

Insight Integration for HP OpenView Network Node Manager Revision 3.3 User Guide



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Audience assumptions

This document is for the person who installs, administers, and troubleshoots servers and storage systems. HP assumes you are qualified in the servicing of computer equipment and trained in recognizing hazards in products with hazardous energy levels.

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Introduction

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Overview

The Insight Integration for HP OpenView Network Node Manager Revision 3.3, (referred to as the "Insight Integration") integrates hardware management and event notification for HP ProLiant, AlphaServer, and Integrity Superdome servers; Evo and Deskpro client systems; and HP storage configurations into the HP OpenView NNM management console. System administrators can easily identify, organize, and manage HP systems from within their existing HP OpenView environments.

The Insight Integration includes processes and specific icons that enable HP systems to be clearly identified and monitored on the NNM Management Map. It also includes event definitions to translate and display over 400 HP SNMP events in the NNM Event Console.

This revision of the Insight Integration supersedes the previous Compaq Insight Manager for HP OpenView NNM and delivers many important enhancements, such as more direct access to detailed hardware data and additional HP management tools, and support for HP Management Agents up to version 7.60 and the latest HP OpenView NNM platforms.

The Insight Integration builds on the functionality of the Insight Management Agents and works with native HP OpenView NNM services to provide the most manageable platform for HP OpenView NNM across a wide range of host and managed operating platforms. This functionality enables systems administrators to manage events for HP server, client, and storage hardware, in addition to other enterprise resources from a common NNM console. Supported operating platforms for host and managed systems include HP-UX, Sun Solaris, Microsoft® Windows Server™ 2003, Microsoft® Windows® 2000, Microsoft® Windows NT®, Microsoft® Windows® XP, Novell NetWare, Linux, HP Tru64 UNIX®, and HP OpenVMS.

Additional data for individual HP servers is available through an integrated browser launch to the HP System Management Homepage, which provides access to Insight Management Agents, Version Control Agents, System Diagnostics, and Survey from the NNM console.

For advanced remote management and deployment of ProLiant systems, a link to the RILOE and iLO solutions are also available through the HP System Management Homepage and Insight Management Agents.

Where broader lifecycle management is needed for groups of HP systems, the Insight Integration includes application launches to HP Systems Insight Manager and the agents associated with the HP Storage Management Appliance.

Features

The following new features were added to Revision 3.3 of the Insight Integration:

- Support for SNMP events defined by HP Insight Management Agents up to version 7.60
- New database field "isHPsmh" for discovery of the System Management Homepage
- New discovery icons for VMware ESX
- Support for Mozilla Firefox 1.5 on HP-UX and Solaris platforms
- Support for c-Class blade systems
- Default support for HP Systems Insight Manager with NNM running on Windows, HP UX, and Solaris

The Insight Integration also supports the following features:

- Automatic discovery and status monitoring of HP server and client systems on the HP OpenView NNM segment map using unique color-coded icons
- HP systems registered in the HP OpenView NNM database
- HP SNMP events translated and displayed in the HP OpenView NNM Event Console and include recommended actions
- Supported event definitions provided by HP Insight Management Agents up to version 7.60
- Qualified for use with HP OpenView NNM 6.3x, 6.4x, 7.0x, and 7.5 across supported operating platforms (HP-UX 11.x, Windows Server™ 2003, Windows® XP, Windows® 2000, Solaris 8, and Solaris 9)
- Instrumentation for HP ProLiant, AlphaServer, and Integrity Superdome servers; Evo and Deskpro client systems; and HP storage configurations
- Embedded menu items to launch HP Systems Insight Manager, HP System Management Homepage, Remote Insight technology, and the HP OpenView Storage Management Appliance from the HP OpenView NNM console
- Flexible installation scripts that enable full NNM console or condensed integration for event-only definitions

System requirements

This user guide assumes that you have a working knowledge of HP OpenView NNM 6.x and 7.x, the HP Insight Management Agents, and the following system requirements:

- HP Management Agent requirements (on page 7)
- Management protocol requirements (on page 8)
- Disk space requirements (on page 8)
- Communication protocol requirements (on page 8)
- HP hardware support (on page 8)
- Managed device platform support (on page 8)
- Recommended browser support (on page 8)
- Operating system support (on page 9)

HP Management Agent requirements

HP Insight Management Agents for servers 5.0 or later and HP Management Agents for clients 4.20 are required. Insight Integration includes support for HP Management Agents up to version 7.60.

Management protocol requirements

Management protocols SNMP and HTTP are required for servers and clients.

Disk space requirements

Insight Integration requires 10 MB of free disk space for installation.

Communication protocol requirements

TCP/IP is the supported communication protocol.

HP hardware support

All HP hardware systems that support the following HP Management Agents are supported:

- HP Insight Management Agents for Servers 5.0 or later
- HP Management Agents for Clients 4.20 or later

This support includes the latest event definitions provided with HP Management Agents 7.60.



NOTE: The Insight Integration does not support former HP NetServer or Vectra systems.

Managed device platform support

The following server and client platforms are supported:

- Microsoft® Windows Server™ 2003
- Microsoft® Windows® 2000
- Microsoft® Windows NT® 4.0 Service Pack 6a
- Microsoft® Windows® XP
- Microsoft® Windows® 98
- NetWare 5.x and later
- Tru64 UNIX® 4.0F and later
- Open VMS 7.1 and later
- OS/2 Warp 4
- UnixWare 7 or later
- Open UNIX® 8
- Linux (Red Hat, SUSE, and UnitedLinux 1.0)
- VMware ESX

Recommended browser support

The following browsers have been tested with HP Insight Management Agents for Servers:

- Microsoft® Internet Explorer 6.0 or later
- Mozilla Firefox 1.5 or later

The following browsers have been tested with HP Management Agents for Clients:

- Microsoft® Internet Explorer 6.0 or later

Operating system support

The Insight Integration is supported on the following HP 9000 series 700/800 operating system HP-UX versions.

HP OpenView version	11.0	11.11	11.23
6.3x	Yes	Yes	No
6.4x	Yes	Yes	No
7.0x	Yes	Yes	No
7.5	Yes	Yes	Yes

The Insight Integration is supported on the following Microsoft® Windows® for Intel® systems.

HP OpenView version	Microsoft® Windows® XP	Microsoft® Windows® 2000	Microsoft® Windows Server™ 2003
6.3.1	No	Yes	No
6.4x	Yes	Yes	No
7.0x	Yes	Yes	No
7.5	Yes	Yes	Yes

The Insight Integration is supported on the following Solaris (SPARC) versions.

HP OpenView version	Solaris 8	Solaris 9
6.3x	Yes	No
6.4x	Yes	Yes
7.0x	Yes	Yes
7.5x	Yes	Yes

Product architecture

The Insight Integration performs the following functions:

- Discovers and displays HP nodes running Insight Management Agents on the NNM management map automatically
- Populates HP hardware status to all OpenView NNM maps
- Identifies and records HP SNMP events in the NNM Event Log
- Translates and displays HP SNMP events for system hardware and related services in the Event Browser

Path names and components

The following table lists the absolute path names of the Insight Integration components.

Component	Path name
Insight Integration executables	\$OV_BIN/CPQ
Application registration files (CPQINFOAPP.REG, CPQMAPAPP.REG)	\$OV_REGISTRATION/\$LANG/CPQ
Symbol registration file (CPQSYM.REG)	\$OV_SYMBOLS/\$LANG/CPQ
Field registration file (CPQFIELD.REG)	\$OV_FIELDS/\$LANG/CPQ

Component	Path name
Bitmaps	\$OV_BITMAPS/\$LANG
Configuration files	\$OV_CONF/\$LANG/CPQ
Local registration files	\$OV_LRF
Insight Integration tools	\$OV_MAIN_PATH/INSTALL/TOOLS/CPQ
Java™ interface icons	\$OV_WWW/
Java™ interface registration files	\$OV_WWW_REG/
Dynamic Views menu definition	\$OV_WWW_REG/dynamicviews/\$LANG

The following table lists the directories and contents associated with the Insight Integration.

Directory	Contents
/bin	Binaries for the Insight Integration processes
/bitmaps	Icons used by Insight Integration
/config	The CPQCONFIG.DAT file for HP systems discovery and the CPQWEB.CONF file for configuring default browser settings.
/docs	<i>Insight Integration for HP OpenView Network Node Manager Revision 3.3 User Guide</i>
/dynamicViews	Menu files for NNM Home Base
/fields	Field registration files used by the Insight Integration
/hpntraps	Files needed for the event (trap) only installation of the Insight Integration
/hpsim	Files for the HP Systems Insight Manager server
/ipf	Support files for HP Integrity Superdome servers
/lrf	Registration files for the CPQDIS and CPQTRAPD processes
/mibs	ProLiant MIBs used by the Insight Integration
/registration	Application and menu registration information
/symbols	Updates to the symbol registration files
/tools	Tools used to verify the installation
/traps	Updates to the trap definition files (used with the full installation of Insight Integration)
/wja	Files for integration with HP Web Jetadmin
/www	GIF and registration files for use with the Java™ GUI

Processes

The Insight Integration installation introduces several specific background and foreground process files, which work with the native NNM processes to provide system discovery, receive and translate HP SNMP events, and display the system hardware status on the NNM management maps.

Process name	Process type
CPQDIS (on page 11)	Background
CPQTRAPD (on page 11)	Background
CPQMAP (on page 11)	Foreground
CPQWEB (on page 11)	Foreground
CPQRIOE (on page 12)	Foreground

Process name	Process type
HPSIM (on page 12) (UNIX)	Foreground
HPSIMLNH (on page 12) (UNIX)	Foreground

CPQDIS

CPQDIS is a background process started by the `OVSTART` command that performs the following functions:

- Uses data gathered by the HP OpenView database to redefine all discovered systems running HP Insight Management Agents
- Categorizes discovered HP nodes by system types (for example, server or client systems) and identifies the associated operating system on each discovered HP node
- Updates the overall status of the HP node
- Must be running before any of the other processes installed by the Insight Integration can start
- References the Discovery section of the `CPQCONFIG.DAT` file (See "Configuration files (on page 20)" for more information on the `CPQCONFIG.DAT` file.)

CPQTRAPD

CPQTRAPD is the trap daemon that the Insight Integration uses to process all traps received from the 232 enterprise.

TRAPD is the HP OpenView NNM process used to receive SNMP traps. The CPQTRAPD process works with TRAPD to identify HP specific traps and formulates the traps into a readable format. Complex values received from the HP Insight Management Agents are converted to explanatory text strings before being displayed as messages in the NNM Event Browser.

When the Insight Integration is installed, the TRAPD configuration file (`TRAPD.CONF`) is modified to accept and process all events from the 232 enterprise as "Log Only," which means that the events are copied to the NNM Event Log (`TRAPD.LOG`) but are not displayed in the NNM Event Browser. The CPQTRAPD process translates the raw SNMP events, adding new information and recommended actions where appropriate. The translated trap is re-entered through TRAPD with a "Log and Display" definition, then copied to the NNM Event Log, and displayed in the NNM Event Browser.

CPQMAP

CPQMAP is a foreground process started by `OVW` that performs the following functions:

- Creates and updates node or subsystem map symbols for all HP nodes identified by the CPQDIS process ("CPQDIS" on page 11)
- Replaces the default NNM subsystem symbols with specific symbols for HP server, client, and storage systems and creates the Web status icons in the node submaps for all identified nodes running HP Insight Management Agents

CPQWEB

CPQWEB is a foreground process that launches the default browser specified during the installation and configuration of the Insight Integration.

This process is used to connect to the HP System Management Homepage of the web-enabled Insight Management Agents on a selected node.

If the web-enabled Insight Management Agents are installed and running on a node, they will be identified in the corresponding node submap by an executable icon labeled "Insight Agents." By selecting

this executable icon, the CPQWEB process will be invoked to launch the default browser, whose path information is defined in the CPQWEB.CONF file.



NOTE: For best results, use only supported browser configurations. See "Recommended browser support (on page 8)" for a list of tested browsers.

CPQRILOE

CPQRILOE is a foreground process used to launch the default browser specified during the installation and configuration of the Insight Integration.

This process is used to connect to the RILOE, RILOE II, iLO, or iLO 2 remote management processor features on HP ProLiant servers that have this capability installed. This connection enables administrators to perform advanced remote management and administration of HP ProLiant servers.

If the server has a remote management processor installed and configured with HP Insight Management Agents, it will be identified with the CPQRILOE field. Right-clicking the server enables you to launch to the RILOE, RILOE II, iLO, or iLO 2 browser-based interface by selecting the Insight Lights-Out option.



NOTE: For best results, use only supported browser configurations. See "Recommended browser support (on page 8)" for a list of tested browsers.

HPSIM

HPSIM is a foreground process used to launch the browser specified in the \$OV_CON/C/cpq/CpqWeb.conf file. This process is used to connect to the HP Systems Insight Manager homepage from NNM.

HPSIMLNH

HPSIMLNH is a foreground process used to launch the browser specified in the OV_CON/C/cpq/CpqWeb.conf file. This process is used to connect to HP Systems Insight Manager and display the node selected in NNM.

Installation

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Installation overview

The Insight Integration can be installed into both UNIX® and Windows® NNM platforms using the following methods to meet different environment or organizational needs:

- Full integration ("[Full integration overview](#)" on page 13)
- Event-only integration ("[Event-only integration overview](#)" on page 14)
- Remote Console integration ("[Remote Console integration overview](#)" on page 14)
- HP Web Jetadmin integration ("[HP Web Jetadmin integration overview](#)" on page 14)

Full integration overview

The full installation of the Insight Integration performs the following functions for the most complete solution:

- Installs foreground and background processes for HP systems discovery and status monitoring on the NNM segment map
- Edits the NNM configuration files to auto-initialize the processes installed by the Insight Integration
- Integrates SNMP trap definitions and message translations into the existing HP OpenView NNM TRAPD.CONF file
- Copies symbols, map icons, and field definitions into the configuration files for OpenView NNM
- Extends NNM menus with HP-specific entries, including embedded links to HP Systems Insight Manager and HP Insight Information menu options for in-depth systems configuration and performance indicators

See "Installation procedures for HP-UX and Solaris platforms (on page 15)" for installation information for UNIX® platforms. See "Installation procedures for Windows platforms (on page 16)" for installation information for Windows® platforms.

Event-only integration overview

The Insight Integration includes an alternative process for installing only SNMP event definitions for HP systems hardware into an existing NNM environment. Event-only integration receives, processes, and displays translated HP SNMP traps using the HP OpenView NNM Alarm Browser. However, it does not install the NNM menu extensions, icons, symbols, or processes for HP system discovery and status monitoring through the NNM console.

See "Event-only integration (on page 27)" for more information.

Remote Console integration overview

The Insight Integration includes support for the NNM Remote Console installation running on Microsoft® Windows®. The supported Remote Console installation can be used with an NNM server running on Windows®, HP-UX, or Solaris.

The full integration should be installed on the NNM server. After the full integration is installed on the server, the Remote Console install script in the Windows® integration download should be executed on the Remote Console system ("[Installing the Insight Integration on an NNM Remote Console](#)" on page 29).

HP Web Jetadmin integration overview

The Insight Integration includes support for HP Web Jetadmin. This support includes launching Web Jetadmin from the NNM Tools menu, launching to Web Jetadmin in-context from the printer pop-up menus, and handling of basic printer events. Web Jetadmin support is optional and is not included in the default installation.

Preinstallation considerations

Before attempting to install the Insight Integration, be sure that you have read and understood the installation information provided in this guide. Other installation requirements include the following:

- The target HP OpenView NNM environment must be fully configured and operational before installing the Insight Integration.
- A supported version of HP OpenView NNM must be installed. See "System requirements (on page 7)" for a list of the supported software.
- A minimum of 10 MB of free disk space is required to install the integration.
- The Insight Integration supersedes all previous revisions of the integration.
- It is not necessary to remove previous revisions of the Insight Integration before installing the latest revision. The installation script is designed to automatically overwrite previously installed versions before applying the new files and configuration updates.
- HP Insight Management Agents must be installed and active on all systems to be monitored by HP OpenView NNM and the Insight Integration.
- SNMP services must be configured locally on all systems before installing the HP Insight Management Agents. If SNMP is not present when the HP Management Agents are installed, the SNMP support elements of the agents will not be implemented.



NOTE: On an HP ProLiant system running NNM, the SNMP settings must be configured in the SNMP EMANATE agent. See "Configuring SNMP on an HP ProLiant server running NNM (on page 32)" for more information.

The Insight Integration includes features that use a web browser to view the System Management Homepage of the HP Management Agents and other HP management tools, such as HP Systems Insight Manager, Java™, and JavaScript. You must enable these tools in the browser configuration to enable these features properly.

Upgrading from previous versions of the Insight Integration

The procedures for upgrading are identical to the procedures listed for the installation. The CPQINSTALL script preserves the current trap configuration entries. Previous trap definitions are no longer deleted during the installation.

Installation procedures for HP-UX and Solaris platforms

Complete the following steps to install the complete Insight Integration in HP-UX or Solaris environments.



NOTE: To install only the HP SNMP trap definitions and omit HP device discovery and status monitoring using the NNM Segment Map, see "Event-only integration (on page 27)."

1. Access the HP website (<http://www.hp.com/servers/integration>) to register and select the version of the Insight Integration that corresponds to your NNM operating platform. Download the file to a separate directory on the system containing the NNM installation (for example, IMHPOV).
2. Expand the .tar.Z file using the Uncompress utility. The uncompressed file is identified as <filename>.tar.
3. Unpack the .tar file using the command `tar xvf <filename>.tar`. This command extracts the integration into a new directory.
4. Log in with root privileges.
5. Close the HP OpenView NNM GUI, if it is running, by pressing the **Ctrl+E** keys.
6. Close all OVV sessions by entering `$OV_BIN/ovstop` from the command line.
7. From the command line, change to the directory that contains the expanded Insight Integration (imovhpux33 or imovsol33).
8. From the command line, enter `./cpqinstall` to initiate the installation script.



NOTE: The installed browser must have Java™ and JavaScript enabled.

9. Configure the path to the web browser used to launch HP management tools within the NNM environment by editing the CpqWeb.conf file.
 - a. Change to the `$OV_CONF/$LANG/cpq` directory, and edit the CpqWeb.conf file after the installation script completes.
 - b. Enter the path and executable for the web browser being used (for example, `/opt/mozilla/mozilla`), and save the file. See "Configuration files (on page 20)" for more information.
10. Include the following environment variable in the `$HOME/.dtprofile` file for each user ID used to view the NNM maps:

```
IPMAP_NO_SYMBOL_CHANGES=TRUE
export IPMAP_NO_SYMBOL_CHANGES
```

This environment variable ensures that the specific icons used by the Insight Integration to identify HP systems and provide hardware status will be automatically used for each discovered HP node.

11. Include the following line in the \$HOME/.dtprofile file for each user ID:


```
. /opt/OV/bin/ov.envvars.sh
```
12. (Optional) Configure an environment variable for HP Systems Insight Manager. Include the following environment variable in the \$HOME/.dtprofile file for each user ID using the integration:


```
IMADDRESS=address or hostname of Systems Insight Manager server
export IMADDRESS
```
13. (Optional) Configure the NNM Java™ interface registration files. If you intend to use the web-based interface for NNM, edit the /insight and /insighthome registration files to configure them for access to your HP Systems Insight Manager server as follows.
 - a. Open the \$OV_WWW_REG/jovw/\$LANG/insight file, and replace the string IM7IPADDRESS with the name or IP address of your HP Systems Insight Manager server.
 - b. Open the \$OV_WWW_REG/launcher/\$LANG/insighthome file, and replace the string IM7IPADDRESS with the name or IP address of your HP Systems Insight Manager server.
14. (Optional) Configure the Alarm Browser Views for NNM 6.31 and later. These versions of NNM can be configured to launch specific views in the context of an event. Edit the xnmeventsExt.conf file in the \$OV_CONF/\$LANG directory, and add the following line:


```
.1.3.6.1.4.1.232.*;"HP System Management Homepage";http://$OvNode:2301
```

This entry enables the web-enabled Insight Management Agents to launch directly from an HP SNMP event received in the NNM Alarm Browser. A sample file (xnmeventsExt.cpq) is provided in the /traps directory of the Insight Integration. This sample file contains launches to the HP Insight Management Agents, HP Systems Insight Manager, and HP Power Manager.
15. (Optional) Load the HP Integrity Superdome system MIBs into the NNM database. Discovery and classification of Integrity Superdome servers is provided by default. To enable more extensive alarm processing from these systems, load the Integrity MIBs by changing to the /ipf directory and executing the loadipf script.
16. (Optional) Configure the Insight Integration menu option for the NNM Home Base Dynamic Views.
 - a. Change to the \$OV_WWW_REG/dynamicViews/\$LANG directory.
 - b. Edit the insight.xml file. Perform a search and replace on the string "localhost," replacing the "localhost" string with the name or IP address of the HP Systems Insight Manager server. Save the file.

The installation takes approximately 10 minutes, and a message appears upon completion. The installation creates the /TMP/CIMINSTALL.LOG log file and the /TMP/CIMERROR.LOG file, which contain information about the installation status and any messages related to installation or configuration errors. If the CIMERROR.LOG file contains errors, fix the reported problems, and then run the ./cpqinstall command again (step 8) to reinstall the software.

Installation procedures for Windows platforms

Complete the following steps to install the complete Insight Integration on NNM 6.3 and later platforms running Windows® 2000, Windows Server™ 2003, or Windows® XP. To install only the HP SNMP trap definitions and omit HP device discovery and status monitoring using the NNM Segment Map, see "Event-only integration (on page 27)."

1. Access the HP website (<http://www.hp.com/servers/integration>) to register and select the Windows® version of Insight Integration. Download the file to a separate directory on the system containing the NNM installation (for example, IMHPOV).
2. Expand the zip file with the unzip (WinZip) utility.
3. Log in with Administrator privileges.
4. Close the HP OpenView NNM GUI, if it is running, by pressing the **Ctrl+E** keys.

5. Close all OVV sessions by selecting NNM Services Stop from the program menu or by entering `$OV_BIN/ovstop` from the command line
6. Select **Start>Run>cmd** to open a command prompt, and change to the directory that contains the expanded Insight Integration (imovwin33).
7. Run the `CPQINSTALL.CMD` script, and follow the on-screen instructions.
8. (Optional) Configure the NNM Java interface registration files. If you intend to use the web-based interface for NNM, edit the `\insight` and `\insighthome` registration files to configure the files for access to your HP Systems Insight Manager Server:
 - a. Open the `%OV_WWW_REG%\javw\%LANG%\insight` file, and replace the string `IM7IPADDRESS` with the name or IP address of your HP Systems Insight Manager server.
 - b. Open the `%OV_WWW_REG%\launcher\%LANG%\insighthome` file, and replace the string `IM7IPADDRESS` with the name or IP address of your HP Systems Insight Manager server
9. (Optional) Configure the Alarm Browser Views for NNM 6.31 and later. These versions of NNM can be configured to launch specific views in the context of an event. Edit the `xnmeventsExt.conf` file in the `$OV_CONF/$LANG` directory, and add the following line:


```
.1.3.6.1.4.1.232.*;"HP System Management Homepage";http://$OvNode:2301
```

This entry enables the web-enabled Insight Management Agents to launch directly from an HP SNMP event received in the NNM Alarm Browser. A sample file (`xnmeventsExt.cpq`) is provided in the `/traps` directory of the Insight Integration.
10. Load the HP Integrity Superdome system MIBs into the NNM database (optional). Discovery and classification of Integrity Superdome servers is provided by default. To enable more extensive alarm processing from these systems, load the Integrity MIBs by changing to the `/ipf` directory and executing the `loadipf` script.
11. (Optional) Configure the Insight Integration menu option for the NNM Home Base Dynamic Views.
 - a. Change to the `$OV_WWW_REG/dynamicViews/$LANG` directory.
 - b. Edit the `insight.xml` file. Perform a search and replace on the string "localhost," replacing the "localhost" string with the name or IP address of the HP Systems Insight Manager server.
 - c. Save the file.

The installation takes approximately 10 minutes, and a message appears upon completion. The installation creates the `%OV_BIN%\CIMINSTALL.LOG` log file and the `%OV_BIN%\CIMERROR.LOG` file, which contain information about the installation status and any messages related to installation or configuration errors. If the `CIMERROR.LOG` file contains errors, fix the reported problems and then run the `CPQINSTALL.CMD` script again (step 7) to reinstall the software.

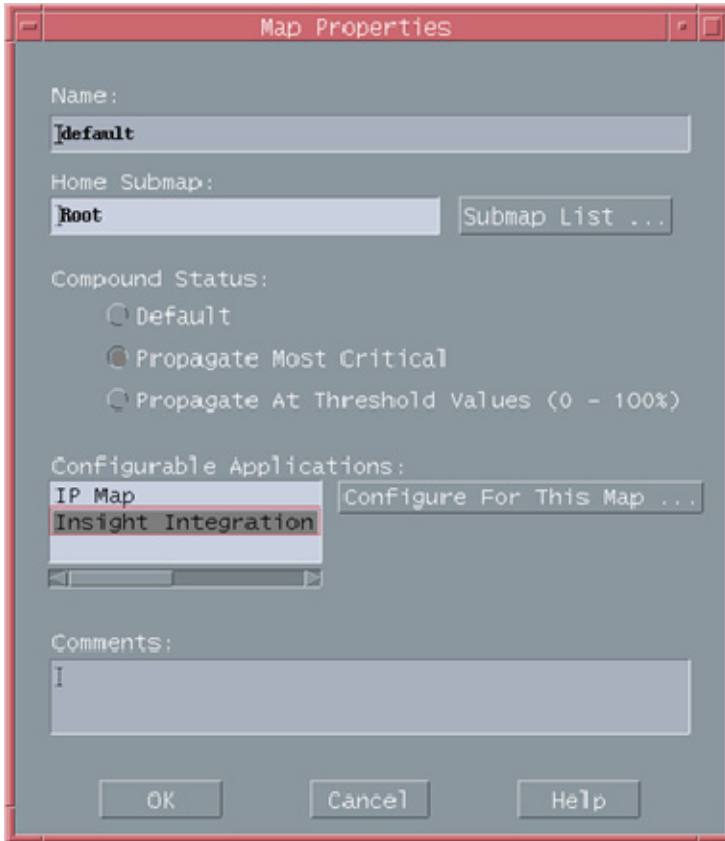
Uninstalling the Insight Integration on HP-UX and Solaris platforms



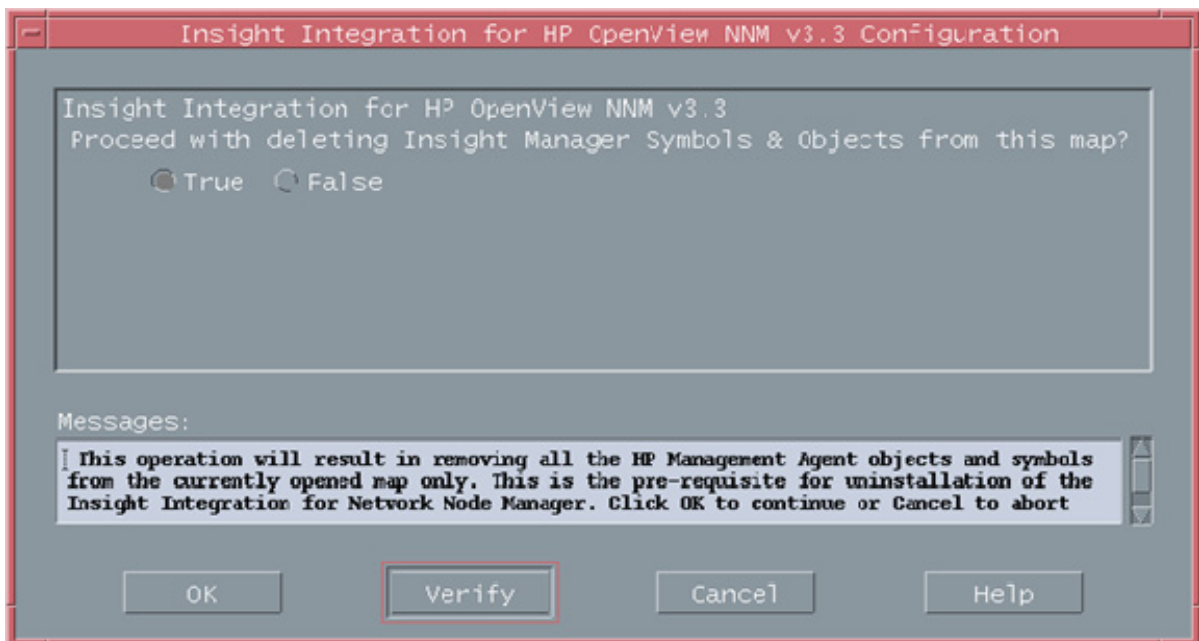
NOTE: Uninstalling the Insight Integration is only necessary if you want to remove the integration components permanently. It is not necessary to uninstall if you are re-installing over a previous revision of the Insight Integration or Compaq Insight Manager for OpenView NNM.

1. Log in to the HP OpenView NNM console system as root.
2. Delete the Insight Integration-specific objects and symbols:
 - a. Start the OVV, and open the NNM map.
 - b. Select **Map>Properties**.

- c. Select **Insight Integration for HP OpenView NNM**, and click **Configure For This Map**.



- d. Select **True**.
- e. Click **Verify** to confirm that the action can be performed.
- f. Click **OK** to complete the selection and start the deletion process.

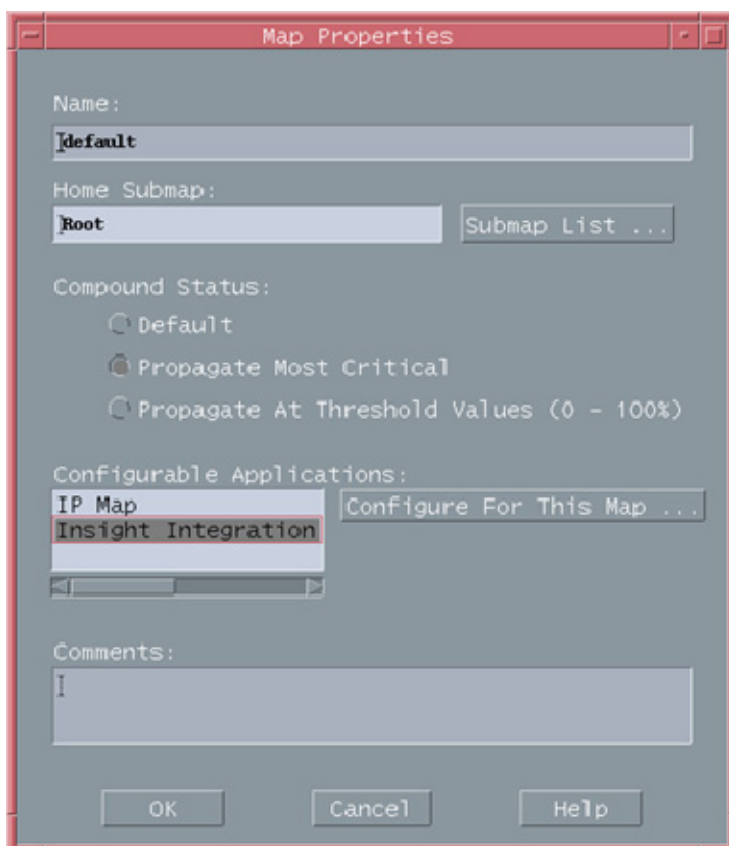


- g. Close all open maps, and exit OVW when the process has been completed for all NNM maps.

- h. Repeat steps b through g for each NNM map.
 3. Remove the Insight Integration files:
 - a. Exit OVW, if it is running, and close all OVW sessions before proceeding.
 - b. From the command line, change to the directory where the downloaded Insight Integration file was extracted, and run the `./cpquninstall` command to remove the Insight Integration files.

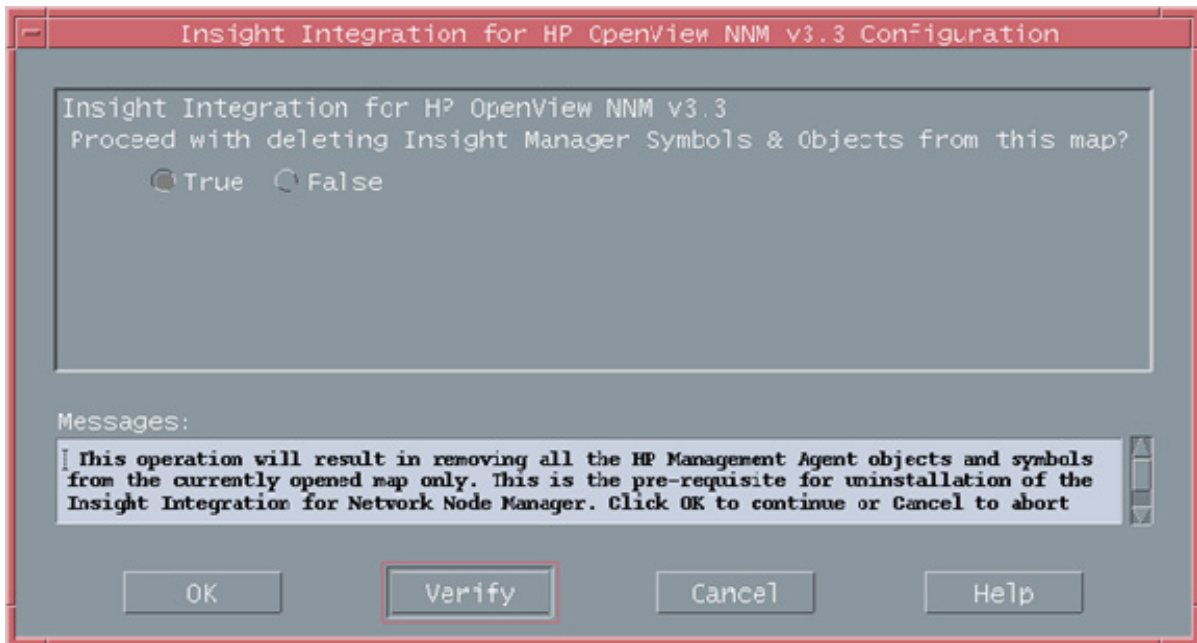
Uninstalling the Insight Integration on Windows platforms

1. Log in as Administrator.
2. Delete the Insight Integration-specific objects and symbols:
 - a. Start the OVW, and open the NNM map.
 - b. Select **Map>Properties**.



- c. In the Applications tab, select **Insight Integration for HP OpenView NNM**.

- d. Click **Configure For This Map**.



- e. Highlight **Proceed with deleting Insight Integration Symbols & Objects from this map?**, and select **True**.
- f. Click **Verify** to confirm that the action can be performed.
- g. Click **OK** to complete the selection and start the deletion process.
- h. Repeat steps b through g for each NNM map.
3. (Optional) Remove the Insight Integration files from the hard drive of the NNM console system before proceeding:
- Close the OpenView NNM GUI, if it is running, and close all other OVW sessions.
 - Click the **NNM Services Stop** icon in the program menu, or run the `%OV_BIN%\OVSTOP` command at the DOS prompt.
 - Click the **NNM Services Status** icon in the program menu, or run the `%OV_BIN%\OVSTATUS` command at the DOS prompt to verify that all OVW processes have been stopped.
 - From the command prompt, change to the directory where the Insight Integration file was extracted (for example, `c:\imovwin33`).
 - From the command prompt, run `cpquninstall`.

Configuration files

The processes installed by the Insight Integration use specific configuration files to define the default browser path and various operating conditions. The following two configuration files can be modified to suit your requirements:

- CPQWEB.CONF—Web browser path configuration file for UNIX-hosted installations
- CPQCONFIG.DAT—Insight Integration configuration file

See "Product architecture (on page 9)" for a full description of the processes installed by the Insight Integration.

CPQWEB browser configuration

CPQWEB.CONF is the browser configuration file used by the CPQWEB process to launch the default browser. After the integration has been installed, modify this file to point to the location of the browser executable (for example, /usr/local/mozilla/mozilla).

The CPQWEB.CONF file is only used by UNIX-hosted installations of the Insight Integration and can be found under the \$OV_CONF/\$LANG/cpq directory. Windows®-hosted configurations use the default browser applications defined in the Windows® registry.

The Insight Integration requires the use of a web browser to view the HP System Management Homepage of the HP Insight Management Agents and other HP management tools such as HP Systems Insight Manager. Java™ and JavaScript must be enabled in the browser configuration to properly enable these features.

For client installations, the browser must be installed in the same path as the server. This path information is defined in the CPQWEB.CONF file.

CPQCONFIG configuration

The Insight Integration uses the CPQCONFIG.DAT configuration file to define the discovery and update status intervals for HP nodes.

This configuration file is installed in the \$OV_CONF/\$LANG/cpq directory and can be modified to include custom settings.

Changes to this configuration file take effect only after performing the following operations:

1. Stop the respective processes using the `OVSTOP` command.
2. Start the respective processes using the `OVSTART` command.

⚠ CAUTION: Do not modify the CPQCONFIG.DAT file, except for the parameters defined in this section.

The Discovery section of the CPQCONFIG.DAT file can be configured to define a number of discovery and status update intervals. All comments within the Discovery section must begin with the number sign (#).

The Discovery section has two configurable parameters:

- **Discovery Interval**—The time interval, in minutes, between two successive discoveries of nodes. If no value is specified, the internal default is used.
 - Interval between successive HP node discovery in minutes
 - Valid range: 1 to 4272
 - Default value: 30
 - `DiscoveryInterval: 30`
- **Rediscovery Interval Iteration**—Specification of the number of rediscoveries and retries before the integration node discovery process is considered complete for all the nodes present in the OVW database.
 - The Rediscovery iteration number
 - Valid range: 1 to 100
 - Default value: 10
 - `Re-discoveryIntervallteration: 10`

Tool Definition configuration

A Tool Definition (TDEF) file for HP Systems Insight Manager is provided with the Insight Integration. This file provides menu definitions that enable the NNM to be launched directly from HP Systems Insight Manager.

1. Copy the file `nnm.xml` from the `/hpsim` directory to the `HP Systems Insight Manager\tools` directory on the HP Systems Insight Manager server.
2. Edit the TDEF file `nnm.xml`, perform a search, and replace the string "localhost" with the name or IP address of your NNM server.
3. Open a command prompt, and change to the `HPSIM\tools` directory.
4. Run the `mxtool -a -f nnm.xml` command to load the new tool definition.
5. Close the browser and log in HP Systems Insight Manager to view the new tool menus. Run the `mxtool -r -f nnm.xml` command to remove the tool definition.

Additional configuration requirements

In addition to the installation and configuration procedures noted, perform the following steps to verify that the Insight Integration functions correctly:

1. On HP-UX and Solaris systems, include the following environment variables in the `$HOME/.dtprofile` file for each user ID used to view the NNM maps. This action ensures that the discovered HP nodes display using the HP specific icons.

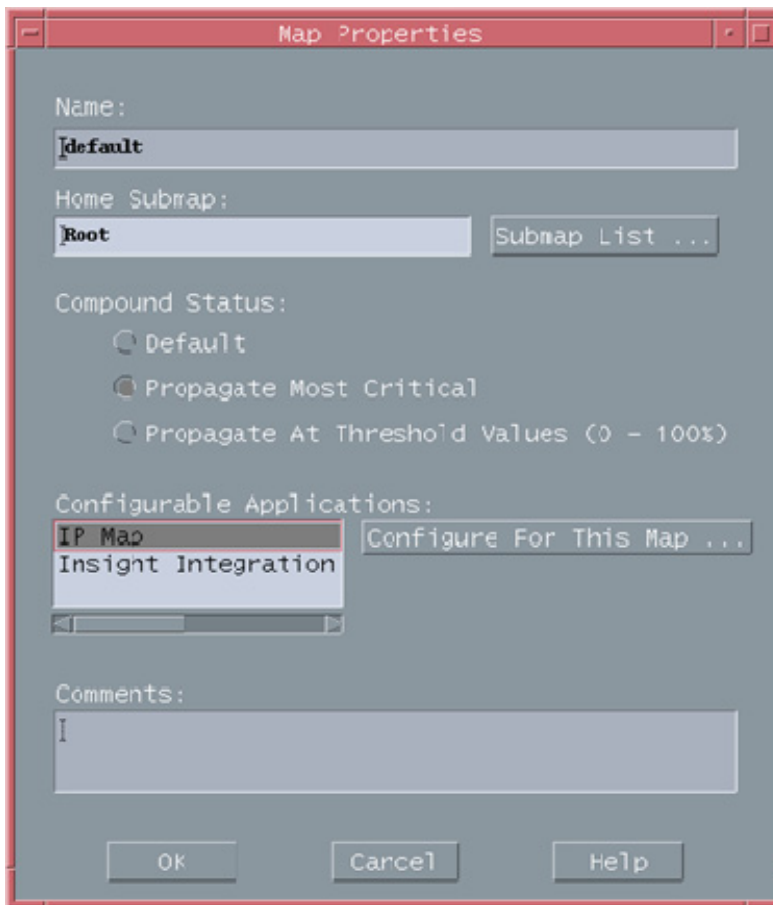
```
IPMAP_NO_SYMBOL_CHANGES=TRUE
export IPMAP_NO_SYMBOL_CHANGES
```
2. On HP-UX and Solaris systems, include the following environment variable in the `$HOME/.dtprofile` file for each user ID used to view the NNM maps. This action enables you to launch to the desired HP Systems Insight Manager server.

```
IMADDRESS=IP address or hostname of the Systems Insight Manager server
export IMADDRESS
```
3. Enable Map Persistence to ensure that the HP status updates are populated on both the main map and submaps within the NNM.
4. To provide access to HP Systems Insight Manager from the NNM Home Base, edit the `insight.xml` file, perform a search, and replace "localhost" with the name or address of the HP Systems Insight Manager Server. The `insight.xml` file is located in the `$OV_WWW_REG/dynamicViews/$LANG` directory.

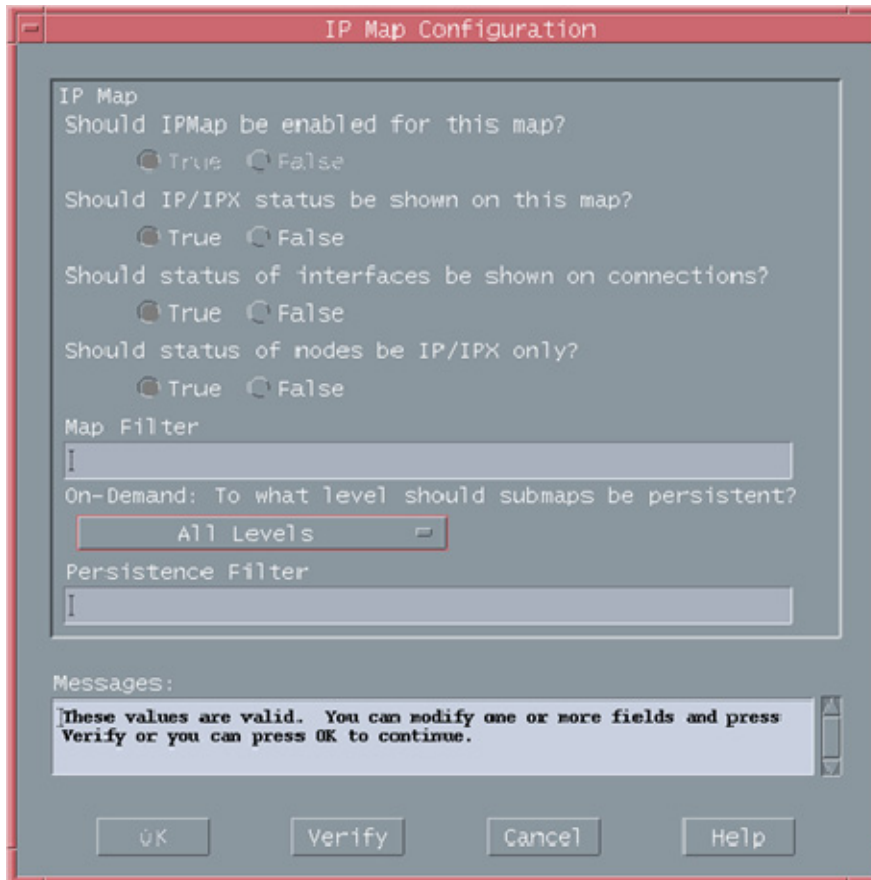
The following sections describe how to implement these settings within the NNM environment on HP-UX and Solaris platforms ("[Setting map persistence in HP-UX and Solaris environments](#)" on page 23) and Windows® platforms ("[Setting map persistence in a Windows environment](#)" on page 25).

Setting map persistence in HP-UX and Solaris environments

1. From the NNM segment map, select **Map>Map Properties**. The Map Properties window appears.



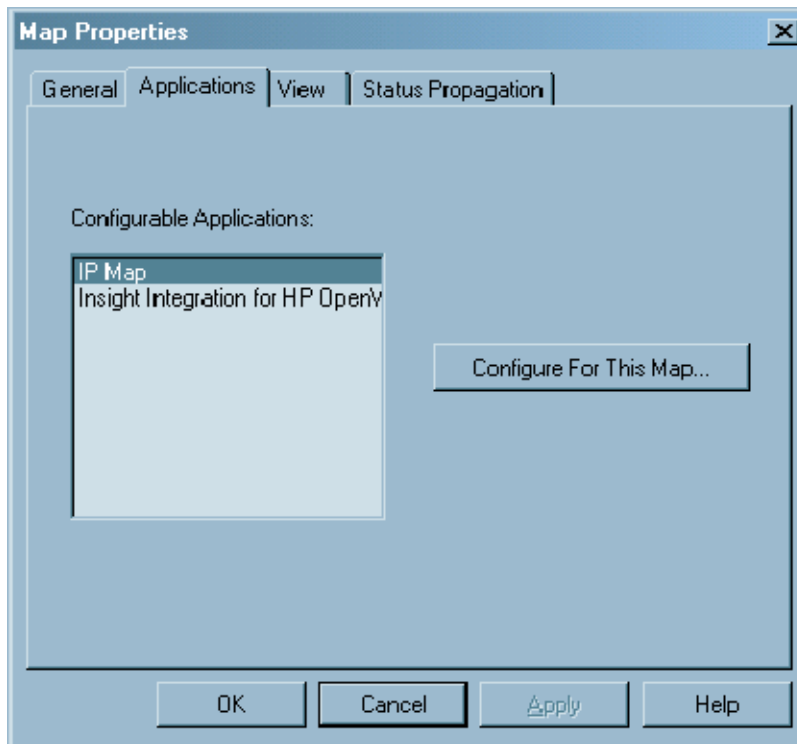
2. Highlight **IP Map**, and click **Configure For This Map**. The IP Map Configuration window appears.



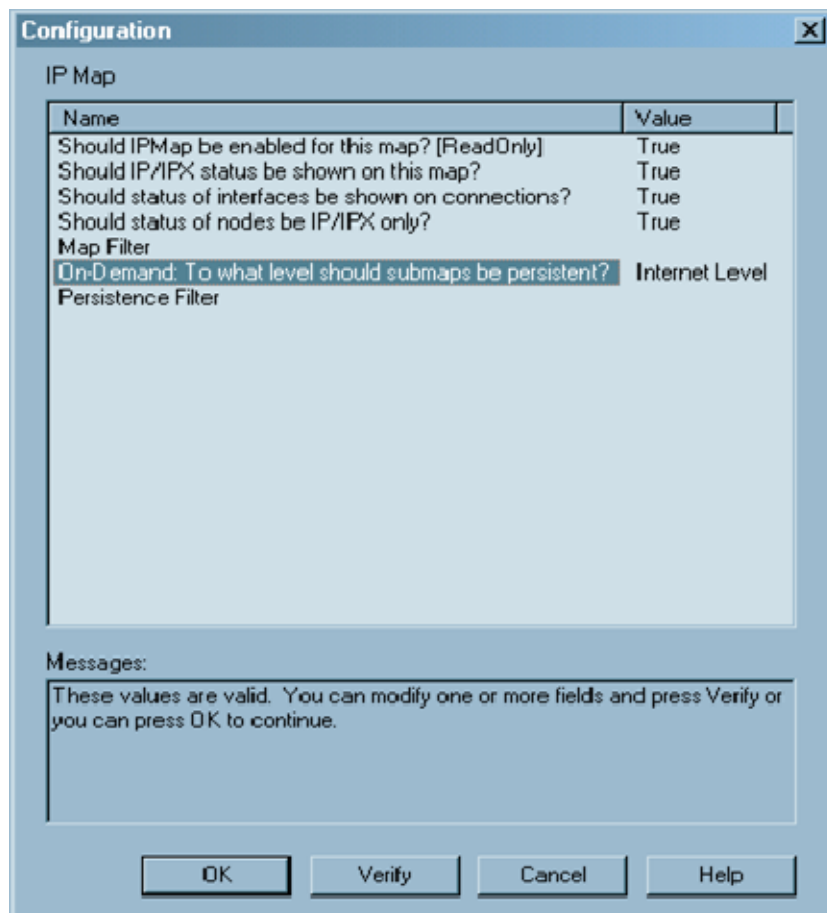
3. In On-Demand: To what level should submaps be persistent?, set the value to **All Levels**.
4. Click **Verify** to confirm that the action can be performed.
5. Click **OK** to complete the process.

Setting map persistence in a Windows environment

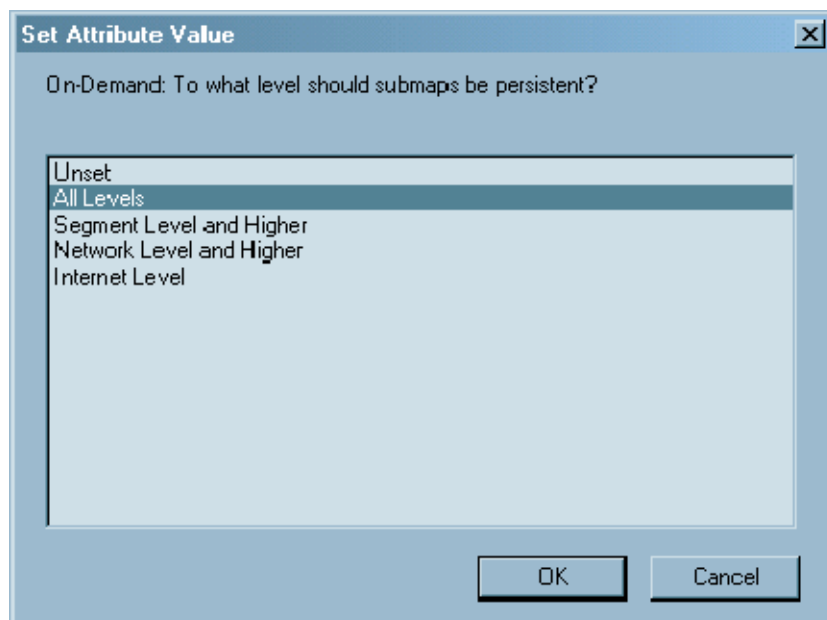
1. From the NNM segment map, select **Map>Map Properties**. The Map Properties window appears.



2. In the Applications tab, highlight **IP Map**, and click **Configure For This Map**. The Configuration window appears.



3. In the Configuration window, highlight **On-Demand: To what level should submaps be persistent?** This action prompts entry in the Set Attribute Value window.



4. In the Set Attribute Value window, select **All Levels**, and click **OK**.
5. Click **Verify** to confirm that the action can be performed.

6. Click **OK** to complete the process.

Event-only integration

The Insight Integration, revision 3.0, introduced an alternative installation process that integrates only the HP SNMP event definitions and MIBs into an existing NNM environment. This process provides an additional level of flexibility, especially when HP ProLiant servers are used, and the primary tool for monitoring the systems infrastructure is the NNM Alarm Browser.

This method will not install the foreground and background processes, symbols, icons, and menu extensions provided with the complete installation of the Insight Integration. See "Installation procedures for HP-UX and Solaris platforms (on page 15)" or "Installation procedures for Windows platforms (on page 16)" for more information on the installation methods.

The files used for the event-only integration are separate from those used by the full integration method and must not to be used in conjunction with the full integration of the Insight Integration.

Event-only integration compared to full integration

While the HP events displayed in the NNM Alarm Browser are of similar content for both installation methods of the Insight Integration, the complete installation implements SNMP trap definition files from the \traps directory, and the event-only installation uses trap definition files from the \hpqtraps directory. Both methods display HP SNMP traps defined by Insight Management Agents up to version 7.60.

By using the event-only integration:

- Only SNMP event integration related to HP ProLiant hardware is provided.
- No discovery or status monitoring of HP systems on the NNM map occurs.
- No background or foreground processes are added to the NNM console.
- HP ProLiant MIBs must be loaded for varbind translation.

Installing event-only integration

To provide detailed entries in the NNM Alarm Browser for HP SNMP events, the HP ProLiant MIBs and predefined HP SNMP trap definition files must be installed using the scripts provided in the \hpqtraps directory. These scripts replace any currently loaded ProLiant MIBs with the new versions.

To install the event-only integration, load the ProLiant MIBs and the HP SNMP trap definitions. Do not load the HP ProLiant trap definitions directly from the MIBs. Load the trap definition file to get detailed trap translations.

Installing HP MIBs on a Windows NNM host

1. Log in as an administrator.
2. Open a command prompt.
3. Change to the integration \mibs directory.
4. Run the cpqload.cmd script.

Installing HP MIBs on an HP-UX or Solaris NNM host

1. Log in as root.
2. Change to the integration \mibs directory.
3. If the script is not executable, modify the permissions by running the command `chmod 744 cpqload`.

4. Run the cpqload script.

Installing the HP SNMP trap definitions on a Windows NNM host

1. Log in as an administrator.
2. Open a command prompt.
3. Change to the \hpqtraps directory.
4. Run the install-win.cmd script.

Installing the HP SNMP trap definitions on an HP-UX or Solaris NNM host

1. Log in as root.
2. Open a terminal window.
3. Change to the /hpqtraps directory.
4. If the script is not executable, modify the permissions by running the command `chmod 744 installtraps`.
5. Run the installtraps script.

HP SNMP event examples

In the following example, a hard drive is replaced in a managed system. This example demonstrates the differences between loading only the HP MIBs for trap translations and loading both the HP MIBs and HP trap definition files for full event translations.

- With only HP MIBs loaded—For a replaced hard drive, the event presented in the NNM Alarm Browser is similar to the following:
`Physical Drive Status is now ok.`
- With HP MIBs and trap definition files loaded—For a replaced hard drive, the event displayed in the NNM Alarm Browser is similar to the following:
`HP - Physical Drive Status has changed to ok. (Controller: 5, Bus:1, Bay: 1, Model: HP ST32171WC, Firmware: 0684, Serial#: JEB360690N5KWG)`

The depth of information displayed in the translated trap can vary, depending on the version of HP Insight Management Agents used to generate events. For example, older versions of the HP Management Agents might not send the drive serial number with the disk drive trap. Consequently, that field would be blank in the translated alarm.

Uninstalling event-only integration

To uninstall event-only integration of the Insight Integration, remove both the HP SNMP MIBs and trap definition files from Windows® and UNIX® NNM host systems.

Removing the HP trap definitions from a Windows NNM host

1. Log in as an administrator.
2. Open a command prompt.
3. Change to the \hpqtraps directory.
4. Run the remove-win.cmd script.

Removing the HP trap definitions from an HP-UX or Solaris NNM host

1. Log in as root.

2. Open a terminal window.
3. Change to the /hpqtraps directory.
4. If the script is not executable, modify the permissions by running the command `chmod 744 removetraps`.
5. Run the removetraps script.

Removing the HP ProLiant MIBs from a Windows NNM host

1. Log in as an administrator.
2. Open a command prompt.
3. Change to the integration \mibs directory.
4. Run the cpqunload.cmd script.

Removing the HP ProLiant MIBs from an HP-UX or Solaris NNM host

1. Log in as root.
2. Open a terminal window.
3. Change to the integration \mibs directory.
4. Modify the permissions by running the command `chmod 744 cpqunload`, if the script is not executable.
5. Run the cpqunload script.

Installing the Insight Integration on an NNM Remote Console

Before installing the Insight Integration on an NNM Remote Console, the full integration must be installed and configured on the NNM server. The NNM server can be running on Windows®, HP-UX, or Solaris.

1. Download the Windows® version of Insight Integration for NNM.
2. Unzip the integration on the Remote Console system.
3. On the Remote Console system, open a command prompt and change to the integration directory.
4. Execute the rconsole-install.cmd script.

The rconsole-install.cmd script copies the necessary files from the integration into the appropriate NNM directories.

The Monitor-HP-Discover and Monitor-HP-Status Update menu items are not available on the Remote Console installation. These menu items are only available on the NNM server.

To remove the integration file for the Remote Console, change to the integration directory and run the rconsole-remove.cmd script.

Installing the Web Jetadmin integration

The integration for HP Web Jetadmin can be installed with the other integration components or as a stand-alone piece.

1. Download the Insight Integration.
2. Unzip the integration file on the local system.
3. Open a command prompt, and change to the location of the unzipped file.
4. Change to the wja directory.

5. Edit the file `hpwjabridge.arf`, replace the string "localhost:8000" with the name and port number of your Web Jetadmin server, and save the file.
6. Run the `install.cmd` script.

Creating NNM events from HP SIM

HP SIM can create events for NNM through an application launch. This option requires minimal configuration on the NNM server. Currently this option is only supported with HP SIM running on Microsoft® Windows®.

To configure the NNM server:

1. Copy the `hpsimtraps.nnm` file from the `/hpsim` directory to the NNM server.
2. Run the command `xnmevents -load hpsimtraps.nnm` on the NNM server to load the trap configuration file.

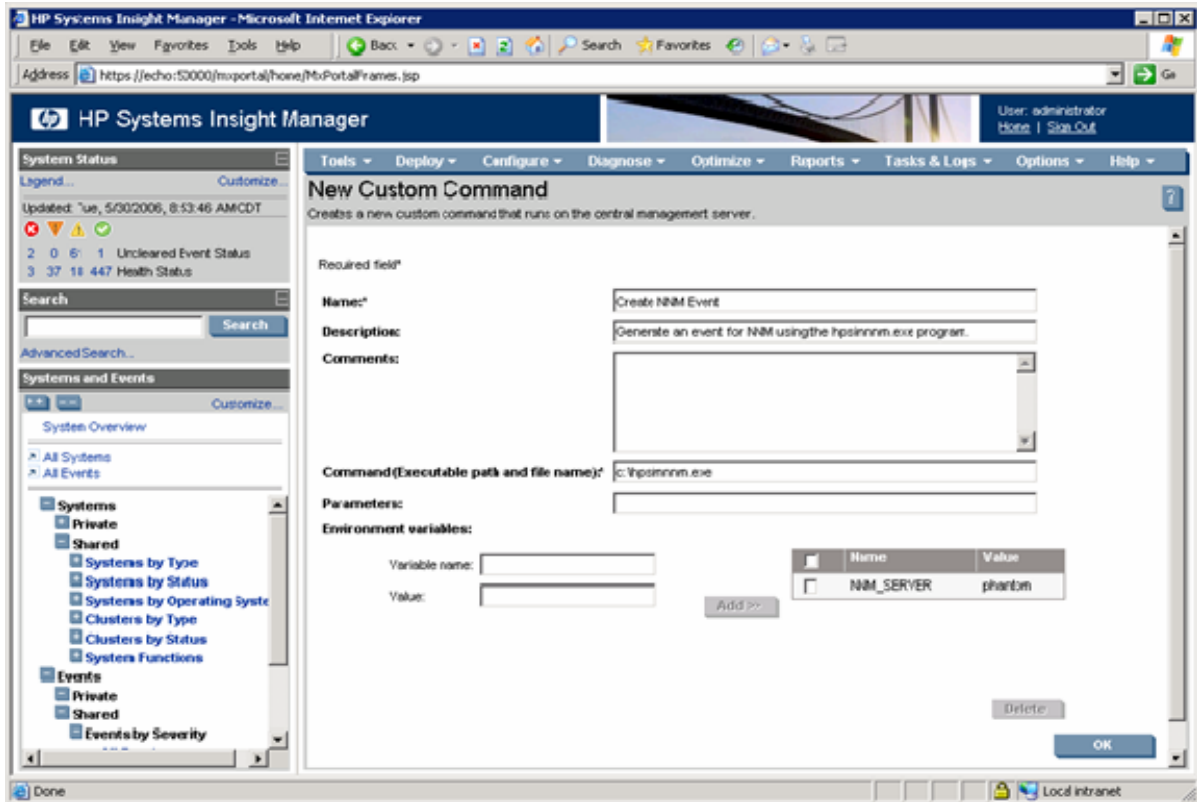
The `hpsimtraps.nnm` trap configuration file defines five events that will be added to `trapd.conf`. One event is defined for each possible severity level in HP Systems Insight Manager. The following table lists the severity mapping used in the trap definition file.

HP SIM events	NNM events
Critical	Critical
Major	Major
Minor	Minor
Normal	Informational
Informational	Informational

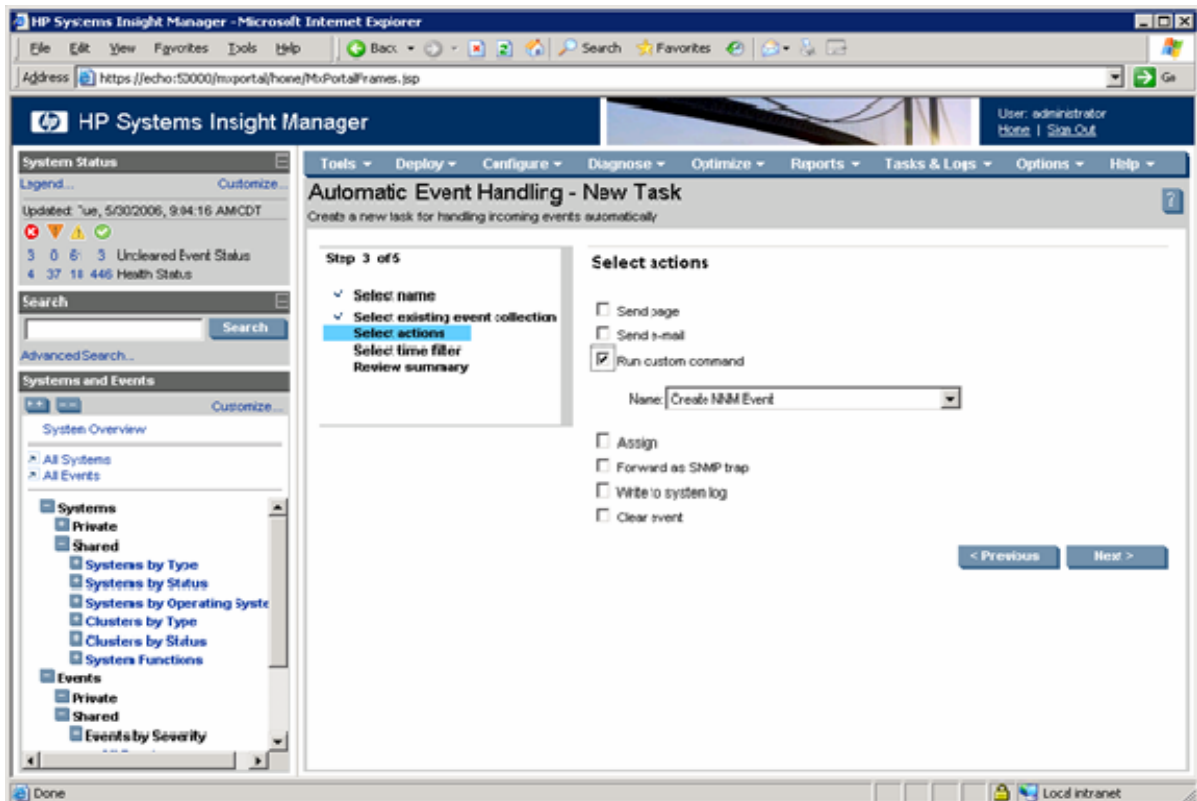
To configure the HP SIM server:

1. Install the NNM Remote Console on the HP SIM server. This provides access to the SNMP command line utilities on the NNM server.
2. Copy the program `hpsimnm.exe` to the HP SIM server.

3. Create a custom command in HP SIM for launching hpsimnm.exe.



4. Create an Automatic Event Handling task to execute the custom command any time it receives a new event.



The executable file `hpsimnm.exe` processes the environment variables created during the application launch. These variables are formatted and the `snmpnotify.exe` command is launched to create the event in NNM.

Using the `hpsimnm.exe` program, only one SNMP variable is sent from HPSIM to NNM. This variable is the complete trap message from SIM in one string. Additionally, the node that originally sent the event to HP SIM is used to display the node information in NNM, so the original node will be displayed as the source of the event.

When an event is received that meets the criteria specified in the automatic event handling setup, the `hpsimnm.exe` program executes and sends an event to NNM using the `snmpnotify` command. Events generated by the HP Systems Insight Manager server begin with "HPSIM" for easy identification.

Configuring SNMP on an HP ProLiant server running NNM

On an HP ProLiant system running NNM, the SNMP settings must be configured in the SNMP EMANATE agent to enable correct operations.

The configuration settings are kept in the `snmpd.conf` file. This file is located in the NNM installation directory under the `%OV_CONF%\SNMPagent` directory (for example, `\HP Openview\NNM\conf\SNMPAgent`).

HP recommends that you configure the `get-community-name`, `set-community-name`, `contact`, `location`, and at least one `trap-dest` entry (for example, `trap-dest: 127.0.0.1`) to trap to the local host.

The following is a sample configuration. Other examples are provided in the `snmp.conf` file.

```
get-community-name: public
set-community-name: PUBLIC
contact: Lab Administrator
location: Integration Test Lab
trap-dest: 170.20.1.10
trap-dest: 170.20.1.11
```

Additionally, you can configure the port used by the NNM Emanate agent if you are experiencing problems with the Insight Management Agents running on the NNM server.

To move the Microsoft® SNMP Agent into port 161:

1. Edit the file `/%SYSTEM_ROOT%/system32/drivers/etc/services/`, and change the value for SNMP to 161.
2. Stop and restart the SNMP service.

To move the NNM Emanate Agent into port 50161:

1. Click **Start>Control Panel>System**.
2. Click the **Advanced tab**.
3. Click **Environment Variables**.
4. Enter a new System Variable called `SR_SNMP_TEST_PORT`, and change the port value to 50161.
5. Reboot the server.

Using the software

In this section

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Using the Insight Integration

The installation of the Insight Integration copies several background and foreground process files, which work with the native NNM processes to provide system discovery, reception, and translation of HP SNMP events in the NNM Alarm Browser and display the HP system status on the NNM Segment Map.

To ensure correct operation of the Insight Integration, the background processes of HP OpenView NNM and the Insight Integration must be running. Normally these processes are started by the process management daemon, OVSPMD, when the operating system is initialized. If any of these background processes are not running, start them using the `OVSTART` command before starting the OVW.

For more information on using `OVSTART` command, see the *HP OpenView Network Node Manager User's Guide*. See "Product architecture (on page 9)" for a full description of the processes installed by the Insight Integration.

Checking the status of HP background processes

Run the `OVSTATUS` command from a command line prompt to check the status of the background processes.

If any of these processes are not displayed as active, configuration or communications problems might exist. To confirm that the Insight Integration has installed correctly and resolve any problems, see "Troubleshooting (on page 85)." For information on using the `OVSTATUS` command, see the *HP OpenView Network Node Manager User's Guide*.

Starting the Insight Integration

The Insight Integration integrates into the existing NNM infrastructure and default processes. Therefore, the Insight Integration is started automatically with the `OVW` command.

If the Insight Integration is not running, see "Checking the status of HP background processes (on page 33)" or "Troubleshooting (on page 85)" for further assistance.

Exiting the Insight Integration

To stop all foreground processes associated with the Insight Integration, exit the HP OpenView GUI. To stop the background processes, use the `OVSTOP` command.

See "Product architecture (on page 9)" for a full description of the processes installed by the Insight Integration. For information on using the `OVSTOP` command, see the *HP OpenView Network Node Manager User's Guide*.

Discovering HP servers with the Insight Integration

The Insight Integration installs processes and map symbols that automatically discover and reclassify HP server and client systems on the NNM Segment Map. The HP symbols also display the primary operating system associated with each individual node and the overall system status. The list of HP systems discovered includes:

- HP ProLiant, AlphaServer, and HP Integrity Superdome servers
- Evo and Deskpro client systems
- HP Storage Management Appliance

The HP discovery and classification processes work with native HP OpenView NNM services to identify HP systems running HP Insight Management Agents. As HP systems are discovered, they are registered in the HP OpenView NNM database, along with all other discovered devices.

The installed HP processes perform the following primary functions:

- CPQDIS is a background process used to redefine all discovered systems running HP Insight Management Agents.
- CPQMAP is a foreground process that updates map symbols for all HP systems identified by the CPQDIS process and replaces the default NNM symbols with HP specific symbols.

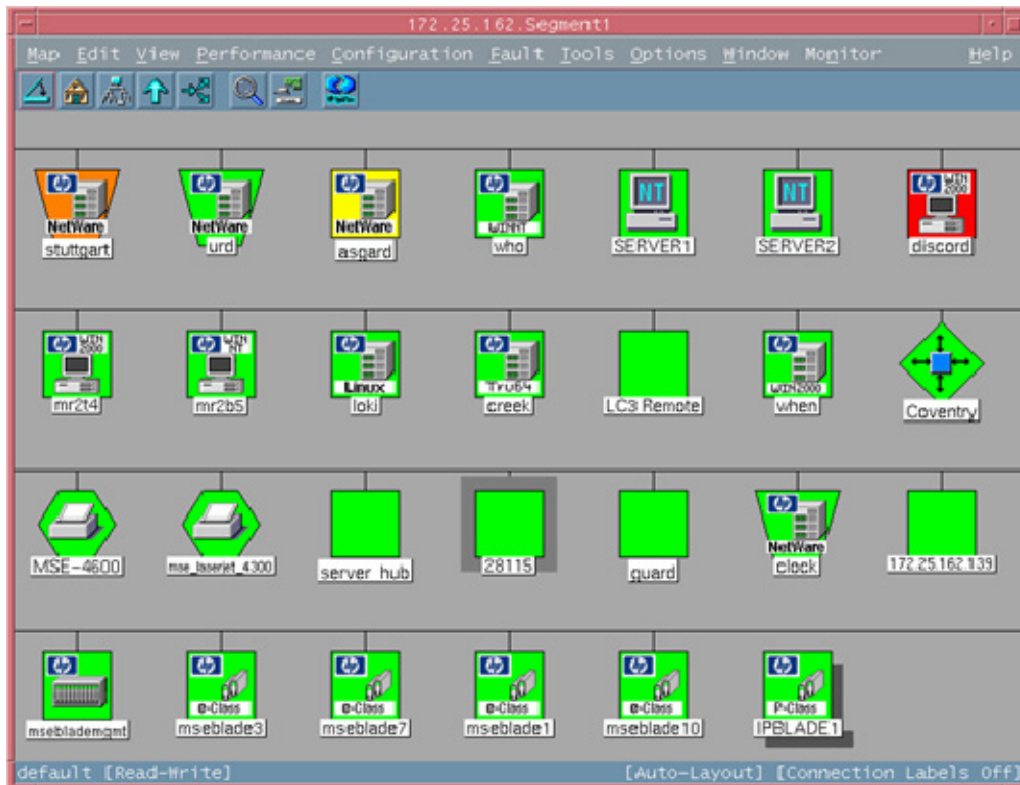
See "Product architecture (on page 9)" for more information on the HP discovery and classification processes. See "Viewing HP systems information (on page 46)" for more information on system status identification and analysis procedures.

The Insight Integration performs discovery and reclassification of the following systems:

- HP ProLiant ML and DL servers
- Servers installed with RILOE, RILOE II, iLO, and iLO 2 technology
- HP ProLiant BL c-Class, p-Class, and e-Class blade systems, including the c-Class Onboard Administrator and the e-Class Integrated Administrator
- Integrity Superdome servers

Discovering HP ProLiant blade systems

HP ProLiant BL blade servers are discovered as either e-Class, p-Class, or c-Class models and displayed on the NNM Segment Map. The operating system associated with each blade server is not discovered or displayed.



For e-Class blade servers, the Integrated Administrator (blade enclosure manager) is also discovered and identified on the NNM map. Right-clicking the discovered enclosure manager provides the option to launch to the Integrated Administrator interface.

For c-Class blade servers, the HP Onboard Administrator is also discovered and identified on the NNM map. Right-clicking the discovered Onboard Administrator provides the option to launch to the HP Onboard Administrator interface.

After the individual ProLiant BL servers are discovered and identified, you can place them into groups for easier access and management.

Discovering management processors

The Insight Integration includes the ability to discover HP ProLiant servers installed with RILOE, RILOE II, iLO, and iLO 2 management processors. For each discovered server hosting a Lights-Out management processor, new menu items are automatically added to enable direct access to the management processor browser-based interface from the NNM Segment Map.

Right-click an individual server on the NNM Segment Map to access the management processor. If RILOE or iLO is present, the Insight Lights-Out menu option appears. Select this menu option to launch the management processor interface for the selected node.

To enable automatic RILOE and iLO discovery, the Insight Integration adds the following two new fields to the NNM database:

- isCpqRILOE—True/False
- cpqRILOEip—IP Address of the RILOE or iLO

The CPQDIS process discovers the management processor agent running on the server and then retrieves the IP address for the cpqRILOEip field.

In addition, the foreground process CPQRIOE.EXE launches to the address of the RILOE or ILO management processor from the server selected on the NNM map. See "Product architecture (on page 9)" for a full description of the processes installed by the Insight Integration.

If the IP address does not appear correctly, verify the IP address returned by the host system by using the SNMPGET command (`snmpget HOSTNAME 1.3.6.1.4.1.232.9.2.5.1.1.5.2`).

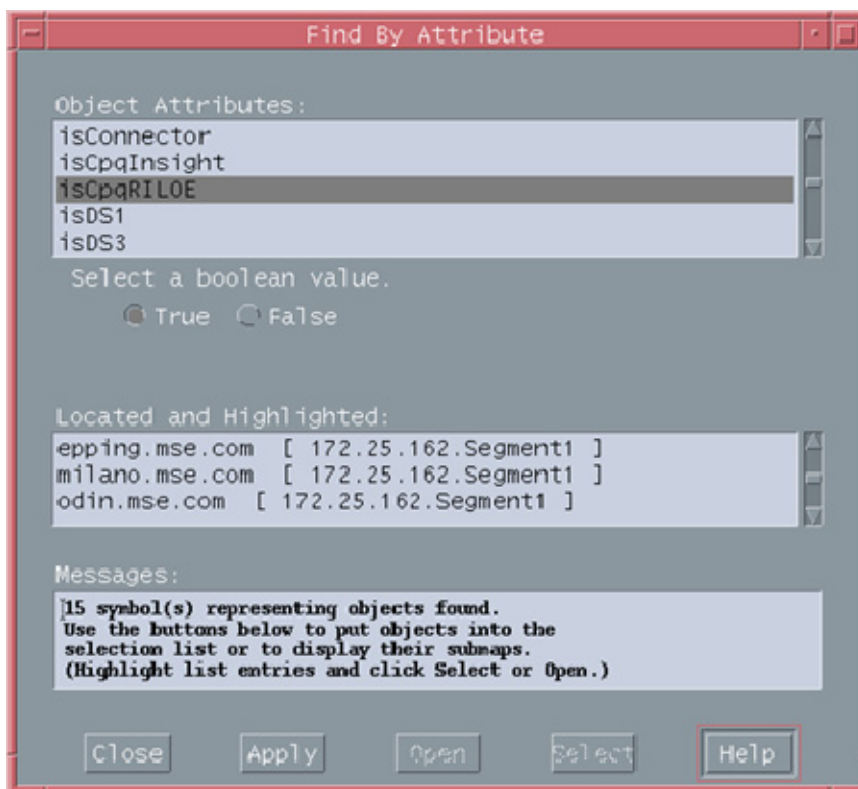
For example:

```
D:\snmpget spiral 1.3.6.1.4.1.232.9.2.5.1.1.5.2
232.9.2.5.1.1.5.2 : IpAddress: 172.25.162.159
```

Finding systems installed with RILOE or iLO

To display all discovered HP systems installed with RILOE or iLO, perform a Find By Attribute procedure on the isCpqRILOE attribute:

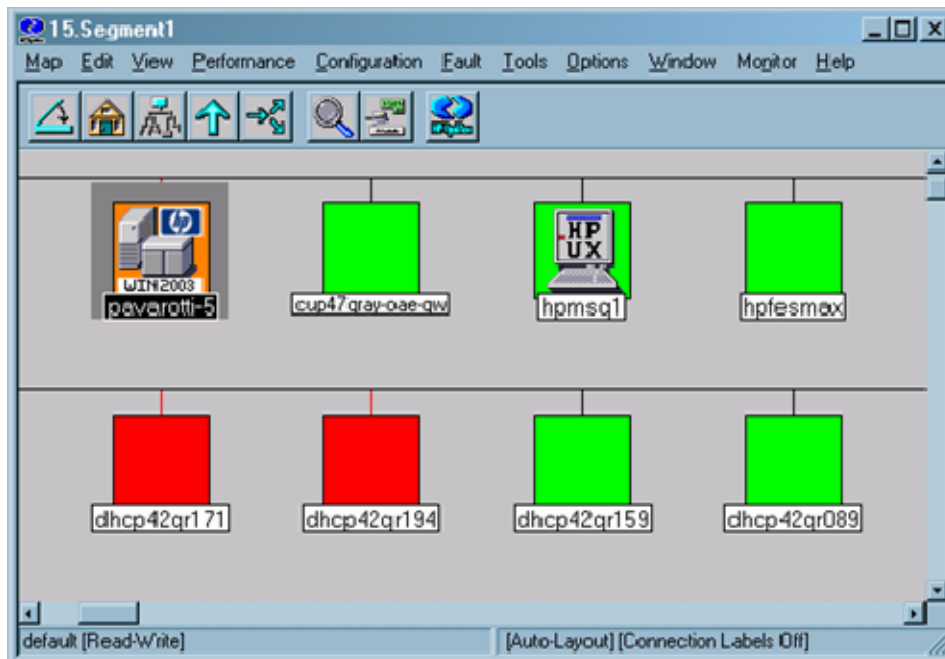
1. From the NNM interface, select **Edit>Find>Object by Attribute**. The Find By Attribute window appears.
2. In the Object Attributes list, highlight **isCpqRILOE**, and click **Apply**. All nodes matching the isCpqRILOE attribute are listed in the Located and Highlighted field.



Discovering HP Integrity Superdome servers

The Insight Integration discovers and classifies HP Integrity Superdome servers with a unique symbol on the NNM Segment Map. The symbol displayed for each discovered server also includes the primary operating system, color-coded system status, and additional menu items that provide access to further systems data and HP management tools. Systems running Windows Server™ 2003 are discovered with the WIN2003 icon. Systems running Linux are discovered with the normal Linux server icons.

See "Viewing HP systems information (on page 46)" for more information on the menu items associated with HP Integrity Superdome servers.



Finding HP Integrity Superdome servers

To find all discovered HP Integrity Superdome servers running Windows Server™ 2003 within the managed NNM environment, perform a Find By Attribute procedure using the cpqOsType attribute:

1. From the NNM interface, select **Edit>Find>Object by Attribute**. The Find By Attribute window appears.
2. In the Object Attributes list, click **cpqOsType**.
3. In the Type of string search panel, select **Pattern matching**.
4. In the Regular Expression field, enter a valid operating system string from the following table:

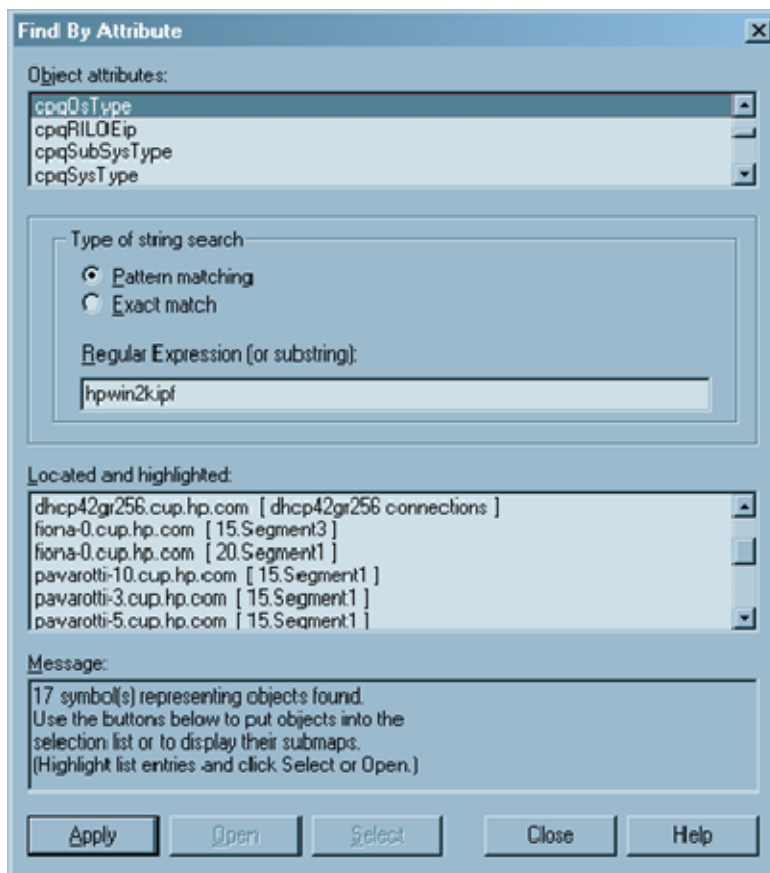
Operating system/Hardware type	Search string
SCO UNIX®	scsrvr
OS2	os2srvr
UnixWare	unixsrvr
Microsoft® Windows NT®	ntsrvr
Microsoft® Windows NT® Enterprise	ntentsrvr
Microsoft® Windows® 2000	win2ksrvr
Microsoft® Windows Server™ 2003	win2k3srvr
Novell NetWare	nwsrvr
OpenVMS	ovmssrvr
Tru64 UNIX®	Tru64srvr
Linux	linuxsrvr
Red Hat Linux	linuxsrvrrh
SUSE Linux	linuxsvrsuse
VMware ESX	linuxsvresx
HP Integrity Superdome	hpwin2kipf

Operating system/Hardware type	Search string
Microsoft® Windows NT® Workstation	ntwkstn
Microsoft® Windows® 95 Workstation	95wkstn
Microsoft® Windows® 2000 Workstation	2kwkstn
Microsoft® Windows® XP	winxpwkstn
HP OpenView Storage Management Appliance	SANworksApplianceServer
HP ProLiant BL10e Server	bladesrvr
HP ProLiant p-Class blade servers	bladesrvp
HP ProLiant c-Class blade servers	bladesrvrc

In this example, the string is `hpwin2kipf` for Integrity Superdome servers.

5. Click **Apply** to initiate the search.

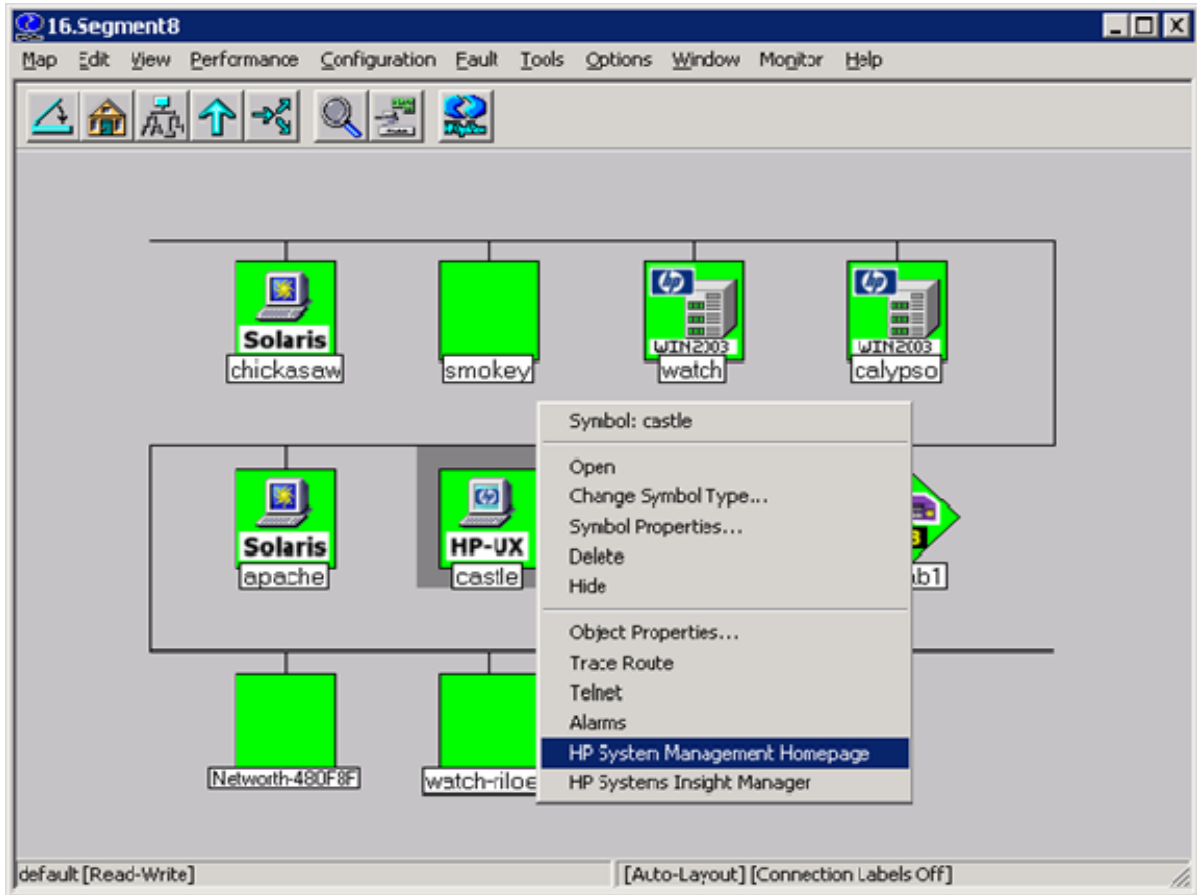
All nodes matching the search criteria are listed in the Located and Highlighted field and are highlighted on the NNM Segment Map.



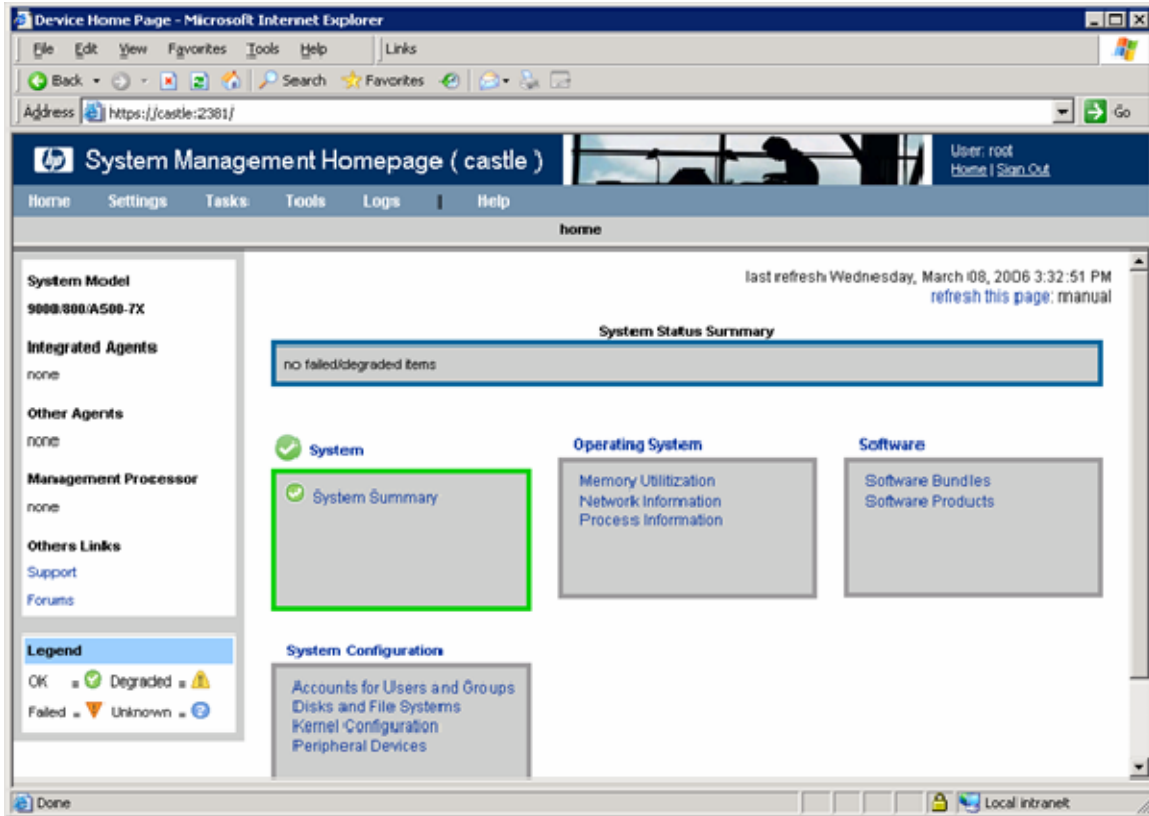
Discovering the HP System Management Homepage

The `isHPsmh` field has been added to the Insight Integration to enable discovery of the HP System Management Homepage. Servers with the HP System Management Homepage installed will now have a link to the page from the NNM map.

To access the HP System Management Homepage for an individual server, right-click the server on the NNM Segment Map, and select **HP System Management Homepage**.



The HP System Management Homepage appears.



Finding HP Systems in NNM by operating system or device type

After HP systems have been initially discovered and classified, groups of HP nodes can be found and displayed using the Find By Attribute procedure within NNM and the device identification strings provided by HP.

1. From the NNM interface, select **Edit>Find>Object by Attribute**. The Find By Attribute window appears.
2. In the Object Attributes list, click **cpqOsType**.
3. In the Type of string search panel, select **Pattern matching**.
4. In the Regular Expression field, enter a valid operating system string from the following table:

Operating system/Hardware type	Search string
SCO UNIX®	scsrvr
OS2	os2srvr
UnixWare	unixsrvr
Microsoft® Windows NT®	ntsrvr
Microsoft® Windows NT® Enterprise	ntentsrvr
Microsoft® Windows® 2000	win2ksrvr
Microsoft® Windows Server™ 2003	win2k3srvr
Novell NetWare	nwsrvr
OpenVMS	ovmssrvr
Tru64 UNIX®	Tru64srvr
Linux	linuxsrvr

Operating system/Hardware type	Search string
Red Hat Linux	linuxsrvrrh
SUSE Linux	linuxsrvrsuse
VMware ESX	linuxsrvresx
HP Integrity Superdome	hpwin2kipf
Microsoft® Windows NT® Workstation	ntwkstn
Microsoft® Windows® 95 Workstation	95wkstn
Microsoft® Windows® 2000 Workstation	2kwkstn
Microsoft® Windows® XP	winxpwkstn
HP OpenView Storage Management Appliance	SANworksApplianceServer
HP ProLiant BL10e Server	bladesrvre
HP ProLiant p-Class blade servers	bladesrvrp
HP ProLiant c-Class blade servers	bladesrvrc

5. Click **Apply** to initiate the search.

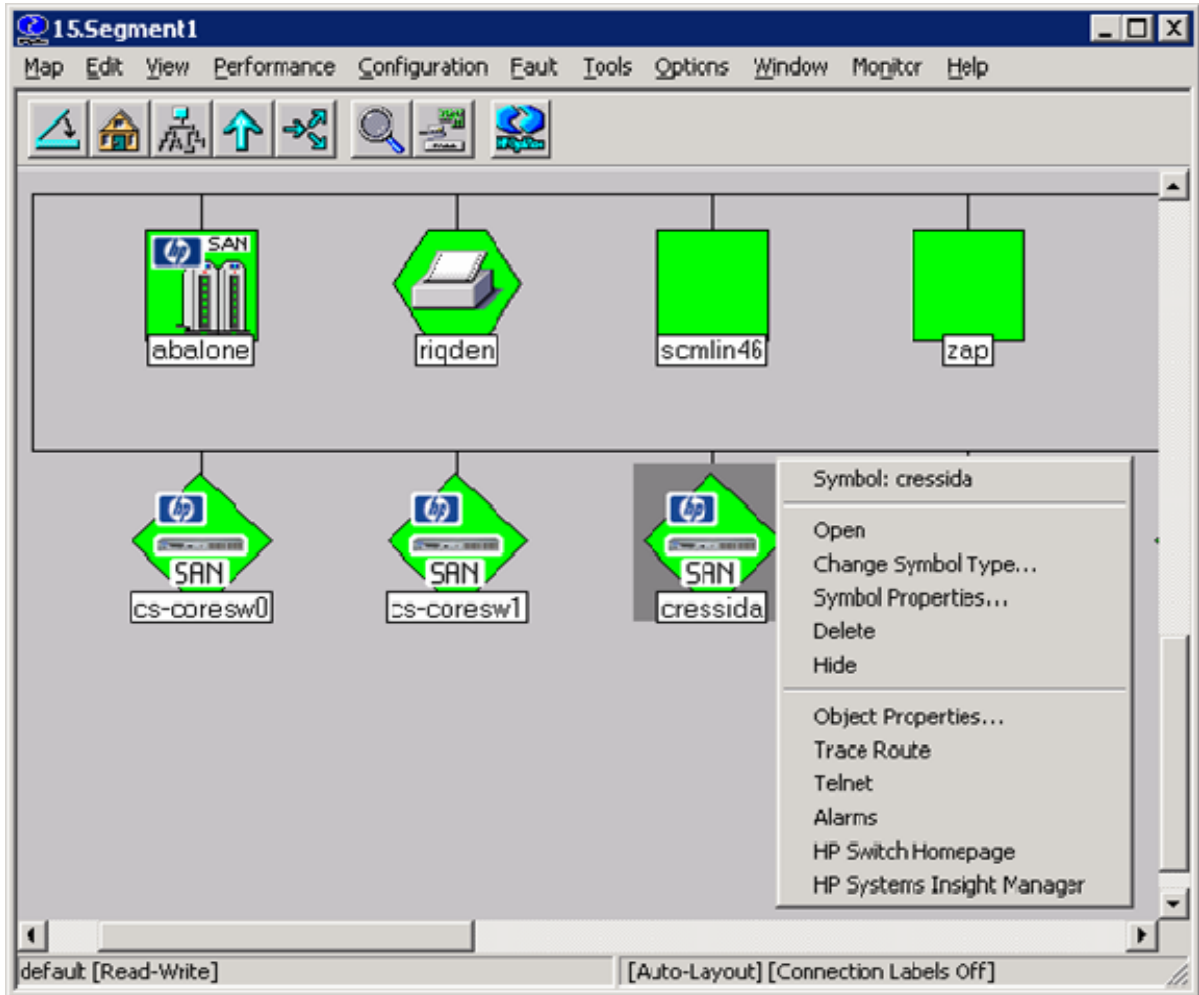
All nodes matching the search criteria are listed in the Located and Highlighted field and are highlighted on the NNM Segment Map.

Insight Integration menus

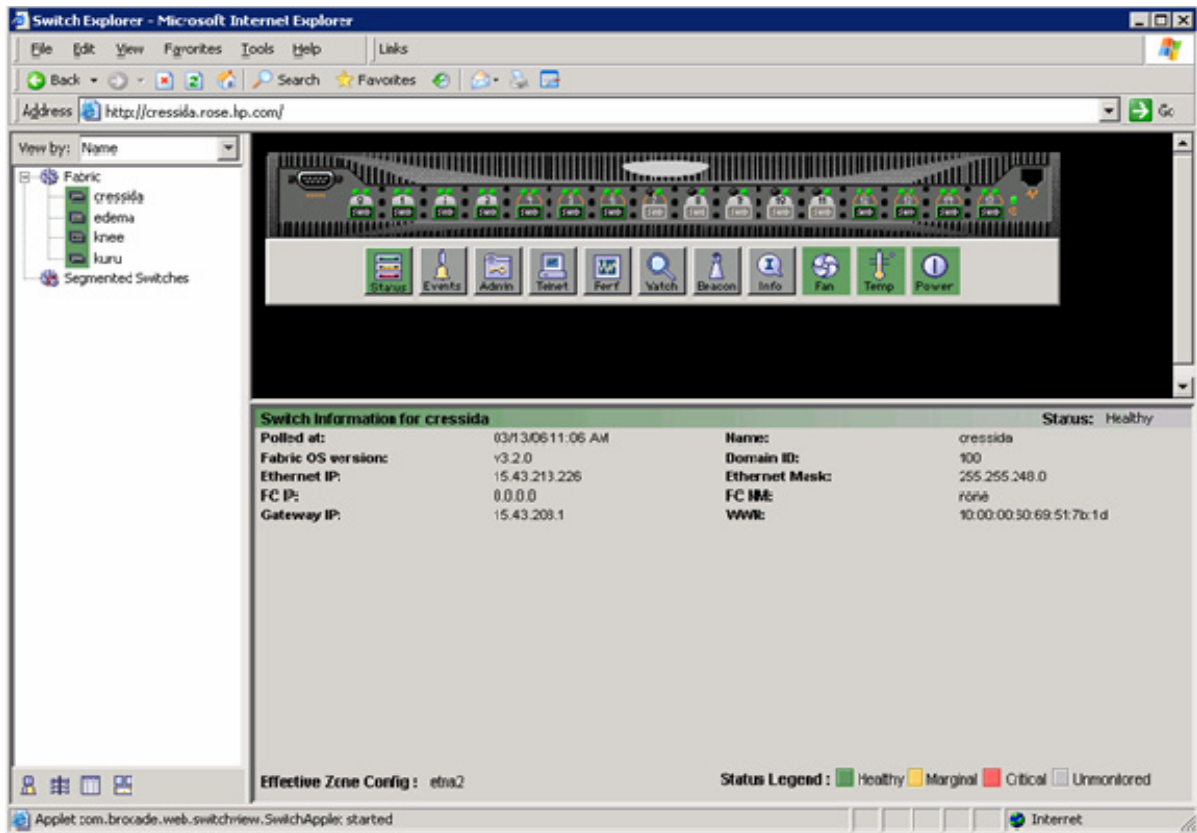
New menu definitions have been added to the Insight Integration for several switch devices. These switches will now have a link to their homepage in their menu.

These menus are applied to systems based on the definitions in the file 018_HP_Insight provided in the Insight Integration.

Right-click the device on the NNM Segment Map, and select the device homepage (in this example, **HP Switch Homepage**).



The device homepage appears.



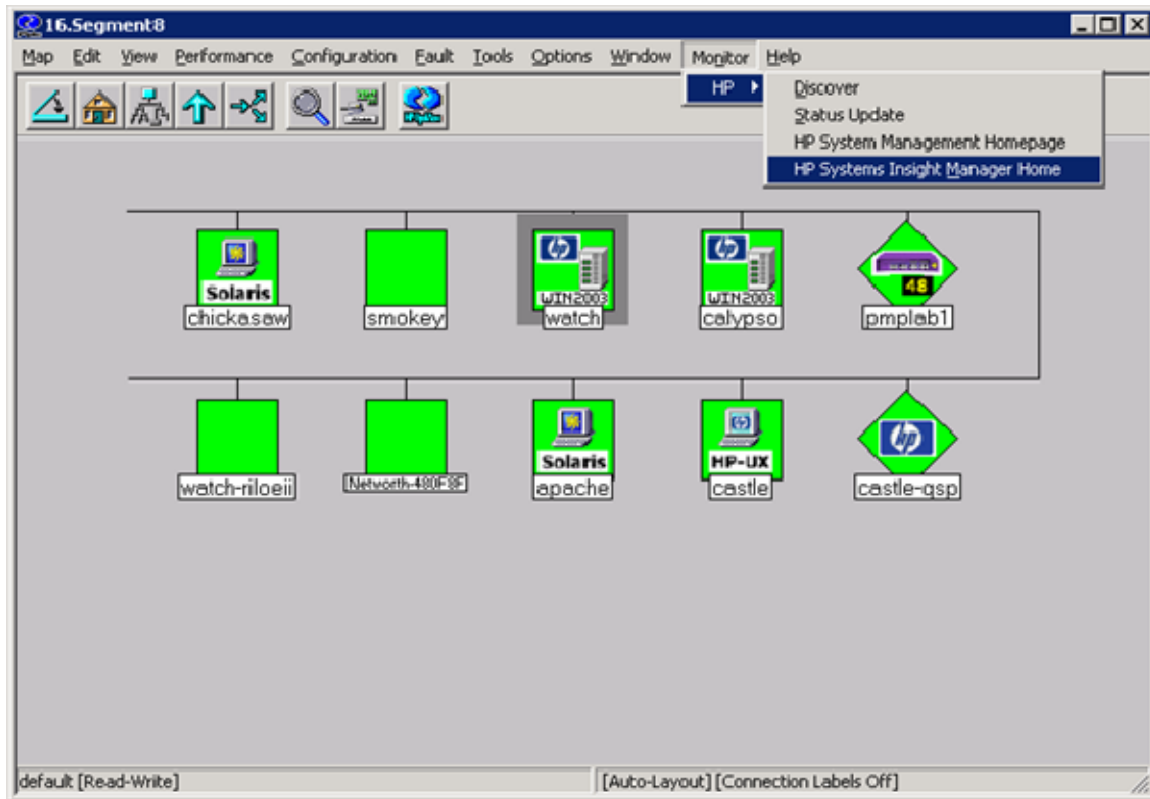
Insight Integration menu options

The Insight Integration installs many additional menu items for performing administration tasks and displaying additional data on HP managed servers, clients, and storage configurations. These menu items fall into two main categories:

- HP extensions to the HP OpenView NNM Map menu options
- Insight Information menu options for each individual HP node

HP extensions to the HP OpenView Map menu options

HP menu extensions provided with the Insight Integration are located under **Monitor>HP**.



The HP menu contains the following options:

- Discover (on page 44)
- Status Update (on page 45)
- HP System Management Homepage ("HP System Management Homepage menu option" on page 45)
- HP Systems Insight Manager Home ("HP Systems Insight Manager home menu option" on page 45)

Discover

Nodes running the HP Insight Management Agents are automatically discovered by the CPQDIS background process, which is initialized by the OVSTART command. The Discover menu option can be used to manually identify new nodes as servers and desktops running the HP Insight Management Agents outside of the defined discovery parameters in the CPQCONFIG.DAT file. See "Configuration files (on page 20)" for more information on editing the CPQCONFIG .DAT parameters. See "Product architecture (on page 9)" for a full description of the processes installed by the Insight Integration.

The Discovery menu option is unavailable if any of the following conditions exist:

- No nodes are selected.
- Any of the selected nodes are of noncomputer type.

To discover nodes in the current submap:

1. Select the required nodes on the segment submap.
2. Select **Monitor>HP>Discover**.

The discover operation performs the following tasks:

- Identifies nodes running HP Insight Management Agents
- Changes the symbol of all identified HP nodes to the appropriate icon provided with the Insight Integration
- Creates appropriate icons in the corresponding node submap, if the HP web-enabled Management Agents are running on the identified nodes

Status update

The status of HP nodes is automatically provided and regularly updated on the NNM management map by means of the CPQMAP foreground process, which is started by OVW. The Status Update menu option can be used to manually update single or multiple node status outside of the update parameters defined in the CPQCONFIG.DAT file. See "Configuration files (on page 20)" for more information on editing the CPQCONFIG.DAT parameters. See "Product architecture (on page 9)" for a full description of the processes installed by the Insight Integration.

The Status Update menu option is unavailable if any of the following conditions exist:

- No nodes are selected.
- Any of the selected nodes on the Segment submap are of the noncomputer type.
- Any of the selected subsystems on the Node level submap are not of the device type.

To manually update the status of HP nodes or subsystems in the current submap:

1. Select the required nodes or subsystems.
2. Select **Monitor>HP>Status Update**.

This operation:

- Queries the system status of each selected node
- Updates the system status for each selected node
- Updates the web-enabled agent status selected node

HP System Management Homepage menu option

The HP System Management Homepage menu option launches the HP System Management Homepage for the selected node on the NNM map.

HP Systems Insight Manager home menu option

The Insight Integration includes embedded links to other HP tools for managing hardware infrastructure lifecycles, such as HP Systems Insight Manager.

The HP Systems Insight Manager Home menu option launches to the browser-based HP SIM application from an HP OpenView NNM Segment Map. Previously, this was only available in NNM running on Windows® systems. Now the Insight Manager menu options are available in NNM running on Windows®, HP-UX, and Solaris.

See "Using HP Systems Insight Manager with HP OpenView NNM (on page 69)" for information on configuring and using this option.

Insight Information menu options for HP nodes

The Insight Integration includes additional menu entries for each individual HP managed node displayed on the NNM Segment Map. These menu entries are designed to provide quick access to a selection of key system configuration, status, and performance data obtained directly from the Insight Management Agents.

These menu options are not intended to provide all the information for a managed HP system. The most complete system configuration and status data for an individual HP system can be viewed by browsing to the web-based HP System Management Homepage of the Insight Management Agents. See "HP Insight Information menu options (on page 55)" for more information on the new menu options.

Viewing HP systems information

The Insight Integration allows detailed configuration and status information for HP servers, desktops, portables, and storage systems to be viewed from within the HP OpenView NMM environment.

Unique icons represent individual HP nodes. These icons also denote the associated primary operating system and the most critical level of system status. The following sections detail how to view and interpret HP system data displayed in HP OpenView NNM.

System status legend

The Insight Integration updates the status of nodes running the HP Insight Management Agents. This update is performed periodically by means of the CPQMAP process or manually using Status Update (on page 45). HP OpenView NNM uses color-coded icons to indicate the status of each node, which is propagated across all HP OpenView maps.

The following table defines the default color codes used by the Insight Integration.

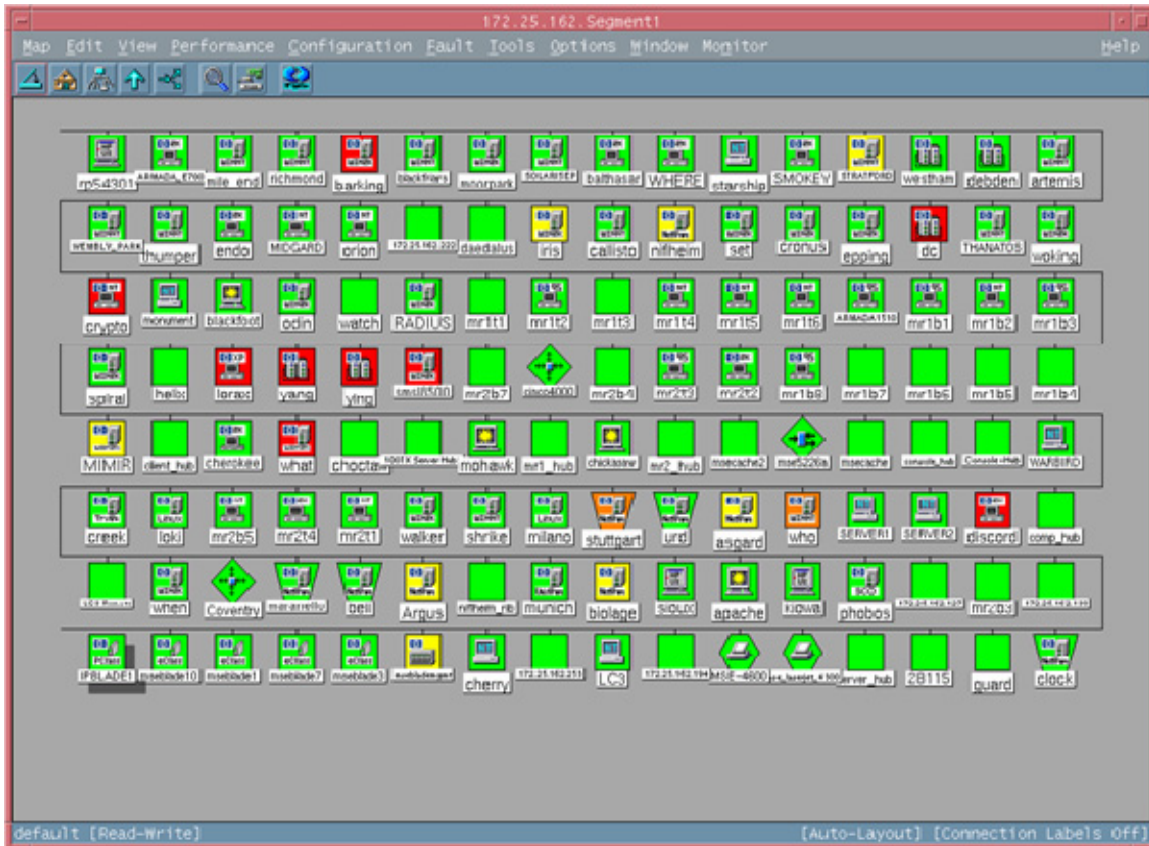


NOTE: The icon for the HP Insight Management Agents displayed on the device submaps no longer enters a Critical (Red) state. It now displays the Major (Orange) state.

Color	Status
Orange	Major/Failed
Blue	Unknown/Down
Yellow	Degraded
Green	Normal

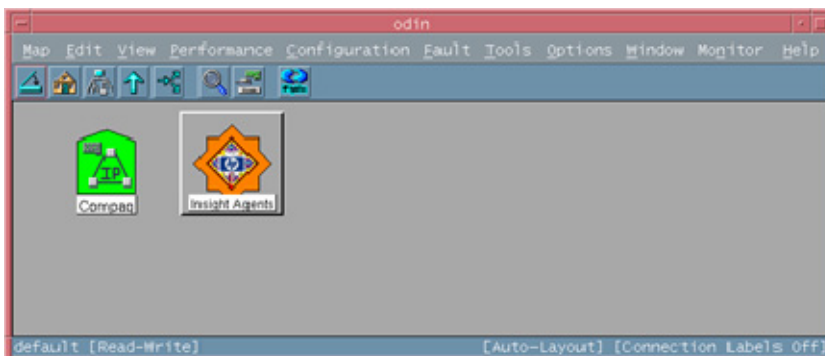
Viewing subsystem information

Navigate through the HP OpenView submaps to the segment level submap. At the segment submap, all identified HP nodes display with specific icons provided with the Insight Integration.

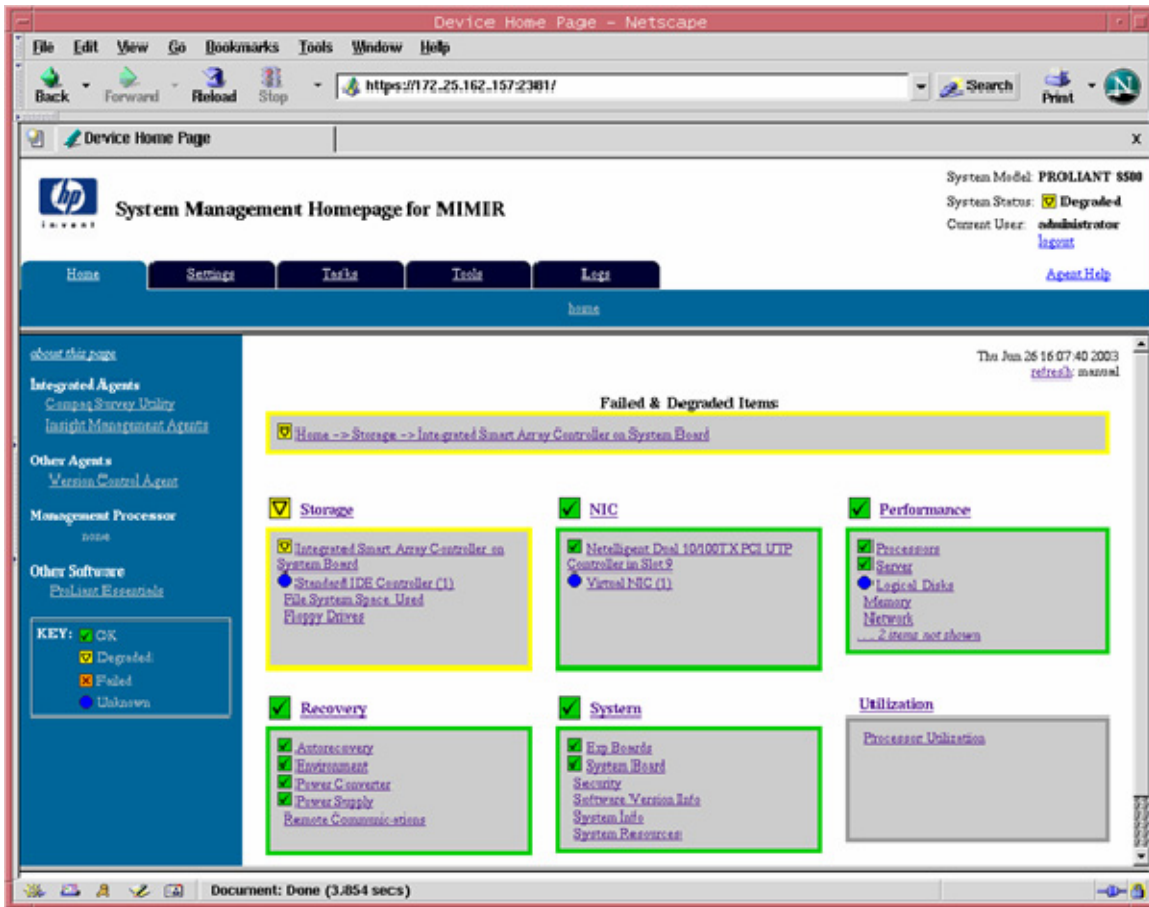


In the NNM Segment submap, HP nodes are distinguished from the other nodes by the HP server and desktop icons. These icons also identify the appropriate operating system running on the node.

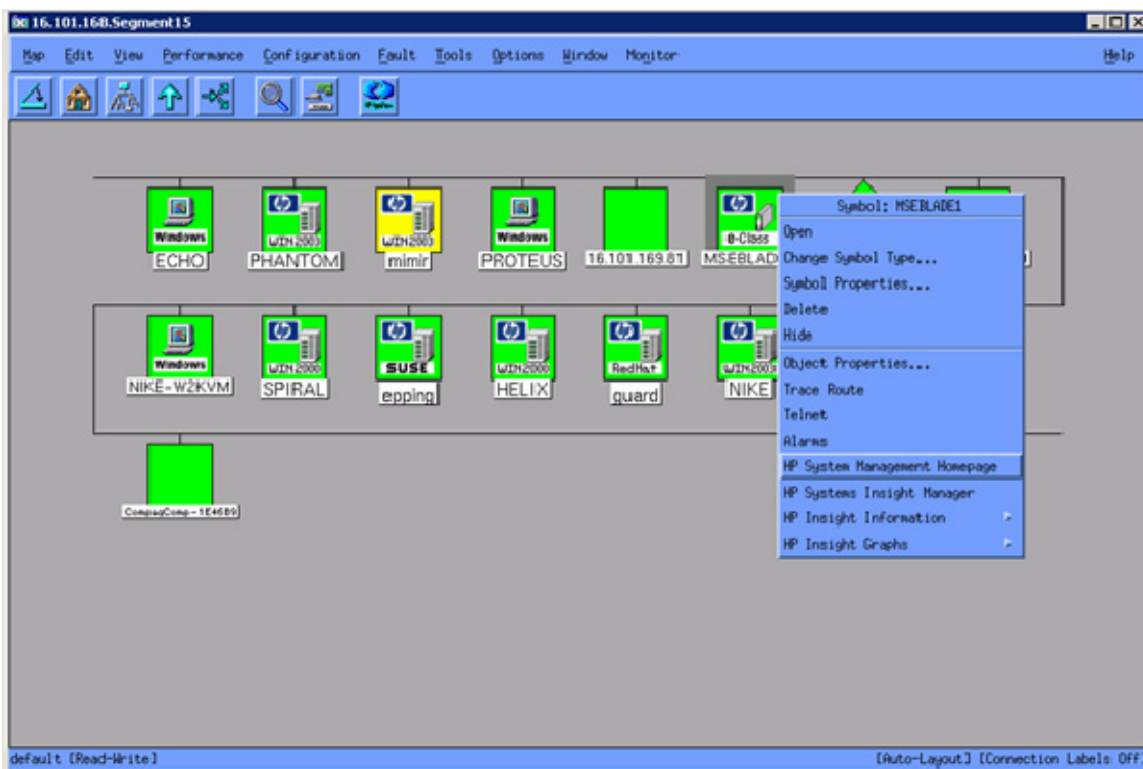
Detailed subsystem information for each HP node can be viewed if the web-enabled Insight Management Agents are installed and running on the node. To view the details on a particular node, double-click the node icon in the NNM Segment submap to display the node submap window. If the web-enabled Insight Management Agent is installed, it displays with an appropriate HP symbol.



Double click the **Insight Agents** icon to launch the default browser (defined in CPQWEB.CONF on HP-UX and Solaris platforms). The browser connects to the HP System Management Homepage on that individual node and displays the system status summary provided by the Insight Management Agents.



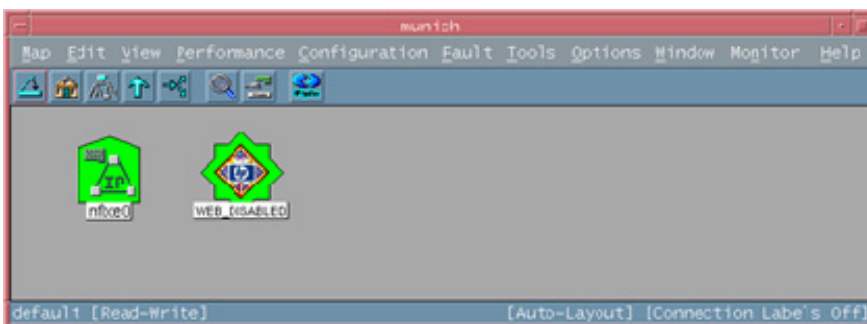
Alternately, right-click the HP node on the NNM Segment Map, and select **HP System Management Homepage** from the menu. This method also provides access to other HP systems information tools, such as the Insight Information menu options and Remote Insight solutions.



All details of the node and its hardware subsystems can be accessed through the browser, which displays data gathered by the HP Insight Management Agents. The background color of the Insight Agents icon represents the overall status of the HP node ("[System status legend](#)" on page 46).

Browsing to the System Management Homepage of the HP Insight Management Agents enables access to any web-enabled HP management application installed on the target node, such as the Version Control Agents, the Array Configuration utility, or Insight Diagnostics. The HP Insight Management Agents also provide direct access to the management processor options for advanced remote systems administration, if installed on the target node.

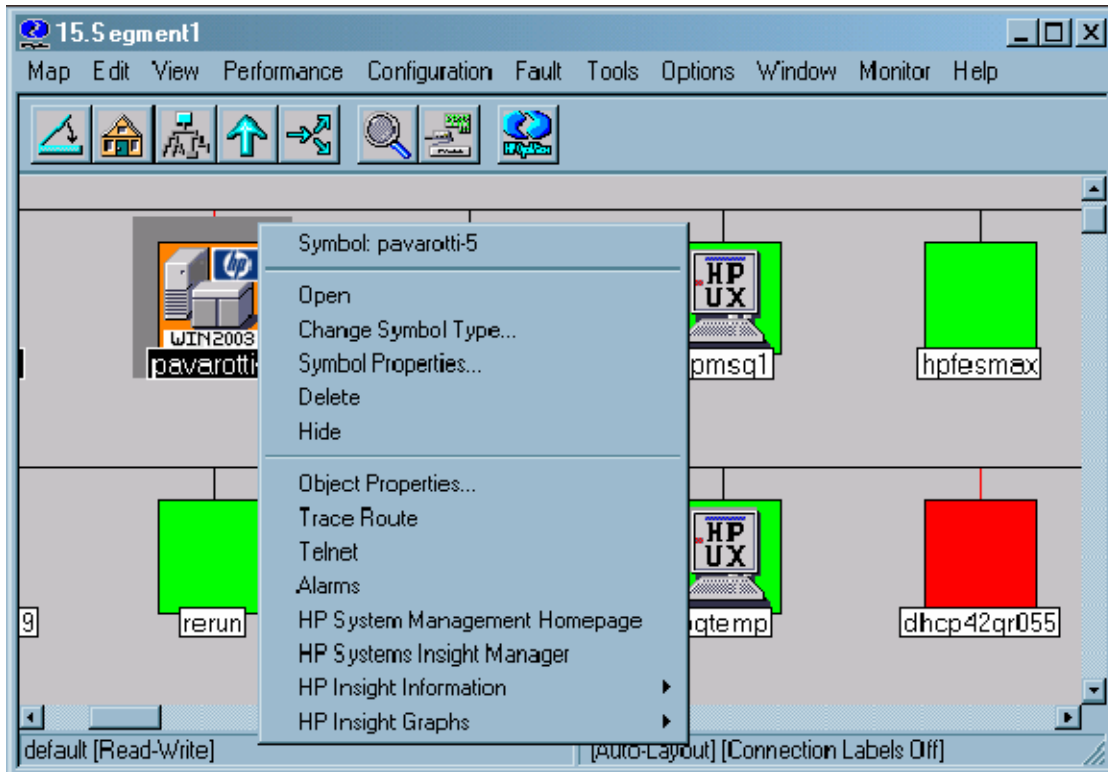
If an HP node is not configured with web-enabled HP Insight Management Agents, the Insight Agents icon on the submap is replaced with the WEB_DISABLED icon.



Viewing information for HP Integrity Superdome servers

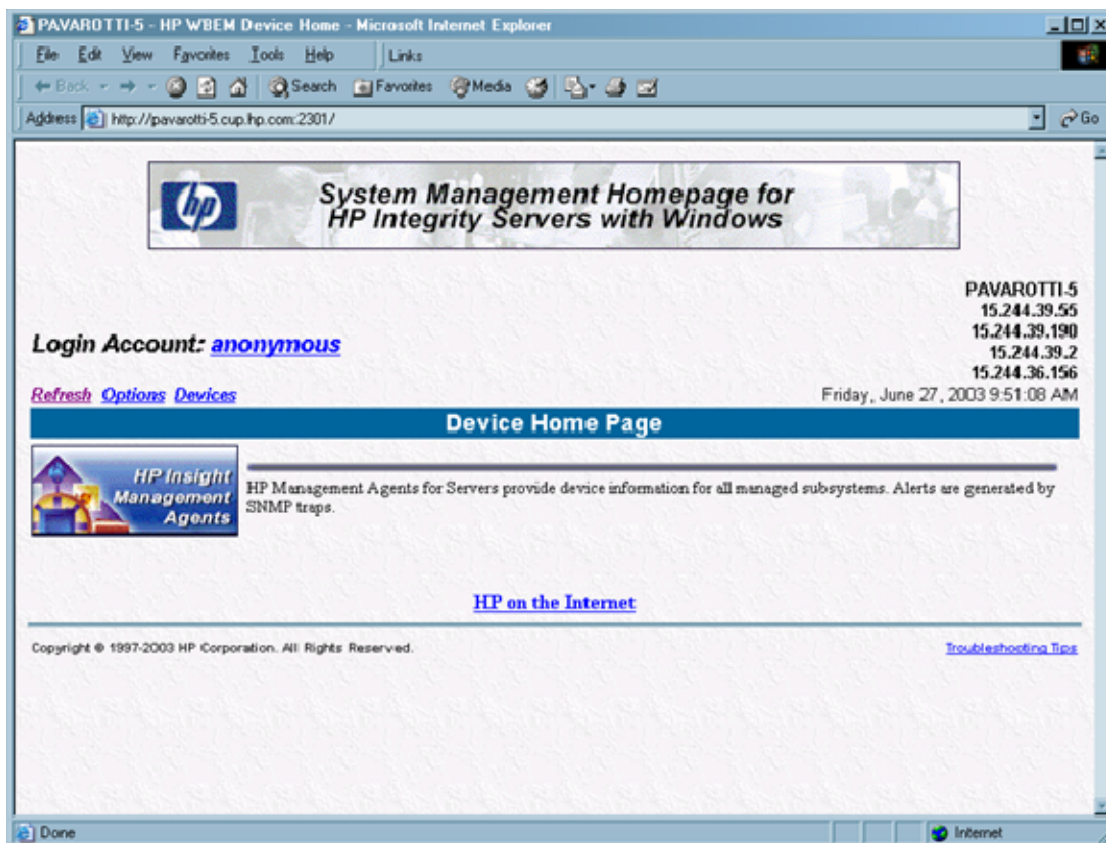
1. Select an HP Integrity Superdome server on the NNM Segment Map.
2. Perform one of the following steps:

- Right-click the node symbol, and select **HP System Management Homepage** from the menu.



- Double-click the segment map symbol to display the device submap, and click the **Insight Agents** icon.

3. Click the **HP Insight Management Agent** icon to open the management summary page. This page presents details on system configuration and hardware status for the selected HP Integrity Superdome server.



Additional systems data for Integrity servers is also available through the Insight Information menu options on the device menu. These menu entries provide quick access to a selection of key system configuration, status, and performance data obtained directly from the HP Insight Management Agents.

These menu options are not intended to provide all the information for a managed HP system. The most complete system configuration and status data for an individual HP system can be viewed by browsing to the web-based HP System Management Homepage of the Insight Management Agents.

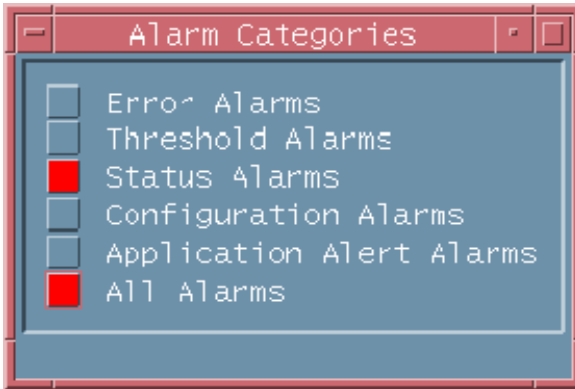
See "HP Insight Information menu options (on page 55)" for more information on the new menu options.

HP event management in HP OpenView NNM

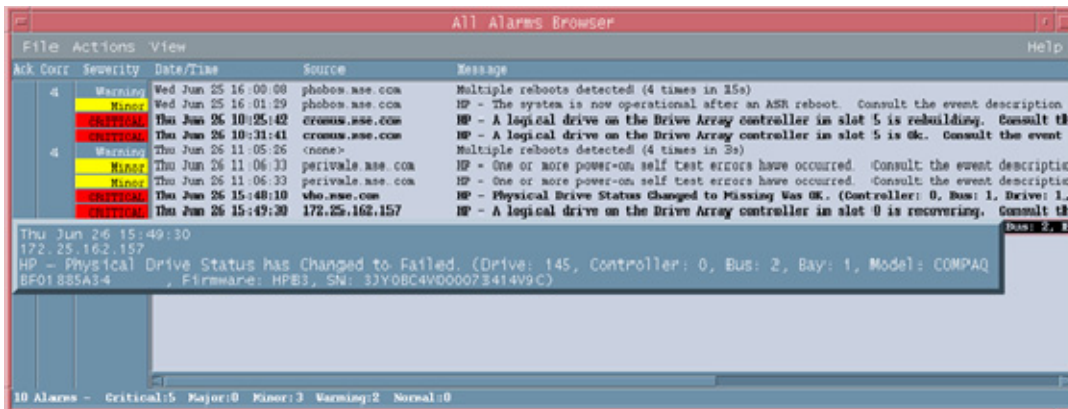
The Insight Integration integrates over 400 SNMP event definitions for HP server, client, and storage configurations into the NNM Alarm Browser. All raw HP trap content is written to the NNM Event Log and then translated into plain text by means of the CPQTRAPD process before being displayed in the NNM Alarm Browser.

All HP events also include color-coded severity levels and additional information for suggested resolutions. This level of event translation makes for easier event identification and root cause analysis, which aids in faster problem resolution and higher systems availability.

All SNMP traps generated by HP Insight Management Agents and specific to the 232 enterprise are received in the Alarm Browser and grouped under the Status Alarm category. To view these events, click **Status Alarms** or **All Alarms** in the Alarm Categories window.



The All Alarms Browser window appears, displaying events generated by HP Management Agents.



To view more detailed trap information:

1. Select an event from the Alarm Browser.

2. Select **Alarm Details** from the Actions menu. The Alarm Details window appears, which contains additional information about the trap entry selected from the Alarm Browser, including message translation and suggested resolutions.



For more information, see the *HP OpenView Network Node Manager User's Guide*.

Launching the HP System Management Homepage from the NNM Alarm Browser

With NNM 6.31 and later, configurable views can be launched from the Alarm Browser. The `xnmeventsExt.conf` file is the NNM configuration file for launching specific views in the context of an event. By editing this file, a view can be added for the 232 enterprise (the MIB enterprise used by the Insight Management Agents). Any event received from this enterprise provides the option of launching to the web-enabled Insight Management Agents from the NNM Alarm Browser.

For NNM 6.31 and later, edit the `xnmeventsExt.conf` file to add the following entry:

```
.1.3.6.1.4.1.232.*;"HP System Management Homepage";http://$OvNode:2301
```

Launching HP Systems Insight Manager from the NNM Alarm Browser

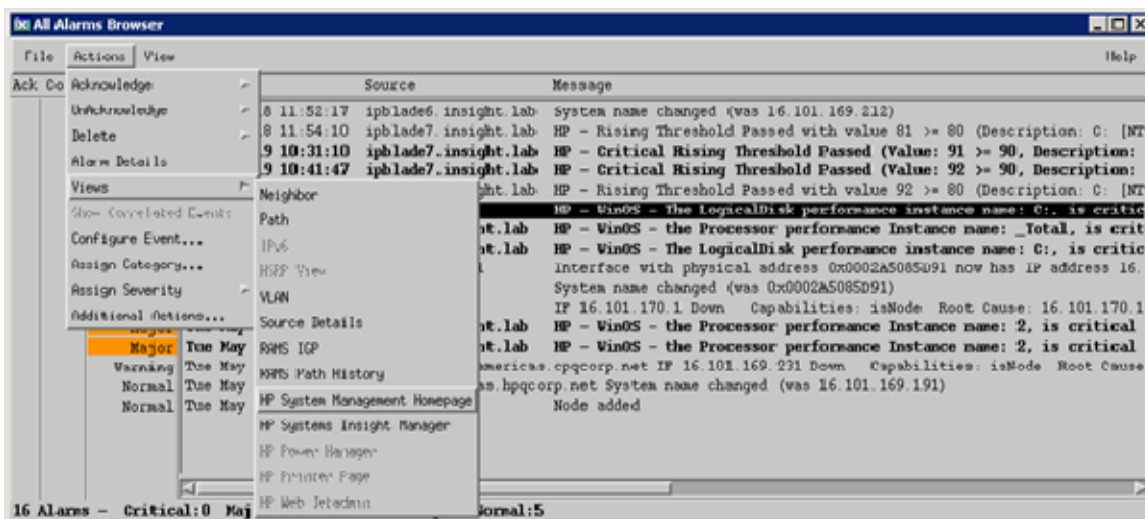
The `xnmeventsExt.conf` file can be edited to allow launching to HP Systems Insight Manager with the appropriate device selected. Edit the `xnmeventsExt.conf` file to add the following entry, replacing "localhost" with the name or IP address of the HP Systems Insight Manager server:

```
.1.3.6.1.4.1.232.*;"HP Systems Insight
Manager";https://localhost:50000/mxportal/MxContextLaunch.jsp?systems=$O
vNode&tool=DEFAULT
```

Any event from the 232 enterprise will now have the option to launch to the Web agents and HP Systems Insight Manager from the **Actions>Views** menu. These entries appear for every alarm from the 232 enterprise, even if the system sending the alarm is not running the web-enabled agents.



NOTE: Sample entries for the `xnmeventsExt.conf` file are provided in the `xnmeventsExt.cpq` file located in the `\traps` directory of the Insight Integration.



Using the HP MIBs for ProLiant servers with HP OpenView NNM

The Insight Integration includes predefined event definitions to provide the event reception and translation for HP SNMP traps.

By default, the ProLiant MIBs are now loaded with the Insight Integration, which allows the integration to present information in an easy-to-understand format. The ProLiant MIBs can also be loaded ("[Loading the HP MIBs](#)" on page 54) and unloaded manually ("[Unloading the HP MIBs](#)" on page 54).

Loading the HP MIBs

To load the HP MIBs outside of the Insight Integration installation script, run the `cpqload` batch file from a command line. This file is located in the `\MIBS` directory created during the Insight Integration expansion. Running this file automatically installs the HP MIBs for immediate use.

If the following message displays, unload any previous CPQ MIBs, and run `cpqload` again.

```
[cpqhost.mib:CPQHOST-MIB] - Line 27: MIB_MODULE: "CPQHOST-MIB" loaded
from MIB: "CPQHOST.MIB" Warning: We recommend to resolve duplicate
MIB_MODULE names by unloading required MIBs. This may create problems
later.
```

If you load the MIBs with `xnmloadmibs`, do not load the trap definitions. Click **Cancel** when prompted to load the trap definitions in the GUI. The trap definitions are provided in the translation files and do not need to be loaded from the MIBs.

Unloading the HP MIBs

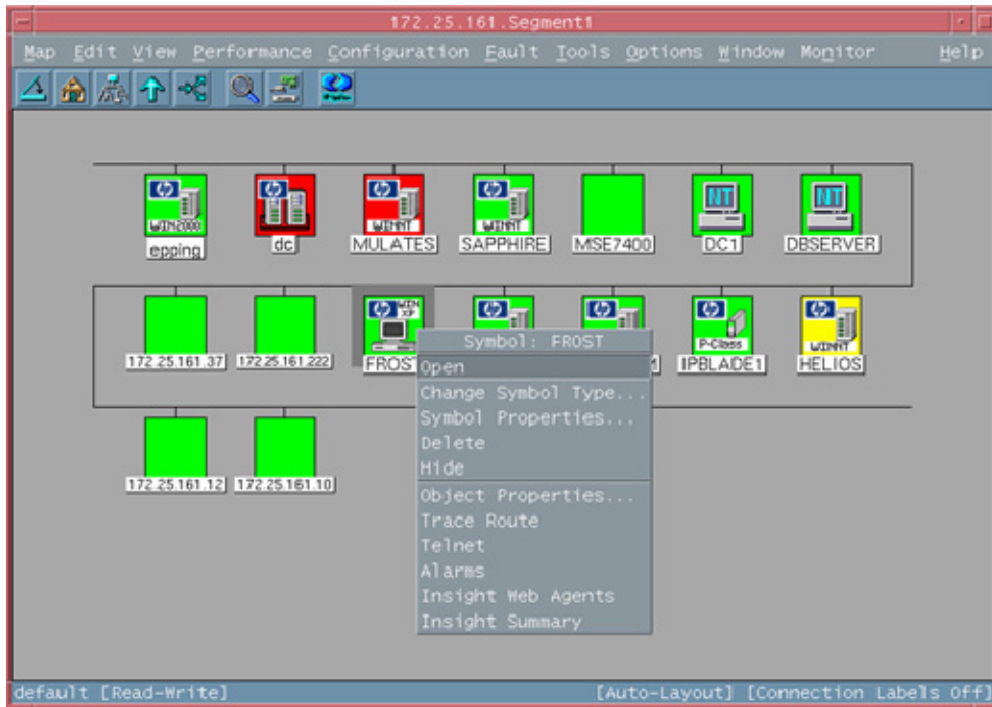
To unload the HP MIBs outside of the integration uninstall script, run the `cpqunload` batch file from a command line. This file is located in the `\MIBS` directory created when expanding the Insight Integration. Running this file completely uninstalls the HP MIBs.

HP Insight Information menu options

The Insight Integration includes additional menu entries for each individual HP managed node displayed on the NNM Segment Map. These menu entries provide quick access to a selection of key system configuration, status, and performance data obtained directly from the Insight Management Agents.

These menu options are not intended to provide all the information for a managed HP system. The most complete system configuration and status data for an individual HP system can be viewed by browsing to the web-based HP System Management Homepage of the Insight Management Agents.

To launch the Insight Information menu options, right-click any HP node on the NNM Segment Map, and select **Insight Information** (or **Insight Summary** for HP desktops) from the menu. A list of available submenu items for specific systems or subsystems appears.



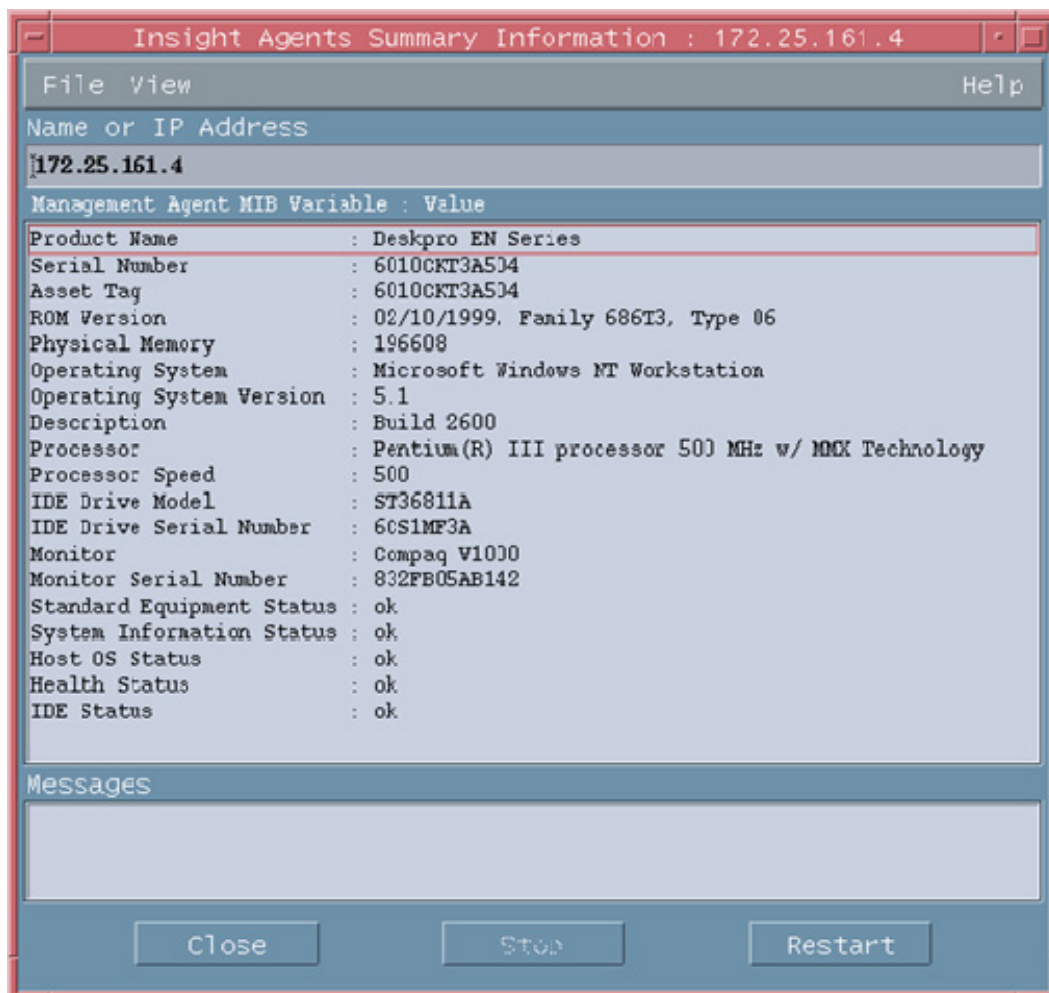
HP Insight Summary Launch for desktops

This menu option provides quick access to some of the information provided by the HP Management Agents for desktops. It is not intended to provide all the information from the Management Agents because complete information is available through the Web agents.

Any fields that do not apply or could not be determined appear as blank. HP Insight Summary provides the following information:

- Product name
- Serial number
- Asset tag (a user-configurable field)
- Operating system
- Operating system version
- Description (of the operating system)
- Processor speed
- ROM version
- Monitor

- Monitor serial number
- IDE drive serial number
- IDE drive model (only the first drive is displayed)
- Physical memory (total memory installed in KB)
- Processor (only the first processor is displayed)
- Standard equipment status (status reported by the standard equipment MIB)
- System information status (status reported by the system information MIB)
- Host OS Status (status reported by the host operating system MIB)
- Health Status (status reported by the health MIB)
- IDE Status (status reported by the IDE MIB)



HP Insight Information for servers

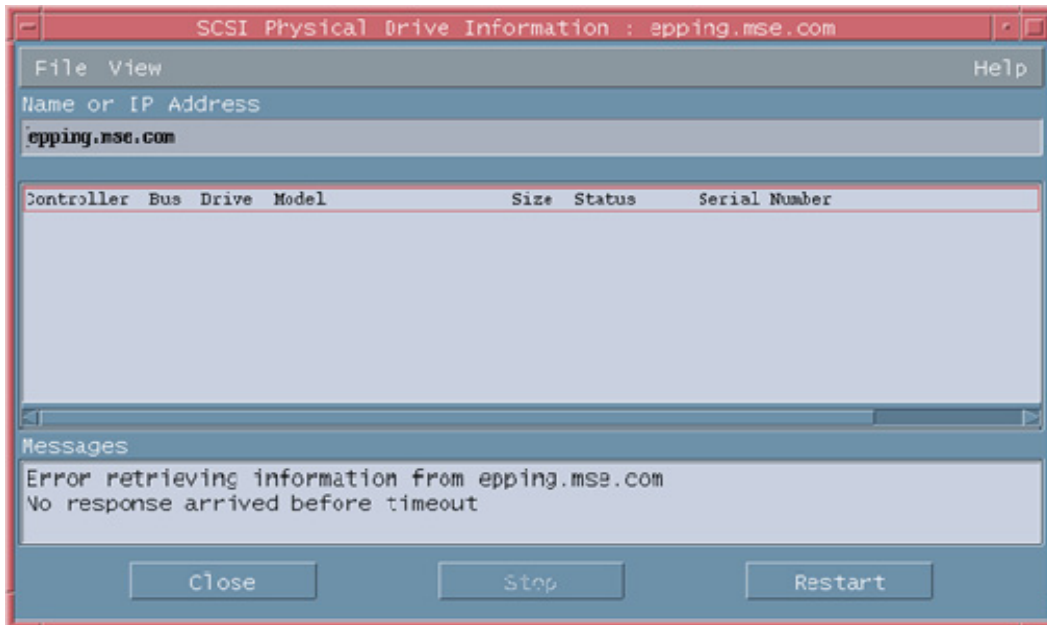
The Insight Information option provides quick access to some of the information provided by the HP Insight Management Agents for servers. This option is not intended to provide all the information from the Management Agents. Complete information is available through the Web agents.



NOTE: Load the HP MIBs for HP ProLiant servers to obtain the most useful information. If the MIBs are not loaded into NNM, then instead of receiving status of other, ok, degraded, or failed, you will receive status of 0, 1, 2, or 3. The MIBs are installed with the Insight Integration by default. See "Loading the HP MIBs (on page 54)" and "Unloading the HP MIBs (on page 54)" for full implementation procedures.

If a requested option is not supported by the selected system, you will receive a message similar to the following: "Note: requested information is not available from hostname."

This error can occur if you selected the SCSI Drives option for a system without any SCSI hard disks installed, as shown in the following example.



Summary

This menu option provides basic information about the selected system, including the status of each hardware subsystem. Any fields that do not apply or could not be determined appear as blank. For example, the cluster status field will be blank on non-cluster systems. Summary provides the following information:

- Product name
- Serial number
- Asset tag (a user-configurable field)
- ROM version
- Physical memory (total memory in KB installed)
- Operating system
- Operating system version
- Description (the operating system description)
- System role (a user-configurable field)
- Standard equipment status
- System information status
- Health status
- Host OS status
- Network interface status
- Threshold management status
- Drive array status
- SCSI status
- IDE status

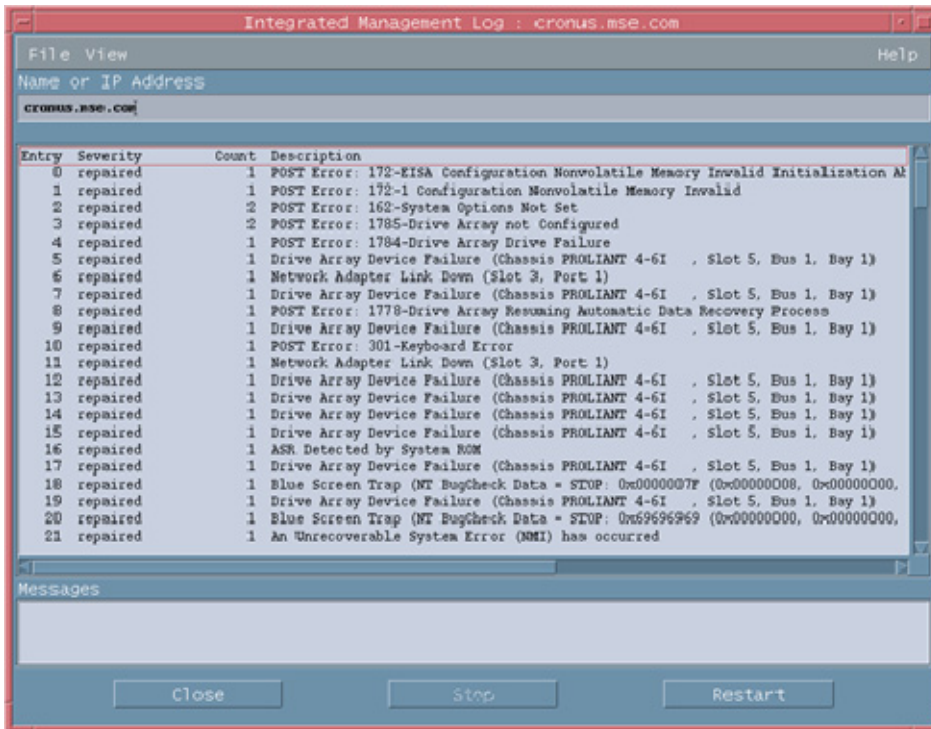
- Windows OS Status
- Linux OS Status
- Storage system status
- Fibre array status
- Lights-Out status
- Cluster status
- Rack status



Integrated Management Log

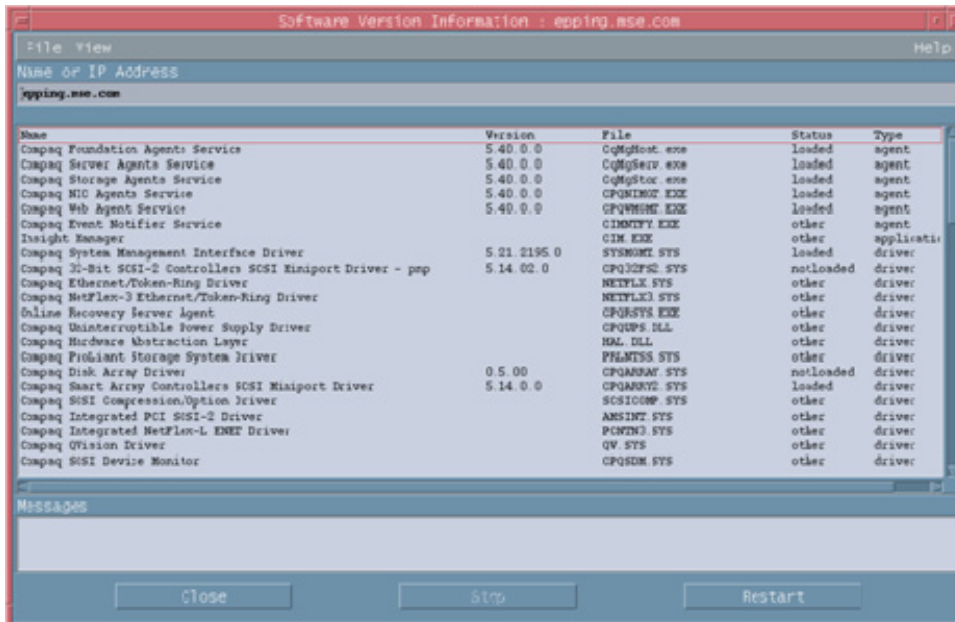
The IML is an embedded technology on all HP ProLiant server system boards used to track and record system POST and operational messages.

This menu item displays the information contained in the IML on the selected server. Entries are sorted from old to new, so the most recent entries display last. The output window follows the data to display the most recent entries.



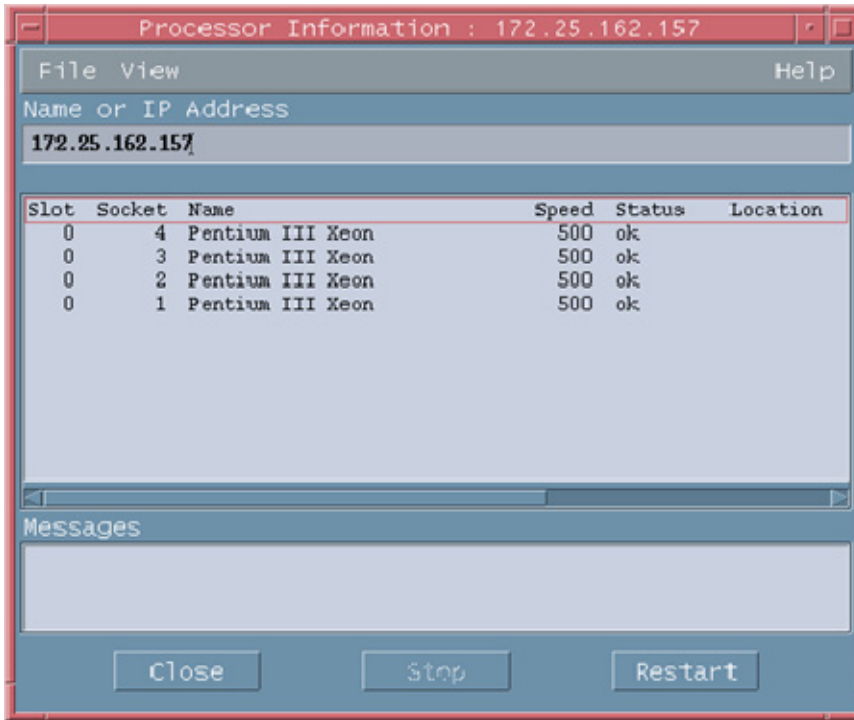
Software Version

The Software Versions option displays the names and versions of HP drivers, Management Agents, and other system-specific software installed in the selected server.



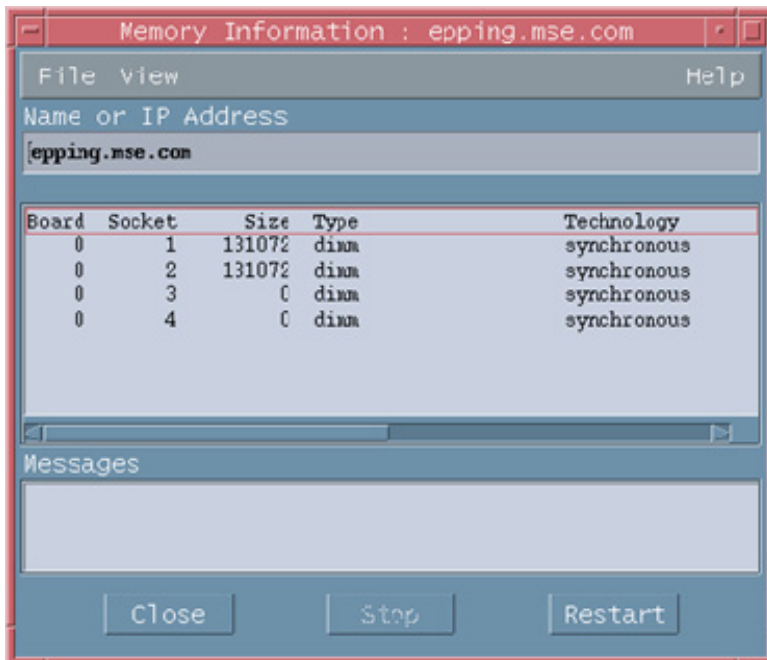
System—Processor

This option displays the type, speed, and status of all processors installed in the selected server. The processor location might be displayed, depending on the type of system selected. The location field is a text description of the hardware location, on complex multi-SBB hardware only, for the processor. An empty string indicates that the hardware location could not be determined or is irrelevant.



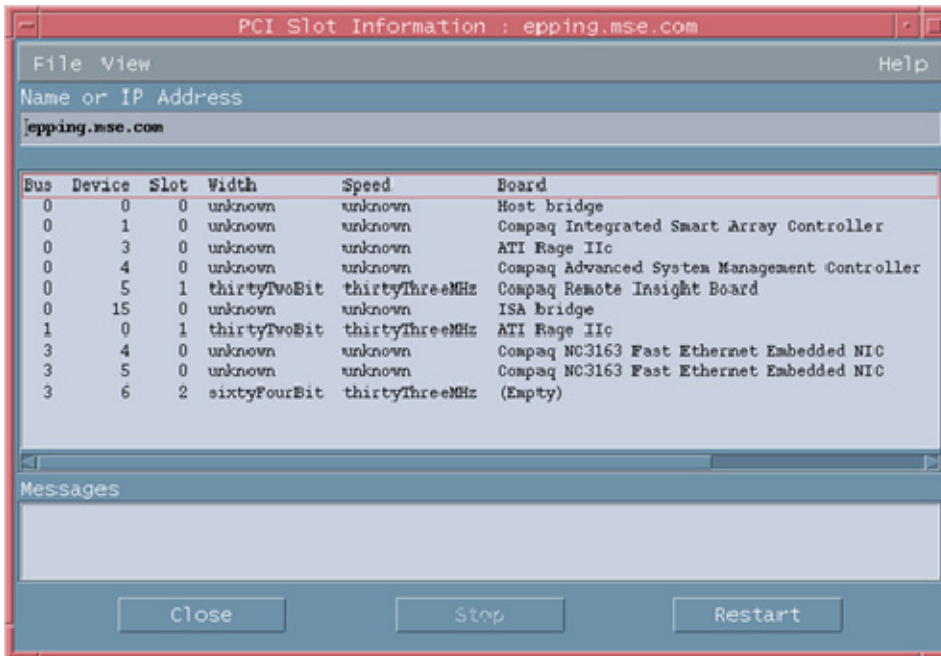
System—Memory

This option displays the location, type, and speed of all memory modules installed in the selected server. Some fields might be incomplete, depending on the system queried.



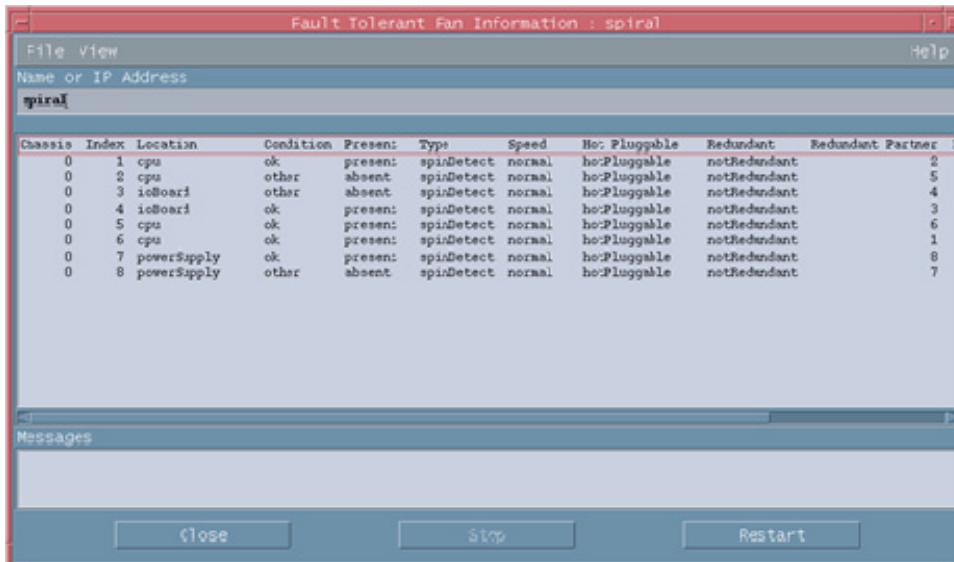
System—PCI slots

This option displays the location and type of all PCI devices installed in the selected server.



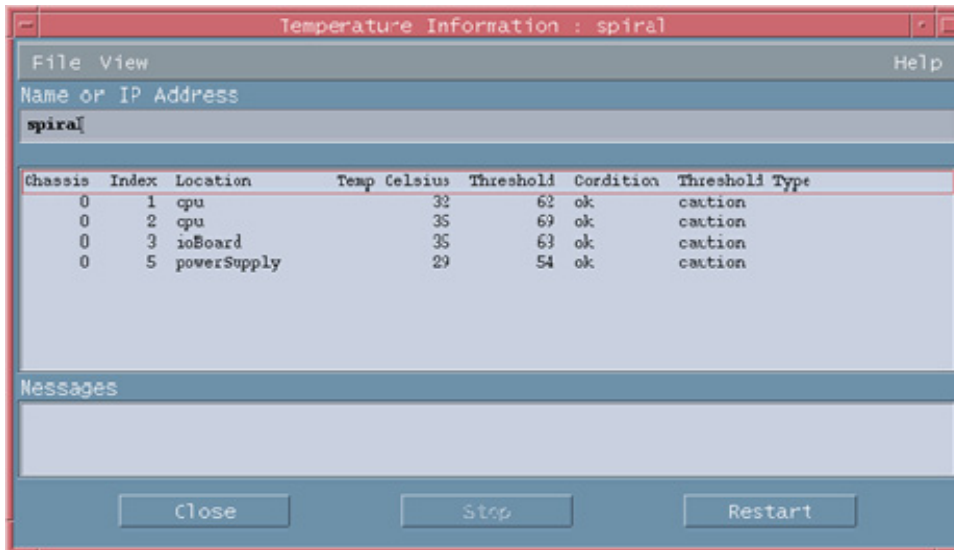
Health—Fault-tolerant fans

This option displays the location, type, speed, and status of all redundant fans installed in the selected server.



Health—Temperatures

This option displays environmental information from the HP Health Agent temperature sensor table.



The screenshot shows a window titled "Temperature Information : spiral" with a menu bar (File, View, Help) and a search field containing "spiral". Below the search field is a table with the following data:

Chassis	Index	Location	Temp Celsius	Threshold	Condition	Threshold Type
0	1	cpu	32	62	ok	caution
0	2	cpu	35	69	ok	caution
0	3	ioBoard	35	63	ok	caution
0	5	powerSupply	29	54	ok	caution

Below the table is a "Messages" section and three buttons: "Close", "Stop", and "Restart".

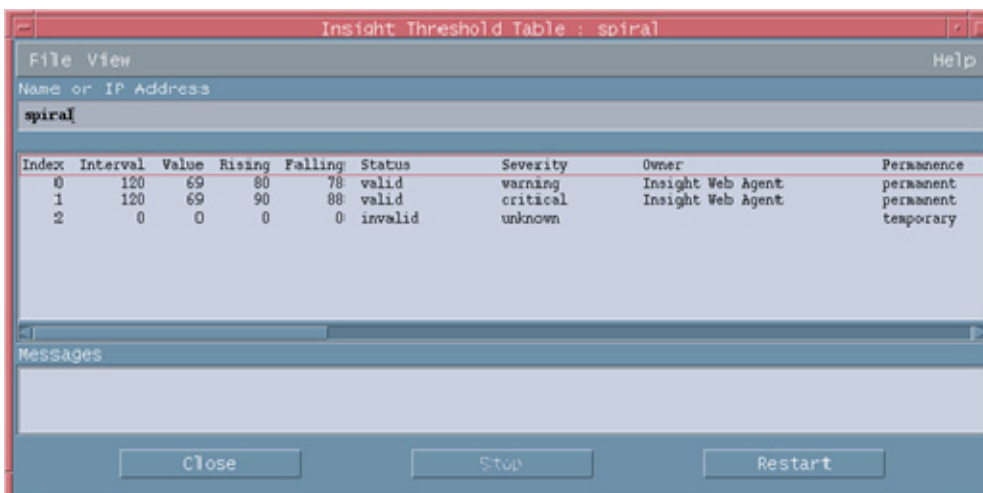
The following threshold types might be displayed in the table:

- Other (1)—Temperature threshold type could not be determined.
- Blowout (5)—If a blowout (5) temperature sensor reaches its threshold, the fans in the area of the temperature sensor increase in speed in an attempt to reduce the temperature before a caution or critical threshold is reached.
- Caution (9)—If a caution (9) temperature sensor reaches its threshold, the cpqHeTemperatureCondition is set to degraded (3), and the system either continues or shuts down, depending on the setting of cpqHeThermalDegradedAction.
- Critical (15)—If a critical (15) temperature sensor reaches its threshold, the cpqHeTemperatureCondition is set to failed (4), and the system shuts down.

The Insight Integration returns a value of -1 if the temperature cannot be determined.

Health—Thresholds

This option displays the Insight threshold table for the selected server. System thresholds are set through the HP System Management Homepage and the Insight Management Agents displays.



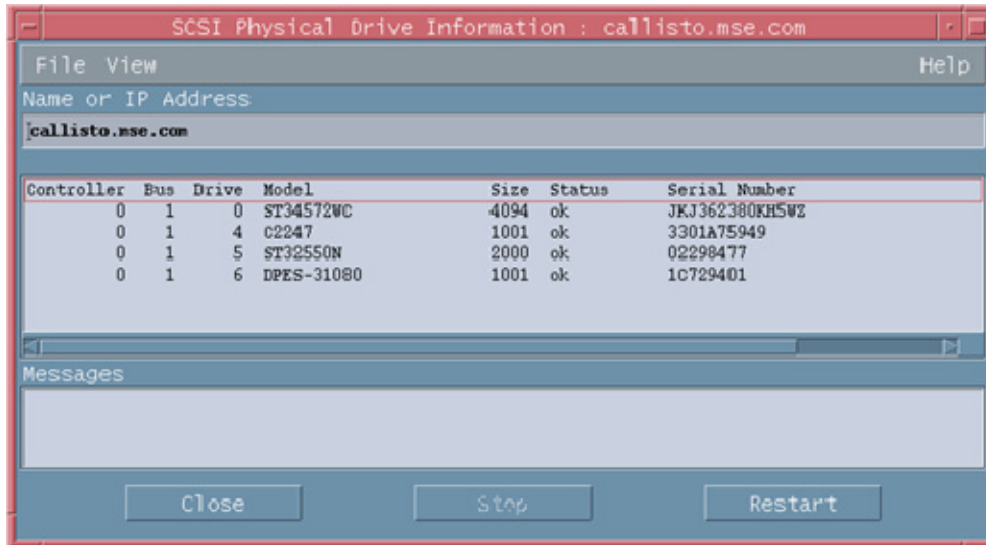
The screenshot shows a window titled "Insight Threshold Table : spiral" with a menu bar (File, View, Help) and a search field containing "spiral". Below the search field is a table with the following data:

Index	Interval	Value	Rising	Falling	Status	Severity	Owner	Permanence
0	120	69	80	78	valid	warning	Insight Web Agent	permanent
1	120	69	90	88	valid	critical	Insight Web Agent	permanent
2	0	0	0	0	invalid	unknown		temporary

Below the table is a "Messages" section and three buttons: "Close", "Stop", and "Restart".

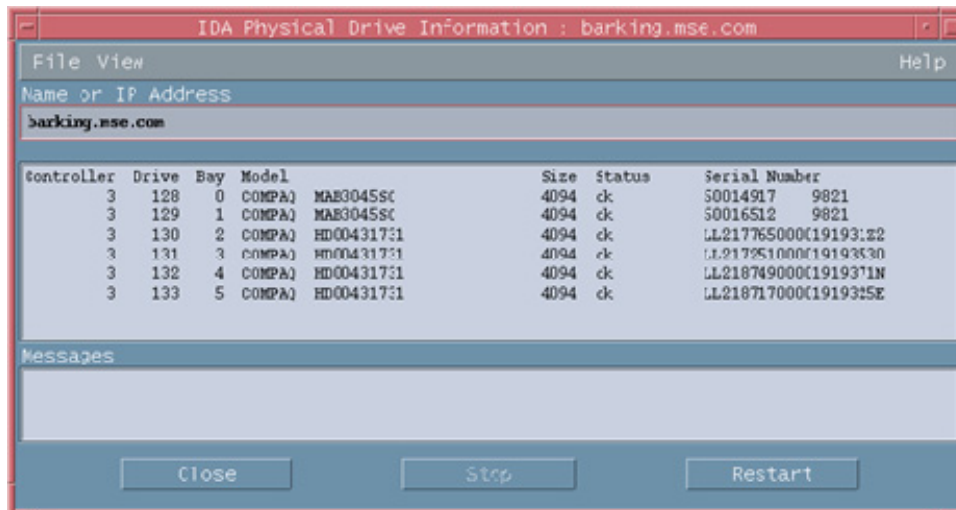
Drives—SCSI

This option provides basic model, size, serial number, and status information for the SCSI physical drives in the selected server.



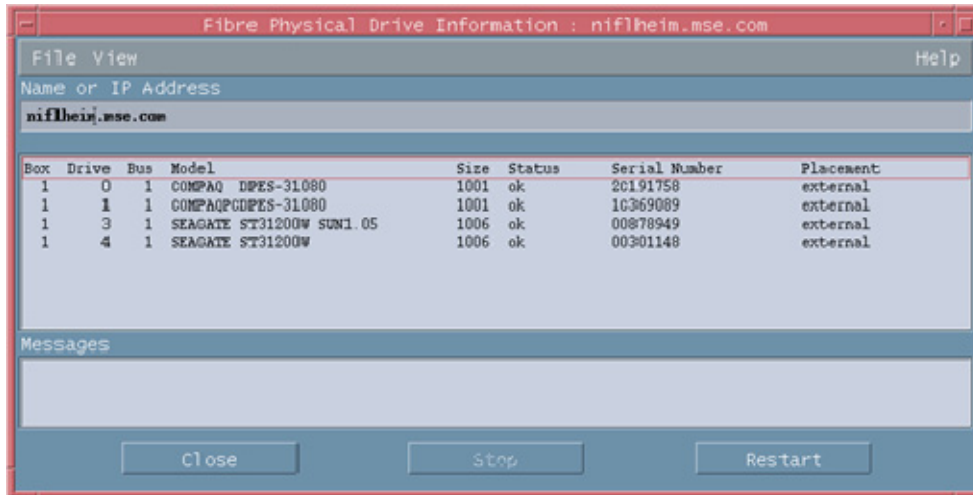
Drives—IDA

This option provides basic controller, type, size, and status information for Drive Array physical drives in the selected server.



Drives—Fibre

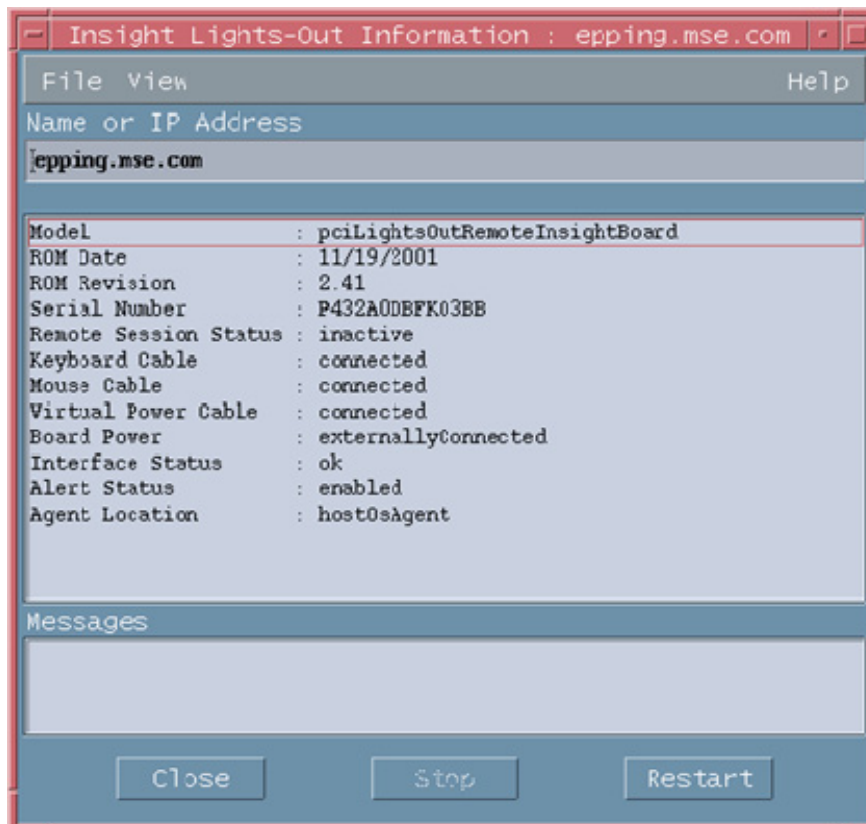
This option provides controller, type, size, and status information for fiber-based drives in the selected server.



Insight Lights-Out information

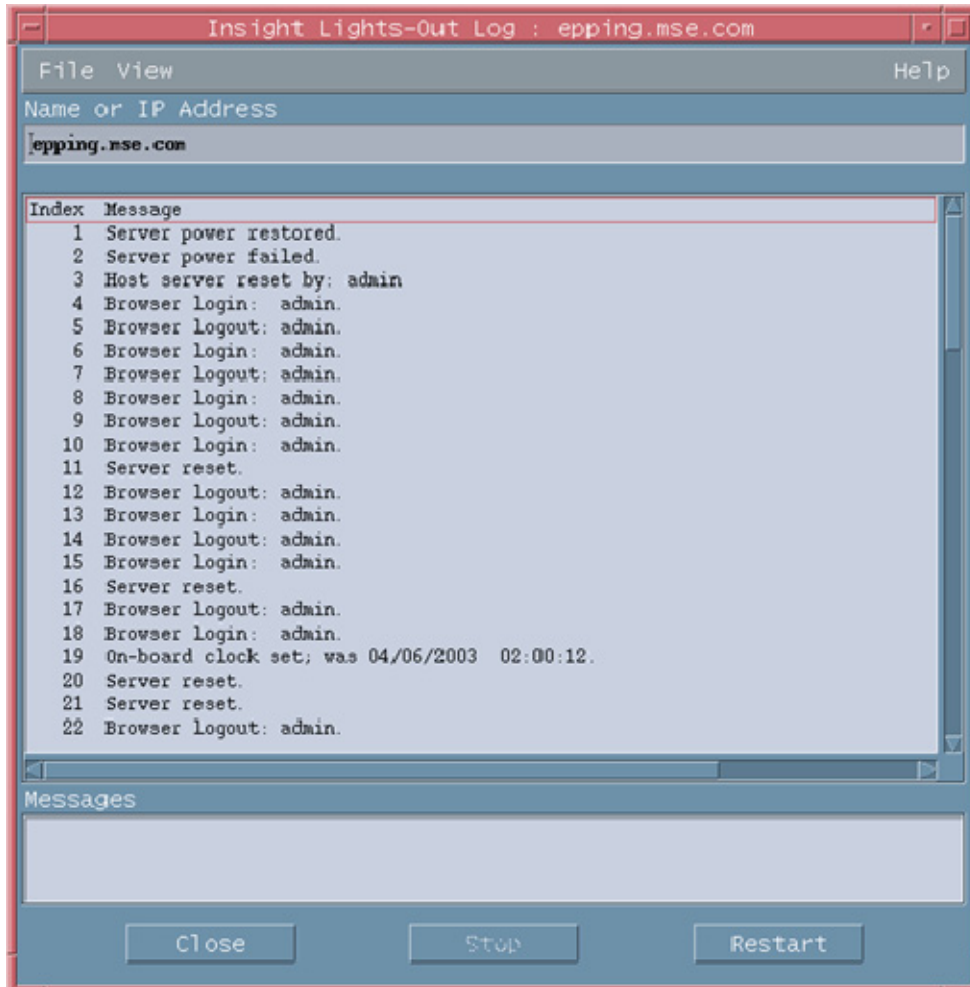
This option provides revision, configuration, and status information for RILOE and iLO technology associated with the selected server. Information in this category displays only if the selected server has RILOE or iLO management processors installed.

For more detailed information, right-click the system, and select **Insight Lights-Out** to launch the browser interface for the management processors.



Insight Lights-Out log

This option displays the information contained in the RILOE or iLO Message Log and only appears on systems where the RILOE or iLO management processors have been discovered. Entries are sorted from new to old for RILOE and RILOE II, so the most recent entries display first. Entries are sorted from old to new for iLO, so the most recent entries display last.

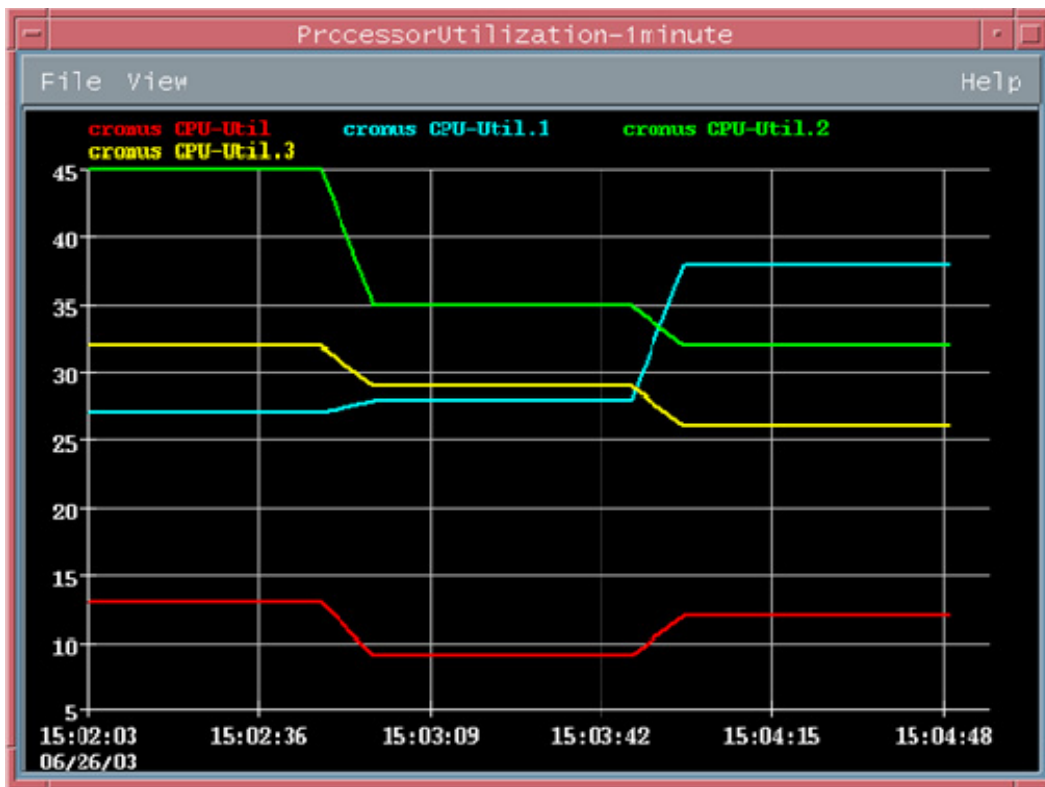


HP Insight graphics

This option displays real-time graphical data for selected capacity and performance statistics, as defined by the Insight MIBs and Insight Management Agents. The `xnmgraph` command is used to present the following data. The following graphs are available:

- Percent Disk Space Used
- Physical Memory Free
- Paging Memory Free
- System Temperatures
- Processor Utilization—1 minute
- Processor Utilization—5 minutes
- Processor Utilization—30 minutes
- Processor Utilization—1 hour

The following is an example of the CPU Utilization—1 Minute graph.



Some data might not be supported on all systems. For example, the System Temperatures graph will return "-1" for values that are not supported. Web-enabled Insight Management agents display "N/A" for unsupported items in summary data.

Information that is more useful is provided for data collection if the MIBs are loaded into NNM. For example, instead of displaying the label "3" for data collection, "cpqHoCpuUtilFiveMin" will display with the MIBs loaded.



NOTE: When using the Insight Integration, do not load the traps from the Insight MIBs. For proper operation, implement the predefined trap definitions provided in the Insight Integration configuration files.

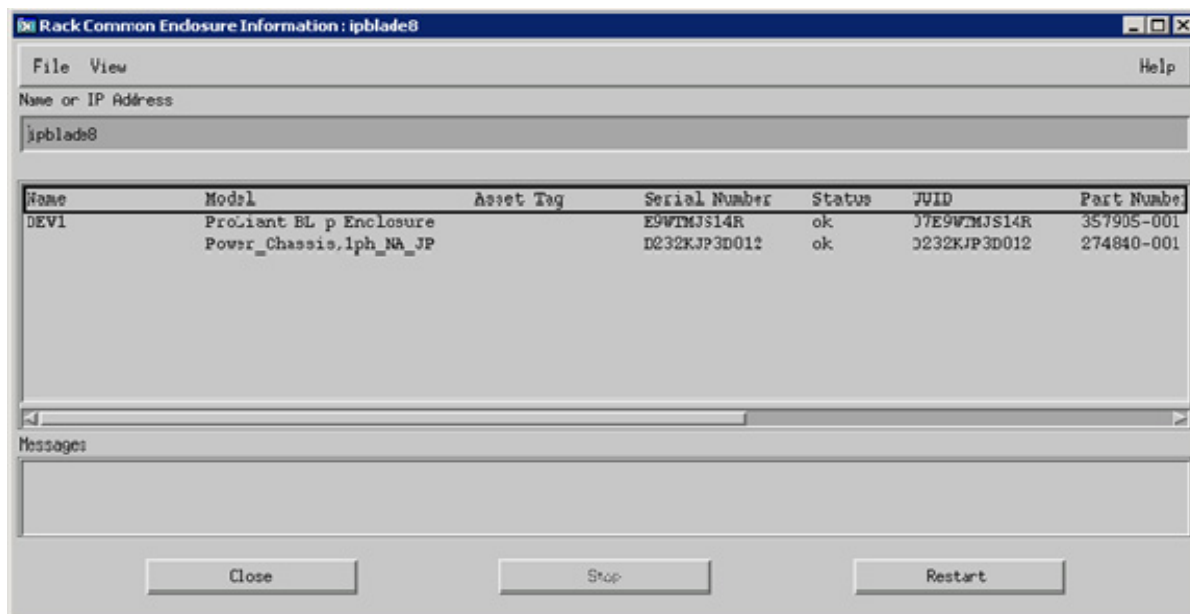
The HP Insight Graphs option appears on all items with the CpqInsight property set to "True." In some cases, the graphs will not apply to the system on which the option displays. For example, the ProLiant BL10e enclosure has this option, but the graphs return no data.

HP Insight rack information

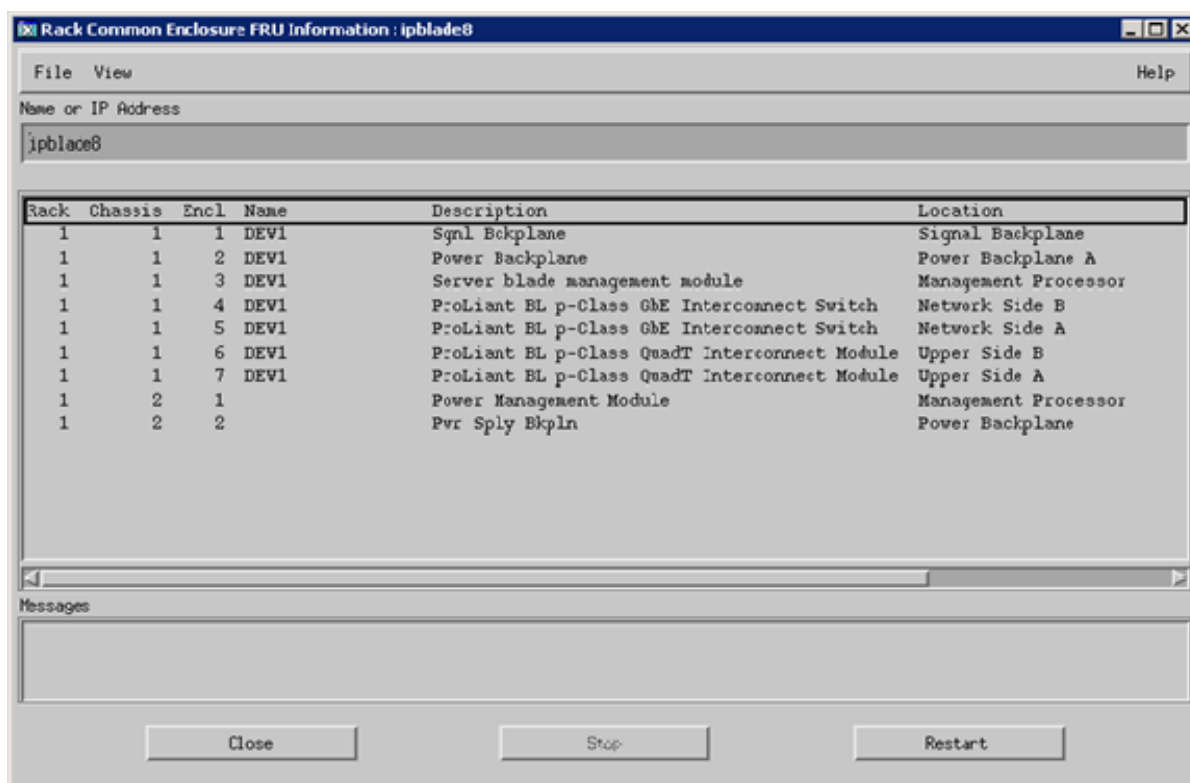
New menu options have been added for devices classified as blade servers. These entries provide access to information from the HP Rack MIB, but only appear on systems that have been classified by the discovery process as blade servers.

The HP Insight Rack Information menu entries are also available when the HP Onboard Administrator is selected. The FRU Table is not available when the HP Onboard Administrator is selected.

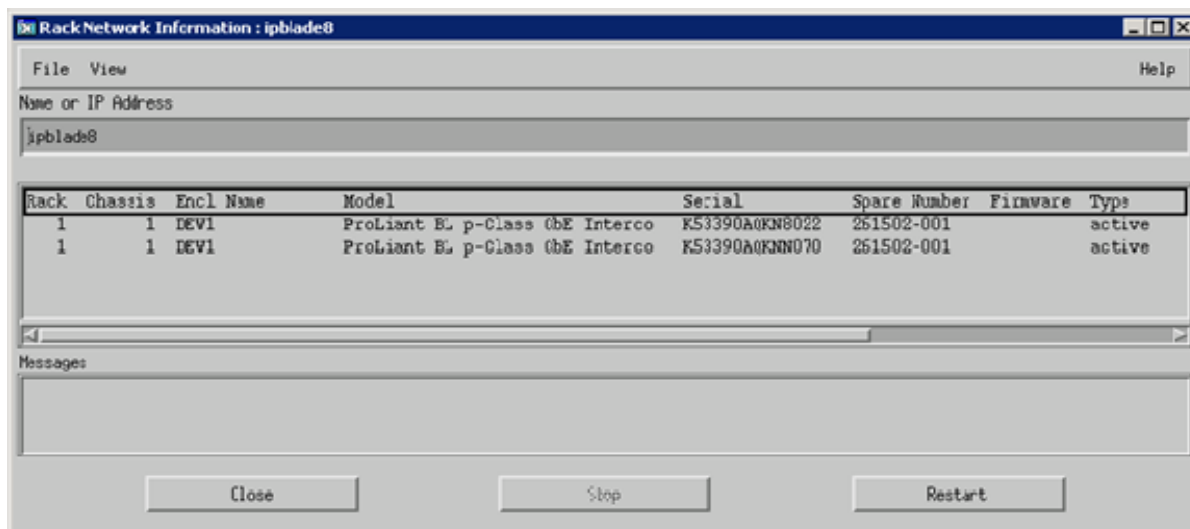
- Enclosure Information



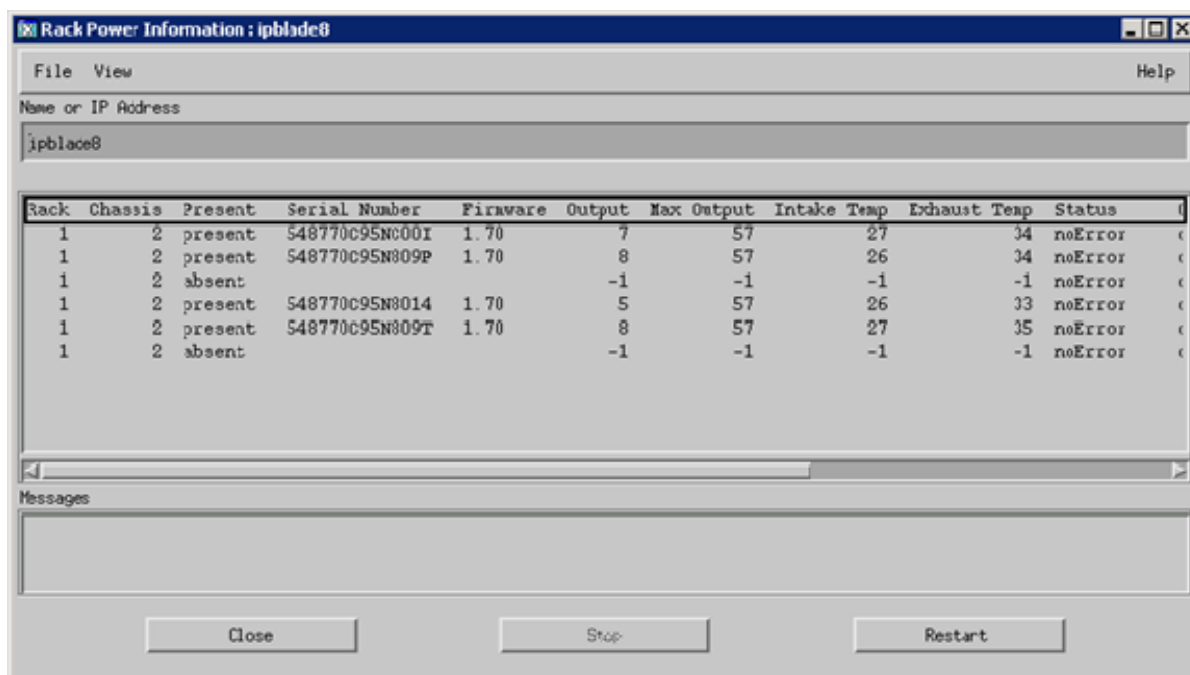
- FRU Table



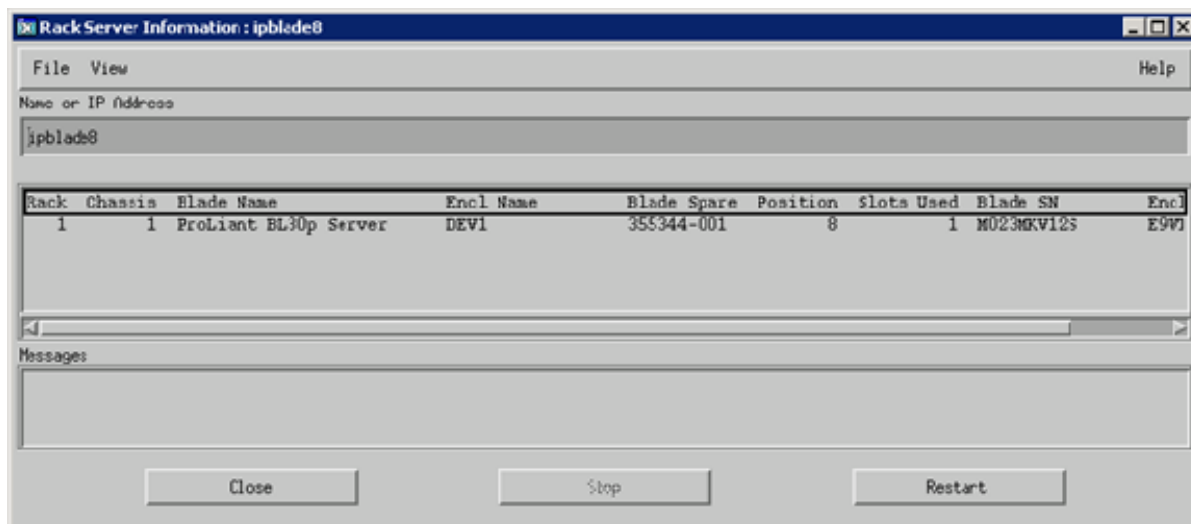
- Network Information



- Power Information



- Server Information

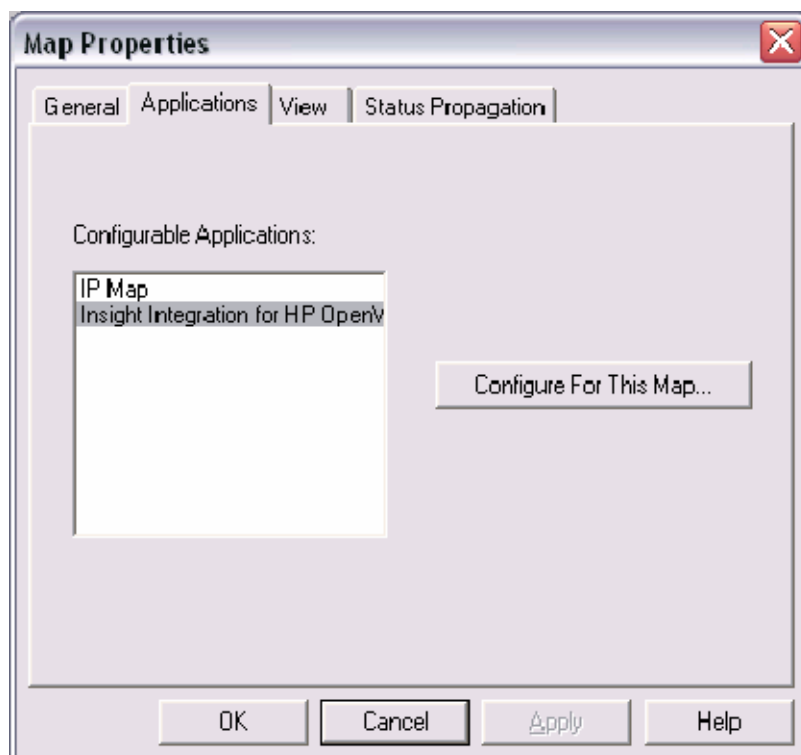


Using HP Systems Insight Manager with HP OpenView NNM

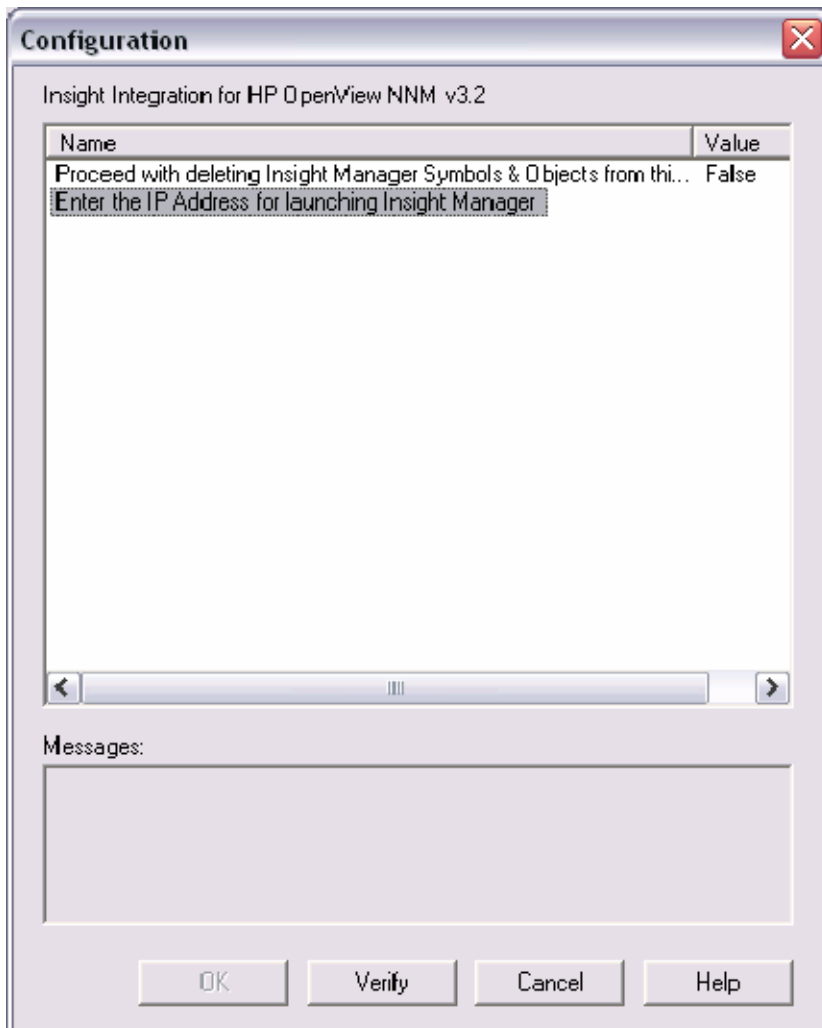
The Insight Integration includes a browser launch from the NNM Segment Map to the browser-based HP Systems Insight Manager application. This browser launch provides additional lifecycle management and administration of HP systems from within the NNM environment.

Configuring the HP Systems Insight Manager launch on Windows

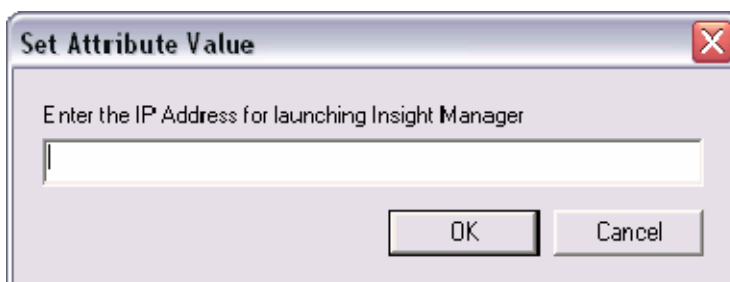
1. From the NNM segment map, select **Map>Map Properties**. The Map Properties window appears.



2. In the Applications tab, select **Insight Integration for HP OpenView NNM** from Configurable Applications.
3. Click **Configure For This Map**. The Configuration dialog box appears



4. Highlight **Enter the IP Address for launching Insight Manager**. The Set Attribute Value window appears.



5. Enter the IP address of the host system running HP Systems Insight Manager, and click **OK**.
6. Click **Verify** to confirm that the action can be performed.
7. Click **OK** to complete the process.

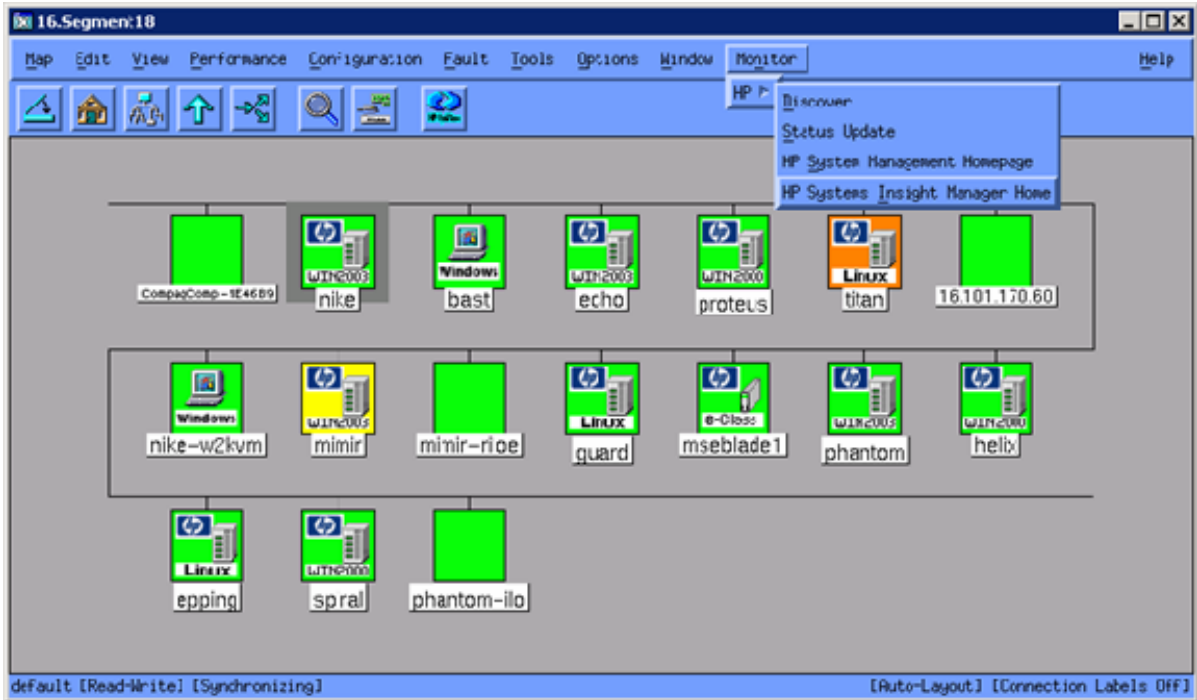
Configuring the Systems Insight Manager launch on UNIX

1. Open the profile for the desired user, and add the following entries:

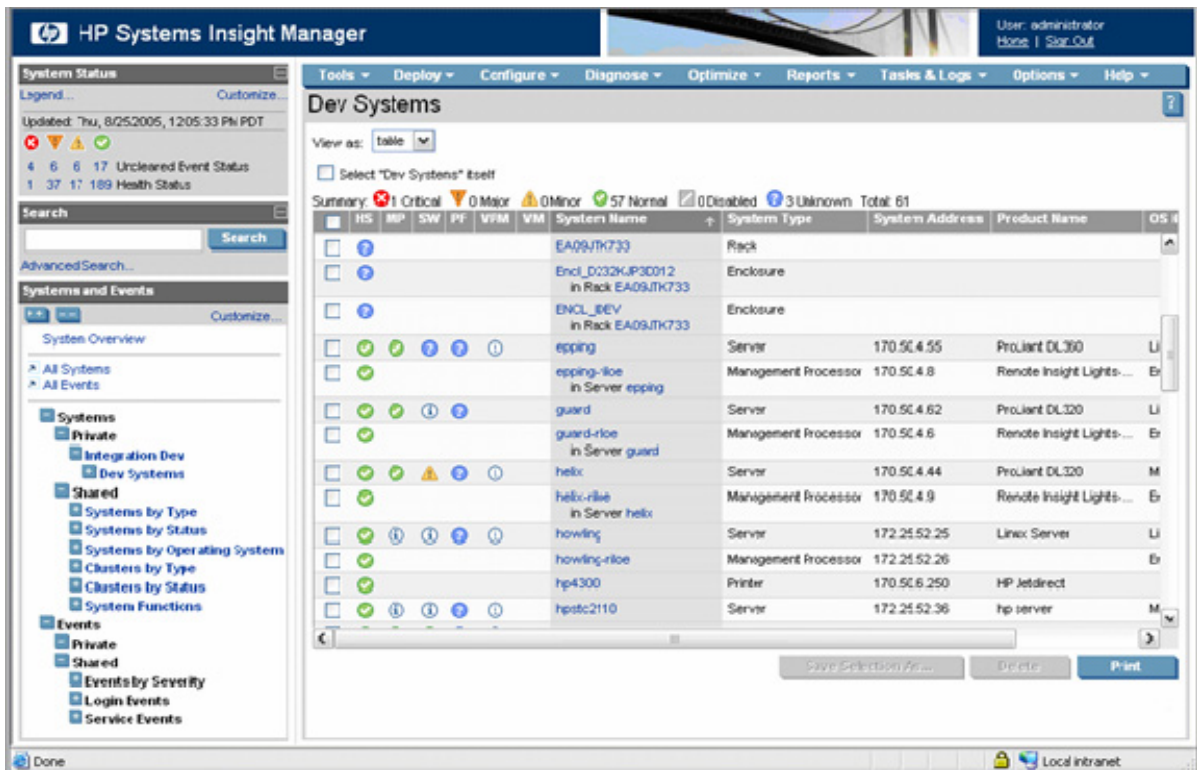
- a. IMADDRESS—IP address or server name of Systems Insight Manager
 - b. EXPORT IMADDRESS
2. Log out of the system and log in again for the changes to take effect.

Launching HP Systems Insight Manager

To launch HP Systems Insight Manager from within the NNM Segment Map, select **Monitor>HP>HP Systems Insight Manager Home**.



Selecting **HP Systems Insight Manager Home** initiates a browser launch to the Systems Insight Manager homepage. The server location was specified during configuration (see "Configuring the Systems Insight Manager launch on UNIX (on page 70)" and "Configuring the HP Systems Insight Manager launch on Windows (on page 69)" for more information).



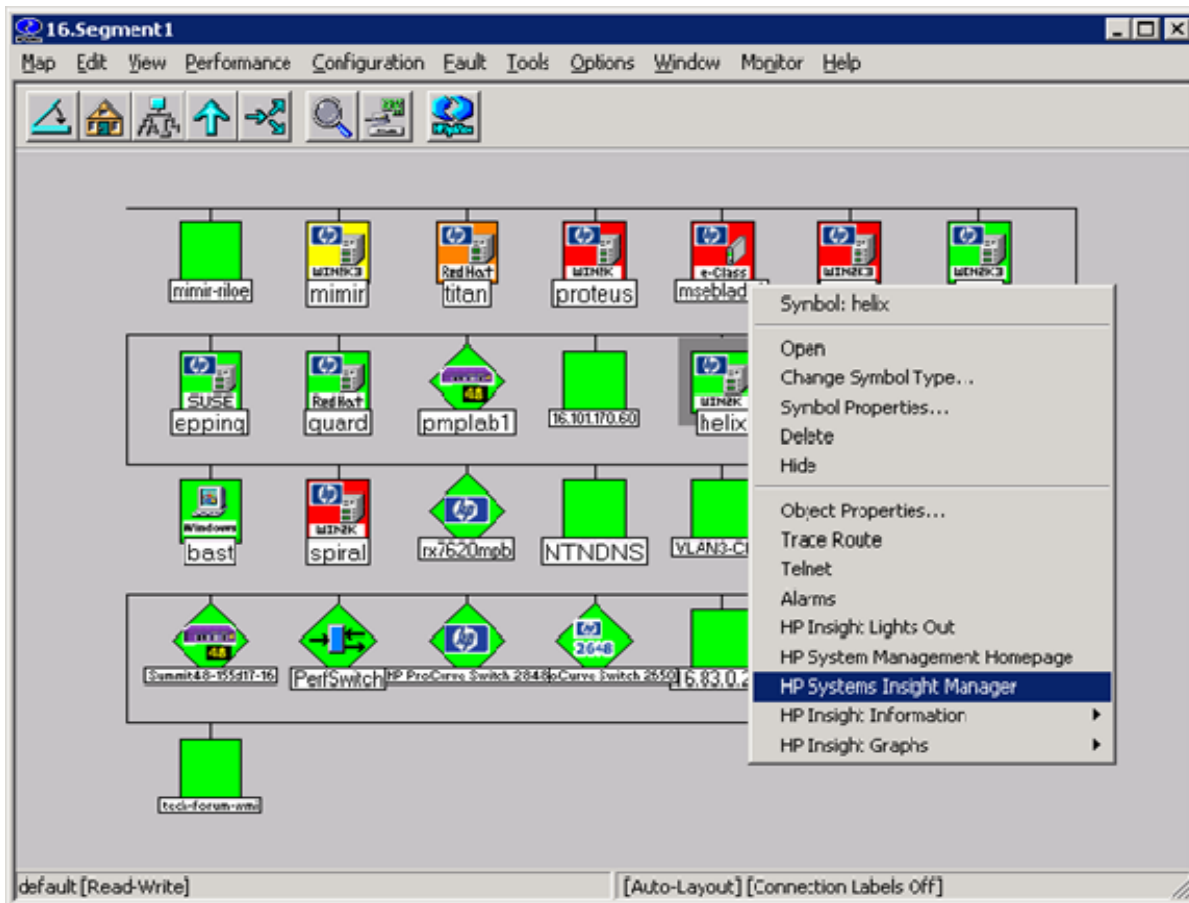
Running an in-context launch to HP Systems Insight Manager

In addition to the HP Systems Insight Manager console launch ("Launching HP Systems Insight Manager" on page 71), the Insight Integration includes an in-context launch to HP Systems Insight Manager.

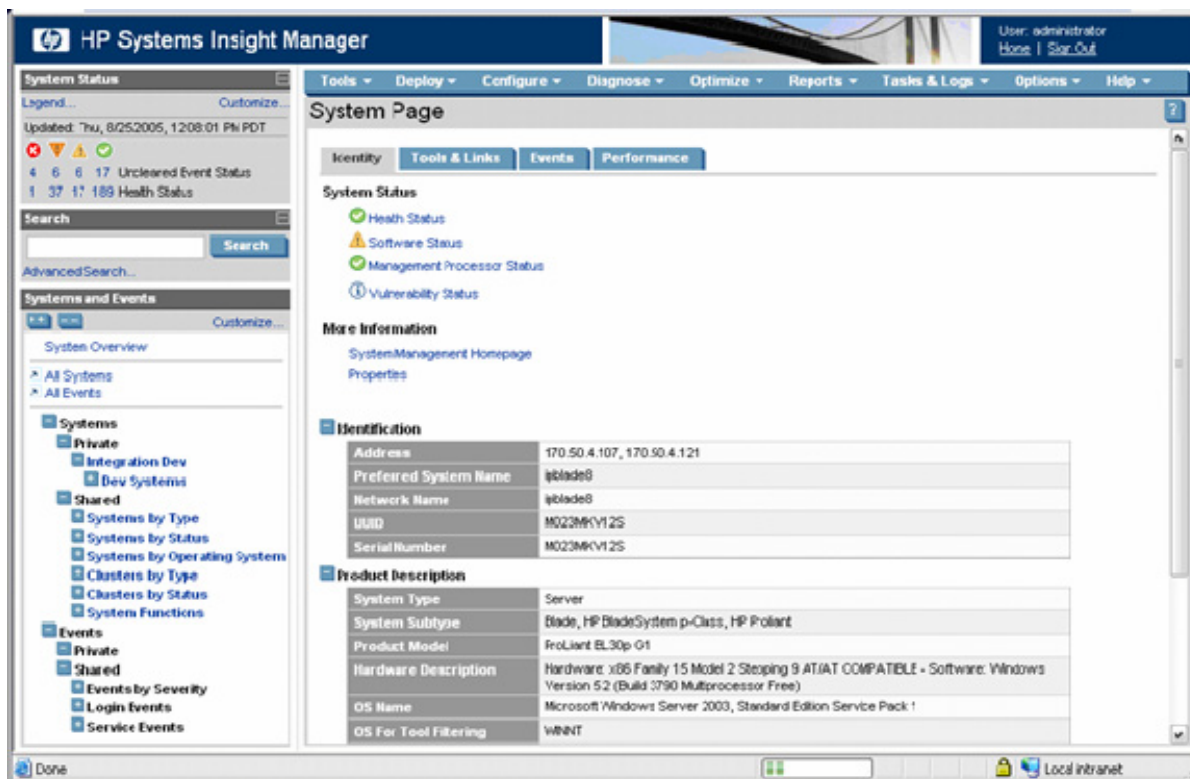
The in-context launch differs from the regular application launch by presenting the device page for a selected system, instead of the HP Systems Insight Manager homepage.

To launch HP Systems Insight Manager in context:

1. Right-click a node in the Segment Map to present the menu for that device.



2. Select **HP Systems Insight Manager**. The browser to the HP Systems Insight Manager server launches, and the selection name for the individual system passes to HP Systems Insight Manager. Using this information, the Device Information page appears after logging in to the server.



This menu option is added to devices with isNode set to true. Consequently, you can launch to the device information pages for type of devices other than HP ProLiant servers.

This feature uses the OVWSelection name to browse to a specific device in HP Systems Insight Manager. If the OVWSelection name and the name in HP Systems Insight Manager do not match, the default homepage might appear. For example, NNM might have the selection name as the fully qualified DNS name, and HP Systems Insight Manager might have only the server name.

To change the name to match what is stored in the HP Systems Insight Manager database, right-click an object, and select **Object Properties>Set Selection Name** in order.

This feature depends on the settings for the environment variable CIMXEIp for Windows® ("[Configuring the HP Systems Insight Manager launch on Windows](#)" on page 69) and IMADDRESS for UNIX ("[Configuring the Systems Insight Manager launch on UNIX](#)" on page 70). If the menu items are launching to an incorrect address, verify the environment variable by verifying that the correct address is set in NNM.

For NNM running on Windows:

1. Select the root map, and click **Map>Properties**.
2. Click the **Applications** tab in the new window, and select **Insight Integration for HP OpenView NNM**.
3. Click **Configure for this Map**, and verify that the correct address is entered in the following window.

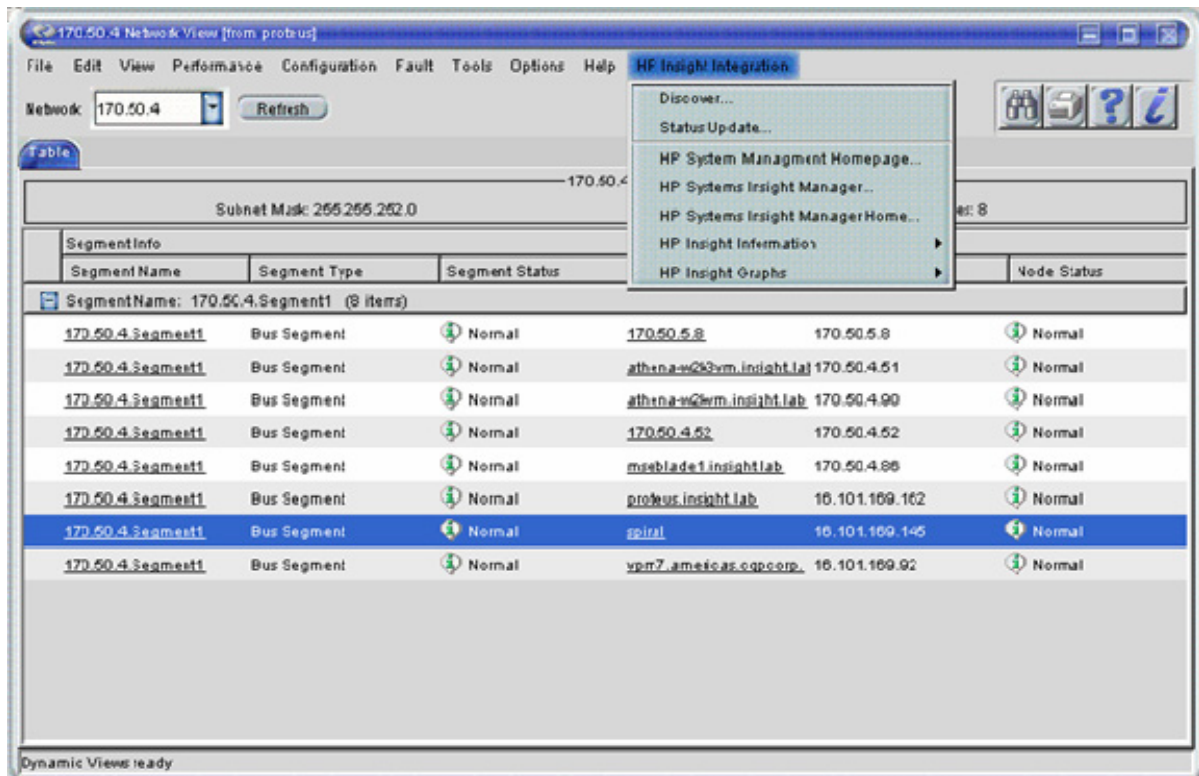
For NNM running on UNIX®, verify the IPADDRESS environment variable in the user profile is correct.

Using the Insight Integration with the Dynamic Views interface

A new menu configuration file is provided to allow access to some of the Insight Integration functionality from the NNM Home Base page. For access to HP Systems Insight Manager from this interface, you must configure the insight.xml file with the name or address of the HP Systems Insight Manager server.

1. Change to the dynamicViews directory (\$OV_WWW_REG/dynamicViews/\$LANG).
2. Edit the insight.xml file.
3. Search for and replace "localhost" with the name or address of the HP Systems Insight Manager server.

The Insight Integration menu in the Dynamic Views interface launches to web agents and HP Systems Insight Manager. Additionally, launches to the HP Insight Information menu options are available if you are running on the local NNM system. These menu items are not context-sensitive and will appear to be available for all nodes.



The event definitions and translations provided with the Insight Integration are also available from the NNM Home Base. The following shows an event browser accessed from the NNM Home Base.

Ack	Corr	Severity	Date and Time	Source	Message
✓		Major	09/01/04 08:52:53	spiral.asn.com	HP - NIC redundancy reduced for adapter in slot 0, port 1.
✓		Minor	09/01/04 08:53:22	spiral.asn.com	HP - One or more power-on self test errors have occurred.
✓		Minor	09/01/04 08:53:24	saal18900.asn.com	HP - One or more power-on self test errors have occurred.
✓		Major	09/01/04 08:53:30	spiral.asn.com	HP - Physical Drive threshold passed. (Controller: 0, Drive: 0)
✓		Major	09/01/04 10:07:35	spiral.asn.com	HP - NIC redundancy reduced for adapter in slot 0, port 1.
✓		Minor	09/01/04 10:08:09	spiral.asn.com	HP - One or more power-on self test errors have occurred.
✓		Major	09/01/04 10:08:15	spiral.asn.com	HP - Physical Drive threshold passed. (Controller: 0, Drive: 0)
✓		Minor	09/02/04 09:31:03	howling.asn.com	HP - One or more power-on self test errors have occurred.
✓		Minor	09/02/04 09:31:03	howling.asn.com	HP - The system is now operational after an ASR reboot.

Total	Critical	Major	Minor	Warning	Normal
18	0	4	8	6	0

Summary of Status Alarms in Event Database September 3, 2004

Using the Insight Integration with the NNM web interface

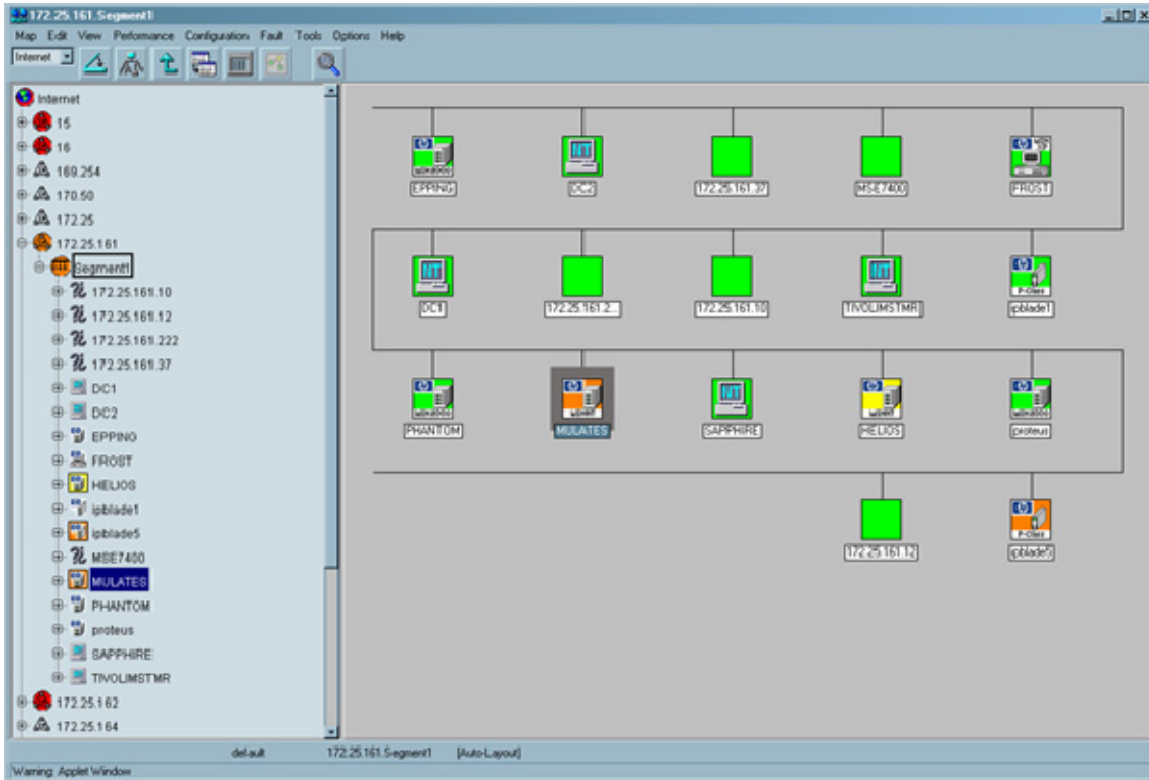
HP OpenView NNM includes a web interface to enable system monitoring of the network infrastructure from across the enterprise.

The Insight Integration can be used with the NNM web interface for system identification, status monitoring, and SNMP event/alarm processing. Launching the Insight Web Agent Object on the device submap is not supported. The NNM web interface does not support the launching of executable objects

Integration with the HP OpenView Java™-based web interface provides:

- Icons for the NNM web interface that correctly identify systems when the NNM web interface is used.

- A registration file that allows access to HP Systems Insight Manager and the Insight Management Agents from the NNM web interface.



The file `\www\insight` contains the registration information for these applications. To launch HP Systems Insight Manager in context, edit the file to include the IP address of the HP Systems Insight Manager server:

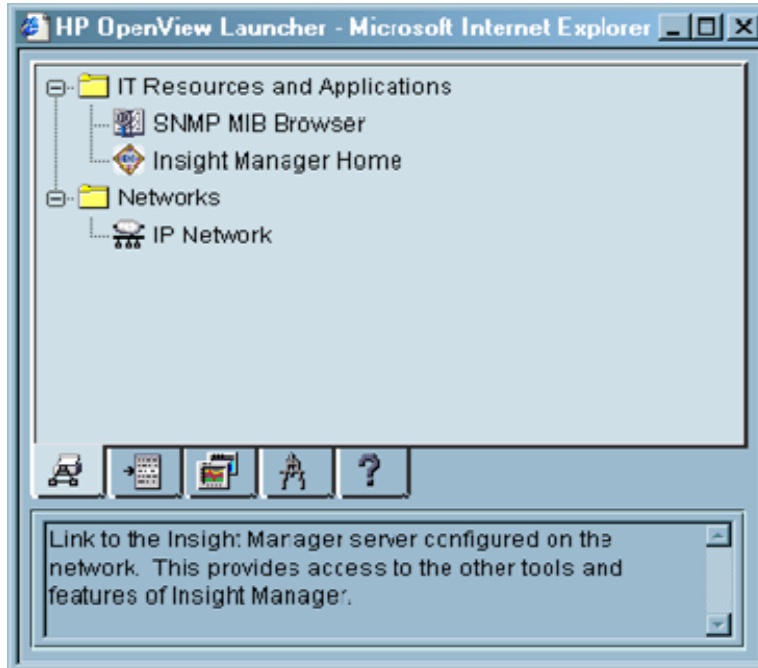
1. Open the insight file.
2. Replace "IM7IPADDRESS" with the name or IP address of your server.
3. Save the file. The insight file is copied to the `%OV_WWW_REG%\jovw\%LANG%` directory.

A registration file is also provided to allow access to the HP Systems Insight Manager Home page from the launcher tools menu.

The file `\www\insighthome` contains the registration information for this application. To launch to HP Systems Insight Manager, edit the file to include the IP address of your HP Systems Insight Manager server:

1. Open the insighthome file.
2. Replace "IM7IPADDRESS" with the name or IP address of your server.

3. Save the file. The insighthome file is copied to the %OV_WWW_REG%\launcher\%LANG% directory.

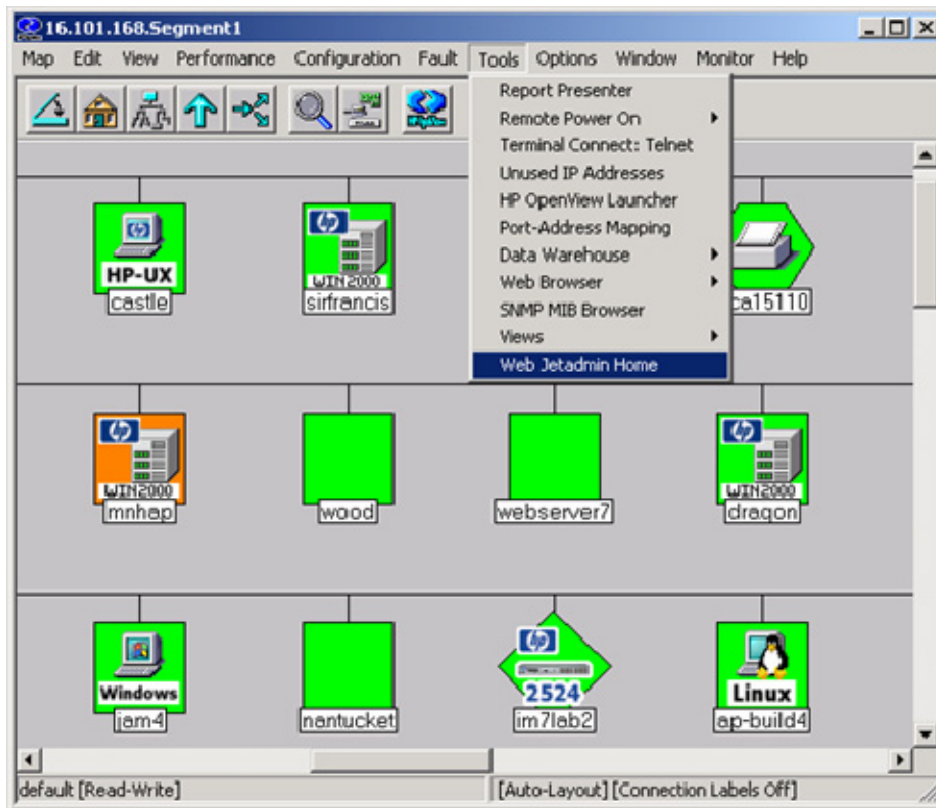


Using the Insight Integration with HP Web Jetadmin

The Insight Integration now includes files for integrating with HP Web Jetadmin. These files can be installed with the other parts of the integration, or they can be installed as stand-alone files.

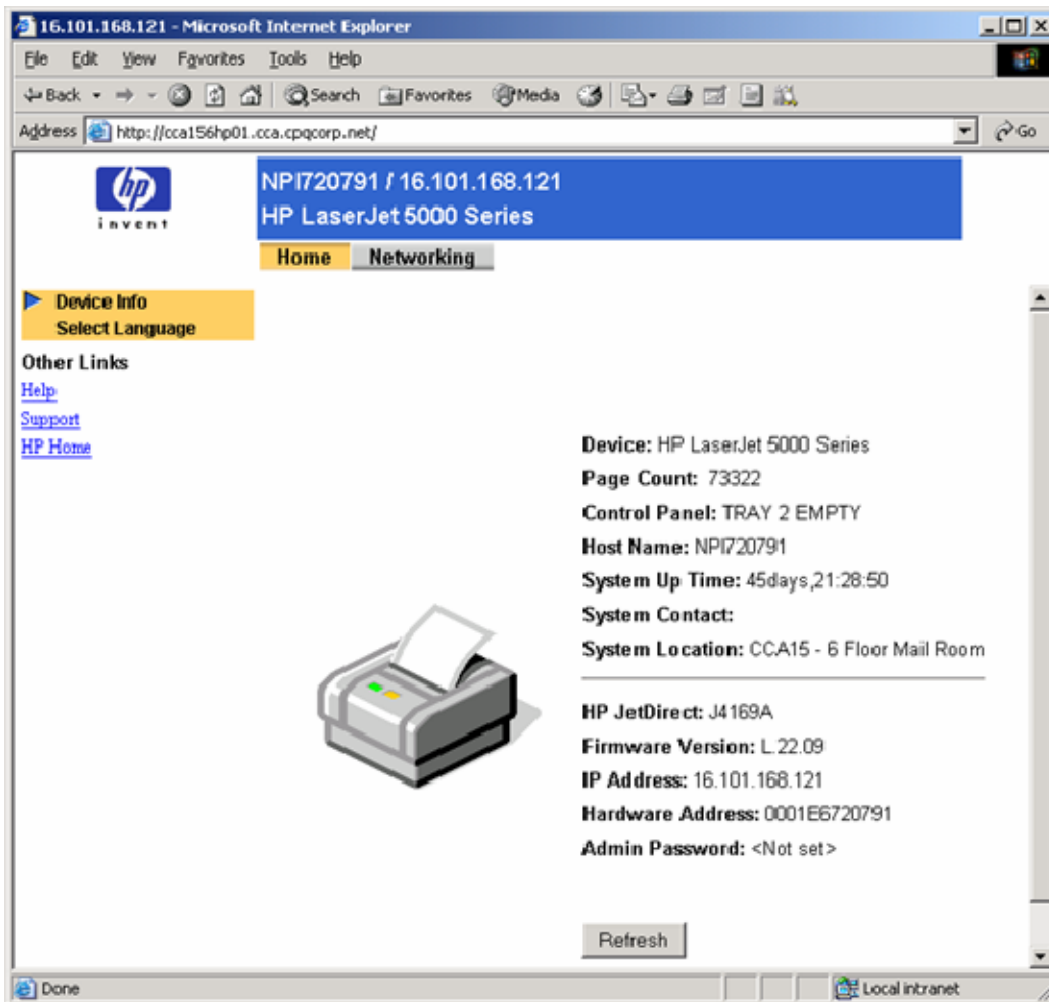
The integration files for Web Jetadmin provide the following functionality:

- Menu item for launching to the Web Jetadmin Homepage from the NNM Tools Menu

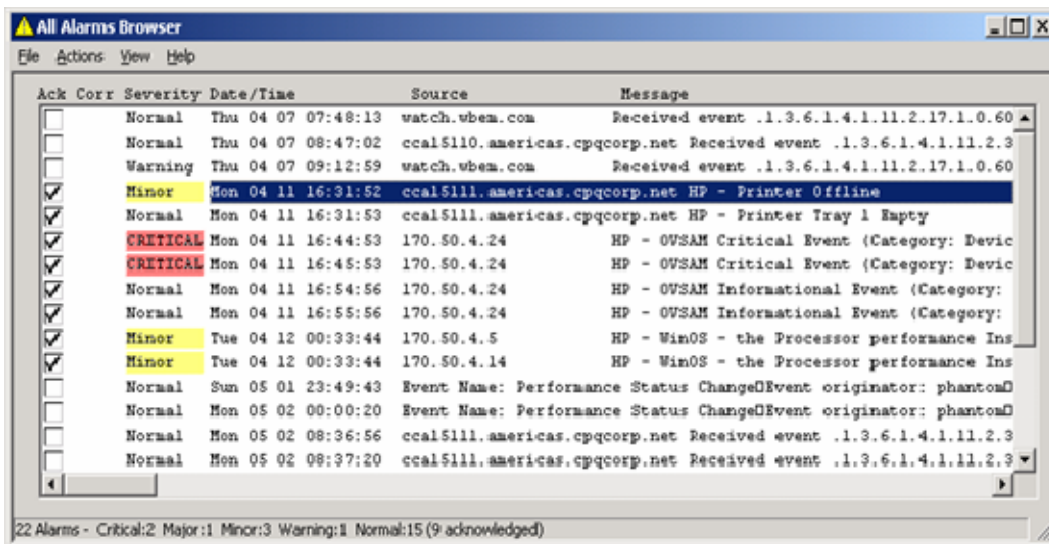


- Menu item for launching to Web Jetadmin in context

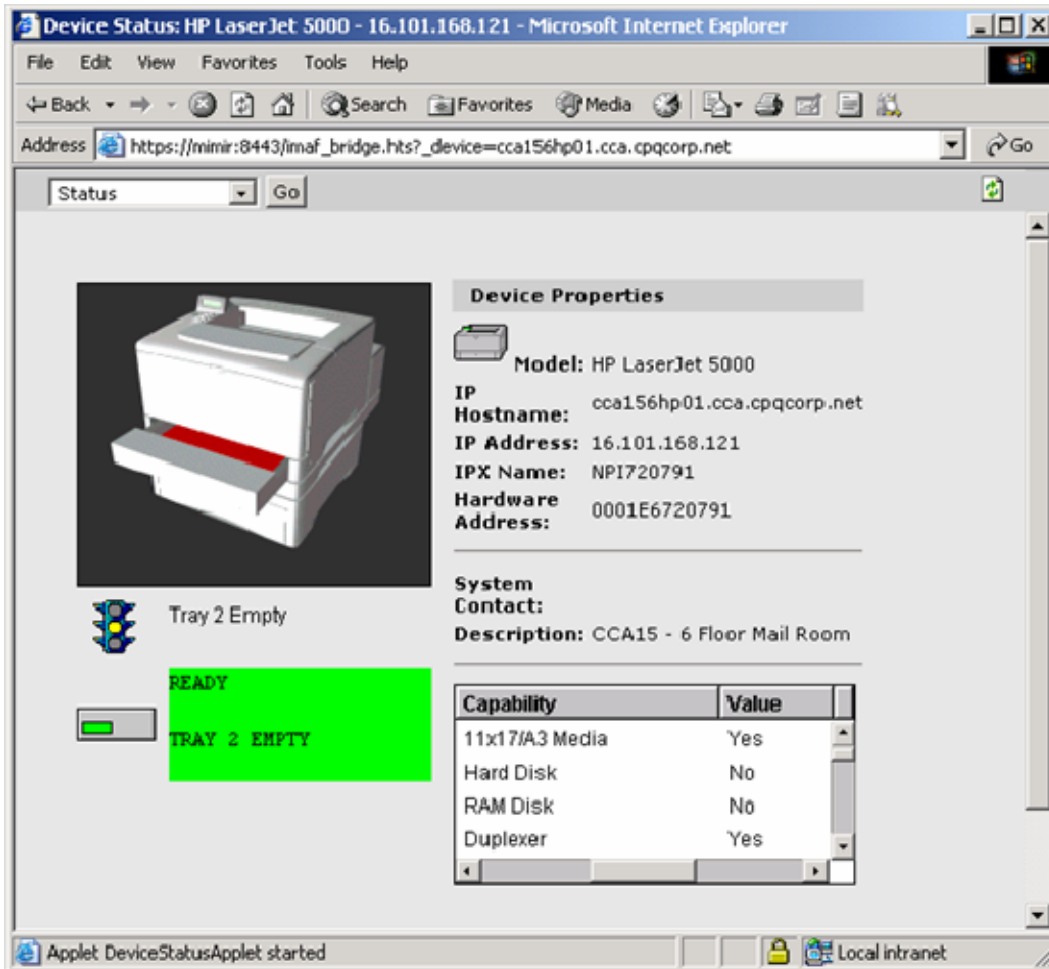
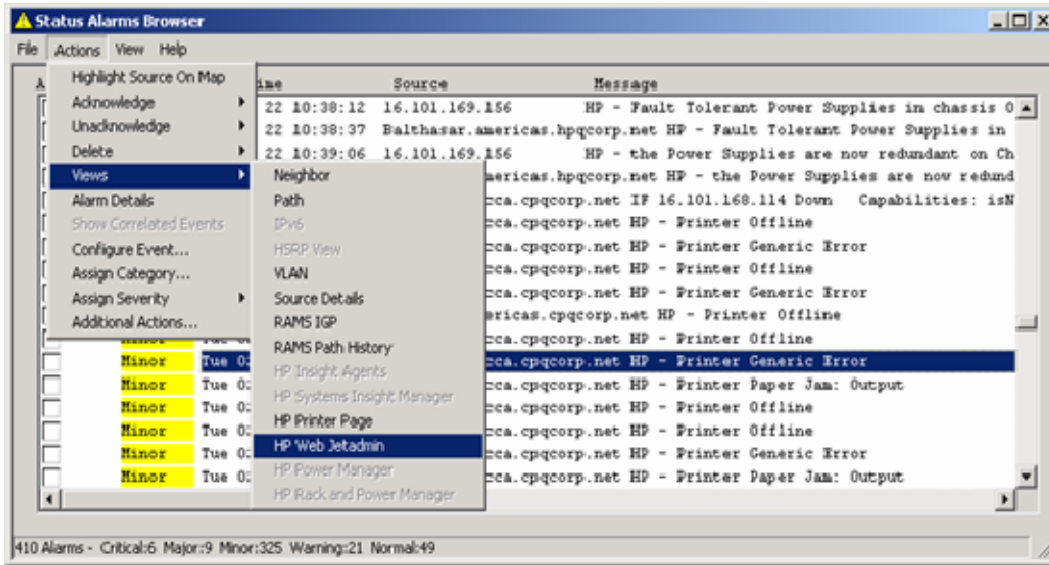
- Menu item for launching to the Web server on the printer



- Menu item for launching to HP Systems Insight Manager in context
- Trap configuration file for monitoring basic printer events



The alarm browser can be configured to include launch options for HP Web Jetadmin and HP Printer. When an alarm is received, you can browse directly to either application without referring to the NNM map



Edit the xnmeventsExt.conf file to add the following entries, replacing "localhost:8000" with the name (or IP address) and port of the Web Jetadmin server:

```
.1.3.6.1.4.1.11.2.3.9.1.*;"HP Printer Page";http://$OvNode
.1.3.6.1.4.1.11.2.3.9.1.*;"HP Web
Jetadmin";http://localhost:8000/device/$OvNode
```



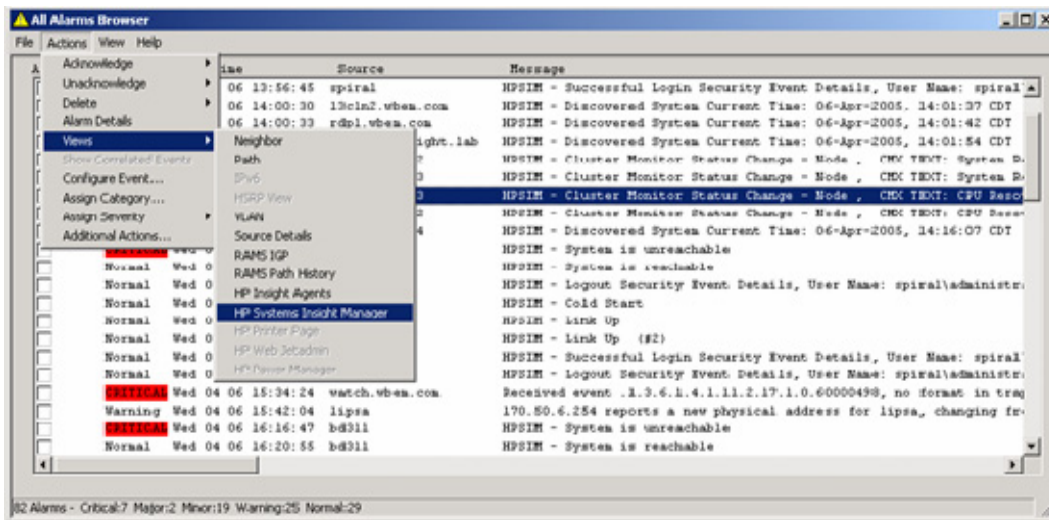
NOTE: Sample entries for the `xnmeventsExt.conf` file are provided in the `xnmeventsExt.cpq` file located in the `\traps` directory of the Insight Integration.

Viewing events in HP Systems Insight Manager

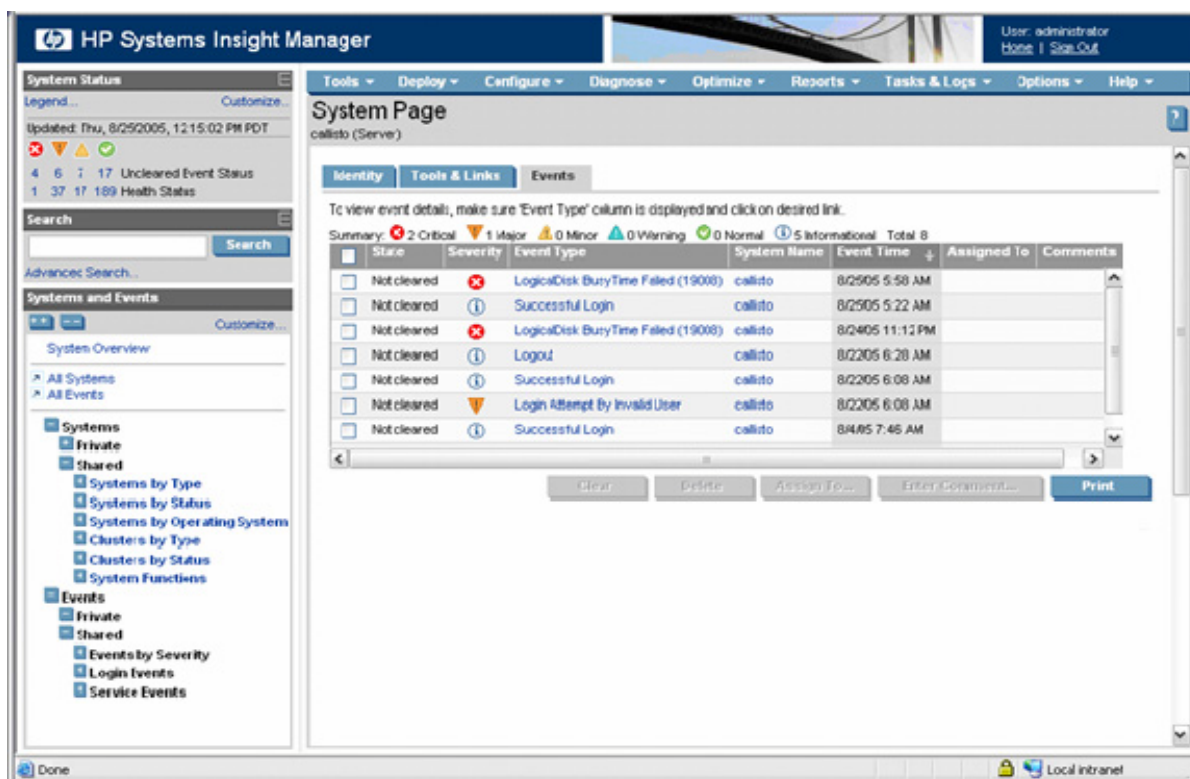
HP Systems Insight Manager can be configured to create events for NNM through an application launch. This option requires minimal configuration on the NNM server. See "Creating NNM events from HP SIM (on page 30)" for information on installing and configuring this option.

After the `hpsimtraps.nnm` trap configuration file is loaded on the NNM server, no other updates or additions to the NNM server should be required. The configuration and filtering for forwarded events is performed through HP Systems Insight Manager.

1. For more detailed information about the event, select **Actions>Views>Systems Insight Manager** in the Alarm Browser. HP SIM launches to the selected node.



- After HP SIM has started, click the **Events** tab to view all the events for the selected node.



The following event definitions are in the hpsimtraps.nnm file:

```
Enterprise: compaq-str {.1.3.6.1.4.1.232.1.3.1}
```

```
#
```

```
HPSIM_101 {.1.3.6.1.4.1.232.1.3.1} 6 101 A "Status Alarms" 5
```

```
$1
```

```
SDESC
```

This is a critical event received by HP Systems Insight Manager and forwarded to Network Node Manager.

```
EDESC
```

```
HPSIM_102 {.1.3.6.1.4.1.232.1.3.1} 6 102 A "Status Alarms" 4
```

```
$1
```

```
SDESC
```

This is a major event received by HP Systems Insight Manager and forwarded to Network Node Manager.

```
EDESC
```

```
HPSIM_103 {.1.3.6.1.4.1.232.1.3.1} 6 103 A "Status Alarms" 3
```

```
$1
```

```
SDESC
```

This is a minor event received by HP Systems Insight Manager and forwarded to Network Node Manager.

```
EDESC
```

```
HPSIM_104 {.1.3.6.1.4.1.232.1.3.1} 6 104 A "Status Alarms" 1
```

```
$1
```

SDESC

This is a normal event received by HP Systems Insight Manager and forwarded to Network Node Manager.

EDESC

```
HPSIM_105 { .1.3.6.1.4.1.232.1.3.1 } 6 105 A "Status Alarms" 1 $1
```

SDESC

This is an informational event received by HP Systems Insight Manager and forwarded to Network Node Manager.

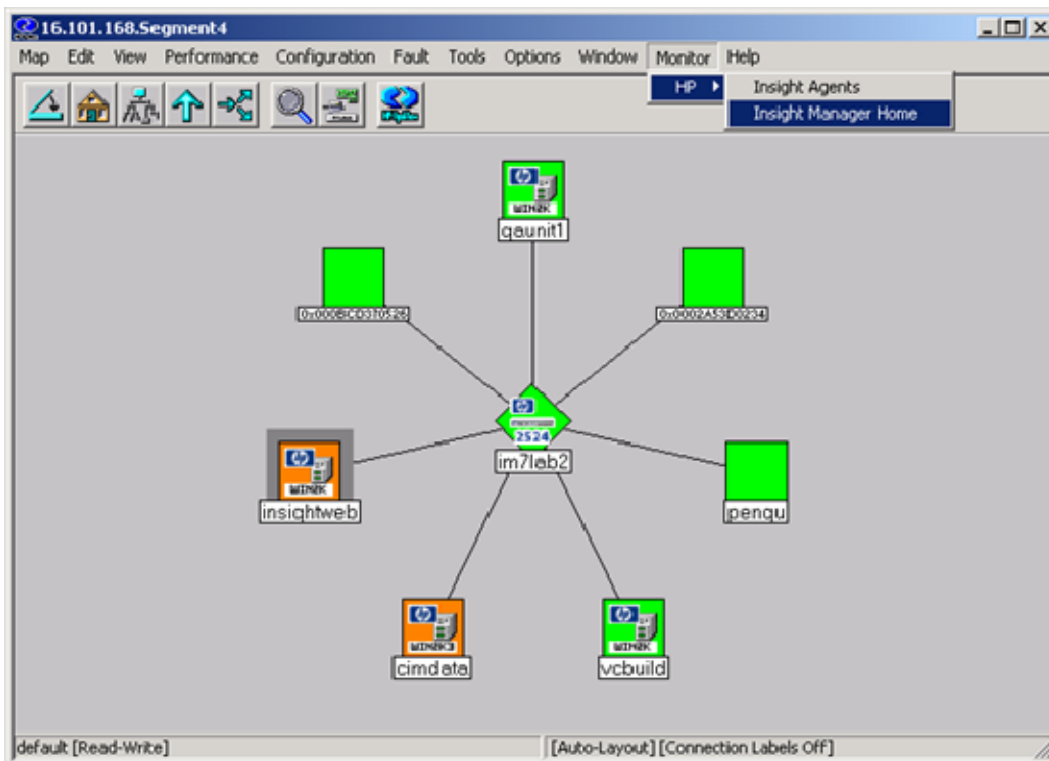
EDESC

Using the Insight Integration with the NNM Remote Console

The Insight Integration includes support for the NNM Remote Console installation running on Microsoft® Windows®. The supported Remote Console installation can be used with an NNM server running on Windows®, HP-UX, or Solaris.

The full integration should be installed on the NNM server. After the full integration is installed on the server, the Remote Console install script in the Windows® integration download should be executed on the Remote Console system.

The Monitor-HP-Discover and Monitor-HP-Status Update menu items are not available on the Remote Console installation. These menu items are only available on the NNM server.



Troubleshooting

In this section

Frequently asked questions	85
Error messages	87
Message logs and application error messages.....	88
Validating the configuration	88
Checking the status of background processes	89
Additional resources	89

Frequently asked questions

Why are there undefined alarms in the event log?

If alarms similar to the following continue to appear in the Alarm Browser, the trap definitions for the integration module might not be installed correctly. Verify that the trap definition files are properly installed.

Reload the trap definitions by executing `xnmevents -load newtraps.cpq`, then stop and restart the HP OpenView services using the `OVSTOP` and `OVSTART` commands.

In the following messages, "nnmsystem.mse.com" is the name of the server running NNM.

```
- Normal Fri Sep 13 10:30:16 nnmsystem.mse.com Received event
.1.3.6.1.4.1.232.1.3.2.0.3001 (enterprise:.1.3.6.1.4.1.232.1.3.2
generic:6 specific:3001), no format in trapd.conf. 1 args: [1]
private.enterprises.compaq.cpqStdEquipment.3.2 (Integer): 7215
- Normal Fri Sep 13 10:30:16 nnmsystem.mse.com Received event
.1.3.6.1.4.1.232.1.3.11.0.3003 (enterprise:.1.3.6.1.4.1.232.1.3.11
generic:6 specific:3003), no format in trapd.conf. 1 args: [1]
private.enterprises.compaq.cpqStdEquipment.3.11 (Integer): 7215
- Normal Fri Sep 13 10:30:16 nnmsystem.mse.com Received event
.1.3.6.1.4.1.232.1.3.3.0.3002 (enterprise:.1.3.6.1.4.1.232.1.3.3
generic:6 specific:3002), no format in trapd.conf. 1 args: [1]
private.enterprises.compaq.cpqStdEquipment.3.3 (Integer): 7215
- Normal Fri Sep 13 10:30:17 nnmsystem.mse.com Received event
.1.3.6.1.4.1.232.1.3.2.0.3001 (enterprise:.1.3.6.1.4.1.232.1.3.2
generic:6 specific:3001), no format in trapd.conf. 1 args: [1]
private.enterprises.compaq.cpqStdEquipment.3.2 (Integer): 7217
```

Why are known HP nodes not classified as HP servers on the NNM map?

Complete the following to verify communication with the system:

1. Right-click the node, and select **Object Properties**.
2. Open a command prompt, and ping the selection name displayed in the Object Properties dialog box.
3. If you cannot ping the selection name, add it to the hosts file on the system. The device should be classified correctly.

4. If this action has no effect, verify the console can communicate with the HP Insight Management Agents.
5. Run `cpqchksnmp` in the `%OV_MAIN_PATH%/install/tools/cpq` directory to verify a system is running SNMP. For example:

```
cpqchksnmp 172.25.162.30 public
```
6. Run `cpqchkagnt` in the `%OV_MAIN_PATH%/install/tools/cpq` directory to verify a system is running the HP agents. For example:

```
cpqchkagnt -n 172.25.162.30
```
7. Verify HP OpenView NNM can get the operating system information from the desired system:
 - a. Run the HP OpenView MIB browser (`%OV_BIN%/xnmbrowser`).
 - b. Enter the host name or IP address of the system.
 - c. Enter the community name to use for communication.
 - d. Enter `.1.3.6.1.4.1.232.11.2.2` for the MIB Object ID.
 - e. Click **Start Query**.

The results should display the operating system name and version, similar to the following (depending on the operating system) in the MIB Values field:

```
1.0:Microsoft® Windows NT® Server
2.0:4.00
3.0:Service Pack 6 1381 Uniprocessor Free
4.0:3
5.0:3
```

If you cannot obtain any results, the system cannot communicate with the HP Insight Management Agents.

Why do the HP Insight Information options return errors when querying a node?

SNMP must be installed and configured for the Insight Information menu items to work properly. In addition, the correct community string must be configured within NNM.

If you receive the error, "Could not perform SNMP get from HOSTNAME: No response arrived before timeout," verify that the correct SNMP community string is being used.

If you receive the message, "Note: requested information is not available from HOSTNAME," be aware that, in most cases, this message is not an error. The most likely cause of this message is requesting information that is not implemented on the target node. For example, selecting **Insight Information>Drives>SCSI** on a system that only has a drive array (no SCSI devices) results in this message.

Why are RILOE, RILOE II, iLO, or iLO 2 management processors not being discovered and associated with the server?

The HP Insight Management Agents must be installed and configured on the target server, and the Remote Insight Agent must be running.

Why are systems not appearing on the NNM Segment Map even though the Insight Integration is installed?

1. Verify that the HP Insight Management Agents are installed and active. If HP Insight Management Agents are not in use or not correctly enabled, your systems will not be discovered. HP recommends HP Management Agents for Servers 5.0 or later and HP Management Agents for Clients 4.20 or later as a minimum.
2. Be sure that the CPQDIS background process is running by using the `OVSTATUS` command ("[Checking the status of HP background processes](#)" on page 33).

If the problem persists, you might have a general configuration or communication problem ("[Validating the configuration](#)" on page 88).

Why does the Insight Agent icon within the NNM device window display WEB DISABLED and the HP Management Agent launch does not execute?

This message indicates that the web-enabled HP Insight Management Agents are not being used. Web-enabled agents are required to activate the integrated browser launch and provide direct access to the data collected by the HP Management Agents.

Verify that HP Management Agents for Servers 5.0 or later and HP Management Agents for Clients 4.20 or later are installed and configured for all HP monitored systems.

Why are SNMP events not showing up within the NNM Event Browser?

1. Verify that the SNMP trap destination is correctly specified on all monitored nodes so that traps are sent to the NNM console.
2. Be sure that the CPQTRAPD background process is running by using the `OVSTATUS` command ("[Checking the status of HP background processes](#)" on page 33).
3. Inspect the TRAPD.LOG file to determine if the raw trap is being received.

If the problem persists, you might have a general configuration or communication problem ("[Validating the configuration](#)" on page 88).

Why does the browser return an incomplete Web page when I click the WEB_ENABLED icon to launch to the HP Management Agents? Why does the device home page appear, but options to access the HP Management Agents do not?

Be sure that your browser application has the Java™ and JavaScript options selected and enabled. These options can usually be found under the Advanced component of the Preferences or Internet Options configuration windows.

Why, after the NNM device discovery, do the Insight Integration device icons on the IP Segment Map revert to the default HP OpenView images?

The following environment variable must be included to the `$HOME/.dtprofile` file for each user ID used to view the NNM maps. Open the file and verify that the following lines are included in each file:

```
IPMAP_NO_SYMBOL_CHANGES=TRUE
export IPMAP_NO_SYMBOL_CHANGES
```

The status indications for nodes are only available on selected maps. Why can I not see system status reflected on all NNM maps?

This symptom can occur if Map Persistence is not enabled ("[Additional configuration requirements](#)" on page 22). Enabling Map Persistence ensures that the HP status updates are populated on both the main map and submaps within the NNM console.

Why can I not browse to the HP System Management Homepage and view Insight Management Agent data on the host NNM system?

If you have HP Insight Management Agents installed on a ProLiant server that also acts as the NNM host, you must configure the SNMP EMANATE agent with the correct settings to enable proper operations ("[Configuring SNMP on an HP ProLiant server running NNM](#)" on page 32).

Error messages

Error messages from all processes associated with the Insight Integration are logged in the file `TMP/CIMOVERR.LOG`. View this file if you have problems with either HP OpenView NNM or the HP integration.

The log contains information to help rectify the problem. If the problem persists, see "Frequently asked questions (on page 85)" and "Before contacting Technical Support (on page 90)" for further assistance.

Message logs and application error messages

The Insight Integration creates many files that can contain a variety installation and operational messages. If you are having problems with HP OpenView NNM and the Insight Integration, view these files for further information and problem analysis.

See "Validating the configuration (on page 88)" to confirm that the Insight Integration has installed correctly and to resolve any problems.

- Error messages from all processes of the Insight Integration are logged to the file TMP\CIMOVERR.LOG or TEMP\CIMOVERR.LOG.
- Installation messages from the Insight Integration are logged to the file tmp/ciminstall.log on UNIX® and the file %OV_BIN%\ciminstall.log on Windows.
- Uninstall messages from the Insight Integration are logged to the file tmp/cimuninstall.log on UNIX® and the file %OV_BIN%\cimuninstall.log on Windows.
- Install and uninstall error messages are logged to the file tmp/cimerror.log on UNIX® and the file %OV_BIN%\cimerror.log on Windows.

If problems persist, contact HP Technical Support.

Validating the configuration

To verify that the application is configured properly, the following tools are provided in the \$OV_INSTALL/TOOLS/CPQ directory. Run the following tools from a command line prompt to display relevant messages and appropriate actions.

- CPQCHKSNMP checks for SNMP connectivity with a given node and given community string.
- CPQCHKAGNT detects whether the SNMP master agent and the HP Management Agents are active on a given node. The following is an example of the syntax:
`CPQCHKAGNT [-n nodename -f filename : Hostname/IP-Address of node]`
- CPQCHECK checks for:
 - Valid values in the environment variables
 - The presence of all the configuration files required by the Insight Integration
 - Syntax of all the configuration files
 - Authorization of the package
 - The presence of all the registration files required by the application

The process within the CPQCHECK utility can also be performed individually by using the following commands:

- CPQCHKENV checks for the following environment variables:
 - IPMAP_NO_SYMBOL_CHANGES=TRUE
 - OV_BIN
- CPQCHKREG checks for the presence of all the registration files.
- CPQCHKCONF checks the syntax of CPQCONFIG.DAT.
- CPQCHKTRAPD checks the syntax of CPQTRAPD.CONF.
- CPQCHKSTR checks the syntax of CPQVAL2STR.TRAP and CPQVAL2STR.INFO.
- CPQCHKNODE checks the syntax of CPQNODE.DAT.

- CPQCHKAUTH displays the authorization details of the HP integration.

Checking the status of background processes

Run the `OVSTATUS` command from a command line prompt to confirm that the Insight Integration background processes are active.

The Insight Integration uses two background processes, which provide discovery of HP nodes on the NNM management map and translate HP SNMP events at the NNM Event Browser:

- CPQDIS
- CPQTRAP

If either of these processes is not displayed as active, configuration or communication problems might exist. See "Validating the configuration (on page 88)" for information on confirming that the Insight Integration installed correctly. For more information, see the *HP OpenView Network Node Manager User's Guide*.

Normally, the process management daemon, `OVSPMD`, starts these processes when the operating system is initialized. If any of these background processes are not running, start them by entering the `OVSTART` command before initializing the OVW. For more information, see the *HP OpenView Network Node Manager User's Guide*.

Additional resources

The following additional resources are available:

- Frequently asked questions (<http://h18000.www1.hp.com/products/servers/management/openview/>)
- HP Management Integration Support website (<http://h18000.www1.hp.com/products/servers/management/>)
- HP OpenView user documentation (http://h20229.www2.hp.com/?jumpid=reg_R1002_USEN)

Technical support

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Before contacting Technical Support

If you are having problems installing or configuring the Insight Integration, complete the following steps before calling Technical Support (on page 90):

- Review the "Installation (on page 13)" section
- Review the "Troubleshooting (on page 85)" section
- Provide copies of the following files:
 - Installation log file CIMINSTALL.LOG
 - Error log file TMP/CIMOVERR.LOG
 - Screen output from the diagnostic tools ("Validating the configuration" on page 88)

HP contact information

For the name of the nearest HP authorized reseller:

- In the United States, see the HP US service locator webpage (http://www.hp.com/service_locator).
- In other locations, see the Contact HP worldwide (in English) webpage (<http://welcome.hp.com/country/us/en/wwcontact.html>).

For HP technical support:

- In the United States, for contact options see the Contact HP United States webpage (http://welcome.hp.com/country/us/en/contact_us.html). To contact HP by phone:
 - Call 1-800-HP-INVENT (1-800-474-6836). This service is available 24 hours a day, 7 days a week. For continuous quality improvement, calls may be recorded or monitored.
 - If you have purchased a Care Pack (service upgrade), call 1-800-633-3600. For more information about Care Packs, refer to the HP website (<http://www.hp.com>).
- In other locations, see the Contact HP worldwide (in English) webpage (<http://welcome.hp.com/country/us/en/wwcontact.html>).

Acronyms and abbreviations

HTTP

hypertext transfer protocol

iLO

Integrated Lights-Out

iLO 2

Integrated Lights-Out 2

IML

Integrated Management Log

IP

Internet Protocol

MIB

management information base

NNM

Network Node Manager

RILOE

Remote Insight Lights-Out Edition

RILOE II

Remote Insight Lights-Out Edition II

SNMP

Simple Network Management Protocol

TCP/IP

Transmission Control Protocol/Internet Protocol

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