HP Network Node Manager i-Series Software

For the Windows®, HP-UX, Linux, and Solaris operating systems

Software Version: NNMi 8.1x patch 5 (8.13)

Online Help: Using the Console

PDF Version of NNMi Online Help

This document is a PDF version of the NNMi online help. This PDF file is provided so you can easily print multiple topics from the help information or read the online help in PDF format.

Note: Some topics do not convert properly to PDF format. You may encounter formatting problems or unreadable text in certain document locations. Those problem topics can be successfully printed from within the online help.

Legal Notices

Warranty

The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

The information contained herein is subject to change without notice.

Restricted Rights Legend

Confidential computer software. Valid license from HP required for possession, use or copying. Consistent with FAR 12.211 and 12.212, Commercial Computer Software, Computer Software Documentation, and Technical Data for Commercial Items are licensed to the U.S. Government under vendor's standard commercial license.

For information about third-party license agreements, see the license-agreements directory on the product installation media.

Copyright Notices

© Copyright 2009 Hewlett-Packard Development Company, L.P.

This product includes software developed by the Apache Software Foundation (http://www.apache.org/). Portions Copyright © 1999-2003 The Apache Software Foundation. All rights reserved.

This product includes ASM Bytecode Manipulation Framework software developed by Institute National de Recherche en Informatique et Automatique (INRIA). Copyright © 2000-2005 INRIA, France Telecom. All Rights Reserved.

This product includes Commons Discovery software developed by the Apache Software Foundation (http://www.apache.org/). Copyright © 2002-2009 The Apache Software Foundation. All Rights Reserved.

This product includes Netscape JavaScript Browser Detection Library software, Copyright © Netscape Communications 1999-2001

This product includes Xerces-J xml parser software developed by the Apache Software Foundation (http://www.apache.org/). Copyright © 1999-2002 The Apache Software Foundation. All rights reserved.

This product includes software developed by the Indiana University Extreme! Lab (http://www.extreme.indiana.edu/). Xpp-3 Copyright © 2002 Extreme! Lab, Indiana University. All rights reserved.

Trademark Notices

DOM4J® is a registered trademark of MetaStuff, Ltd.

HP-UX Release 10.20 and later and HP-UX Release 11.00 and later (in both 32 and 64-bit configurations) on all HP 9000 computers are Open Group UNIX 95 branded products.

Java™ is a US trademark of Sun Microsystems, Inc.

Oracle® is a registered trademark of Oracle Corporation and/or its affiliates.

Microsoft® and Windows® are U.S. registered trademarks of Microsoft Corporation.

UNIX® is a registered trademark of The Open Group.

Oracle Technology — Notice of Restricted Rights

Programs delivered subject to the DOD FAR Supplement are 'commercial computer software' and use, duplication, and disclosure of the programs, including documentation, shall be subject to the licensing

restrictions set forth in the applicable Oracle license agreement. Otherwise, programs delivered subject to the Federal Acquisition Regulations are 'restricted computer software' and use, duplication, and disclosure of the programs, including documentation, shall be subject to the restrictions in FAR 52.227-19, Commercial Computer Software-Restricted Rights (June 1987). Oracle USA, Inc., 500 Oracle Parkway, Redwood City, CA 94065.

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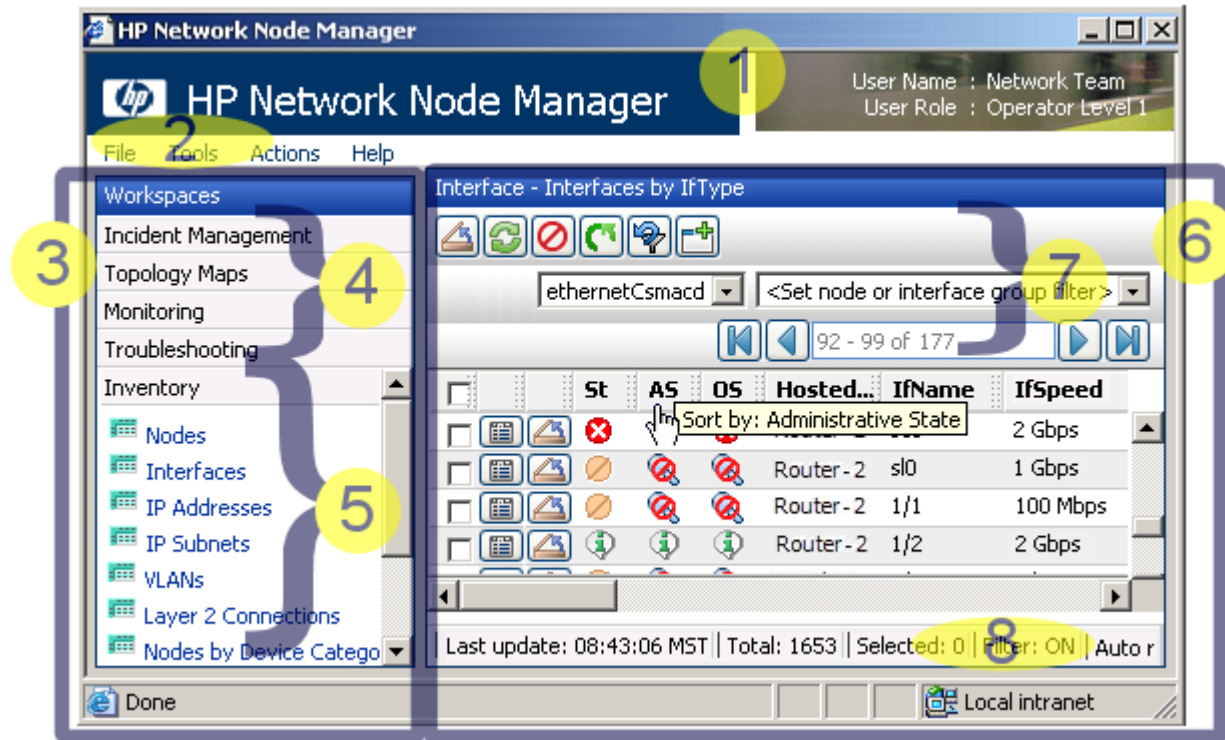
Table of Contents

About the NNMi Console

The HP Network Node Manager (NNMi) console is the graphical user interface for your NNMi application. The main features of the console are shown in the following diagram and explained in the table below .

When using the NNMi console, note the following:

● If you are using Microsoft Internet Explorer as your browser, you can sign in to multiple NNMi sessions. Use a different user name for each browser session.

● If you are using Mozilla Firefox as your browser, you can only sign in to a single NNMi session on each client system.

● You can bookmark the URL for the NNMi console.

● You can integrate NNMi with other applications, including NNM iSPIs (HP Smart Plug-ins). Therefore, you might see user interface items such as workspaces, views, or tabs that are not described in the NNMi online help. Contact your NNMi administrator if you have questions about any additional user interface items that are not described.

Network Node Manager Console Features

Feature	Description
1 Title bar	Used to identify the application you are running. The top-right corner contains the standard browser buttons for closing and resizing the console window, your current user name, and role assignment.
2 Main menu bar	Commands available in the console. Command categories include File, Tools, Actions, and Help. See "Invoke Actions" (on page 15) and "Using Actions to Perform Tasks" (on page 69). See also "Access Help" (on page 16) and "Search the Help Topics" (on page 17) for information about the tools provided to help you learn about NNMi.

3 Work-space navi-gation panel	Helps you navigate between workspaces and views. See "Display Views" (on page 12) and "About Workspaces" (on page 19).
4 Work-spaces	A context that represents your current scope of interest and work. Workspaces provide a means of grouping views for a related purpose or task flow. Multiple views are available in each workspace. See "Views Provided by NNMi" (on page 57).
5 View	Views show information about the objects being managed in your network. See "Using Views to Display Data" (on page 27) .
6 View panel	Shows the view you selected from the workspace navigation panel. Each view provides access to a group of objects. More details about each object are available when you select the object and click the 🔺 **Open** icon to display that object's form. See "Access More Information About an Object (Quick View and Forms)" (on page 14) and "Working with Objects" (on page 65) .
7 View Tool-bar	Tools available within the current view. These tools enable you to remove any data filters that you previously applied, restore any columns that you previously hid, and manipulate objects within the view. See "Using the View Toolbars" (on page 22) for more information. The drop-down selectors enable you to modify the factory-set filter values applied to the visible data. See "Filter a Table View" (on page 32).
8 Status Bar	In table views, the Status Bar shows the following information: - Total. The current number of objects in the database that match the criteria for this table (each row displays data about one object). **Note**: You might also see a LIMIT number. This indicates that NNM iSPI software (HP Smart Plug-ins), has set a limit for the current view. This number appears when the number of objects that match the criteria for the current table exceeds the number of rows allowed. See "Help for Administrators" for more information about NNM iSPI software. **Tip**: To reduce the number of objects displayed so that you see only the objects of interest, use filters. - Selected: Indicates the number of rows selected in the table. - Filter. Indicates if the currently displayed data is a filtered subset of available objects. See "Filter a Table View" (on page 32). - Auto Refresh. Indicates the current refresh time interval. See "Refresh a View" (on page 28). In map views, the Status Bar shows the following information: - The number of nodes displayed on the map. - Auto status refresh. Automatic refresh rate for the Refresh Status option. See "Refresh Node Status on a Map" (on page 46). To update other aspects of the map data (changes in node placement, nodes added, and nodes deleted), see "Refresh a View" (on page 28). **Note**: The Network Overview Map indicates the refresh rate for Auto full refresh, which refreshes both status and topology.

In both table and map views, the Status Bar displays the Last Updated time to indicate the time at which the view was last refreshed.

Configure How Mozilla Firefox Launches NNMi Requests

By default, NNMi opens:

- Forms in a new browser window.

- Online help in a new browser window.

- In the main console window, launches a duplicate of the current view in a new browser window.

To control the number of windows generated, you can configure Mozilla Firefox so NNMi launches requests in a new tab within the current Firefox window.

To configure how Mozilla Firefox launches NNMi links:

1. Open a Mozilla Firefox browser window.

2. In the URL field, type `about:config` and press **Enter**.

3. At the top of the displayed form, in the field labeled **Filter**, type `newwindow`. A list of relevant attributes displays.

4. Double-click **browser.link.open_newwindow**.

5. In the **Enter integer value** dialog box, type one of the following choices:

   1 = Launch links to replace the current Firefox window/tab.

   2 = Launch links in a new Firefox window.

   3 = Launch links in a new tab within the current Firefox window.

6. Click **OK** to save your changes and close the dialog box.

7. Double-click **browser.link.open_newwindow.restriction**.

8. In the **Enter integer value** dialog box, type one of the following choices:

   0 = Launch links according to settings in **browser.link.open_newwindow**.

   1 = Ignore settings in **browser.link.open_newwindow**.

   2 = Launch links according to settings in **browser.link.open_newwindow** unless the URL contains other window instructions.

9. Click **OK** to save your changes and close the dialog box.

Related Topics

Configure How Microsoft Internet Explorer Launches NNMi Requests

By default, NNMi opens:

- Forms in a new browser window.

- Online help in a new browser window.

- In the main console window, launches a duplicate of the current view in a new browser window.

To control the number of windows generated, you can configure Microsoft Internet Explorer so NNMi launches requests in a new tab within the current Explorer window.

To configure how Microsoft Internet Explorer launches NNMi requests:

1. From the Microsoft Internet Explorer browser, select **Tools → Internet Options**

2. Select the **General** tab.

3. Under the **Tabs** section, click **Settings**.

4. In the **Tabbed Browsing Settings** dialog, locate the radio box group labeled **When a pop-up is encountered**.

5. Make your selection:

   - **Let Internet Explorer decide...**

   - **Always open pop-ups in a new window**

   - **Always open pop-ups in a new tab**

6. Click **OK** to save your configuration and close the dialog box.

7. Click **OK** to close the **Internet Options** dialog and return to the browser window.

Related Topics

"Configure How Mozilla Firefox Launches NNMi Requests" (on page 10)

Configure the Microsoft Internet Explorer Title Bar

When using Internet Explorer, browser settings determine whether the name of an NNMi view or form displays in the title bar.

To configure Microsoft Internet Explorer to display view and form titles:

1. Open the Internet Explorer browser and click the Tools menu.

2. Select **Internet Options**.

3. Navigate to the **Security** tab, **Trusted Sites**, **Custom Level**, **Miscellaneous** section.

4. Disable the **Allow websites to open windows without address or status bars** attribute

Navigating the Console

The main window of the console is your starting point for navigation.

A *view* is a collection of related objects that are depicted as a table or map. A *form* provides all known details about a selected object.

From the main window, you can perform the following tasks:

- "Display Views" (on page 12)
- "Access More Information About an Object (Quick View and Forms)" (on page 14)
- "Invoke Actions" (on page 15)
- "Use the Tools Menu" (on page 16)
- "Access Help" (on page 16)
- "Search the Help Topics" (on page 17)

Display Views

Views contain information about the objects in your network. A view can be a table (a list of objects) or a view can be a map with icons. For example, to assist you in managing incidents, NNMi provides the Open Key Incidents and My Open Incidents table views.

To display a view:

1. Click a workspace name in the **Workspaces** navigation panel to display a group of views. For example, **Incident Management**, **Topology Maps**, **Monitoring**, **Troubleshooting**, **Inventory**, **Management Mode**, **Incident Browsing**, and **Configuration** are workspaces provided by NNMi as shown below:

2. Select the view you want.

When you select another view from the **Workspaces** navigation panel, the selected view replaces the current view.

If you open a view using the **Show View in New Window** icon, the view opens in a new window.

If you open a map view using the **Actions** menu, each unique map view displays in a new window. NNMi uses the criteria described in the following table to determine whether a map is unique.

Criteria for Displaying Maps in a New Window

Map View	Object Attribute Values that Must be Unique
Node Group Map	The Name attribute value for the Node Group.
Layer 2 Neighbor View	The Name attribute value of the Starting Node.
Layer 3 Neighbor View	The Name attribute value of the Starting Node.
Path View	The pair of Name attribute values for the Source Node and the Destination Node.

If the view has more than one page of information, use the scroll bar or the page controls to navigate through each page of the view. See "Using the View Toolbars" (on page 22) for more information about using page control.

See "Using Actions to Perform Tasks" (on page 69) for more information about views that are accessible from the console's **Actions** menu.

Access More Information About an Object (Quick View and Forms)

You can access more information about any object. For example, in your current view, you can obtain more information about a node or interface that was reported as having problems. From within the node or interface form, you can access the associated incidents.

Access a subset of object attributes by displaying the Quick View:

To access Quick View from a table view:

Click or mouse over the ⊞ Quick View icon in the row that represents the object of interest.

The Quick View window displays a subset of available object attributes.

Note: The Quick View window automatically closes after a short interval. To prevent the Quick View window from closing, click anywhere within the Quick View window.

To access Quick View from a map view:

Mouse over the object of interest.

The Quick View window displays a subset of available object attributes.

Note: The Quick View window automatically closes after a short interval. To prevent the Quick View window from closing, click anywhere within the Quick View window.

Access all object attributes and related objects by displaying the form:

To open a form using Tools → Find Node:

See the "Use the Tools Menu" (on page 16) for more information.

To open a form from a table view:

Click the ◿ Open icon in the row that represents the object of interest.

The form appears, containing the details about the object. For more information, see "Working with Objects" (on page 65).

To open a form from a map view:

Do one of the following:

- Select the map object. Then, click the ◿ Open icon in the toolbar.
- Double-click the map object.

Note: If the map object is a Child Node Group, double-clicking the Child Node Group object replaces the current map with a map containing each of the nodes in the Child Node Group. To access a Child Node Group form, use the ◿ Open icon in the toolbar.

The form appears, containing the details about the object. For more information, see "Working with Objects" (on page 65).

To open multiple forms from a table view:

Note: You can open a maximum of 10 objects at one time.

1. Select each object of interest by clicking the ☑ selection box in the row that represents the object.

    Note: To select *all* the objects in a view, click the ☑ selection box at the top of the selection column (in the view display panel toolbar).

2. Click the ⬈ Open icon in the toolbar.

    A form for each object appears, containing the details about the object. For more information, see "Working with Objects" (on page 65).

To open multiple forms from a map view:

Note: You can open a maximum of 10 objects at one time.

1. Select each object of interest by using Ctrl-Click.

2. Click the ⬈ Open icon in the toolbar.

    A form for each object appears, containing the details about the object. For more information, see "Working with Objects" (on page 65).

Related Topics

"Using the Form Toolbar" (on page 26)

Invoke Actions

To perform an action, you select an action from the **Actions** menu. The **Actions** menu is accessible from the NNMi console main menu toolbar, from a form menu toolbar, and from the menu toolbar in any view that is opened in a new window.

Note: The actions available to you depend on your user role and on the object selected. If no actions are available for a particular object, the Actions menu is empty.

To invoke an action from a table or map view:

1. If you do not have a view displayed, from the workspace navigation panel, select a view:

    - In a table view, select the objects of interest by checking the ☑ selection box that precedes each object of interest.

    - In a map view, single-click the object of interest. For multiple selection, use Ctrl-click.

2. Select the **Actions** menu in the menu toolbar of the NNMi console or map view.

3. Select the action you want to perform from the list of available actions.

To invoke an action from a form:

1. If you do not have a form open, from the workspace navigation panel, select the table view you want to access.

2. From the table view, click the ⬈ Open icon to open the object instance (for example, node) you want to update.

3. From the form menu toolbar, select Actions and then the action you want; for example, select **In Progress** to change the lifecycle state of the selected incident to **In Progress**.

When invoking actions, note the following:

- If you are running an action that modifies attributes on a form, the action takes effect immediately. You do not have to select ⊞ Save.

- An action might cause a new window to open.

- In the Actions menu, you may find choices that are not documented. Your administrator can add menu choices.

- If you selected the wrong number of objects for an action, you can de-select all objects by clicking twice on the ☑ selection box that appears above the column in the row. (The first click selects all objects and the second click de-selects all objects.)

Related Topics

"Using Actions to Perform Tasks" (on page 69)

Use the Tools Menu

Several tools are provided beneath the **Tools** menu. The list of tools changes depending on the role to which you are assigned. The tools listed in the following table are available to all users.

NNMi Tools Menu Options

Tool	Description
Find a Node	Searches the NNMi database for a specific Node by using the current value of the Name (case-sensitive), Hostname (case-sensitive), IP address, or MIB II sysName (case-sensitive) attributes. If multiple matches are found, NNMi displays the Node form of the first match.
	Note: NNMi converts the fully-qualified DNS hostnames to all lowercase when storing the discovered hostname in the NNMi database.
Find Attached Switch Port	Identifies the switch port to which the selected node is attached.
NNMi Status	Displays a list showing the status of each process and service of NNMi. When NNMi is functioning properly, each process and service should be running. If one is not running, contact your NNMi administrator.
Restore All Default View Settings	Removes all view customizations, and resets all views to their default settings. See "Restore Table Defaults" (on page 42) for more information.

Access Help

Note: Context-sensitive help is not available when pressing [F1]. Use the NNMi Help menu, instead.

If you have a Guest user role, start with the topics in **Help → Using the Console**. More information about each view is in **Help → Help for Operators**. If you need more information about a form, use the **Help → Using the <name> form** within the form.

If you are an Operator, task information is provided in **Help → Help for Operators**. If you are an Administrator, all the resources described in the table below are valuable.

To access the help:

1. Select **Help** from the NNMi console main menu.

2. From the help you can access all the information described in the table below.

Help → Links

Help Link	Description
Using the <*name*> form	Context-sensitive help for the current form.
Using the Console	Explains how to use the NNMi console, including how to navigate within the console, as well as how to access and use the forms and views NNMi provides.
Help for Operators	Describes how to use the views, forms, and additional NNMi features that are useful for monitoring and troubleshooting the network.
Help for Administrators	Explains how NNMi works and how you can configure NNMi to meet your needs. Describes how to use the Configuration workspace that lets you configure a variety of objects and settings for NNMi.
Documentation Library	Provides access to Reference Pages (command line tool information), the Installation Guide, and Release Notes.
HP Software Support Website	Launches the HP Software support web site.
About HP Network Node Manager i-series	Licensing and health information about NNMi. See "Displaying NNMi Information" (on page 72).

Related Topics

"Search the Help Topics" (on page 17)

"Mark Your Favorite Help Topics" (on page 18)

Search the Help Topics

To search for specific information across all help topics:

1. In the navigation pane of the Help window, click the **Search** tab.

2. Type in a search string (see table).

3. Click the **Search** button. The order of the resulting list of topics is based on a ranking order, with highest ranking topics at the top of the list.

Search Variables

Description	Variable	Example
Search for one or more words. When you enter a group of words into the search field, "or" is inferred.		node interface
Search for a phrase.	" " (wrap a text string in quotes)	"navigation pane"
Search for "either of" or "any of" specific strings.	OR (case insensitive)	node or interface or address
	| (pipe symbol)	"node name"|- "interface status"
Search for two or more specific strings.	AND (case insensitive)	node And interface And address
	+ (plus symbol)	"node name"+- address
	& (ampersand)	"node name"&- "interface"
Search for all topics that do not contain something.	NOT (case insensitive)	not node
	! (exclamation mark)	! node
Search for all topics that contain one string and do not contain another.	^ (carat symbol)	node ^ interface
Combinations of the above.	( ) parenthesis	node and (name or status)
		node or vlan (!address)

Note: Results returned are case insensitive. However, results ranking takes case into account and assigns higher scores to case matches. Therefore, a search for "templates" followed by a search for "Templates" would return the same number of help topics, but the order in which the topics are listed would be different.

Mark Your Favorite Help Topics

Use the Favorites tab in the Help system to set favorites for your commonly used help topics.

When using this feature, note the following:

- This feature is not related to the Favorites option in your Web browser.

- Any time you delete your Web browser cookies, your help topic favorites list is deleted.

About Workspaces

A workspace is a collection of views that represent a scope of interest and work. Workspaces group views with a related purpose or task flow. NNMi includes the following workspaces:

- Incident Management

- Incident Browsing

- Topology Maps

- Monitoring

- Troubleshooting

- Inventory

Note: If your role includes Administrator privileges, you also can access the Management Mode and Configuration workspaces. See "Help for Administrators" for more information.

The views within workspaces provide convenient access to information associated with each object type represented. A view displays all the objects of a given type that meet the filter criteria specified for that view.

When you click the name of a workspace, the views associated with that workspace display below the workspace in the workspace navigation panel. After you select a view, the view display panel shows the requested data. See "About the NNMi Console" (on page 8) and "Display Views" (on page 12) for more information about the workspace navigation and view display panels.

Use the **Incident Management** workspace to access the incidents that are most important to the network Operator and that often require more immediate action. Incident views include Open Key Incidents, Unassigned Open Key Incidents, and My Open Incidents. The Open Key Incidents views includes those incidents whose Lifecycle State is **Registered**, **In Progress**, or **Completed** and whose Correlation Nature is any of the following:

Incident Correlation Nature	Description
None	Indicates there is no incident correlation for this incident.
Root Cause	Indicates the incident that reports the root cause of a problem.
Service Impact	Indicates a relationship between incidents in which a network service is effected by other incidents. By default, NNMi generates Service Impact incidents for Router Redundancy Groups. For example, an Interface Down incident can effect a Router Redundancy Group that is part of an HSRP service. The Service Impact incident helps to identify the service that is affected. This Correlation Nature is available for use by NNM iSPIs (HP Smart Plug-ins). See "Help for Administrators" for more information about HP Smart Plug-ins.
Stream Correlation	Indicates the correlations that NNMi's event pipeline establishes as it recognizes patterns in the flow of events through the pipeline. Correlations are created as NNMi analyzes events and traps to determine the root cause incident for a problem. Examples of stream correlations include Dedup (duplication of events) and Rate (occurrence of events by time) correlations.

The Unassigned Open Key Incidents view includes the Key Incidents that are unassigned and whose Life-cycle State is **Registered**, **In Progress**, or **Completed**. The My Open incidents view includes the incidents that have a Lifecycle State that is **Registered**, **In Progress**, or **Completed** and are assigned to the current user.

The **Incident Browsing** workspace includes the following views related to Key incidents:

- Open Key Incidents by Severity

- Open Key Incidents by Priority

- Open Key Incidents by Category

- Open Key Incidents by Family

- Closed Key Incidents

- Key Incidents by Lifecycle State

Each of these Key Incident views is filtered based on where the incident resides in its Lifecycle State. For example, the Open Key Incidents by Severity view displays all Key Incidents whose Lifecycle State value is other than Closed. The Closed Key Incidents view displays all incidents whose Lifecycle State is Closed.

The **Topology Maps** workspace includes a Node Group map view of all top-level Node Groups created in your network, as well as map views of your Network Device Infrastructure, Layer 3 (routers) and Layer 2 (switches) network. See "Help for Operators" for more information about Node Groups. An NNMi admin-istrator, or a role assigned by the NNMi administrator, can change the map views listed in this workspace. See "Help for Administrators" for more information.

The **Monitoring** workspace includes views to check for those nodes, interfaces, IP addresses, and Node Groups whose Status is Critical or other than Normal. This view also provides views for checking the health of node components.

Within the **Troubleshooting** workspace, you can access a variety of map views, including the following:

- Layer 2 Neighbor View

- Layer 3 Neighbor View

- Path View

- Node Group Map

The Layer 2 Neighbor View map displays Layer 2 network connectivity. The Layer 3 Neighbor View map displays Layer 3 network connectivity. The Path View map displays the active path between a source and destination node, useful when troubleshooting data flow problems. The Node Group Map view displays all nodes within a specified group.

Within the **Inventory** workspace are the following views:

- Nodes

- Interfaces

- IP Addresses

- IP Subnets

- VLANs

- Layer 2 Connections

- Node Groups

- Interface Groups

- Management Stations

- Router Redundancy Groups

Each view in the Inventory workspace contains information related to the object listed. For example, the Nodes view contains information related to the Nodes object. The Interfaces view contains information related to the Interface object. The IP Subnets view contains information related to the IP Subnet object.

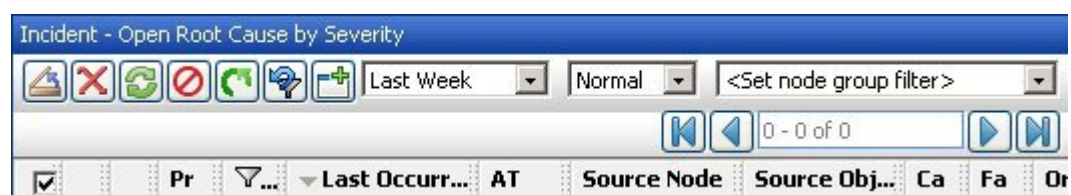**Related Topics**

"Views Provided by NNMi" (on page 57)

Using the View Toolbars

NNMi provides toolbars for the following types of views:

- Table views

- Node Group Map views

- Neighbor views

- Path View

Table View Toolbar

This is the table view display panel toolbar:

Use the table view toolbar to perform the following tasks within the displayed view.

View Toolbar Icons

Icon	Description
	Displays the form for the selected object. See "Access More Information About an Object (Quick View and Forms)" (on page 14).
	If your role allows, deletes the selected object instance and any objects contained in that object. For example, deleting a node also deletes the interface and address instances associated with that node.
	Refreshes the current view. See "Refresh a View" (on page 28) for more information. Restarts periodic refresh if it has been disabled.
	Temporarily disables the periodic refresh of a view. See "Stop Periodic Refresh of a View" (on page 29) for more information.
	Resets default settings, including the resizing of table columns, sort selections, and filters. Any hidden columns are restored to the view. See "Hide a Column" (on page 30).
	Clears any currently applied filters. See "Filter a Table View" (on page 32).
	(Only available from the main console.) Displays the current view in a new window.
Last Week ▾	Selects a time period filter. This filter only appears in incident views.
<attribute> ▾	Use to select the attribute value by which to filter the view. For example, **Normal** is a possible value for the **Severity** filter. Filters are used in the views that include "by" in the view name (for example **Open Key Incidents by Severity**).
<Set node group filter> ▾	Selects an available node group or interface group filter.

Icon	Description
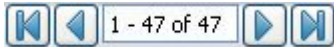
The page controls only appears when viewing tables. They let you page through table information by rows.

Use ▶ to move forward one page.

Use ◀ to move back one page.

Use ◀◀ to move to the top of the table.

Use ▶▶ to move to the end of the table.

The page control displays the total number of rows in the current table, as well as which group of rows within that total is currently visible.
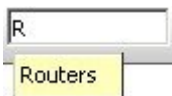
Node Group Map Toolbar

This is the Node Group Map display panel toolbar:

The Node Group Map view toolbar lets you perform the following tasks within the displayed map.

Node Group Map Toolbar Icons

Icon	Description
	Navigates back to the previous Node Group Map that was displayed.
	Opens the Node Group Map for the selected Child Node Group. The Child Node Group map replaces the current map and displays each node within the Child Node Group.
	Note: You can also double-click the Child Node Group object to open the Node Group Map for the selected Child Node Group.
	See the "Help for Operators" for more information about Node Groups and Child Node Groups.
	Displays the form for the selected object. See "Access More Information About an Object (Quick View and Forms)" (on page 14).
	Refreshes the current view. See "Refresh a View" (on page 28) for more information. In table views, if the periodic refresh has been disabled, this icon also restarts the periodic refresh.
	Refresh status. Refreshes only the status of each node in the map. See "Refresh Node Status on a Map" (on page 46) for more information.
	Saves the current position of each of the nodes on the current Node Group Map.
	Note: Each time you use this option, any previous location information is deleted.
	(Only available from the main console.) Displays the current view in a new window.

Icon	Description
R Routers	Enables you to identify the Node Group whose map you want to display. **Note**: As you type, NNMi provides a selection list of all current valid entries matching your criteria (case sensitive). You must use one of the suggested values.
Disable Quick View ☐	Controls whether Quick View information appears each time the mouse cursor is placed over an object on a map. See "Control Quick View on a Map" (on page 47) for more information.
Indicate Key Incidents ☐	Controls whether NNMi enlarges any Source Object on a Node Group map that has a key incident associated with it. See "Node Group Map Objects" (on page 49) for more information.

Neighbor View Toolbar

This is the neighbor view display panel toolbar:

Layer 2 Neighbor View						
△	↻	↻	⊞	Node or IP:	Number of Hops: 1 ▾	Disable QuickView: ☐

The neighbor view toolbar lets you perform the following tasks within the displayed view.

Neighbor View Toolbar Icons

| Icon	Description
△	Displays the form for the selected object. See "Access More Information About an Object (Quick View and Forms)" (on page 14).
↻	Refreshes the current view. See "Refresh a View" (on page 28) for more information.
↻	Refresh status. Refreshes only the status of each node in the map. See "Refresh Node Status on a Map" (on page 46) for more information.
⊞	(Only available from the main console.) Displays the current view in a new window.
Node or IP:	Specify the starting node whose neighbors you want to map. Populate this field with the current value of the node's Name attribute or one of the Node's IP addresses. **Note**: As you type, NNMi provides a selection list of all current valid entries matching your criteria. You must use one of the suggested values.
Number of Hops: 1 ▾	Select the number of hops to be displayed within the map view. A hop is a node representing any network device, such as a workstation, gateway, or switch, which is connected by a link with no intermediate nodes.
Disable Quick View ☐	Controls whether Quick View information appears each time the mouse cursor is placed over an object on a map. See "Control Quick View on a Map" (on page 47) for more information.

Path View Toolbar

This is the Path View display panel toolbar:

The Path View toolbar lets you perform the following tasks within the displayed view.

Path View Toolbar Icons

Icon	Description
	Displays the form for the selected object. See "Access More Information About an Object (Quick View and Forms)" (on page 14).
	Refreshes the current view. See "Refresh a View" (on page 28) for more information.
	Refresh status. Refreshes only the status of each node in the map. See "Refresh Node Status on a Map" (on page 46) for more information.
	(Only available from the main console.) Displays the current view in a new window.
Source:	Specify the source node to be used in the Path View.
	Populate this field with the current value of the node's Hostname attribute or one of the node's IPv4 addresses.
	Note: As you type, NNMi provides a selection list of all current valid entries matching your criteria. You must use one of the suggested values.
	Swaps the source and destination nodes in the Path View.
Destination:	Specify the destination node in the Path View.
	Populate this field with the current value of the node's Hostname attribute or one of the node's IPv4 addresses.
	Note: As you type, NNMi provides a selection list of all current valid entries matching your criteria. You must use one of the suggested values.
	Computes the Path View.
	Note: Also use this icon to re-compute the Path View.
Disable Quick View	Controls whether Quick View information appears each time the mouse cursor is placed over an object on a map. See "Control Quick View on a Map" (on page 47) for more information.

Using the Form Toolbar

This is the form toolbar:
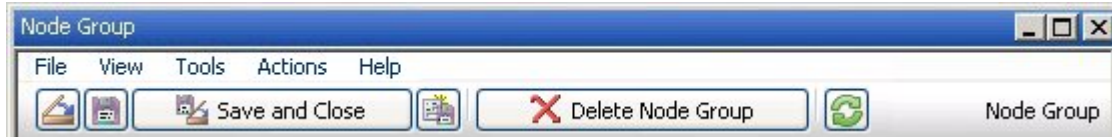
If your role allows, the toolbar lets you perform the following tasks within the form. The group of available actions can change from form to form:

Form Toolbar Icon Actions

Icon	Action
	Closes the current form.
	Saves the current form.
Save and Close	Saves and closes the current form.
	Saves the current form, and opens a new empty form where you can create a new object instance.
	Deletes the selected object instance and any objects contained in that object. For example, deleting a node also deletes the interface and address instances associated with that node.
	Note: When you delete an object instance that is created using a filter, such as a Node Group or Interface Group, NNMi deletes only the Node or Interface Group filter. NNMi does not remove the nodes or interfaces that belong to the selected group.
	Refreshes the data in the current form.

Related Topics

"Access More Information About an Object (Quick View and Forms)" (on page 14)

Using Views to Display Data

A view is the primary mechanism for displaying data. In the console, many views are available to help you visualize your network.

Type of Views in the NNMi Console

View Type	Strength
Table Views	Present summary information for a list of objects in a sorted order. Examples include: viewing a list of incidents sorted by status and filtered by lifecycle state.
Map Views	Display graphical relationships among objects.

To access a view, select a workspace and then click the view that you want to display. Some views are also accessible from the console's **Actions** menu. See "Using Actions to Perform Tasks" (on page 69) for more information.

Note: Your NNMi administrator is able to delete nodes and other objects from the NNMi database. Any node that has been deleted appears as a transparent icon on the map until the map is refreshed using the **Refresh** icon. After **Refresh**, the deleted node is removed from the map. NNMi does not automatically refresh the connectivity or set of nodes in a map view, except on the Network Overview map.

From a view, you can:

- "Select Multiple Objects" (on page 27)

- "Refresh a View" (on page 28) ( )

- "Refresh Node Status on a Map" (on page 46)

- Stop the Periodic Refresh of a View ( )

- "Using the View Toolbars" (on page 22) to Display a View in a New Window ( )

- "Invoke Actions" (on page 15)

NNMi users assigned to the NNMi role of `Administrator` can create and delete instances of some objects from the view. If you are an NNMi `Administrator`, see **Help → Help for Administrators** for more information.

Related Topics

"Use Table Views" (on page 29)

"Use Map Views" (on page 44)

Select Multiple Objects

You can select or deselect multiple objects when using a table or map view. This feature is useful when you want to access details or invoke an action on multiple objects, such as nodes, IP addresses, or interfaces.

Multiple Objects in Table Views

To select multiple objects in a table view:

Check the selection box (☑) that precedes each object you want to select.

To select all objects that appear in a table view:

Check the selection box (☑) that appears above the selection box column.

To de-select an object in a table view:

Clear the selection box (☐) that precedes each object you want to de-select.

To de-select all objects that appear in the table view:

- If all objects are selected, clear the selection box (☐) above the selection box column.

- If some objects are selected, click twice on the selection box above the selection box column. The first click selects all objects (☑) and the second click clears the check box for all objects (☐).

Look in the status bar of each table view to see the number of objects currently selected as well as the total number of objects in the view.

Multiple Objects in Map Views

To select multiple objects in a map view:

Use Ctrl-Click to select each object of interest on the map.

Each object you select changes to indicate it has been selected.

To de-select an object in a map view:

Use Ctrl-Click to de-select an object of interest on the map.

Each object you de-select returns to normal on the map.

Refresh a View

You can manually refresh a view at any time so that you are viewing the latest set of information. You cannot change the automatic refresh rate that was set by NNMi for each view.

To refresh a table view:

Click the 🔄 Refresh icon in the table view toolbar to manually refresh your view.

The table view status bar displays the refresh rate and whether the refresh rate is enabled or disabled. (If disabled, clicking the 🔄 Refresh icon enables periodic refresh.)

To refresh a map view:

Click the 🔄 Refresh icon in the map view toolbar to update changes in node placement, nodes added, and nodes deleted.

To refresh the status of nodes on a map, see "Refresh Node Status on a Map" (on page 46).

Related Topics

"Stop Periodic Refresh of a View" (on page 29)

Stop Periodic Refresh of a View

You can manually stop the periodic refresh of a view at any time.

NNMi's status bar displays the refresh rate and whether the refresh rate has been disabled.

Note: You cannot change the refresh rate that was set by NNMi for each view.

To stop the periodic refresh of a view:

1. Click the ⊘ Stop Periodic Refresh icon.

   Note: Not all views provide periodic refresh.

2. If you want to restart the refresh rate, click the 🔄 Refresh icon in the view display panel toolbar.

Related Topics

"Refresh a View" (on page 28)

Use Table Views

Table views display data in tabular format. Each row displays data about one object. If there are more rows than fits on a single screen, you can scroll through the table view using the scroll bar.

From a table view, in addition to the tasks accessed with the view display panel toolbar, you can perform the following tasks:

- "Resize a Column" (on page 30)
- "Hide a Column" (on page 30)
- "Sort Column Data " (on page 31)
- "Filter a Table View" (on page 32)
- "Restore Table Defaults" (on page 42)
- "Print Table Information" (on page 43)
- "Invoke Actions" (on page 15)
- "Access More Information About an Object (Quick View and Forms)" (on page 14)

The following customizations are saved across browser sessions:

- Column width
- Hidden columns
- Sort column and order
- Column filters
- Quick filter value
- Node or interface group filter
- Time period filter (for incidents)

See for more information about the number of tables whose customizations can be stored.

Resize a Column

You can resize columns using your mouse.

To resize a column in the table:

1. Mouse over the edge of the column until you see a ↔ resize icon.

2. Drag the column edge to the width you want.
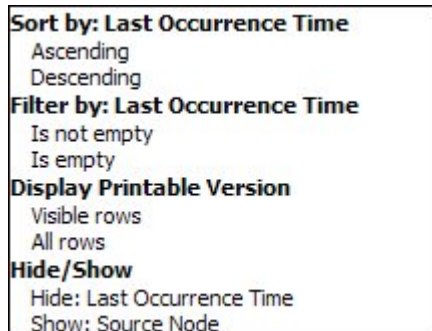
Related Topics

Hide a Column

If you find you no longer want to include a column of information in your view, you can hide a specified column.

To hide a table column:

1. Right-click the column of interest.

   Note: The selected column heading appears below the Hide/Show selection. In the following example, the selected column is **Last Occurance Time**.

   ```
   Sort by: Last Occurrence Time
      Ascending
      Descending
   Filter by: Last Occurrence Time
      Is not empty
      Is empty
   Display Printable Version
      Visible rows
      All rows
   Hide/Show
      Hide: Last Occurrence Time
      Show: Source Node
   ```

2. Select **Hide:**<*column_to_hide*>.
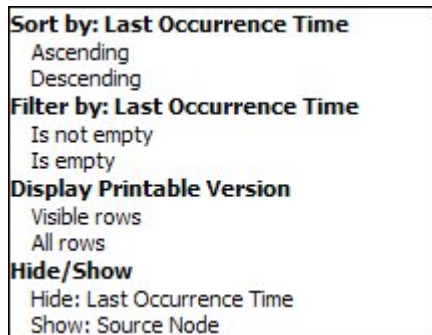
Related Topics

Show a Hidden Column

If you want to show a hidden column.

To show a hidden table column:

1. Right-click any column to see the list of currently hidden columns.

   Note: The hidden column heading appears below the Hide/Show selection.

   ```
   Sort by: Last Occurrence Time
     Ascending
     Descending
   Filter by: Last Occurrence Time
     Is not empty
     Is empty
   Display Printable Version
     Visible rows
     All rows
   Hide/Show
     Hide: Last Occurrence Time
     Show: Source Node
   ```

2. Select **Show**:*<column_to_show>*.

Related Topics

"Hide a Column" (on page 30)

"Resize a Column" (on page 30)

"Sort Column Data " (on page 31)

Sort Column Data

By sorting columns, you can get the most important information at the top of your table. For example, at times you might want to view all critical nodes. At other times, you might need to find node contact information.

To sort by columns:

1. Right-click the column heading or data cell on which you want to sort.

2. To sort the column in ascending order, select **Sort by: *<object name>*** → **Ascending**

3. To sort the column in descending order, select **Sort by: *<object name>*** → **Descending**

When sorting column data, note the following:

- You can click the column header to initiate a sort on the column values. Clicking the column heading again, reverses the sort direction.

- NNM iSPI software (HP Smart Plug-ins) might provide table views in which sorting is disabled for one or more columns.

- Sorting tables that contain large amounts of data (for example, viewing all interfaces or incidents), can sometimes result in slow response times. In this case, it is better to first filter the table information so that it contains only the values of interest before performing your sort.

More About Sorting

When sorting table columns, note the following:

- You can sort on only one column heading at one time.

- Capital letters are sorted separately from lowercase.

- NNMi sorts some table columns using lexicographical ordering. This may produce non-natural orders for strings such as Object IDs that contain numbers. For example you might expect the following order

when sorting the sysObjectID data type:

- 1.3.6.1.4.1.1

- 1.3.6.1.4.1.3

- 1.3.6.1.4.1.20

Using lexicographical ordering, these system object ID values are ordered as follows:

- 1.3.6.1.4.1.1

- 1.3.6.1.4.1.20

- 1.3.6.1.4.1.3

- Some table columns, such as Status and IfType, display data types which have a natural sort order that is distinct from an alphabetical order. When sorting these columns, the values are sorted according to a natural or pre-determined order rather than alphabetically. For example when sorting the Status column, you always see the following order (ascending) or the reverse (descending): **Critical**, **Major**, **Minor**, **Warning**, **Unknown**, **Disabled**, **Normal**, and **No Status**.

- Your sort choices are saved across user sessions.

Related Topics

"Filter a Table View" (on page 32)

"Hide a Column" (on page 30)

"Resize a Column" (on page 30)

"Restore Table Defaults" (on page 42)

Filter a Table View

When using table views, you can reduce the amount of information displayed by filtering a view using one of the object's attribute values. For example, you can access only those incidents whose Status is **Critical**, or only those incidents whose Description is **Interface Down**.

When a view is first displayed, it displays a set of filtered columns based on the view definition provided by NNMi. In some table views, the attribute on which the table is filtered is included in the view name. For example, the "Nodes by Category" view indicates the view is filtered by the **Device Category** attribute. You can change the filter value in these views. Using the same example, the "Nodes by Device Category" view provides a drop-down list of **Device Category** attributes on which you can change the filter value. This drop-down list is known as a Quick Filter.

Note: The view status bar indicates if one or more filters have been set for the view. FILTER:ON indicates that one or more filters have been set. These are filters that you can modify. In some views, NNMi provides factory set filters that cannot be changed. For example, the My Open Incidents view is filtered on the Assigned To attribute, which cannot be changed. FILTER:OFF indicates no modifiable filters have been set for the view. These views may or may not have factory set filters.

When specifying filters, you can perform the following tasks:

Drop-Down List Selection Filters

- "Filter Tables by Node or Interface Group" (on page 34)

- "Filter by Time Period (Incident Views Only)" (on page 36)

Column Selection Filters

- "Filter by Attribute Value" (on page 36)

- "Change a Filter" (on page 39)

- "Remove a Filter" (on page 40)

- "Modify a Filter Value" (on page 40)

- "Restore Default Filters" (on page 41)

- "Filter by Variables"

- "Display Current Filter Settings" (on page 41)

When using filters, note the following:

- You can filter on multiple table columns. The resulting filter is a logical AND of the filters for all of the columns.

- NNM iSPI software (HP Smart Plug-ins) might provide table views in which filtering is disabled for one or more columns.

- NNMi matches to the milliseconds when filtering on columns that represent time values (for example, **Last Occurrence**). Therefore, if you use the **Equals this value** filter option, only those times that match to the milliseconds are included in your view. Try using the **Less than or equal to this value** or **Greater than or equal to this value** filter options to include a wider range of time values.

- NNMi restricts certain filter operations or options per data type. Only the filter options that apply to the attribute data type appear. The data types and valid filter options are described in the table below.

- A different subset of these filter options appears depending on whether you are clicking a data cell, a column header, or a blank row. A data cell filter menu includes filters that use the value of the selected data cell.

Filter Options Available with Each Data Type

Data Type	Valid Filter Options
All data types	Equals this value
	Not equal to this value
	Is empty
	Is not empty
Numeric (Integer, enumerations, IP address, and date)	Greater than or equal to this value
	Less than or equal to this value
Text	Contains string...
	Starts with string...
	Matches string...
Group Filter	Provides a drop-down menu in the view display panel toolbar of the node and interface groups available to you.
	See "Filter Tables by Node or Interface Group" (on page 34) for more information about group filters.

Data Type	Valid Filter Options
Quick Filter	Provides a drop-down menu in the view display panel toolbar of all of the possible values for an attribute. These drop-down menus are provided for table views that include "by" in the view name.
Time Period Filter	Provides a drop-down menu in the view display panel toolbar in incident views. This filter lists a variety of time periods for which you can filter your incident views. Possible values include: **Last 5 minutes**, **Last Hour**, **Last 8 Hours**, **Last Day**, **Last 3 Days**, **Last Week**, **Last Month**, and **All**.

Filter Tables by Node or Interface Group

NNMi lets you filter your table views by node or interface group. For example, you might want to view all of the important Cisco routers, or all of the Voice-Over-IP interfaces within your network.

Your NNMi administrator creates these groups. They are listed in a "group selector" drop-down menu list on the view toolbar as shown below:

<Set node group filter>

Node Group filters are available for:

- Node views
- Interface views
- IP address views
- Incident views

Note: Node Group filters are not available for the **NNM 6.x/7.x Events** view.

Interface group filters are available for:

- Interface views
- IP address views

To filter a view by node or interface group:

1. Navigate to the view of interest

   a. From the workspace navigation panel, select the workspace that contains the view you want to use; for example, **Inventory**.

   b. Select the view of interest; for example, **Nodes**.

2. In the "group selector" drop-down list <Set node group filter>, select the node or interface group you want to use as a filter.

When using node or interface group filters, note the following:

- By default, table views are not filtered by node or interface group.

- If a view includes filtering by both node and interface groups, NNMi lists the Node Groups first, followed by all of the interface groups. Each list appears in alphabetical order.

- When the filter is applied, the view is automatically refreshed to show the new group of objects.

- If you set a Node or Interface group filter, NNMi combines the group filter with any other filters using the AND Boolean operator.

- To clear the group filter, set it to the default value "<set node group filter>" or "<set node or interface group filter>".

Related Topics

"Filter by Attribute Value" (on page 36)

"Change a Filter" (on page 39)

"Remove a Filter" (on page 40)

"Modify a Filter Value" (on page 40)

"Restore Default Filters" (on page 41)

"Display Current Filter Settings" (on page 41)

About Node and Interface Groups

When monitoring your network, you might be interested in only viewing information for a particular set of nodes or interfaces. Your network administrator is able to group sets of nodes or interfaces into node or interface groups. An example Node Group could be all important Cisco routers, or all routers in a particular building. As another example, all interfaces used for Voice-Over-IP might be grouped together in your network.

Your administrator configures Node Groups based on any of the following:

- Vendor or model SNMP object identifiers.

- Specific devices identified by name or IP address.

- Devices identified with wildcard characters to define a Node Group. These groups might be based on a naming strategy that is set in place for your organization.

Note: Node Groups can also control how NNMi monitors network devices. For example, your administrator might configure each group to have a different health monitoring interval.

Interface group definitions match the way your team identifies important network devices. Each interface group can include one or more interface-type specifications (based on industry-standard IANA ifType-MIB variables).

To view a Node Group definition:

1. From the workspace navigation panel, select the **Inventory** workspace.

2. Select the **Node Groups** view.

3. Locate the row representing the Node Group, click the Open icon.

4. The Node Group form displays.

5. When finished, click the Close icon.

To view an Interface Group definition:

1. From the workspace navigation panel, select the **Inventory** workspace.

2. Select the **Interface Groups** view.

3. Locate the row representing the Interface Group, click the Open icon.

4. The Interface Group form displays.

5. When finished, click the ◢ Close icon.

The following actions are available within the Node Group or Interface view:

Actions Available within the Node or Interface Group Views

Actions	Description
Actions → Node Group Map	Node Groups only. Shows the pre-defined members of a Node Group in the context of not only status and connectivity, but of a pre-defined background image (for example, a map of North America).
Actions → Show Members	Displays a Node view or Interface view filtered by the selected group.
Actions → Show All Incidents	Node Groups only. Displays an Incident view filtered by the selected group.
Actions → Show All Open Incidents	Node Groups only. Displays an Incident view filtered by the selected group plus filtered by the Open attribute.
Actions → Status Details	Node Groups only. Summarizes status information for the selected Node Group, including the number and percentage of nodes with each possible status.

Filter by Time Period (Incident Views Only)

Incident views enable you to filter your view by time period. Filtering using the time period filter lets you focus on the most recent incidents of interest. The available time periods include:

- Last 5 Minutes
- Last Hour
- Last 8 Hours
- Last Day
- Last 3 Days
- Last Week
- Last Month
- All

Note: A month is defined as 31 days.

Filter by Attribute Value

When specifying filters based on attribute (column) values, some filter options require that you specify the value by selecting the value in an object instance, some require that you specify the value from a drop-down list (Quick Filter), and some require that you enter the value string. You can also specify a filter based on whether an attribute contains a value.

- "Select Filter Values" (on page 37)
- "Type Filter Values" (on page 38)
- "Null Value Filters" (on page 39)

Select Filter Values

The following filter options require an attribute value as the basis for the filter. These filter options apply to all object types.

Filter Settings

Filter Option	Description
Equals this value	NNMi displays only instances that contain the attribute value you specify.
Not equal to this value	NNMi displays only instances whose attribute value does *NOT* contain the value specified. You can specify multiple values for this filter; but can only supply one value each time you select this option.
Greater than or equal to this value	NNMi displays only instances that contain the attribute values that are greater than or equal to the value you specify.
Less than or equal to this value	NNMi displays only instances that contain the attribute values that are less than or equal to the value you specify.

You can change a filter at any time. NNMi saves filters per user so that the filters you specify are maintained during subsequent user sessions. See "Limits to View Settings" (on page 43) for information about the number of tables whose customizations can be saved based on your web browser. See "Restore Table Defaults" (on page 42) for information about how to remove table view customizations.

To filter your view by selecting an attribute value:

1. Right-click the attribute value on which you want to base your filter.

2. Select one of the filter options described in the table below.

   Tip: In some table views, you can select an attribute value from a drop-down list (Quick Filter). These table views include an attribute name in the table view name (for example, "Nodes by Device Category") to indicate on which attribute a Quick Filter is provided.

To filter a view by selecting an attribute value from a Quick Filter drop-down menu:

1. Click the arrow in the Quick Filter drop-down menu to view your selections.
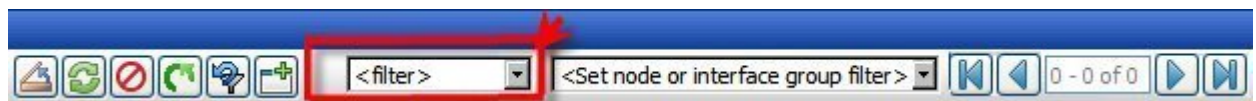
2. Select the attribute value on which you want to filter the view.

   NNMi displays a table view of all instances that have been selected based on the filter option and attribute values you specified or selected.

   Each filtered column is indicated using the ▽ filter icon.

Related Topics

"Null Value Filters" (on page 39)

Type Filter Values

You can provide attribute values on which you want to filter. These filter options only apply to attributes that contain text type values.

The following filter options require a value string (see table below for more information):

- Contains string...

- Starts with string...

- Matches string...

To filter information by providing a value string:

1. Right-click the column or attribute on which you want to filter.

2. Select from the filter options described in the table below.

3. In the **Enter String to Search for** field, enter the value string that you want the attribute to contain.

4. Click **OK**.

   NNMi displays a table view of all instances that have been selected based on the filter option and attribute value(s) you specified or selected.

   Each filtered column is indicated using the ▽ filter icon.

   Note: String filters are case sensitive.

Filter Options

Filter Option	Description
Contains string	NNMi displays only instances whose attribute value contains the string specified.
	Use this option when you are looking for a string value that is not an exact match. For example, if you want to find the following list of Cisco devices, you would use the value string "Cisco1":
	- Cisco1
	- Cisco12
	- Cisco123
Starts with string...	NNMi displays only instances whose attribute value starts with the string specified.
	Use this option when you are looking for an entry that begins with a specific string value. For example if all of your Cisco devices started with the text string "Cisco", and you wanted to find all Cisco devices, you could use the value string "Cicso".
Matches string...	NNMi displays only those instances whose attribute value matches the string you enter.
	You can also use a wildcard character (*) within your string value.
	If a wildcard is not specified this filter option finds those values that exactly match the value string you enter. For example, if you wanted to find only the Cisco1 device from the following list of values, you would use "Cisco1" as your value string:
	- Cisco1
	- Cisco12

Filter Option	Description
	• Cisco123
	NNMi would not include Cisco12 and Cisco123 in this example.

Related Topics

"Select Filter Values" (on page 37)

"Null Value Filters" (on page 39)

Null Value Filters

NNMi provides the following filter options to filter your view based on whether the attribute contains a value. These filter options appear for all data types.

- Is not empty

- Is empty

To filter your view based on null values:

1. Right-click the column or attribute value on which you want to filter.

2. Select from the filter options described in the table below.

3. NNMi displays a table view of all instances that have been selected based on the filter option and attribute value(s) you specified or selected.

   Each filtered column is indicated using the ▽ filter icon.

   You can change a filter at any time. NNMi saves filters per user so that the filters you specify are maintained during subsequent user sessions.

Filter Choices

Filter Option	Description
Is not empty	NNMi displays only the instances that contain a value for this attribute.
Is empty	NNMi displays only the instances that do not have a value for this attribute.

Related Topics

"Select Filter Values" (on page 37)

"Type Filter Values" (on page 38)

Change a Filter

You can change a filter at any time. NNMi saves filters per user so that the filters you specify are maintained during subsequent user sessions.

To change a filter:

1. If a column is already filtered using a filter based on an existing attribute value you must first remove the existing filter before specifying a new one.

   Note: If you have used an existing attribute value with the **Not equal to this value filter**, you do *NOT* have to remove the filter before changing the value.

2. Right-click the column whose filter you want to change.

3. Remove the original filter by selecting the **Remove filter** option.

4. Right-click the new attribute value on which you want to base the filter.

5. Select the filter option you want to use from the drop-down list.

   If the column is filtered using the **Not equal to this value** filter option or a value that you provided, you do not have to remove the filter before making your changes:

   ▪ Right-click the attribute value whose filter you want to change.

   ▪ Select the new string filter option you want to use. For example, you might re-select the filter option you had previously used or you might select a different filter option that lets you enter a string value.

   ▪ In the **Enter string to search for** field, enter the new value string you want to use for the current filter.

The previous filter is replaced with the new filter option and value string you entered.

Related Topics

"Filter Tables by Node or Interface Group" (on page 34)

"Filter by Attribute Value" (on page 36)

"Remove a Filter" (on page 40)

"Modify a Filter Value" (on page 40)

"Restore Default Filters" (on page 41)

"Display Current Filter Settings" (on page 41)

Remove a Filter

NNMi lets you remove a filter for a selected column at any time.

To remove a filter:

1. Right-click the column whose filter you want to remove.

2. Select Remove filter from the drop-down menu.

NNMi removes all existing filters that have been set for that column.

Related Topics

"Change a Filter" (on page 39)

"Modify a Filter Value" (on page 40)

"Restore Default Filters" (on page 41)

Modify a Filter Value

You can modify the value for any filter string value that you entered.

To change a filter string value:

1. Right-click the attribute value whose filter you want to change.

2. Select the new string filter option you want to use. For example, you might re-select the filter option you had previously used, or you might select a different filter option that lets you enter a string value.

3. In the **Enter string to search for** field, enter the new value string you want to use for the current filter.

The previous filter is replaced with the new filter option and value string you entered.

Related Topics

"Change a Filter" (on page 39)

"Remove a Filter" (on page 40)

"Restore Default Filters" (on page 41)

"Display Current Filter Settings" (on page 41)

Restore Default Filters

You can restore the default filters for a view. This option removes any filters that you have defined for the current view.

To restore the default filter settings:

In the table toolbar, click the ![icon] **Restore Default Filters** icon.

Note: If you are viewing a table that appears in the form, open the table in a new window using the ![icon]
Show View In New Window icon, and then click the ![icon] **Restore Default Filters** icon.

All filters are reset to the default values and any filters that you have created are removed for the current view.

Note: You will lose any selections you have in the view.

Related Topics

"Display Current Filter Settings" (on page 41)

"Remove a Filter" (on page 40)

Display Current Filter Settings

To keep track of the filters you have created, you can view the filter that has been set on a column by column basis.

To view a column's filter:

Mouse over the column of interest.

The example below shows the filter option and the string provided for that filter:

The following table explains the symbols used for each filter option

Filter Definitions

Symbol	Filter Option
<=	Less than or equal to this value

Symbol	Filter Option
>=	Greater than or equal to this value
=	Equals this value
NOT IN	Not equal to this value
IS NULL	Is empty
IS NOT NULL	Is not empty
LIKE	Contains string...
	Starts with string...
	Matches string...

Note: The percent sign (%) represents the wildcard character.

Related Topics

Restore Table Defaults

You can remove the types of table view customizations described in the following table. Remove customizations when you no longer find them useful or when you reach the limit for the maximum number of customizations that can be stored. See "Limits to View Settings" (on page 43) for more information about the number of tables whose customizations can be stored.

If you are concerned about reaching your table view settings limit, remove view settings for tables that are not important.

Note: The ✿ **Restore Default Filters** icon and ♺ **Restore Default Settings** icon do not appear on table views in forms. If you want to clear settings from a table view that appears in a form, use the ▥ Show in New Window icon to open the table view in a new window and perform these operations.

Restore Default Table View Settings

What You can Remove	How	Description
Only table view filters	From the view display panel toolbar, select ✿ **Restore Default Filters**.	Clears all customizations to filters for the table view and refreshes the view with the view's default filter settings.
All customizations for a table view	From the view display panel toolbar, select ♺ **Restore Default Settings**	Clears all customizations for the table view and refreshes the view with the view's default settings
All cus-	Select **Tools →**	Clears all customizations (and cookies) for all table view customizations. See "Limits to View Settings" (on page 43) for

What You can Remove	How	Description
tomizations for all table views	**Restore All Default View Settings**	more information about how NNMi uses cookies to store table view customizations.

Related Topics

"Filter a Table View" (on page 32)

Print Table Information

You can send the contents of a table view to a web page for printing. You can choose to print only the rows that are visible or all of the rows in your table.

When printing table information, note the following:

- The first three columns of table information do not appear in the printable version. The contents of these columns are for selection purposes only.

- If you save the printable page as a file, the html reference images are not included.

- You can copy and paste the table data to other applications, such as Microsoft Word or Microsoft Excel, for additional editing and manipulating, such as getting a list of hostnames.

To display a printable version of all visible table rows:

1. Right-click any cell or column header within the table .

2. Select **Display Printable Version → Visible rows**.

To display a printable version of all table rows:

1. Right-click any cell or column header with the table.

2. Select **Display Printable Version → All rows**.

Note: Displaying a printable version that includes all rows for table that contain large amounts of data (for example, viewing all incidents or interfaces), can result in slow response times. Filter your table view and hide columns to contain only the information of interest before printing all table rows.

Related Topics

"Filter a Table View" (on page 32)

"Hide a Column" (on page 30)

Limits to View Settings

NNMi automatically saves the following kinds of table view settings.:

- Column width

- Hidden columns

- Sort column and order

- Filters

When customizing table views, note the following:

- All settings for each table are stored in a corresponding cookie for that table.

- The number of tables whose settings can be saved, and the behavior when the limit is reached depends the browser you use:

  Microsoft Internet Explorer discards your oldest cookie and lets you continue creating customizations. If you are using Microsoft Internet Explorer, the cookie limit is 48.

  If you are using Mozilla Firefox, the cookie limit is 48. If you reach the 48 limit, Mozilla Firefox removes the next to last cookie before saving the latest cookie created.

- Table view settings are specific to each operating system user. Therefore, if you log on as a different operating system user, you will have *different* view settings. If you log on as a different NNMi user, but as the same operating system user, you will have *the same* view settings.

Note: NNMi displays a warning message when your last cookie and subsequent table settings are being saved.

You can remove a table view's settings using the **Restore Default Settings** option in the view display panel toolbar. You can remove the customizations for all of your tables using the **Tools** → **Restore All Default View Settings**. See "Restore Table Defaults" (on page 42) for more information.

Related Topics

"Restore Default Filters" (on page 41)

Use Map Views

A map view is a powerful way to display information about your network. In a map view, nodes, interfaces, IP address, and subnets are represented as symbols on the map. The lines between the nodes and inter-faces represent the connection or relationship between these objects.

For each symbol, a background shape indicates the type of device, such as router or switch. See "About Map Symbols" (on page 49). The color of this background shape indicates the current health of the device. See "About Status Colors" (on page 51) for more information about map color values

On the maps, a foreground image is placed over the background shape. The foreground image identifies the make and model of the network device.

On Node Group maps, the **Indicate Key Incidents** check box in the Node Group Map toolbar specifies whether you want NNMi to enlarge any Source Object that has an associated open Key Incident. See "Node Group Map Objects" (on page 49) for more information.

You access map views from the Troubleshooting workspace as well as from table views using the **Actions** menu. See "Access Maps Provided by NNMi" (on page 54) and "Using Actions to Perform Tasks" (on page 69) for more information.

Depending on the type of map you are viewing, NNMi uses additional conventions to depict other kinds of objects on the map:

"Layer 2 Neighbor View Map Objects" (on page 47)

"Layer 3 Neighbor View Map Objects" (on page 48)

"Path View Map Objects" (on page 48)

"Node Group Map Objects" (on page 49)

Note: Your NNMi administrator is able to delete nodes and other objects from the NNMi database. Any node that has been deleted appears as a transparent icon on the map until the map is refreshed using the **Refresh** icon. After **Refresh**, the deleted node is removed from the map. NNMi does

not automatically refresh the connectivity or set of nodes in a map view, except on the Network Over-view map.

You can perform the following operations in a map view:

- "Access More Information About an Object (Quick View and Forms)" (on page 14)

- "Refresh a View" (on page 28)

- "Change the Map Layout" (on page 45)

- "Adjust the Zoom Factor" (on page 45)

- "Pan Around the Map" (on page 46)

- "Refresh Node Status on a Map" (on page 46)

- "Control Quick View on a Map" (on page 47)

If you use the Mozilla Firefox browser and have any timeout issues; for example, being prompted to click **Continue** before a map appears, see "Configure Mozilla Firefox Timeout Interval".

Related Topics

"Use Table Views" (on page 29)

Navigate Maps

NNMi enables you to navigate within map views in the following ways:

"Change the Map Layout" (on page 45)

"Adjust the Zoom Factor" (on page 45)

"Pan Around the Map" (on page 46)

Change the Map Layout

If you prefer a different layout for the nodes on your map, you can change the node placement.

To change the map layout:

Click and then drag a node to the location you want on the map.

This placement persists until you refresh or otherwise reload the map.

You can manually reposition nodes on a map, and, if your role allows, save your node locations in Node Group Maps. See **Help → Help for Operators** for more information.

Related Topics

"Adjust the Zoom Factor" (on page 45)

"Pan Around the Map" (on page 46)

Adjust the Zoom Factor

If you need to make a portion of the map larger, you can adjust the zoom factor.

To adjust the zoom, select the following keyboard characters:

- To zoom in, click anywhere in the map background, and then press **+ (**PLUS SIGN).

- To zoom out, click anywhere in the map background, and then press **- (**MINUS SIGN).

- To fit the map to the screen size, click anywhere in the map background, and then press **=** (EQUALS SIGN).

Related Topics

"Change the Map Layout" (on page 45)

"Pan Around the Map" (on page 46)

Pan Around the Map

If the node of interest is not easily visible on the map, you can move to other sections of the map.

To pan to other sections of the map:

Use the map's scroll bars to move to other sections of the map.

Related Topics

"Change the Map Layout" (on page 45)

"Adjust the Zoom Factor" (on page 45)

Refresh Node Status on a Map

In map views, you can refresh the node status on a map while maintaining the layout of the nodes. This feature enables you to quickly refresh a view when you are only concerned with status updates for one or more nodes on your map.

NNMi automatically refreshes node status on a map every 30 seconds. The 30 second counter begins after the completion of the last status refresh.

You can also refresh the node status manually.

Note: If a map is taking longer than expected to refresh, the maximum number of nodes that are displayed on a map might be set too high. The NNMi administrator can set this value. See "Help for Administrators" for more information.

To refresh only the node status:

Click the ![Refresh Status icon] **Refresh Status** icon in the view display panel toolbar to manually refresh node status on your map view.

The last update time is changed and the status of each node is refreshed on the map. Nodes are not added, deleted, or rearranged. Connectivity is not recalculated.

Note: Your NNMi administrator is able to delete nodes and other objects from the NNMi database. Any node that has been deleted appears as a transparent icon on the map until the map is refreshed using the ![Refresh icon] **Refresh** icon. After **Refresh**, the deleted node is removed from the map. NNMi does not automatically refresh the connectivity or set of nodes in a map view, except on the Network Overview map.

Related Topics

"Refresh a View" (on page 28)

Control Quick View on a Map

When you place the mouse cursor over an object on a map, NNMi displays Quick View information for the current object. Quick View information is a subset of the information in the object's form.

To disable Quick View, select the **Disable Quick View** checkbox in the map toolbar.

When using **Disable Quick View**, note the following:

- While the map displays, Quick View remains disabled until you clear the check box.

- When you select the **Disable Quick View** checkbox, NNMi closes any open Quick View dialog boxes.

- Each time you open a map, the default value for **Disable Quick View** is clear. You must select **Disable Quick View** again to suppress Quick View information.

Related Topics

"Using the View Toolbars" (on page 22)

Understand Maps

To understand how to interpret the contents of maps provided by NNMi, you want to know the following:

"Layer 2 Neighbor View Map Objects" (on page 47)

"Layer 3 Neighbor View Map Objects" (on page 48)

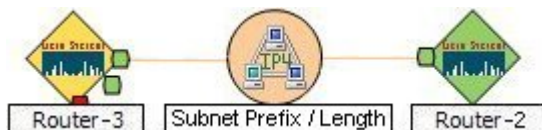"Path View Map Objects" (on page 48)

"Node Group Map Objects" (on page 49)

"About Map Symbols" (on page 49)

"About Status Colors" (on page 51)

Layer 2 Neighbor View Map Objects

Layer 2 Neighbor View maps show a map view of a selected device and any connected devices within a specified number of hops from the selected device. This view is useful for understanding the **switch connectivity** between devices. See "Help for Operators" for more information.

In Layer 2 Neighbor View maps, interfaces are indicated by little squares around the background shape of the parent node. Each interface also has a status color. Green indicates the interface is working properly. Red indicates the interface is down. The lines between devices indicate the connections. The lines also show status color:
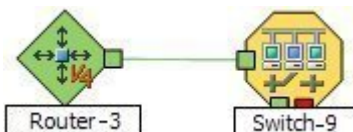
NNMi Advanced. Layer 2 Neighbor View maps might also include Aggregator Link and Aggregator Interface objects. An Aggregator Link object represents many-to-many physical connections. For example, two nodes might be connected with four physical connections. These four physical connections are depicted as a single Aggregator Link object using a thick line on the Layer 2 Neighbor View map.

NNMi Advanced. The interface depicted at each end of the Aggregator Link object is an Aggregator Interface object. An Aggregator Interface object represents the collection of physical interfaces for one end of an Aggregator Link.

NNMi Advanced. The Aggregator Interface status is based on the status of each of its physical interfaces. See "Status Color and Meaning for Aggregator Objects (NNMi Advanced)" (on page 53) for more information about how the NNMi Causal Engine determines the status of an Aggregator Interface.

NNMi Advanced. The following example includes an Aggregator Link object and its Aggregator Interfaces:
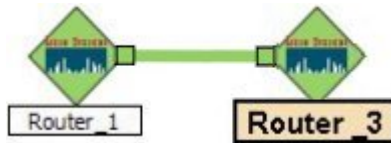
NNMi Advanced. As shown in the example above, the Aggregator Link line shows status color. NNMi determines this status based on the status of each of the physical connections that are associated with the Aggregator Link. See "Status Color and Meaning for Aggregator Objects (NNMi Advanced)" (on page 53) for more information.

See "Help for Operators" for more information about Layer 2 Neighbor View maps.

Related Topics

"About Map Symbols" (on page 49)

"About Status Colors" (on page 51)

Layer 3 Neighbor View Map Objects

Layer 3 Neighbor View maps show a selected device and its connected devices within a specified number of hops from the selected device. This view is useful for understanding the **router connectivity** between devices.

In Layer 3 Neighbor View maps, addresses connected to neighbors within the same subnet are indicated by hexagons around the background shape of the parent node. Each address has a status color. Green indicates the address is working properly. Red indicates the address is not responding. The line between devices indicates the subnet. The subnet does not have any status:

See "Help for Operators" for more information about Layer 3 Neighbor View maps.

Related Topics

"About Map Symbols" (on page 49)

"About Status Colors" (on page 51)

Path View Map Objects

Path View maps show an active network path between a source and destination end point.

The main objects in a Path View map are routers and switches.

When NNMi cannot determine the nodes within a portion of the path, it uses a Cloud object as shown in the example below:
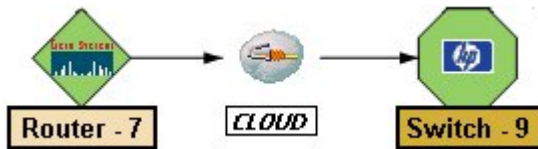
Path View maps also show objects included in Layer 2 Neighbor View maps and Layer 3 Neighbor View maps. See "Help for Operators" for more information.

Related Topics:

"About Map Symbols" (on page 49)

"About Status Colors" (on page 51)

Node Group Map Objects

Tip: See "Help for Operators" for more information about Node Group maps.

Node Group maps show members of a Node Group (as defined by the NNMi administrator). Each Node Group Map shows either Layer 2 or Layer 3 information.

The map displays the status of each member, connection, and Child Node Group. To provide context for your environment, the NNMi administrator might also add a background image (for example, a map of North America).

Note: If any object on the map appears larger than normal, this indicates the object is a Source Object for an open Key Incident. Double-click the map object to open the Node form. Select the Node form's Incidents tab to view the associated incidents.

Because these maps are based on Node Groups rather than connectivity, some nodes might not have any connections on the map.

A hexagon (as shown below) indicates a Child Node Group:

See "Views Provided by NNMi" (on page 57) for information about the Node Group maps that NNMi provides.

Related Topics

"About Map Symbols" (on page 49)

"About Status Colors" (on page 51)

About Map Symbols

Map symbols represent nodes or node groups. Each map symbol that represents a single node has a background shape and a superimposed foreground image. The foreground image represents the vendor and model. The background shape conveys the following information:

- The type of device.

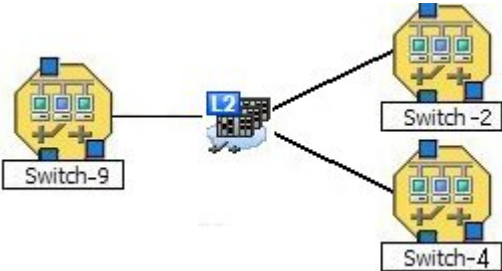- The most recent health status (see "About Status Colors" (on page 51)).

- All connections:

  ▪ In Layer 2 Neighbor View maps, as well as Node Group or Path View maps using Layer 2 con-
  nectivity, small squares around the parent symbol represent each connected interface. Lines of a
  normal thickness indicate one-to-one connections. Special icons indicate one-to-many connections
  .

  NNMi Advanced. Thick lines represent Aggregator Link or many-to-many connections.

  ▪ In Layer 3 Neighbor View maps, as well as Node Group or Path View maps using Layer 3 con-
  nectivity, small hexagons around the parent symbol represent each connected address. Lines indi-
  cate one-to-one connections. Special icons indicate subnets or clouds.

Each Child Node Group has a hexagon background shape and does not include a foreground image.

Background Shapes for Specific Devices

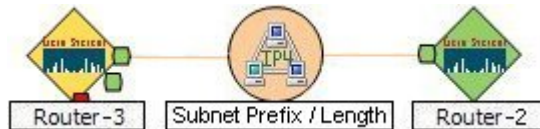| Shape	Meaning	Shape	Meaning
■	Chassis, Computer, Server, Workstation, Other **Note**: **Other** includes non-SNMP nodes.	●	ATM Switch, Switch
■	Child Node Group	◆	Gateway, Hub, Router, Switch-Router, and Voice Gateway
●	Analyzer, Firewall, Load Balancer, Network Appliance, Power Supply, Printer, and Wireless Access Point	▲	IP Phone
●	Subnet		

Icons for Special Connections

Icon	Meaning
	Used in Layer 2 Neighbor View maps when NNMi concludes that a shared media, such as a hub or a mesh, connects multiple devices.Click here for an example.

| | Used in Layer 2 Neighbor View maps to represent an unidentified set of devices that is most likely part of a Service Provider's network or WAN.Click here for an example. |

| Icon	Meaning
	Used in Layer 3 Neighbor View maps to represent subnets.Click here for an example.
	Used in Path Views. If NNMi detects a connection, but cannot verify the device's identification (no response to SNMP), that device is indicated on the map by a cloud symbol.Click here for an example.
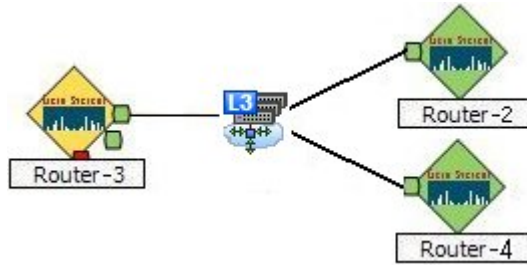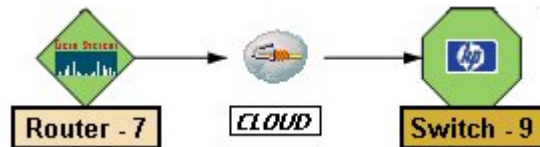
Related Topics

About Status Colors

The color of the background shape of each map symbol conveys the most recent health status. The color of each connection icon (the line) conveys the most recent health status of each connection. For example:
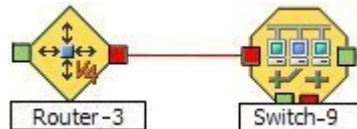
The color of each interface or address icon also conveys the most recent health status:

- In Layer 2 Neighbor View maps, little squares around the parent symbol represent each connected interface.

    Note: *NNMi Advanced*. On Layer 2 Neighbor View and Path View maps some squares represent Aggregator Interfaces. NNMi displays a thick line to represent an Aggregator Link. The interface

for more information.

- In Layer 3 Neighbor View maps, small hexagons around the parent symbol represent each connected address.

NNMi calculates appropriate status status for objects:

Status Color and Meaning for Objects

NNMi displays the status color for the following:

Background Shapes Status Color and Meaning

Network Connections Status Color and Meaning

The following table describes the meaning for each status color for a background shape that represents a Node, Interface, or IP address that might appear on a map.

Background Shapes Status Color and Meaning

Color	Meaning	Description
	Unknown	Indicates the object is unreachable and cannot be polled.
	Normal	Indicates there are no known problems related to the associated object.
	Warning	Indicates there may or may not be a problem related to the associated object.
	Minor	Indicates NNMi detected problems related to the associated object that require further investigation.
	Major	Indicates NNMi detected problems related to the associated object to be resolved before they become critical.
	Critical	Indicates NNMi detected problems related to the associated object that require immediate attention.
	Disabled	Indicates the object is administratively *disabled*.
	No Status	Indicates one of the following: • NNMi's current configuration excludes this object from monitoring. The Status is not calculated because the object is set to Unmanaged/Out Of Service. • The object has just been added to the NNMi database and the Causal Engine has not yet calculated its health status.
	Node not in the NNMi Database	Indicates information about the node is not stored in the NNMi database.

The following table describes the meaning for each status color for a single network connection.

Network Connections Status Color and Meaning

Color	Meaning	Description
	Unknown	Indicates that due to other network problems, the status of one interface cannot be determined at this time.
	Normal	Indicates both interfaces in the connection are responding.
	Warning	Indicates there might be a problem with either interface.
	Minor	Indicates the interface on one end is not responding. The interface on the other end is responding.
	Critical	Indicates neither interface or IP address is responding.
	Disabled	Indicates one or both interfaces are administratively *disabled*.
	No Status	Indicates one of the following: • NNMi's current configuration excludes one or both interfaces from monitoring. The Status is not calculated because the interface is set to Unmanaged/Out Of Service. • The interface has just been added to the NNMi database and the Causal Engine has not yet calculated its health status.

Related Topics

"Status Color and Meaning for Aggregator Objects (NNMi Advanced)" (on page 53)

Status Color and Meaning for Aggregator Objects (*NNMi Advanced*)

An Aggregator Link is a many-to-many relationship between physical connections. For example, two nodes might be connected with four physical connections. These four physical connections are indicated by a thick line on the Layer 2 Neighbor View map. See "Layer 2 Neighbor View Map Objects" (on page 47) for more information.

The interface depicted at each end of the Aggregator Link is an Aggregator Interface.

See the following tables for a description of the possible status colors and their meaning.

Aggregator Interface Status Color and Meaning

Aggregator Link Status Color and Meaning

The following table describes the meaning of status colors for an Aggregator Interface.

Aggregator Interface Status Color and Meaning

Color	Status	Meaning
	Unknown	Indicates all of the physical interfaces that are members of the Aggregator Interface are unreachable and cannot be polled.
	Normal	Indicates all of the physical interfaces that are members of the Aggregator Interface have a Status of Normal.
	Minor	Indicates at least one of the physical interfaces that is a member of the Aggregator Interface has a Status of Critical.

Color	Status	Meaning
■	Critical	Indicates all of the physical interfaces that are members of the Aggregator Interface have a Status of Critical.
▫	Disabled	Indicates all of the physical interfaces that are members of the Aggregator Interface are administratively *disabled*.
▫	No Status	Indicates one of the following: ● NNMi's current configuration excludes all of the physical interfaces that are members of the Aggregator Interface from monitoring, so the Status is not calculated because the device or interface is set to Unmanaged/Out Of Service. ● All of the physical interfaces that are members of the Aggregator Interface have just been added to the NNMi database and the Causal Engine has not yet calculated their health status.

The following table describes the meaning of status colors for an Aggregator Link.

Aggregator Link Status Color and Meaning

Color	Meaning	Description
▬	Unknown	Indicates all of the physical interfaces in each Layer 2 Connection within the Aggregator Link are unreachable and cannot be polled.
▬	Normal	Indicates all of the physical interfaces in each Layer 2 connection within the Aggregator Link have a Status of Normal.
▬	Minor	Indicates at least one of the physical interfaces in a Layer 2 Connection within the Aggregator Link has a Status of Critical.
▬	Critical	Indicates all of the physical interfaces in each Layer 2 connection within the Aggregator Link have a Status of Critical.
▬	Disabled	Indicates all of the physical interfaces in each Layer 2 Connection within the Aggregator Link are administratively down.
▬	No Status	Indicates one of the following: ● NNMi's current configuration excludes all of the physical interfaces in each Layer 2 Connection within the Aggregator Link from monitoring. The Status is not calculated because the device is set to Unmanaged/Out Of Service. ● All of the physical interfaces that are in each Layer 2 Connection within the Aggregator Link have just been added to the NNMi database and the Causal Engine has not yet calculated their health status.

Related Topics

"Status Color and Meaning for Objects" (on page 52)

Access Maps Provided by NNMi

You can access maps in the following ways:

● From table views using the **Actions** menu

● From the **Topology Maps** and **Troubleshooting** workspaces

See "Using Actions to Perform Tasks" (on page 69) for more information about using the **Actions** menu.

To launch a map view from a table view:

1. Select the table view you want from the **Workspaces** navigation panel. (For example, select the **Nodes** view in the **Inventory** workspace.)

2. In the table view, click the ☑ selection box that precedes the object of interest.

3. Select the **Actions** menu in the main toolbar and select the map view you want.

   Note: You can also access map views from the **Actions** menu in a form. See "About the NNMi Console" (on page 8), for more information.

   The label for the starting node appears in bold text on the map.

4. If you are displaying either Layer 2 or Layer 3 Neighbor views, after the map view appears, you can change the number of hops.

   A hop is a node representing any network device, such as a workstation, gateway, or switch, which is connected by a link with no intermediate nodes.

   In the **Number of Hops** drop-down list, select the number of hops to display. The default number of hops is 1. The maximum number of hops is 9.

To launch a Node Group map from the Topology Maps workspace:

1. Select the **Topology Maps** workspace.

2. Select **Node Group Map** name of interest.

To launch a Layer 2 or Layer 3 Neighbor View map from the Troubleshooting workspace:

1. Select the **Troubleshooting** workspace.

2. Select the type of map you want to generate.

3. In Layer 2 Neighbor View and Layer 3 Neighbor View maps, you can designate the starting node using either the node name or IP address. The label for the starting node appears in bold text on the map.

   Note: After you begin to type the node name or IP address, NNMi displays a list that includes all potential existing names or IP addresses that match the letters or numbers as you enter them.

4. After the map view appears, you can change the number of hops.

   A hop is a node representing any network device, such as a workstation, gateway, or switch, which is connected by a link with no intermediate nodes.

   In the **Number of Hops** drop-down list, select the number of hops to display. The default number of hops is 1. The maximum number of hops is 9.

To launch a Path View from the Troubleshooting workspace:

1. Select the **Troubleshooting** workspace.

2. Select **Path View**.

3. In the **Source** and **Destination** fields, designate the nodes at both ends of the path using either the node name or IPv4 address.

Note: After you begin to type the node name or IPv4 address, NNMi displays a list that includes all potential existing names or IPv4 addresses that match the letters or numbers as you enter them.

To launch a Node Group map from the Troubleshooting workspace:

1. Select the **Troubleshooting** workspace.

2. Select **Node Group Map**.

3. In the Node Group field, specify the name of the Node Group whose nodes you want to display.

Note: After you begin to type the Node Group name, NNMi displays a list that includes all potential existing names that match the letters or numbers as you enter them.

Views Provided by NNMi

NNMi offers several out-of-the-box views to determine a managed device's status. Each of these is described in the following tables.

Note: Depending on your NNMi user role, you might not be able to see all of the views described.

- Views for Incident Management

- Views of Topology Maps

- Views to Assist You with Monitoring Network Devices

- Views to Assist You with Troubleshooting

- Views with Inventory Lists

- Management Mode Views

- Views for Incident Browsing

Views for Incident Management

View Title	Description
Open Key Incidents	Shows the incidents that are most important to network Operators and that often require more immediate action. The Open Key Incidents view includes those incidents whose Correlation Nature is either of the following: • **None** - Indicates there is no incident correlation for this incident. • **Root Cause** - Indicates the incident that reports the root cause of a problem. • **Service Impact** - Indicates a relationship between incidents in which a network service is effected by other incidents. By default, NNMi generates Service Impact incidents for Router Redundancy Groups. For example, an Interface Down incident can effect a Router Redundancy Group that is part of an HSRP service. The Service Impact incident helps to identify the service that is affected. This Correlation Nature is available for use by NNM iSPIs (HP Smart Plug-ins). See "Help for Administrators" for more information about HP Smart Plug-ins. • **Stream Correlation** - Indicates the correlations that NNMi's event pipeline establishes as it recognizes patterns in the flow of events through the pipeline. Correlations are created as NNMi analyzes events and traps to determine the root cause incident for a problem. Examples of stream correlations include Dedup (duplication of events) and Rate (occurrence of events by time) correlations.
Unassigned Open Key Incidents	Shows the open Key Incidents that have not yet been assigned. This view is useful for identifying the most recent Key Incidents that must be assigned.
My Open Incidents	Shows the incidents that have been assigned to the user name associated with the current user.

Views of Topology Maps (See "Help for Operators" for more information about Node Group Maps.)

View Title	Description
Node Group Overview	Displays a map containing all (top-level) Node Groups that do not have parent Node Groups.
Network Overview	Displays a map containing the most highly connected nodes in the Layer 3 network. This map periodically updates both topology and status. The update interval is more frequent when the topology is changing, and less frequent when the topology is not changing. **Note**: Automatic refresh cancels any modifications, such as selecting or zooming, you make to this view. To view the connectivity for a particular node, select the node of interest and use the **Actions → Layer 2 Neighbor View** or **Actions → Layer 3 Neighbor View**.
Networking Infrastructure Devices	Displays representative Node Groups for the Switches and for the Routers in your network. Each of the following device types, if applicable, are also included on the map: • Chassis • Firewalls • Voice Gateways **Note**: Your NNMi Administrator can remove this map from the Topology Maps workspace. See "Help for Operators" for more information about Node Group Maps.
Routers	Displays a Node Group Map of the Router and Layer 3 connectivity in your network. **Tip**: See "Help for Operators" for more information about Node Groups. **Note**: If the number of Node Groups in your network is greater than the maximum number of map objects configured to be displayed on the map, NNMi filters the map to display routers that have interfaces with addresses in the largest number of overall subnets in the network. Your NNMi administrator can configure the maximum number of nodes to be displayed on a map. See "Help for Administrators" for more information. **Note**: Your NNMi Administrator can remove this map from the Topology Maps workspace.
Switches	Displays a Node Group map of the Switches and Layer 2 connectivity in your network. **Tip**: See "Help for Operators" for more information about Node Groups. **Note**: If the number of nodes in your network is greater than the maximum number of nodes configured to be displayed on the map, NNMi filters the map to display switches that are the most highly connected. Your NNMi administrator can configure the maximum number of nodes to be displayed on a map. See "Help for Administrators" for more information. **Note**: Your NNMi Administrator can remove this map from the Topology Maps workspace.

Views to Assist You with Monitoring Network Devices

View Title	Description
Critical Interfaces	Shows the information about all interfaces that have a status of Critical.
Critical Nodes	Identifies the nodes whose status is Critical.
Critical Component Health	Identifies the nodes whose status is Critical due to a problem with the health of a node component.
Non-Normal Interfaces	Identifies all of the interfaces that might need operator attention.
Non-Normal Nodes	Identifies all of the nodes that might need operator attention.
Not Responding Addresses	Identifies all of the addresses that have a state of Not Responding. A **Not Responding** state indicates that the address is not responding to ICMP ping.
Nodes by Status	Lets you filter the node view according to node status using Quick Filter. See "Select Filter Values" (on page 37) for more information about Quick Filter. See "Help for Operators" for more information about node status.
Interfaces by Status	Lets you filter the interface view according to interface status using Quick Filter. See "Select Filter Values" (on page 37) for more information about Quick Filter. See "Help for Operators" for more information about interface status.
Interfaces by Administrative State	Lets you filter the interface view according to administrative state using Quick Filter. See "Select Filter Values" (on page 37) for more information about Quick Filter. See "Help for Operators" for more information about administrative state.
Interfaces by Operational State	Lets you filter the interface view according to operational state using Quick Filter. See "Select Filter Values" (on page 37) for more information about Quick Filter. See "Help for Operators" for more information about operational state.
IP Addresses by State	Lets you filter the IP address view according to state using Quick Filter. See "Select Filter Values" (on page 37) for more information about Quick Filter. See "Help for Operators" for more information about IP address state.
Component Health by Status	Lets you filter the Component Health view according to Status using Quick Filter. See "Select Filter Values" (on page 37) for more information about Quick Filter. See "Help for Operators" for more information about Component Health.
Interface Performance	(*NNM iSPI Performance for Metrics.*) Helps you identify the over-used and under-used interfaces for the nodes in your managed network.
Router Redundancy Groups	Shows the available Router Redundancy Groups created by the NNMi administrator. Each Router Redundancy Group is a set of two or more routers that use one or more virtual IP addresses to help ensure that information packets reach their intended destination. See "Help for Operators" for more information about Router Redundancy Groups.
Node Groups	Shows the Node Groups created by the NNMi administrator. Node Groups enable the NNMi administrator to define groups of nodes based on several criteria, including by hostname or location. See "Help for Operators" for more information about Node

View Title	Description
	Groups.

Views to Assist You with Troubleshooting

View Title	Description
Layer 2 Neighbor View	Shows a map view of a selected device and its connector devices within a specified number of hops from the selected device. This view is useful for understanding the **switch connectivity** between devices.
	The background color of a node in a network map indicates the node's or interface's status. For example, green indicates the node is up. Red indicates the node or interface is down.
Layer 3 Neighbor View	Shows a map view of a selected device and it connector devices within a specified number of hops from the selected device. This view is useful for understanding the **router connectivity** between devices.
	The background color of a node in a network map indicates the node's or interface's status. For example, green indicates the node is up. Red indicates the node or interface is down.
Path View	Shows an active network path between a source and destination end point. This view is useful for diagnosing connectivity problems; for example, when one node cannot communicate with another or when you are not able to access a particular node, such as a client PC not being able to contact the Microsoft Exchange server.
Node Group Map	Shows the pre-defined members of a Node Group in the context of not only status and connectivity, but of a pre-defined background image (for example, a map of North America). See "Help for Operators" for more information about Node Group Maps.

Views with Inventory Lists

View Title	Description
Nodes	Shows the status for all nodes discovered by NNMi.
	Sorting this view by status lets you see all of the nodes that are down or somehow disabled.
Interfaces	Shows the information about all network interfaces discovered by NNMi.
	Sorting this view by associated node Name value (Hosted on Node) lets you see all of the network interfaces per node.
	Sorting the view by Administrative or Operations Status helps you determine the interfaces or nodes that are down or somehow disabled.
IP Addresses	Shows the status for all IP addresses hosted on Nodes that are discovered by NNMi. (The Node form: IP Addresses tab also displays relevant addresses from this view.)
IP Subnets	Shows the status for all IP subnets.
	Sorting this view by status lets you quickly see all of the IP addresses whose status indicates there is a current or potential problem.
VLANs	Shows the switch port VLANs discovered in your environment. A device can participate in multiple VLANs. And a port can be assigned to multiple VLANs.

View Title	Description
Layer 2 Connections	Shows the Layer 2 connections discovered or added in your environment.
Nodes by Device Category	Lets you filter the view by device category using Quick Filter. See "Select Filter Values" (on page 37) for more information about Quick Filter. See "Help for Operators" for more information about device category.
Interfaces by IfType	Lets you filter the view by interface type (IfType) using Quick Filter. See "Select Filter Values" (on page 37) for more information about Quick Filter. See "Help for Operators" for more information about IfType.
Custom Nodes	Provides a Node view of all Node attributes. Sort and filter this view to meet your needs.
Custom Interfaces	Provides an Interface view of all Interface attributes. Sort and filter this view to meet your needs.
Custom IP Addresses	Provides an IP Address view of all IP Address attributes. Sort and filter this view to meet your needs.
Router Redundancy Groups	Shows the available Router Redundancy Groups created by the NNMi administrator. Each Router Redundancy Group is a set of two or more routers that use one or more protected (virtual) IP addresses to help ensure that information packets reach their intended destination. See "Help for Operators" for more information about Router Redundancy Groups.
Node Groups	Shows the Node Groups provided by NNMi and created by the NNMi administrator. See "Help for Operators" for more information about Node Groups. See "Help for Operators" for more information about Node Groups.
Interface Groups	Shows the Interface Groups provided by NNMi and created by the NNMi administrator. See "Help for Operators" for more information about Interface Groups.
Management Stations	Shows the 6.x/7.x Management Stations that have been configured to forward 6.x or 7.x events to NNMi.

Management Mode Views

View Title	Description
Managed Nodes	Shows all of the nodes that are being managed by NNMi. These nodes have been discovered and are being monitored and updated.
Managed Interfaces	Shows all of the interfaces that are being managed by NNMi. These interfaces have been discovered and are being monitored and updated.
Managed IP Addresses	Shows all of the addresses that are being managed by NNMi. These addresses have been discovered and are being monitored and updated.
Not Managed Nodes	Shows all of the nodes whose management mode has been set to **Not Managed**. These nodes are no longer being monitored nor updated.

View Title	Description
Not Managed Interfaces	Shows all of the interfaces whose management mode has been set to **Not Managed**. These interfaces are no longer being monitored nor updated.
Not Managed IP addresses	Shows all of the addresses whose management mode has been set to **Not Managed**. These addresses are no longer being monitored nor updated.
Out of Service Nodes	Shows all of the nodes whose management mode has been set to **Out of Service**. These nodes are no longer being monitored nor updated.
Out of Service Interfaces	Shows all of the interfaces whose management mode has been set to **Out of Service**. These interfaces are no longer being monitored nor updated.
Out of Service IP Addresses	Shows all of the addresses whose management mode has been set to **Out of Service**. These addresses are no longer being monitored nor updated.
Nodes	Shows the management mode of all of the nodes that are stored in NNMi's database. Sorting this view by Management Mode lets you see which sets of nodes are managed, temporarily out of service, and not being managed.
Interfaces	Shows the management mode of all of the interfaces that are stored in NNMi's database. This view also displays the management mode of the node associated with an interface so that you can determine how NNMi arrived at the Management Mode value for the interface.
IP Addresses	Shows the management mode of all IP Addresses that are hosted on Nodes. This view also displays the management mode of the associated Interface, if any, and the Node associated with each address so that you can determine how NNMi arrived at the Management Mde value for the address.

Views for Incident Browsing

View Title	Description
Open Key Incidents by Severity	Lets you filter the incident view according to an open incident's severity using Quick Filter. See "Select Filter Values" (on page 37) for more information about Quick Filter. See "Help for Operators" for more information about incident severity.
Open Key Incidents by Priority	Lets you filter the incident view according to an open incident's priority. See "Select Filter Values" (on page 37) for more information about Quick Filter. See "Help for Operators" for more information about incident priority.
Open Key Incidents by Category	Lets you filter the incident view according to an open incident's category using Quick Filter. See "Help for Operators" for more information about incident categories.
Open Key Incidents by Family	Lets you filter the incident view according to an open incident's family. See "Select Filter Values" (on page 37) for more information about Quick Filter. See "Help for Operators" for more information about incident family.
Closed Key Inci-	Shows the key incidents that have been closed. This view is useful for identifying the root cause incidents that have been resolved. This view might be particularly useful for report-

View Title	Description
dents	ing on how many incidents were closed within a given time period.
Key Incidents by Lifecycle State	Lets you filter the incident view according to the lifecycle state of interest using Quick Filter. See "Select Filter Values" (on page 37) for more information about Quick Filter. See "Help for Operators" for more information about incident lifecycle state.
Root Cause Incidents	Shows all of the root cause incidents. This view is useful for identifying the number of root cause incidents in the queue.
Open Root Cause Incidents	Shows the root cause incidents that have not yet been closed. This view is useful for identifying the root cause incidents that need to be resolved.
Service Impact Incidents	Indicates incidents that have a relationship to other incidents in which a network service is affected. For example, an Interface Down incident can effect a Router Redundancy Group that is part of an HSRP service. The Service Impact incident helps to identify the service that is affected. This Correlation Nature is available for use by NNM iSPIs (HP Smart Plug-ins). See "Help for Administrators" for more information about HP Smart Plug-ins.
Stream Correlation Incidents	Shows the correlations that NNMi's event pipeline establishes as it recognizes patterns in the flow of events through the pipeline. See "Help for Operators" for more information about stream correlations.
Incidents by Family	Lets you filter the incident view according to the Family of interest using Quick Filter. See "Select Filter Values" (on page 37) for more information about Quick Filter. See "Help for Operators" for more information about incident families.
Incidents by Correlation Nature	Lets you filter the incident view according to Correlation Nature. This view is useful for focusing on incidents of a specific Correlation Nature. For example, you might want to check for any incidents with a Correlation Nature of Service Impact. See "Help for Operators" for more information about Correlation Nature.
All Incidents	Shows all incidents. This view is useful for determining all of the incidents that have been generated within a certain time period.
Custom Incidents	Lets you create a customized view for your incident information. For example, you might want to filter this view to include only the incidents assigned to you.
NNM 6.x/7.x Events	Shows all of the incidents forwarded from Network Node Manager 6.x and 7.x management stations in your network environment.
NNM 6.x/7.x Events by Category	Shows all of the incidents forwarded from Network Node Manager 6.x and 7.x management stations in your network environment. This view lets you filter the view by incident category using Quick Filter. See "Select Filter Values" (on page 37) for more information about Quick Filter. See "Help for Operators" for more information about incident categories.
SNMP Traps	Shows all of the traps that were received from devices in your network environment. Your NNMi administrator must configure specific traps before they are displayed within NNMi incident views
SNMP	Lets you filter the incident view according to the Family of interest using Quick Filter. See

View Title	Description
Traps by Family	"Select Filter Values" (on page 37) for more information about Quick Filter. See "Help for Operators" for more information about incident families.

Related Topics

"Print Table Information" (on page 43)

Working with Objects

Objects are database records of information about your environment and events that occur within it. Each type of object represents a particular kind of information. For example, incident objects represent situations or events that arise in your environment.

An object is defined by its attributes. For example, an incident object includes a status attribute and a source node (among many others). Different object types have different amounts and types of attributes. Some attribute values are simple things, such as numbers and text strings. Other attribute values are more complex, such as a reference to a related object. For example, when an SNMP Agent attribute appears in a Node form, it represents the SNMP Agent that is related to the selected node.

If more than one of a certain type of object can be related to the selected object (for example, incidents related to a node), the form contains a tab that displays a table with the entire list of related objects.

A *view* is a collection of related objects that are depicted graphically as a table or map. A *form* provides all stored attributes about a selected object. The attributes on the form can be attributes of the selected object or related objects.

Operations that can be performed on objects are called actions. Actions are simply shortcuts to simple or complex tasks of various kinds. A particular action can be associated with a specific object type. For example, when displaying a node table view, you might want to open a map showing all of that node's Layer 2 neighbors.

Note: If you are an NNMi user with the Guest role, you are not able to access Actions.

To access an object's form from a table view:

Click the Open icon that precedes the object of interest.

NNMi displays the form for the selected object.

To access an object's form from a map view:

Do one of the following:

- Select the node of interest and click the Open icon.
- In most cases, double-click the object of interest.

    Note: If the map object is a Child Node Group, double-clicking the Child Node Group object replaces the current map with a map of the nodes in the Child Node Group. To access a Child Node Group form, select the Child Node Group object and click the Open icon. See "Help for Operators" for more information.

NNMi displays the form for the selected object.

From an object form, you can:

"Display the Entire Attribute Value" (on page 68)

"Modify Object Attribute Values" (on page 66)

"Access All Information About a Related Object" (on page 66)

"Access a Subset of the Available Information About a Related Object" (on page 66)

Access a Subset of the Available Information About a Related Object

While investigating the available information for an object (within that object's form), some information represents attributes of the object itself and some information is about related objects. The related objects are indicated by a [icon] ⏷Lookup icon. For example, when viewing information for an Interface object, you can access information about the Node in which that interface resides.

This is an example Lookup Field:

Device Family [   ] [icon] ⏷

To display a subset of information about a related object from within a form:

1. Locate the field for the related object that you want to learn more about.

2. Click the [icon] ⏷Lookup icon, and select [icon] **Quick View** from the drop-down menu.

Source Node [ciscoNode09] [icon] ⏷
[icon] Quick View
[icon] Open

3. A window appears showing a subset of attributes about the related object.

Access All Information About a Related Object

While investigating the details for one object using a form, you can access information about another related object. For example, when viewing all information stored for a node, you can access all available information for an interface for that node to determine the interface status.

You can open another form from within a form for any object that is contained in the form you are viewing. Such objects are indicated using a [icon] ⏷Lookup icon.

This is an example Lookup Field:

Source Node [ciscoNode09] [icon] ⏷
[icon] Quick View
[icon] Open

To open another form from within a form:

1. Locate the field of an object about which you want to see more information.

2. Click the [icon] ⏷ Lookup icon, and select [icon]**Open** from the drop-down menu.

A new form appears showing all of the attributes for that object. Any default values specified for the object are pre-populated in the form

Modify Object Attribute Values

When viewing details for an object, such as a node, subnet, or interface, you can change one or more of its attribute values. For example, you can add notes to an incident to explain steps that were taken to date to resolve the problem. Until the problem is resolved you can enter information related to a workaround. Finally, after a solution is determined, you can add information describing how the problem was resolved.

Note: If you have Guest user role, you cannot modify any attributes.

Two kinds of fields indicate that you can modify an attribute.

To modify information in a text box:

1. Move your cursor to the modifiable field of interest.

2. Type the new value. For example, the Notes attribute is a modifiable field:

Notes
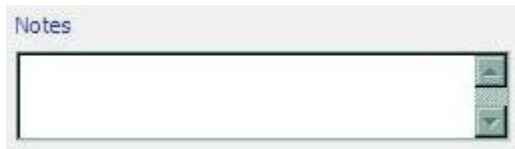
> **Tip**: If the attribute appears to be a modifiable field, but it does not permit text entry, it is a memo field.

> **Tip**: Click the attribute label to access a dialog box that enables you to view or edit text. Using this feature, you can insert more text or view a text field that is longer than the original display area.

3. When you are finished with your edits:

    - Click ▣ **Save** to save your changes.

    - Click ▣ **Save and Close** to save your changes and close the form.

To modify information in a 📑 ▾**Lookup field**:

1. Look for this icon to the right of a text box 📑 ▾. For example:

Device Family

2. Do one of the following:

    - Start to type into the text box. NNMi displays a list of all valid choices. You can select from the list to complete your choice.

Device Family | All
Device Vendor |
Device Category |

Allied Telesis
Allot Communications
Allot Communications NetEnforcer

    - Click the 📑 ▾Lookup icon, and choose 🔍 Quick Find to display a list of valid choices:

Assigned To

Quick View
Quick Find...
Open

3. When you are finished with your edits:

    - Click ▣ **Save** to save your changes.

    - Click ▣ **Save and Close** to save your changes and close the form.

Display the Entire Attribute Value

You may not be able to see the entire attribute value within the space allocated in a particular field.

To access all of the text for an attribute value:

Click the label text for that attribute.

NNMi opens a window showing the entire attribute value.

Using Actions to Perform Tasks

Actions let you perform operations on selected items. The actions available to you depend on your NNMi user role. Administrators have more action choices than operators. If SPIs are installed in your environment, the list of actions could expand.

See the NNMi Actions table for a description of possible actions.

Note: Actions that change an object's attribute value or that require login access to a node (for example, telnet) are also not included in this list.

To perform any of the actions described, you select an action from the **Actions** menu. The **Actions** menu is accessible from the NNMi console main menu bar, from a form menu bar, and from the menu bar in any view that is opened in a new window. See "Invoke Actions" (on page 15) for more information about how to access actions.

If you open a map view using the **Actions** menu, each unique map view displays in a new window. NNMi uses the criteria described in the following table to determine whether a map is unique.

Criteria for Displaying Maps in a New Window

Map View	Object Attribute Values that Must be Unique
Node Group Map	The Name attribute value for the Node Group.
Layer 2 Neighbor View	The Name attribute value of the Starting Node.
Layer 3 Neighbor View	The Name attribute value of the Starting Node.
Path View	The pair of Name attribute values for the Source Node and the Destination Node.

NNMi Actions

Action	Description
Layer 2 Neighbor View	Displays a map of the Layer 2 network. Layer 2 maps help you better understand your switch connectivity. See "Help for Operators" for more information.
Layer 3 Neighbor View	Displays a map of the Layer 3 network. Layer 3 network maps help you better understand your router connectivity. See "Help for Operators" for more information.
Path View	Displays a map showing the route between two specified nodes.
Ping	Lets you test whether a node is reachable, using the ping command
Monitoring Settings	Check the monitoring configuration settings that were set for a particular node, interface, address, Router Redundancy Member, Tracked Object, or Component Health.
Configuration Poll	Launches a real-time configuration check of the selected device to detect any changes since the last discovery cycle.

NNMi Actions Specific to Incidents

Action	Description
Node Group Members	*Island Node Group incidents only*. Displays a table of the nodes that are members of the Island Node Group that is the Source Object for the selected incident. **Note**: Incidents whose Source Object is an Island Node Group include **Remote site** in the incident message.
Node Group Map	Displays the lowest level Node Group map to which the Source Node belongs. For example, if the node belongs to a Child Node Group, the Child Node Group displays. If the Source Node is a member of more than one Node Group at the lowest level, NNMi prompts you to select the Node Group map you want to display. If the incident's Source Object is an Island Node Group, NNMi displays the Island Node Group map. **Note**: Incidents whose Source Object is an Island Node Group include **Remote site** in the incident message. See "Help for Operators" for more information. When the selected Source Node is not a member of any Node Group, and you select the **Node Group Map** action, NNMi displays an information message.
Source Node	Opens the Node form for the Source Node of the current incident.
Source Object	Opens the Source Object's form for the current incident. For example, if the Source Object is a Layer 2 Connection, NNMi opens the Layer 2 Connection form.

Actions Specific to Nodes, Interfaces, and IP Addresses

Action	Description
Node Group Map	This action displays the lowest level Node Group map to which the Source Node, or selected interface or IP address on a node belongs. For example, if the node belongs to a Child Node Group, the Child Node Group displays. If the Source Node, or selected interface or IP address on a node is a member of more than one Node Group at the same level, NNMi prompts you to select the Node Group map you want to display. When the selected Source Node, interface, or IP address is not a member of any Node Group, and you select the **Node Group Map** action, NNMi displays an information message.

NNMi Actions Specific to Node Groups

Action	Description
Node Group Map	Displays the pre-defined members of a Node Group in the context of not only status and connectivity, but of a pre-defined background image (for example, a map of North America).
Show Members	Displays all nodes in the selected Node Group.
Show All Incidents	Displays all incidents for the nodes in the selected Node Group.

Action	Description
Show All Open Incidents	Displays all open incidents for the nodes in the selected Node Group. Open incidents include those with a lifecycle state of **Registered** and **In Progress**.
Status Details	Displays status information for all nodes in the selected Node Group.

NNM iSPI Performance for Metrics Actions

(*NNM iSPI Performance for Metrics*) An additional choice is available in the Actions menu that launches the NNM iSPI Performance for Metrics Report Menu. The context of the Report Menu changes depending on the currently selected object (Node, Node Group, Interface, or Interface Group). When selecting more than one object, multiple NNM iSPI Performance for Metrics reports open (one for each object, maximum 5).

No matter where you are in the NNMi console, the following option appears under the Actions menu:

- **Reporting - Report Menu**

In a Path View, this additional option appears under the Actions menu:

- **Reporting - Path Health**

See "Invoke Actions" (on page 15) for more information about how to access actions.

Displaying NNMi Information

To access information about NNMi, select **Help → About HP Network Node Manager i-series**.

The **About HP Network Node Manager i-series** option launches a window that provides the following information:

- The version number of NNMi that is running.

- A link to your NNMi license information.

- Counts for each type of object stored in the NNMi database. Possible objects include nodes, SNMP Agents, interfaces, addresses, connections, incidents, subnets, and VLANs.

- *NNMi Advanced*. Counts for the number of Router Redundancy Groups are listed.

- Information about the NNMi management server, including its hostname, IP address, fully qualified domain name (FQDN), operating system, and memory usage and status information.

- State Poller and Custom Poller health, including the following statistics:

    - State Poller and Custom Poller status

    - Collections requested and completed

    - Execution and collection times

    - Queue lengths

    - Types of objects being monitored

    - The number of objects being monitored for each object type

- Name, identifier, and version number for any NNM iSPI software (HP Smart Plug-ins) installed, as well as for any types of device extensions deployed in NNMi. NNMi displays the hostname of the server on which the NNM iSPI software and device extensions are installed.

- Locale (language) that is in use.

See "Help for Operators" for information about displaying views of your network objects and how to save the data for printing or for other applications.

Appendix A: Glossary Terms

A

Anycast Rendezvous Point IP Address

Rendezvous Point addresses are loopback addresses used for routers in multi-cast network configurations.

L

Layer 2

Refers to the Data Link layer of the multilayered communication model, Open Systems Interconnection (OSI). The Data Link layer moves data across the physical links in the network. The switches and bridges are devices that redirect data messages at the layer 2 level, using the destination Media Access Control (MAC) address to determine where to direct the message.

Layer 3

Refers to the Network layer of the multilayered communication model, Open Systems Interconnection (OSI). The Network layer is concerned with knowing the address of the neighboring nodes in the network, selecting routes and quality of service, and recognizing and forwarding incoming messages to local host domains. The router and switch-router are the devices that redirect data messages at the Layer 3 level. Everything in a subnet is connected at the Layer 3 (IP) level.

Link Aggregation

A Link Aggregation is comprised of an Aggregator Link, Aggregator Interface, and the physical interfaces and connections that they represent. An Aggregator Link object represents many-to-many physical connections. For example, two nodes might be connected with four physical connections. These four physical connections are depicted as a single Aggregator Link object using a thick line on the Layer 2 Neighbor View map. The interface depicted at each end of the Aggregator Link object is an Aggregator Interface object. An Aggregator Interface object represents the collection of physical interfaces for one end of an Aggregator Link.

loopback address

The address associated with the loopback interface. The loopback interface is a virtual interface on a device that provides a route for internal communication. Many vendors provide a specially configured

loopback for management pur-
poses. Exact details of how
loopbacks are configured
varies by vendor and model.
See each device's doc-
umentation for details. NNMi
identifies these loopback
addresses by using IfType 24,
softwareloopback from the
IANA ifType-MIB.

Appendix B: Index