

HP Network Node Manager i Software

For the Windows[®] and Linux operating systems

Software Version: NNMi 10.00

HP Network Node Manager i Software—IBM Tivoli Netcool/ OMNibus Integration Guide

Document Release Date: May 2014
Software Release Date: May 2014



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.

Copyright Notice

© Copyright 2008–2014 Hewlett-Packard Development Company, L.P.

Trademark Notices

Adobe® is a trademark of Adobe Systems Incorporated.

Intel® is a trademark of Intel Corporation in the U.S. and other countries.

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

Oracle and Java are registered trademarks of Oracle and/or its affiliates.

Red Hat® is a registered trademark of Red Hat, Inc. in the United States and other countries.

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 America, Inc., 500 Oracle Parkway, Redwood City, CA 94065.

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

Acknowledgements

This product includes software developed by the Apache Software Foundation.
(<http://www.apache.org>)

This product includes software developed by the Indiana University Extreme! Lab.
(<http://www.extreme.indiana.edu>)

Available Product Documentation

In addition to this guide, the following documentation is available for NNMi:

- *HP Network Node Manager i Software Documentation List*—Available on the HP manuals web site. Use this file to track additions to and revisions within the NNMi documentation set for this version of NNMi. Click a link to access a document on the HP manuals web site.
- *NNMi Installation Guide*—This is an interactive document, and is available on the NNMi product media. See the `nnmi_interactive_installation_en_README.txt` file, located on the product media, for more information.
- *HP Network Node Manager i Software Upgrade Reference*—Available on the HP manuals web site.
- *HP Network Node Manager i Software Release Notes*—Available on the product media and the NNMi management server.
- *HP Network Node Manager i Software System and Device Support Matrix*—Available on the product media and the NNMi management server.
- *HP Network Node Manager iSPI Network Engineering Toolset Planning and Installation Guide*—Available on the NNM iSPI NET diagnostics server product media.

To check for recent updates or to verify that you are using the most recent edition of a document, go to:

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

This site requires that you register for an HP Passport and sign in. To register for an HP Passport ID, go to:

<http://h20229.www2.hp.com/passport-registration.html>

Or click the **New users - please register** link on the HP Passport sign-in page.

You will also receive updated or new editions if you subscribe to the appropriate product support service. Contact your HP sales representative for details.

Support

Visit the HP Software Support Online web site at:

www.hp.com/go/hpsoftwaresupport

This web site provides contact information and details about the products, services, and support that HP Software offers.

HP Software online support provides customer self-solve capabilities. It provides a fast and efficient way to access interactive technical support tools needed to manage your business. As a valued support customer, you can benefit by using the support web site to:

- Search for knowledge documents of interest
- Submit and track support cases and enhancement requests
- Download software patches and associated patch documentation
- Manage support contracts
- Look up HP support contacts
- Review information about available services
- Enter into discussions with other software customers
- Research and register for software training

Most of the support areas require that you register as an HP Passport user and sign in. Many also require a support contract. To register for an HP Passport user ID, go to:

<http://h20229.www2.hp.com/passport-registration.html>

To find more information about access levels, go to:

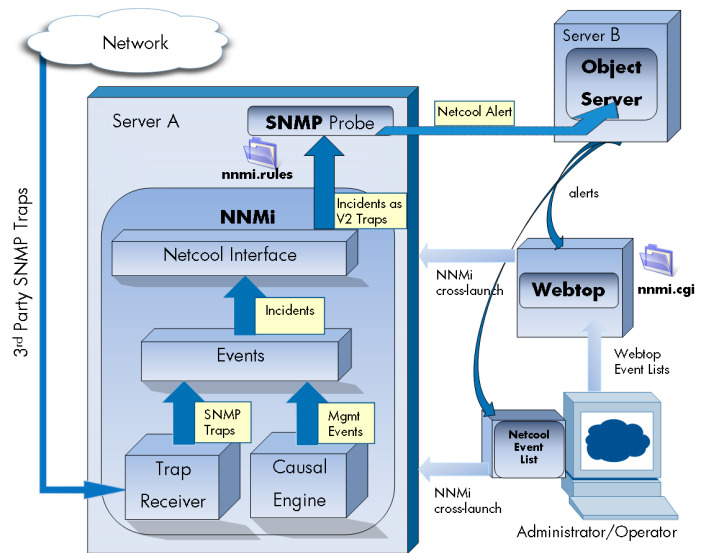
http://h20230.www2.hp.com/new_access_levels.jsp

May 2014

Contents

HP NNMi Integration Module for IBM Tivoli Netcool/OMNIBus Software	9
Value	10
Integrated Products	10
Documentation	11
Enabling the HP NNMi Integration Module for IBM Tivoli Netcool/OMNIBus Software.	11
Configuring HP NNMi to Forward Logger Syslog Messages.	15
Using the HP NNMi Integration Module for IBM Tivoli Netcool/OMNIBus Software	17
Changing the HP NNMi Integration Module for IBM Tivoli Netcool/OMNIBus Software	18
Disabling the HP NNMi Integration Module for IBM Tivoli Netcool/OMNIBus Software	18
Troubleshooting the HP NNMi Integration Module for IBM Tivoli Netcool/OMNIBus Software.	19
IBM Tivoli Netcool/OMNIBus Does Not Receive Any Forwarded HP NNMi Management Events. . .	19
Netcool/OMNIBus Does Not Receive Some Forwarded NNMi Management Events	20
Some Attributes of Netcool Traps Received from NNMi have Missing or Incorrect Data	20
Error When Launching an NNMi Form for a Layer 2 Connection	21
HP NNMi Integration Module for IBM Tivoli Netcool/OMNIBus Software Destination Form Reference	21
Netcool/OMNIBus SNMP Probe Connection	22
Integration Content	22
Destination Status Information	25

HP NNMi Integration Module for IBM Tivoli Netcool/OMNIbus Software



IBM Tivoli Netcool/OMNIbus consolidates events from a wide range of sources into a single view.

This chapter contains the following topics:

- [HP NNMi Integration Module for IBM Tivoli Netcool/OMNIbus Software](#)
- [Enabling the HP NNMi Integration Module for IBM Tivoli Netcool/OMNIbus Software](#)
- [Configuring HP NNMi to Forward Logger Syslog Messages](#)
- [Using the HP NNMi Integration Module for IBM Tivoli Netcool/OMNIbus Software](#)
- [Changing the HP NNMi Integration Module for IBM Tivoli Netcool/OMNIbus Software](#)
- [Disabling the HP NNMi Integration Module for IBM Tivoli Netcool/OMNIbus Software](#)
- [Troubleshooting the HP NNMi Integration Module for IBM Tivoli Netcool/OMNIbus Software](#)
- [HP NNMi Integration Module for IBM Tivoli Netcool/OMNIbus Software Destination Form Reference](#)

HP NNMi Integration Module for IBM Tivoli Netcool/OMNIbus Software

The HP NNMi Integration Module for IBM Tivoli Netcool/OMNIbus Software forwards NNMi management events as SNMPv2c traps to a Netcool/OMNIbus SNMP Probe on the NNMi management server. The probe filters the NNMi traps and forwards them to the Netcool/OMNIbus server.

While the integration can also forward the SNMP traps that HP NNMi receives from managed devices to the probe, it is recommended that you instead use the NNMi SNMP trap forwarding mechanism. For more information, see the `hp-nnmi-nbi.mib` file.

The integration provides menu items that extend the Netcool event viewers for launching NNMi forms and views in the context of a selected event.

The NNMi Integration Module for Netcool Software is a specific implementation of the HP NNMi northbound interface, which is described in the *NNMi Northbound Interface* chapter in the *NNMi Deployment Reference*.

The NNMi Integration Module for Netcool Software consists of the following components:

- nnm northbound integration module
- Configuration files for converting NNMi traps to Netcool/OMNIBus events and creating new menus in the Netcool/Webtop event lists and the Netcool/OMNIBus Event List

Value

The NNMi Integration Module for Netcool Software adds network-level fault and performance information to Netcool/OMNIBus, so that Netcool/OMNIBus users can detect and investigate potential network problems.

The primary features of the integration are as follows:

- Automatic management event forwarding from HP NNMi to IBM Tivoli Netcool/OMNIBus. Forwarded management events appear in the Netcool/Webtop event lists and the Netcool/OMNIBus Event List.
- Access to the NNMi console from Netcool/Webtop and IBM Tivoli Netcool/OMNIBus.
 - IBM Tivoli Netcool/OMNIBus users can open an NNMi form (for example, the Node form) in the context of a selected event and topology object.
 - IBM Tivoli Netcool/OMNIBus users can open an NNMi view (for example, the Layer 2 Neighbor view) in the context of a selected event and node.
 - IBM Tivoli Netcool/OMNIBus users can open the NNMi Incident form in the context of a selected event.

Integrated Products

The information in this chapter applies to the following products:

- IBM Tivoli Netcool/OMNIBus
- Netcool/OMNIBus SNMP Probe
- NNMi 10.00 with an NNMi Integration Module for Netcool Software license



For the list of supported versions, see the *NNMi System and Device Support Matrix*.



As of NNMi 9.00, installing NNMi enables a temporary Instant-On license key for the NNMi Integration Module for Netcool Software. To use the integration after the Instant-On license key expires, obtain and install a permanent license key for the NNMi Integration Module for Netcool Software.

HP NNMi and IBM Tivoli Netcool/OMNIBus must be installed on separate computers. The NNMi management server and the Netcool/OMNIBus server can be of the same or different operating systems.

The Netcool/OMNIBus SNMP Probe must be installed on the NNMi management server.

For the most recent information about supported hardware platforms and operating systems, see the HP NNMi support matrix and the IBM Tivoli Netcool/OMNIbus product documentation.

Documentation

This chapter describes how to configure the NNMi Integration Module for Netcool Software to forward NNMi management events to a Netcool/OMNIbus SNMP Probe. It also describes how to use the integration functionality.

For information about IBM Tivoli Netcool/OMNIbus, see that application's documentation.

Enabling the HP NNMi Integration Module for IBM Tivoli Netcool/OMNIbus Software

The NNMi Integration Module for Netcool Software includes files for configuring the Netcool/OMNIbus SNMP Probe and the Netcool event viewers. Because IBM Tivoli Netcool/OMNIbus is highly configurable, the instructions for the IBM Tivoli Netcool/OMNIbus side of the configuration might not exactly match your Netcool/OMNIbus system. It is recommended that an experienced Netcool/OMNIbus administrator complete the procedure for enabling the integration.

To enable the NNMi Integration Module for Netcool Software, follow these steps:

- 1 Gather the information for configuring Netcool/OMNIbus:
 - a On any computer, log on to the NNMi console as an NNMi user with the Administrator role.
 - b In the NNMi console, open the **HP NNMi Integration Module for IBM Tivoli Netcool/OMNIbus Software Configuration Actions** form (**Integration Module Configuration > Netcool**).
 - c Download the rules include file for the Netcool/OMNIbus SNMP Probe by right-clicking the **nnmi.include.rules** link and then saving the file to a known place on the computer.

The `nnmi.include.rules` file defines a rule for interpreting the SNMPv2c traps of the NNMi management events.

- For information about the contents and format of the traps that NNMi sends to the probe, see the `hp-nnmi-nbi.mib` file.
 - For information about customizing the `nnmi.include.rules` file, see the IBM Tivoli Netcool/OMNIbus documentation.
- d *Optional.* Download the information for configuring the Netcool/Webtop event lists to launch NNMi views. Do both of the following:
 - Right-click the **nnmi_launch.cgi** link, and then save the file to a known place on the computer.
 - Right-click the **nnmi_launch_cfg.txt** link, and then save the file to a known place on the computer.

- e *Optional.* Download the information for configuring the Netcool/OMNIbus Event List to launch NNMi views. Do one of the following:
 - *Windows* Netcool/OMNIbus server:
Right-click the **nnmi_confpack.zip** link, and then save the file to a known place on the computer.
 - *Linux* Netcool/OMNIbus server:
Right-click the **nnmi_confpack.gz** link, and then save the file to a known place on the computer.
- 2 Install the Netcool/OMNIbus SNMP Probe on the NNMi management server.
 - a Configure the probe to receive SNMP traps on an available UDP port.
 - Note this port number for configuring the integration in NNMi.
 - Verify that the probe port is different from the port NNMi uses to receive SNMP traps. To configure the NNMi SNMP port, use the **Communication Configuration** form in the NNMi console.
 - b Copy the `nnmi.include.rules` file from [step 1c](#) to the NNMi management server.
 - c Back up the master rules file, and then open the file in any text editor.
 - d Within the Netcool/OMNIbus enterprise trap switch block, add an `include` directive for the `nnmi.include.rules` file, and then save the master rules file.
 - e Restart the probe, and then examine the probe log file to verify that there were no problems reloading the rules file.

For more information about installing and configuring the probe, see the probe documentation.

- 3 Configure NNMi incident forwarding:
 - a On any computer, log on to the NNMi console as an NNMi user with the Administrator role.
 - b In the NNMi console, open the **HP NNMi Integration Module for IBM Tivoli Netcool/OMNIbus Software Configuration Actions** form (**Integration Module Configuration > Netcool**).
 - c Click **Enable/Disable** NNMi Integration Module for Netcool Software, and then click **New**.

(If you have selected an available destination, click **Reset** to make the **New** button available.)
 - d On the **HP NNMi Integration Module for IBM Tivoli Netcool/OMNIbus Software Destination** form, select the **Enabled** check box to make the remaining fields on the form available.
 - e Enter the information for connecting to the Netcool/OMNIbus SNMP Probe. For information about these fields, see [Netcool/OMNIbus SNMP Probe Connection](#) on page 22.
 - f Specify the sending options.

For information about these fields, see [Integration Content](#) on page 22.

- g Click **Submit** at the bottom of the form.
A new window opens, showing a status message. If the message indicates a problem with the settings, click **Return**, and then adjust the values as suggested by the text of the error message.



The `nnmi.include.rules` file contains example rules for interpreting standard NNMi management events sent through the Northbound Interface as SNMPv2c traps. You might need to add definitions to the `nnmi.include.rules` file for new NNMi management events or if NNMi management events have been customized (such as events sent from custom polls).



You can select **Send** in the **Deletions** field and configure HP NNMi to send a deletion trap to the Netcool/OMNIBus SNMP Probe for each incident that is deleted in NNMi. Make sure to save your changes. You might need to add definitions to the `nnmi.include.rules` file to recognize the deletion traps and to permit the Netcool/OMNIBus system to correctly process them.



SNMP traps fall into three categories:

- *NNMi Management Events*: These events originate within NNMi, such as `NodeDown` or `IncidentDown` events. These events can only be sent to Netcool/OMNIBus through the Northbound Interface. They will be sent in the NNMi Incident trap format, as documented in the `hp-nnmi-nbi.mib` MIB. This method is explained in more detail in the next tip.
- *3rd-Party SNMP Traps*: These are SNMP traps that originate outside of NNMi, and are received by the NNMi trap receiver components. These traps can be forwarded to Netcool/OMNIBus through the Northbound Interface or through the NNMi trap forwarder. This method is explained in more detail in the next tip.
- *HP ArcSight Logger Syslog messages*: These are events that originate in HP ArcSight Logger and are integrated with NNMi. These events can be sent to Netcool through the Northbound Interface. They will be sent in the NNMi Incident trap format, as documented in the `hp-arcsight.mib` MIB. See [Configuring HP NNMi to Forward Logger Syslog Messages](#) on page 15.

Read the remaining tips, then see [Trap Forwarding Choices](#) on page 15 for a summary of your forwarding choices.



If you must send 3rd party traps from HP NNMi to Netcool/OMNIbus as NNMi events, do *either* of the following:

- **3rd-Party SNMP Traps (NNMi trap forwarding):** Configure SNMP trap forwarding to Netcool/OMNIbus from the NNMi console using the **Trap Forwarding** option under the **Incidents** folder of the **Configuration** workspace. For more information see *Configure Trap Forwarding* in the NNMi help.
 - This method requires normal trap configuration, and involves loading the correct MIBs, creating incidents, and enabling these incidents. See *Configure Trap Forwarding* in the NNMi help.
 - Traps are sent to Netcool/OMNIbus in their original format unless you configured NNMi to translate the traps into a different format (such as translating from SNMPv3 to SNMPv2c or SNMPv1). This method should permit existing Netcool trap rules (such as those published by IBM in the Netcool Knowledge Library) to work without change.
 - You can configure NNMi to *spoof* the sending address (make the address appear as if it originated from a different source). By spoofing the sending address, the trap, when received, will appear to have come directly from the original source instead of from NNMi.
- **NNMi incidents:** You can forward NNMi incidents to any application that can receive SNMPv2c traps using the NNMi northbound interface. To send 3rd party traps from HP NNMi to the Netcool/OMNIbus SNMP Probe using this method, do the following:
 - a Select **3rd Party SNMP Traps** in the **Incidents** field. Save your changes.
 - b Configure the `nnmi.include.rules` file for the specific traps you want to forward to the Netcool/OMNIbus SNMP Probe.
For more information, see the NNMi Northbound Interface chapter in the *NNMi Deployment Reference*.

This method provides the following benefits:

- NNMi sends events after they pass through NNMi functions, such as filtering and enrichment. For example, NNMi only forwards *link down* traps for managed interfaces on managed nodes.
- Events will contain NNMi enrichment information, including information about the associated node that might provide additional diagnostic value for other applications,

This method requires normal trap configuration, and involves loading the correct MIBs, creating incidents, and enabling these incidents. It also requires rules in the Netcool/OMNIbus system to process each varbind correctly.

Table 1 Trap Forwarding ChoicesN

Message Class	Forward Using Northbound Interface	Forward Using NNMi Trap Forwarding
NNMi Management Events	Yes - as documented in the <code>hp-nnmi-nbi.mib</code> MIB	No
ArcSight Logger SNMP Trap Incidents	Yes - as documented in the <code>hp-nnmi-nbi.mib</code> MIB	No
3rd-Party Traps	Yes - as documented in the <code>hp-nnmi-nbi.mib</code> MIB	Yes, according to the installed MIBs.

- 4 *Optional.* Configure the Netcool/Webtop event lists to launch NNMi views.
 - a Copy the `nnmi_launch.cgi` file from [step 1d](#) to the `cgi-bin` directory on the Netcool/Webtop server.
 - b Follow the instructions in the `nnmi_launch_cfg.txt` file from [step 1d](#) to prepare the CGI file and to configure the Netcool/Webtop menus.
- 5 *Optional.* Configure the Netcool/OMNIbus Event List to launch NNMi views.
 - a Copy the `nnmi_confpack.*` archive file from [step 1e](#) to the computer where the instance of the Netcool/OMNIbus ObjectServer is running.
 - b Unpack the `nnmi_confpack.*` archive file to a temporary location.
 - c From the temporary location, run the following command:
 - *Windows* Netcool/OMNIbus server:


```
%OMNIBUSHOME%\bin\nco_confpack -import \  
-package nnmi.confpack \  
-user <objectserver_administrator_username> \  
-server <objectserver_name>
```
 - *Linux* Netcool/OMNIbus server:


```
$OMNIBUSHOME/bin/nco_confpack -import \  
-package nnmi.confpack \  
-user <objectserver_administrator_username> \  
-server <objectserver_name>
```
 - d *Linux only:* Verify that `$OMNIBROWSER` is set to the location of the Mozilla Firefox browser.

Configuring HP NNMi to Forward Logger Syslog Messages

You can configure HP NNMi to forward HP ArcSight Logger Syslog messages to a Netcool/OMNIbus SNMP Probe on the NNMi management server using NNMi's Northbound Interface. The result is in HP ArcSight Logger Syslog messages being sent to Netcool/OMNIbus software.

To configure the NNMi Integration Module for Netcool Software to forward Syslog messages to NNMi's Northbound Interface, do the following.

- 1 Review the information shown in the [HP NNMi Integration Module for IBM Tivoli Netcool/OMNIBus Software Destination Form Reference](#) on page 21.
- 2 Follow the enabling instructions shown in [Enabling the HP NNMi Integration Module for IBM Tivoli Netcool/OMNIBus Software](#) on page 11.
- 3 From the NNMi console, click **Integration Module Configuration > NetCool**. NNMi displays the **HP NNMi Integration Module for Netcool Software Configuration Actions** screen.
- 4 Click **Enable/Disable** NNMi Integration Module for Netcool Software.
- 5 Click **Edit**.
- 6 Modify the form to match the highlighted fields shown in [Figure 1](#). Completing the following configuration steps are important:
 - In the **Incidents** Field, select the **Syslog** check box.
 - In the **Deletions** Field, select the **Send** check box

Figure 1 Important Fields.

The screenshot shows the configuration form for the HP NNMi Integration Module for Netcool Software Destination. The form is titled "HP NNMi Integration Module for Netcool Software Destination" and includes a "Help" button. The "Netcool Destination" section has an "Enabled" checkbox. The "Host" field is set to "NNMi FQDN" with a text input field containing "https://nntestnmgm1010.usda.hp.com". The "Port" field is empty, and the "Community String" is set to "public". The "Sending Options" section includes "Incidents" (Management, 3rd Party SNMP Trap, Syslog), "Lifecycle State Changes" (Enhanced Closed, State Changed, Both), "Correlations" (None, Single, Group), "Deletions" (Dont Send, Send), and "NNMi Console Access" (HTTP, HTTPS). The "Incident Filters" section includes "OIDs" (None, Include, Exclude) and a list of OIDs with "Add" and "Remove" buttons. The "Additional Information" section includes "Trap Destination IP Address", "Uptime (seconds)" (2,341.02), and "NNMi URL" (https://nntestnmgm1010.usda.hp.com:443/). The form has "Submit", "Return", and "Cancel" buttons at the bottom.

- 7 Configure the Netcool/OMNIBus software to listen for `nmmSyslog` incidents. The `nmmSyslog` incident OID to listen for is `.1.3.6.1.4.1.11.2.17.19.2.0.4000`.



You might need to add definitions to the `nmmi.include.rules` file for syslog incidents or deletion traps that appear as undefined traps to the Netcool/OMNIBus SNMP Probe.

After completing [step 1](#) through [step 7](#), the NetCool software will be able to consume HP ArcSight Logger Syslog messages.

- e NNMi takes varbinds from the `ArcSightEvent` trap (OID is `.1.3.6.1.4.1.11937.0.1`) and forwards these varbinds northbound in another trap (from the `hp-nnmi-nbi.mib`). You can see the trap's Custom Incident Attributes (CIAs) by viewing the 20th varbind (`nnmiIncidentCias`) in the comma-separated list from the `nmmiSyslog` incident (OID is `.1.3.6.1.4.1.11.2.17.19.2.0.4000`).

Using the HP NNMi Integration Module for IBM Tivoli Netcool/OMNIBus Software

When the NNMi Integration Module for Netcool Software is enabled, HP NNMi sends SNMPv2c traps to the Netcool/OMNIBus Probe. View the content forwarded from HP NNMi in the Netcool/Webtop event lists and the Netcool/OMNIBus Event List.

For information about the types of traps the integration module can forward to the probe, see *Using the NNMi Northbound Interface* in the *NNMi Deployment Reference*. For information about the contents and format of these traps, see the `hp-nnmi-nbi.mib` file. For a comparison of trap forwarding mechanisms, see *Trap and Incident Forwarding* in the *NNMi Deployment Reference*.

NNMi sends only one copy of each management event trap (or received SNMP trap) to the Netcool/OMNIBus SNMP Probe. HP NNMi does not queue traps. If the probe is unavailable when HP NNMi forwards a trap, it loses the trap.

The integration module provides links to the NNMi console from the Netcool event viewers. Enter your NNMi user credentials to see the NNMi console views.

In [Enabling the HP NNMi Integration Module for IBM Tivoli Netcool/OMNIBus Software](#) on page 11, [step 4](#) and [step 5](#) add the following menu items to the Netcool event viewers:

- **Source Object**—Opens the NNMi form for the object in the event selected in Netcool/OMNIBus.
- **Node**—Opens the NNMi Node form for the node in the event selected in Netcool/OMNIBus.
- **L2 Neighbors**—Opens the NNMi Layer 2 Neighbor View for the node in the event selected in Netcool/OMNIBus.
- **L3 Neighbors**—Opens the NNMi Layer 3 Neighbor View for the node in the event selected in Netcool/OMNIBus.

- **Incident Details**—Opens the NNMi Incident form for the event selected in Netcool/OMNIbus



On Linux Netcool/OMNIbus servers:

- Mozilla Firefox must be the default web browser to support the launching of NNMi views from the Netcool/OMNIbus Event List.
- The `$OMNIBROWSER` environment variable must be set to the location of the Mozilla Firefox browser.

Changing the HP NNMi Integration Module for IBM Tivoli Netcool/OMNIbus Software

To change the NNMi Integration Module for Netcool Software configuration parameters, follow these steps:

- 1 In the NNMi console, open the **HP NNMi Integration Module for IBM Tivoli Netcool/OMNIbus Software Configuration Actions** form (**Integration Module Configuration > Netcool**).
- 2 Click **Enable/Disable** NNMi Integration Module for Netcool Software.
- 3 Select a destination, and then click **Edit**.
- 4 Modify the values as appropriate.

For information about the fields on this form, see [HP NNMi Integration Module for IBM Tivoli Netcool/OMNIbus Software Destination Form Reference](#) on page 21.

- 5 Verify that the **Enable** check box at the top of the form is selected, and then click **Submit** at the bottom of the form.

The changes take effect immediately.

Disabling the HP NNMi Integration Module for IBM Tivoli Netcool/OMNIbus Software

No SNMP trap queuing occurs while a destination is disabled.

To discontinue the forwarding of NNMi management events to the Netcool/OMNIbus SNMP Probe, follow these steps:

- 1 In the NNMi console, open the **HP NNMi Integration Module for IBM Tivoli Netcool/OMNIbus Software Configuration Actions** form (**Integration Module Configuration > Netcool**).
- 2 Click **Enable/Disable** NNMi Integration Module for Netcool Software.
- 3 Select a destination, and then click **Edit**.

Alternatively, click **Delete** to entirely remove the configuration for the selected destination.

- 4 On the **HP NNMi Integration Module for IBM Tivoli Netcool/OMNIBus Software Destination** form, clear the **Enable** check box at the top of the form, and then click **Submit** at the bottom of the form.

The changes take effect immediately.

- 5 To conserve system resources, shut down the Netcool/OMNIBus SNMP Probe while the destination is disabled.

To permanently disable the integration, also do the following:

- Uninstall the Netcool/OMNIBus SNMP Probe as described in the probe documentation.
- Remove the NNMi menu items from the Netcool/Webtop and Netcool/OMNIBus Event List configurations.

Troubleshooting the HP NNMi Integration Module for IBM Tivoli Netcool/OMNIBus Software

IBM Tivoli Netcool/OMNIBus Does Not Receive Any Forwarded HP NNMi Management Events

If the Netcool event viewer does not contain any traps from HP NNMi, follow these steps:

- 1 Verify that the Netcool/OMNIBus SNMP Probe is receiving traps:
 - a Verify that the probe can send messages to the Netcool/OMNIBus server.
 - b Verify that the probe master rules file includes or contains the content of the `nnmi.include.rules` file.
 - c Verify the syntax of the master rules file.
 - d Examine the probe log file to verify that there were no problems loading the rules file.
 - e Examine the probe log file to determine whether the NNMi traps arrive at the probe.
 - f Examine the probe log file to determine whether the probe processes or drops the incoming traps.

For information about troubleshooting the probe, see the Netcool/OMNIBus documentation.

- 2 Verify that NNMi is forwarding management events to the Netcool/OMNIBus SNMP Probe.

For information, see *Troubleshooting the NNMi Northbound Interface* in the *NNMi Deployment Reference*.

Netcool/OMNIBus Does Not Receive Some Forwarded NNMi Management Events

If one or more NNMi management event traps do not appear in the Netcool event viewer, follow these steps:

- 1 Verify that the Netcool/OMNIBus SNMP Probe master rules file includes or contains the content of the `nnmi.include.rules` file.
- 2 Verify that Netcool/OMNIBus is running.

If the Netcool/OMNIBus server shuts down, the Netcool/OMNIBus SNMP Probe queues received traps. The probe forwards the queued traps when the Netcool/OMNIBus server becomes available.

HP NNMi relies on the probe to queue and forward traps. If the probe shuts down, the forwarded traps are lost.

- 3 Verify that the NNMi processes are running.

Some Attributes of Netcool Traps Received from NNMi have Missing or Incorrect Data

The Netcool probe rules provided in the `nnmi.include.rules` configuration file are designed to operate within the framework of the Netcool Knowledge Library rule set. NNMi rules are designed to store key NNMi incident information in unused alarm columns to enable “right-click” tools to be launched from Webtop or the Web GUI.

Other rules that are distributed with the Netcool Knowledge Library and enabled in your deployment might overwrite the NNMi values and should be checked if the “right-click” tools fail to launch because of missing data.

To verify the final value of certain attributes (columns) once received, specify `details($*)` in the `nnmi.include.rules` configuration file as follows:

- 1 Open the `nnmi.include.rules` configuration file.
- 2 Insert the following line:


```
details($*)
```
- 3 Check the following attribute values in the traps received from NetCool to determine whether the values are being overwritten by rules outside those in the `nnmi.include.rules` file.



This list includes the more common attributes to check; however, there might be others.

- @LocalNodeAlias
- @LocalSecObj
- @LocalPriObj
- @LocalRootObj
- @RemoteNodeAlias
- @RemotePriObj
- @RemoteSecObj
- @RemoteRootObj

- 4 If the values are not as expected, check for any additional rules that might overwrite attribute values in your Netcool traps. For example, if it is used by your system, the `$NC_RULES_HOME/include-compat` folder might also contain rules that overwrite attribute values defined in `nnmi.include.rules`.

Error When Launching an NNMi Form for a Layer 2 Connection

If the source object in an NNMi management event is a layer 2 connection, NNMi users with a role other than Administrator cannot open the NNMi form directly from the **Source Object** menu item in the Netcool event viewer. Instead, in the Netcool event viewer, use the **L2 Neighbors** menu item to connect to NNMi, and then double-click the connection in the Layer 2 Neighbor View.

HP NNMi Integration Module for IBM Tivoli Netcool/OMNibus Software Destination Form Reference

The **HP NNMi Integration Module for IBM Tivoli Netcool/OMNibus Software Destination** form contains the parameters for configuring communications between HP NNMi and a Netcool/OMNibus SNMP Probe. When a valid NNMi Integration Module for Netcool Software license has been installed on the NNMi management server, this form is available from the **Integration Module Configuration** workspace. (On the **HP NNMi Integration Module for IBM Tivoli Netcool/OMNibus Software Configuration Actions** form, click **Enable/Disable** NNMi Integration Module for Netcool Software. Click **New**, or select a destination, and then click **Edit**.)



Only NNMi users with the Administrator role can access the **HP NNMi Integration Module for IBM Tivoli Netcool/OMNibus Software Destination** form.

The **HP NNMi Integration Module for IBM Tivoli Netcool/OMNibus Software Destination** form collects information for the following areas:

- [Netcool/OMNibus SNMP Probe Connection](#) on page 22
- [Integration Content](#) on page 22
- [Destination Status Information](#) on page 25

To apply changes to the integration configuration, update the values on the **HP NNMi Integration Module for IBM Tivoli Netcool/OMNibus Software Destination** form, and then click **Submit**.

Netcool/OMNIBus SNMP Probe Connection

Table 2 lists the parameters for configuring the connection to the Netcool/OMNIBus SNMP Probe.

Table 2 Netcool/OMNIBus SNMP Probe Connection Information

Field	Description
Host	<p>The fully-qualified domain name (preferred) or the IP address of the NNMi management server, which is the system that the Netcool/OMNIBus SNMP Probe receives SNMP traps from NNMi.</p> <p>The integration supports the following methods for identifying the probe host:</p> <ul style="list-style-type: none"> • NNMi FQDN NNMi manages the connection to the probe on the NNMi management server and the Host field becomes read-only. This is the default and recommended configuration. • Use Loopback NNMi manages the connection to the probe on the NNMi management server and the Host field becomes read-only. • Other Do not use this option. <p>NOTE: If the NNMi management server participates in NNMi application failover, see the <i>NNMi Deployment Reference</i> for information about the impact of application failover on the integration.</p>
Port	<p>The UDP port where the Netcool/OMNIBus SNMP Probe receives SNMP traps. Enter the port number specific to the probe.</p> <p>To determine the port, examine the probe <code>mttrapd.properties</code> file on the NNMi management server.</p> <p>NOTE: This port number must be different from the port NNMi uses to receive SNMP traps, as set in the SNMP Port field on the Communication Configuration form in the NNMi console.</p>
Community String	<p>A read-only community string for the Netcool/OMNIBus SNMP Probe to receive traps.</p> <p>If the probe configuration requires a specific community string in the received SNMP traps, enter that value.</p> <p>If the probe configuration does not require a specific community string, use the default value, which is <code>public</code>.</p>

Integration Content

Table 3 lists the parameters for configuring the content the NNMi Integration Module for Netcool Software sends to the Netcool/OMNIBus SNMP Probe.

Table 3 NNMi Integration Module for Netcool Software Content Configuration

Field	Description
Incidents	<p>The incident forwarding specification.</p> <ul style="list-style-type: none"> • Management HP NNMi forwards only NNMi-generated management events to the Netcool/OMNIbus Probe. This is the default configuration. • SNMP 3rd Party Trap HP NNMi forwards only SNMP traps that HP NNMi receives from managed devices to the probe. • Syslog HP NNMi forwards HP ArcSight Syslog messages to the northbound application using the NorthBound Integration module. <p>HP NNMi begins forwarding incidents as soon as you enable the destination. For more information, see <i>Incident Forwarding</i> in the <i>NNMi Deployment Reference</i>.</p>
Lifecycle State Changes	<p>The incident change notification specification.</p> <ul style="list-style-type: none"> • Enhanced Closed HP NNMi sends an incident closed trap to the Netcool/OMNIbusSNMP Probe for each incident that changes to the CLOSED lifecycle state. This is the default configuration. • State Changed HP NNMi sends an incident lifecycle state changed trap to the probe for each incident that changes to the IN PROGRESS, COMPLETED, or CLOSED lifecycle state. • Both HP NNMi sends an incident closed trap to the probe for each incident that changes to the CLOSED lifecycle state. Additionally, the integration sends an incident lifecycle state changed trap to the probe for each incident that changes to the IN PROGRESS, COMPLETED, or CLOSED lifecycle state. NOTE: In this case, each time an incident changes to the CLOSED lifecycle state, the integration sends two notification traps: an incident closed trap and an incident lifecycle state changed trap. <p>For more information, see <i>Incident Lifecycle State Change Notifications</i> in the <i>NNMi Deployment Reference</i>.</p>
Correlations	<p>The incident correlation notification specification.</p> <ul style="list-style-type: none"> • None HP NNMi does not notify the Netcool/OMNIbus SNMP Probe of incident correlations resulting from NNMi causal analysis. This is the default configuration. • Single HP NNMi sends a trap for each parent-child incident correlation relationship resulting from NNMi causal analysis. • Group HP NNMi sends one trap per correlation that lists all child incidents correlated to a parent incident. <p>For more information, see <i>Incident Correlation Notifications</i> in the <i>NNMi Deployment Reference</i>.</p>

Table 3 NNMi Integration Module for Netcool Software Content Configuration (cont'd)

Field	Description
Deletions	<p>The incident deletion specification.</p> <ul style="list-style-type: none"> • Don't Send NNMi does not notify the Netcool/OMNIBus SNMP Probe when incidents are deleted in NNMi. This is the default configuration. • Send HP NNMi sends a deletion trap to the probe for each incident that is deleted in NNMi. <p>For more information, see <i>Incident Deletion Notifications</i> in the <i>NNMi Deployment Reference</i>.</p>
NNMi Console Access	<p>The connection protocol specification in the URL for browsing to the NNMi console from the Netcool event viewer. The traps that NNMi sends to the Netcool/OMNIBus SNMP Probe include the NNMi URL in the NmsUrl varbind (1.3.6.1.4.1.11.2.17.19.2.2.2).</p> <p>The configuration page defaults to the setting that matches the NNMi configuration. If the NNMi console is configured to accept both HTTP and HTTPS connections, you can change the HTTP connection protocol specification in the NNMi URL. For example, if all Netcool/OMNIBus users are on the intranet, you can set NNMi console access from the Netcool event viewer to be over HTTP. To change the protocol for connecting to the NNMi console from the Netcool event viewer, select the HTTP option or the HTTPS option as appropriate.</p>
Incident Filters	<p>A list of object identifiers (OIDs) the integration uses to filter the events sent to the Netcool/OMNIBus SNMP Probe. Each filter entry can be a valid numeric OID (for example, .1.3.6.1.6.3.1.1.5.4.1.3.6.1.4.1.9) or OID prefix (for example, .1.3.6.1.6.3.1.1.5.*).</p> <p>Select one of the following options:</p> <ul style="list-style-type: none"> • None HP NNMi sends all events to the probe. This is the default configuration. • Include HP NNMi sends only the specific events that match the OIDs identified in the filter. • Exclude HP NNMi sends all events except for the specific events that match the OIDs identified in the filter. <p>Specify the incident filter:</p> <ul style="list-style-type: none"> • To add a filter entry, enter the text in the lower text box, and then click Add. • To delete a filter entry, select that entry from the list in the upper box, and then click Remove. <p>For more information, see <i>Event Forwarding Filter</i> in the <i>NNMi Deployment Reference</i>.</p>

Destination Status Information

Table 4 lists the read-only status information for the NNMi Integration Module for Netcool Software destination. This information is useful for verifying that the integration is working correctly.

Table 4 NNMi Integration Module for Netcool Software Status Information

Field	Description
Trap Destination IP Address	<p>The IP address that the Netcool/OMNIBus SNMP Probe destination host name resolves to.</p> <p>This value is unique to this probe destination.</p>
Uptime (seconds)	<p>The time (in seconds) since the northbound component was last started. The traps that HP NNMi sends to the Netcool/OMNIBus SNMP Probe include this value in the sysUptime field (1.3.6.1.2.1.1.3.0).</p> <p>This value is the same for all integrations that use the NNMi northbound interface. To see the latest value, either refresh or close and re-open the form.</p>
NNMi URL	<p>The URL for connecting to the NNMi console. The traps that NNMi sends to the Netcool/OMNIBus SNMP Probe include this value in the NmsUrl varbind (1.3.6.1.4.1.11.2.17.19.2.2.2).</p> <p>This value is unique to this northbound destination.</p>

We appreciate your feedback!

If an email client is configured on this system, by default an email window opens when you click *here*.

If no email client is available, copy the information below to a new message in a web mail client, and then send this message to **ovdoc-nsm@hp.com**.

Product name and version: NNMi 10.00

Document title: *HP NNMi - IBM Tivoli Netcool/Omnibus Integration Guide*

Feedback:

