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for the Windows® and Linux® operating systems

HPE Network Node Manager i Software–IBM Tivoli Netcool/OMNIbus Integration Guide

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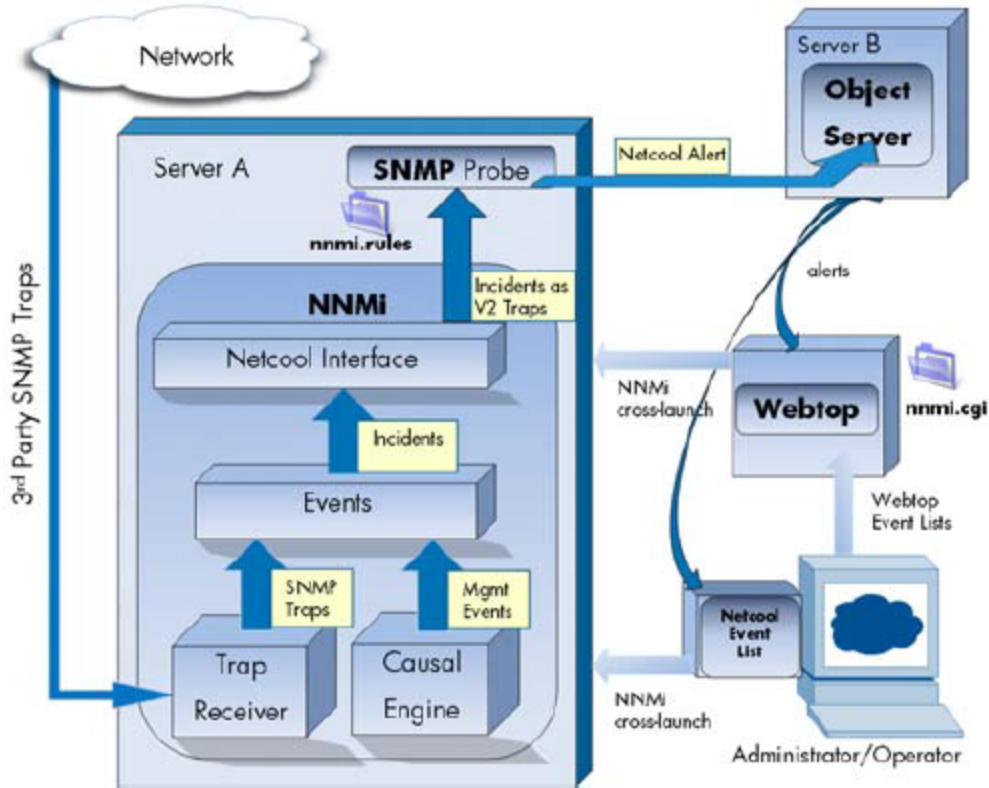Most of the support areas require that you register as an HP Passport user and sign in. Many also require a support contract. To register for an HP Passport ID, go to **https://softwaresupport.hpe.com** and click **Register**.

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Contents

Integrate NNMi with IBM Tivoli Netcool/OMNIbus

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

This chapter contains the following topics:

- "HPE NNMi Integration Module for IBM Tivoli Netcool/OMNIbus Software"
- "Enabling the HPE NNMi Integration Module for IBM Tivoli Netcool/OMNIbus Software"
- "Configuring NNMi to Forward Logger Syslog Messages "
- "Using the HPE NNMi Integration Module for IBM Tivoli Netcool/OMNIbus Software"
- "Changing the HPE NNMi Integration Module for IBM Tivoli Netcool/OMNIbus Software"
- "Disabling the HPE NNMi Integration Module for IBM Tivoli Netcool/OMNIbus Software"
- "Troubleshooting the HPE NNMi Integration Module for IBM Tivoli Netcool/OMNIbus Software"
- "HPE NNMi Integration Module for IBM Tivoli Netcool/OMNIbus Software Destination Form Reference"

HPE NNMi Integration Module for IBM Tivoli Netcool/OMNIbus Software

The HPE 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 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 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:

- nnmi-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 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

  > **Tip:** For the list of supported versions, see the NNMi Support Matrix.

- Netcool/OMNIbus SNMP Probe

- NNMi 10.30 with an NNMi Integration Module for Netcool Software license

> **Note:** 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.

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 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 HPE 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 **HPE 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 "Gather the information for configuring Netcool/OMNIbus:""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." 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 **HPE 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 **HPE 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".

f. Specify the sending options.

For information about these fields, see "Integration Content".

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.

Tip: 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).

Tip: You can select **Send** in the **Deletions** field and configure 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.

Tip: 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.

- *HPE ArcSight Logger Syslog messages*: These are events that originate in HPE 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 NNMi to Forward Logger Syslog Messages ".

    Read the remaining tips, then see "Table 1   Trap Forwarding Choices" for a summary of your forwarding choices.

Tip: If you must send 3rd party traps from 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 NNMi to the Netcool/OMNIbus SNMP Probe using this method, do the following:

  i. Select **3rd Party SNMP Traps** in the **Incidents** field. Save your changes.

  ii. 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 Choices

Message Class	Forward Using Northbound Interface	Forward Using NNMi Trap Forwarding
NNMi Management Events	Yes - as documented in the **hp-nnmi-nbi.mib** MIB	No
ArcSight Logger SNMP Trap Incidents	Yes - as documented in the **hp-nnmi-nbi.mib** MIB	
3rd-Party Traps	Yes - as documented in the **hp-nnmi-nbi.mib** 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 "Gather the information for configuring Netcool/OMNIbus:""Optional. Download the information for configuring the Netcool/Webtop event lists to launch NNMi views. Do both of the following:" to the `cgi-bin` directory on the Netcool/Webtop server.

   b. Follow the instructions in the `nnmi_launch_cfg.txt` file from "Gather the information for configuring Netcool/OMNIbus:""Optional. Download the information for configuring the Netcool/Webtop event lists to launch NNMi views. Do both of the following:" 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 "Gather the information for configuring Netcool/OMNIbus:""Optional. Download the information for configuring the Netcool/OMNIbus Event List to launch NNMi views. Do one of the following:" 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 NNMi to Forward Logger Syslog Messages

You can configure NNMi to forward HPE ArcSight Logger Syslog messages to a Netcool/OMNIbus SNMP Probe on the NNMi management server using NNMi's Northbound Interface. The result is in HPE 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 "HPE NNMi Integration Module for IBM Tivoli Netcool/OMNIbus Software Destination Form Reference".

2. Follow the enabling instructions shown in "Enabling the HPE NNMi Integration Module for IBM Tivoli Netcool/OMNIbus Software".

3. From the NNMi console, click **Integration Module Configuration** > **NetCool**. NNMi displays the **HPE 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   Important Fields". 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

HPE NNMi Integration Module for Netcool Software Destination

Netcool Destination   Enabled: ☐

Host:*   ⦿ NNMi FQDN ◯ Use Loopback ◯ Other

Port:*

Community String:*   public

                                                                              * Required

Sending Options

Incidents: ☑ Management ☐ 3rd Party SNMP Trap ☐ Syslog

Lifecycle State Changes: ⦿ Enhanced Closed ◯ State Changed ◯ Both

Correlations: ⦿ None ◯ Single ◯ Group

Deletions: ⦿ Dont Send ◯ Send

NNMi Console Access: ◯ HTTP ⦿ HTTPS

Incident Filters

OIDs   ⦿ None ◯ Include ◯ Exclude

[Add]
[Remove]

Additional Information

Trap Destination IP Address:

Uptime (seconds):   47,951.12

NNMi URL:

[Submit]   [Return] [Cancel]

7. Configure the Netcool/OMNIbus software to listen for `nnmSyslog` incidents. The `nnmSyslog` incident OID to listen for is .1.3.6.1.4.1.11.2.17.19.2.0.4000.

> **Tip:** You might need to add definitions to the `nnmi.include.rules` file for syslog incidents or deletion traps that appear as undefined traps to the Netcool/OMNIbus SNMP Probe.

After completing "Review the information shown in the "HPE NNMi Integration Module for IBM Tivoli Netcool/OMNIbus Software Destination Form Reference"." through "Configure the Netcool/OMNIbus software to listen for nnmSyslog incidents. The nnmSyslog incident OID to listen for is .1.3.6.1.4.1.11.2.17.19.2.0.4000.", the NetCool software will be able to consume HPE 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 `nnmiSyslog` incident (OID is .1.3.6.1.4.1.11.2.17.19.2.0.4000).

Using the HPE NNMi Integration Module for IBM Tivoli Netcool/OMNIbus Software

When the NNMi Integration Module for Netcool Software is enabled, NNMi sends SNMPv2c traps to the Netcool/OMNIbus Probe. View the content forwarded from 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. NNMi does not queue traps. If the probe is unavailable when 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 HPE NNMi Integration Module for IBM Tivoli Netcool/OMNIbus Software", "Optional. Configure the Netcool/Webtop event lists to launch NNMi views." and "Optional. Configure the Netcool/OMNIbus Event List to launch NNMi views." 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

> **Note:** 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 HPE 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 **HPE 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 "HPE NNMi Integration Module for IBM Tivoli Netcool/OMNIbus Software Destination Form Reference".

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 HPE 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 **HPE 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 **HPE 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 HPE NNMi Integration Module for IBM Tivoli Netcool/OMNIbus Software

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

If the Netcool event viewer does not contain any traps from 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.

    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.

> **Note:** 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.

HPE NNMi Integration Module for IBM Tivoli Netcool/OMNIbus Software Destination Form Reference

The **HPE NNMi Integration Module for IBM Tivoli Netcool/OMNIbus Software Destination** form contains the parameters for configuring communications between 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 **HPE 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**.)

> **Note:** Only NNMi users with the Administrator role can access the **HPE NNMi Integration Module for IBM Tivoli Netcool/OMNIbus Software Destination** form.

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

- "Netcool/OMNIbus SNMP Probe Connection"
- "Integration Content"
- "Destination Status Information"

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

Netcool/OMNIbus SNMP Probe Connection

"Table 2   Netcool/OMNIbus SNMP Probe Connection Information" lists the parameters for configuring the connection to the Netcool/OMNIbus SNMP Probe.

Table 2   Netcool/OMNIbus SNMP Probe Connection Information

Field	Description

Host	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.
	
	The integration supports the following methods for identifying the probe host:
	
	- **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.
	
	Note: If the NNMi management server participates in NNMi application failover, see the *NNMi Deployment Reference* for information about the impact of application failover on the integration.

Port	The UDP port where the Netcool/OMNIbus SNMP Probe receives SNMP traps. Enter the port number specific to the probe. To determine the port, examine the probe `mttrapd.properties` file on the NNMi management server. **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.

Table 2   Netcool/OMNIbus SNMP Probe Connection Information, continued

Field	Description
Community String	A read-only community string for the Netcool/OMNIbus SNMP Probe to receive traps. If the probe configuration requires a specific community string in the received SNMP traps, enter that value. If the probe configuration does not require a specific community string, use the default value, which is `public`.

Integration Content

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	The incident forwarding specification. • **Management** NNMi forwards only NNMi-generated management events to the Netcool/OMNIbus Probe. This is the default configuration. • **SNMP 3rd Party Trap** NNMi forwards only SNMP traps that NNMi receives from managed devices to the probe. • **Syslog** NNMi forwards HPE ArcSight Syslog messages to the northbound application using the NorthBound Integration module. NNMi begins forwarding incidents as soon as you enable the destination. For more information, see *Incident Forwarding* in the NNMi Deployment Reference.
Lifecycle State Changes	The incident change notification specification. • **Enhanced Closed** NNMi sends an incident closed trap to the Netcool/OMNIbusSNMP Probe for each incident that changes to the C$_{LOSED}$ lifecycle state. This is the default configuration. • **State Changed** NNMi sends an incident lifecycle state changed trap to the probe for each incident that changes to the I$_N$ P$_{ROGRESS}$, C$_{OMPLETED}$, or C$_{LOSED}$ lifecycle state. • **Both** NNMi sends an incident closed trap to the probe for each incident that

Table 3   NNMi Integration Module for Netcool Software Content Configuration, continued

Field	Description
	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. For more information, see *Incident Lifecycle State Change Notifications* in the NNMi Deployment Reference.
Correlations	The incident correlation notification specification. • **None** NNMi does not notify the Netcool/OMNIbus SNMP Probe of incident correlations resulting from NNMi causal analysis. This is the default configuration. • **Single** NNMi sends a trap for each parent-child incident correlation relationship resulting from NNMi causal analysis. • **Group** NNMi sends one trap per correlation that lists all child incidents correlated to a parent incident. For more information, see *Incident Correlation Notifications* in the NNMi Deployment Reference.
Deletions	The incident deletion specification. • **Don't Send** NNMi does not notify the Netcool/OMNIbus SNMP Probe when incidents are deleted in NNMi. This is the default configuration. • **Send** NNMi sends a deletion trap to the probe for each incident that is deleted in NNMi. For more information, see *Incident Deletion Notifications* in the NNMi Deployment Reference.
NNMi Console Access	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). The configuration page defaults to the setting that matches the NNMi configuration. If the NNMi console is configured to accept both HTTP and HTTPS

Table 3   NNMi Integration Module for Netcool Software Content Configuration, continued

Field	Description
	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.
Incident Filters	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.*).
	Select one of the following options:
	- **None** NNMi sends all events to the probe. This is the default configuration. - **Include** NNMi sends only the specific events that match the OIDs identified in the filter. - **Exclude** NNMi sends all events except for the specific events that match the OIDs identified in the filter.
	Specify the incident filter:
	- 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**.
	For more information, see *Event Forwarding Filter* in the NNMi Deployment Reference.

Destination Status Information

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	The IP address that the Netcool/OMNIbus SNMP Probe destination host name resolves to. This value is unique to this probe destination.
Uptime (seconds)	The time (in seconds) since the northbound component was last started. The traps that NNMi sends to the Netcool/OMNIbus SNMP Probe include this value in the sysUptime field (1.3.6.1.2.1.1.3.0).

Table 4   NNMi Integration Module for Netcool Software Status Information, continued

Field	Description
	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.
NNMi URL	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). This value is unique to this northbound destination.

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