HP OpenView
Reporting and Network Solutions

Network Node Manager / Performance Insight Integration Module User's Guide

Software Version: 2.0

HP-UX, Solaris, and Windows® operating systems

Manufacturing Part Number: None

April 2004

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Introducing the NNM / OVPI Integration Module

Overview

The NNM / OVPI integration module creates tight linkages between HP OpenView Network Node Manager (NNM) and HP OpenView Performance Insight (OVPI). By joining fault management with performance management, the integration module enhances problem diagnostic capabilities.

Features and Benefits

The following list outlines the features of the NNM / OVPI integration module and its benefits to you:

- It provides additional performance data from NNM, which contributes to faster and easier resolution of network-based service level problems.
- It shares and synchronizes detailed topology information between NNM and OVPI databases to better enable NNM and OVPI to monitor and manage your environment.
- It can forward OVPI threshold traps to a specified NNM server (or set of NNM servers).
- It enables you to launch OVPI reports directly from an NNM submap or the NNM alarm browser. Reports display information pertinent to the node or alarm from which the action is invoked.
- It can integrate other Reporting and Network Solutions components, such as the LAN/WAN Edge Smart Plug-in for NNM, with NNM and OVPI to further enhance the management and monitoring of networks.

Configuration Points

Node Synchronization

NNM and OVPI must manage the same devices. The task of making the NNM topology information available to OVPI is known as Node (or Device List) Synchronization, and involves importing specific NNM node information into OVPI so that OVPI can then perform type discovery and data collection on those nodes.

Node synchronization takes place with minimal user intervention. The integration module installation process handles the initial node synchronization. Under normal conditions, you do not need to modify node synchronization after installation. The installation process also instructs node synchronization to run at regular intervals, thus ensuring that NNM and OVPI remain synchronized.

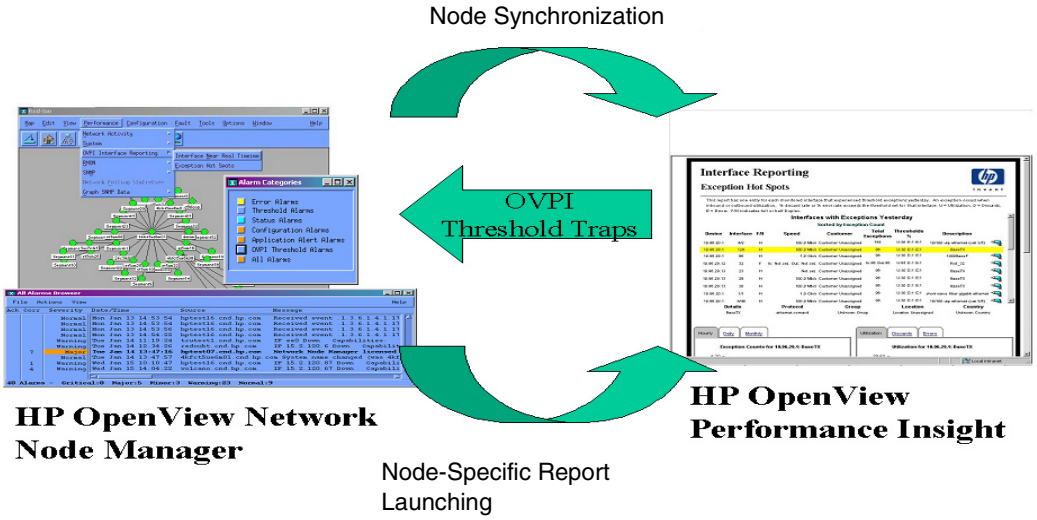
Node-Specific Report Launching

You can launch OVPI reports directly from an NNM submap or NNM alarm browser. When OVPI is installed, you can use the `Report LaunchPad` window to view a list of relevant reports based on the node information from a selected device in a submap or alarm from the alarm browser. You can then launch the most appropriate report from the `Report LaunchPad` window. See *Launching Node-Specific Reports* on page 23 for more information on how to launch reports.

Points of Integration

Figure 1 highlights the integration points between NNM and OVPI.

Figure 1 Points of Integration



Sources of Additional Information

The following documents are sources for additional information:

- NNM: *Creating and Using Registration Files*
- NNM: *Managing Your Network*
- OVPI: *Administration Guide*
- OVPI: *Guide to Building and Viewing Reports*
- OVPI: *Installation Guide*
- Reporting and Network Solutions: *Interface Reporting Report Pack User Guide*
- Reporting and Network Solutions: *Threshold and Event Generation Module User Guide*

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Installing the Integration Module

Prerequisites

NOTE: Installed OVPI components access components on the NNM server to synchronize the device list. For this reason, you must install the NNM integration components on the NNM server *before* installing the OVPI integration components on the OVPI server.

Before installing the integration module, verify that you have installed the following software and all its prerequisites and patches:

OV Performance Insight:

- OVPI 5.0
- All OVPI 5.0 service packs and patches

Network Node Manager:

- NNM 7.01
- All NNM 7.01 patches

Note: Service packs and patches are available at: http://support.openview.hp.com/support.jsp

If you encounter problems while performing the installation, see Troubleshooting on page 16, as well as the latest *NNM/OVPI Integration Module Release Notes*, and the latest *Reporting and Network Solutions Release Notes* for assistance.

Installing the Integration Module on NNM

Installing on a UNIX Operating System

To install the NNM / OVPI integration module on an NNM management station with a UNIX® operating system, follow these steps:

1. Log on to the NNM management station as user `root`.
2. Mount the Reporting and Network Solutions CD-ROM.
3. From the Reporting and Network Solutions CD-ROM directory, run `setup`.
4. Follow the instructions on the screen to install the NNM / OVPI Integration module. The following table lists the decisions you will be asked to make during the installation process:

Option	**Description**
List of product types to install	Choose to install NNM Value-add Components.
List of value-add components	Choose to install OV NNM Integration to Performance Insight.

Installing on a Windows Operating System

To install the NNM / OVPI integration module on an NNM management station with a Windows® operating system, follow these steps:

1. Log on to the NNM management station as user `administrator`.
2. Insert the Reporting and Network Solutions CD-ROM into the CD-ROM drive.
3. The CD-ROM should start automatically. If it does not, go to the Reporting and Network Solutions CD-ROM directory, and then double-click `setup.bat`.
4. Follow the instructions on the screen to install the NNM / OVPI Integration module. The following table lists the decisions you will be asked to make during the installation process:

Option	**Description**
List of product types to install	Choose to install NNM Value-add Components.
List of value-add components	Choose to install OV NNM Integration to Performance Insight.

Configuring Node-Specific Launching for Other OVPI Report Packs

The NNM / OVPI integration module and many OVPI report packs include functionality for launching node-specific reports. The NNM / OVPI integration module installation enables this functionality for the NNM /OVPI integration module reports. You must enable node-specific launching from NNM to an OVPI report once per report pack for each NNM management station.

To configure node-specific launching for a report pack:

1. Locate the OVPI report pack ARF file. On the OVPI server, the ARF file is located in the following directory:

   UNIX:
   `$DPIPE_HOME/packages/<ReportPack>/NNM_Utils/*.arf`

   Windows:
   `%DPIPE_HOME%\packages\<ReportPack>\NNM_Utils\*.arf`

2. Copy the OVPI report pack ARF file to the following directory on the NNM management station:

   UNIX: `$OV_NEWCONFIG/OVPI_INTEGRATION`

   Windows: `<install_dir>\conf\OVPI_INTEGRATION`

3. Start the script to configure and place the ARF file:
   `install.ovpl -force <file.arf>`

   For information on the install.ovpl script, see *The install.ovpl Script* on page 16.

Installing Integration Components on OVPI

For the integration module to function properly, the following packages must be installed and configured on the OVPI server:

- `NNM Device Sync` package, which is part of the Integration Module package (see *Configuring* NNM Device Sync on page 16)
- `Threshold` package (see the *Threshold and Event Generation Module User Guide*)
- `Interface Reporting ifEntry Datapipe` package (see the *Interface Reporting ifEntry Datapipe User Guide*)

Installing NNM / OVPI integration Components on OVPI

To install the NNM / OVPI integration module on an OVPI server, follow these steps:

1. UNIX:
   Log on as user `root`, and mount the Reporting and Network Solutions CD-ROM.

   Windows:
   Insert the Reporting and Network Solutions CD-ROM in the CD-ROM drive.
2. UNIX:
   From the Reporting and Network Solutions CD-ROM directory, as user `root`, execute:
   `./setup`

   Windows:
   The CD-ROM should automatically start for you. If not, go to the Reporting and Network Solutions CD-ROM directory and double-click `setup.bat`.
3. Follow the online instructions to install the NNM / OVPI integration components. The following table lists the options you will need to select from the installation menu:

Option	Description
List of product types to install	Choose to install Performance Insight Report Packs.

4. In the `Package Manage` window, click `Next`.
5. Select the `Install` radio button and click `Next`.
6. Perform the following from the OVPI `Reports Deployment` window:
    a. Check `Deploy Reports`.
    b. Enter user name and password. Unless configured differently during installation of OVPI, the user name is `trendadm` and the password is `trendadm`.
    c. Click `Next`.
7. In the OVPI `Package Selection` window, select the following packages for installation, and then click [`Next`].
    - `NNM_Device_Sync`
    - `Thresholds`
    - `IRifEntry_Datapipe`
8. In the OVPI `Type Discover` window:
    a. Check `Run OVPI Type Discover` if you want OVPI to start type discovery now. Note that this process may take awhile.
    b. Click `Next`.
9. Click `Install`.
10. During the installation process, two configuration windows prompt you for additional information:
    - For information on how to enter data in the HP OpenView NNM `Node Sources` configuration window, see *Configuring* NNM Device Sync on page 16.
    - For information on how to enter data in the SNMP Trap Destinations List configuration window, see *Configuring an NNM Trap Destination for OVPI Threshold Traps* on page 19.

Configuring NNM Device Sync

Use the HP OpenView NNM `Node Sources` window as follows to identify the NNM server to be used as a source for device and interface status information:

1. Replace the default information with the correct information for your environment. Table 1 provides an overview of the options that are

available for the `Filters` column. The default for this column is `SNMP Only`.

2. If multiple NNM servers are to be configured, select `Add` by using the right mouse button, and then supply the required information.

Figure 2 The NNM Node Sources Window

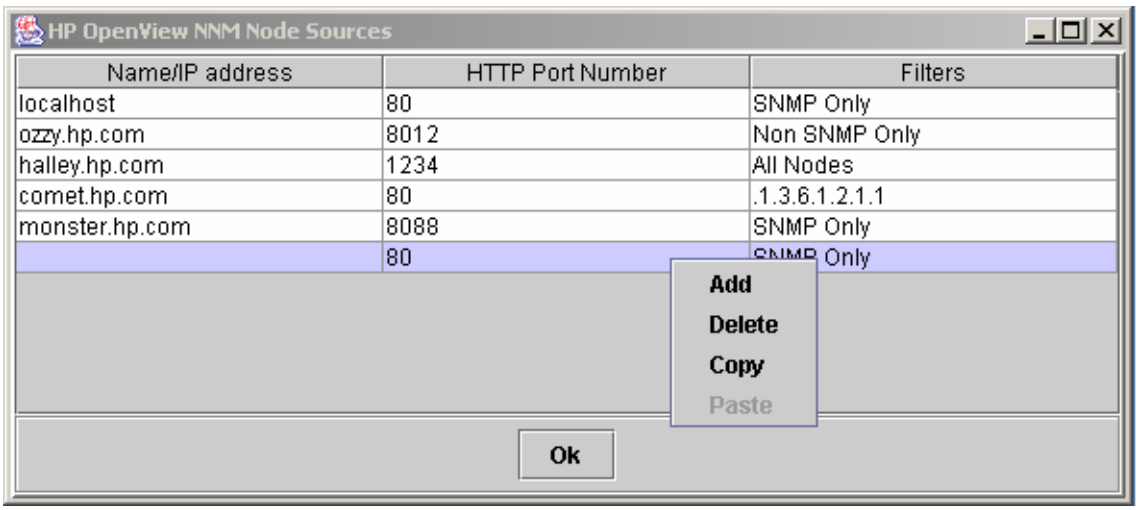


Table 1 Node Synchronization Filters Options

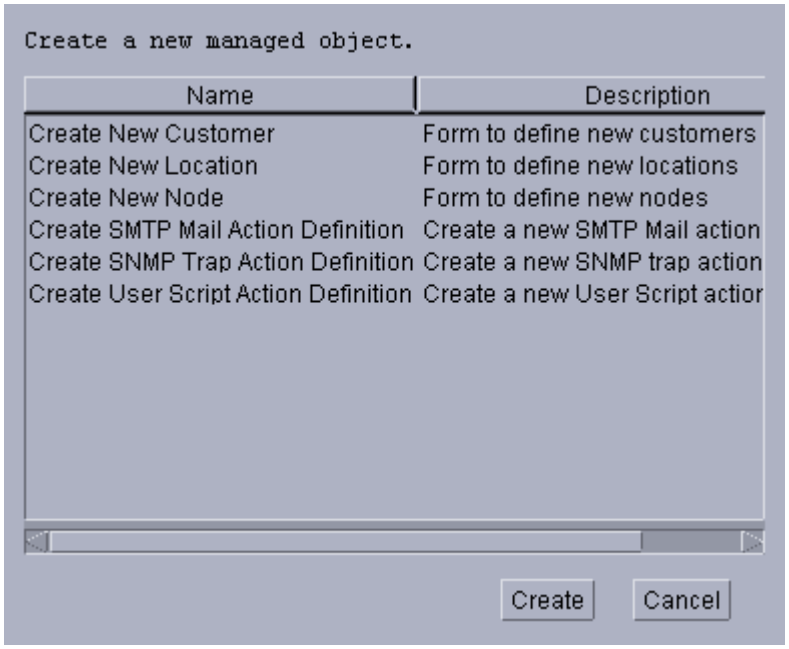
Filters option	Description
SNMP Only	Only nodes that exist in the NNM topology and respond to SNMP are included in the Node Synchronization list.
Non SNMP Only	Only nodes that exist in the NNM topology and do **NOT** respond to SNMP are included in the Node Synchronization list.
All Nodes	All nodes that exist in the NNM topology are included in the Node Synchronization list, independent of their ability to respond to SNMP.
.1.2.3.4.5.6 (Sys Object ID format)	A Sys Object ID may be specified in numerical dot notation. With this option, only nodes with a matching Sys Object ID are included in the Node Synchronization list.
isIP (OVW Object Database Capability field)	An OVW object database capability field may be used as a filter. In this case, only the field name is provided and only nodes that have the associated OVW object database capability set will be included in the Node Synchronization list. For more information on the use of OVW object database capability fields, see the *HP OpenView Window's Developers Guide*.

Configuring an NNM Trap Destination for OVPI Threshold Traps

After you install the OVPI Threshold module, you must configure the destination for OVPI-generated threshold traps. Set the OVPI trap destination to the IP hostname and port number of the NNM server to which the traps are to be forwarded.

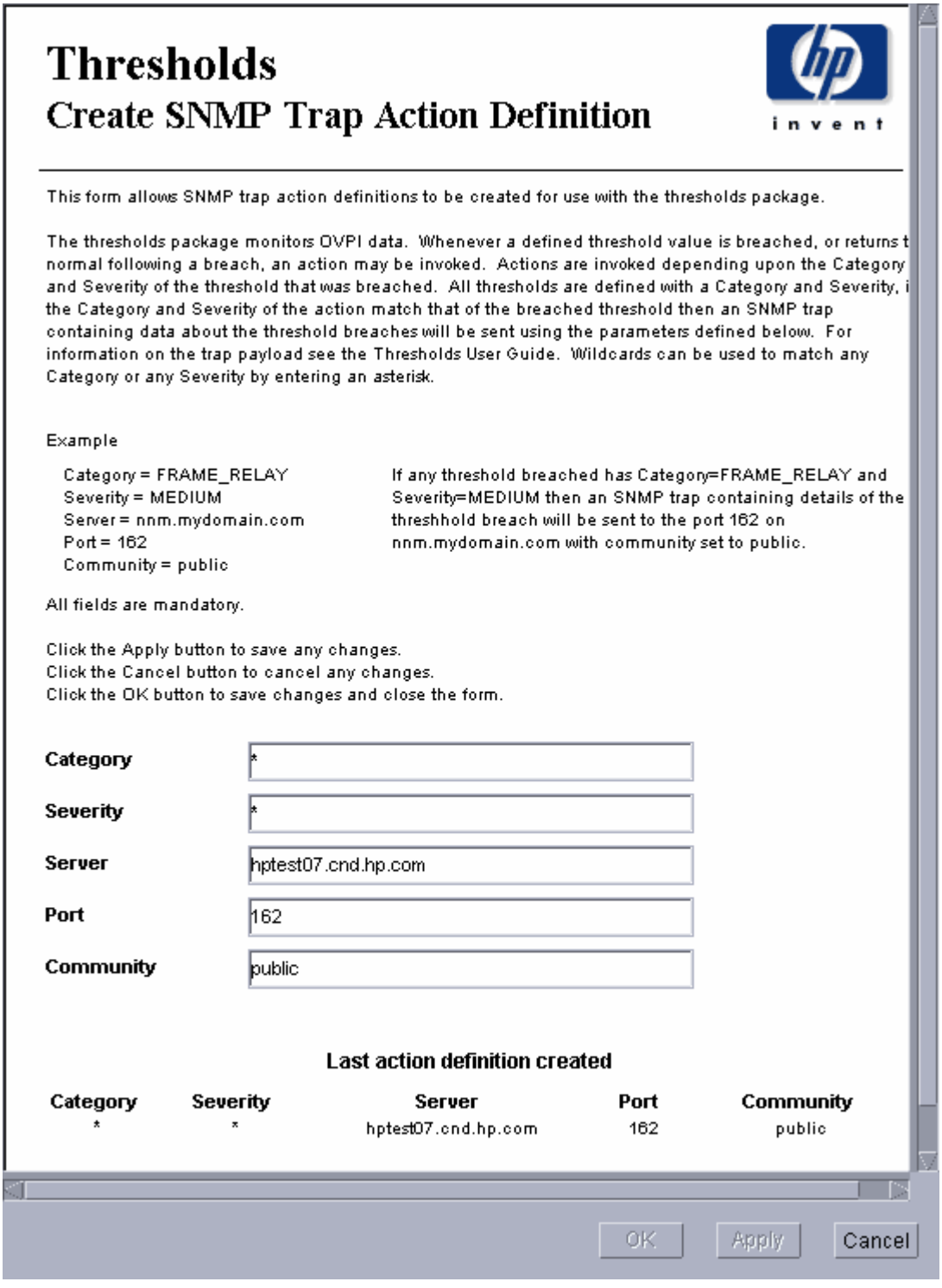
To set the destination for all OVPI-generated traps, follow these steps:

1. As user `trendadm`, start the OVPI admin utility:
   `$DPIPE_HOME/bin/piadmin`
2. Click **`Objects`** in the left-hand pane.
3. Select **`File:New`** to display the **`Create a New Managed Object`** window:



4. From the list of names, click **`Create SNMP Trap Action Definition`**.
5. Click **`Create`** to display the **`Thresholds: Create SNMP Trap Action Definition`** form (see Figure 3).
6. Enter the host name and SNMP port number of the server to which OVPI traps are to be forwarded.

Figure 3 Trap Destination Form



Uninstalling the NNM / OVPI Integration Module

This section describes the procedure for uninstalling the NNM / OVPI integration module from the NNM management station and the OVPI server.

To uninstall the integration components from the OVPI server, follow these steps:

1. Using Package Manager, uninstall the `NNM_Device_Sync` package. Due to dependencies between this package and the `Unmanaged Interface Sync` package (`IFEntry_Disc_Datapipe`), both packages are uninstalled.
2. To prevent OVPI from sending traps to a specific location, remove the destination from the `Threshold Action Definition` file. The action definition file can be found on the OVPI server at:

   UNIX: `$DPIPE_HOME/lib/threshAct.xml`

   Windows: `%DPIPE_HOME%/lib/threshAct.xml`

Redefining the trap destination to be `localhost` in the Threshold Action Definition files allows OVPI to continue to monitor thresholds and store threshold breach information in the database for threshold reporting.

To uninstall the integration module from the NNM management station, follow these steps:

1. *UNIX*: **`cd $OV_NEWCONFIG/OVPI_INTEGRATION`**
   Windows: **`cd %OV_NEWCONFIG%\conf\OVPI_INTEGRATION`**
2. Execute:
   `uninstall.ovpl`

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Launching Node-Specific Reports

The NNM / OVPI integration module supports the launching of OVPI reports from an NNM submap (`ovw`), the NNM alarm browser, and an NNM Extended Topology dynamic view. A launched report contains information specific to the node that was selected (if launching from a submap or view) or the node that caused the alarm (if launching from the alarm browser).

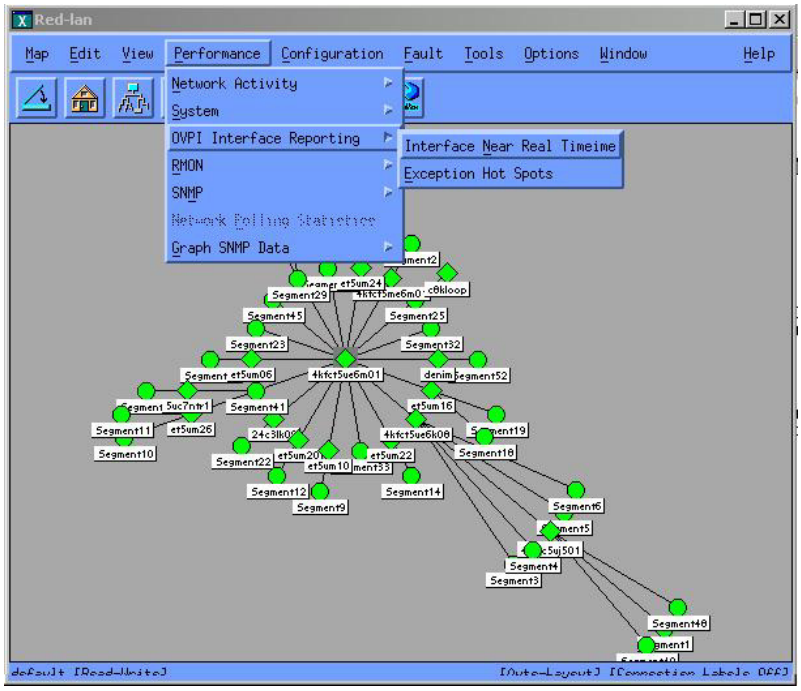
Launching Reports from an NNM Submap

Launch reports from an NNM submap by using either the `Performance` menu or the report launcher shortcut menu (right-click on the node).

To launch a report:

1. Select a node.
2. On the `Performance` menu, click either the `Interface Near Real Time` or `Exception Hot Spots` report (shown in Figure 4).

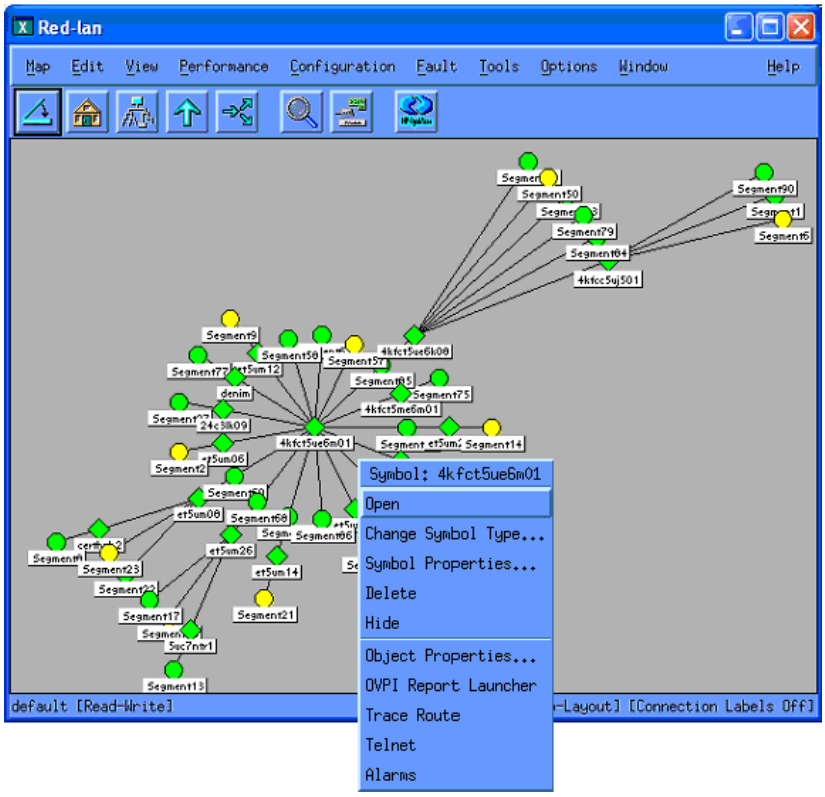
Figure 4 Launching OVPI Reports from Performance Menu



Alternatively, you can launch OVPI reports by selecting a node on the NNM submap, and right-clicking to display the `Symbol Information` dialog box.

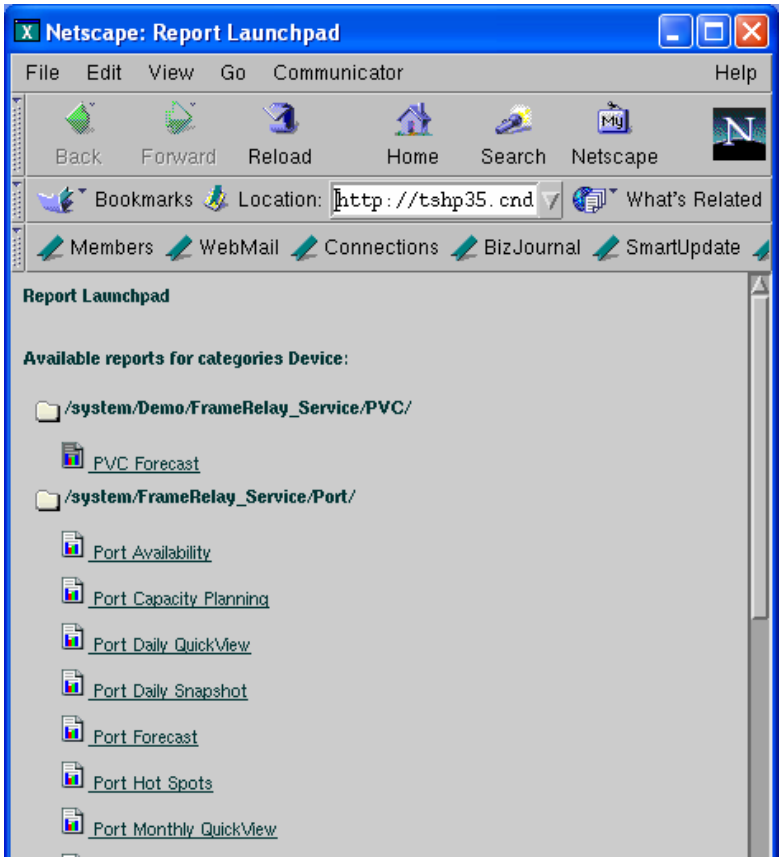
From OVPI, use the `OVPI Report Launcher` shortcut menu to launch a report (see Figure 5).

Figure 5 Launching Reports from the OVPI Shortcut Menu



When you launch a report, NNM notifies OVPI of the node name and possible node symbol. OVPI, in return, launches a `Report Launchpad` window that displays a list of appropriate reports for that node. Select the report to view (see Figure 6).

Figure 6 The Report Launchpad Window

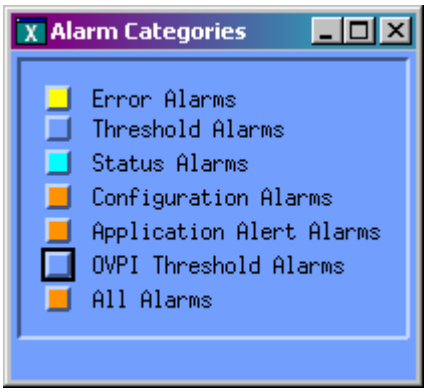


NOTE: The report launch menu lists items for nodes that are known to NNM as Routers, Bridges, Hubs, or Connectors.

Launching Reports from the NNM Alarm Browser

A key feature of the NNM / OVPI integration module is the creation of an alarm category, `OVPI Threshold Alarms`, in the `Alarm Categories` window of the NNM alarm browser (see Figure 7).

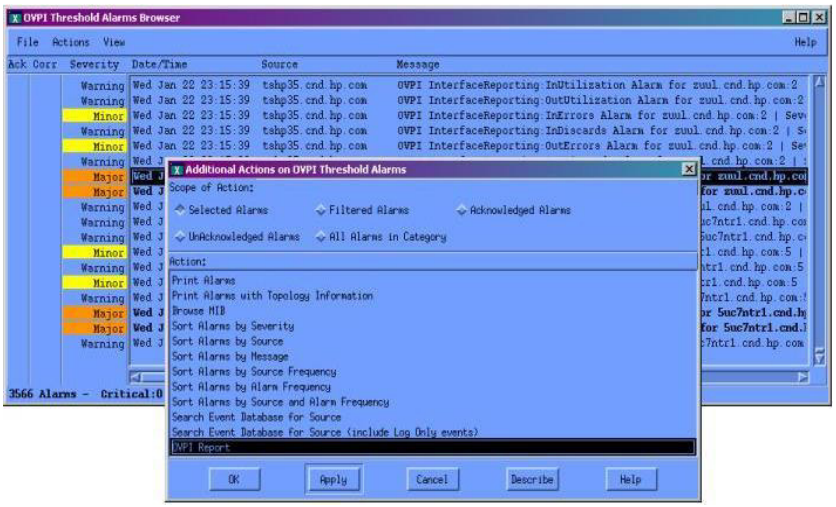
Figure 7 OVPI Threshold Alarm Category of the NNM Alarm Browser



You can view alarms received by the NNM management station by double-clicking the `OVPI Threshold Alarms` category to bring up the `Threshold Alarm` browser.

OVPI reports are launched from the OVPI Threshold Alarms Browser by selecting an alarm and clicking `Actions: Additional Actions`. Figure 8 depicts the OVPI Threshold Alarm Browser containing OVPI threshold alarms, and also shows the `report` action selected.

Figure 8 OVPI Report Actions from Threshold Alarm Browser



Launching an OVPI report from an alarm that has an OVPI OID causes the report specific to that OID to launch. The `OvpiRptLauncher.conf` configuration file contains the assignments of OVPI reports to OVPI OIDs.

If you launch an OVPI report from an alarm that does not have an OVPI OID, the `Report Launchpad` window displays, as illustrated in Figure 6.

The OVPI report launch action is defined for all OVPI threshold events. The MIB definition for the OVPI threshold event can be found at:

UNIX*:* `$OV_NEWCONFIG/OVPI_INTEGRATION/hp-ovpi.mib`

Windows*:* `<`*`install_dir`*`>\conf\OVPI_INTEGRATION\hp-ovpi.mib`

Launching Reports from NNM Dynamic Views

You can launch reports from an NNM Extended topology dynamic view using either the `Performance` menu or the `OVPI Launch Pad` shortcut menu (right-click on the node).

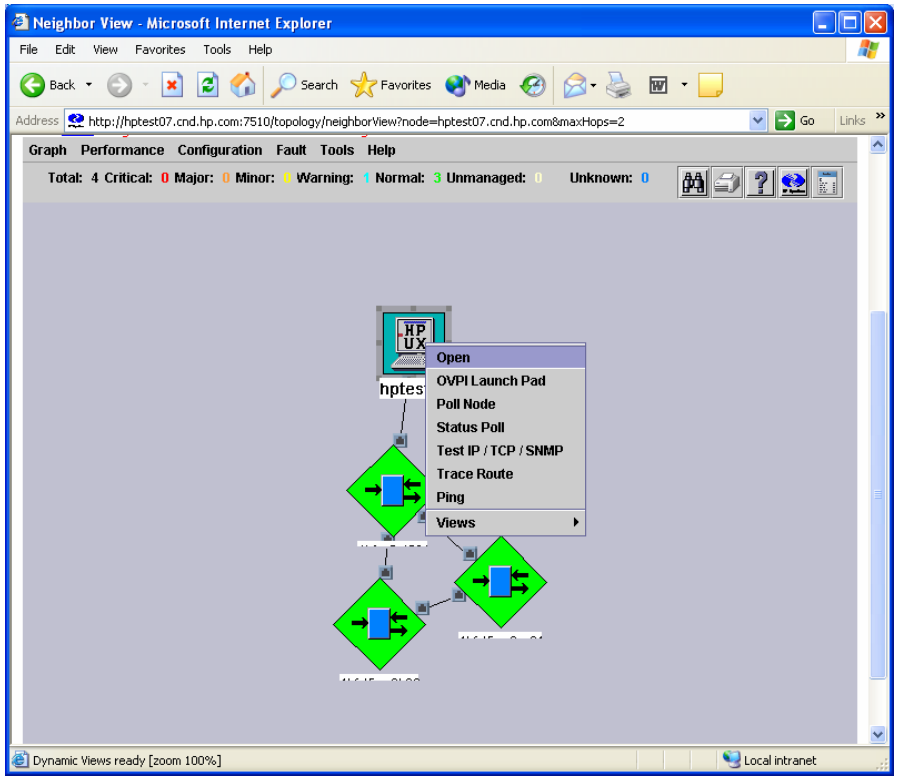
To launch a report using the `Performance` menu:

1. Select a node.
2. On the `Performance` menu, click `OV Performance Insight`. The `Report Launchpad` window appears, as shown in Figure 6.
3. Select the appropriate report to launch.

To launch a report using the OVPI Launch Pad shortcut menu:

1. Select a node.
2. Right-click, and then click `OVPI Launch Pad` (see Figure 9).
3. Select the appropriate report to launch.

Figure 9 Launching Reports from Dynamic Views



4

Verifying the Installation

This section describes the process for checking if your system is configured properly.

Verifying NNM Device List Synchronization

To verify devices have been imported into OVPI from NNM through the NNM Device List synchronization, follow these steps:

1. Start the OVPI GUI:

   `$DPIPE_HOME/bin/TREND`

2. Open `Polling Policy Manager`.

3. Select `Polling Policy Manager->Edit:Nodes` to open the Nodes window.

   The Nodes window displays all nodes known to OVPI for data collection, and should contain nodes imported from NNM.

Verifying Report Launching

To verify that OVPI reports can be launched from NNM:

1. Verify that you can launch a report from an NNM submap by selecting a node and using the `Performance` menu to launch an OVPI report.

2. Verify that you can launch a report from an NNM submap by right-clicking on a selected node and launching `OVPI Interface NRT Report`.

3. Verify that you can launch a report from the NNM alarm browser by selecting an OVPI threshold alarm and launching a report using the `Actions-> Additional Actions` menu.

Troubleshooting

Node List Synchronization Is Not Working

If no NNM devices are being imported into OVPI from NNM through Device Synchronization, follow these steps:

1. Verify that the NNM management station from which device information is to be imported is running and accepting requests on the port specified during the installation of the `NNM_Device_Sync` package.
2. Verify that the Trend timer process is running. If it is not, restart it.
3. Verify that there is an entry for `SyncNodeList` in the `trendtimer.sched` file located at:

   UNIX: `$DPIPE_HOME/lib/`

   Windows: `%DPIPE_HOME%\lib`

   If no entry exists, device synchronization is not taking place. The cause for the missing entry is most likely a failure during installation.
4. Verify that devices are being imported to the OVPI server by viewing the Device Synchronization log files on the OVPI server. These log files can be found at:

   UNIX: `$DPIPE_HOME/lib/`

   Windows: `%DPIPE_HOME%\lib`

Launched Reports Contain No Data

If this condition occurs, verify that the NNM Device Synchronization components are functioning by using the procedure described in *Node List Synchronization Is Not Working* on page 30.

NNM Device Sync Installation Fails

This may occur if all NNM node sources specified by the user are either not reachable, or if the NNM / OVPI integration module was not installed on those NNM management stations. Details of the failure can be found in the `$DPIPE_HOME/log/trend.log` file.

NNM Device Sync Fails for Some of the NNM Node Sources

This may occur if the NNM node is not reachable, or if the NNM / OVPI integration module is not installed on that NNM management station for which the NNM Device Sync failed. The details of the failure can be found in the `$DPIPE_HOME/log/trend.log` file.

Additional Troubleshooting Resources

For additional troubleshooting information, refer to the latest *NNM / OVPI Integration Module Release Notes* and *Reporting and Network Solutions Release Notes* available on the web at `http://ovweb.external.hp.com/lpe/doc_serv` under the Reporting and Network Solutions product category.

5

Reference

The install.ovpl Script

The Perl install script, `install.ovpl`, modifies Application Registration Files (ARF) with the node name and port information of the OVPI server. It then places these files in the correct location on the NNM management station. This configuration enables node-specific launching of OVPI reports from the NNM management station.

The script prompts you for the hostname of the OVPI server and the port number on which that server receives HTTP requests. See for a complete list of command line options for `install.ovpl`. For the standard installation, run the script without any options.

NOTE: Run this script with the version of Perl shipped with NNM.

Table 2 Command Line Options for install.ovpl

install.ovpl option	Description
No options <default>	If no options are specified, `install.ovpl` updates every ARF file and browser action file in the `OVPI_INTEGRATION` directory and places those files in their appropriate locations.
`-force all`	By default, `install.ovpl` does not replace ARF files on repeated invocations to guard against accidentally overwriting already configured versions. The use of the *force* option with the *all* argument causes `install.ovpl` to reconfigure and re-place the ARF files located in the `OVPI_INTEGRATION` directory. This option is useful when modifying every ARF to point to a different OVPI server, or if the HTTP port number on the OVPI server has changed.
`-force <`*file*`.arf>`	Using the <*file.arf*> argument with the *force* option causes `install.ovpl` to configure and place the specified ARF file only. This option is useful when launching different reports on different OVPI servers.