

# **HP OpenView Reporting and Network Solutions**

## **Network Node Manager and Performance Insight Integration Module User's Guide**

**Software Version: 2.0**

**HP-UX, Solaris, and Windows® operating systems**



**Manufacturing Part Number: None**

**August 2004**

©Copyright 2002-2004 Hewlett-Packard Development Company, L.P.

# Legal Notices

## **Warranty.**

*Hewlett-Packard makes no warranty of any kind with regard to this document, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. Hewlett-Packard shall not be held liable for errors contained herein or direct, indirect, special, incidental or consequential damages in connection with the furnishing, performance, or use of this material.*

A copy of the specific warranty terms applicable to your Hewlett-Packard product can be obtained from your local Sales and Service Office.

## **Restricted Rights Legend.**

Use, duplication or disclosure by the U.S. Government is subject to restrictions as set forth in subparagraph (c)(1)(ii) of the Rights in Technical Data and Computer Software clause in DFARS 252.227-7013.

Hewlett-Packard Company  
United States of America

Rights for non-DOD U.S. Government Departments and Agencies are as set forth in FAR 52.227-19(c)(1,2).

## **Copyright Notices.**

©Copyright 2002-2004 Hewlett-Packard Development Company, L.P.

No part of this document may be copied, reproduced, or translated to another language without the prior written consent of Hewlett-Packard Company. The information contained in this material is subject to change without notice.

## **Trademark Notices.**

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

UNIX® is a registered trademark of The Open Group.

## Support

Please visit the HP OpenView web site at:

<http://openview.hp.com/>

There you will find contact information and details about the products, services, and support that HP OpenView offers.

You can go directly to the HP OpenView support web site at:

<http://support.openview.hp.com/>

The support web site includes:

- Downloadable documentation
- Troubleshooting information
- Patches and updates
- Problem reporting
- Training information
- Support program information



# contents

<b>Introducing the NNM and OVPI Integration Module.....</b>	<b>7</b>
Overview .....	7
Features and Benefits.....	7
Configuration Points.....	8
Sources of Additional Information .....	9
<b>Installing the Integration Module.....</b>	<b>11</b>
Prerequisites .....	11
Installing the Integration Module on NNM .....	12
Installing Integration Components on OVPI .....	14
Uninstalling the NNM and OVPI Integration Module .....	20
<b>Launching Node-Specific Reports .....</b>	<b>22</b>
Launching Reports from an NNM Submap.....	22
Launching Reports from the NNM Alarm Browser .....	25
Launching Reports from NNM Dynamic Views.....	27
<b>Verifying the Installation.....</b>	<b>28</b>
Verifying NNM Device List Synchronization.....	28
Verifying Report Launching.....	28
Troubleshooting.....	29
<b>Reference.....</b>	<b>33</b>
The install.ovpl Script.....	33



# Introducing the NNM and OVPI Integration Module

## Overview

The NNM and 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 and 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

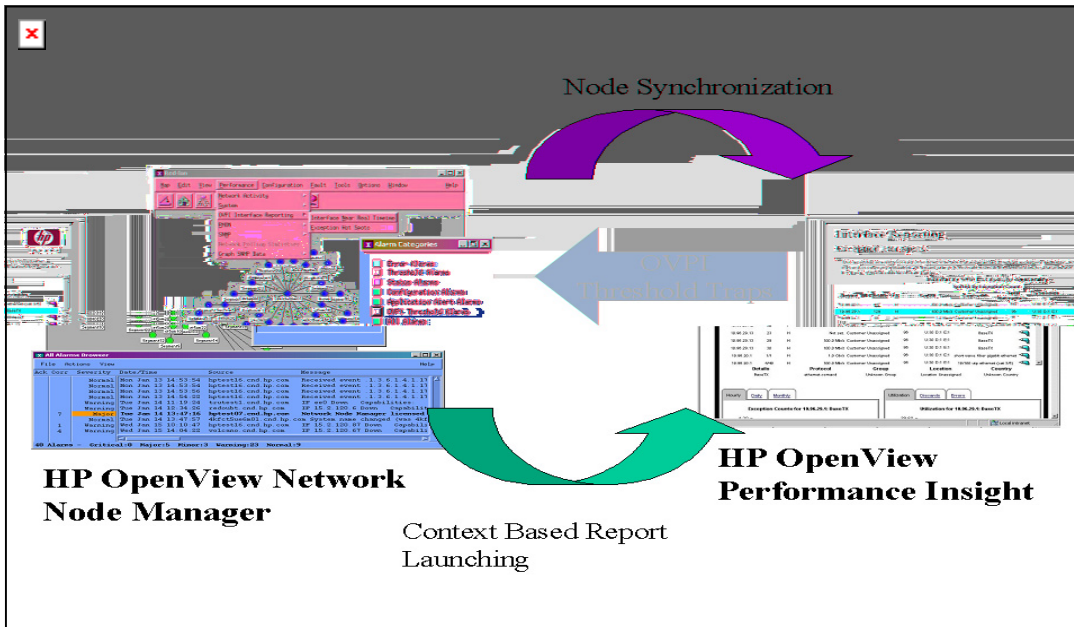
You can launch OVPI reports directly from an NNM submap or NNM alarm browser. When OVPI is installed, you can use the `Report LaunchPad` window to view a list of relevant reports based on the node information from a selected device in a submap or alarm from the alarm browser. You can then launch the most appropriate report from the `Report LaunchPad` window. See *Launching Node-Specific Reports* on page 22 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*



# 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 7.5
- All NNM 7.5 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 15, as well as the latest *NNM and 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 and OVPI Integration Module on an NNM management station with a UNIX<sup>®</sup> 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 and OVPI Integration module. The following table lists the decisions you will be asked to make during the installation process:

<b>Option</b>	<b>Description</b>
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 and 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:

<b>Option</b>	<b>Description</b>
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 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 15)
- 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 and OVPI Integration Components on OVPI

To install the NNM and 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 and 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`
  - `Interface_Reporting_ifEntry_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 15.
  - 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 18.

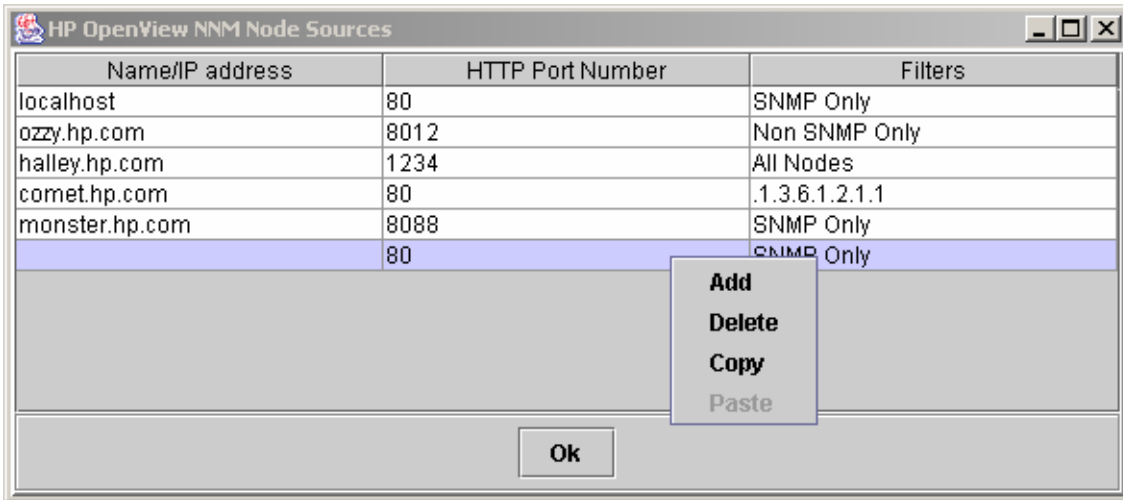
## Configuring NNM Device Sync

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**

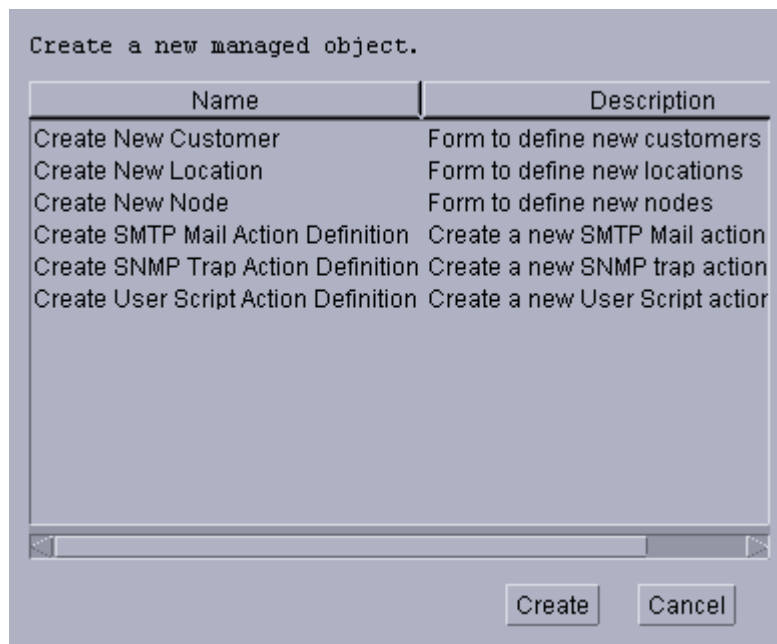
<b>Filters option</b>	<b>Description</b>
SNMP Only	Only nodes that exist in the NNM topology and respond to SNMP are included in the Node Synchronization list.
Non SNMP Only	Only nodes that exist in the NNM topology and do <b>NOT</b> respond to SNMP are included in the Node Synchronization list.
All 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 <i>HP OpenView Window's Developers Guide</i> .

## 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

## Thresholds

### Create SNMP Trap Action Definition



---

This form allows SNMP trap action definitions to be created for use with the thresholds package.

The thresholds package monitors OVPI data. Whenever a defined threshold value is breached, or returns to normal following a breach, an action may be invoked. Actions are invoked depending upon the Category and Severity of the threshold that was breached. All thresholds are defined with a Category and Severity, and the Category and Severity of the action match that of the breached threshold then an SNMP trap containing data about the threshold breaches will be sent using the parameters defined below. For information on the trap payload see the Thresholds User Guide. Wildcards can be used to match any Category or any Severity by entering an asterisk.

**Example**

Category = FRAME_RELAY Severity = MEDIUM Server = nnm.mydomain.com Port = 162 Community = public	If any threshold breached has Category=FRAME_RELAY and Severity=MEDIUM then an SNMP trap containing details of the threshold breach will be sent to the port 162 on nnm.mydomain.com with community set to public.
--	--

All fields are mandatory.

Click the Apply button to save any changes.  
 Click the Cancel button to cancel any changes.  
 Click the OK button to save changes and close the form.

<b>Category</b>	*
<b>Severity</b>	*
<b>Server</b>	hptest07.cnd.hp.com
<b>Port</b>	162
<b>Community</b>	public

**Last action definition created**

Category	Severity	Server	Port	Community
*	*	hptest07.cnd.hp.com	162	public

OK
Apply
Cancel

# Uninstalling the NNM and OVPI Integration Module

This section describes the procedure for uninstalling the NNM and 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`



## Launching Node-Specific Reports

The NNM and 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).

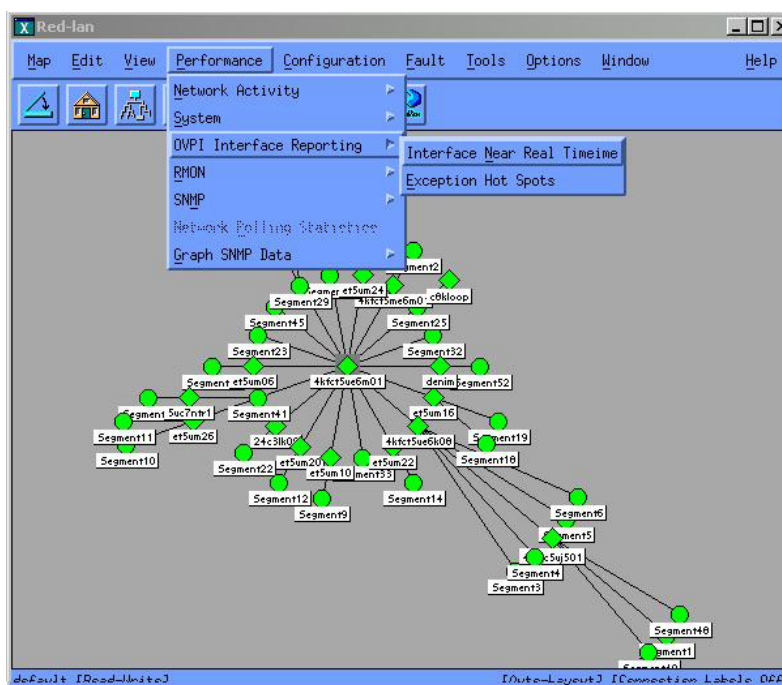
### Launching Reports from an NNM Submap

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).

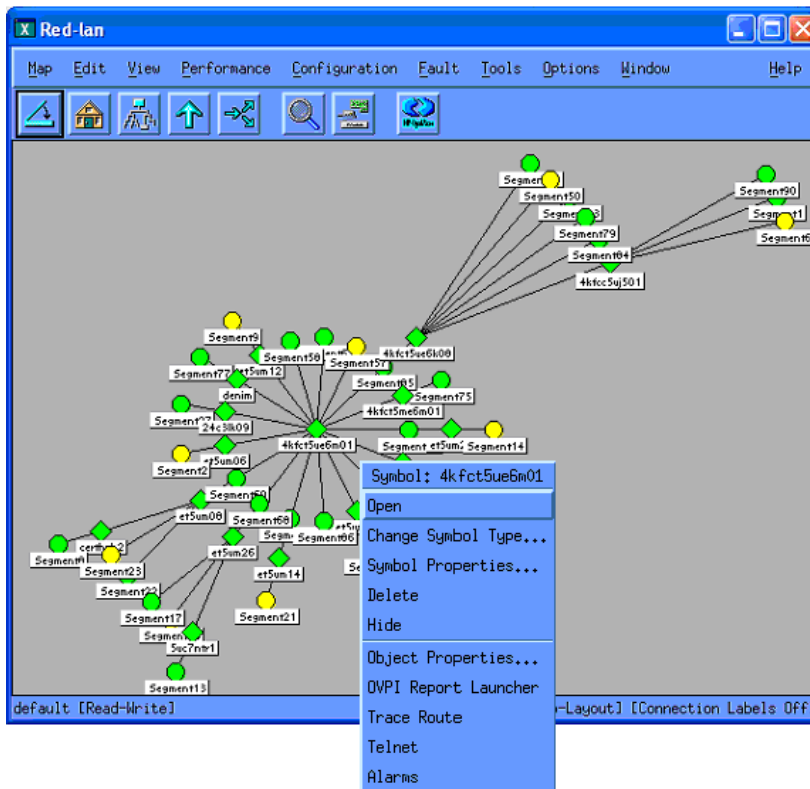
**Figure 4 Launching OVPI Reports from Performance Menu**



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

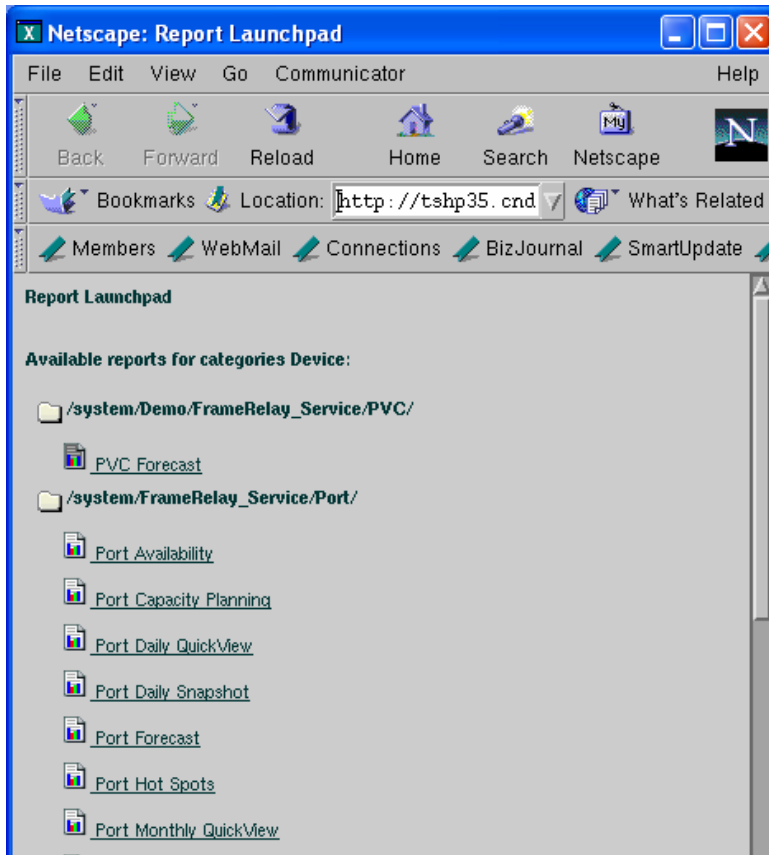
From OVPI, use the OVPI Report Launcher shortcut menu to launch a report (see Figure 5).

**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**



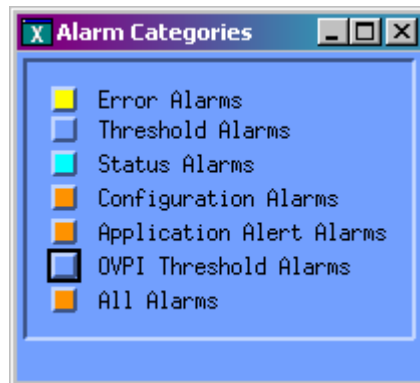
**NOTE:** The report launch menu lists items for nodes that are known to NNM as Routers, Bridges, Hubs, or Connectors.



## Launching Reports from the NNM Alarm Browser

A key feature of the NNM and 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).

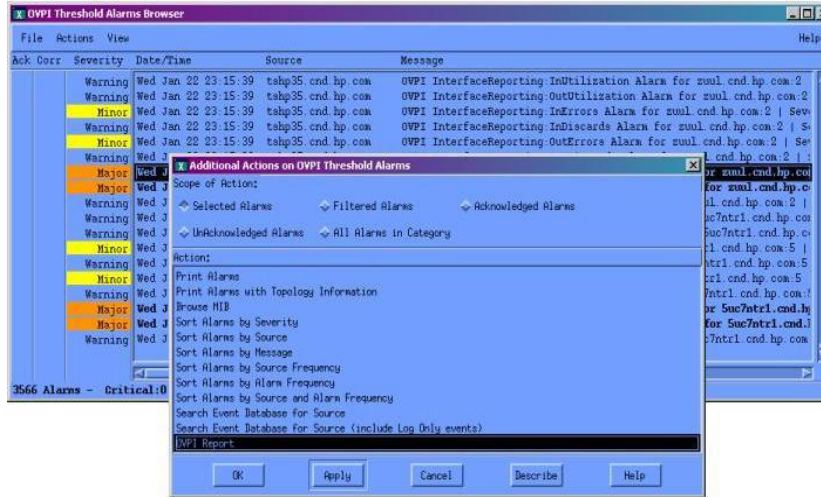
Figure 7 OVPI Threshold Alarm Category of the NNM Alarm Browser



You can view alarms received by the NNM management station by double-clicking the OVPI Threshold Alarms category to open 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).

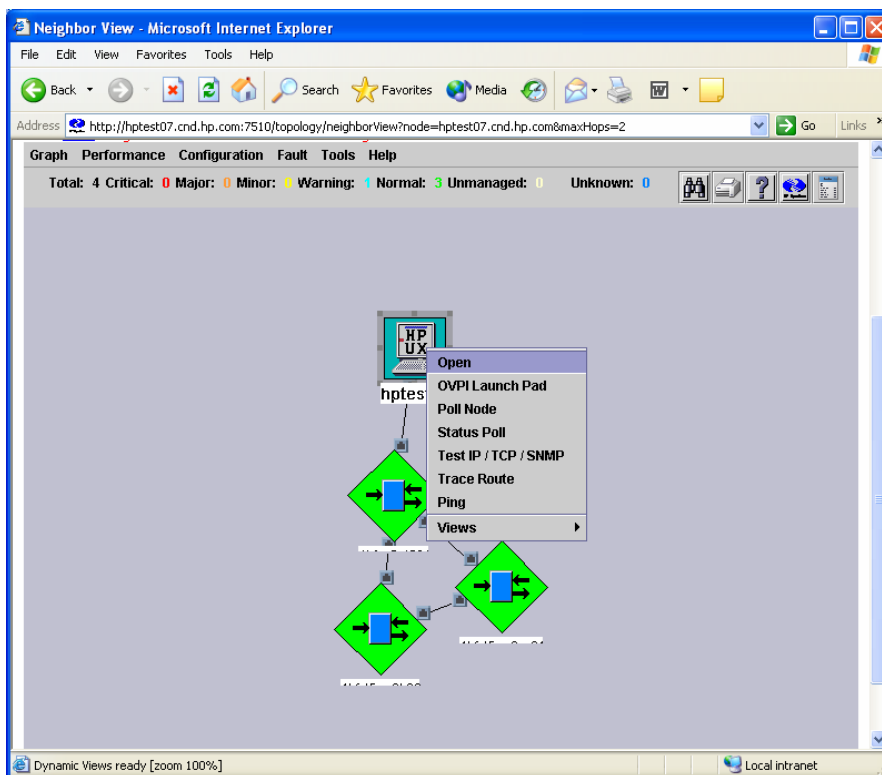
To launch a report using the Performance menu:

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 select OVPI Launch Pad (see Figure 9).
3. Select the appropriate report to launch.

**Figure 9 Launching Reports from Dynamic Views**



## 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 29.

## 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 and 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 and 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.

## Unable to open NNM Event reports on Windows

**Note:** This problem occurs only when NNM is running on a Windows operating system.

When using the NNM and OVPI Integration Module in conjunction with the OpenView Performance Insight NNM Event Report Pack, NNM may not be able to access its version of Perl. As a result, NNM Event reports may not be generated properly.

On the NNM management station, modify the Windows `PATH` environment variable so that the path to NNM's copy of Perl is listed first. When NNM is installed in its default location, the following must be added to the beginning of the Windows `PATH` environment variable:

```
C:\Program Files\HP OpenView\bin\Perl\bin
```

## OVPI-THRESHOLD-CLEAR event displays incorrect message in the NNM alarms browser

The OVPI and NNM Integration Module forwards `OVPI-THRESHOLD-CLEAR` events to the NNM management station with an incorrect message identifying the events as *Breach* events. Thus, the `OVPI-THRESHOLD-CLEAR` events display as *Breach* events in the NNM alarms browser.

**Workaround:** Use the NNM Event Configuration utility to modify the event message. From the Event Configuration window, select the `OVPI enterprise` and double-click `OVPI-THRESHOLD-CLEAR`. Modify the event message by changing the word `Breach` to `Clear`.

## OVPI Launch Pad menu command does not display in shortcut menu of Dynamic Views

On some machines, the `OVPI Launch Pad` shortcut menu command does not appear in Dynamic Views even if you have OVPI installed and configured.

**Workaround:** Type the following URL in a web browser:

```
http://<ovpi_server>:<ovpi_port>/reports/launchpad?p_Device=<node_s  
elected>
```

where *ovpi\_server* is the fully-qualified DNS address of the OVPI server, *ovpi\_port* is the port number of the OVPI web site, and *node\_selected* is the name of the NNM device with which to open the OVPI Reports Launchpad.

### **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](http://ovweb.external.hp.com/lpe/doc_serv) under the Reporting and Network Solutions product category.





## 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**

<b>install.ovpl option</b>	<b>Description</b>
No options <default>	If no options are specified, <code>install.ovpl</code> updates every ARF file and browser action file in the <code>OVPI_INTEGRATION</code> directory and places those files in their appropriate locations.
<code>-force all</code>	By default, <code>install.ovpl</code> does not replace ARF files on repeated invocations to guard against accidentally overwriting already configured versions. The use of the <i>force</i> option with the <i>all</i> argument causes <code>install.ovpl</code> to reconfigure and re-place the ARF files located in the <code>OVPI_INTEGRATION</code> 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.
<code>-force &lt;file.arf&gt;</code>	Using the <code>&lt;file.arf&gt;</code> argument with the <i>force</i> option causes <code>install.ovpl</code> to configure and place the specified ARF file only. This option is useful when launching different reports on different OVPI servers.

