HP OpenView Adapter Using Radia

Radia Adapter for HP OpenView

Software Version: 2.0

for the UNIX and Windows operating systems

Manufacturing Part Number: T3424-90075

August 2004

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Preface

This document details the implementation of *Radia Adapter for HP OpenView*, which integrates with *Network Node Manager* (NNM) for Radia Inventory Manager access and SNMP events. This integration uses *Simple Network Management Protocol* (SNMP) in NNM as well as the Radia Inventory Manager database.

Radia Adapter for HP OpenView was created in the Hewlett-Packard *Software Change-and-Configuration Management* division—the former Novadigm, Inc. It is for this reason that within the Radia Adapter for HP OpenView product there are numerous occurrences of **Novadigm** (such as the **Novadigm Alarm** category and **Novadigm Events**).

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1

Network Node Manager and SNMP

Introduction

Radia can interact with the HP OpenView *Network Node Manager* (NNM) via integration with *Simple Network Management Protocol* (SNMP) alerts, and the Radia Inventory Manager. This chapter focuses on the NNM-SNMP combination, and Chapter 2 presents information on the integration of the Radia Inventory Manager and NNM.

Radia with NNM uses SNMP agents in conjunction with the Novadigm MIB and event generation capabilities to communicate between the two systems. The operational status of the Radia Configuration Server is communicated to NNM as events and alerts for display or resolution. A *Novadigm Alarm* category exists in NNM to help console operators quickly identify alerts as being *critical*, *major*, *minor*, *warning,* or *normal*. The installation of the Novadigm MIB in NNM automatically assigns default event correlations that can be modified by the NNM Administrator to best match the environment definitions. With Radia adapter for HP OpenView, the capabilities of NNM extend beyond being simply a monitoring device, it becomes capable of running a Radia Configuration Server through SNMP *get* and *set* commands. This means NNM can configure and generate trap events; remotely initiate control of the Radia Configuration Server in order to set commands; and retrieve status information using get commands.

Installation

To install Radia integration with the HP OpenView NNM, run an installation batch script (WIN32 platforms) or a shell script (UNIX). These processes replace the previous installation and document, *Installing the Novadigm MIB on HP OpenView*.

- UNIX users must be logged in as a *superuser*.
- WIN32 users must have administrator rights.

Establishing the Environment

Before running either installation, you must run a script that establishes the required environment variables for NNM in the default installation directory. For UNIX this is

```
/opt/OV/bin/ov.envvars.sh
```

For Win32 it might be found in

```
\opt\OV\bin\ov.envars.bat
```

If you attempt to run the MIB installation script without first establishing the environment, you will see the following error message:

```
# ./install_mib.sh or \install_mib.bat

OV_BIN has not been set

Please execute ov.envvars.sh (ov.envvars.bat) from the

OpenView bin directory before running this install script
```

Install the Novadigm MIB and Novadigm Alarm Category

Once the environment has been established, run the appropriate script (install_mib.sh or install_mib.bat) to install the Novadigm MIB. The process will display as follows:

```
# . /opt/OV/bin/ov.envvars.sh or \opt\OV\ov.envvars.bat

# ./install_mib.sh or \install_mib.bat

Loading the Novadigm MIB

Loading Novadigm event trap definitions

The Novadigm MIB and Trap Event definitions

have been successfully loaded
```

The Novadigm MIB and **Novadigm Alarm Category** have been successfully installed.

As you can see, this script also loads Trap Event definitions into OpenView. From here they can be inspected and manipulated. Once the installation is complete, the **Novadigm Alert Alarms** category will appear on the NNM console (as in Figure 1.1), and it is into this category that NNM will display events.

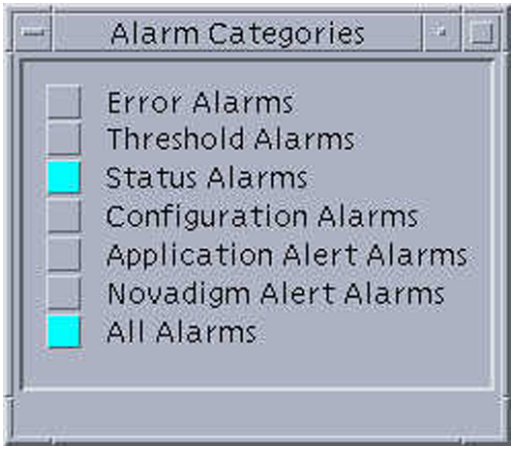

Figure 1.1 – The Alarm Categories with Novadigm Alert Alarms added.

The NNM Administrator can modify the event category defaults for Novadigm-defined alerts with the Novadigm MIB using the root of the NNM console, and selecting **Options** (see Figure 1.2), then **Event Configuration Utility**. From the series of windows that appear, select **Novadigm**, **Defined Trap Events**, **Modify Event**, and then select each event to be changed.

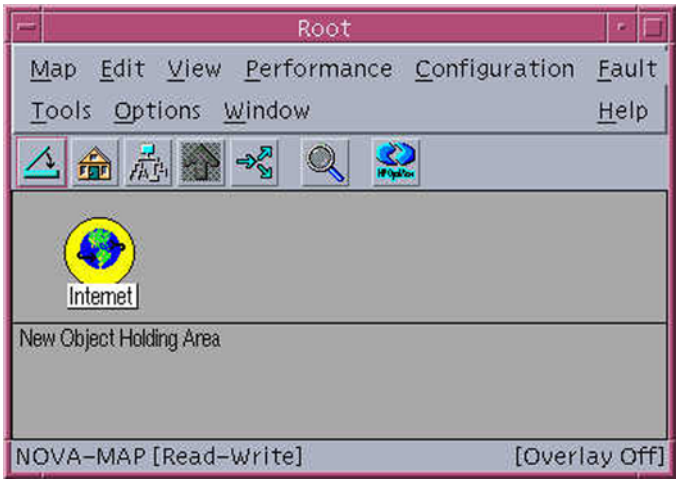

Figure 1.2 – The root window of the NNM Console.

The default event classifications (Normal, Warning, Minor, Major, and Critical) for each of the Novadigm-defined events are presented in the following table.

Novadigm default event classifications
EVENT notifyCmplt .1.3.6.1.4.1.2133.0.10 "Novadigm Alert Alarms" Normal
EVENT notifyRecvd .1.3.6.1.4.1.2133.0.15 "Novadigm Alert Alarms" Normal
EVENT notifyExecOK .1.3.6.1.4.1.2133.0.20 "Novadigm Alert Alarms" Normal
EVENT connectInit .1.3.6.1.4.1.2133.0.25 "Novadigm Alert Alarms" Normal
EVENT demonConnOK .1.3.6.1.4.1.2133.0.30 "Novadigm Alert Alarms" Normal
EVENT verifyCmplt .1.3.6.1.4.1.2133.0.35 "Novadigm Alert Alarms" Normal
EVENT resourceRcvd .1.3.6.1.4.1.2133.0.40 "Novadigm Alert Alarms" Normal
EVENT stgFileRcvd .1.3.6.1.4.1.2133.0.45 "Novadigm Alert Alarms" Normal
EVENT stgFileSnt .1.3.6.1.4.1.2133.0.50 "Novadigm Alert Alarms" Normal
EVENT mgrFileRcvd .1.3.6.1.4.1.2133.0.55 "Novadigm Alert Alarms" Normal
EVENT versActivate .1.3.6.1.4.1.2133.0.65 "Novadigm Alert Alarms" Normal
EVENT timerElmtInit .1.3.6.1.4.1.2133.0.70 "Novadigm Alert Alarms" Normal
EVENT timerOK .1.3.6.1.4.1.2133.0.75 "Novadigm Alert Alarms" Normal
EVENT clientCmplt .1.3.6.1.4.1.2133.0.100 "Novadigm Alert Alarms" Normal
EVENT stagerStart .1.3.6.1.4.1.2133.0.110 "Novadigm Alert Alarms" Normal
EVENT stagerShutdown .1.3.6.1.4.1.2133.0.130 "Novadigm Alert Alarms" Minor
EVENT appeventInstallOK .1.3.6.1.4.1.2133.0.135 "Novadigm Alert Alarms" Normal

Novadigm default event classifications
EVENT appeventUninstallOK .1.3.6.1.4.1.2133.0.140 "Novadigm Alert Alarms" Minor
EVENT appeventUpdateOK .1.3.6.1.4.1.2133.0.145 "Novadigm Alert Alarms" Normal
EVENT appeventRepairOK .1.3.6.1.4.1.2133.0.150 "Novadigm Alert Alarms" Normal
EVENT appeventVerifyOK .1.3.6.1.4.1.2133.0.155 "Novadigm Alert Alarms" Normal
EVENT appeventActivationOK .1.3.6.1.4.1.2133.0.160 "Novadigm Alert Alarms" Normal
EVENT appeventDeactivationOK .1.3.6.1.4.1.2133.0.165 "Novadigm Alert Alarms" Normal
EVENT notifyRejectID .1.3.6.1.4.1.2133.0.515 "Novadigm Alert Alarms" Minor
EVENT notifyRejectPwd .1.3.6.1.4.1.2133.0.520 "Novadigm Alert Alarms" Minor
EVENT notifyExecNG .1.3.6.1.4.1.2133.0.525 "Novadigm Alert Alarms" Major
EVENT demonConnNG .1.3.6.1.4.1.2133.0.530 "Novadigm Alert Alarms" Major
EVENT stgCnctFail .1.3.6.1.4.1.2133.0.535 "Novadigm Alert Alarms" Minor
EVENT timerNG .1.3.6.1.4.1.2133.0.540 "Novadigm Alert Alarms" Major
EVENT clientCnctNG .1.3.6.1.4.1.2133.0.545 "Novadigm Alert Alarms" Major
EVENT fileRecvFail .1.3.6.1.4.1.2133.0.555 "Novadigm Alert Alarms" Major
EVENT clientNoSpace .1.3.6.1.4.1.2133.0.560 "Novadigm Alert Alarms" Major
EVENT clientLowLicense .1.3.6.1.4.1.2133.0.570 "Novadigm Alert Alarms" Minor
EVENT stagerStartNG .1.3.6.1.4.1.2133.0.580 "Novadigm Alert Alarms" Major
EVENT clntCommErr .1.3.6.1.4.1.2133.0.680 "Novadigm Alert Alarms" Minor
EVENT clntMemAlloc .1.3.6.1.4.1.2133.0.690 "Novadigm Alert Alarms" Minor
EVENT clntObjProc .1.3.6.1.4.1.2133.0.700 "Novadigm Alert Alarms" Minor
EVENT clntResFail .1.3.6.1.4.1.2133.0.710 "Novadigm Alert Alarms" Minor
EVENT clntSvcFail .1.3.6.1.4.1.2133.0.720 "Novadigm Alert Alarms" Minor
EVENT clntSyntaxErr .1.3.6.1.4.1.2133.0.730 "Novadigm Alert Alarms" Minor
EVENT clntOtherErr .1.3.6.1.4.1.2133.0.740 "Novadigm Alert Alarms" Minor
EVENT appeventInstallFailed .1.3.6.1.4.1.2133.0.745 "Novadigm Alert Alarms" Major
EVENT appeventUninstallFailed .1.3.6.1.4.1.2133.0.750 "Novadigm Alert Alarms" Major
EVENT appeventUpdateFailed .1.3.6.1.4.1.2133.0.755 "Novadigm Alert Alarms" Major
EVENT appeventRepairFailed .1.3.6.1.4.1.2133.0.760 "Novadigm Alert Alarms" Major
EVENT appeventVerifyFailed .1.3.6.1.4.1.2133.0.765 "Novadigm Alert Alarms" Major
EVENT appeventActivationFailed .1.3.6.1.4.1.2133.0.770 "Novadigm Alert Alarms" Major
EVENT appeventDeactivationFailed .1.3.6.1.4.1.2133.0.775 "Novadigm Alert Alarms" Major
EVENT managerStarting .1.3.6.1.4.1.2133.0.2000 "Novadigm Alert Alarms" Normal
EVENT managerStartupLogFailure .1.3.6.1.4.1.2133.0.2005 "Novadigm Alert Alarms" Major
EVENT managerLicenseEnd .1.3.6.1.4.1.2133.0.2010 "Novadigm Alert Alarms" Major
EVENT managerStarted .1.3.6.1.4.1.2133.0.2015 "Novadigm Alert Alarms" Normal
EVENT managerLicenseWarn .1.3.6.1.4.1.2133.0.2020 "Novadigm Alert Alarms" Warning
EVENT managerShuttingDown .1.3.6.1.4.1.2133.0.2025 "Novadigm Alert Alarms" Warning
EVENT notifySent .1.3.6.1.4.1.2133.0.2030 "Novadigm Alert Alarms" Normal

Novadigm default event classifications
EVENT notifyConnectFailed .1.3.6.1.4.1.2133.0.2035 "Novadigm Alert Alarms" Warning
EVENT managerDBSpaceLow .1.3.6.1.4.1.2133.0.2040 "Novadigm Alert Alarms" Minor
EVENT managerLogSpaceLow .1.3.6.1.4.1.2133.0.2045 "Novadigm Alert Alarms" Minor
EVENT managerConnectTimeout .1.3.6.1.4.1.2133.0.2050 "Novadigm Alert Alarms" Minor
EVENT managerConnectKilled .1.3.6.1.4.1.2133.0.2055 "Novadigm Alert Alarms" Warning
EVENT managerConnectLost .1.3.6.1.4.1.2133.0.2060 "Novadigm Alert Alarms" Minor
EVENT managerConnectHardLocked .1.3.6.1.4.1.2133.0.2065 "Novadigm Alert Alarms" Warning
EVENT managerConnectTaskLimit .1.3.6.1.4.1.2133.0.2070 "Novadigm Alert Alarms" Warning
EVENT managerConnectIpDisabled .1.3.6.1.4.1.2133.0.2075 "Novadigm Alert Alarms" Minor
EVENT managerConnectNbDisabled .1.3.6.1.4.1.2133.0.2080 "Novadigm Alert Alarms" Minor
EVENT managerConnectLu2Disabled .1.3.6.1.4.1.2133.0.2085 "Novadigm Alert Alarms" Minor
EVENT managerConnectLu62Disabled .1.3.6.1.4.1.2133.0.2090 "Novadigm Alert Alarms" Minor
EVENT managerConnectNwDisabled .1.3.6.1.4.1.2133.0.2095 "Novadigm Alert Alarms" Minor
EVENT managerConnectMSPXDisabled .1.3.6.1.4.1.2133.0.2100 "Novadigm Alert Alarms" Minor
EVENT managerMethodTimedOut .1.3.6.1.4.1.2133.0.2105 "Novadigm Alert Alarms" Warning
EVENT managerMethodFailed .1.3.6.1.4.1.2133.0.2110 "Novadigm Alert Alarms" Minor
EVENT managerZerror .1.3.6.1.4.1.2133.0.2115 "Novadigm Alert Alarms" Minor
EVENT managerLogMsg .1.3.6.1.4.1.2133.0.3000 "Novadigm Alert Alarms" Normal

Alarm Display of Novadigm Event

Figure 1.3 – The NNM Console/Novadigm Alert Alarms Browser showing a defined Major event on page 15 shows the **Novadigm Alert Alarms Browser** of the **NNM Console**.

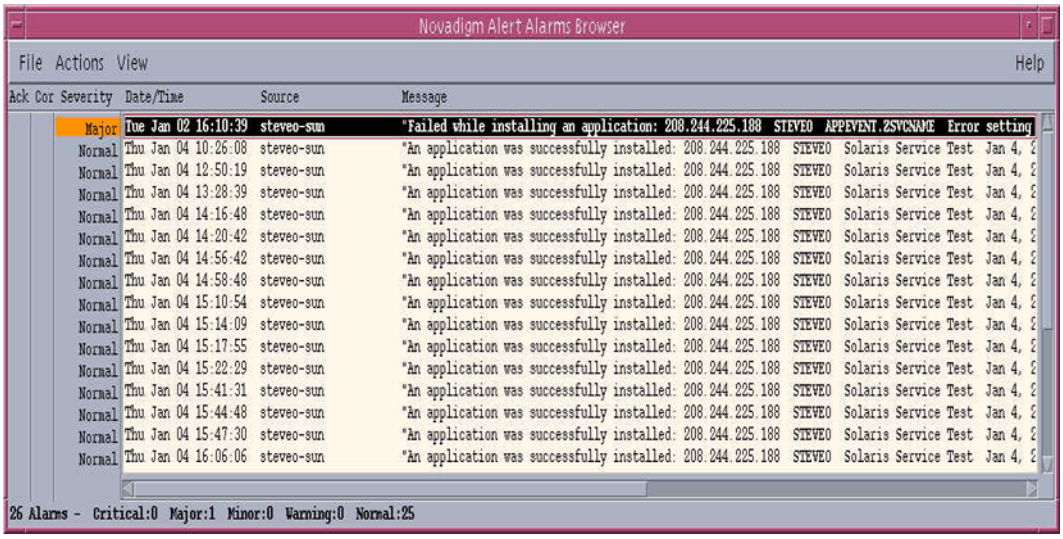

Figure 1.3 – The NNM Console/Novadigm Alert Alarms Browser showing a defined Major event.

2

Network Node Manager and Radia Inventory Manager

Introduction

The Radia Adapter for HP OpenView enhances the OpenView *Network Node Manager* (NNM) versatility by adding the following capabilities:

- The ability to launch the web browser and access the Radia Integration Server from the NNM **Tools** menu. The Radia Integration Server can query any of the inventory and/or event data stored by Radia Inventory Manager.
- The ability to right-click on a node that is displayed in the NNM user interface and launch the web browser to view inventory and event data for that node.

This section explains these capabilities, and describes how to install them into NNM.

Query Radia Inventory Manager Data

You can launch the web browser to access Radia Inventory Manager data stored on the Radia Integration Server from an NNM menu choice. In NNM, select the **Tools** menu, and on the drop-down menu, click **Radia Inventory Manager**, as in *Figure 2.1 - The Tools drop-down menu* below.

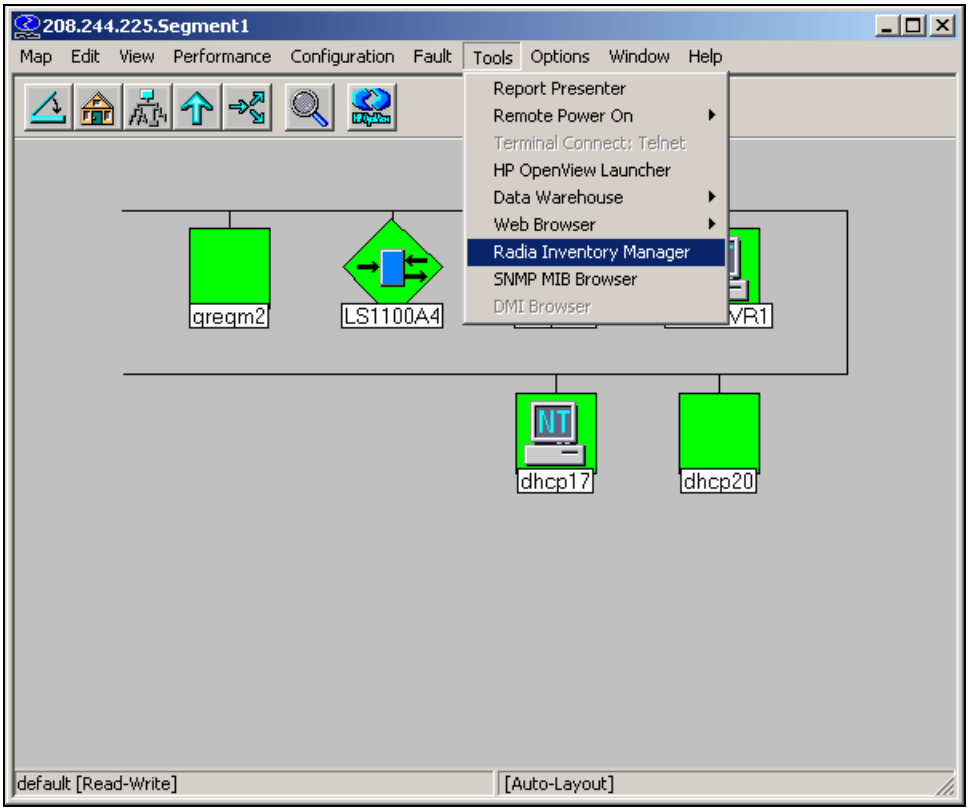

Figure 2.1 - The Tools drop-down menu.

The web browser will open, displaying the Radia Integration Server home page. Use the Radia Integration Server to query inventory and/or event data stored by Radia Inventory Manger. See the Radia Inventory Manager documentation for complete information about these capabilities.

Viewing Inventory and Event Data for a Specific Node

Right-click any node in the NNM display, and from the shortcut menu select **RIM Properties**.

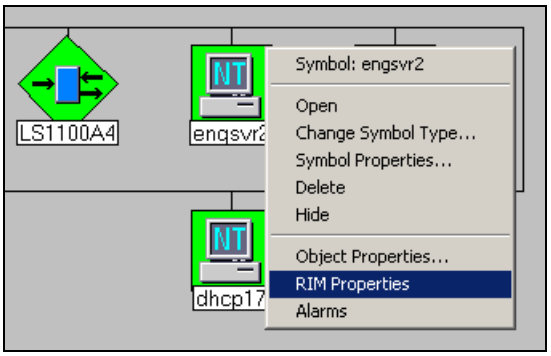

Figure 2.2 - The NNM display node pop-up menu.

The web browser will open, displaying the inventory and/or event data collected by the Radia Inventory Manager for the selected node. See the Radia Inventory Manager documentation for details on how to navigate the browser display to view all of the data for the selected node.

Installation

Prior to installing the Radia NNM Integration, make sure that NNM is not running.

Win32 Installation

To install the Radia Adapter for HP OpenView Radia Integration

1. On the computer that runs NNM, launch the Radia NNM Integration **SETUP.EXE** to begin the installation. The installation program will open, similar to the following:

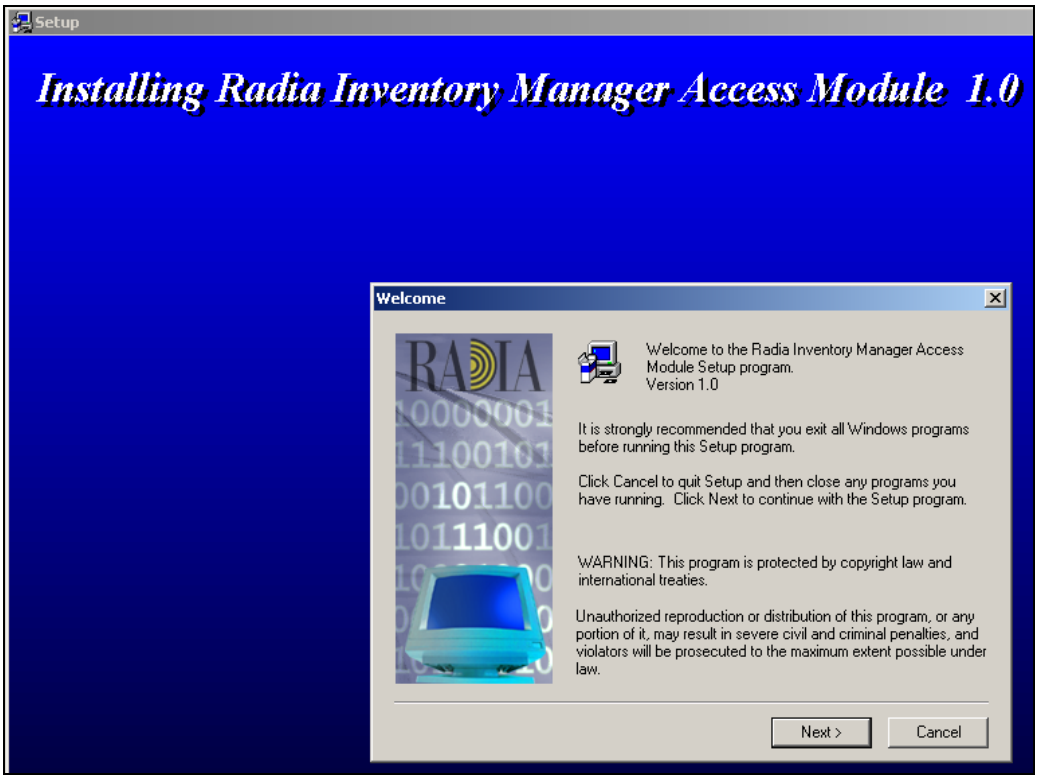

Figure 2.3 - The Installing Radia Inventory Manager Access Module Setup and Welcome windows.

2. Click **Next** to continue.

The **Setup Directories** dialog box appears, as shown in *Figure 2.4 – The Setup Directories dialog box* on page 21.

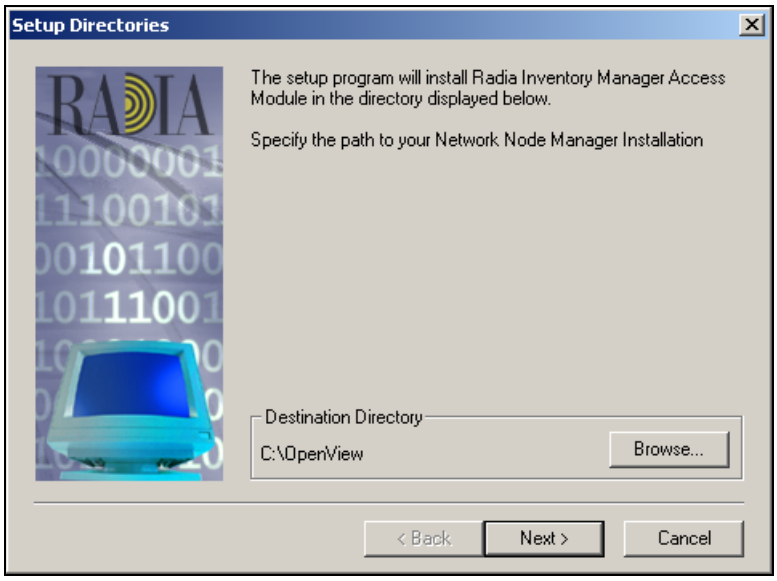

Figure 2.4 – The Setup Directories dialog box.

3. Specify the directory in which to install the Radia Inventory Manager Access Module.

This **Destination Directory** must be the location where NNM resides on this machine.

Note

The installation program will detect this location from the Registry, and suggest it as a default. You shouldn't need to change the suggested location.

When the correct location is displayed, click **Next** to continue.

The **Enter Information** dialog box opens.

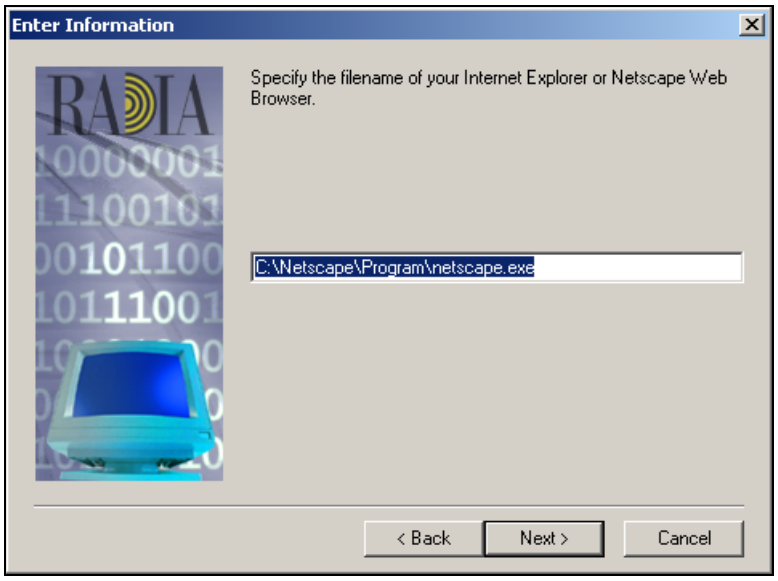

Figure 2.5 – The Enter Information (specify web browser filename) panel.

4. Specify the file name of your web browser. Enter the full path and name of the browser's executable into the text box.

> **Note**
>
> The installation program obtains, from the Registry, the name and path to the default web browser's executable, and displays them in this dialog box. You do not need to change this unless you want to use a browser other than the computer's default browser.

Click **Next** to continue.

A second **Enter Information** dialog box opens.

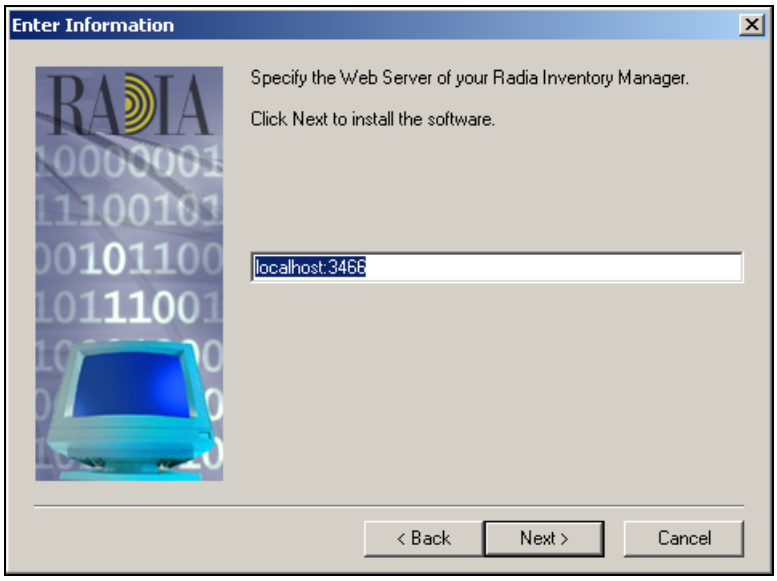

Figure 2.6 – The Enter Information (specify web server) dialog box.

5. Enter the IP address (or DNS name) and port for the Radia Integration Server. Concatenate them, using a colon, as shown in *Figure 2.6 – The Enter Information (specify web server) dialog box* above.

This example shows that the Radia Integration Server is running on the same computer as NNM (*localhost*) and is using the Radia Integration Server default port (*3466*).

Click **Next** to continue.

A message is displayed, indicating the files are being copied.

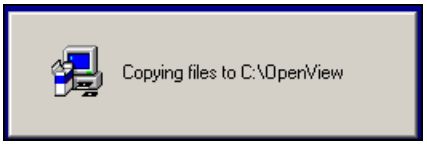

Figure 2.7 – The copying files confirmation message.

When all the modules have been copied, the installation is complete, and a confirmation message is presented.

Figure 2.8 – The successful installation message.

Radia Inventory Manager has been successfully installed for Win32.

UNIX Installation

Prior to installing the Radia NNM Radia Inventory Manager Access module, make sure that NNM is not running.

Note

On the computer that runs NNM, UNIX users must be logged in as a *superuser*. Logon as root.

Establish the environment

Before running the installation, you must run a script that establishes the required environment variables for NNM in the default installation directory. For UNIX, type:

```
/opt/OV/bin/ov.envvars.sh
```

in order to set OV_BIN.

To install the Radia Inventory Manager Access Module

1. Once the environment has been established, untar into any temporary directory, the **nnmrim_install.tar** file from the Radia Adapter for HP OpenView CD-ROM.
2. Run the script (install_rim.sh) to install the Radia Inventory Manager Access Module. The process will display as follows:

```
# ./install_rim.sh
```

3. Enter the fully qualified name of your Internet browser. For example,

   /opt/netscape/netscape

4. Enter the host name or IP address of your Radia Integration Server.

   xxx.xxx.xxx.xx

5. Enter the port for the Radia Integration Server. The default port is 3466.

   ```
   3466
   ```

   The information you have specified will be displayed on the screen.

   Browser: **/opt/netscape/netscape**

   Radia Integration Server Host: **xxx.xxx.xxx.xx**

   Radia Integration Server Port: **3466**

   Are these parameters correct? (yn):

6. If you are satisfied with your specifications, enter **Y** to continue the installation, wherein you will see the following messages. Any response, other than **Y**, will generate a prompt to re-enter your parameters. See Step 7 below.

   ```
   Copying files to NNM Directories...
   Successful installation display:
   The Radia Inventory Manager Access Module has been successfully loaded.
   Please shutdown OpenView NNM and restart to enable these changes.
   ```

7. Reenter parameters? (yn):

   Enter **Y** to restart the installation, returning to step 3 (above). Any response, other than **Y**, will exit the install.

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