HP Device Manager 3.8
User Manual

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First Edition (April 2008)

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CHAPTER 1

Introduction

This chapter introduces HP Device Manager and describes the scope of this User Manual.

What is HP Device Manager?

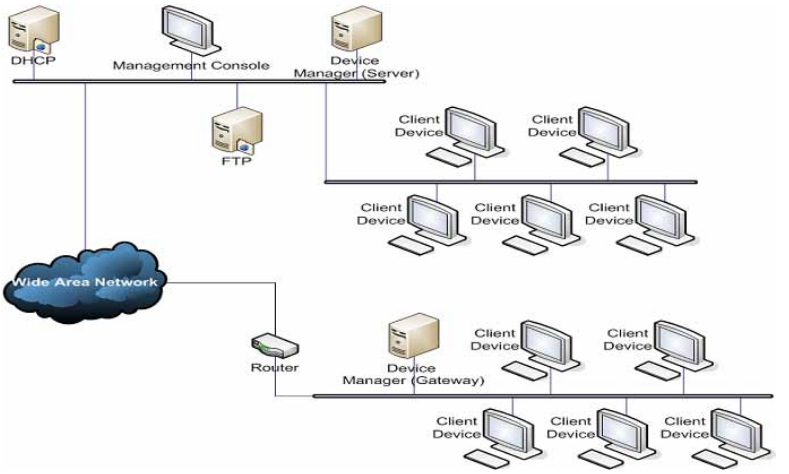
HP Device Manager is a server-based application that provides sophisticated centralized administration capabilities for thin client devices running HP software. Features of HP Device Manager include:

- Centralized management of software configuration and upgrades.
- A central server-based database.
- The ability to easily create, store and update tasks.
- The ability to report on work done and task status.
- The ability to access any file or the system registry in thin client devices.
- XML-based task file.
- Design tool for administrator to create tasks.
- User-friendly graphical user interface.
- Easy and powerful repository management.
- Support for WAN environment.
- Windows® XPe device management.

- Easy to change Enhanced Write Filter setting for XPe Agent.
- The ability to adjust the response time.
- Communicate with Data Encryption and Data Compression between HP Management Server and HP Management Gateway.
- Easy to set the work mode of Agent.

Overview

HP Device Manager is structured as a Console - Server - Gateway system.



HP Management Console

The HP Management Console is the user interface of HP Device Manager. Several HP Management Consoles can interact with an HP Management Server. The console allows system administrators to view details for each controlled device, organize device trees, create and maintain remote job definitions, and monitor tasks sent out to devices.

HP Management Server

The HP Management Server controls agents through the HP Management Gateway. Tasks, stored as Task Templates on the server, can be sent to each agent through each agent's respective gateway to perform commands as required.

HP Management Gateway

The HP Management Gateway serves as the link between devices and the HP Management Server. Devices register with the gateway when they are started. The machine installed with the HP Management Gateway also normally contains the PXE Server installed by HP Device Manager.

Device Agent

The HP Management Agent is a software component installed on thin client devices so that HP Device Manager can interact with them. Agents are embedded into each HP operating system to enable Device Manager to manage devices out-of-the-box (however, agents on older devices may need to be upgraded). Agents get task commands, execute the commands and report on their status.

FTP Server

The FTP server is where files are stored in a repository of components, images, etc. that can be uploaded from or downloaded to the agents at the request of the HP Management Server. You can create a repository on more than one FTP server. The repository on an FTP server is referred to as the "FTP Repository" in dialogs and in this User Manual to distinguish it from the HP Management Server Repository (the "Server Repository").

Concepts

The Device Pane

The **Device Pane** is in the top-left of the Management Console's main screen. All thin clients of a selected product type that are connected to the server are displayed in this pane.

This pane contains the **Device Tree** and the **Grouping Scheme** drop-down menus.

Device Tree

The **Device Tree** is the organized structure of all the managed devices in the Management Console, displayed in the **Device Pane**, on the top-left of the main screen.

The tree contains all the devices reported to the Management Server. Devices can be automatically sorted and grouped according to their attributes, or they can be dragged and dropped into arbitrary groups when the devices are grouped by their customized extended properties.

Tasks can be designated to groups of devices to meet their specific needs.

Element

An **Element** is a type of resource (such as a software component, system image, diagnostic tool or agent file) stored in the **Repository** which can be applied to a device using a particular template.

Task Template

Task Templates are some of the tools administrators may use to remotely control the devices. They are displayed in the **Template Pane**. Each Task Template is an XML file that defines the configuration change or software update that administrators want the remote devices to do.

HP Device Manager provides a variety of built-in Task Templates and many examples on how to manage remote devices, including device name changes, network settings, home URL changes, ICA connection clones, add/remove software components and so on.

Task Templates can be imported or exported by using tools on the Management Console. New Task Templates can be downloaded from HP's FTP site, then imported to your HP Management Server.

Managed Device

Managed device, client device, remote device, or device, as mentioned in this manual, means a device managed by HP Device Manager, such as a thin client.

OS Tabs

OS Tabs enable you to select the different categories of Platform Operating System that are controlled by HP Device Manager.

PXE

PXE is a protocol defined on a foundation of industry-standard Internet protocols and services that are widely deployed in the industry (namely TCP/IP, DHCP, and TFTP).

HP Device Manager utilizes PXE to execute thin-client image extraction and distribution.

Repository

The Repository is a collection of elements which may consist of software components, system images, diagnostic tools and agent files stored on one or more FTP servers. The Repository actually resides over several servers, these being the HP Management Server Repository (the "Server Repository") and one or more FTP Server Repositories (the "FTP Repository").

Task

A task, or job, is the scheduled action to execute Task Templates to a device or group of devices. To create a task, just drag and drop the desired Task Template from the template pane to a device or a group of devices in the device tree. Once executed, the details of the task will be displayed in the **Task Pane** and the summaries will be displayed in the **Summary Pane**.

Task Pane & Summary Pane

The **Task Pane** and **Summary Pane** are in the bottom area of the main Management Console window. They display the execution status for each task. If there is more than one device for a listed task, the status of each device will be listed.

Template Pane

The **Template Pane** is in the top-right of the Management Console main screen. The templates that are applicable to the listed client devices are listed here.

Status Bar

The **Status Bar** is shown at the very bottom of the main Management Console window. Descriptions of various items in HP Device Manager are displayed here when the mouse cursor moves over them; for example, a description of each **Device Pane** icon is displayed when the mouse cursor moves over each icon.

EWF

Enhanced Write Filter (EWF) provides the ability to write-protect a run-time image. By redirecting all write requests to either a separate disk partition or RAM, EWF allows the run-time image to maintain the appearance of a writeable run-time image. Additionally, Enhanced Write Filter provides the ability to deploy a run-time image onto read-only media, such as a CD-ROM.

Agent Mode

Agent Mode is the mode of the Management Agent to acquire tasks from the Management Gateway. Through configurations to the Agent mode, the agent can work at the NAT network without Gateway. The Agent mode can be either Push mode or Pull mode. Push mode means the gateway sends the available task to the agent, and Pull mode means the agent would require the task from the gateway at regular intervals.

Getting More Information

The Internet

Current and archival information about HP products, including the latest software updates, is available at:

http://www.hp.com

In addition, this user manual and other HP documentation are available at the HP web site for browsing or downloading.

Technical Support

For technical support regarding HP products, call HP at **+1-610-277-8300** or request support using the form at:

http://www.hp.com/support/support_request.html

About This Manual

This manual explains how to use HP Device Manager version 3.8. Occasionally it will refer to items displayed by client operating systems. For a description of these items, please refer to the User Manual for the type of client operating system being used.

Overview of Contents

This manual is divided into the following chapters and appendices:

Chapter 1: Introduction

Introduces HP Device Manager and describes the scope of this User Manual.

Chapter 2: Installing HP Device Manager

Describes the requirements for running HP Device Manager and how to install it.

Chapter 3: Getting Started

Describes how to start using the HP Management Console, set up a repository, and discover clients.

Chapter 4: Using the HP Management Console

Covers the main functions of the Management Console, including device management, task templates and task management.

Chapter 5: Common Tasks

Describes how to use the Management Console to change device settings, copy files and execute commands.

Chapter 6: Advanced Tasks

Describes how to use snapins, images, change registry settings, install XPe software components, and set the agent mode.

Chapter 7: Configuration Management

Explains the administration of the console, working with users, advanced server configuration, and licensing.

Appendix A: Installing & Running JRE

Describes how to install and run the Java® Runtime Environment.

Appendix B: Installing & Running MySQL

Describes how to install and run MySQL.

Appendix C: Error Code Reference

Explains the meaning of error codes which may be generated by HP Device Manager.

Terms & Conventions

The following terms and conventions are used in this manual:

devices, clients and thin clients

The terms "devices", "clients", "thin clients" are interchangeable and refer to any client devices that are running HP software.

keys to press

When you need to press two or more keys together at the same time, such as the **Ctrl** key and the **C** key, this will be indicated by a plus character inbetween the key names, which will be highlighted. For example: **Ctrl + C**. The "+" character does not represent a key to be pressed.

double-click

To "double-click" means to click the left mouse button twice in quick succession when the mouse pointer is on a particular item on the display, such as an icon. You should use the left mouse button unless specifically told otherwise.

drag

To "drag" means to position the mouse pointer on an item on the display (such as the edge of a window), then hold down the left mouse button and move the mouse while keeping the button held down.

CHAPTER 2

Installing HP Device Manager

This chapter describes the requirements for running HP Device Manager and how to install it.

Introduction

HP Device Manager consists of four modules:

- **Management Console**
  The graphical application used by administrators to access the management system.
- **Management Server**
  The central server which consolidates and controls all management activities.
- **Management Gateway**
  The gateway which serves as the link between Agents and the Management Server.
- **Management Agent**
  Software installed on the client to enable device management.

The Management Console, Management Server and Management Gateway may be installed on the same machine, or on different machines separately.

System Requirements

Management Console

The **Management Console** can be installed on any number of machines. It has the following minimum system requirements:

- **Operating System**
  Windows 2000 Professional (SP4)
  Windows 2000 Server (SP4)
  Windows XP Professional (SP2)
  Windows 2003 Server
- **Third-party Software**
  Java™ Runtime: SUN Java Runtime Environment version 1.4.2.
- **Hardware**
  Pentium-III or greater
  512MB RAM
  256MB free disk space.

Management Server

The **Management Server** should be installed on a single machine. It has the following minimum system requirements:

- **Operating System**
  Windows 2000 Server (SP4)
  Windows 2003 Server
- **Third-party Software**
  Java Runtime:
  SUN Java Runtime Environment version 1.4.2.
  DBMS - any of the following are supported:
  Microsoft SQL Server 2000
  MySQL 4.1
  Microsoft Access 2000 or later.
- **Hardware**
  Pentium® III or greater
  512 MB RAM
  512 MB free disk space.

Management Gateway

The **Management Gateway** may be installed on multiple machines. However, only one Gateway should be present on a subnet. It has the following minimum system requirements:

- **Operating System**
  Windows 2000 Professional (SP4)
  Windows 2000 Server (SP4)
  Windows 2003 Server
- **Third-party Software**
  N/A
- **Hardware**
  Pentium-III or greater
  512 MB RAM
  512 MB free disk space.

Management Agent

The **Management Agent** should be installed on each device that will be managed by the system. It has the following minimum system requirements:

- **Operating System**
  NeoLinux 4.0.1
  Neoware CE 8.1
  Neoware XP embedded 1.4.2 or later
  NeoLinux 3
- **Hardware**
  Thin-client device supporting one of the operating systems listed above.
  2 MB free disk space.

Third Party Software

The following FTP Servers are recommended for use with HP Device Manager:

- **FTP Server**
  Microsoft Internet Information Server (IIS) 5.0
  Rhinosoft Serv-U FTP Server 4.0
  SCO UNIX OpenServer FTP Server 5.0.4 or 5.0.6.

Network Requirements

The network should not contain any other running PXE servers. It should permit free communication on ports used by HP Device Manager. A number of UDP and TCP ports are required for client/server communication. See Table 1 for a list of standard ports required, and Table 2 for a list of custom ports required.

If you are using a Server behind a firewall, please add ports **1099** and **40002** to the exception ports in the firewall settings.

Table 1: Standard Ports Required

Port	Protocol	Purpose
67 & **68**	UDP	PXE - Bootstrap.
69	UDP	TFTP (Trivial File Transfer Protocol).
4011	UDP	DHCP Proxy Service (this is an alternative to ports 67 and 68 if those ports are not available).
20 & **21**	TCP	FTP (used for the Repository).
5900	TCP	VNC Server.

Table 2: Custom HP Device Manager Ports Required

Receiver Port	Sender	Receiver	Protocol	Purpose
1099	Console	Server	TCP	Console queries the RMI Registry.
40000	Server/ Agent	Gateway	UDP	Server/Agent polls Gateway.
40001	Gateway	Agent	TCP	Gateway sends task to Agent.
40002	Console	Server	TCP	Console calls the remote objects on Server by RMI.
40003	Server/ Agent	Gateway	TCP	Server sends task to Gateway; Agent sends report to Gateway.

Table 2: Custom HP Device Manager Ports Required

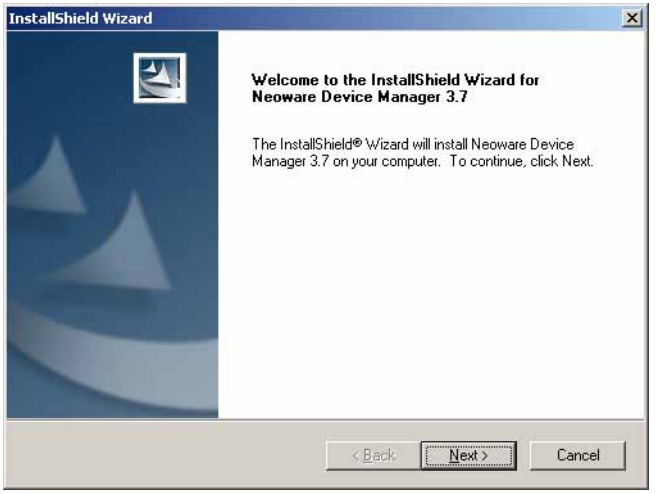
Receiver Port	Sender	Receiver	Protocol	Purpose
40005	Gateway	Server	TCP	Gateway sends report to Server.

Installing HP Device Manager

The installation program will determine if the software required to run Device Manager is already installed.

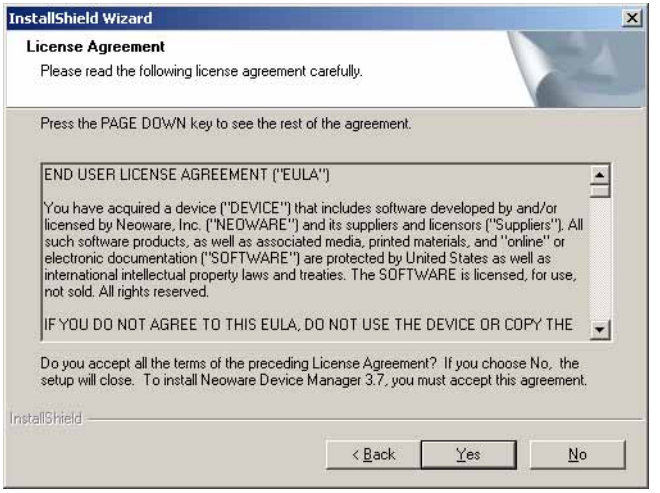
Note: *Different operating systems may have slightly different steps and wording for the installation process.*

1 Run the Device Manager InstallShield Wizard. The installation's introductory dialog will be displayed.

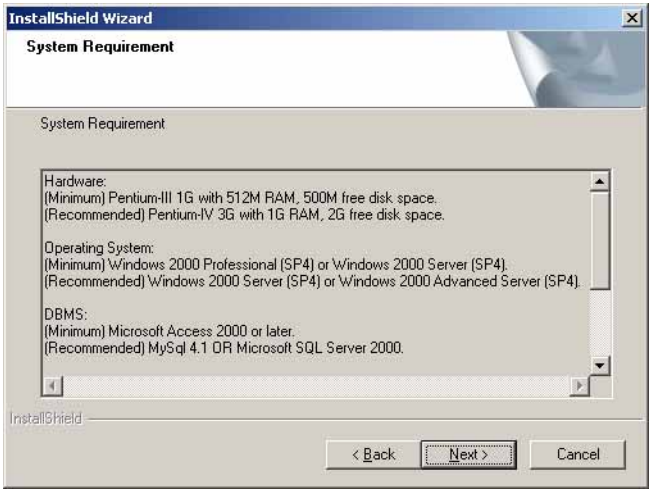


2 Click **Next**.

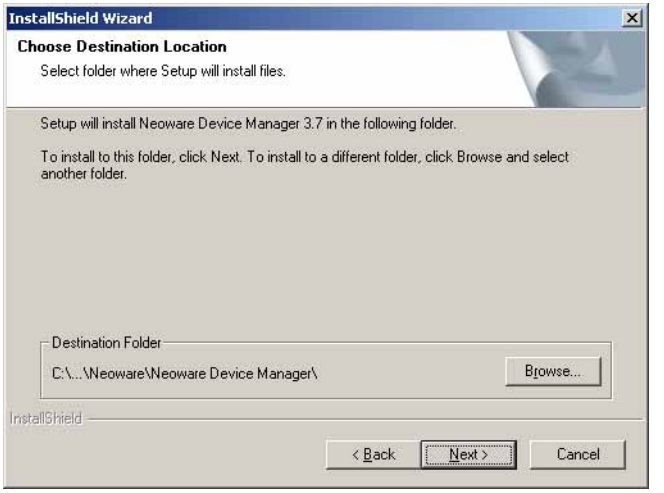
3 Read then accept all the terms in the **License Agreement** dialog by clicking **Yes**.



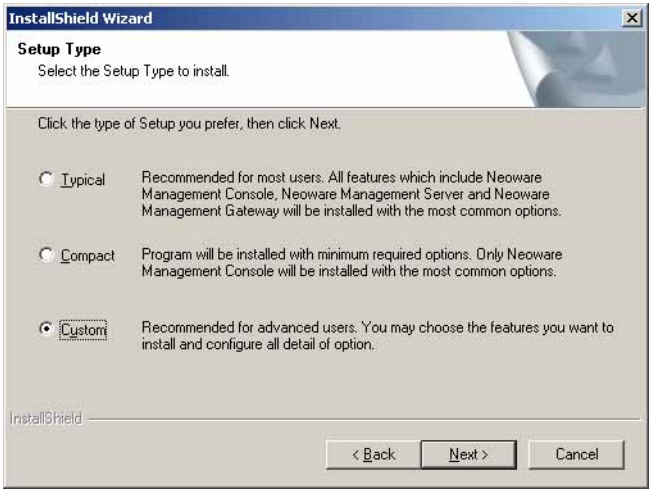
4 Read the **System Requirement** then click **Next**.



5 In the **Choose Destination Location** dialog, select the folder where Device Manager will be installed. Accept the default folder or click **Browse** and navigate to a specific location.



6 Click **Next** and select a **Setup Type**.



Typical - The Management Console, Server and Gateway will be installed with their default configurations. A Microsoft Access database will be initialized as the Server's database.

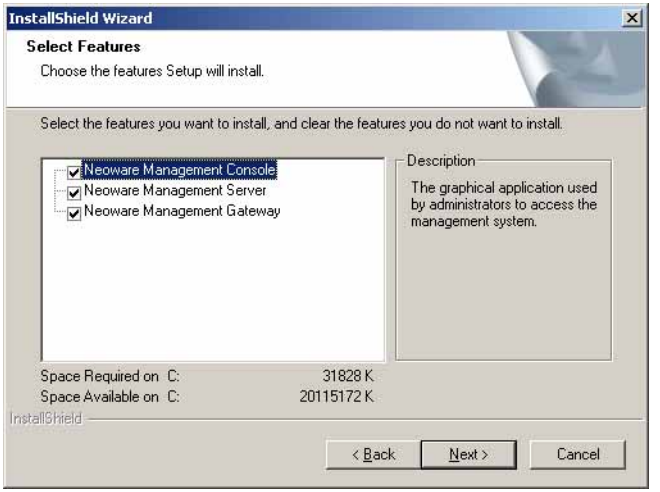
Compact - Only the Management Console will be installed.

Custom - Select the components to install and specify the configuration of each one:

- **Console** - Does not require any configuration.
- **Server** - You can choose which database will be used for the Server. The optional databases are Microsoft Access, MySQL and Microsoft SQL Server.
- **Gateway** - You should configure DHCP and Gateway settings. The DHCP server is used by the PXE boot ROM to get an IP address as well as other basic networking information (subnet mask, default gateway, etc.).

7 Select **Custom** as an example, then click **Next** to continue.

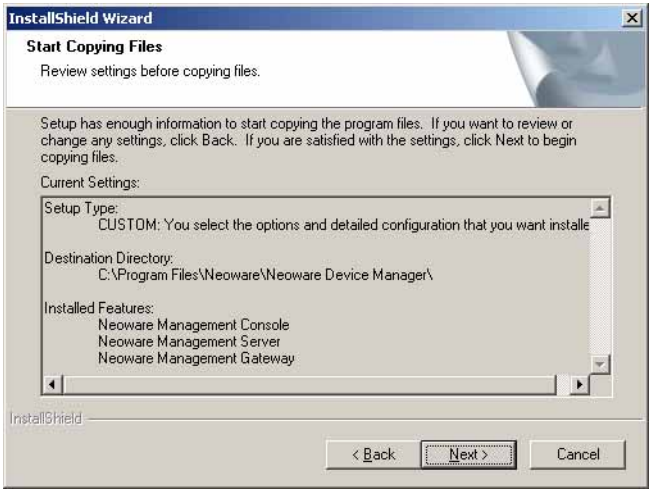
8 Select the Device Manager components that you wish to install then click **Next** to continue.



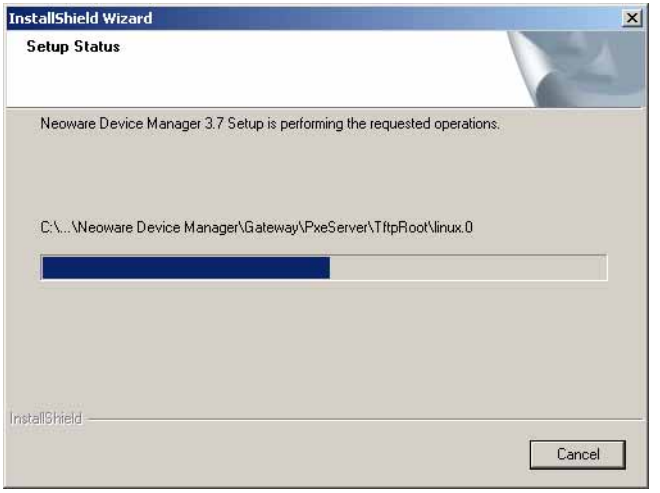
A Java Runtime Environment of version 1.4 or later, including any Java2 platform system, is required to run Device Manager. If JRE is not installed on your machine or its version is older than 1.4, the system will display the following dialog:

9 In the **Select Program Folder** dialog, select the name of the folder to store HP Device Manager.

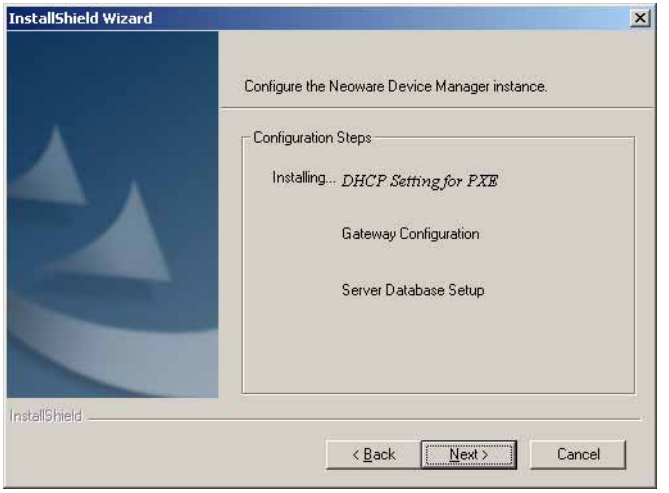
10 Click **Next** to preview the current installation settings.



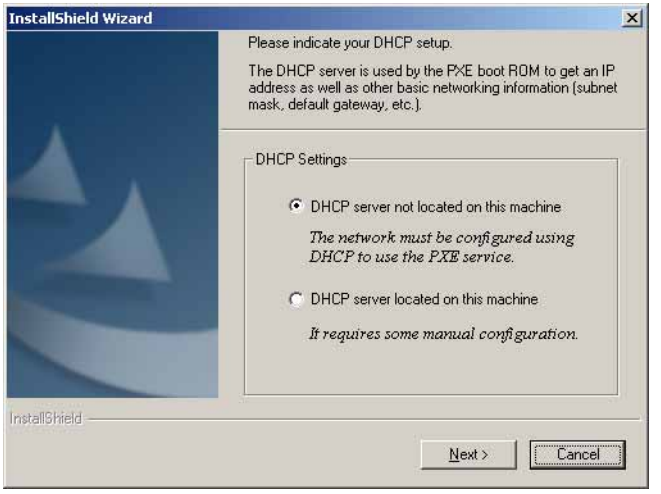
11 Click **Next** to start installing the selected HP Device Manager component(s).



12 Please wait until the file copying process is finished.



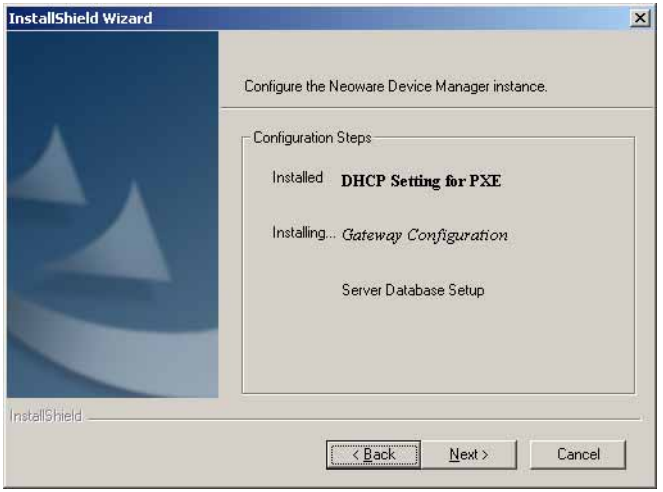
13 Click **Next** and the **DHCP Configuration** dialog will appear.



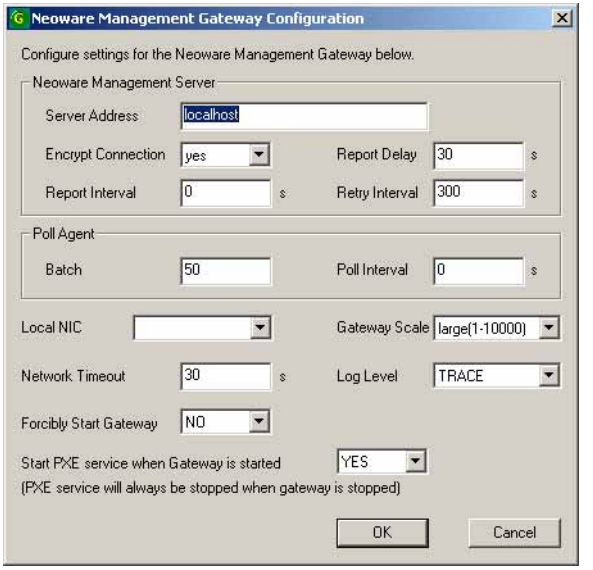
Specify whether the DHCP server is located on the machine you are installing HP Device Manager.

Note: *The DHCP server may need to be configured so that it can be used with Device Manager, particularly if it is on the same machine as Device Manager. See "Configuring DHCP Servers" on page 30 for further information.*

14 Click **Next** to install the **Management Server** and **Management Gateway** services to your machine.



15 Click **Next** to display the **Gateway Configuration** dialog.

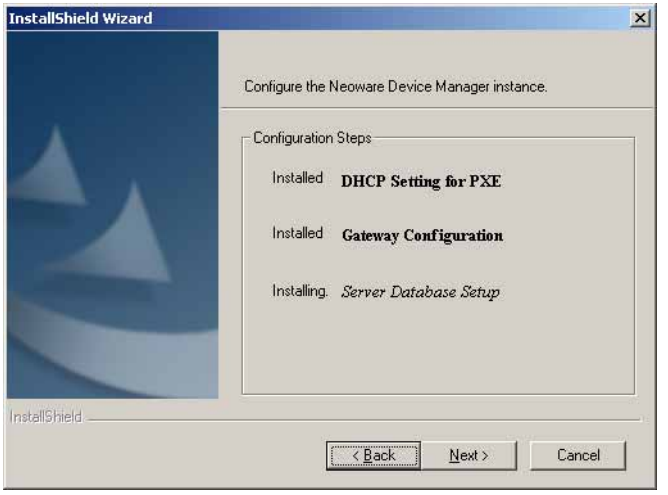


The **Management Server Address** is the address for the Management Server that the Management Gateway will report to.

The **Local NIC** selects which NIC the gateway will receive agent reports on. If there is only one NIC for the system, this field can be left blank.

The **Start PXE service when Gateway is started** setting determines whether the PXE service will be started along with the Management Gateway. The PXE service is always installed along with the Gateway, but can be controlled independently of the Gateway (by changing this setting to **NO**) if required. If this is set to **YES**, when the Gateway is stopped, the PXE service will also stop; when the Gateway is started, the PXE service will also start.

16 Once you have set up the Gateway, click **OK** to save the settings and continue.



17 Click **Next** to start the Management Server Database configuration.

18 Select one database installation option and click **Next** to start the configuration.

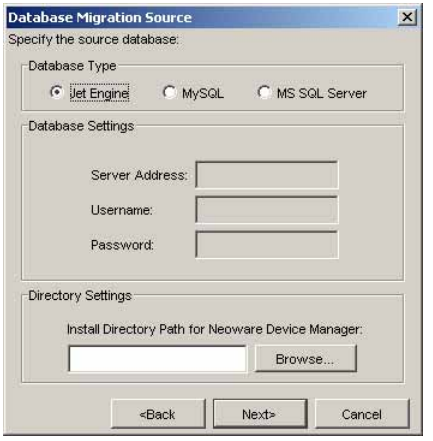
Create new database:

Note: *If a Database named* ***ndmdb*** *already exists, it will be overwritten without any warning!*

Use Device Manager database at existing location:

Select the folder where Device Manager has been installed. Input the path or click **Browse** and navigate to a specific location in the **Directory Settings** box.

Migrate Device Manager database to new location:



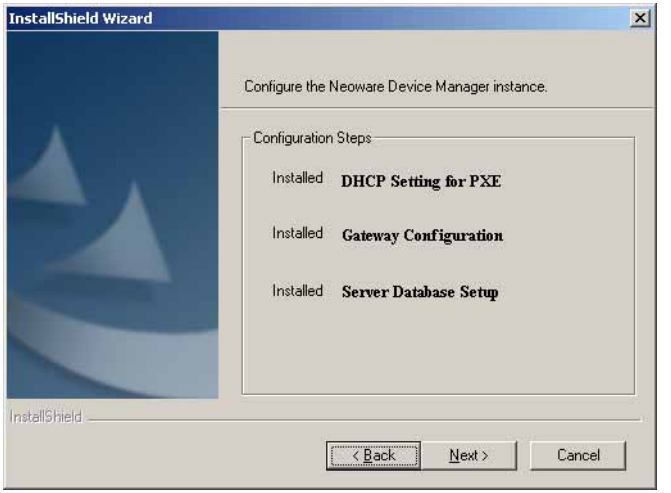
Select the folder where Device Manager has been installed. Input the path or click **Browse** and navigate to a specific location in the **Directory Settings** box.

19 The following dialog will appear when the database has been successfully created.

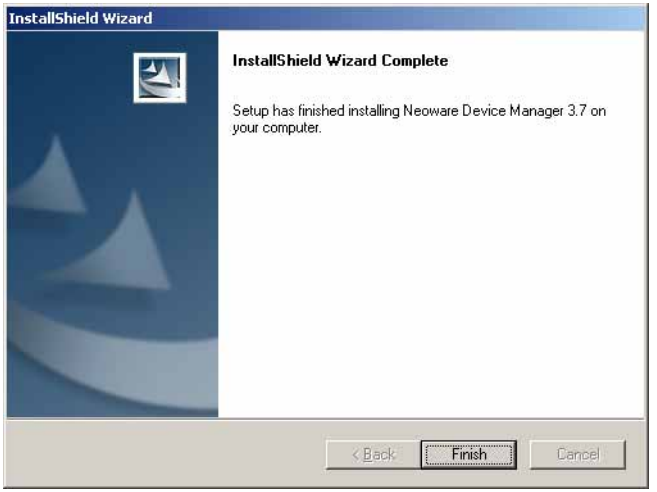
20 Click **OK** to set the Administrator password.

21 Click **OK** and you will be informed that the password has been set successfully.

22 Click **OK**.



23 Click **Next**.



24 Click **Finish** to complete the installation process.

25 If the Management Console, Server and Gateway are setup successfully, icons of the Server and Gateway will be displayed in the Systray of your machine as shown below.

A green icon indicates the service is running, a yellow icon indicates the service is starting up, and a red icon indicates the service has stopped.

Note: *You can start/stop services and configure the Gateway server again by using the menu options displayed when you right-click on the Systray icons.*

An icon for the Management Console will be displayed on the desktop.

Configuring DHCP Servers

This section describes how to configure the DHCP server for use with PXE.

Management Server Installed Separately to the DHCP Server

Should problems occur when using PXE, the DHCP servers may need to be checked for certain settings that may conflict with PXE. However, on most networks, these issues should not occur.

The DHCP server is used by the PXE boot ROM to get an IP address as well as other basic networking information (subnet mask, default gateway, etc.).

Note: *The network must be configured using DHCP to use the PXE service.*

Configuring the DHCP Server

1. Ensure the DHCP server has not been previously configured for a PXE bootstrap.
2. If the **DHCP options 43 & 60** are set, remove them.

   Note: *The Device Manager PXE service will detect the DHCP packets sent by any PXE BootROMs and will offer PXE network parameters without disturbing the standard DHCP negotiation process. This is called DHCP Proxy.*

   The DHCP server should then be ready to be used with PXE.

Management Server Installed on DHCP Server Machine

If Management Server is installed with a DHCP server on the same machine, it requires some manual configuration.

The Management Server installation process installs the **HP PXE Service**. This service provides the PXE remote-imaging function. The service is automatically started and stopped with the operating system.

The DHCP server is used by the PXE boot ROM to get an IP address as well as other basic networking information (subnet mask, default gateway, etc.).

The following instructions assume that:

- The network is already configured using DHCP.
- The DHCP server has not been previously configured for a PXE bootstrap.
- There are no other TFTP servers running on the same network.

Configuring the DHCP Server:

By default options 60 and 201 are not set under Windows 2000. These options will have to be added in order to tell PXE clients where to find the Management Server.

1. If **DHCP option 43** is set, remove it. (This is due to the fact that Management Server is installed on the same machine as the DHCP server.)
2. Add **option 60**, and set value to "**PXEClient**". If **option 60** does not exist, see the following instructions on setting this option.

   Either:

   - From the main Windows menu select **Start** > **Run**.
   - Enter **Cmd** in the **Open:** field. A Command shell appears.
   - Enter **netsh** then press the **Enter** key.
   - Enter **dhcp** then press the **Enter** key.
   - Enter **server \\servername** (using the UNC name for the server).

   Or:

   - Enter **server <ip_address>** (using the IP address of the server.). A "**dhcp server >**" prompt appears in the command window.

- Enter **add optiondef 60** ***(name of your choice)*** **STRING 0** then press the **Enter** key.
- Enter **set optionvalue 60 STRING** "**PXEClient**" then press the **Enter** key.
- To confirm that the settings are correct, enter **show optionvalue all** then press the **Enter** key.

3 Add **option 201**, and set the value to "***'Management_Gateway_IP_Address'*** **'40003'**"

- Type in **add optiondef 201 (*name of your choice*) STRING 0** then press the **Enter** key.
- Type in **set optionvalue 201 STRING *'Management_Gateway_IP_Address'* '40003'** then press the **Enter** key. (The ***Management_Gateway_IP_Address*** is the address of the server running the Management Gateway service.)
- To confirm that the settings are correct, type in **show optionvalue all** then press the **Enter** key.

Note: *When setting* ***optionvalue 201****,* ***'Management_Gateway_IP_Address' '40003'*** *must be written exactly as shown above, including the single quotes and separated by a single space, otherwise errors will occur.*

The DHCP server should then be ready to be used with PXE.

Adding DHCP Option 60 and 201 to an ISC DHCP Server

If ISC DHCP server 2.0 is in use, it must be updated to ISC DHCP server 3.0 as version 2.0 does not support vendor specific information. For more information, see **HTTP://WWW.ISC.ORG**.

Configuring a Linux DHCP Server

1. Edit the DHCP server configuration file **/etc/dhcpd.conf**. Add the following lines to the beginning of the file exactly as shown:

   ddns-update-style ad-hoc;
   Authoritative;
   Option NDM code 201 =string;
   Option vendor-class-identifier "PXEClient";
   Option NDM "'Management_Gateway_IP_Address' '40003'";

2. Restart **dhcpd** to use the new configuration.

3. The HP Device Manager config string should be:

   'Management_Gateway_IP_Address' '40003'

Configuring Routers

For PXE to function properly, any network that uses DHCP and has multiple subnets should have an IP helper configured in the router between any clients requiring a dynamic IP address and the DHCP server. The router will need to be configured to have an additional IP helper address to point to the Management Gateway.

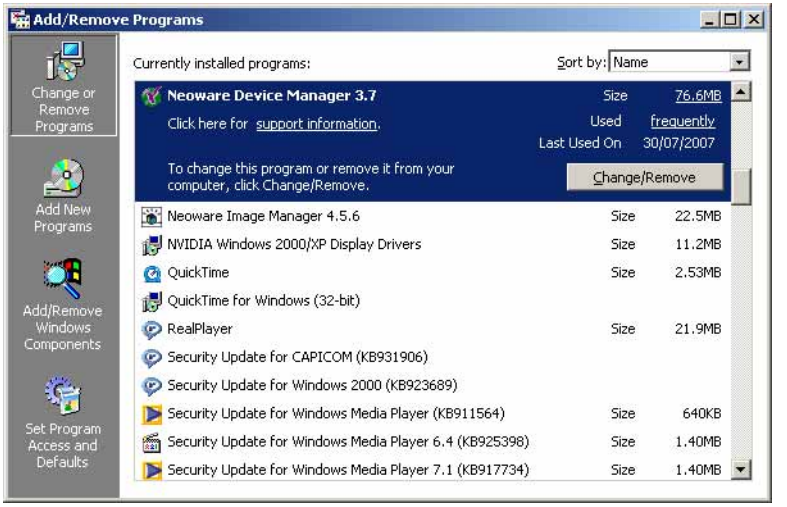
Example (Cisco Router):

1. Go to **Global Configuration** mode.
2. Type **ip forward-protocol udp 67** and press **Enter**.
3. Type **ip forward-protocol udp 68** and press **Enter**.
4. Go to the LAN interface(s) that serves the PXE workstations.
5. Type **ip helper-address <DHCP Server IP address>** and press **Enter**.
6. Type **ip helper-address <Management Gateway IP address>** and press **Enter**.

Note: *The above IP addresses should be entered without the* **<** *or* **>** *characters.*

Uninstalling Device Manager

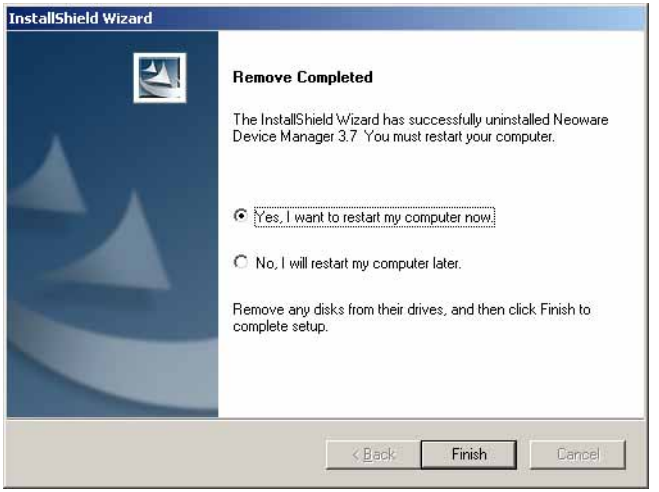
1. Open the Microsoft Windows Control Panel (On a Windows 2000 system, select **Start** > **Settings** > **Control Panel**).
2. Double-click **Add/Remove Programs**. The **Add/Remove Programs** window will appear.



3. Select **Neoware Device Manager** from the list of currently installed programs.
4. Click **Change/Remove** to activate the Device Manager configuration program.
5. You will be asked to confirm your decision.

Click **OK** to continue.

6 Once Device Manager has been uninstalled, the computer should be rebooted. Click **Finish** on the **Remove Completed** dialog to reboot the computer, or select **No** before clicking **Finish** if you intend to reboot the computer yourself later.



7 HP Device Manager has now been uninstalled from your system.

CHAPTER 3

Getting Started

This chapter describes how to start using the HP Management Console, set up a repository, and discover clients.

Logging in to the HP Management Console

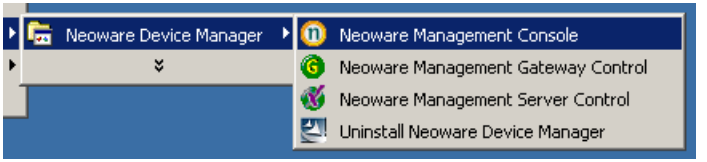
To launch the HP Management Console:

1 Double-click the **Neoware Management Console** icon on the Windows desktop.

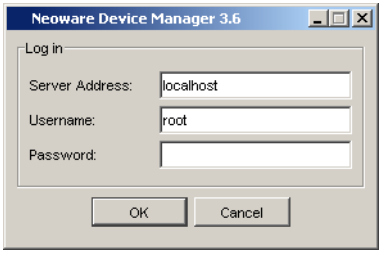
OR

From the main Windows screen select:

Start > **Programs** > **Neoware** > **Neoware Device Manager** > **Neoware Management Console**



The **Log in** dialog will appear.



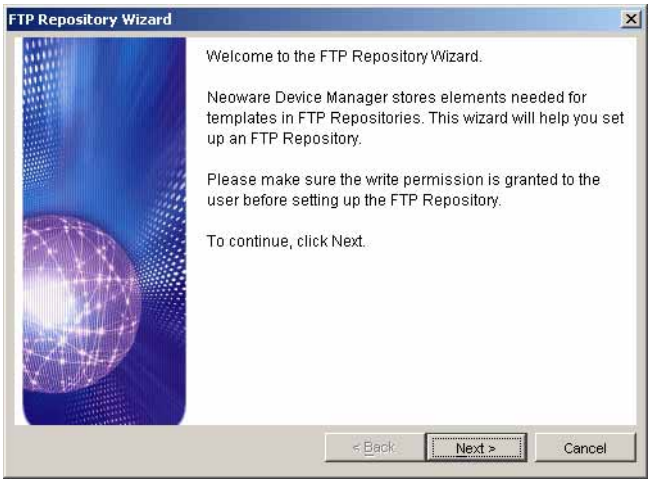
2 Enter the **Server Address** of your network's HP Management Server. The address can be entered as an IP address or as a machine name. If the console is on the same machine as the HP Management Server, then enter **"localhost"**.

3 Enter your **Username** and **Password** in their respective fields.

4 Click **OK** to log in to the Console.

Once the username and password are verified, the main window of the HP Management Console appears.

If this is the first time you have logged in the Management Console, the **FTP Repository Wizard** will be displayed.



Configuring the Repository

The HP Management Repository is used to store software components, system images, diagnostic tools and agent files. Each of the individual items stored in the Repository is referred to as an **element**. Once elements are stored in the Repository, they can be applied to client devices using templates.

The HP Management Repository actually resides over several servers, these being the HP Management Server Repository (the "Server Repository") and one or more FTP Server Repositories (the "FTP Repository"). The **Repository Management** tool is used to import elements into the Server Repository and then transfer them to the relevant FTP Repository. An element must be transferred to an FTP Repository before it can be applied to clients.

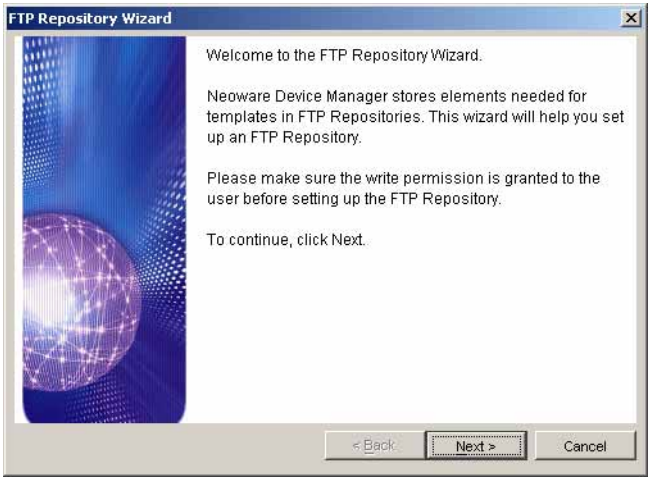
When you log in the HP Device Manager Console for the first time you will be automatically prompted to create an FTP Repository using the **FTP Repository Wizard** as described below. If you need to create an additional FTP Repository later, you can run the **FTP Repository Wizard** again by selecting **Tools** > **Configuration** from the Console's menu bar, selecting **FTP Repositories** in the left-hand tree pane, then clicking the **Launch FTP Wizard** button in the top-right corner.

Creating an FTP Repository

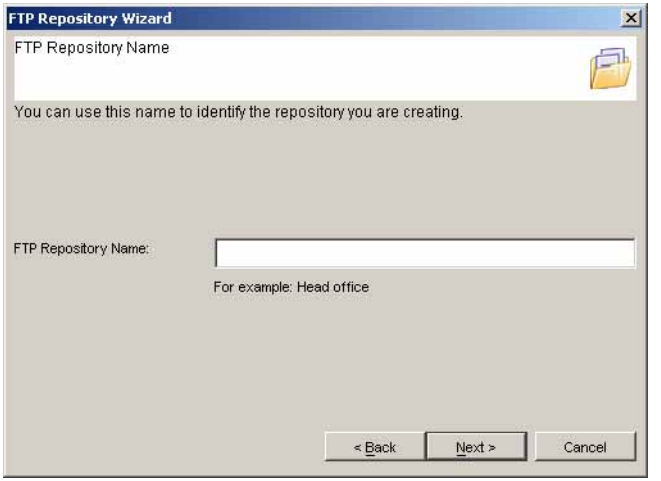
To create an FTP Repository:

1. If the **FTP Repository Wizard** is not displayed already, select **Tools** > **Configuration** in the Console's menu bar, select **FTP Repositories** in the left-hand tree pane, then click the **Launch FTP Wizard** button in the top-right corner.

   The **Welcome** screen will be displayed.

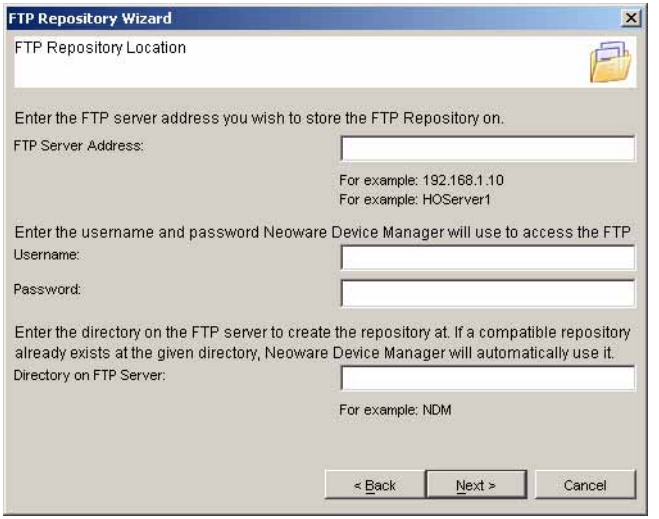


2 Click **Next** to display the **FTP Repository Name** screen.



3 Enter a name to identify this FTP Repository in the **FTP Repository Name** field.

4 Click **Next** to display the **FTP Repository Location** screen.

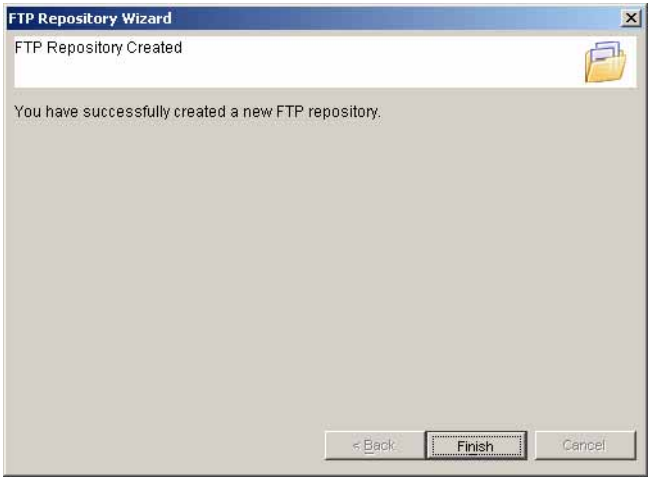


5 In the **FTP Server Address** field, enter the IP address or host-name of the server on which the FTP Repository is to be created.

Enter the **User Name** and **Password** for the server to enable HP Device Manager to access it. The **User Name** and **Password** must have write permissions for the server.

Enter a **directory on the FTP server** that will be used to store the FTP Repository. When you click **Next**, the **FTP Repository Wizard** will search for the directory, and if an existing FTP Repository is found at that location, it will use it. If an existing FTP Repository is not found, you will be asked if you want to create the directory and FTP Repository as required.

6 When you have entered all of the details for the FTP Repository, click **Next** to create it.

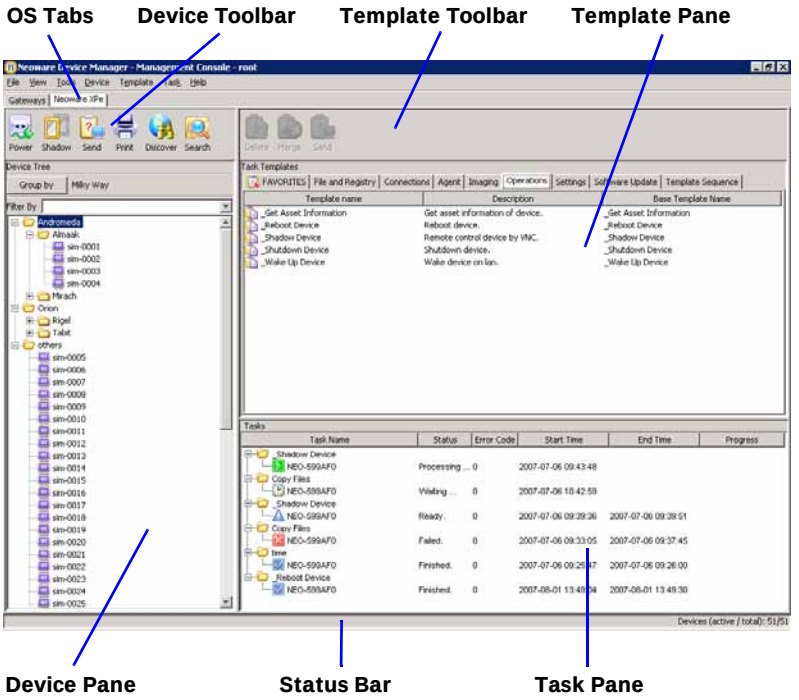


7 Click **Finish** to close the **FTP Repository Wizard**.

The FTP Repository is now ready for you to add elements to it using the **Repository Management** tool as described in the section “Adding Elements to the Repository” on page 51.

Management Console Overview

The Management Console window consists of three panes and a series of tabs which determine their content.



- **OS Tabs**
  Selects the different categories of terminal operating systems that are controlled by HP Device Manager. Note that only the tabs for the operating system types of the devices currently managed by HP Device Manager will be displayed.
- **Device Toolbar**
  Provides tools enabling you to power on/off the client devices, shadow a remote client, send tasks, print device properties, discover an agent, etc. Refer to the section “Toolbar Overview” on page 62 for more information.

- **Device Pane**
  All clients of the selected OS type that are connected to the server are displayed in this window. This pane contains the **Device Tree**, which is heirachical list of all the client devices, sorted with a custom grouping scheme.
- **Template Toolbar**
  Selects the different options to delete, merge or send templates.
- **Template Pane**
  The templates that are applicable to the listed client devices are listed here.
- **Task Pane**
  Displays the execution status for each task in a hierachical structure. If there is more than one device for a listed task, the status of each device will be listed.
- **Status Bar**
  Descriptions of various items in the HP Management Console are displayed here when the cursor moves over them.

Client Discovery

Clients which have the HP Management Agent installed must be 'discovered' by HP Device Manager before they can be used. There are four approaches to client discovery:

- Through an HP Management Agent Broadcast (automatic)
- Server-side discovery using IP walking
- Discover Agent using DHCP Tag
- Agent Configuration

HP Management Agent Broadcast

The HP Management Gateway will normally be able to detect most HP Management Agents. The gateway functions by listening for a network broadcast message sent when each agent starts up. However, to ensure that the gateway is able to detect all agents, it must be running before each agent is started up.

If the gateway is unable to detect an agent, Discover Agent, IP walking, DHCP Tag or Agent Configuration can be used instead.

Discover Agent

HP Device Manager can search a range of IP addresses for agents and gateways.

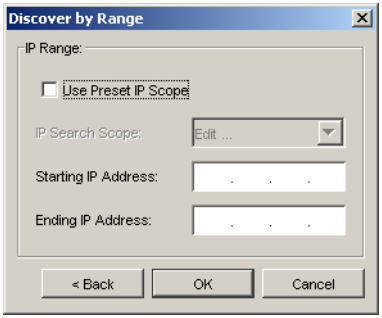
1 Click on the **Discover** button in the **Device Toolbar** and select **Discover Device** in the menu.

The **Discover Device** dialog will be displayed.

Walking with IP Range

2 Select the gateway in the **Select Neoware Management Gateway** list box, then select the **Walking with IP Range** option.

3 Click **Next** to display the **Discover by Range** dialog.



4 IP scopes define set ranges where HP Device Manager will search for client agents. Select **Use Preset IP Scope** then select an **IP Search Scope,** or deselect the box and enter a **Starting IP Address** and an **Ending IP Address**. IP walking will search this range of addresses for a reply.

To configure an IP scope, select the **Edit...** option in the **IP Search Scope** list box to display the **Edit IP Walking Scope** dialog.

Select an existing IP scope from the **IP Walking Scopes** list or click **Add** to create a new one.

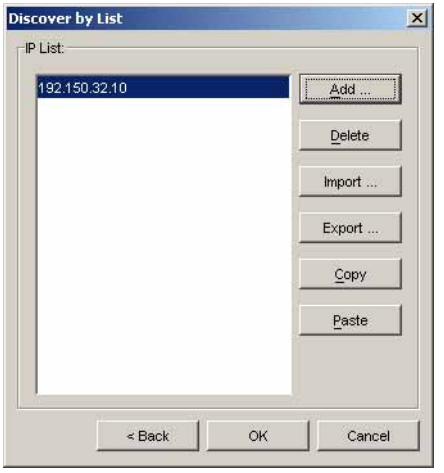
Enter a scope name to be used by HP Device Manager to refer to the new search scope, then click **OK**.

Define the IP address range you want HP Device Manager to search for client agents by filling in the **Starting IP Address** and **Ending IP Address**. The IP address can be copied from another location and pasted here. Click **Apply** to save the settings, then **OK** to exit.

Walking with IP List

2 Select the gateway in the **Select Neoware Management Gateway** list box, then select the **Walking with IP List** option.

3 Click **Next** to display the **Discover by List** dialog.



4 The IP addresses in the **IP List** can be customized according to your specific needs. Refer to the table below for descriptions of each button in the dialog.

Table 3: Discover by List - Button Functions

Button	Function
Add	Add a new IP address to the IP list.
Delete	Remove an existing IP address from the list.
Import...	Import a *.txt or *.csv file to the IP list.
Export...	Export the IP list as a *.txt file.
Copy	Copy the current IP list.
Paste	Paste a copied IP address.

5 Click on **OK** to search for agents or gateways. Once the search has finished, a report will show the clients detected by HP Device Manager.

6 Click **Close** to automatically add the successful IP addresses to the **Device Pane**.

Discover by DHCP Tag

An agent can automatically register with a gateway based on the content of a DHCP tag it receives during start-up. Add option **202** to DHCP server and set the value to "**<Server IP> <Gateway IP>**". (The Server IP and Gateway IP is the IP address of the server running the Management Server and Gateway respectively.) Please refer to “Configuring DHCP Servers” on page 30 for details on how to configure DHCP Server and add options.

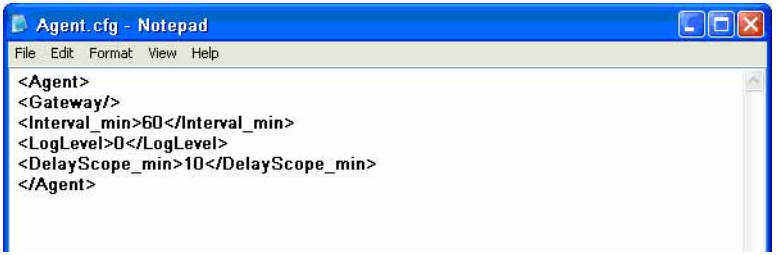
Agent Configuration

You can manually add the IP address of the gateway to the agent's configuration file so that the agent can search for the gateway automatically.

To Configure Windows XP Embedded Agents:

1 Open the directory of **C:\WINDOWS\xpeagent**.

2 Open the **Agent.cfg** file with the Notepad application.



3 Modify the gateway IP address in the second line. Please take the format of the following illustration as an example (where **192.168.0.106** is the IP address of the gateway).

4 Save your modifications and close this file.

When rebooted, the agent will search for the gateway according to your specified IP address in the **Agent.cfg** file.

Note 1: *The agents in the **NAT** environment must be configured as described above.*

Note 2: *As for the agents that have successfully finished one task at least, the IP address of the gateway has been added into the original format of the **Agent.cfg** file on these agents. Hence you do not need to manually configure these agents again.*

Adding Elements to the Repository

This section describes how elements are added to the HP Management Repository so that they are available for applying to client devices. You must have configured an FTP Repository using the **FTP Repository Wizard** before you can add elements to it (refer to the section “Configuring the Repository” on page 39 for details).

The HP Management Repository actually resides over several servers, these being the HP Management Server Repository (the "Server Repository") and one or more FTP Server Repositories (the "FTP Repository"). The **Repository Management** tool is used to import elements into the Server Repository and then transfer them to the relevant FTP Repository. An element must be transferred to an FTP Repository before it can be applied to clients.

Note: *When importing an element into the HP Management Repository, a relay FTP server must be selected to temporarily hold the element, which is then automatically transferred to the Server Repository.*

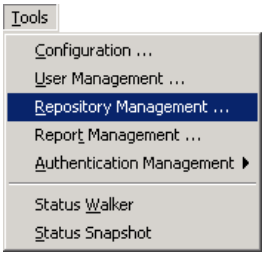
The **Repository Management** tool is displayed by selecting **Tools** > **Repository Management** from the Management Console’s menu bar. The following section describes how to use it to import an element into the Server Repository, then transfer it to an FTP Repository.

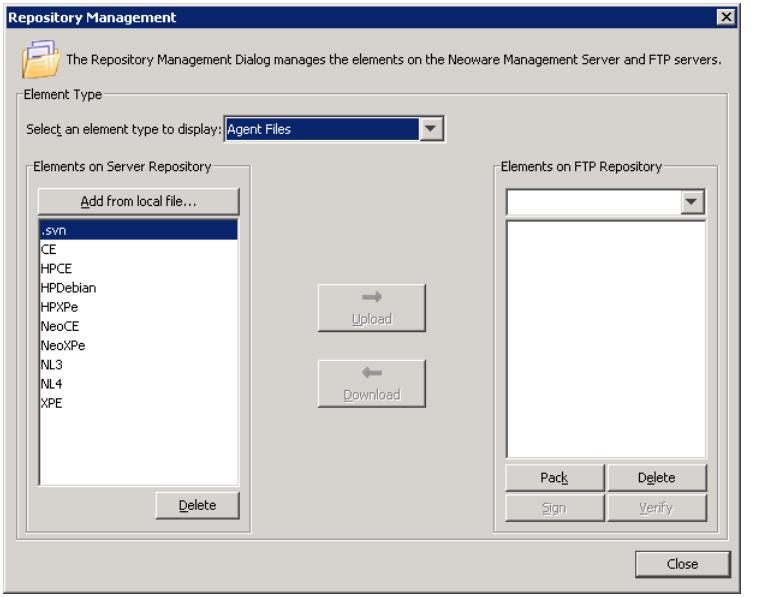
Elements created through the Console using a template (for example, an image file), are placed in the FTP Repository specified in the template. If you want the element to be available in another FTP Repository, you first need to transfer it to the Server Repository using the **Repository Management** tool’s **Download** button, then transfer the element from the Server Repository to the other FTP Repository using the **Upload** button.

Importing an Element into the Repository

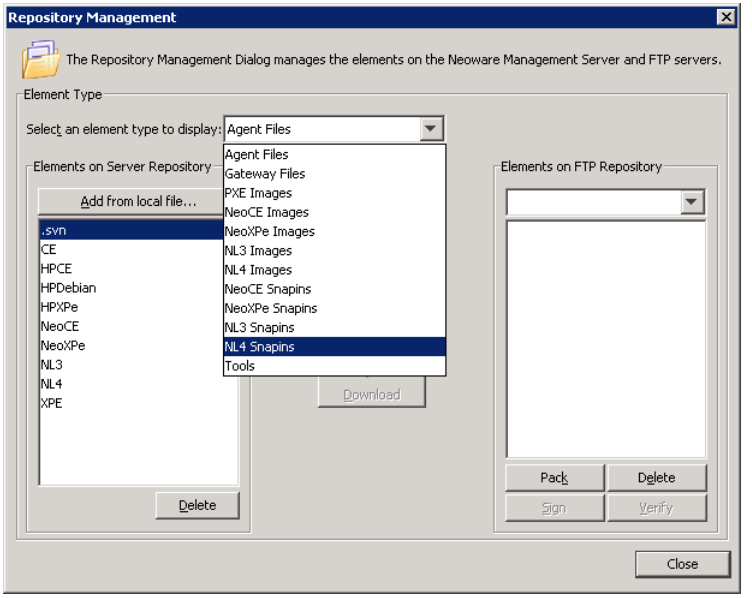
The following procedure describes how to import an element into the Repository. In this example we are importing a snapin which can be used to add Adobe Reader to NeoLinux 4 clients.

1. Copy the element to be imported to a temporary location on your local drive. (In this case the element is a snapin downloaded from the support section of the HP website.)
2. Select **Tools** > **Repository Management** from the Management Console's menu bar to display the **Repository Management** dialog.

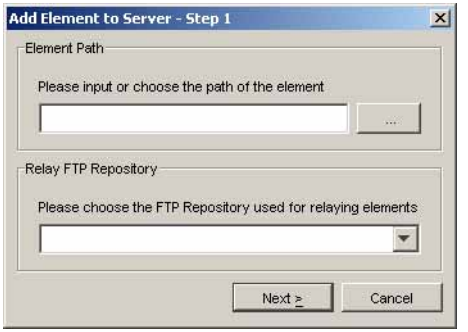




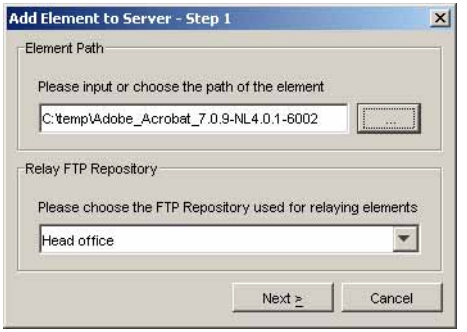
3 In the **Select an element type to display** field, select the appropriate element option from the drop-down list. For this example we will be using a NeoLinux 4 snapin to install Adobe Acrobat Reader to NeoLinux 4 thin clients, so **NL4 Snapins** is selected.



4 Click the **Add from local file** button to display the **Add Element to Server - Step 1** dialog.

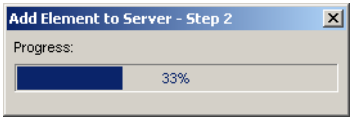


5 Click the **...** button in the **Element Path** box to browse to the directory containing the snapin you downloaded in step 1. Select the folder containing the snapin files (in our example it is **Adobe_Acrobat_7.0.9-NL4.0.1-6002**) then click **Choose**.



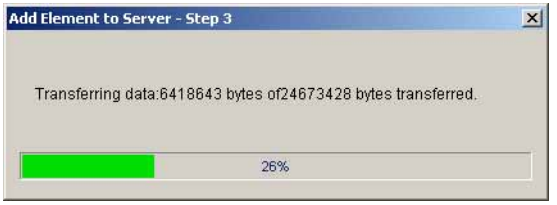
The **Relay FTP Repository** field will display the name of the FTP Repository to use for relaying element files. You can change this if required.

6 Click **Next** to start copying the element files to the relay FTP Repository.

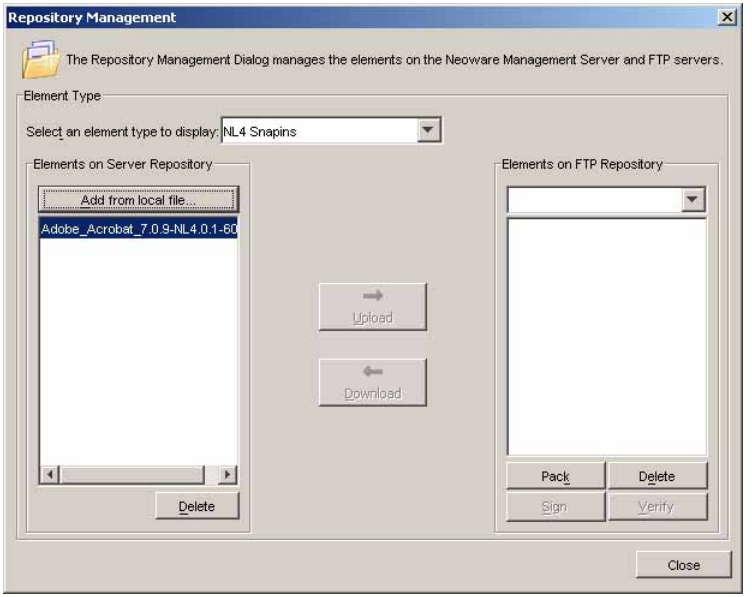


A message box will be displayed once the element files have been successfully uploaded to the relay FTP Repository.

7 Click **OK** to automatically transfer the element files from the relay FTP Repository to the Server Repository.



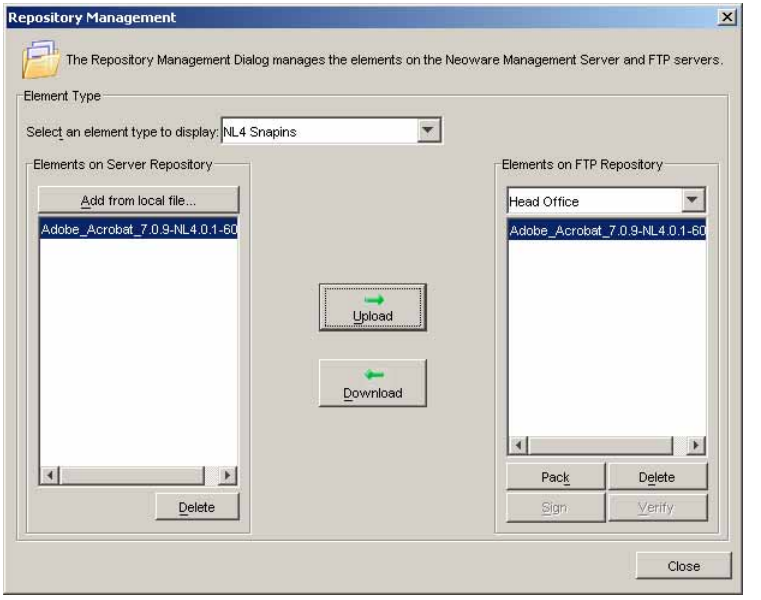
The **Repository Management** dialog should now display the name of the element in the **Elements on Server Repository** field.



8 Select the name of the FTP Repository to which you want to transfer the element from the **Elements on FTP Repository** drop-down list box.

9 Select the element to transfer in the **Elements on Server Repository** field, then click the **Upload** button.

Once the element has been transferred, it will be listed in both the **Server Repository** and **FTP Repository** fields.



Now that the element is in the FTP Repository, it can be applied to client devices using a template.

CHAPTER 4

Using the HP Management Console

This chapter covers the main functions of the Console, including device management, task templates and task management.

Menu Item Overview

The following table provides a brief description of the functions of all the menu items available in the Management Console.

Table 4: Management Console - Menu Items

Menu	Item	Description
File	Import License	Import a new license for Device Manager.
	Import Scheme	Import a device grouping scheme.
	Export Scheme	Export a device grouping scheme.
	Print Device Information	Print information about the devices.
	Print Device Task Report	Displays and prints task information on all users or a specific device. See “Printing a Device Task Report” on page 90 for more information.
	Print Task Report	Displays and prints information on tasks.
	Exit	Exit the Management Console.

Table 4: Management Console - Menu Items

Menu	Item	Description
View	Edit Grouping Scheme	Sort the device list using customized properties according to the actual requirements. See “Grouping Devices” on page 71 for more information.
	Search Device Tree	Search for a device in the Device Tree according to the IP address, host name and device IDs. This option is very useful in a network containing a large number of devices.
	Device Filter	Configure the device filters so as to filter the devices when the Management Console is sending tasks. As a result, only the required devices can receive and perform the task.
	Refresh	Contact the Management Server to refresh the status of the console.
Tools	Configuration	Configure settings related to FTP servers, IP search scopes, system time-outs, shadowing, gateway polling and extension properties. See “Configuring the Repository” on page 39 for more details.
	User Management	Configure user accounts and user groups for the console. See “User Management” on page 177 for more information.
	Repository Management	Control the elements (such as images and software components) that are stored on the Management Server repository and the FTP server repositories. See “Configuring the Repository” on page 39 for more details.
	Report Management	Manage the reports of the Devices and the Tasks so that the user can get the required reports according to the customized conditions.

Table 4: Management Console - Menu Items

Menu	Item	Description
	Authentication Management	Key Management - Manage the communication keys such as add, update, import and export options, etc. Gateway Access Control - Decide if a specified gateway is an authenticated gateway. If not, the gateway will be banned and cannot communicate with the Management Server.
	Status Walker	This tool makes a list of all the IPs available and walks to them; taking back their status information and displaying it. See "Status Walker" on page 109 for details.
	Status Snapshot	This tool takes a snapshot, creates a report of the devices' status and stores it in the server to be displayed when the tool is opened. See "Status Snapshot" on page 114 for more information.
Device	Check Connection Status	Check the network connection status of the agents via Ping and Trace Route.
	Add	Add a new device. See "Adding Devices Using MAC Addresses" on page 173 for more information.
	Delete	Delete the selected device.
	Manual Group	Add Folder, Rename or Delete.
	Send Task	Send a Task Template task to the selected device. See "Applying Tasks to Devices" on page 99 for more information.
	Shadow	Attempts to shadow the selected device. See "Shadowing Devices" on page 91 for more information.

Table 4: Management Console - Menu Items

Menu	Item	Description
	Power Management	Reboot - Sends a command to reboot the selected device. Wake on LAN - Sends a command to the selected device to start it up. Shutdown - Sends a command to shut down the selected device. See “Power Management” on page 93 for more information.
	Get Device Asset Information	Get the specific information of the selected device, such as General, Software, Hardware, Hotfix, Network, Configuration and other extended properties, etc.
	Properties	Displays the properties for the selected device. See “Displaying Device Properties” on page 66 for more information.
Template	Delete	Remove the selected template.
	Merge	Merge two or more selected composite templates. See “Merging File and Registry Templates” on page 130 for more information.
	Send Task	Send the selected template to the devices as a task.
	Properties	Edit the selected template’s properties.
	Add to Favorites	Add the frequently used templates to the Favorites tab in the Template Pane for more convenient usage.
	Import	Import an XML template file into the currently selected template category. See “Importing & Exporting Task Templates” on page 97 for more information.

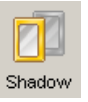
Table 4: Management Console - Menu Items

Menu	Item	Description
	Export	Export an XML template file into the currently selected template category. See “Importing & Exporting Task Templates” on page 97 for more information.
	Template Plugin Management	Manage the plugin of the templates, such as import or uninstall plugin, etc.
Task	Pause	Pause the selected task.
	Continue	Continue the selected task.
	Resend	Resend the selected task.
	Cancel	Cancel the selected task.
	Cancel All	Cancel all tasks.
	Delete	Delete the selected task.
	Delete All	Delete all tasks in the Task Pane.
	Delete All Finished	Delete all finished tasks in the Task Pane.
	Open VNC Viewer for Shadowing	When a remote device has finished the Shadow task, you can login the device via the VNC viewer.
	Open Result Template	View the content of the result template, which is created by certain types of templates on the completion of their tasks.
	View Task Contents	View the specific content of the tasks.
	View Task Log	View the task status log.
Help	About	Display copyright and licensing information for Device Manager.

Toolbar Overview

The toolbar provides quick access to frequently used tools.

This enables you to **Reboot**, **Wake on LAN** or **Shutdown** the currently selected device(s) in the device tree. Refer to the section “Power Management” on page 93 for details.



This enables you to shadow the selected device. The **Task Editor** dialog will be displayed. Click **OK** to apply the shadowing task to the device. Refer to the section “Shadowing Devices” on page 91 for details.

This will display the **Template Chooser** dialog enabling you to send a template task to the currently selected device(s). Refer to the section “Applying Tasks to Devices” on page 99 for details.

This enables you to print information about the device(s) currently selected in the device tree. Refer to the section “Printing Information About Devices & Tasks” on page 89 for details.

This enables you to discover client devices or gateways on the network. Refer to the section “Discovering Devices” on page 68 for details.

This enables you to find a specific device in the device tree. Refer to the section “Searching for a Device in the Device Tree” on page 86 for details.

The following tools are available in the **Template Pane**:

This will delete the currently selected template. You will be prompted to confirm the action before it is actually deleted.

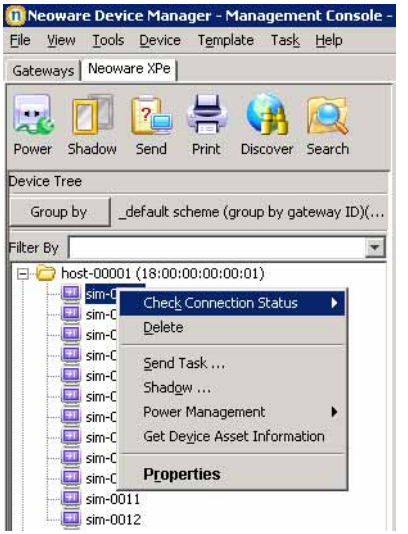
This will display the **Merge Templates** dialog enabling you to merge two or more **File and Registry** templates. Refer to the section “Merging File and Registry Templates” on page 130 for details.

This will display the **Task Editor** dialog enabling you to send a template task to the currently selected device(s). Refer to the section “Applying Tasks to Devices” on page 99 for details.

Device Management

All thin clients that connect to the server are displayed in the **Device Pane** of the Management Console window. Selecting one of the OS tabs below the menu bar will display all of the clients of the chosen OS type in the **Device Pane**. Double-clicking an item in the **Device Pane** or clicking on a folder icon will expand the device list.

Select one or more devices and then right-click to see a menu of applicable commands.



All of these commands are also available in the **Device** menu which is displayed from the Console's menu bar.

Device Tree Icons

On the **Gateway** tab, a **G** icon indicates a Management Gateway:


A green **G** icon represents a gateway that is currently active.


A greyed-out **G** icon represents a gateway that is currently down or disconnected.

On the **OS** tabs, devices are represented by the following icons:


A folder represents a number of devices that have been grouped together using the grouping schemes function.


A screen icon with a power symbol over it indicates that currently the status of this device cannot be confirmed because a gateway to the device cannot be found.


A greyed-out screen icon with an exclamation mark over it indicates the device is currently powered-off.


A screen icon with a curved arrow over it indicates the device is currently in pull mode.


A screen icon with a curved arrow and padlock over it indicates the device is currently in pull-lock mode (Enhanced Write Filter is ON).

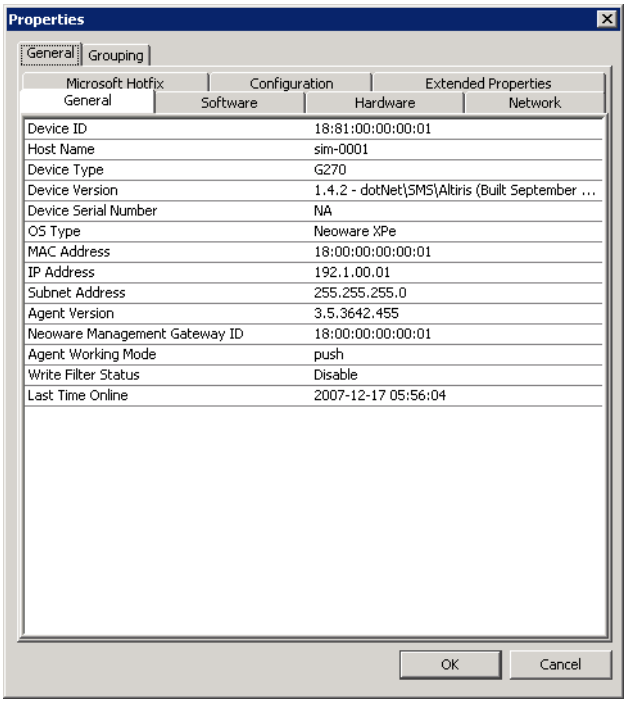

A screen icon with a straight arrow over it indicates the device is currently in push mode.


A screen icon with a straight arrow and padlock over it indicates the device is currently in push-lock mode.

Displaying Device Properties

To display the properties of a device:

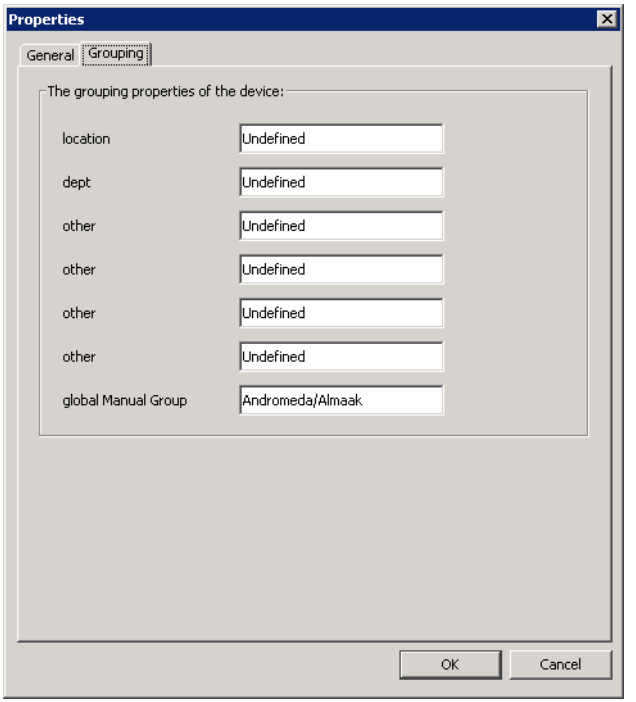
1. Right-click on the device in the **Device Pane**.
2. Select **Properties** from the menu (or double-click any device) to display the **Device Properties** dialog.



The **Device Properties** dialog displays the properties of the thin client devices that are connected to the server. The dialog lets you see different types of information.

Note: *The IP address and MAC address in the device properties dialog can be selected and copied. The selected address will be highlighted, then you can right-click to copy the selected address.*

Click the **Grouping** tab to set grouping properties, which are used as grouping criteria. See “Changing Grouping Properties” on page 79 for information on how to rename these grouping properties.



Note: *To set the grouping properties, you can also right-click a device in the* ***Task View*** *and select* ***Edit Device Properties*** *in the menu.*

Deleting Devices

To delete a device:

1. Right-click the device in the **Device Pane**.
2. Select **Delete** from the menu.

   The selected device is removed from the **Device Pane**.

Discovering Devices

The **Discover Devices** option allows Device Manager to search a range of IP addresses for agents and gateways.

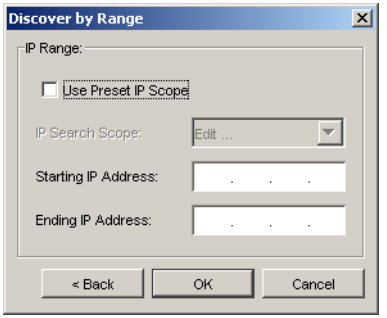
To use **Discover Devices**:

1 Click on the **Discover** button in the **Device Toolbar** and select **Discover Device** in the menu opened.

The **Discover Device** dialog will be displayed.

2 Select the corresponding gateway in the **Select Neoware Management Gateway** drop-down menu, then select the **Walking with IP Range** option.

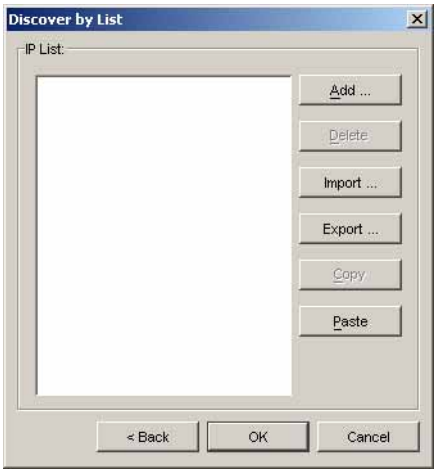
3 Click **Next** to display the **Discover by Range** dialog.



4 Check the **Use Preset IP Scope** box and select an **IP Search Scope**, or deselect the box and enter a **Starting IP Address** and an **Ending IP Address**. IP Walking will search this range of addresses for a reply.

OR

You can select the corresponding gateway in the **Select Gateway** drop-down menu, and then select the **Walking with IP List** option. Click **Next** to display the **Discover by List** dialog.



In the **Discover by List** dialog, the IP addresses in the **IP List** can be customized according to your specific needs. See the following table for descriptions of each button in this dialog.

Table 5: Discover by List - Button Functions

Button	Function
Add	Add a new IP address to the IP list.
Delete	Remove an existing IP address from the IP list.
Import...	Import a *.txt or *.csv file to the IP list.
Export...	Export the IP list as a *.txt file.
Copy	Copy the current IP list.
Paste	Paste a copied IP address.

5 Click **OK** to search for devices.

Grouping Devices

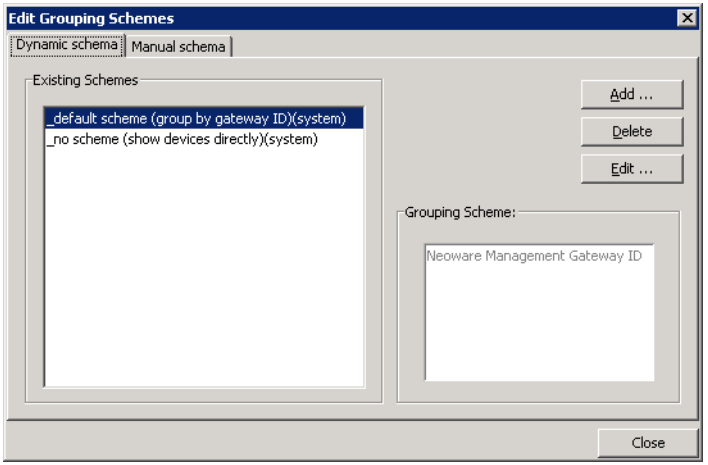
Grouping devices according to specified criteria makes it easier for administrators to manage them. Devices can be grouped automatically according to any of their properties, or manually assigned to groups in any way that is suitable for your requirements. Note that you can also pre-assign the group to which a device belongs from the device itself by editing its agent configuration settings.

Dynamic Grouping

Dynamic grouping allows you to automatically group devices by specific properties. For example, you could create a grouping scheme that will group all devices by their CPU type or agent version. You can specify more than one grouping property for a group, and you can define up to six customizable grouping properties. Once you have defined the properties associated with a dynamic grouping scheme, all devices with matching properties will automatically be assigned to the relevant group, including any devices added to Device Manager in the future.

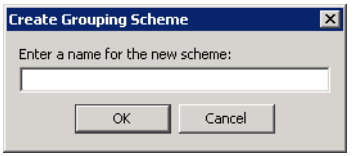
Defining a Dynamic Grouping Scheme

1 Display the **View** menu from the Console's menu bar and select **Edit Grouping Schemes**.

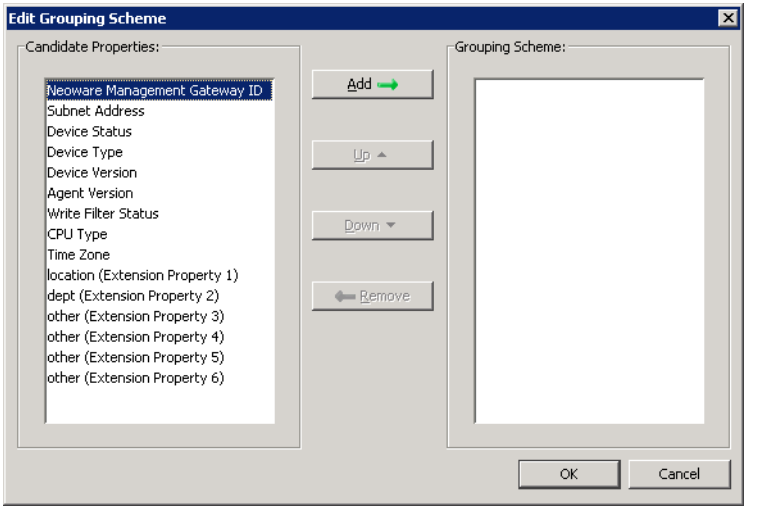


The **Dynamic schema** tab lists existing dynamic grouping schemes and enables you to create or edit a grouping scheme. Two schemes are supplied by default: **_default scheme** will group devices by gateway ID, whereas **_no scheme** will not group devices but just list every device managed by Device Manager.

2 To create a new dynamic grouping scheme, click **Add**.



3 Enter a name for the new grouping scheme then click **OK**.



4 Select a property by which you want to group devices in the **Candidate Properties** list, then click **Add** to add it to the **Grouping Scheme** list. You can specify more than one property.

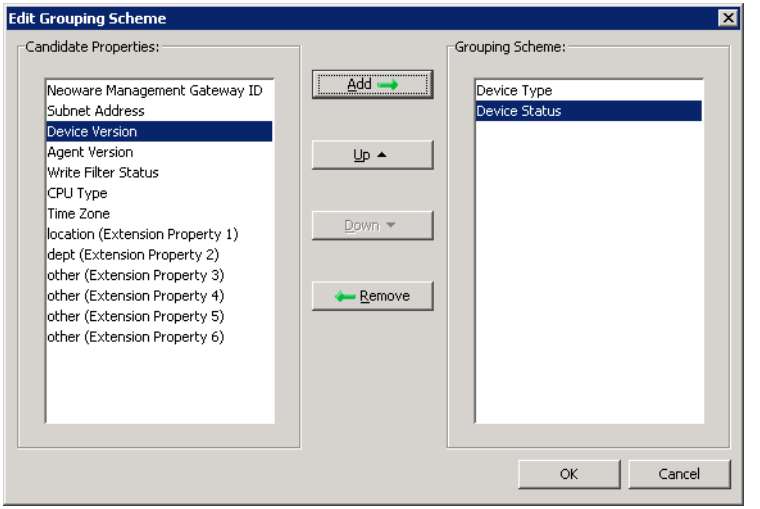
Table 6: Candidate Properties

Properties	Description
Gateway ID	Group by gateway ID.
Subnet Address	Group by subnet address.
Device Status	Group by status (on/off).
Device Type	Group by product type.
Device Version	Group by device version.
Agent Version	Group by agent version.
Write Filter Enabled	Group by EWF status.
CPU Type	Group by processor type.
Time Zone	Group by time zone.
location (Extension Property 1)	Customizable grouping property.
dept (Extension Property 2)	Customizable grouping property.
other (Extension Property 3 - 6)	Customizable grouping property.

Note that there are six customizable grouping properties you can use to group your devices as required.

5 Once you have selected the properties to use, specify the priority of those properties by clicking **Up** or **Down** to move the selected property in the **Grouping Scheme** to a higher or lower grouping priority. Device Manager will group devices using the property with the highest priority in the order list. Other properties in the order list are then considered in turn.

You can remove a selected property from the **Grouping Scheme** list by clicking **Delete**.



6 Click **OK** to create the new grouping scheme.

7 Click the **Group by** button in the **Device Tree** panel and select **Dynamic Group**. The new grouping scheme will be listed and available for selection.

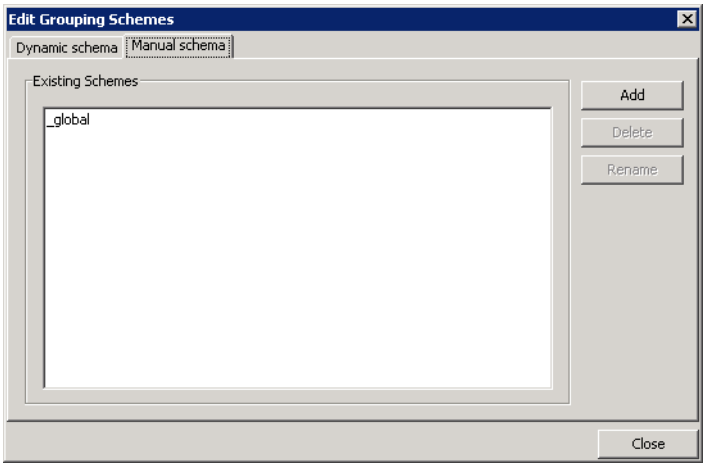
8 Select the new grouping scheme to group all devices managed by Device Manager accordingly.

Manual Grouping

You can create grouping schemes in which you manually assign devices to groups in whatever way you require.

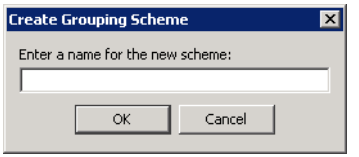
Defining a Manual Grouping Scheme

1 Display the **View** menu from the Console's menu bar, select **Edit Grouping Schemes**, then click on the **Manual schema** tab.

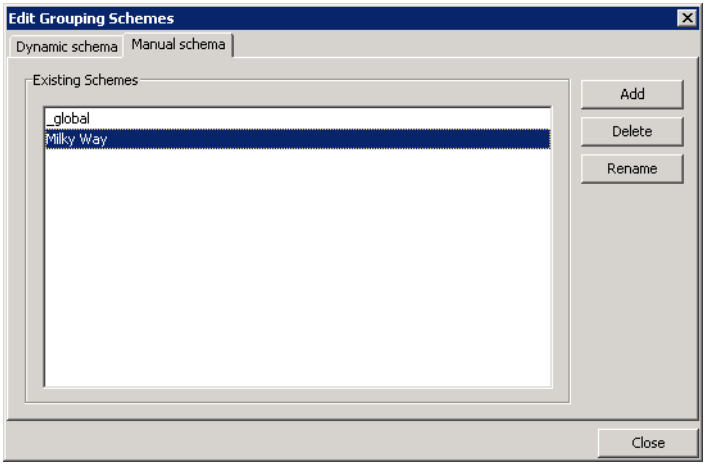


The **Manual schema** tab lists existing manual grouping schemes and enables you to create or edit a grouping scheme. One scheme is supplied by default: **_global** will not group devices but just list every device managed by Device Manager.

2 To create a new manual grouping scheme, click **Add**.

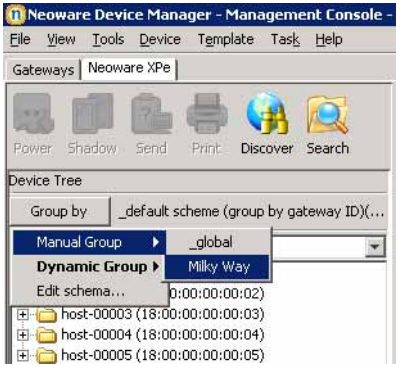


3 Enter a name for the new grouping scheme then click **OK**. The name will appear in the **Existing Schemes** list.



4 Click **Close**.

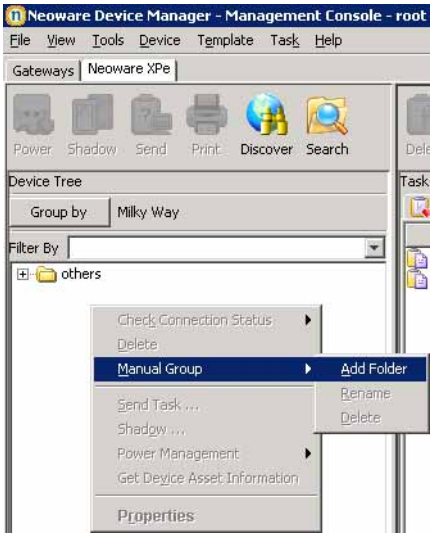
5 Click the **Group by** button in the **Device Tree** panel and select **Manual Group**. The new grouping scheme will be listed and available for selection.



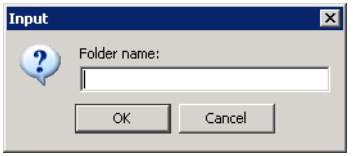
6 Select the new manual grouping scheme.

Any organisational changes you now make to the devices and folders listed in the **Device Tree** panel will be saved to this grouping scheme.

7 To create a new folder in which to group devices, right-click in the **Device Tree** pane and select **Manual Group** > **Add Folder** from the pop-up menu.



8 Enter a name for the group folder then click **OK**.



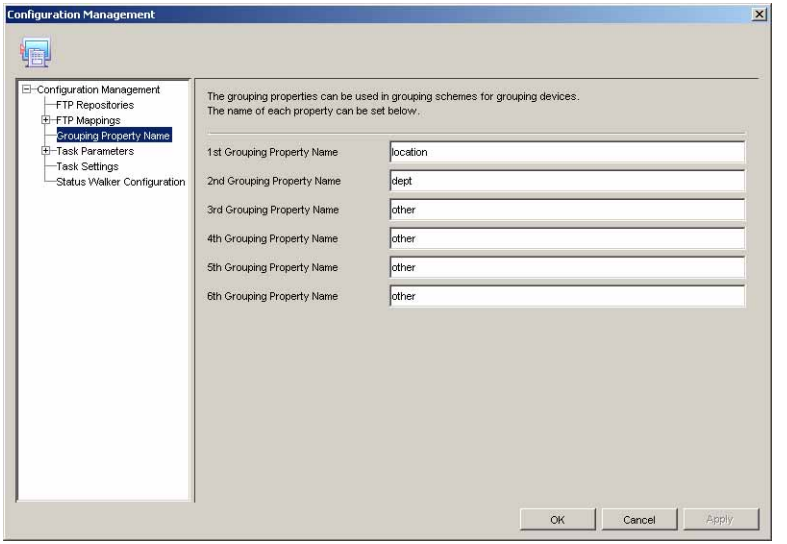
9 You can now drag-and-drop the names of devices into this group folder within the **Device Tree** panel.

Naming Grouping Properties

Grouping properties are used to group devices into a customized order suitable for your organization's network configuration. These groups provide simple management of devices over different departments or different locations. Each property name can be renamed as required.

To rename grouping properties:

1. Display the **Tools** menu from the Console's menu bar and select **Configuration**.
2. Select the **Grouping Property Name** item in the left-hand tree pane.



3. Enter the names for the 1st, 2nd, 3rd, 4th, 5th and 6th grouping properties as required.

   Note: *Changing the name of the properties does not alter the data for each property. The 1st property always remains the 1st property, the 2nd the 2nd, and so on.*

4. Click **Apply** to save the settings.
5. Click **OK** to finish.

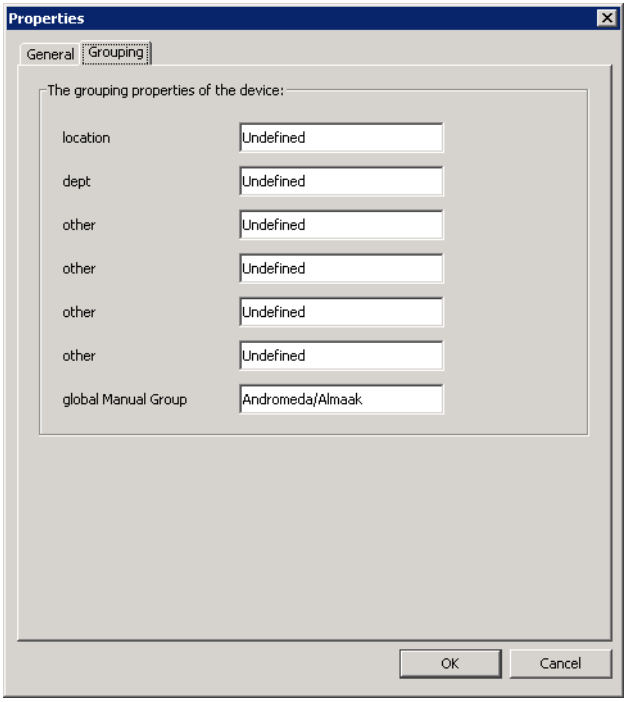
Changing Grouping Properties

Grouping properties can be set by entering them into the properties window for each device, or assigned by dragging and dropping devices between property groups.

Setting grouping properties:

1 Right-click the device whose properties you wish to view.

2 Select the **Grouping** tab.



3 Edit the data in each field as required.

4 Click **OK** when done.

These properties can now be used to categorize your devices using grouping schemes in the **Device Pane**.

Dragging and dropping devices:

1. Ensure that the device tree has at least one grouping property selected in the grouping scheme.
2. Click on a device, hold down the mouse button then drag the device to another group on the device tree.

   Note: *Devices can only be dragged between groups of the same level on the device tree, and groups being dragged between must have a grouping property.*
3. Release the mouse button and the grouping property for the device will be set to that of the group being dropped into. The device will then be re-grouped under the target group.

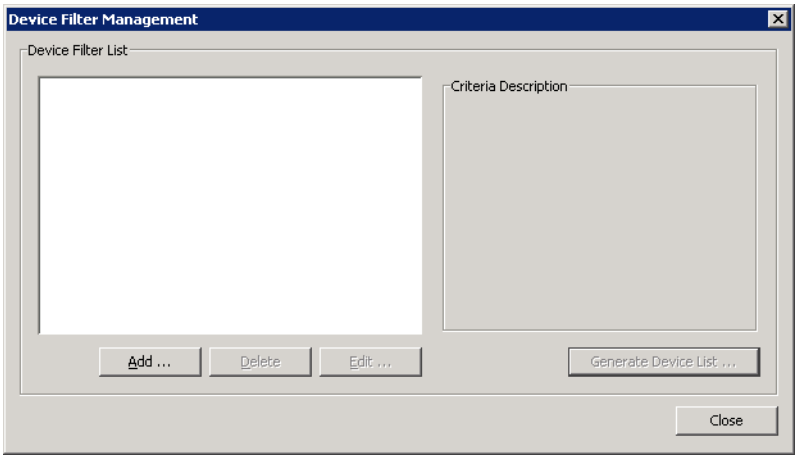
Pre-assigning Devices to Groups

You can pre-assign a device to a specific group using the **Agent Configuration** dialog on the device itself. On the **Group** tab, select **Use Static Custom Groups** > **Add Group Name** "Manual Group" and specify a value. Once the device agent has registered with the server, you will see the device placed in the specified pre-assigned group folder if you choose the global manual grouping scheme (click the **Group By** button and select **Manual Group** > **_global**.)

Editing the Device Filter

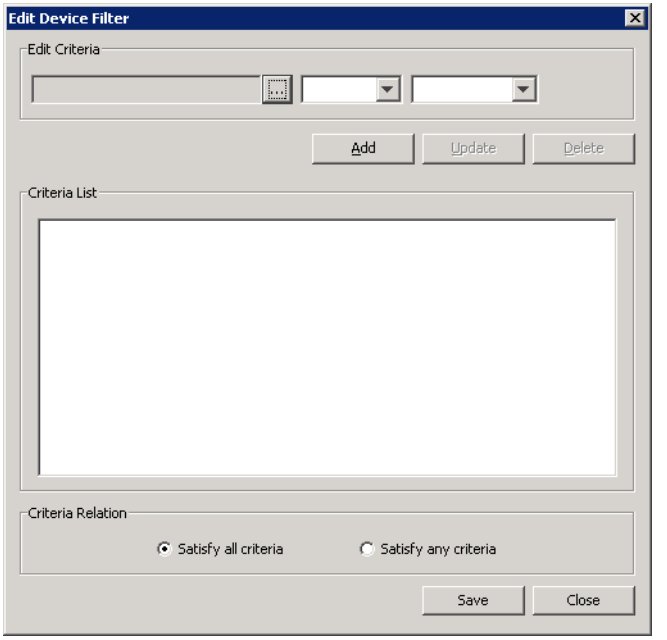
To edit the Device Filter:

1 Select **Device Filter...** from the **View** menu.

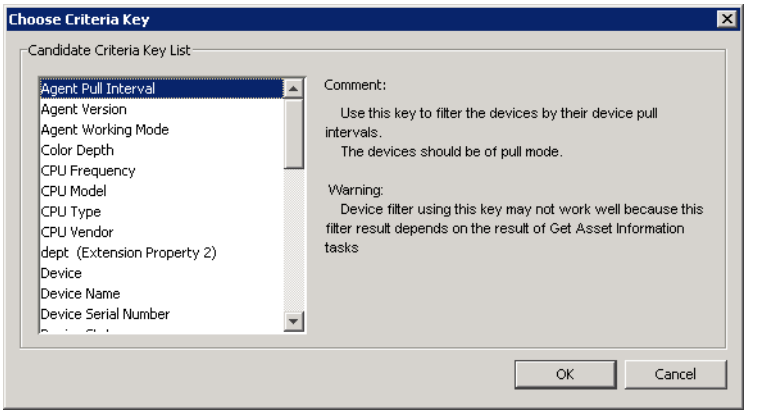


2 Click **Add...** to display the **Set New Device Filter Name** dialog. You can also click **Delete** and **Edit...** to remove or modify the existing Device Filters.

3 Enter a name for the new device filter (e.g. **XPe)** and click **OK** to display the **Edit Device Filter** dialog.



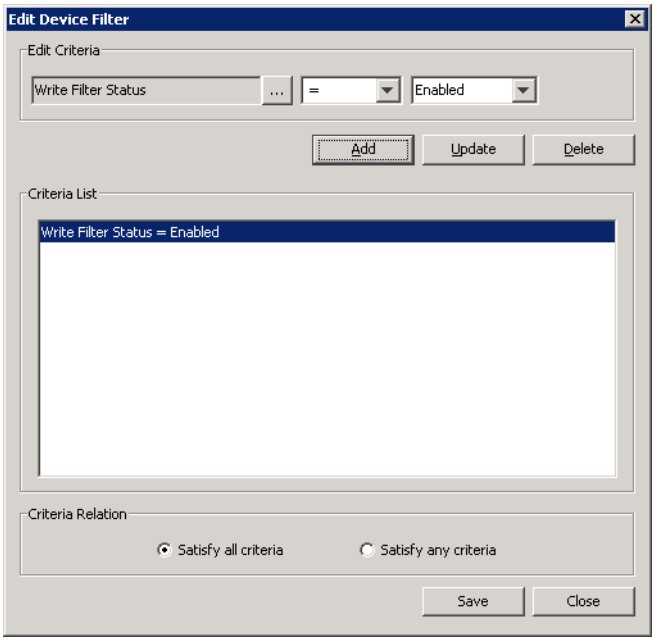
4 Click the browse button in the **Edit Criteria** section to open the **Choose Criteria Key** dialog.



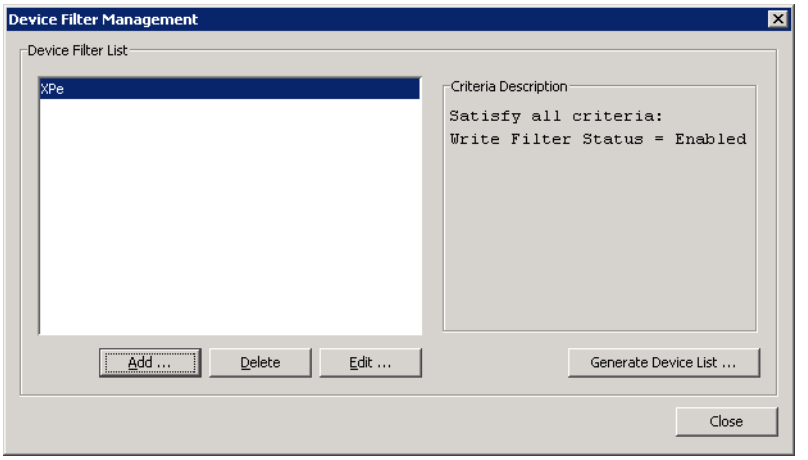
5 In the **Candidate Criteria Key List**, select the criteria according to your needs. Click **OK** to return to the **Edit Device Filter** dialog.

6 Click the arrow button in the **Edit Criteria** section to select conditions in the drop-down menus. For example: **Write Filter Status = Enabled.**

7 Click **Add** to add it to the **Criteria List** below. You also can select one of the lists to modify or delete.

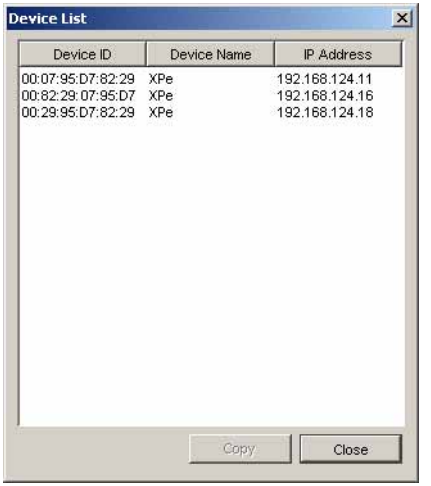


8 If multiple filters exist in the **Criteria List**, you can select **Satisfy all criteria** or **Satisfy any criteria**. Then click **Save** to return to the **Device Filter Management** dialog.



9 In the **Device Filter Management** dialog you can edit or remove the selected filter according to your requirements.

10 Click the **Generate Device List...** button to create the filtered device list.

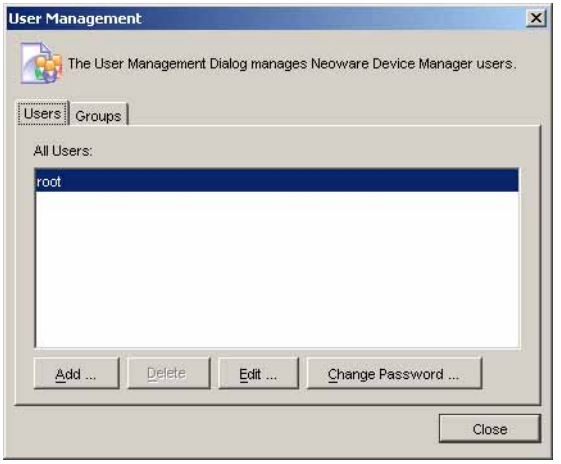


Now the administrator can use the device filters to manage the devices in the network.

Filter Security

You can limit the devices a user can see by assigning a filter to that user as his security filter. The procedure is as follows:

1 Display the **Tools** menu and select **User Management...**.



2 Select the name of the user on the **Users** tab, then click **Edit**.

3 Display the **Filter** tab.

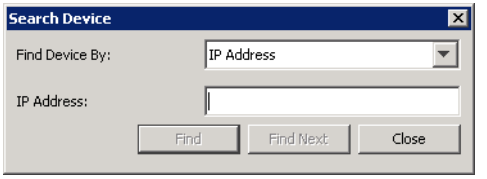
4 Select the filter to use in the **Enhanced Filter** drop-down list.

When you log on as that user you will see that only the devices allowed by the selected filter are displayed.

Searching for a Device in the Device Tree

You can quickly display a particular device in the Console's device tree either by selecting **Device** > **Search Device Tree** from the menu bar, or by clicking the **Search** button in the toolbar.

The **Search Device** dialog will be displayed.



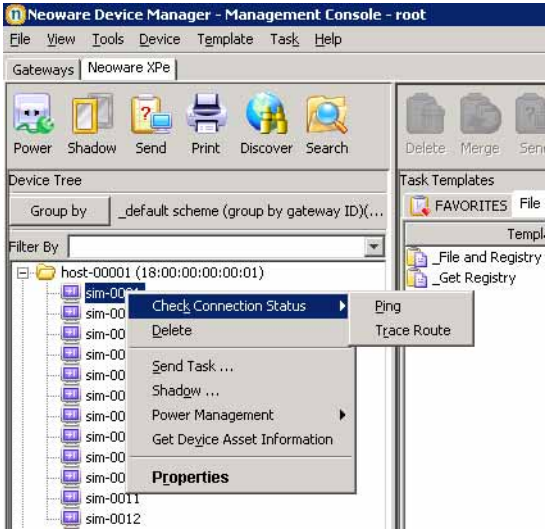
You can find a device either by entering its IP Address, Host Name, Device ID or Device Serial Number, as specified in the **Find Device By** field. Enter the relevant information in the field below then click **Find**. If the device is found, the console will automatically change the display to show the device in the device tree.

Checking Network Connection Status

You can check the network connection status of a device (i.e. whether it is connected to the network or not).

1 In the **Device Pane**, select one or more devices and right-click them to display a menu.

2 Select **Check Connection Status**.



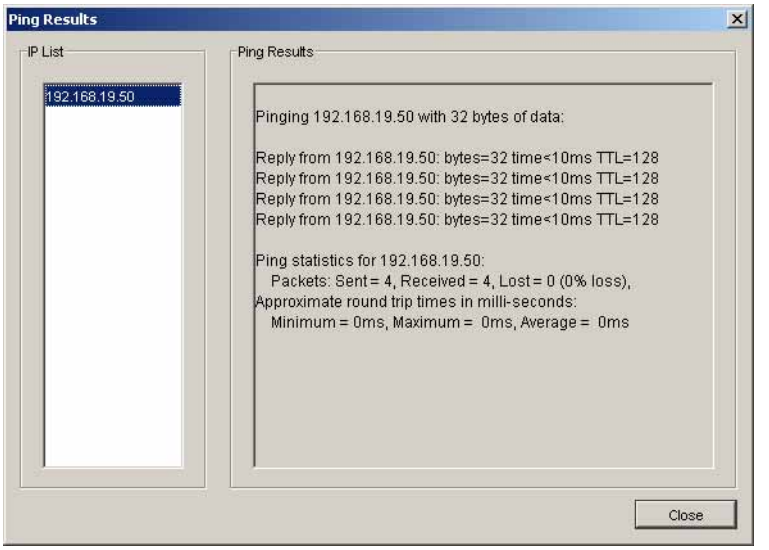
3 Select the utility you want to use to check the connection status of the device. You can choose from:

Ping - A basic Internet program that lets you verify that a particular Internet address exists and can accept requests. Pinging is diagnostically used to ensure that a host computer, which you are trying to reach, actually operates.

Trace Route - This diagnostic tool determines the path taken to a destination by sending ICMP Echo Request messages with varying Time to Live (TTL) values to the destination. Each router along the path is required to decrement the TTL in an IP packet by at least 1 before forwarding it. Effectively, the TTL is a max-

imum link counter. When the TTL on a packet reaches 0, the router is expected to return an ICMP Time Exceeded message to the source computer.

A window displaying the network connection status of the device will appear.



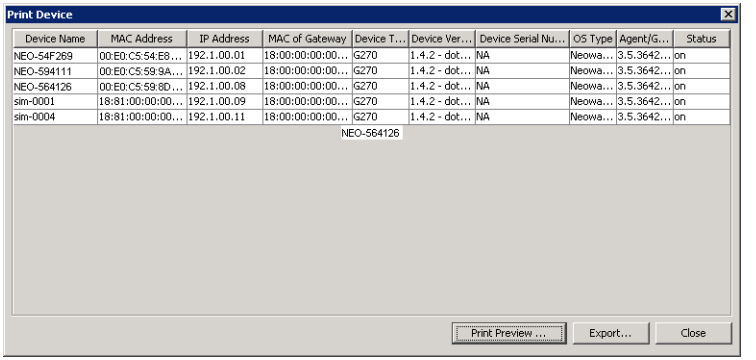
4 Click **Close**.

Printing Information About Devices & Tasks

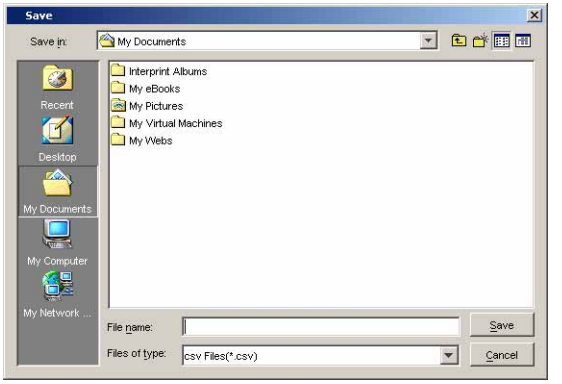
Printing Device Information

To print information about any devices listed in the Console:

1. In the **Device Pane**, select the devices you want to print (CTRL-click and/or SHIFT-click them).
2. Click the **Print** icon in the toolbar to display the **Print Device** window. Information about all the selected devices is displayed in the window.



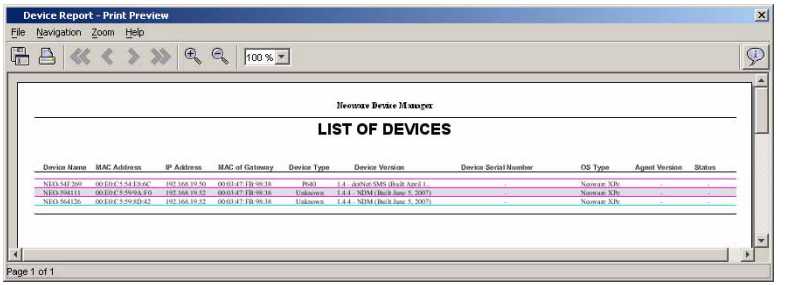
3. Either click **Export** to export the list to a ***.csv** file.



Enter a name and click **Save**.

OR

Click **Print Preview** to print the device report. The **Print Preview** window opens.



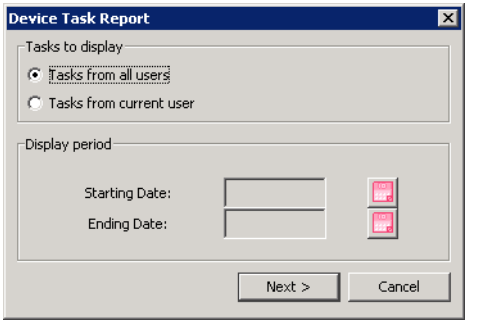
4 If you are satisfied with the preview, click the printer icon or display the **File** menu and select **Print**. Click **OK** if you accept the printing settings.

Printing a Device Task Report

To print information about tasks:

1 In the **Device Pane**, select one device ONLY.

2 Right-click on it and select **Device Task Report** from the menu.



3 Tick **Tasks from all users** or **Tasks from current users** depending on what information you need to print.

4 Define the period you want to get login information for by clicking the buttons for both **Starting Date** and **Ending Date**.

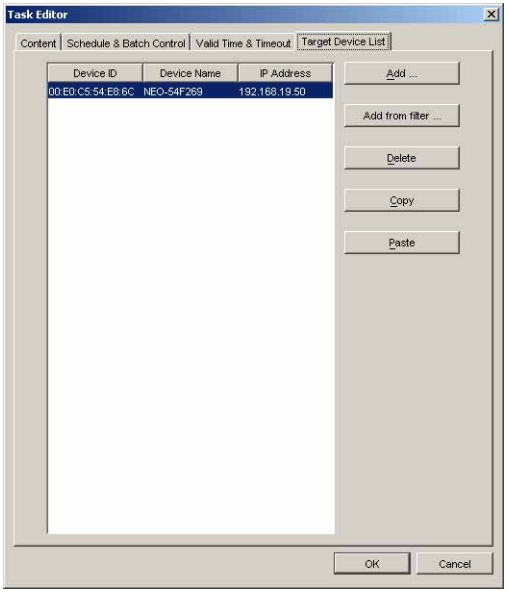
5 Click **Next** then **Print**.

Shadowing Devices

Shadowing enables you to connect to a remote thin client and view and control that client from the HP Management Console. This can be achieved either by using the **_Shadow Device** template available on the **Operations** tab, or by selecting from the pop-up menu when you right-click on a device as described below.

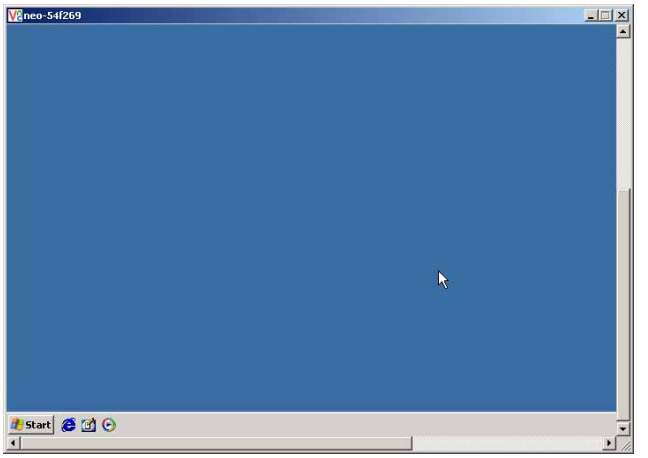
To shadow a device:

1. Select a device or a group of devices in the **Device Pane**.
2. Right-click and select **Shadow** from the pop-up menu. The **Task Editor** dialog will be displayed.



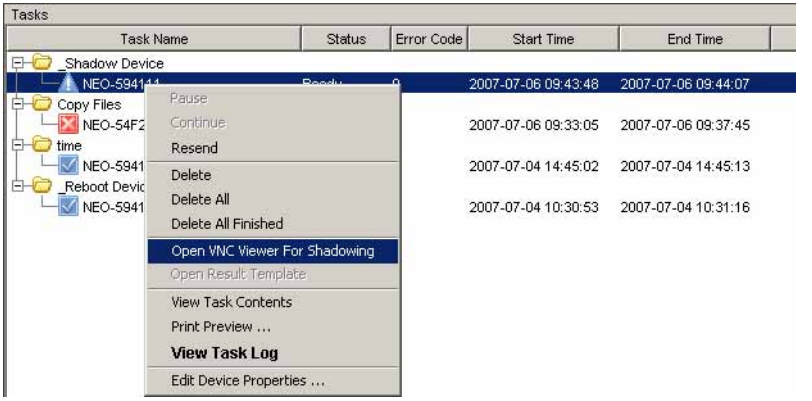
3. Click **OK**. When the Shadow processing task is complete, the remote desktop of the terminal will be displayed in a separate window.

Note: *The session password of Shadow is the default password, which can be set in Configuration.*



To Open VNC Viewer for Shadowing:

1. Select a completed **Shadow Device** task in the **Task Pane**.
2. Right-click and select **Open VNC Viewer for Shadowing**, or display the **Task** menu and select **Open VNC Viewer for Shadowing**.



The remote desktop of the client will be displayed in a separate window ready for your operations.

Power Management

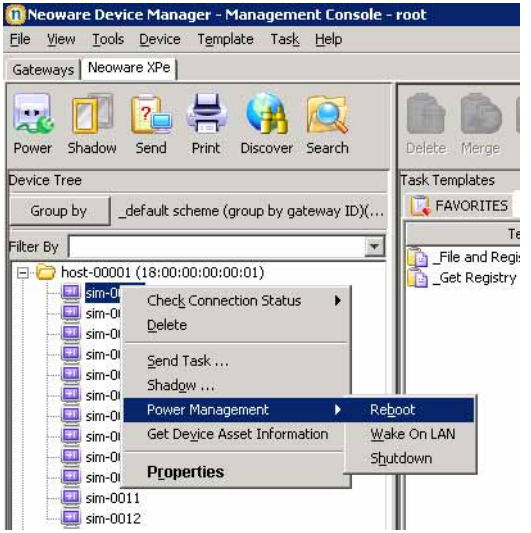
The Management Console enables you to reboot, shutdown and wake a client remotely. This can be achieved either by using the templates available on the **Operations** tab, or by selecting from the pop-up menu when you right-click on a device as described below.

Note: *To wake a client, the Wake On LAN support of the client's BIOS must be enabled.*

To shutdown, reboot, or wake a client:

1 Select a device from the **Device Pane** in the main Console window.

2 Right-click and select **Power Management** > **Reboot**, **Wake On LAN** or **Shutdown** from the pop-up menu.



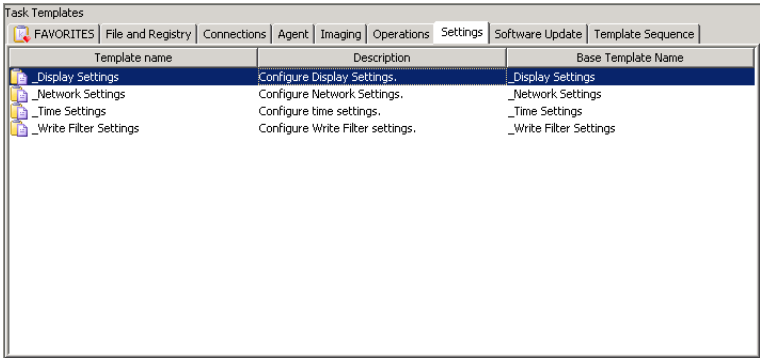
3 The **Task Editor** dialog will be displayed. Click **OK** to perform the task.

When the client receives the task, a warning dialog will appear on the screen of the client device to inform the user that the device will be shutdown or restarted.

Task Template Management

HP Device Manager uses Task Templates as the vehicle of communication between the server and agents residing on thin client devices. A Task Template is an XML file that contains information about a task. XML is a standard data format that can be shared easily across applications and platforms - especially between those on separate operating systems that need to share data.

All the Task Templates in the system are displayed and managed in the **Template Pane**.



Task Template Categories

Task Templates are sorted into categories according to their function.

- **Favorites**
  Used to store frequently used templates for convenient access.
- **File and Registry**
  A generic template, consisting of a customizable combination of copying files, deleting files, registry changes, running operating system commands and pauses.
- **Connections**
  Used to get the connection settings of a device.
- **Agent**
  Used to define the work mode of the agent (push or pull), and update the agent version.

- **Imaging**
  Used to push or pull flash-memory images of client devices.
- **Operations**
  Used to perform various operations on a device such as reboot, shadow, shutdown and wake up.
- **Settings**
  Used to change various settings on the device such as display, network, time and write filter.
- **Software Update**
  Used to install or uninstall software components on client devices.
- **Template Sequence**
  Used to define sequences in which tasks are performed.

Personalized Task Templates, based upon these categories, can be edited, deleted, imported or exported to create customized specific tasks for devices.

Creating & Editing Task Templates

A set of standard 'blank' task templates are provided which are listed under various categories according to their function in the **Template Pane**. The names of standard templates begin with the "_" (underscore) character, for example: **_File and Registry**.

To create or edit a task template:

1. Double-click an existing template in the **Template Pane**, or right-click a template then select **Properties** from the pop-up menu.
2. Specify your requirements for the template using the options available. To clear a value of the target device, leave the corresponding field for that value blank on the template.
3. When you have finished defining a new template, click the **Save as** button and enter a name for the new template.
4. Click **OK**. The new template will be created and its name will appear in the **Template Pane**.

Adding a Template to Favorites

To make it easier to locate templates that are used frequently, you can add them to the **Favorites** tab as follows:

1. Select a tab from the **Template Pane**.
2. Right-click on the name of the template in the tab.
3. Select **Add to Favorites** from the pop-up menu.

A copy of the selected template is added to **Favorites**.

Using Template Sequence Templates

You can specify two or more templates to be performed in a specific order using **Template Sequence** templates. A **Template Sequence** template can contain a maximum of 22 tasks.

1. Select the **Template Sequence** tab in the **Template Pane**.
2. Double-click the standard **_Template Sequence** template to open the **Template Editor**.
3. Click the **Add** button and select a template to add to the sequence from the pop-up menu. The **Template Editor** for the selected template will be displayed allowing you to edit it.

   Note: *You can define new templates to add to the sequence as required, just select the blank template type from the menu.*
4. Click **OK** to add the template to the template sequence.
5. Continue adding templates to the sequence as required. Note that clicking **Add** after the first template has been added to the sequence will display an additional menu for you to indicate whether the next template will be actioned after the previous template task has been **successful**, **failed**, or **anyway** (regardless of the result).
6. When you have finished defining the template sequence, click **Save as...** to save the **Template Sequence** template for later use.

Importing & Exporting Task Templates

You can import or export Task Templates so they can be shared between HP Device Manager systems.

To import an XML file as a Task Template:

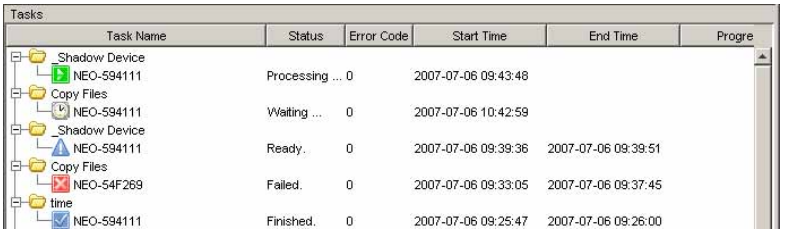
1. Select the **Product Type** tab and the **Category** tab into which you want to import the template.
2. Display the **Template** menu from the menu bar and select **Import**. The **Open** dialog will be displayed.
3. Select the XML file that you want to import.
4. Click **Select Import Files**. The file will be added to the selected tab as a new template.

To export a Task Template as an XML file:

1. Display the **Template** menu from the menu bar and select **Export**.
2. Enter the name of the template.
3. Select the destination of the exported file.
4. Click **OK** to export the template as an XML file.

Task Management

All the tasks that have been sent are monitored and the results are displayed in the **Task Pane**. The **Task Pane** lists all the tasks that have been sent to devices.



The task list consists of six columns:

- **Task Name**
  Indicates how many devices that task was assigned to.
- **Status**
  Indicates the status of the task in a particular device.
- **Error Code**
  If the status is waiting and the server is retrying to send the task, this indicates what the problem was.
- **Start Time**
  Indicates when the task was begun.
- **End Time**
  Indicates when the task ended.
- **Progress**
  Indicates the progress of a task in a device.

Task Pane Icons

The meaning of the icons displayed in the **Task Pane** are as follows:

Task Folder
This groups together a number of devices that have been sent the same task.

Success
The task was executed successfully by the device.

Sending
The console has sent the task to the device and is waiting for a reply.

Failed / Timeout
The task has failed or timed out. (If the task is not complete after finite time, the status of the task will be displayed as **Timeout**. The error code of the status is **0**.)

Ready
The task is executed and waiting for the user's operation.

Paused
The task has been paused.

Waiting
The task has been scheduled for sending at a later time, and has not been sent yet.

Processing
The task has been accepted by the device and is being processed.

Applying Tasks to Devices

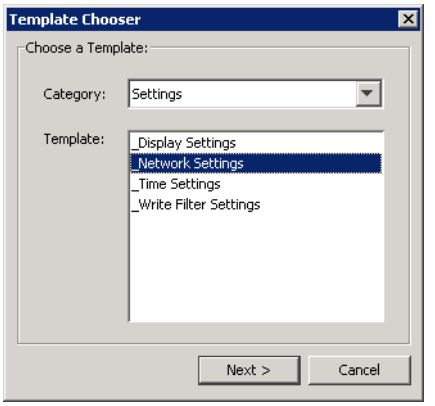
You can apply a task to a device from a defined template for the purpose of remote configuration, monitoring, installing or restricting. Assigning a PXE task will cause the thin client to either wake on LAN or re-boot.

You can apply tasks by drag-and-drop or by manually selecting the task.

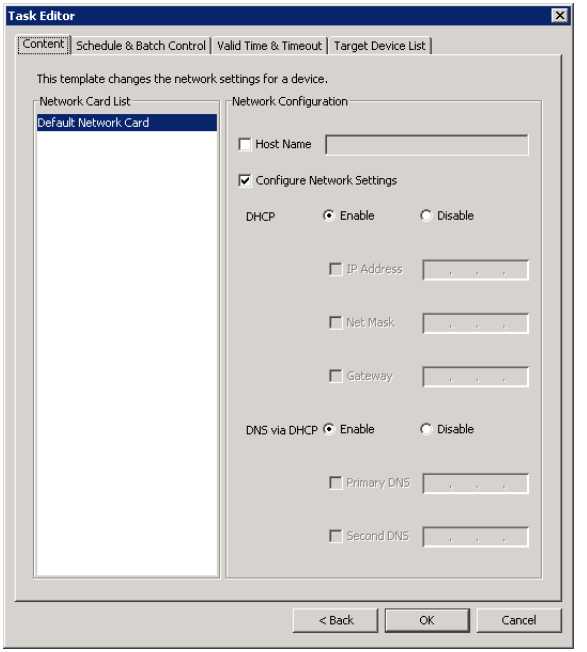
1 Drag a template from the **Template Pane** and drop it on to a device,

OR

Right-click the device and select **Send Task** from the pop-up menu to display the **Template Chooser**. Select a category then a template from the templates list, then click **Next**.

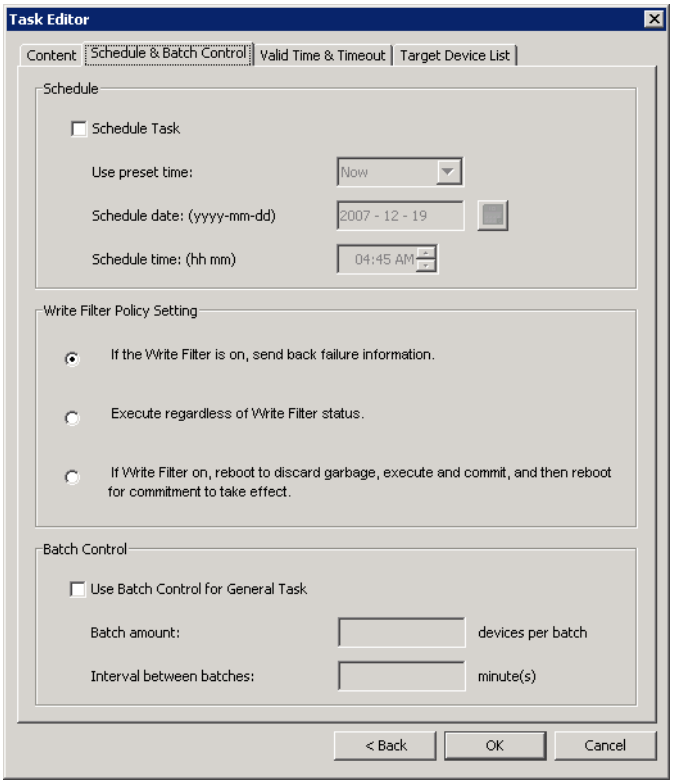


2 The **Task Editor** dialog will be displayed. This enables you to make changes to the template and specify how and when the task is to be performed.



3 The **Content** tab allows you to change the properties of the task as desired. (See "Creating & Editing Task Templates" on page 95 for details.)

4 Select the **Schedule & Batch Control** tab and specify when and how the task is to be performed.



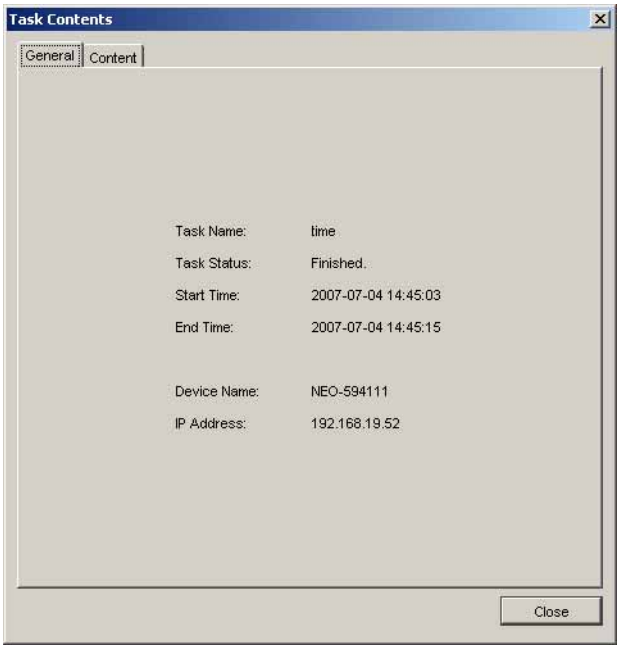
If you do not select the **Schedule Task** option and specify a time, the task will be sent to the device as soon as you click the **OK** button.

5 Click **OK** to apply the task to the device.

Displaying Task Properties

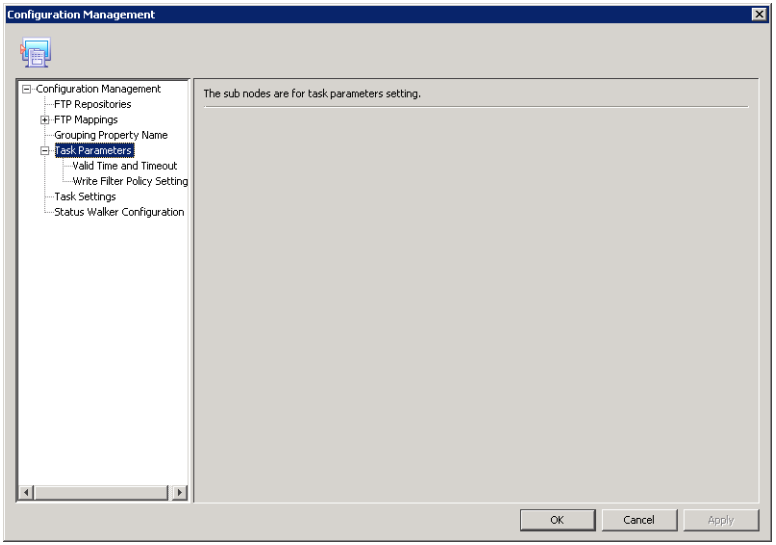
To display the properties of a task:

1. In the **Task Pane**, click the **+** box next to the **Task Name** to list the devices that the task is assigned to.
2. Right-click a device and select **View Task Contents** in the pop-up menu. A **Task Contents** window will be displayed showing detailed information about the assigned task.



Configuring Task Parameters

Select **Tools** > **Configuration** from the Console's menu bar to open the **Configuration Management** dialog, then click the **Task Parameters** option in the option tree pane to expand it.

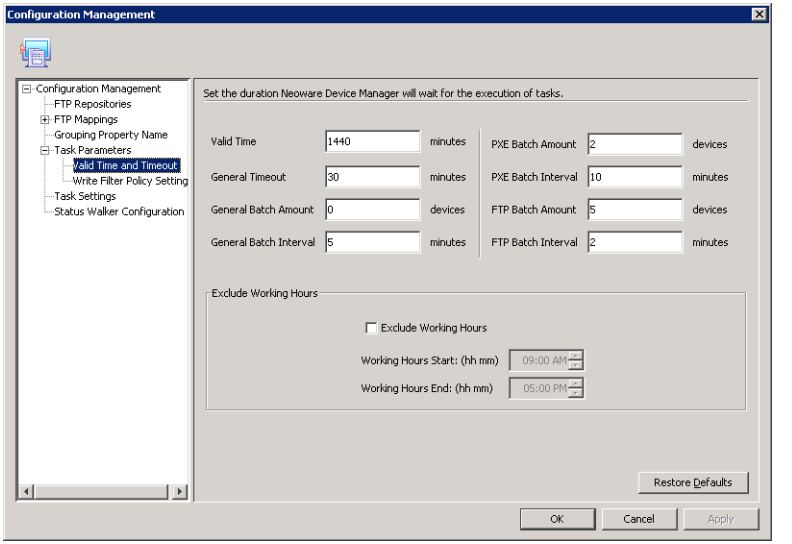


The **Task Parameters** option consists of two sub-options: **Valid Time and Timeout** and **Write Filter Policy Setting**. These are described in the following sections.

Valid Time and Timeout

The **Valid Time and Timeout** options enable you to set the duration HP Device Manager will wait for the execution of tasks. You can also specify the start and end time of working hours during which HP Device Manager will not execute tasks. Clicking in an option field will cause the **Description** box to display a short description of that option.

1. Select **Valid Time and Timeout** in the option tree pane of the **Configuration Management** dialog.
2. Set the time, in minutes, for each category: **Valid Time**, **General Timeout**, **General Batch Interval**, **PXE Batch Interval** and **FTP Batch Interval**.



Set the amount, in devices, for each category: **General Batch Amount**, **PXE**, **Batch Amount** and **FTP Batch Amount**.

Check the **Exclude Working Hours** option box to input the start and end time of working hours.

Clicking **Restore defaults** will reset the timeout settings to their defaults and set the working hours to **9.00** start and **17.00** end..

3 Click **Apply** to save the new settings.

4 Click **OK** to exit.

Write Filter Policy Setting

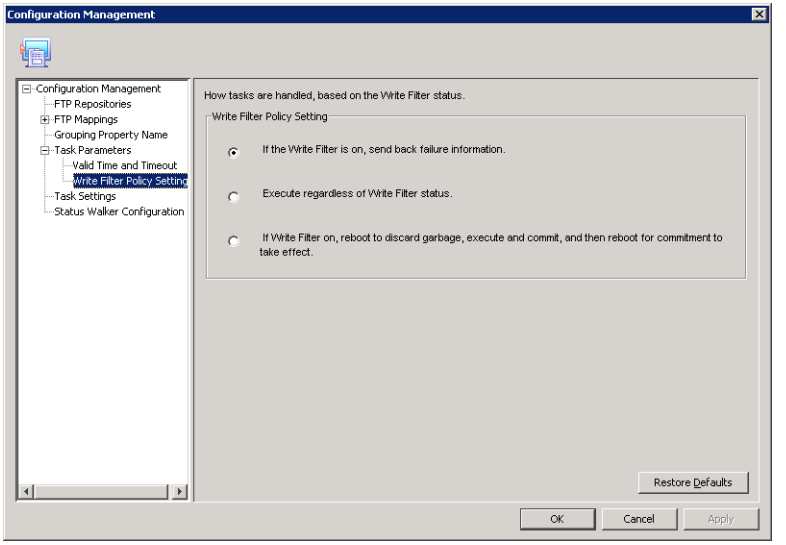
The **Write Filter Policy Setting** options enable you to specify how the Enhanced Write Filter on XPe devices affects tasks.

1 Select **Write Filter Policy Setting** in the option tree pane of the **Configuration Management** dialog.

2 Choose one of the three policy items.

3 Click **Apply** to save the new settings.

4 Click **OK** to exit.

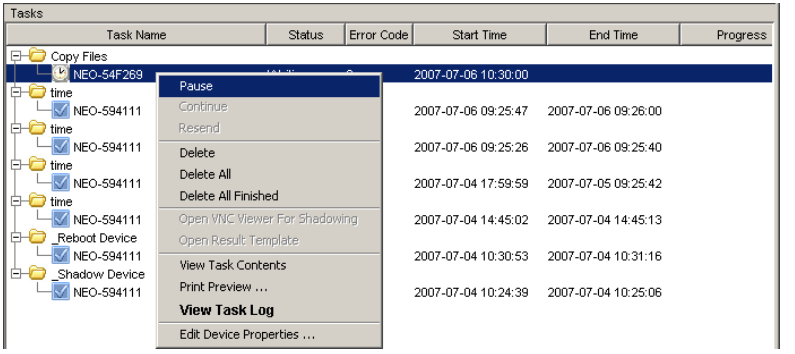


Pausing Tasks

To pause a waiting task:

1 Select a waiting task in the **Task Pane**.

2 Right-click and select **Pause** from the pop-up menu.



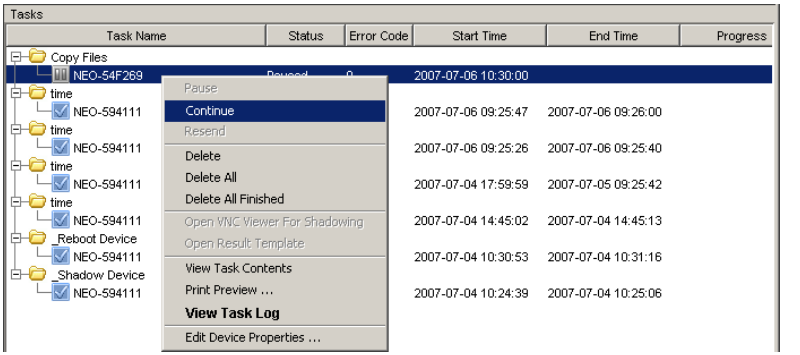
The status of the waiting task will be changed to **Paused**.

Note: *This operation only is available for waiting tasks.*

Continuing Tasks

To continue a paused task:

1. Select a paused task in the **Task Pane**.
2. Right-click and select **Continue** from the pop-up menu.



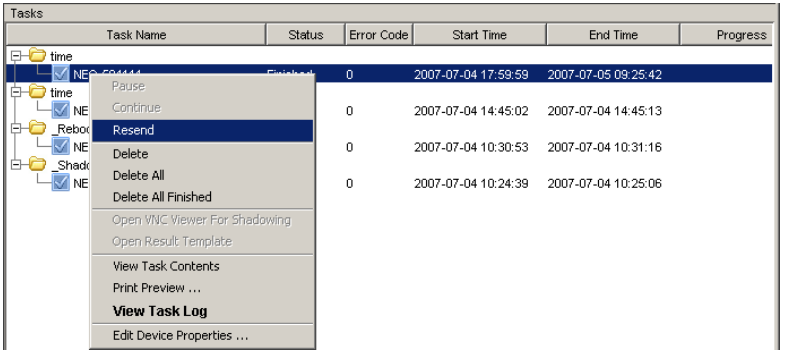
The status of the paused task will be changed to **Waiting**.

Note: *Only paused tasks (tasks that have not been sent) can be continued.*

Resending Tasks

If a task has finished, you can resend the task to the device.

1. Select the finished task in the **Task Pane**.
2. Right-click and select **Resend** from the pop-up menu.



Deleting Tasks

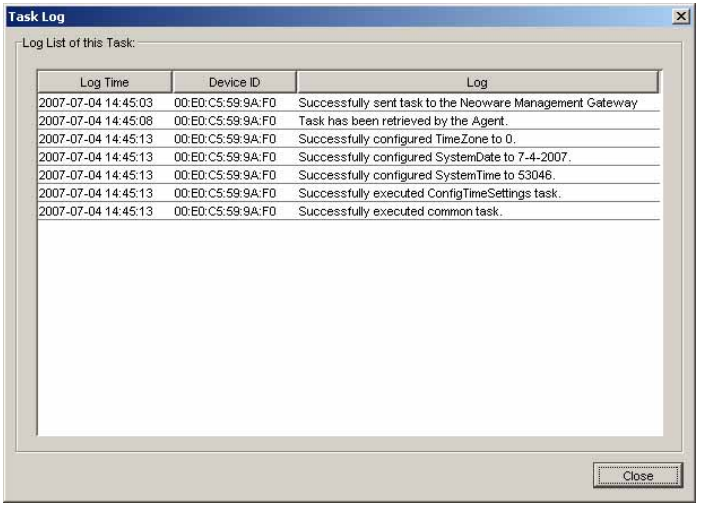
To delete a selected task, right-click the task and select **Delete** from the pop-up menu. If you select **Delete All**, all the tasks in the **Task Pane** will be deleted. If you select **Delete All Finished**, all finished tasks will be removed from the **Task Pane**.

***Warning**: Deleting a task that is in progress may damage the OS image! For example, updating and upgrading tasks, pushing imaging tasks, and so on.*

Displaying Task Logs

To display the log of a task:

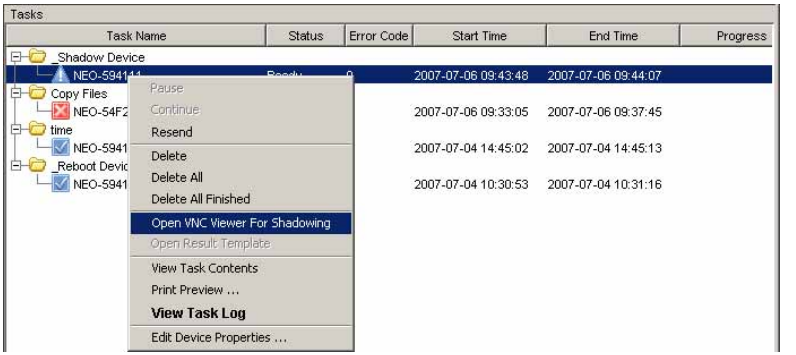
1 Right-click a task in the **Task Pane** and select **View Task Log** from the pop-up menu. A **Task Log** window will be displayed.



2 Click **Close** to close the log viewer when you have finished.

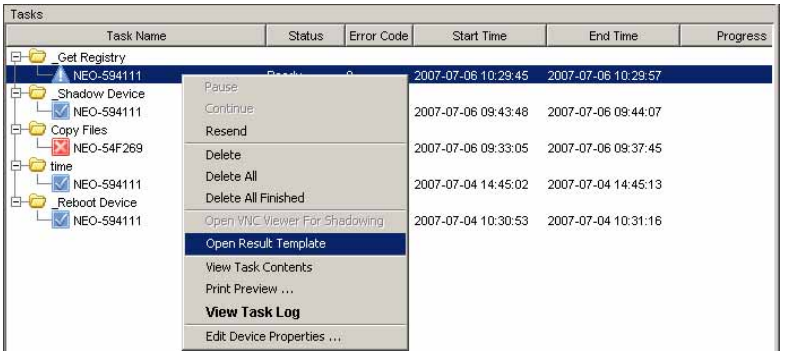
Opening VNC Viewer for Shadowing

You can open a VNC Viewer for shadowing a device by right-clicking a ready or finished shadowing task and selecting **Open VNC Viewer for Shadowing** from the pop-up menu.



Opening a Result Template

Right-click a ready task and select **Open Results Template** from the menu to open the results of some tasks such as **Get Registry**, **Get Connection Configuration** and so on.



Device Status Tools

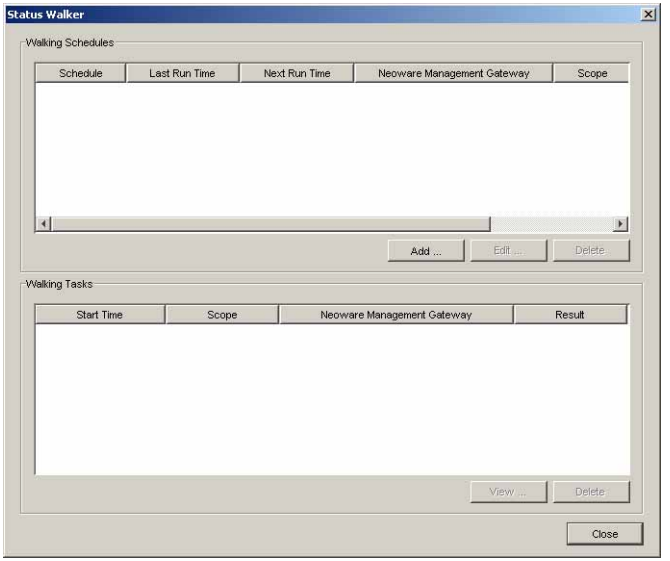
HP Device Manager has two integrated tools that monitor and record the performance of the devices: **Status Walker** and **Status Snapshot**.

Status Walker

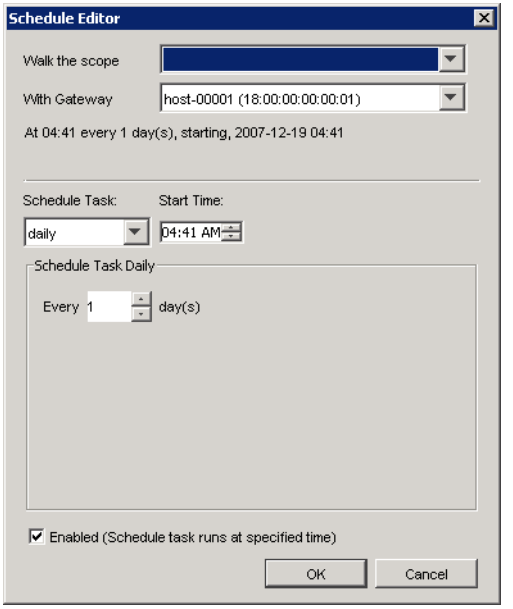
The **Status Walker** tool makes a list of all the IPs available and walks to them; it brings back their status information and displays it. This status report is made in real time. The information is stored in a database placed on the server.

***Note:** The **Status Walker** option is only available for Windows gateways.*

1 Display the **Tools** menu from the Console's menu bar and select **Status Walker** to display the following dialog.

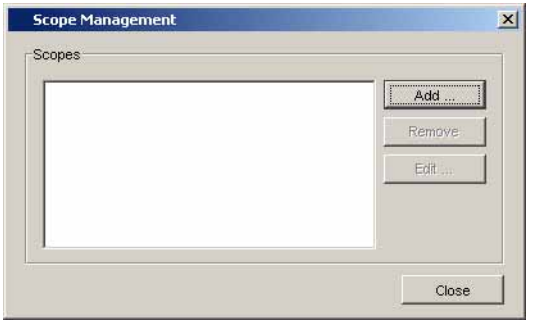


2 Click **Add** to create a new walking schedule, or **Edit** to modify an existing one. The **Schedule Editor** dialog will be displayed.

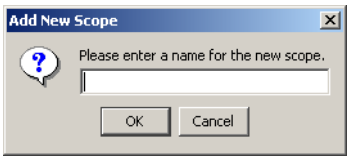


3 Select the name of the scope to use in the **Walk the Scope** drop-down menu, or select **Edit...** to define a new scope.

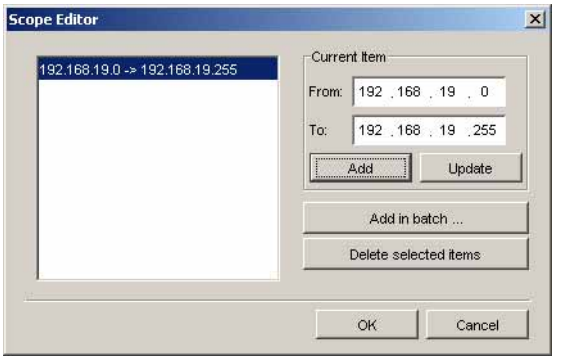
Selecting **Edit...** will display the **Scope Management** dialog which enables you to add, edit or remove scopes..



Click the **Add** button and enter a name for the new scope.



Click **OK** to display the **Scope Editor** dialog.



Specify the IP address range in the **Current Item** fields, then click **Add** to add it to the list box on the left. Click **OK** when you have finished defining scopes.

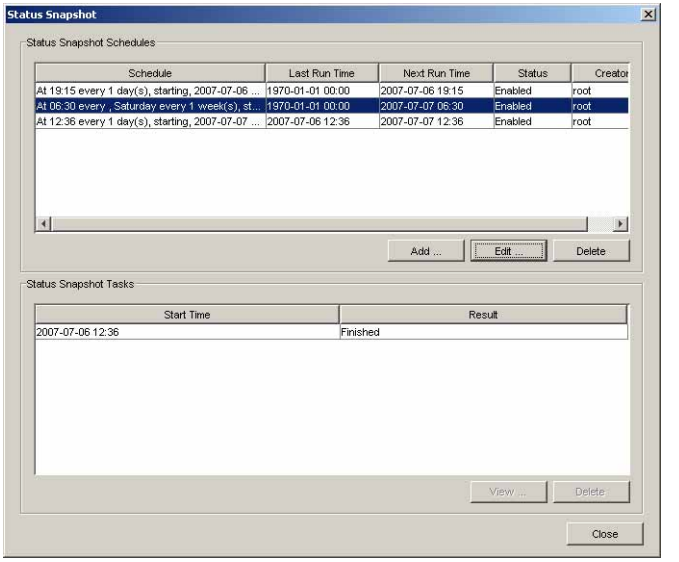
Click **Close** in the **Scope Manager** dialog to return to the **Schedule Editor**. The scope(s) you defined will be listed in the **Walk the scope** field ready for selection.

4 Select the **Gateway** to use.

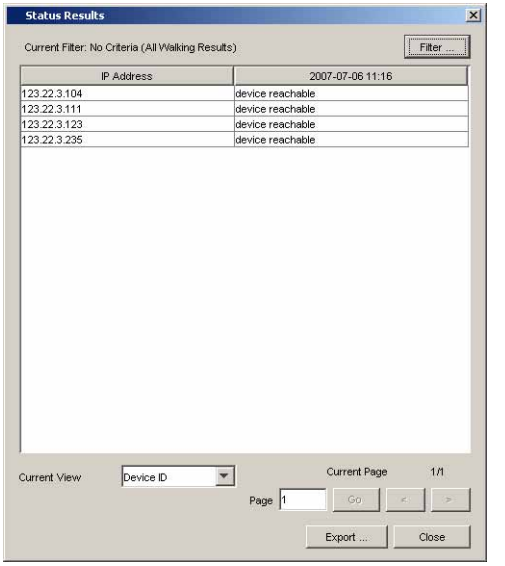
5 Use the **Schedule** options to specify the time and frequency of the task.

6 Click **OK**.

The results of scheduled walking tasks will be displayed in the **Walking Tasks** pane at the bottom of the **Status Walker** dialog.



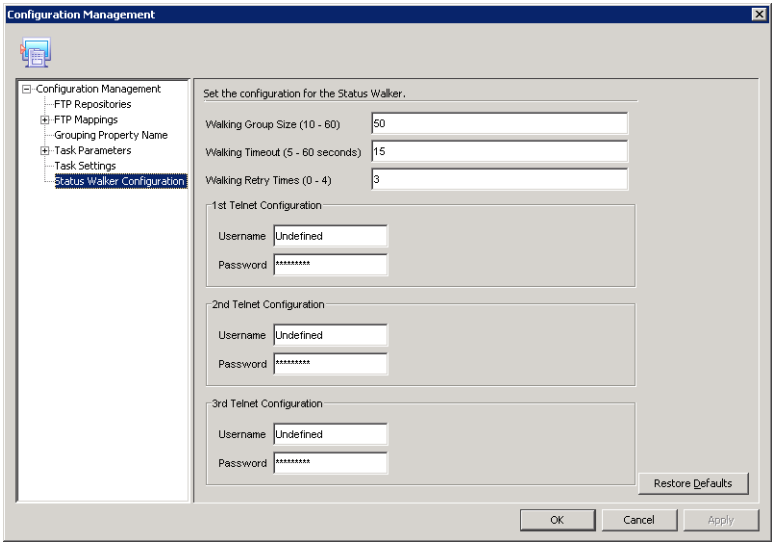
Selecting a **Finished** walking task then clicking the **View** button will display the status of devices found.



Configuring the Status Walker

You can configure the **Status Walker** to suit your requirements as follows:

1. Select **Tools** > **Configuration** from the Console's menu bar to open the **Configuration Management** window.
2. Select the **Status Walker Configuration** item in the left-hand tree pane.



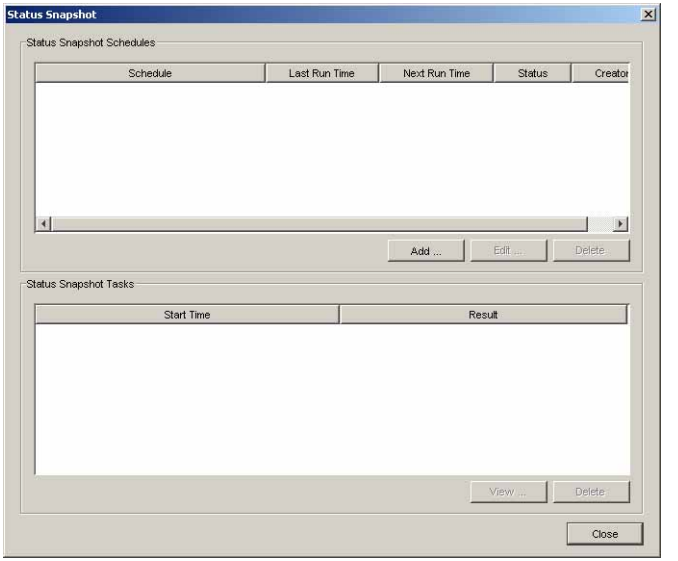
Note: *You can display a short description of each option by clicking in the option field.*

3. Enter a value for the **Walking Group Size**.
4. Define a value for **Walking Timeout**.
5. Set the number of **Walking Retry Times**.
6. Configure the **1st**, **2nd** and **3rd Telnet** by typing in a **Username** and **Password** for each one of them.
7. Click **Apply** to save the settings.
8. Click **OK**.

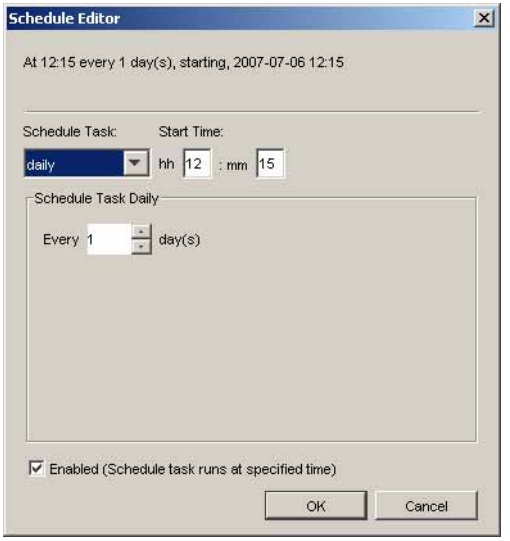
Status Snapshot

The Status Snapshot tool takes a snapshot of the network, that is, it creates a report of the devices' status and stores it on the server to be displayed when the tool is opened. This tool does not work in real time. The Status Snapshot settings allow the administrator to schedule the walk and set the frequency.

1. Display the **Tools** menu from the Console's menu bar and select **Status Snapshot**. The **Status Snapshot** dialog will be displayed.



2. Click **Add** to create a new status snapshot schedule, or **Edit** to modify an existing one. The **Schedule Editor** dialog will be displayed.

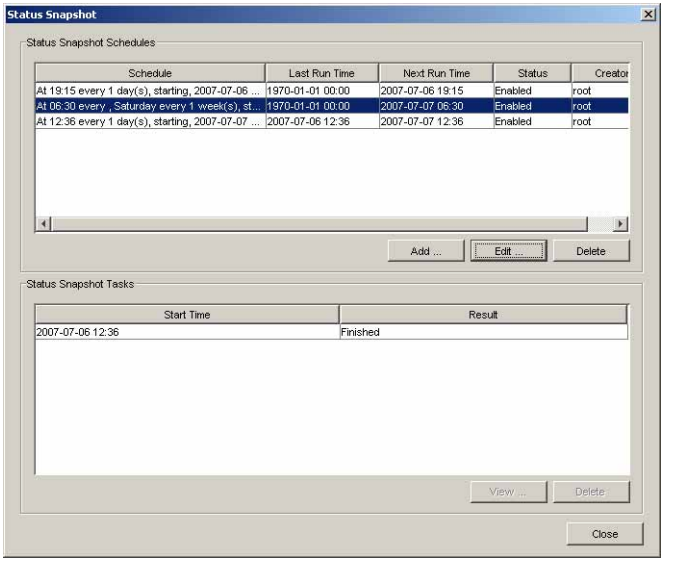


3 Schedule the status snapshot task by specifying its **Frequency** and the **Start Time**.

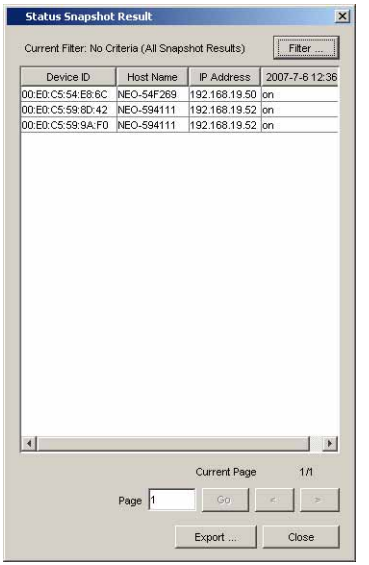
4 Click **OK**.

5 Click **Close**.

The results of the scheduled status snapshot tasks will be displayed in the **Status Snapshot Tasks** pane at the bottom of the **Status Snapshot** dialog.



Selecting a **Finished** status snapshot task then clicking the **View** button will display information about the devices found.



CHAPTER 5

Common Tasks

This chapter describes how to use the Management Console to change device settings, copy files and execute commands.

Performing a Task

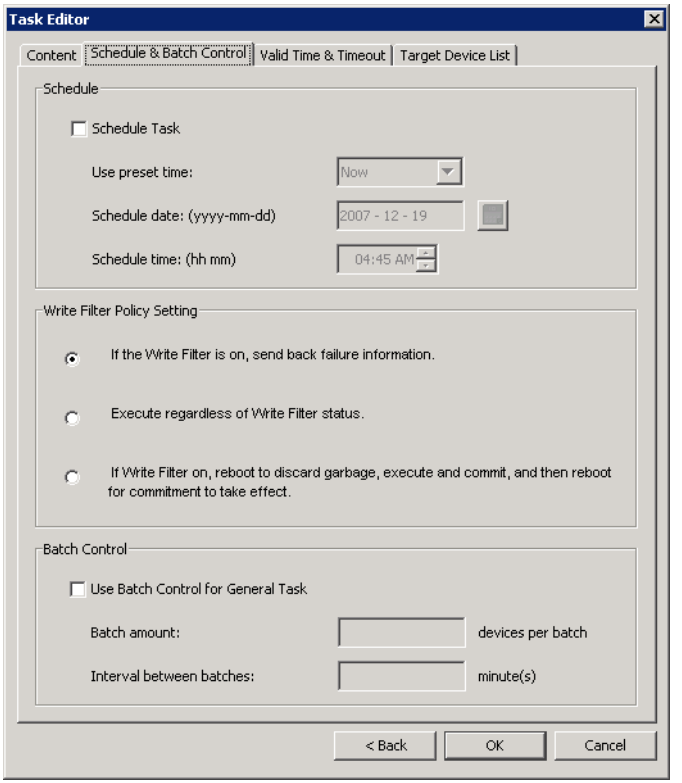
In order to perform a task on a remote device you must first define a template which provides the instructions to be executed or new settings, then apply that template to the device. The basic procedure is described below. For a more detailed explanation, please refer to the sections “Task Template Management” on page 94 and “Task Management” on page 98.

1. To define a template, double-click an existing template in the **Template Pane**, or right-click a template then select **Properties** from the pop-up menu.
2. Specify your requirements for the template using the options available, then click the **Save as** button and enter a name for the new template.
3. To apply the template to a device or group of devices, either drag the template from the **Template Pane** and drop it on to the device or group,

   or

   right-click the device and select **Send Task** from the pop-up menu to display the **Template Chooser**. Select a category then a template from the templates list, then click **Next**.

4 The **Task Editor** dialog will be displayed. Select the **Schedule & Batch Control** tab and specify when and how the task defined in the template is to be performed. If you do not select the **Schedule Task** option and specify a time, the task will be applied to the device as soon as you click the **OK** button.



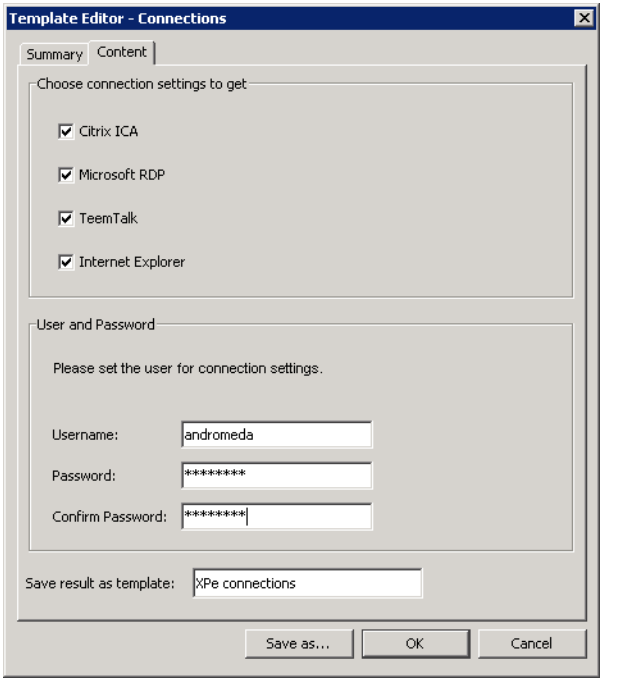
5 Click **OK** to apply the task to the device.

Changing Connection Settings

HP thin client devices are designed to access servers or applications through pre-defined ICA, RDP, terminal emulation or Web browser connections. HP Device Manager enables you to copy these pre-defined connection settings from one thin client to others of the same model and operating system type.

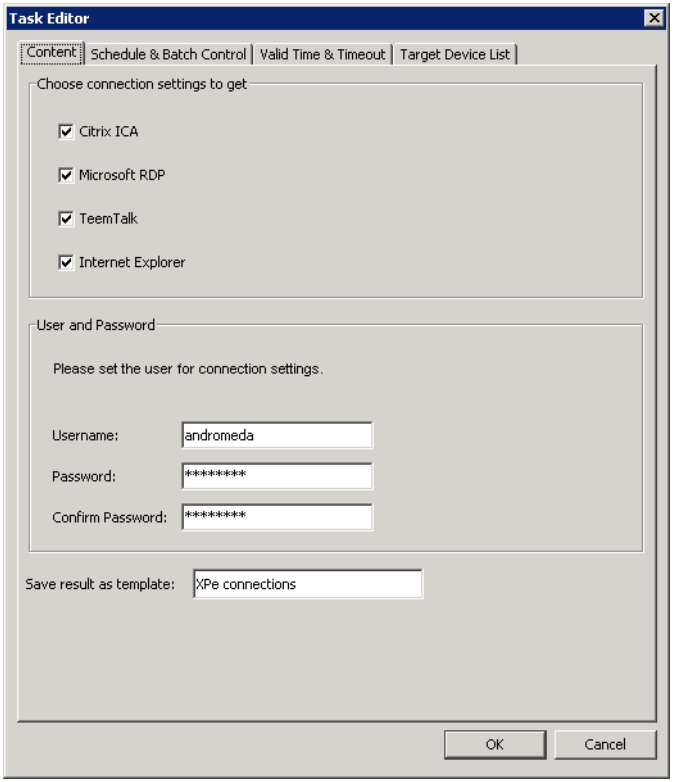
Important: *Before copying the connection settings of a device, you must make sure that each connection is properly configured and tested on the network where the connections will be used.*

1. Configure a thin client device with the required connection settings and ensure that the connections work on the network where they will be used.
2. Run the Management Console and display the name of the device with the correct connections in the device tree.
3. Select the **Connections** tab in the **Template Pane**, then double-click on the **_Get Connection Configuration** template to display the **Template Editor**.
4. Use the check boxes to indicate which connection settings to retrieve from the device.
5. Enter a name for the template which will be created to store the connection settings.



6 Click the **Save as...** button, enter a name for this template then click **OK**.

7 Drag and drop the template on the name of the device with the correct connections in the device tree. The **Task Editor** will be displayed.



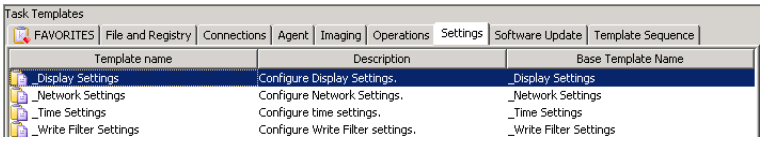
8 Click **OK** to apply the task to the client device.

9 The connection settings will be copied from the device and stored in a new template which will appear in the **Templates Pane** with the name you specified in step 5.

10 You can now drag and drop this new template on devices in the device tree to apply the connection settings to them.

Changing Device Settings

The setup configuration of a device can be changed using templates listed on the **Settings** tab in the **Template Pane**.

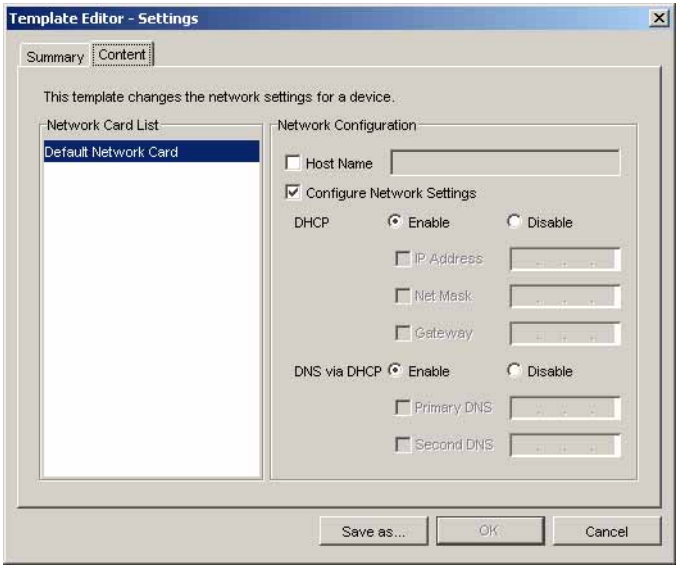


The following sections provide an overview of each template.

Configuring Network Settings

1 Select the **Settings** tab in the **Template Pane**.

2 Double-click the **_Network Settings** template to display the **Template Editor**.



3 Enter the network settings as required.

__Note:__ If __DHCP__ is enabled (default), the device will not use static IP information. If you want to use static IP, select __Disable__.

4 Click **Save As...** to save the template with a new name.

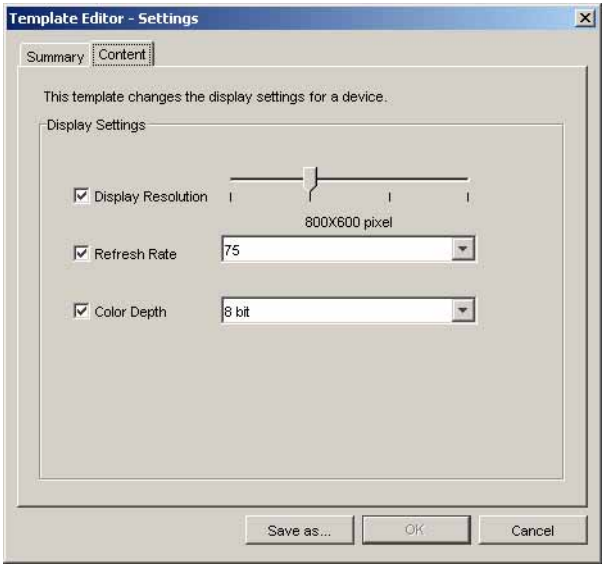
5 Drag and drop the template on the device(s) you want to configure.

Note: *Because changes made to device properties can be applied to more than one device at a time, some settings are not available if more than one device is selected. These include the static IP information and device hostname - settings that must be unique to each device.*

Configuring Display Settings

1 Select the **Settings** tab in the **Template Pane**.

2 Double-click the **_Display Settings** template to display the **Template Editor**.



3 Specify the **Display Resolution** (e.g. 800 x 600) using the slider, and select the screen **Refresh Rate** and **Color Depth** from the drop-down lists.

4 Click **Save as...** to save the template with a new name.

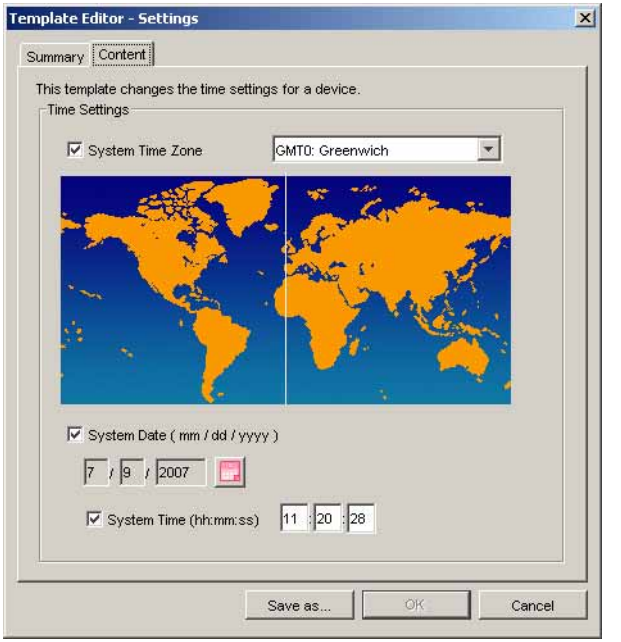
5 Drag and drop the template on the device(s) you want to configure.

*Note: The **Color Depth** option is only available for XPe OS devices.*

Configuring Time Settings

1 Select the **Settings** tab in the **Template Pane**.

2 Double-click the **_Time Settings** template to display the **Template Editor**.



3 Specify the time settings you require.

4 Click **Save as...** to save the template with a new name.

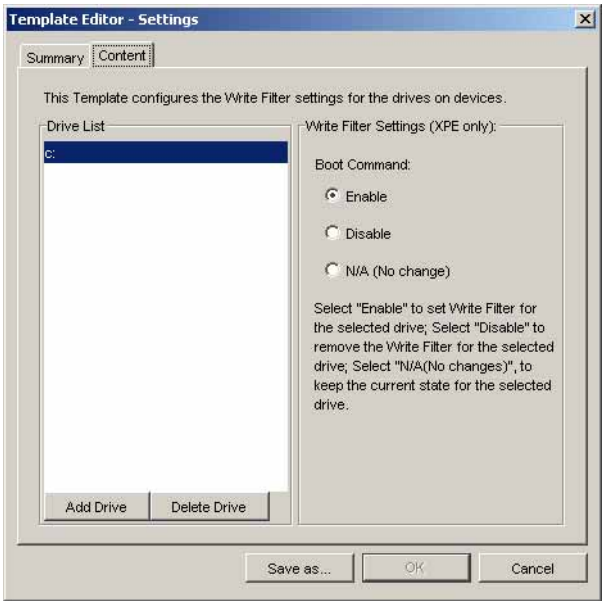
5 Drag and drop the template on the device(s) you want to configure.

Configuring Write Filter Settings

Note: Write Filter settings are only applicable to XPe OS devices.

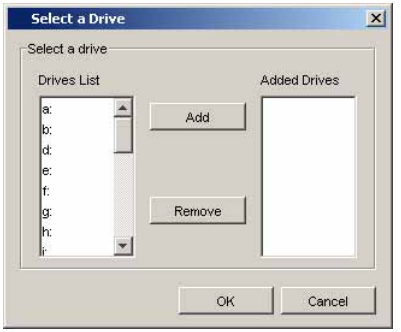
1 Select the **Settings** tab in the **Template Pane**.

2 Double-click the **_Write Filter Settings** template to display the **Template Editor**.



3 Select the drive to configure in the **Drive List** box.

You can add one or more drives to the list by clicking the **Add Drive** button to display the **Select a Drive** dialog.



Select a drive letter from the **Drives List** then click **Add** to add it to the **Added Drives** list. Click **OK** to add the drives.

4. Set the **Boot Command** to either **Enable** to set the Write Filter, **Disable** to remove the Write Filter, or **N/A (No change)** to keep the current state for the selected drive.
5. Click **Save as...** to save the template with a new name.
6. Drag and drop the template on the XPe OS device(s) you want to configure.

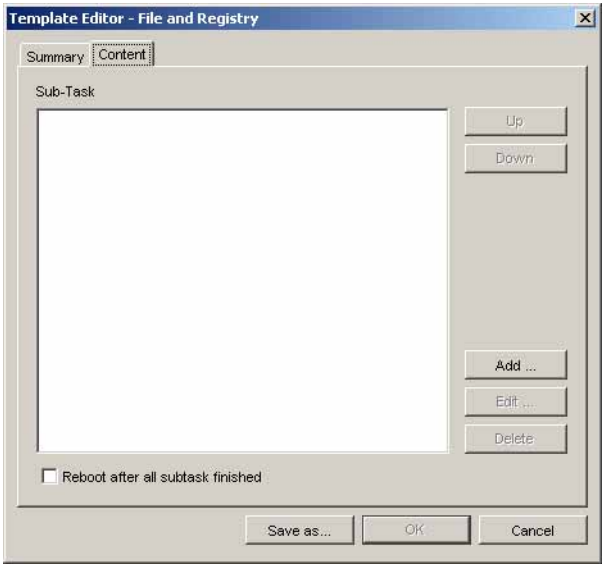
Using File and Registry Templates

The **_File and Registry** template is generic in that it consists of a customizable combination of copying files, deleting files, registry changes, running operating-system commands and pauses.

Customizing this template involves adding, deleting and re-arranging a variety of sub-tasks.

1 Select the **File and Registry** tab in the **Template Pane**.

2 Double-click the **_File and Registry** template to display the **Template Editor**.



3 Click **Add** to add a variety of sub-tasks. (Refer to the table below for more information on each sub-task.)

Click **Edit** to edit a sub-task.

Click **Delete** to delete the selected sub-task.

Click **Up** and **Down** to re-arrange the sub-tasks as required.

4 After modifying the template, click **Save as** to save the template for later use.

Table 7: File and Registry Template Sub-Tasks

Sub-Task	Item	Description
Copy Files	FTP Server	Select an FTP repository to use.
	Upload	Upload files from the client device to the selected FTP repository.
	Download	Download files from the selected FTP repository to the client device.
	File Path On Console	The path to the files to be copied.
	File Name	The name of the files to be copied.
	Path On Device	The path for the files to be copied to on the device.
	Copy Recursively	Copy files matching the pattern in **File Name** recursively in all subdirectories from the given **Path On Device**.
Delete Files	File Name	The file name to be deleted.
	Path On Device	The location of the file.
	Delete Recursively	Delete files matching the pattern in **File Name** recursively in all subdirectories from the given **Path On Device**.
Registry	Add Key...	(Registry tree) Add a key at the selected location on the tree.
	Add Value...	(Registry tree) Add a value on the selected key.
	Rename...	(Registry tree) Rename the selected item.
	Delete	(Registry tree) Delete the selected item.

Table 7: File and Registry Template Sub-Tasks

Sub-Task	Item	Description
	Action	(Registry settings) The action to be applied to the registry table. Set to **add** to add a key, or **delete key** to delete a key.
	Type	(Registry settings) The type of registry key value.
	Value Name	(Registry settings) Specify a name for the registry key. Double-click on this field to edit it.
	Value Data	(Registry settings) Specify the data to add to the registry key value. Double-click on this field to edit it.
	Add Key	(Key settings) If this is selected, even if the selected key is empty, the key will still be added to the registry.
	Delete Key and Value	(Key settings) If this is selected, the selected key and all values under it will be deleted. Note that there must be no values under the given key.
Command	Command	The command on the client device to be executed. Enter the full path name of the command on the client device. If you are using a long file name that contains a space, use quoted strings to indicate where the file name ends and the arguments begin. For example: **"c:\program files\file.exe"**.
	Execute After Reboot	Set to **Yes** if you want the system to reboot and execute the command when it restarts, or **No** if you want the command to be executed immediately.
	Wait	Set to **Yes** if the given command has to wait for the previous command to finish before processing, or set to **No** for simultaneous execution of commands.

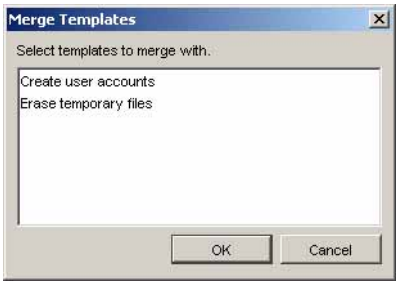
Table 7: File and Registry Template Sub-Tasks

Sub-Task	Item	Description
Pause	Hours, Minutes, Seconds	The duration of time to pause processing of the template, often in order to wait for certain events, for example a system restart.

Merging File and Registry Templates

Two or more **File and Registry** templates can be merged together to form a new **File and Registry** template with the combined sub-tasks of all of them.

1. Select one of the **File and Registry** templates that you wish to merge.
2. Right-click on it and select **Merge** from the pop-up menu.



3. Select another template to merge the selected template with, then click **OK** to merge the templates.
4. You will prompted to enter a name for the new template.

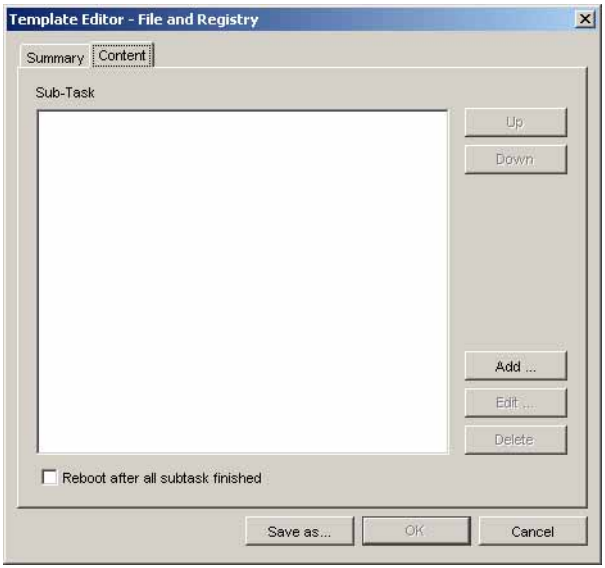
5. Enter a name for the new template.
6. A new **File and Registry** template will be created with all of the sub-tasks of the original templates combined.

Copying Files

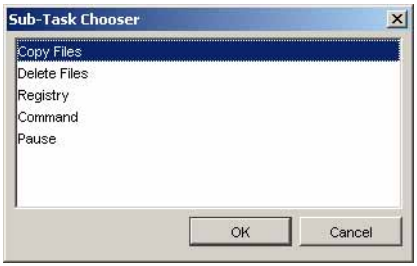
You can copy files from a device to the FTP Repository, or download files from the console to a device through the FTP Repository. Both are achieved using the **_File and Registry** template.

1 Select the **File and Registry** tab in the **Template Pane**.

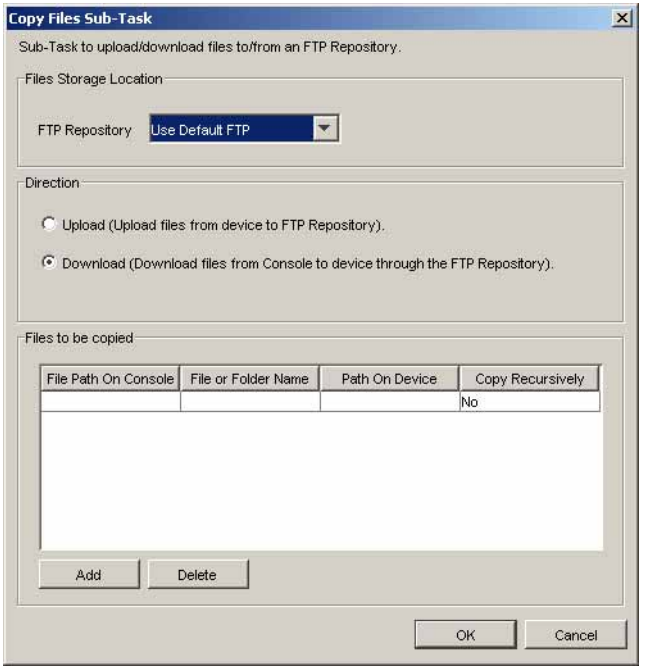
2 Double-click the **_File and Registry** template to display the **Template Editor**.



3 Click the **Add** button and select **Copy Files**.



4 Click **OK**.



5 Select the **FTP Repository** to use from the list box.

6 Select the **Direction** of the copy files task: **Upload** files from device to FTP Repository, or **Download** files from console to device through the FTP Repository.

7 Specify the **Files to be copied** by clicking in the fields and entering the relevant information. Additional lines can be added by clicking the **Add** button.

The **File Name** field supports the use of the wildcards ***** and **?**. For example:

*****	means zero or more characters.
?	means one character.
com.jar	means the file is named **com.jar**.

c:\abc*
c:\abc
c:\abc all mean the same thing, that is, all the files under directory **c:\abc**.

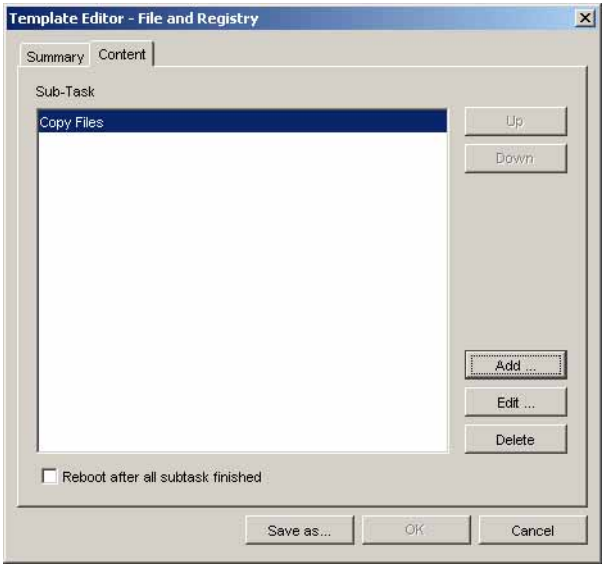
a* means all the files that start with the letter **a**.

***a** means all the files that end with the letter **a**.

If **Copy Recursively** is set to **Yes**, both files and sub-directories matching the wildcard pattern defined in the **File Name** field will be copied. If **No** is selected, only files in the given path will be copied, but not sub-directories.

8 Click **OK** when you have finished specifying files to be copied.

A **Copy Files** sub-task will be added to the **Sub-Task** list of the template.



9 Click **Save as...** to save the template with a new name.

10 Drag and drop the template on the device you want to copy files to/from.

Remote Command Execution

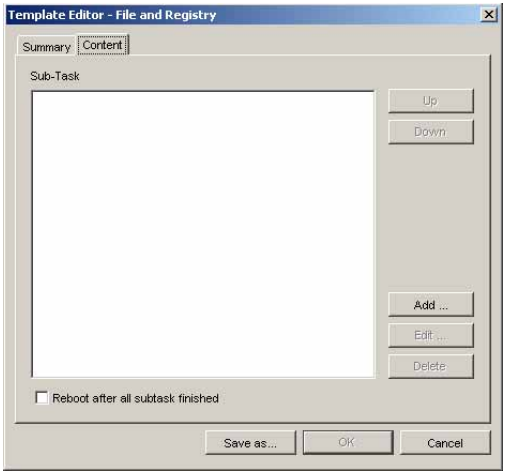
HP Device Manager can remotely execute commands on a device using **File and Registry** templates. In this context, a command is anything executable on the device's operating system. It can be applications, DOS batch files, Windows scripts, etc. You can enter any command, however it is recommended that these commands are tested on a client device first.

Note: *DOS commands cannot be executed directly on a Windows XP Embedded OS. To execute DOS commands you need to write them to a batch file saved with the suffix "**.bat**", then execute the batch file.*

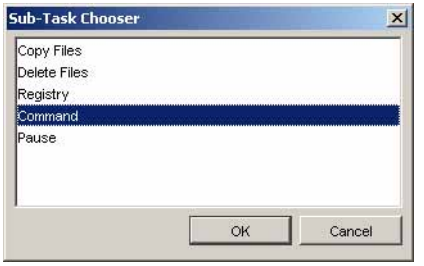
The Windows environment variable **PATH** may be different on each device, so it is important to enter the full path to each command to make sure it can be found on the device. For example, to execute an executable file named **xxx.exe** in a directory named **C:\Program Files**, enter the command as **C:\Program Files\xxx.exe**

To execute commands:

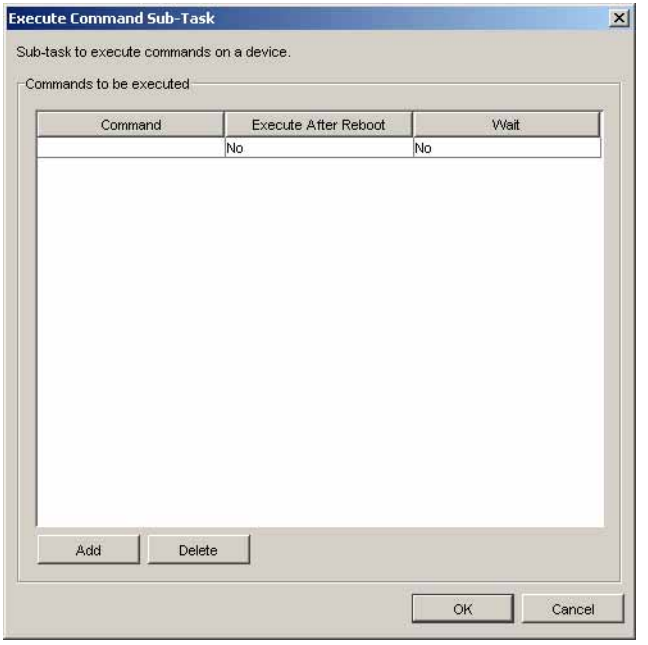
1. Select the **File and Registry** tab in the **Template Pane**.
2. Double-click the **_File and Registry** template to display the **Template Editor**..



3 Click the **Add** button and select **Command**.



4 Click **OK**.



5 Specify the command to be executed by clicking in the **Command** column and entering the appropriate information.

6 In the **Execute After Reboot** column, select **Yes** if the device should reboot before executing the command you specify. Select **No** if you want the command to execute without the need to reboot the device.

7. In the **Wait** column, select **Yes** if the given command has to wait for the previous command to finish before processing, or set to **No** for simultaneous execution of commands.
8. If you want to specify more commands, click **Add** to continue.
9. Click **OK** when you have finished.
10. Click **Save As...** to save the template under a new name.
11. Drag and drop the template on the devices where you want the commands to run.

Remote Execution of Windows Scripts

Windows Scripting Host is a comprehensive scripting infrastructure for the Microsoft Windows platform, provides script engines, Visual Basic Scripting Edition and Microsoft JScript, which can be embedded into Windows applications and an extensive array of supporting technologies that make it easier for script users to script Windows applications.

For more information on how to write Windows scripts, see:

http://www.msdn.microsoft.com

Enter "**windows script**" as search keywords.

To run windows scripts as a command from HP Device Manager, you need to add "**wscript**" before the script name you want to run. **Wscript.exe** is in the **C:\windows\system32** directory.

CHAPTER 6

Advanced Tasks

This chapter describes how to use snapins, images, change registry settings, install XPe software components, and set the agent mode.

Snapins

Introduction

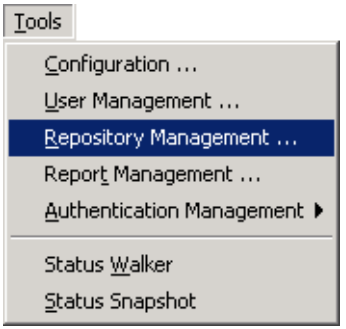
All of HP's thin client operating systems utilize real filesystems in Flash disk memory instead of monolithic Flash images. They also use registry-based configuration mechanisms. The combination of real filesystems and registry-based configuration allows HP customers to add software or update software modules and device configuration without having to replace the entire Flash image in the thin client device.

Modular software additions and updates need only be as big as they have to be (and in some cases may only be a few kilobytes of information), and registry changes are similarly small. This speeds the update process and helps alleviate bandwidth impact on busy networks and low-bandwidth connections.

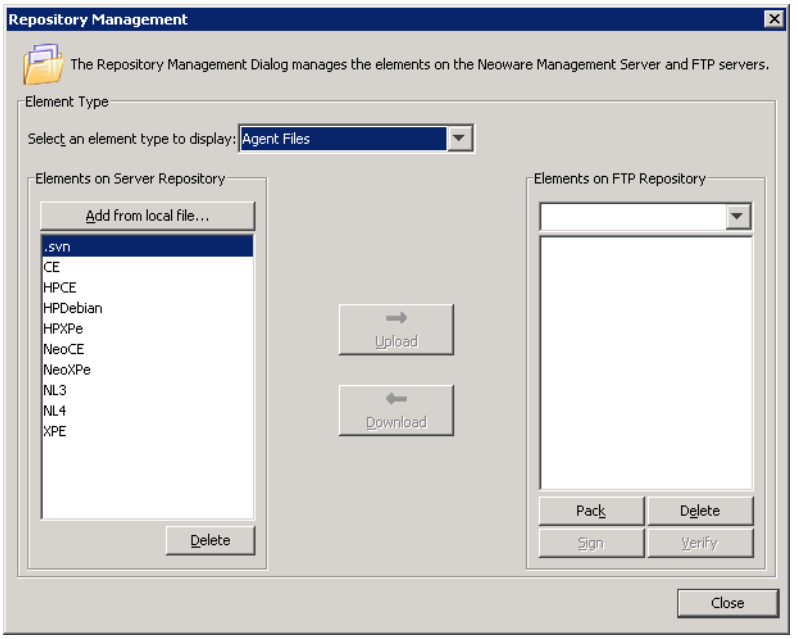
HP provides snapins to add software to thin clients, such as Adobe Acrobat Reader. Snapins may also be provided by HP Technical Support to help diagnose customer problems. Customers can develop and use their own snapins, since the technology is based on industry-standard protocols.

Applying a Snapin to a Thin Client

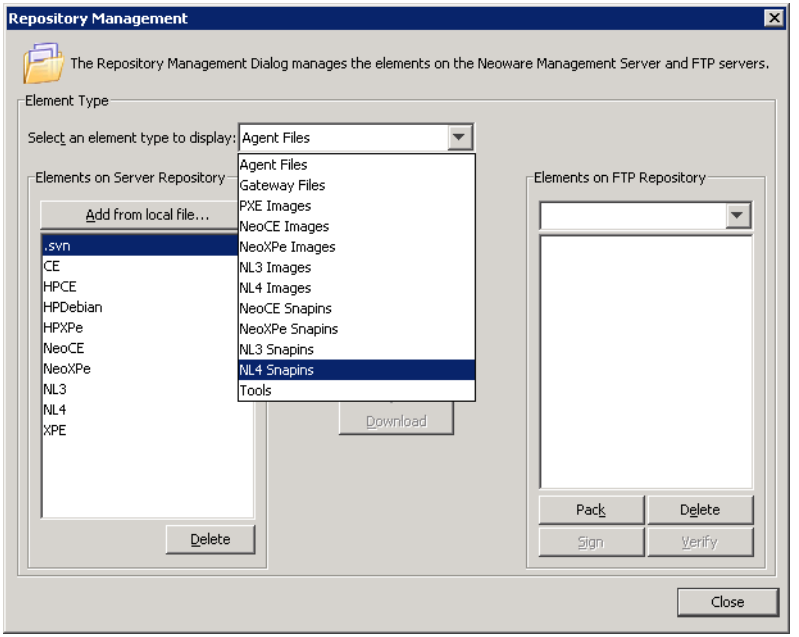
1. Download the required snapin from the support section of the HP website to a temporary location on your local drive.
2. Run the HP Management Console and select **Tools** > **Repository Management** from the menu bar.



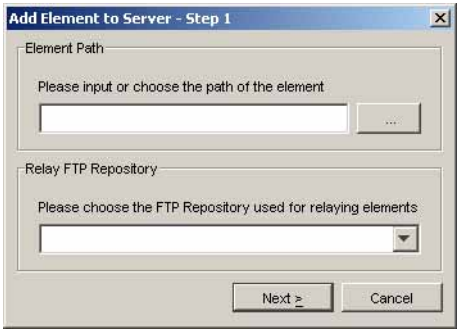
The **Repository Management** dialog will be displayed.



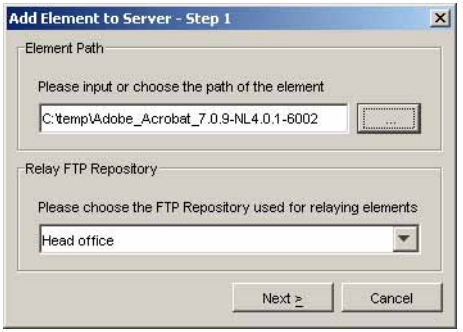
3 In the **Select an element type to display** field, select the appropriate **Snapins** option from the drop-down list. For this example we will be using a NeoLinux 4 snapin to install Adobe Acrobat Reader to NeoLinux 4 thin clients, so **NL4 Snapins** is selected.



4 Click the **Add from local file** button to display the **Add Element to Server - Step 1** dialog.

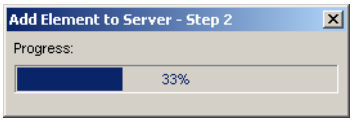


5 Click the **...** button in the **Element Path** box to browse to the directory containing the snapin you downloaded in step 1. Select the folder containing the snapin files (in our example it is **Adobe_Acrobat_7.0.9-NL4.0.1-6002**) then click **Choose**.



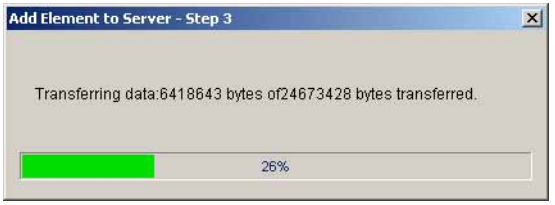
The **Relay FTP Repository** field will display the name of the FTP Repository to use for relaying files. You can change this if required.

6 Click **Next** to start copying the snapin files to the relay FTP Repository.

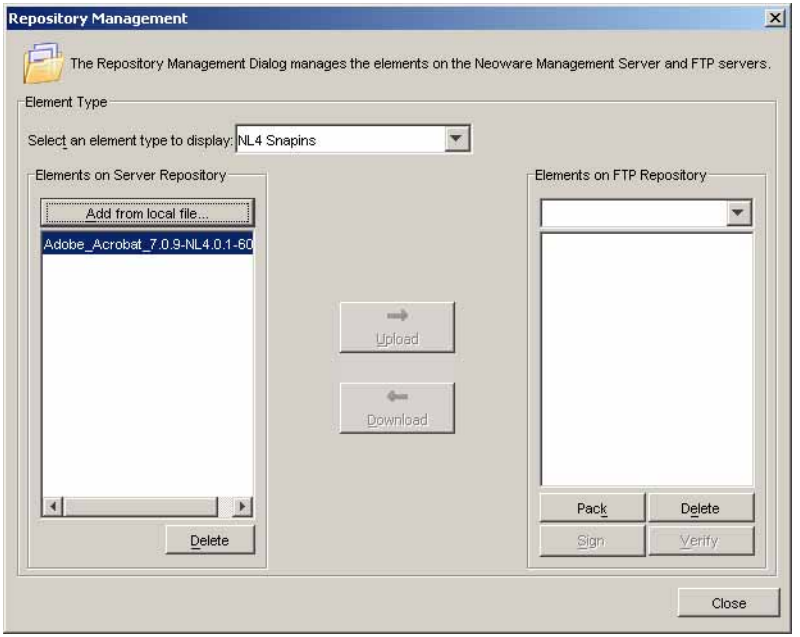


A message box will be displayed once the snapin files have been successfully uploaded to the relay FTP Repository.

7 Click **OK** to automatically transfer the snapin files from the relay FTP Repository to the Server Repository.



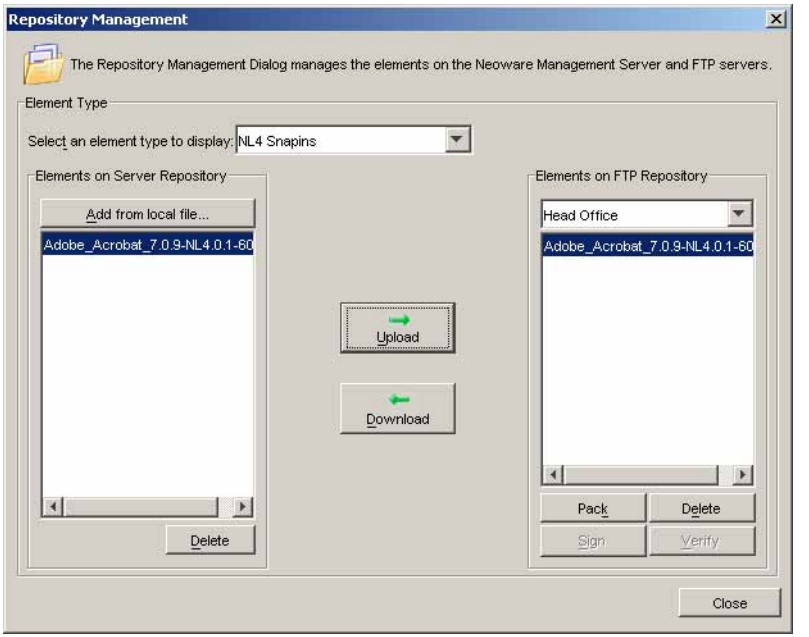
The **Repository Management** dialog should now display the name of the snapin in the **Elements on Server Repository** field.



8 Select the name of the FTP Repository to which you want to transfer the snapin from the **Elements on FTP Repository** drop-down list box.

9 Select the snapin to transfer in the **Elements on Server Repository** field, then click the **Upload** button.

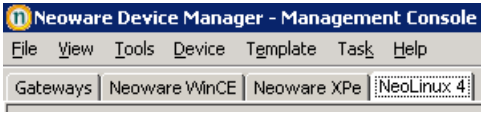
Once the snapin has been transferred, it will be listed in both the **Server Repository** and **FTP Repository** fields.



Now that the snapin is in the FTP Repository, it can be applied to client devices using a template.

10 Click **Close** to exit **Repository Management**.

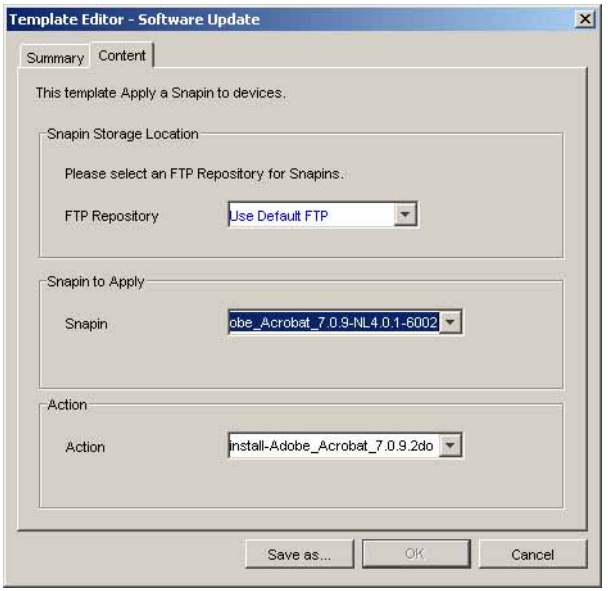
11 Click on the OS tab for the operating system supported by the snapin. In our example it is the **NeoLinux 4** OS tab.



12 In the **Task Templates** pane, click the **Software Update** tab then double-click on the **_Snapin** template to display the **Template Editor**.

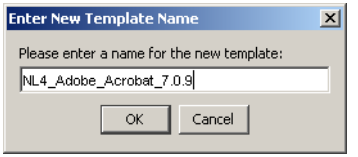
13 Select the FTP Repository where the snapin resides in the **FTP Repository** list box.

14 Select the name of the snapin in the **Snapin** list box. The **Action** field will then display actions which can be performed using the snapin. In this case the only action is **Install**.



Note: *If the snapin is not displayed in the* ***Snapin*** *field, check that you are displaying the* ***Task Templates*** *pane in the correct OS tab (****NeoLinux 4*** *in our example).*

15 Click the **Save as...** button and save the template using a name that enables you to easily identify what it does.



The **Task Templates** pane will now display the new snapin template in the **Software Update** tab.

16 To apply the snapin to one or more thin client devices, select the name of the snapin template then drag and drop it on the name of the device(s) in the device tree panel. The **Task Editor** dialog will be displayed.

17 If you want the snapin to be applied to the thin client(s) immediately, click **OK**. Otherwise you can schedule a time for the snapin to be applied by clicking the **Schedule & Batch Control** tab.

Images

Introduction

HP Device Manager can read and write images to and from supported clients. An image file (**.img**) is a binary file containing all the data on a thin client's flash storage. HP Device Manager manages images through the **Repository Management** tool, which also provides utilities to verify image integrity.

The **Imaging** templates for each OS tab provide various means of reading and writing images depending on whether or not a PXE Server is being used. A PXE image can be pulled from a device and pushed to other devices using the **_PXE Imaging** template (see page 147 and page 150, respectively).

Note: *Pushing and pulling images uses the PXE functions of HP Device Manager and some DHCP server setups may conflict with PXE. Should you experience problems with PXE, see "Configuring DHCP Servers" on page 30.*

The **_Update Image** template enables you to update a device using an image from a specified FTP Repository without using a PXE Server (see page 157). The **Neoware XPe** OS tab also includes a **_Clone XPe Image** template (see page 153).

Images & Repository Management

The **Repository Management** tool enables you to import image files into the Repository and transfer image files between FTP Repositories. It also enables you to sign and verify PXE images. The **Repository Management** tool is displayed by selecting **Tools** > **Repository Management** from the Console's menu bar. Select the relevant **Images** option from the **Select an element type to display** list.

Importing Images

Image files from an external source (i.e. not created from your local HP Device Management System) can be imported into an FTP Repository as described in the section "Importing an Element into the Repository" on page 52.

Transferring Image Files Between Repositories

An image file must be stored in an FTP Repository in order for it to be applied to clients using a template. Image files are initially placed either in the Server Repository if they were imported, or in a specific FTP Repository if created using a template. You can transfer image files between repositories using the **Upload** and **Download** buttons in the **Repository Management** dialog. In order to transfer an image file from one FTP Repository to another, it must first be **Download**ed to the Server Repository, then **Upload**ed from there to the other FTP Repository.

Signing & Verifying PXE Images

If the image file is a PXE image, it can be signed or verified by clicking the **Sign** or **Verify** buttons in the **Repository Management** dialog. HP Device Manager will report a verification error if the MD5 signature file does not exist. Therefore, if the image is from a reliable source, simply click **Sign** to re-create the digital signature.

Client BIOS Settings for PXE

Before you can pull or push a PXE image, you must make sure that the source and target client devices have their BIOS settings configured correctly.

1. Power-on the thin client device and hold down the **Delete** key to display the **CMOS Setup Utility** screen.
2. Select **Advanced BIOS Features** and set the following:

   First Boot Device [LAN]
   Second Boot Device [HDD-0]

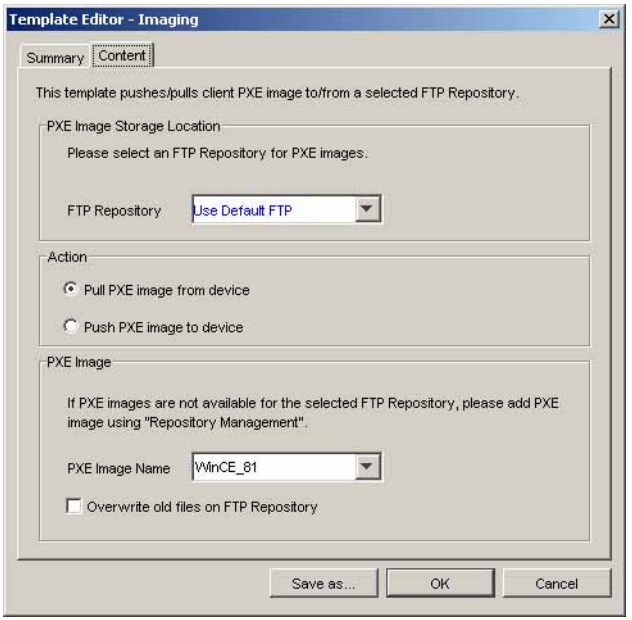
3. Press the **ESC** key to return to the initial screen, select **Integrated Peripherals** then **VIA OnChip PCI Device**.
4. Make sure **Onboard Lan Boot ROM** is set to **[Enabled]**.
5. Press the **F10** key then **Y** and **Return** to save the settings.

Pulling a PXE Image From a Client

You can pull (copy) a PXE image from any client managed by HP Device Manager and store it as a **.img** file in the Repository so that it can be pushed (written) to other clients. This is achieved using the **_PXE Imaging** template.

To pull a PXE image from a device:

1. Make sure the BIOS settings of the client device from which you want to pull an image are as described in the section "Client BIOS Settings for PXE" on page 146.
2. In the Management Console, display the OS tab containing the name of the client in its **Device Tree**.
3. Select the **Imaging** tab in the **Task Templates** pane then double-click on the **_PXE Imaging** template.
4. In the **Template Editor - Imaging** dialog, select the **FTP Repository** where the image will be stored.



5. Set the **Action** to **Pull PXE image from device**.

6 Enter a name for the **PXE Image** so that you can easily identify it once it is stored in the FTP Repository.

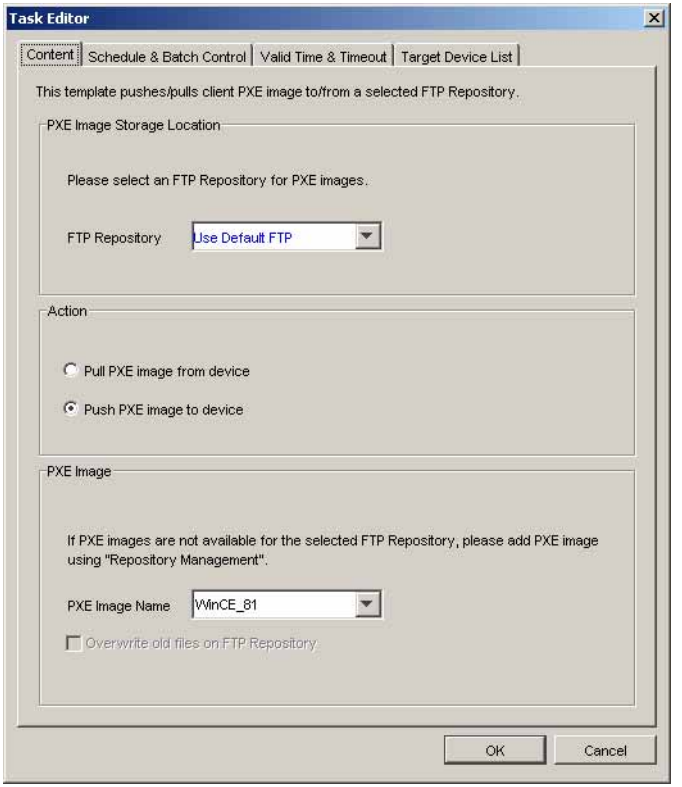
7 If you need to overwrite any files that already exist in the FTP Repository, select **Overwrite old files on FTP Repository**.

8 Click the **Save as...** button, enter a name for this template, then click **OK**.

The template will be created and listed in the **Task Templates** pane ready for you to apply to devices.

9 Select the template then drag and drop it on the name of the client in the **Device Tree** from which you want to pull an image.

The **Task Editor** will be displayed.

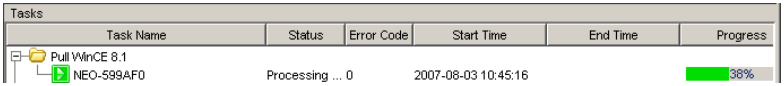


10 Click **OK** to apply the task to the device.

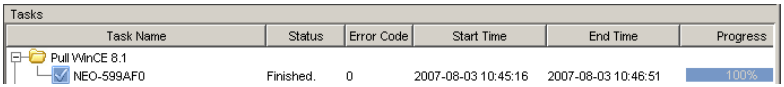
When the HP Management Agent on the client receives the task, the client will display a warning message indicating that the device will reboot in 15 seconds.

The client will shutdown then start-up in DOS mode and run the utility which copies the contents of the flash storage to an **.img** file in the FTP Repository. Note that this may take several minutes.

The progress of the image creation task will be indicated in the **Tasks** pane of the Console.



When the task has been completed successfully, the client will reboot as normal and the **Tasks** pane will indicate the task has finished.



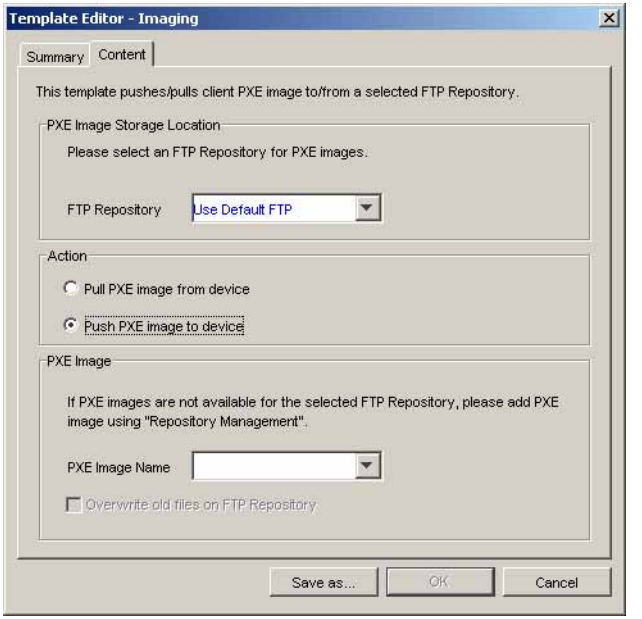
An image file has now been created in the FTP Repository you specified in step 4.

Pushing a PXE Image to a Client

You can push (write) a PXE image stored in an FTP Repository to any client managed by HP Device Manager, as long as it contains enough Flash storage. This is achieved using the **_PXE Imaging** template.

To push a PXE image to a device:

1. Make sure the BIOS settings of the client device to which you want to push an image are as described in the section "Client BIOS Settings for PXE" on page 146.
2. In the Management Console, display the OS tab containing the name of the client in its **Device Tree**.
3. Select the **Imaging** tab in the **Task Templates** pane, then double-click on the **_PXE Imaging** template to display the **Template Editor**.



4. Select the FTP Repository where the PXE image file resides in the **FTP Repository** list box.
5. Select **Push PXE image to device** as the **Action** to perform.

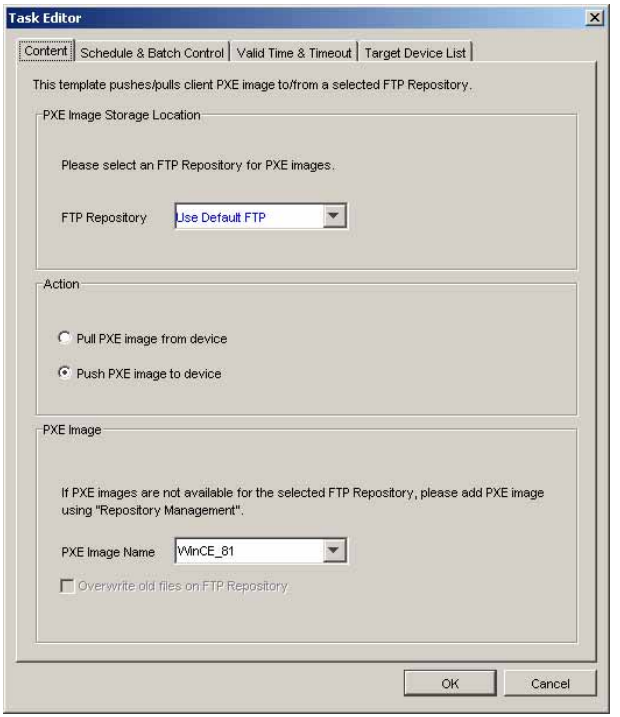
6 Enter the name of the PXE image to push to the client in the **PXE Image Name** field.

*Note: The **PXE Image Name** field will only list the names of PXE images if the image files have been transferred from the FTP Repository to the Server Repository using the **Repository Management** tool. However, you can manually enter the name of the image file in this field if it is not in the Server Repository, as long as it is present in the **FTP Repository** you have selected in the template.*

7 Click **Save as...** to save the template with a new name.

The template will be created and listed in the **Task Templates** pane ready for you to apply to devices.

8 Drag and drop the template on the device(s) to which you want to apply the image. The **Task Editor** will be displayed.



9 Click **OK** to apply the task to the device.

When the HP Management Agent on the client receives the task, the client will display a warning message indicating that the device will reboot in 15 seconds.

The client will shutdown then start-up in DOS mode and run the utility which copies the image file from the FTP Repository to its flash storage. Note that this may take some time.

The progress of the task will be indicated in the **Tasks** pane of the Console.

When the task has been completed successfully, the client will reboot with the new image and the **Tasks** pane will indicate the task has finished.

Preparing an XPe Client for Image Distribution

The **ChangeSID** utility allows you to modify the computer SID (Security ID) in the Microsoft NT/2000/XP operating system.

Note: *Only the local administrator is authorized to run this utility.*

SID information is kept in a registry file which is used for computer and user identification in a workgroup or domain environment. The **ChangeSID** utility creates a new random SID and replaces the old one.

To use the **ChangeSID** utility, log on as a local administrator and run **ChangeSID.exe** from a command line:

ChangeSID.exe <*options*>

where ***<options>*** can include the following:

-m Change the computer's name to **NEO-** plus the last 6 digits of its MAC address.

-n <*new computername*>
Assign a new computer name. Note that if **-m** is specified, this option will be ignored.

-sid Change the computer SID.

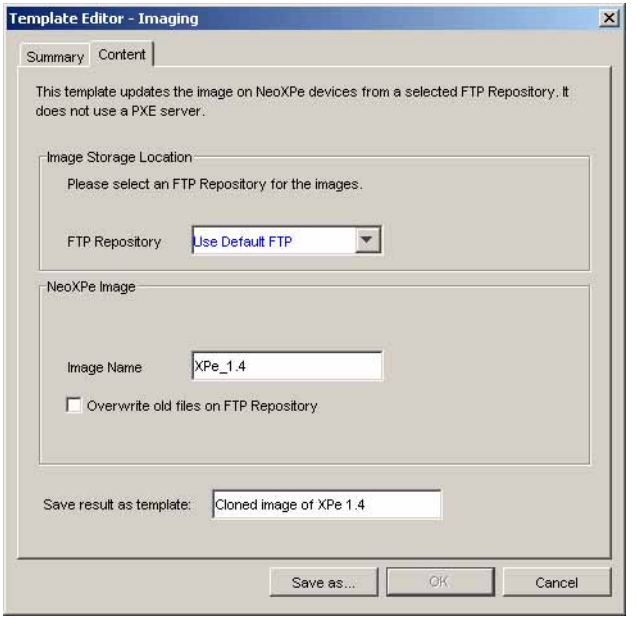
-all Produces the same result as if you specified"**-m -sid**".

Cloning an XPe Image

The **_Clone XPe Image** template enables you to clone the image of an XPe device and either store the image for backup or apply it to other XPe devices of the same model type and identical flash storage size. This template does not use a PXE Server.

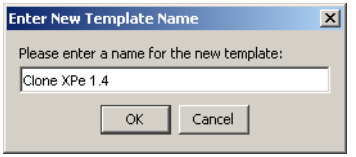
To clone an XPe image:

1. Select the **Imaging** tab in the **Task Templates** pane then double-click on the **_Clone XPe Image** template.
2. In the **Template Editor - Imaging** dialog, select the **FTP Repository** where the cloned image will be stored.

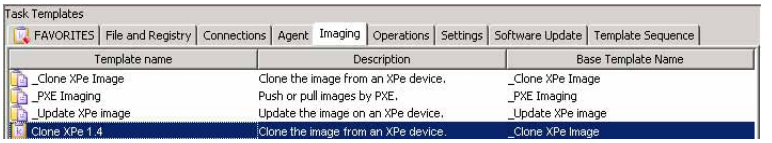


3. In the **Image Name** field, enter a name for the cloned image that will be stored in the FTP Repository.
4. If you need to overwrite any files that already exist in the FTP Repository, select **Overwrite old files on FTP Repository**.
5. In the **Save result as template** field, enter a name for the resulting template which will be automatically created to enable you to apply the cloned XPe image to other XPe clients.

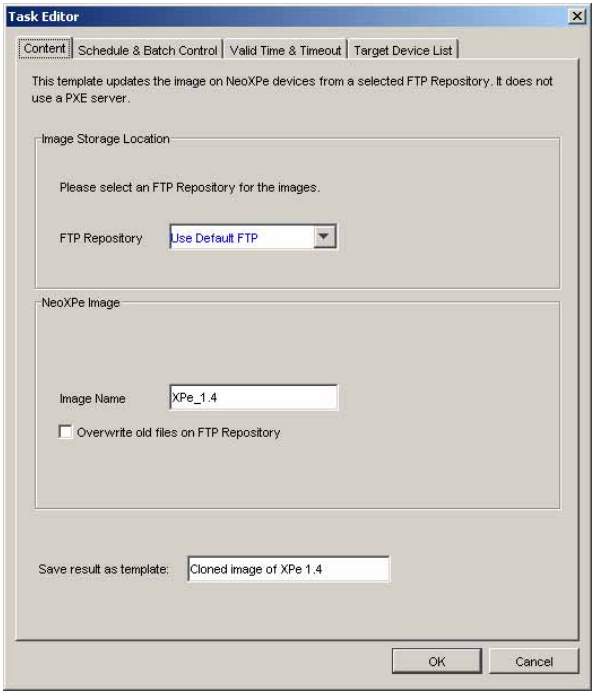
6 Click the **Save as...** button, enter a name for this template, then click **OK**.



A new template will appear in the **Task Templates** pane.



7 Drag and drop this template on the XPe device whose image you want to clone in the **Device Tree**. The **Task Editor** dialog will be displayed.



8 Click **OK** to apply the task to the device immediately.

When the HP Management Agent on the client receives the task, the client will display a warning message indicating that the device will reboot in 15 seconds.

The client will shutdown then start-up in DOS mode and run the clone utility which copies the contents of the flash storage to an **.img** file on the FTP Repository. The last line on the client display will indicate progress in percentage completed. Note that this may take several minutes.

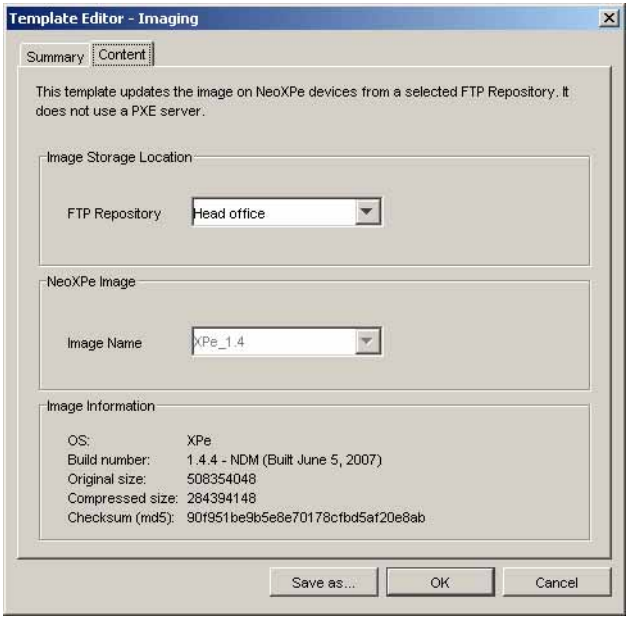
The client will reboot after cloning has completed and enter Maintenance Mode. DO NOT turn off the device during this procedure! The client will then reboot again.

The **Tasks** pane in the Management Console will continue to indicate that the task is processing. The cloned image is being compressed.

When the task has finished, a new template will appear in the **Task Templates** pane with the name you specified in step 5 (the result template).

You can now use this template to apply the cloned XPe image to other XPe devices of the same model type and identical flash storage size just by dragging and dropping it on the device(s) in the **Device Tree**.

You can view information about the XPe image associated with the template by double-clicking on the name of the template to display the **Template Editor** dialog. This will display the name of the image and the FTP Repository where it is stored, its OS build number, original size, compressed size, and checksum.



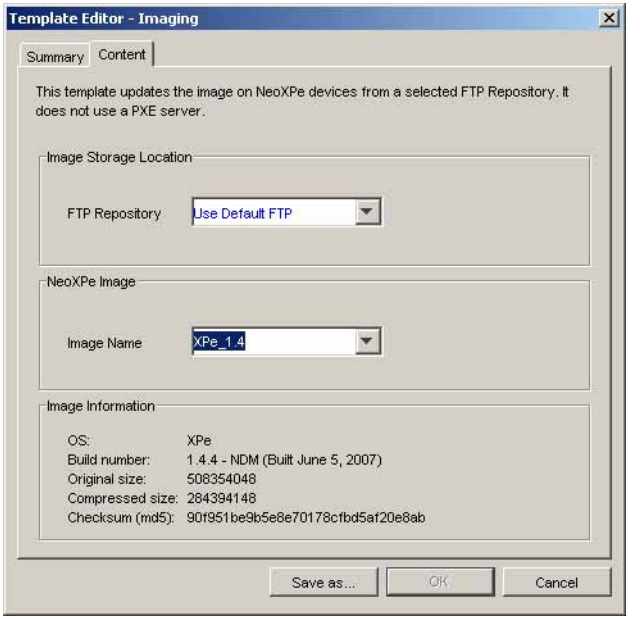
The cloned XPe image file will also be listed in **Repository Management** ready for use in other templates. Select **NeoXPe Images** as the element type, then select the **FTP Repository** where it is stored.

Updating Images

The **_Update Image** template on each OS tab enables you to apply images to devices without using a PXE Server.

To update the image on one or more devices:

1. In the Management Console, display the OS tab containing the name of the client(s) to be updated with the new image in the **Device Tree**.
2. Select the **Imaging** tab in the **Task Templates** pane, then double click on the **_Update Image** template to display the **Template Editor**.



3. Select the **FTP Repository** where the image is stored.
4. Enter the name of the image file in the **Image Name** field.

   Note: *The* ***Image Name*** *field will only list the names of images if the image files have been transferred from the FTP Repository to the Server Repository using the* ***Repository Management*** *tool.*

However, you can manually enter the name of the image file in this field if it is not in the Server Repository, as long as it is present in the ***FTP Repository*** *you have selected in the template.*

The **Image Information** box below will provide details of the OS build version and image size for the image whose name is currently displayed in the **Image Name** field.

5 Click the **Save as...** button to save the template with a new name.

6 Drag and drop the template on to the device(s) whose image is to be updated. The **Task Editor** dialog will be displayed.

7 Click **OK** to apply the image update task to the device(s).

Changing Registry Settings

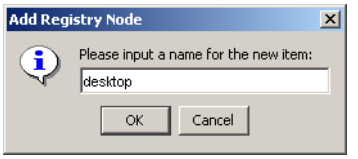
HP Device Manager can add, delete and change registry keys and their values on thin client devices using **File and Registry** templates. Additionally, the existing settings can be cloned from a device using the **Get Registry** template and then modified.

Getting Registry Settings

HP Device Manager can clone the system registry of a thin client device. The procedure is as follows:

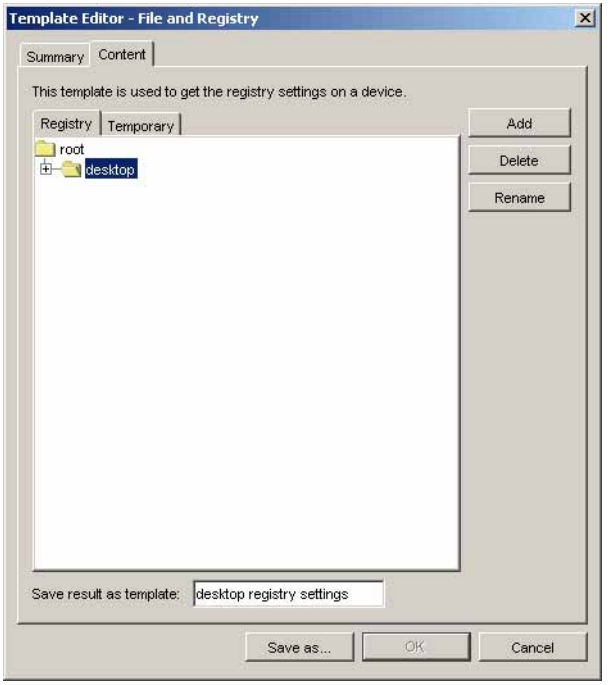
1. In the Console's **Management View**, select the OS tab corresponding to the operating system of the device from which you want to get registry settings (e.g. **NeoLinux 4**).
2. Select the **File and Registry** tab in the **Task Templates** pane, then double-click on the **_Get Registry** template to display the **Template Editor**.

3 Click the **Add** button and enter the name of the registry node from which you want to retrieve settings (e.g. **desktop** for desktop settings), then click **OK**.

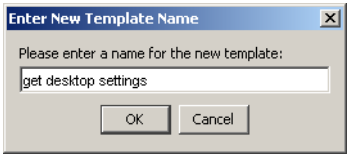


The name of the new node will appear on the **Registry** tab of the **Template Editor**.

4 In the **Save result as template** field, enter a name for the template which will be created to store the result.

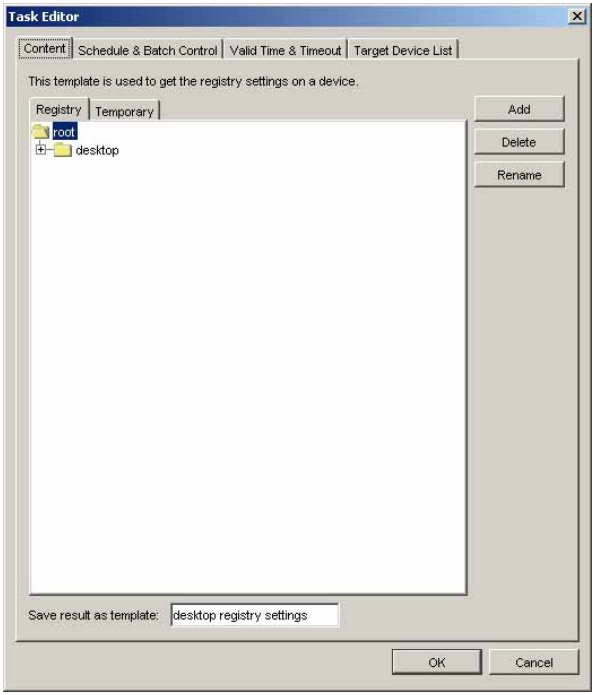


5 Click **Save as...** and enter a name which indicates the purpose of this template (get desktop settings).



6 Click **OK** and the new template will appear in the **Task Templates** pane.

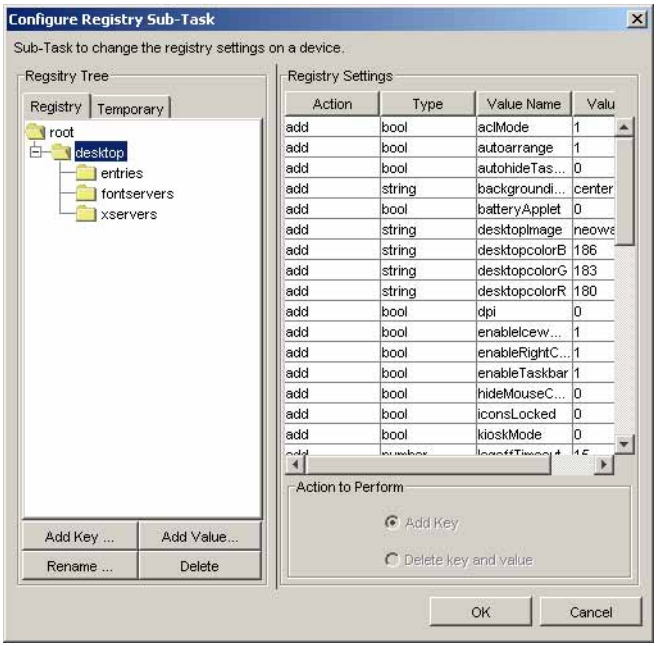
7 Drag and drop this template on the device in the **Device Tree** from which you want to get registry settings. The **Task Editor** dialog will be displayed.



8 Click **OK** to apply the task to the device immediately.

The registry settings will be retrieved from the device and stored in a new template in the **Task Templates** pane. Its name will be the one which you specified in step 4.

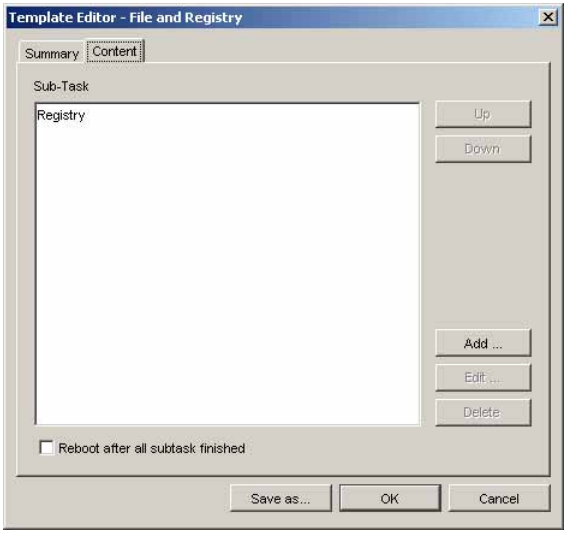
9 To view the retrieved registry settings, double-click on the result template to display the **Template Editor**, double-click on the **Registry** entry in the **Sub-Task** box to display the **Configure Registry Sub-Task** dialog, then click on the registry node in the **Registry Tree** panel to display the settings.



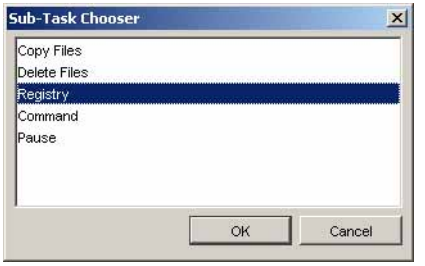
Editing Registry Settings

1 Select the **File and Registry** tab in the **Template Pane**.

2 If you are editing a previously generated **_Get Registry** task result template, double-click the name of that template, then double-click **Registry** in the **Sub-Task** box.

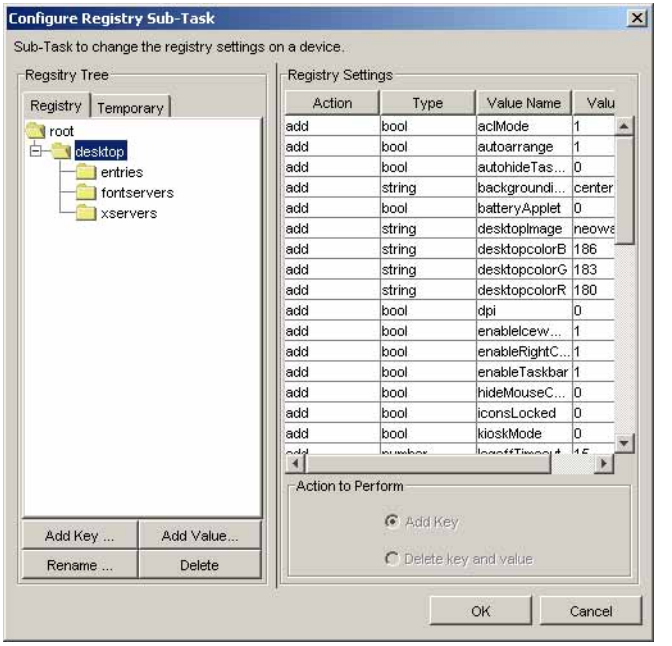


If you need to create a new template, double-click the **_File and Registry** template to display the **Template Editor**, then click the **Add** button.



Select **Registry** in the **Sub-Task Chooser**, then click **OK**.

3 The **Configure Registry Sub-Task** dialog will be displayed enabling you to edit registry settings.



You can edit the contents of the **Registry Tree** using the four buttons at the bottom of the box.

Add Key enables you to add a new key under the currently selected item.

Add Value enables you to add a value to the selected key.

Rename enables you to rename the selected item.

Delete enables you to remove the selected item.

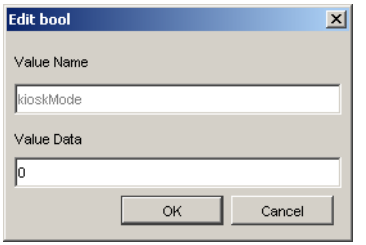
The **Registry Settings** box will display the current settings of the key selected in the **Registry Tree**. It is divided into the following columns:

Action Indicates the action to be applied to the registry table: **add** or **del**ete a key. Click in the field to change the current setting.

Type Indicates the type of registry key value.

Value Name Displays the name of the registry key. Double-click in this field to edit it.

Value Data Displays the data for the registry key value. Double-click in this field to edit it.



The **Action to Perform** options determine whether the key is added or deleted. If **Add Key** is selected, the selected key will be added to the registry even if the key is empty. If **Delete Key and Value** is selected, the selected key and all values under it will be deleted. Note that there must not be any values under the specified key.

4 When you have finished modifying the template, click the **Save as...** button and enter a name for the new template.

5 Click **OK**. The new template will be created and its name will appear in the **Template Pane**.

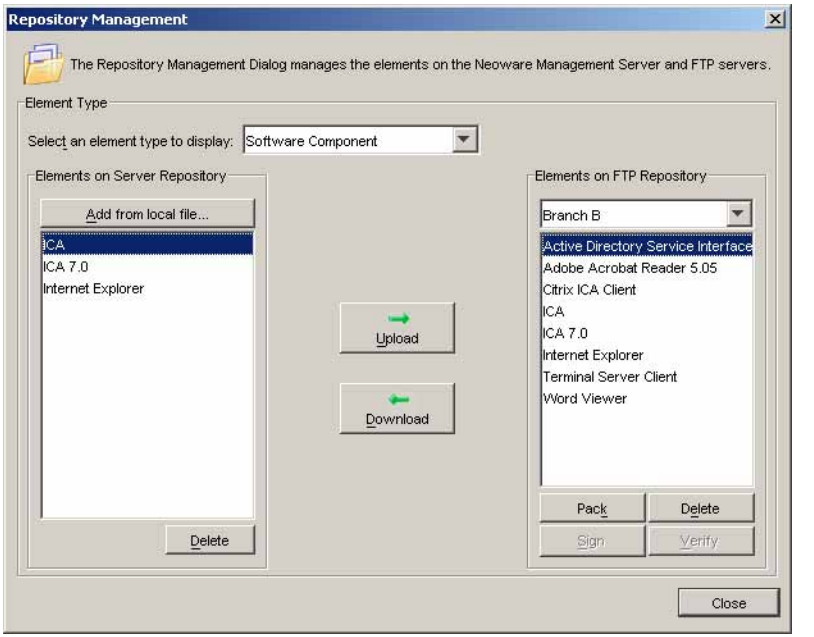
6 You can now apply the new registry settings to one or more devices by dragging the template from the **Template Pane** and dropping it on to the device(s) in the **Device Tree**.

Installing an XPe Software Component

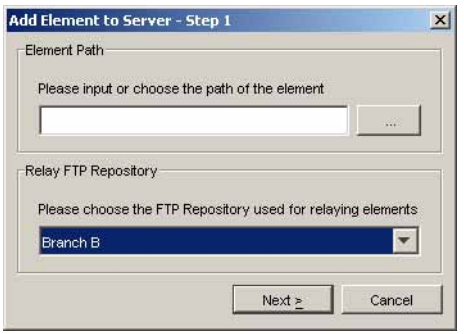
Software components for XPe devices must be transferred to an FTP Repository using **Repository Management** before they can be distributed to client devices.

Transferring an XPe Software Component to the FTP Repository

1. Download and unzip the XPe software components to a local drive.
2. Select **Tools** > **Repository Management** from the Console's menu bar.
3. In the **Select an element type to display** field, select the **Software Component** option from the drop-down list box.



4. Click the **Add from local file...** button.

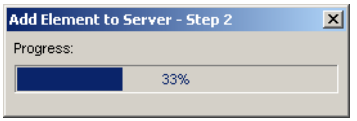


5 Enter the path of the software component you wish to add.

6 Select a **Relay FTP Repository** in order to transfer the files to the Server Repository.

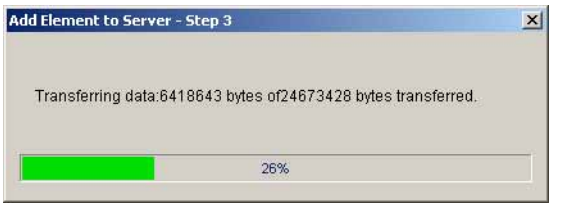
The relay FTP Repository will receive the files from the Console, and temporarily hold them until they are automatically transferred to the Server Repository.

7 Click **Next** to start copying the files to the relay FTP Repository.



A message box will be displayed once the files have been successfully uploaded to the relay FTP Repository.

8 Click **OK** to automatically transfer the files from the relay FTP Repository to the Server Repository.



The **Repository Management** dialog should now display the name of the software component in the **Elements on Server Repository** field.

9 Select the **FTP Repository** where you want the new software component to be stored.

10 Select the software component then click **Upload** to upload it to the FTP Repository.

Note: *The username selected for the FTP server profile must have write permission for the target folder.*

11 Your software component is now ready to be installed using a **Software Component** template.

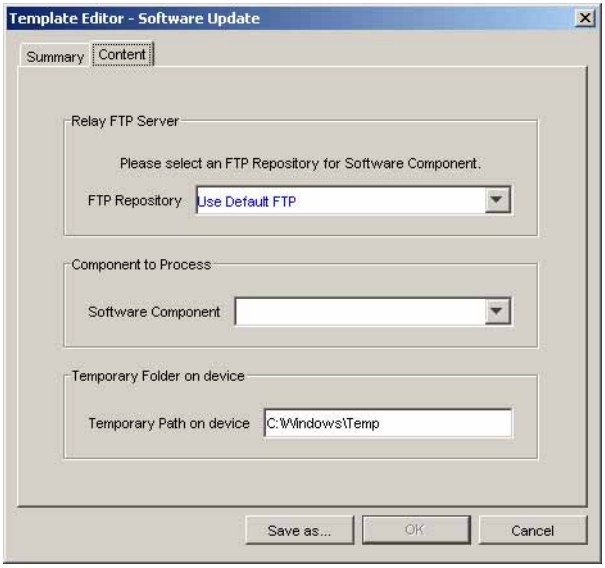
Installing an XPe Software Component on Client Devices

Software components can be installed on client devices once they have been uploaded to the FTP Repository.

Note: *The procedure for installing software components discussed in this section is only applicable to Windows XPe clients.*

To install a software component:

1. Select the **Software Update** tab from the **Template Pane**.
2. Double click **_Software Component** template to display the **Template Editor** dialog.



3. Select the **FTP Repository** containing the software component to install.
4. Select or enter the name of the **Software Component** to install from the FTP Repository.
5. Click **Save as...** to save the template with a new name.
6. Drag and drop the template on the device(s) to which you want to install the software component.

Performing a Persistent Write Operation on NeoLinux 4.x Devices

NeoLinux 4.x devices use three related file systems which are mounted as follows:

/
/writable
/.fs/org

Normally a user will perform all work under **/** or **/writable**, which are mounted as readable and writable when the system starts up. The file system of **/writable** is used for storing persistent data, where files can be created, modified or removed, and the changes will not be lost when the device reboots or shuts down.

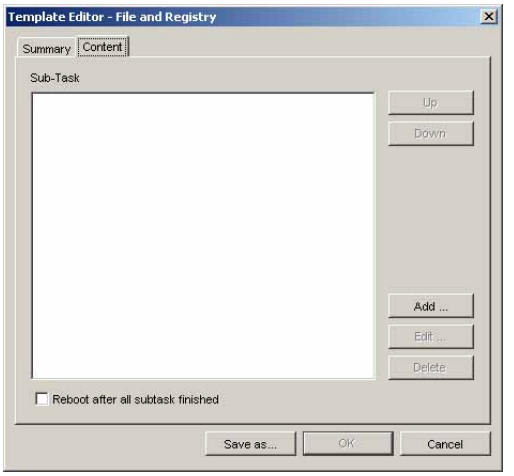
However, the file system of **/** works in a different way. Any modifications made in this file system are temporary and will not be transferred to the actual disk, even though it is writable. When the device reboots or shuts down the changes will be lost and the file system of **/** will revert to its original state.

Sometimes you may need to perform a persistent write to **/** in order to run commands, utilities, scripts, etc. which require changes to be saved. This can be achieved using the third file system **/.fs/org**, which is mounted from the same source as **/**. It is possible to create, modify or remove files persistently in **/.fs/org**, but as it is mounted as read only you need to *remount it to be writable* before making any changes to the file system, then reboot the device for the changes to take effect.

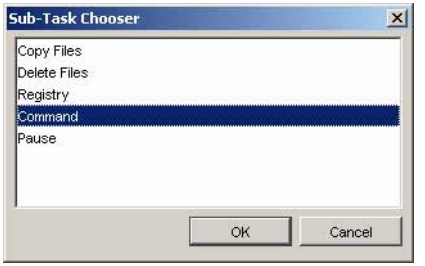
The **Command** sub-task in the **File and Registry** template for NeoLinux 4 devices includes options enabling you to change the root directory to **./fs/org** and mount it as writable.

The following procedure describes how to change the directory of a NeoLinux 4.x device to **/.fs/org** and mount it as writable in order to perform commands:

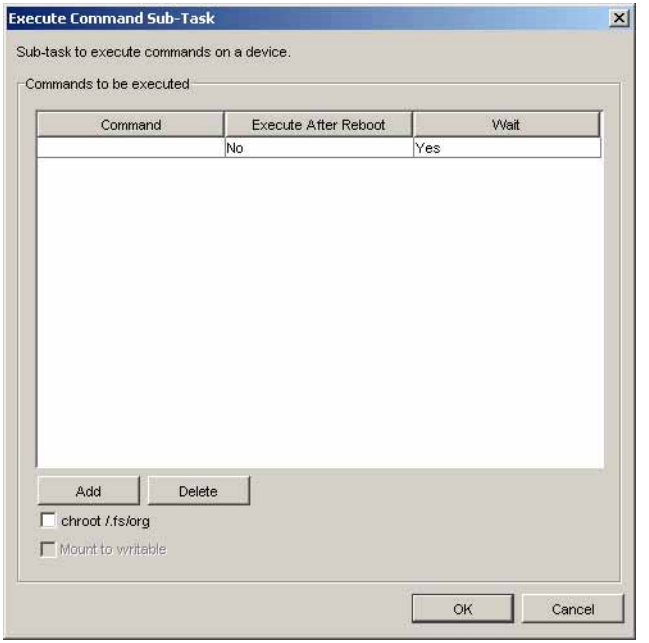
1. With the **NeoLinux 4** tab displayed, select the **File and Registry** tab in the **Template Pane**.
2. Double-click the **_File and Registry** template to display the **Template Editor**.



3. Click the **Add** button and select **Command**.



4. Click **OK** to display the **Execute Command Sub-Task** dialog.



5 Check the **chroot /.fs/org** check box at the bottom of the dialog in order to change the root directory to **/.fs/org**. The **Mount to writable** option will then be available. Check this box as well.

Any commands you specify in this dialog will now be directed to **/.fs/org** which will be mounted as writable.

6 Specify the command(s) to execute, then click **OK** when you have finished.

7 Select the **Reboot after all subtask finished** option.

8 Click **Save As...** to save the template under a new name.

9 Drag and drop the template on the devices where you want the commands to run.

Adding Devices Using MAC Addresses

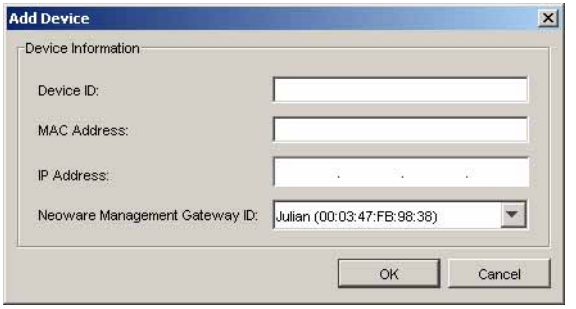
Devices that are not working and need a new image, or that otherwise have not been found by HP Device Manager, can be added to the console using their MAC address. However, devices added to the console in this manner cannot be fully managed by HP Device Manager until the agent on the device reports to the HP Management Server properly.

The primary use of this feature is if the device is not working and needs a new image. An image can be pushed to the device using a template. Another way to use this feature is to **Wake On LAN** a device that has not previously been reported to the HP Management Server and therefore is not displayed in the device tree.

To add a new device using its MAC address:

1 Select **Device** > **Add** from the Management Console menu bar.

The **Add Device** dialog will be displayed.



2 Enter the **MAC Address** of the device to be added.

3 Select the Management Gateway that will connect with the device from the **Neoware Management Gateway ID** drop-down list.

4 Click **OK** to add the device.

A new device will appear in the device tree with the name **deviceX**, where **X** is a number. This device will appear as powered-off, but you can still interact with the device. For example, you can use **Send Task** to send a new **Imaging** template to the device, or **Wake on LAN** to attempt to start up the device.

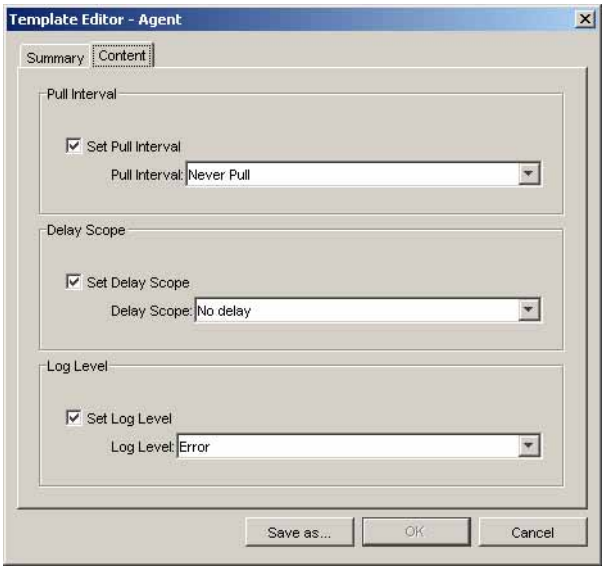
Configuring Agents

The **Agent** templates enable you to set agent parameters and update the agent version.

Setting Agent Parameters

The **_Configure Agent** template enables you to specify how often it pulls tasks from the Management Gateway, set the delay scope, and specify the type of log information that will be generated.

1 Double-click the **_Configure Agent** template on the **Agent** tab of the **Template Pane**.



2 Select the **Pull Interval** from the list.

3 Select the **Delay Scope** from the list.

4 Select the **Log Level** from the list.

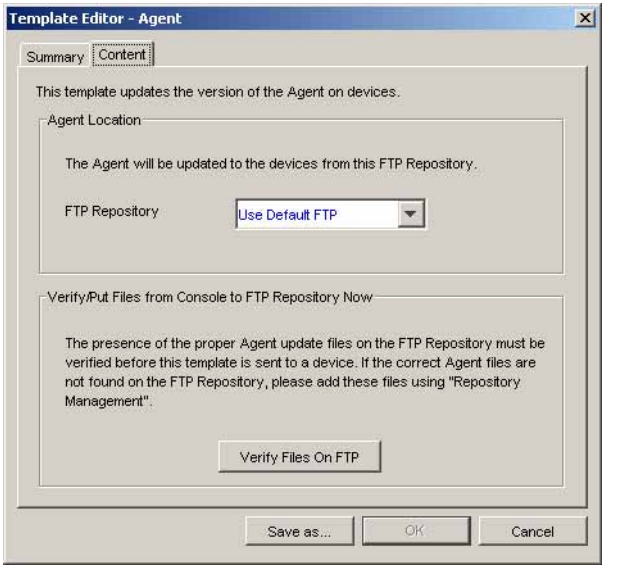
5 Click **Save as...** to save the template with a new name.

6 Drag and drop the template on the device(s) you want to configure.

Updating the Agent Version

The **_Update Agent** template enables you to apply the latest version of the Agent file to client devices. Agent update files must be added to an FTP Repository using **Repository Management** before they can be applied to client devices.

1. Double-click the **_Update Agent** template on the **Agent** tab of the **Template Pane**.



2. Specify the location of the Agent update files by selecting from the **FTP Repository** list.
3. Click the **Verify Files On FTP** button to check whether the correct Agent files are located on the specified FTP Repository.

4. Click **Save as...** to save the template with a new name.
5. Drag and drop the template on the device(s) you want to update.

CHAPTER 7

Configuration Management

This chapter explains the administration of the console, working with users, advanced server configuration, and licensing.

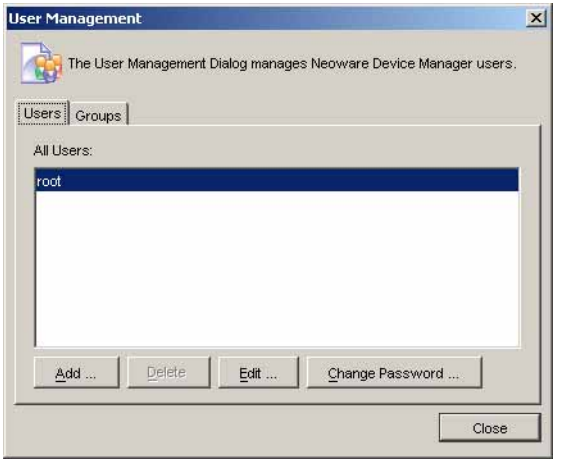
User Management

Each user account can have customized permissions, according to their level of need. These are assigned through the user groups system.

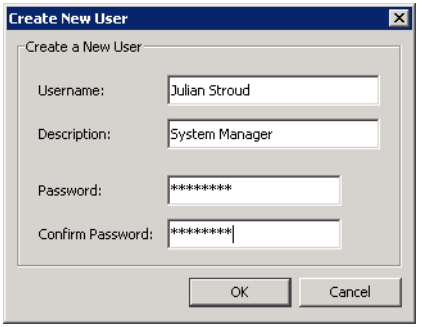
Working With Users

To add users:

1 Display the **Tools** menu from the Console's menu bar and select **User Management**.



2 Click **Add** to add a new user. The **Create New User** dialog will be displayed.



3 Enter a **Username** for the new user and specify a **Password**. Click **OK** to create the new user.

4 Refer to the instructions below in order to add the new user to a user group. Note that the user must be added to a group before it has any permissions to use HP Device Manager.

This user name can be used to log in to the console the next time the console starts.

To delete users:

1 Display the **Tools** menu from the menu bar and select **User Management**.

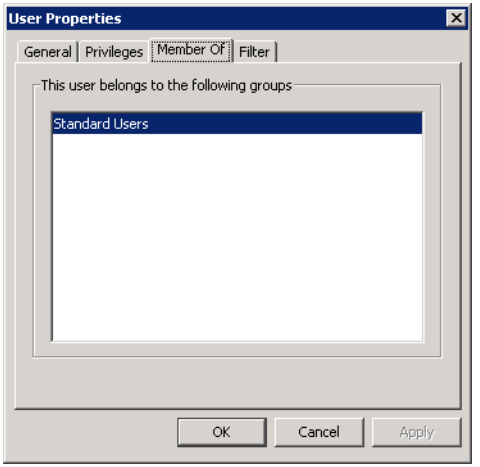
2 Select a user in the **User Management** dialog.

3 Click **Delete** then **Yes** to confirm that you want to delete the selected user from the list.

To assign users to groups:

1 In the **User Management** dialog, double-click a user name in the **Users** list to edit the user.

2 Select the **Member Of** tab.

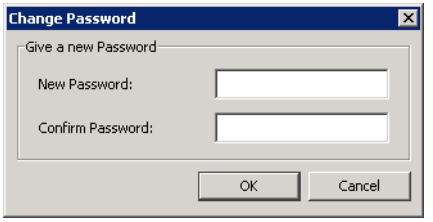


3 Click **Add** to add the user to a new group, or **Delete** to remove the user from the selected group.

To change a user's password:

1 In the **User Management** dialog, right-click on the name of the user whose password needs to be changed.

2 Select **Change Password** from the pop-up menu.



3 Enter the **New Password** for the user, then re-enter it in the **Confirm Password** field.

4 Click **OK** to finish.

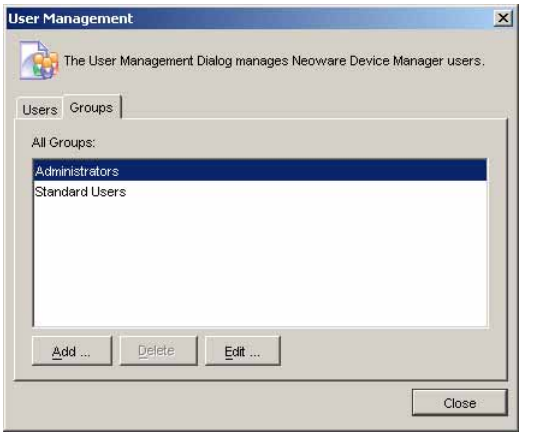
Note: *When you log in as root for the first time, it is strongly recommended that you change the password from the default.*

Working With Groups

Groups can be used to control user permissions in HP Device Manager.

To add a group:

1 Display the **Tools** menu from the Console's menu bar and select **User Management**. Select the **Groups** tab.



2 Click **Add** to add a new group. This group can now be assigned a set of permissions, and then users can be assigned to this group.

To assign permissions to groups:

1 In the **All Groups** list, right-click the group you wish to modify.

2 Select **Properties** in the pop-up menu.

3 Select the **Privileges** tab.

4 Select the permissions you wish to assign to the group.

5 Click **OK** to finish.

To assign users to groups:

1 Right-click the group you wish to modify in the **Groups** tab of the **User Management** dialog.

2 Select **Properties** in the pop-up menu.

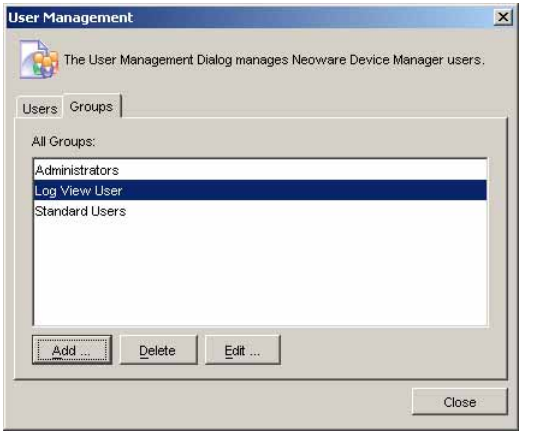
3 Select the **Users** tab.

4 Use the **Add** and **Delete** buttons to modify the members of this group.

5 Click **OK** to finish.

To delete a group:

1 Select the name of the group to be deleted in the **All Groups** list on the **Groups** tab.



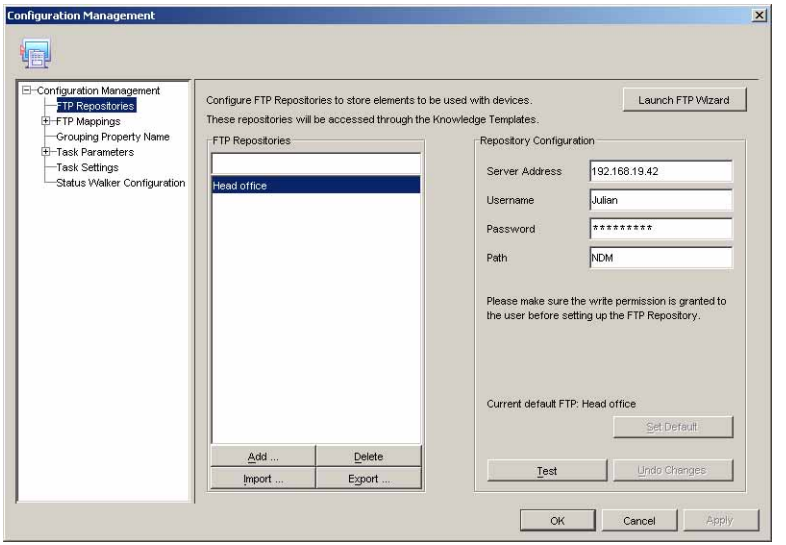
2 Click the **Delete** button then **Yes** to confirm that you want to delete the selected group from the list.

FTP Repositories

Configuring an FTP Repository

1 Select **Tools** > **Configuration** from the Console's menu bar.

2 In the **Configuration Management** dialog, select the **FTP Repositories** item in the left-hand tree pane.



3 Different server profiles can be used to access different FTP servers or different parts or accounts of the same FTP server. Click **Add** to configure a new server.

4 Enter a repository name to be used by HP Device Manager to refer to the new repository, then click **OK**.

5 Fill in the **Server Address**, **Username**, **Password** and **Path** settings. For example:

Server Address: **192.168.88.7** (FTP server IP address)

Username: **john**

Password: **dev1234** (input will appear hidden)

Path: **./ndm**

Note: *You need to have write permissions for the given path.*

The files will be stored at **/home/john/ndm/** where **/home/john** is the default login directory of user **john**.

6 You can click **Test** if you want to try the connection to the server. If there is a problem, click **Undo Changes** to recover the last saved settings.

7 If you want this Repository to be your default FTP server, click **Set Default**.

8 Click **Apply** to save the settings.

Deleting a Repository

1 Select **Tools** > **Configuration** from the Console's menu bar.

2 In the **Configuration Management** dialog, select the **FTP Repositories** item in the left-hand tree pane.

3 Select the repository you want to delete in the **FTP Repositories** list, click **Delete** then **Yes** to confirm.

Exporting a Repository

1 Select **Tools** > **Configuration** from the Console's menu bar.

2 In the **Configuration Management** dialog, select the **FTP Repositories** item in the left-hand tree pane.

3 Select the repository you want to export in the **FTP Repositories** list, then click **Export**.

4 Browse to the location where you want to save it.

5 Click **Export FTP Repositories**.

Importing a Repository

1. Select **Tools** > **Configuration** from the Console's menu bar.
2. In the **Configuration Management** dialog, select the **FTP Repositories** item in the left-hand tree pane.
3. Click **Import...**
4. Browse to the location where the FTP Repository you want to import is located.
5. Click **Import FTP Repositories**.

   Note: *The first FTP Repository imported will become the default FTP Repository unless another has already been defined as such.*

FTP Repository Selection for Templates

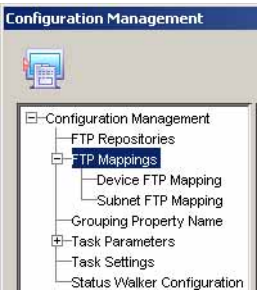
Where applicable, each template allows you to define the method used to find the required FTP Repository. The **Content** tab of the **Template Editor** dialog will include an **FTP Repository** drop-down list box providing the following three possibilities:

- **Use Default**
  You preset a default server. To do this, select **FTP Repositories** in the left-hand tree pane of the **Configuration Management** dialog, select the name of the FTP Repository to use by default in the **FTP Repositories** list, then click the **Set Default** button.
- **Auto Mapping**
  The HP Management Server will find the corresponding FTP server for each device according to the mapping defined in the **FTP Mappings** definitions. (See "FTP Mappings" on page 186.)
- **Use Specific FTP**
  You choose a specific FTP server for each template.

FTP Mappings

The **FTP Mappings** tool automatically maps each and every client device to the nearest and most convenient FTP server. This allows the administrator to send tasks to a large number of agents, and have the device connect automatically to an FTP server to find the information or applications it may need to perform the task.

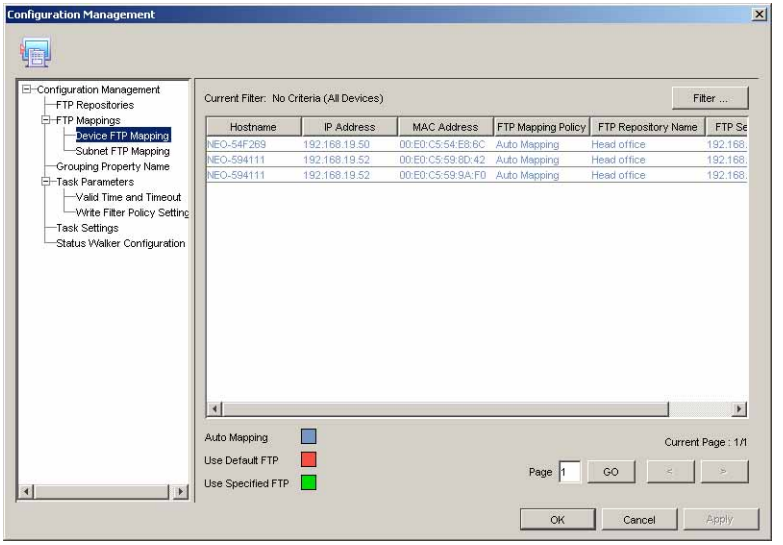
To configure the **FTP Mappings** tool, select **Tools** > **Configuration** from the Console's menu bar, expand the **FTP Mappings** item in the left-hand tree pane of the **Configuration Management** dialog, then select either **Device FTP Mapping** or **Subnet FTP Mapping**.



Listing Devices & their FTP Servers

You can list devices and their FTP servers by selecting the **Device FTP Mapping** item in the left-hand tree pane of the **Configuration Management** dialog. A color code indicates how each device's FTP server was assigned:

- **Blue**
  Automatic mapping (factory default settings). The HP Management Server assigns an FTP server to each device depending on which subnet it is connected to.
- **Red**
  Uses a default FTP server, usually a server with highest broadband. The default FTP server can be changed at any time, so that the devices assigned "default FTP" would connect to the new FTP server.



- **Green**
  Uses a static FTP server specified by the administrator.

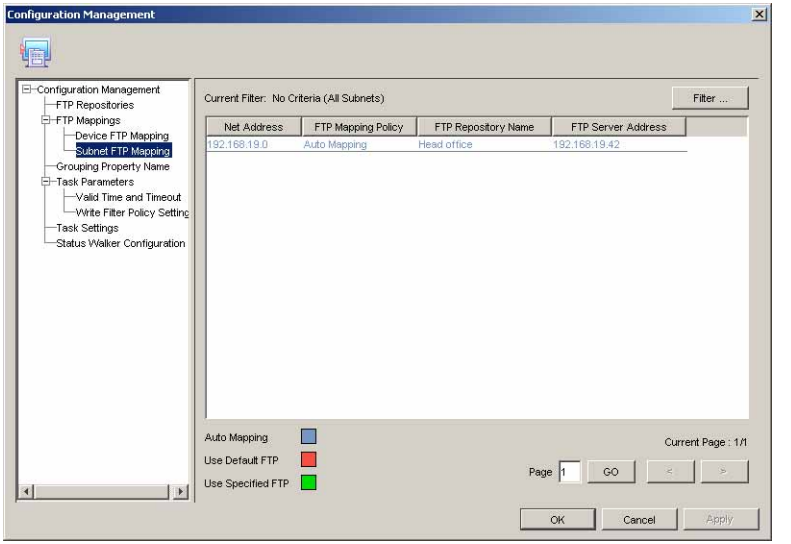
Note: *An administrator can change the FTP settings of a device or a subnet at any time. The administrator can also change the default FTP server and that will affect all the devices that use this option.*

Note: *HP Device Manager will automatically map any new device added to the network.*

Listing Subnets & their FTPs Servers

You can list subnets and their FTP servers by selecting the **Subnet FTP Mapping** item in the left-hand tree pane of the **Configuration Management** dialog. A color code indicates how their FTP server was assigned:

- **Blue**
  Automatic mapping (factory default settings). The HP Management Server assigns an FTP server to each subnet according to its proximity. For example, a subnet that has an FTP server will be using that server instead of another one in the entire network.

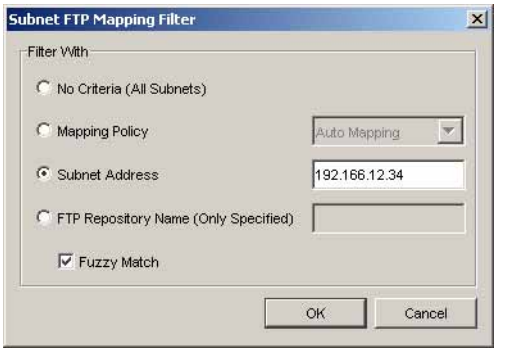


- **Red**
  Uses a default FTP server, usually a server with highest broadband. The default FTP server can be changed at any time, so that the subnets assigned "default FTP" would connect to the new FTP server.
- **Green**
  Uses an FTP server specified by the administrator. For subnets where this is the case, the administrator can change their FTP settings to automatic mapping or default.

Filtering Devices or Subnets

For companies with a large number of devices and/or subnets, the **Device FTP Mapping** and **Subnet FTP Mapping** listings will be too long for an administrator to easily find a particular device or to see certain aspects. You can filter these mappings so that the administrator can manage both the general and the specific aspects of each device.

On both the **Device FTP Mapping** and the **Subnet FTP Mapping** tabs, click **Filter** to display a dialog which enables you to filter the listing in various ways. Choose one of the filtering options then click **OK.**

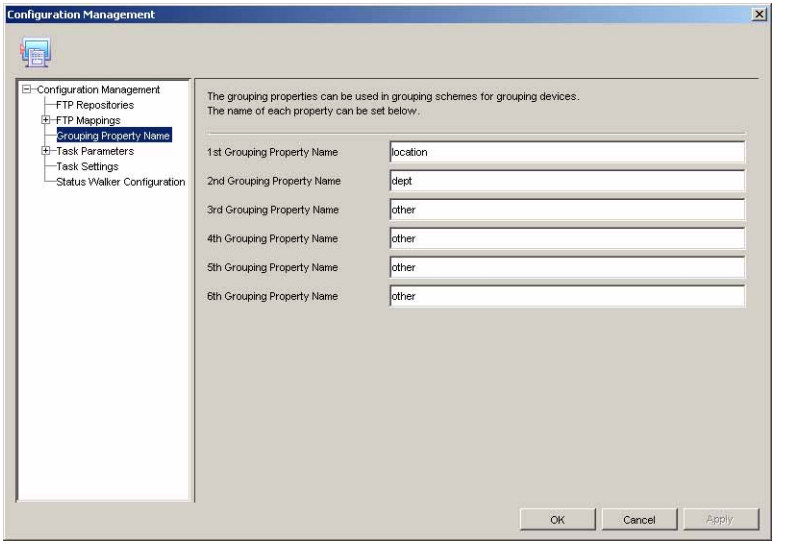


Grouping Property Name

Grouping properties can be used in grouping schemes for grouping devices.

1 Select **Tools** > **Configuration** from the Console's menu bar.

2 In the **Configuration Management** dialog, select the **Grouping Property Name** item in the left-hand tree pane.



3 Enter the name of the grouping property in the relevant **Grouping Property Name** field.

4 Click **OK** when you have finished.

Task Parameters

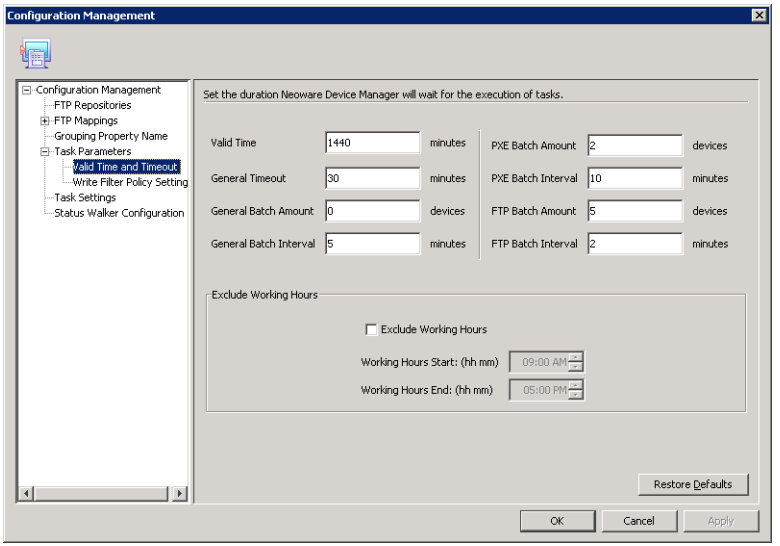
You can set task parameters by selecting **Tools** > **Configuration** from the Console's menu bar to display the **Configuration Management** dialog, then expanding the **Task Parameters** item in the left-hand tree pane.

The **Task Parameters** item consists of two sub-items: **Valid Time and Timeout** and **Write Filter Policy Setting**. These are described in the following sections.

Valid Time and Timeout

The **Valid Time and Timeout** options enable you to set the duration HP Device Manager will wait for the execution of tasks. You can also specify the start and end time of working hours during which HP Device Manager will not execute tasks. Clicking in an option field will cause the **Description** box to display a short description of that option.

1 Select **Valid Time and Timeout** in the left-hand tree pane of the **Configuration Management** dialog.



2 Set the time, in minutes, for each category: **Valid Time**, **General Timeout**, **General Batch Interval**, **PXE Batch Interval** and **FTP Batch Interval**.

Set the amount, in devices, for each category: **General Batch Amount**, **PXE**, **Batch Amount** and **FTP Batch Amount**.

Check the **Exclude Working Hours** option box to input the start and end time of working hours.

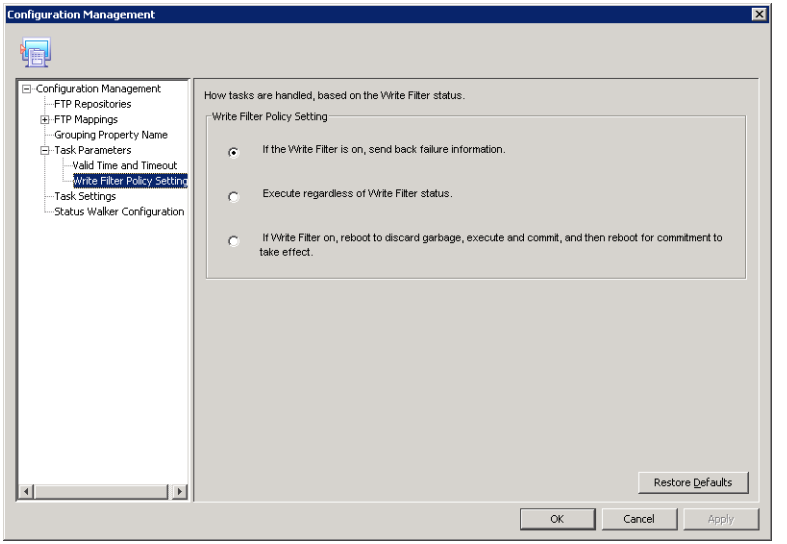
Clicking **Restore defaults** will reset the timeout settings to their defaults and set the working hours to **9.00** start and **17.00** end.

3 Click **Apply** to save the new settings, then **OK** to exit.

Write Filter Policy Setting

The **Write Filter Policy Setting** options enable you to specify how the Enhanced Write Filter on XPe devices affects tasks.

1 Select **Write Filter Policy Setting** in the left-hand tree pane of the **Configuration Management** dialog.

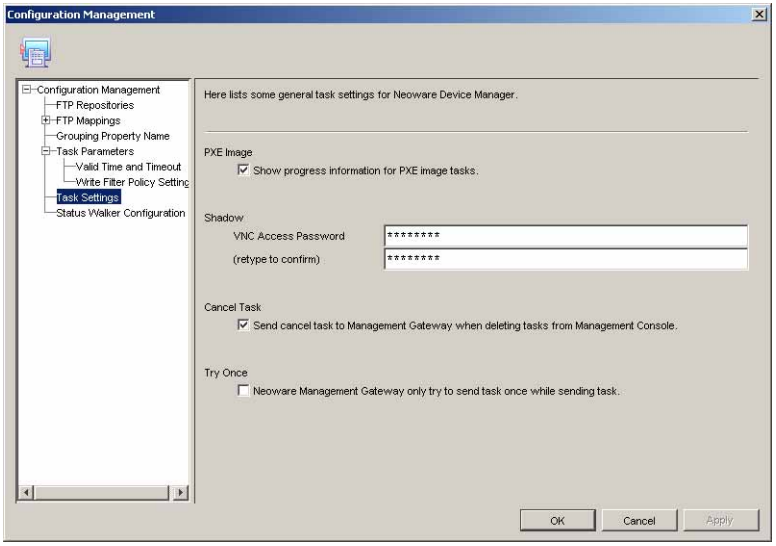


2 Choose one of the three policy options.

3 Click **Apply** to save the new settings, then **OK** to exit.

Task Settings

You can specify general task settings by selecting **Tools** > **Configuration** from the Console's menu bar to display the **Configuration Management** dialog, then selecting the **Task Settings** item in the left-hand tree pane.



The **PXE Image** option enables you to show progress information for PXE image tasks.

The **VNC Access Password** fields enable you to specify a password that must be supplied to enable shadowing. Note that these fields cannot be blank.

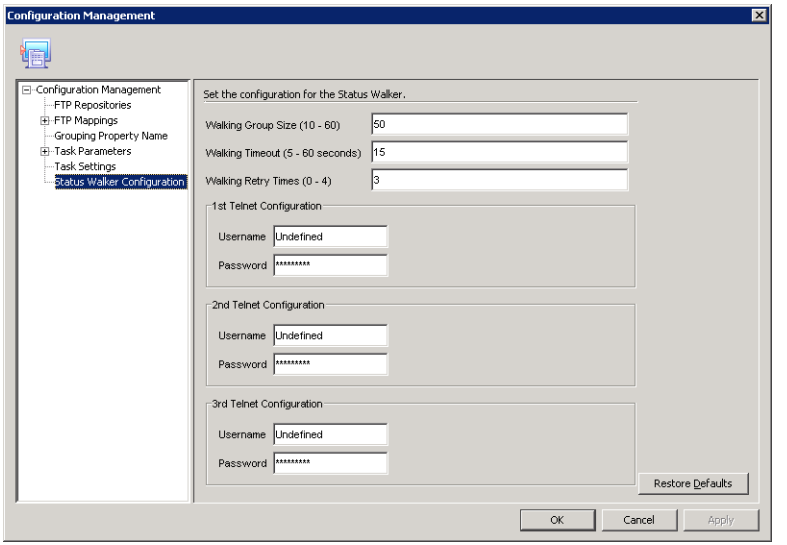
If the **Cancel Task** option is checked, a 'cancel task' command will be sent to the Management Gateway when deleting tasks from the Console.

If the **Try Once** option is checked, the Management Gateway will only attempt to send a task once.

Status Walker Configuration

The Status Walker configuration options enable you to specify the walking group size, timeout and retry times, and specify the user name and password for three telnet configurations.

Select **Tools** > **Configuration** from the Console's menu bar to display the **Configuration Management** dialog, then select the **Status Walker Configuration** item in the left-hand tree pane.



Clicking in an option field will cause the **Description** box to display a short description of that option.

Licensing

A license file contains information for the maximum number of clients your HP Management Server can support concurrently and the expiration date for the license. If more clients need to be supported and the number is over the maximum in the license file, HP can be contacted for another license file. Once this file has been obtained it must be imported into HP Device Manager.

The HP Management Server icon in the Windows Systray will turn red if the license expires. Consequently the HP Management Console will not connect to the Management Server until a new license file is imported.

You can view information about your current license by selecting **Help** > **About** from the Console's menu bar.

Importing a New License

You can only import a new license file through the Management Console if the old license has already expired. Any invalid operation to the license file when the Management Server is running will cause the server to crash.

1. Select **File** > **Import License...** from the Console's menu bar to display the **Open** dialog.
2. Browse for the new license file and select it. (The license file has the extension "**.lic**".)
3. Click **Choose**.

The Management Server will reboot automatically before the Console continues to work under the new license.

Authentication Management

Since the HP Management Server can discover and manage all HP Device Manager gateways and agents on the network, a security problem may occur due to the improper usage of the Management Server. To overcome this, HP Device Manager provides an authentication capability for the gateways and the agents to recognize a secure Management Server.

There are two tools for providing authentication: **Key Management** and **Gateway Access Control**. These are accessed by selecting **Tools** > **Authentication Management** in the Console's menu bar.

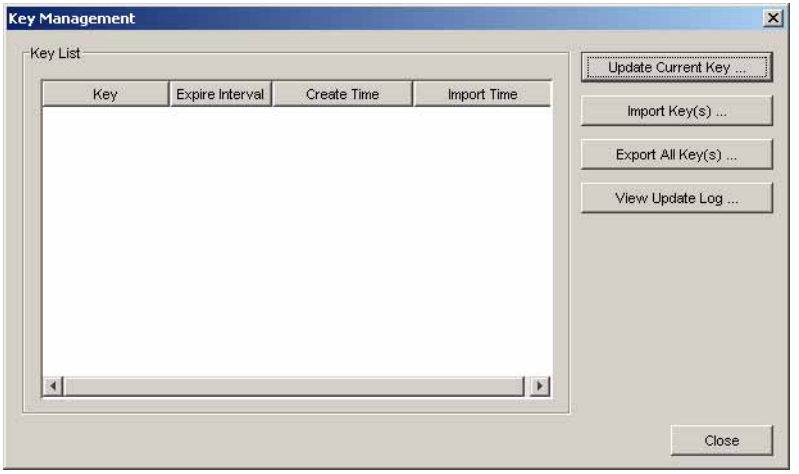
Key Management

An Authentication Key is a plain text password which is input on the Management Console. The key will be passed to the devices during the key update process. The devices will check the key passed by Management Server when executing tasks.

To update the current Authentication Key:

1 Select **Tools** > **Authentication Management** > **Key Management** in the Console's menu bar to display the **Authentication** dialog.

2 Enter your user **Password** then click **OK**. The **Key Management** window will be displayed.



3 Click the **Update Current Key...** button to display the **Update Key** dialog.

4 Enter the new **Password** (i.e. the Authentication Key) and specify the **Expire Interval** (number of days).

5 Click the **OK** button.

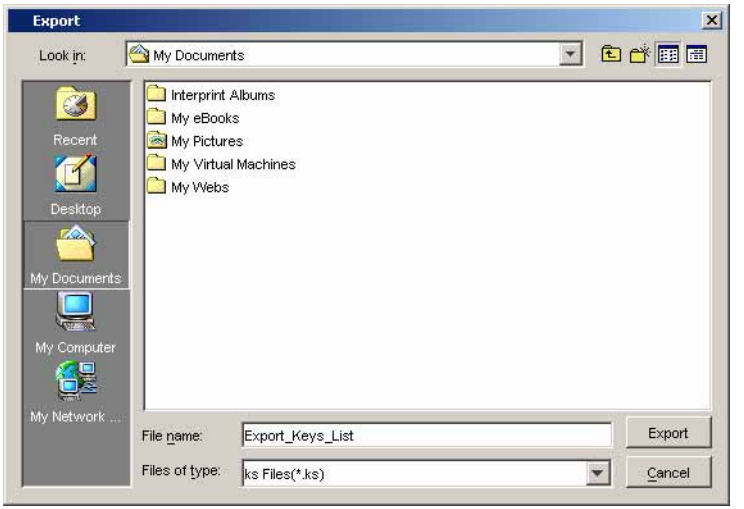
***Note:* Expire Interval** *is the time that the password (Key) keeps valid. If an agent cannot contact a gateway for key information before a specified time (Expiration Interval), the Key will expire, (i.e., no longer in use) and the agent will revert to its initial key.*

HP recommends that user passwords contain:

- at least eight characters
- letters of both upper and lower cases
- numbers and punctuations as well as letters

To export all Authentication Key(s):

1 Click the **Export All Key(s)** button in the **Key Management** window to display the **Export** dialog.



2 Browse for a folder to save the current authentication key(s) as a ***.ks** file, then click the **Export** button.

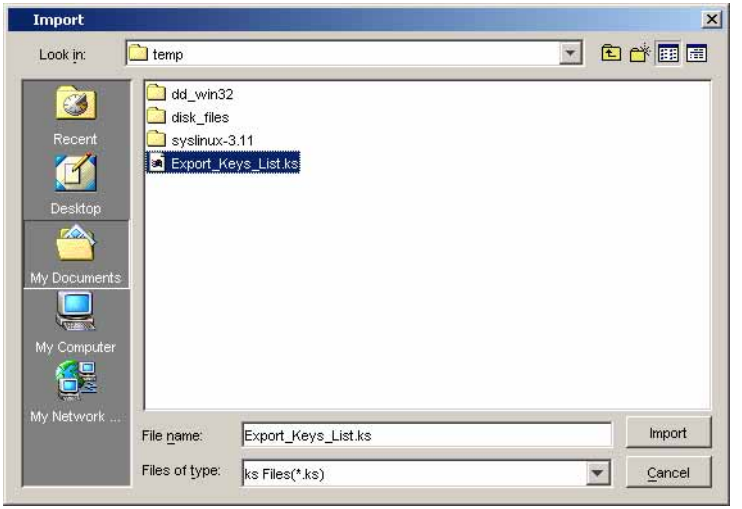
3 The system will prompt you to create and confirm the KeyStore password.

4 In the **Create KeyStore Password** dialog, enter a KeyStore **Password** and confirm the password in the **Re-enter Password** field.

5 Click the **OK** button.

To import Authentication Key(s):

1 Click the **Import Key(s)** button in the **Key Management** window to display the **Import** dialog.



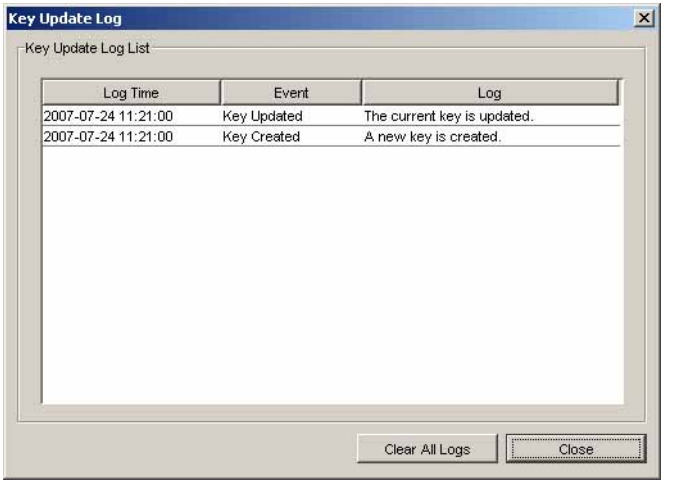
2 Browse for the exported ***.ks** file, then click the **Import** button.

3 The system will prompt you to enter the KeyStore password.

4 Enter the KeyStore **Password** then click the **OK** button.

Viewing the Key Update Log

To view the **Key Update Log**, click the **View Update Log...** button in the **Key Management** window.



In the **Key Update Log List** you can view all the log times and events. You can remove all the logs by clicking the **Clear All Logs** button.

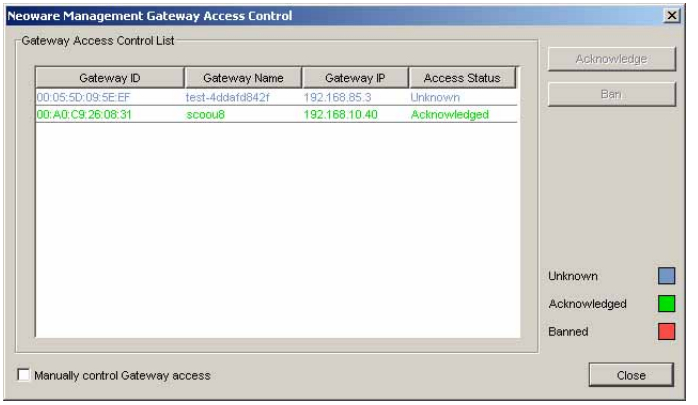
Gateway Access Control

The Management Server will maintain the acknowledge status of a gateway which is specified by the user from the Management Console. When a gateway is discovered by the Management Server, the gateway is set as Unknown status. The Management Server will not establish any connection with a gateway nor receive any messages sent by the banned gateway unless the gateway is acknowledged.

To control Gateway access manually:

1 Select **Tools** > **Authentication Management** > **Neoware Management Gateway Access Control...** from the Console's menu bar to display the **Authentication** dialog.

2 Enter your password then click **OK**. The **Neoware Management Gateway Access Control** window will be displayed.



3 Select a gateway from the **Gateway Access Control List**, then click the **Acknowledge** or **Ban** button to recognize or ban the selected gateway.

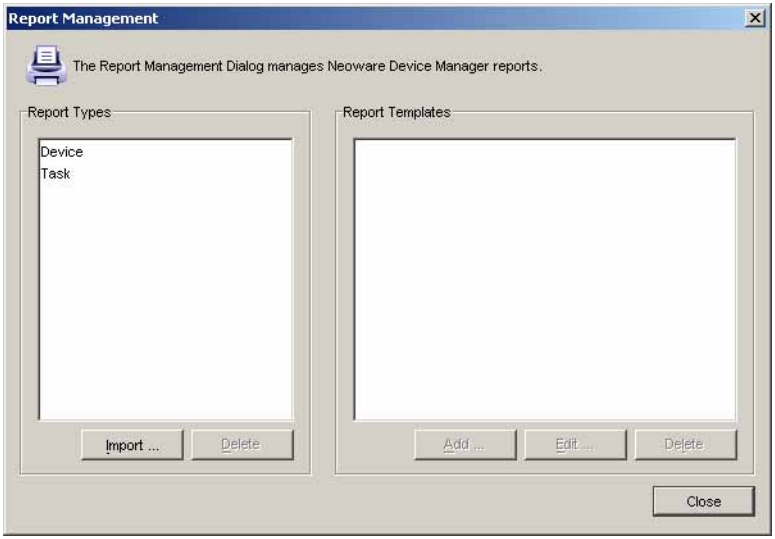
***Note:** If the **Manually control Gateway access** option is unchecked, the gateway with the **Unknown** status is regarded as **Acknowledged**. When this option is selected, the gateway with the **Unknown** status is regarded as **Banned** and you need to configure the status of the gateway manually.*

Report Management

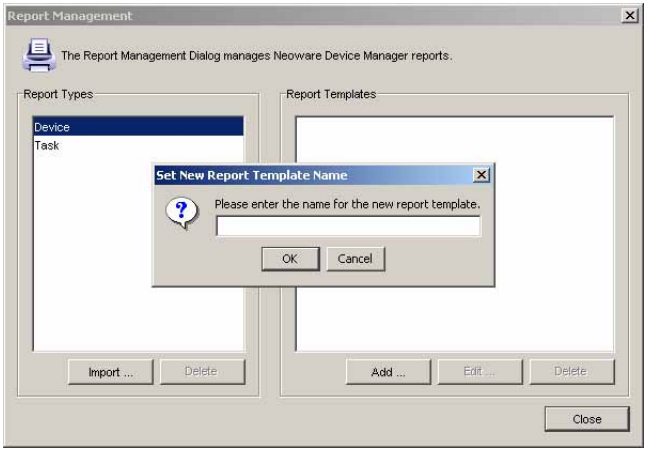
Adding a Report Template

To add a report template:

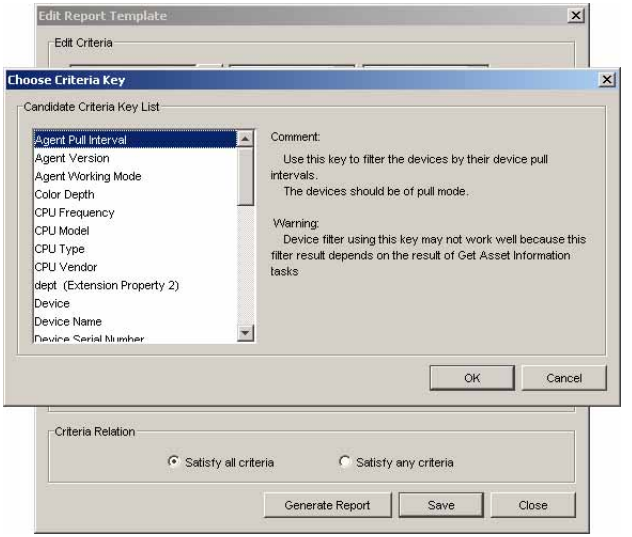
1 Select **Tools** > **Report Management** from the Console's menu bar to display the **Report Management** window.



2 Select one report type from the **Report Types** list, then click the **Add** button. A **Set New Report Template Name** dialog will prompt you to input a report template name.

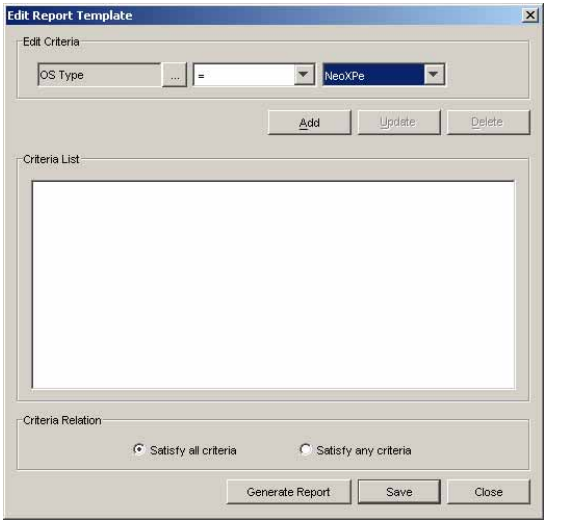


3 Click **OK** to open the **Edit Report Template** window. In the **Edit Criteria** field, click the **...** button to open the **Choose Criteria Key** window. Select a criteria key in the **Candidate Criteria Key List**.

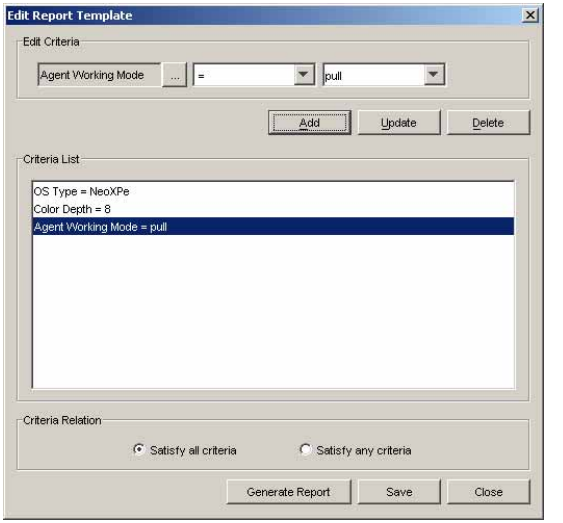


After you have made the selection, click **OK** to return to the **Edit Report Template** window.

4 In the **Edit Criteria** field, select or enter the criteria conditions in the two drop-down lists.

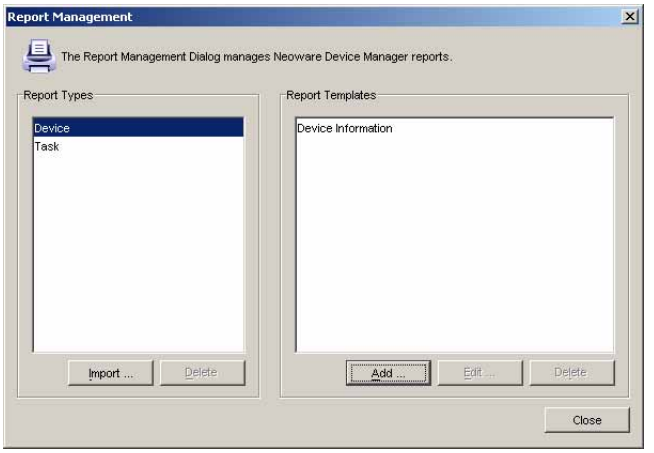


Click **Add** to add the criteria into the **Criteria List** below, or you can select an existing criteria then click **Update** to renew the restricted condition.



Note: *The* ***Report Template*** *can contain several criteria and each criteria could have one of two kinds of relationships:* ***Satisfy All Criteria*** *or* ***Satisfy Any Criteria****. So you can select either of them to generate reports.*

5 Click **Generate Reports** to generate the report according to the current criteria, or click **Save** to add these criteria to the named template.

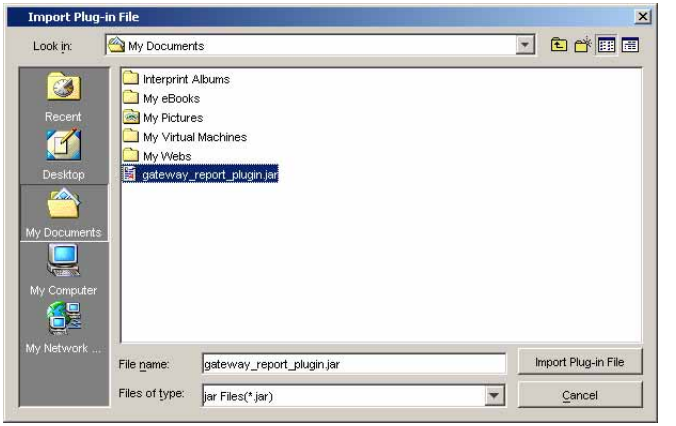


Note: *The modified criteria will not be saved in the template after generating a report. You need to click the* ***Save*** *button to save the modified criteria in the template.*

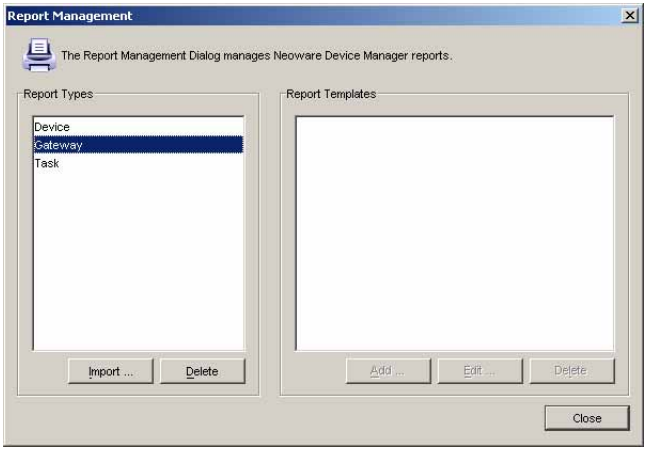
Importing a Report Plug-in File

To import a report plug-in file:

1 Click **Import** in the **Report Management** window, then select a plug-in file (***.jar**).



2 Click **Import Plug-in File** to import the file and return to the **Report Management** window. A new report type is added to the **Report Types** list.



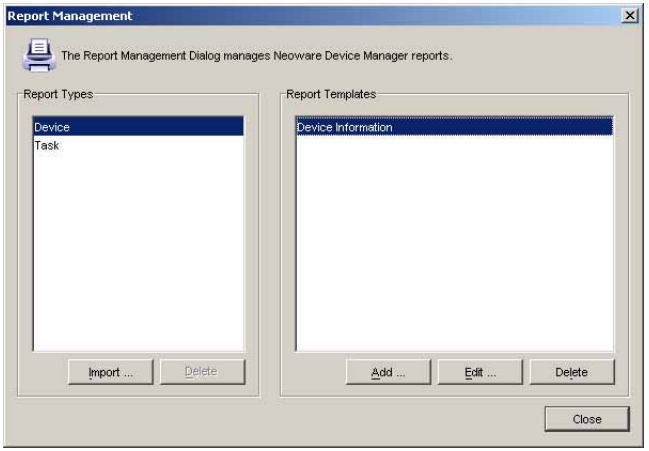
You can remove a report type from the list by selecting it then clicking the **Delete** button. You will be prompted to confirm that you want to delete it.

Note: *The imported report types can be deleted only if there is no template belonging to the reported type.*

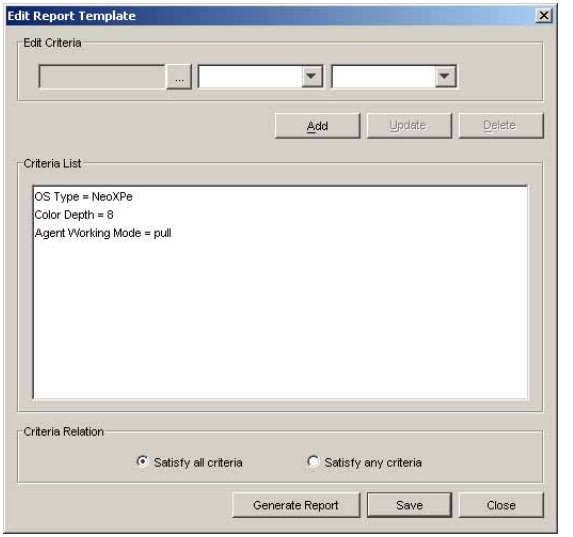
Generating a Report Using a Report Template

To generate report using a report template:

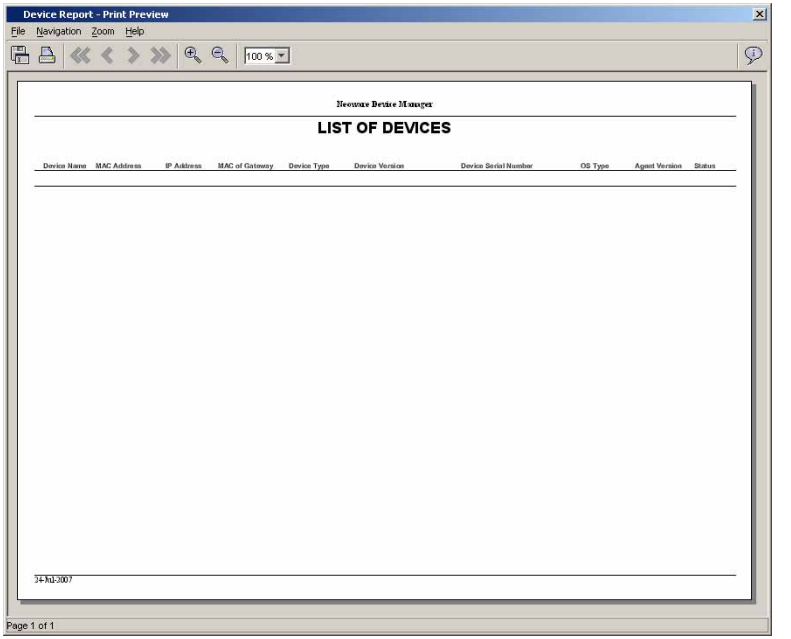
1 In the **Report Management** window, select a report type from the **Report Types** list and all the report templates belong to the selected type will be displayed in the **Report Templates** list.



2 Select a template from the list then click **Edit**, or double click on the template to view the template's content.



3 Click **Generate Report** to preview the report.

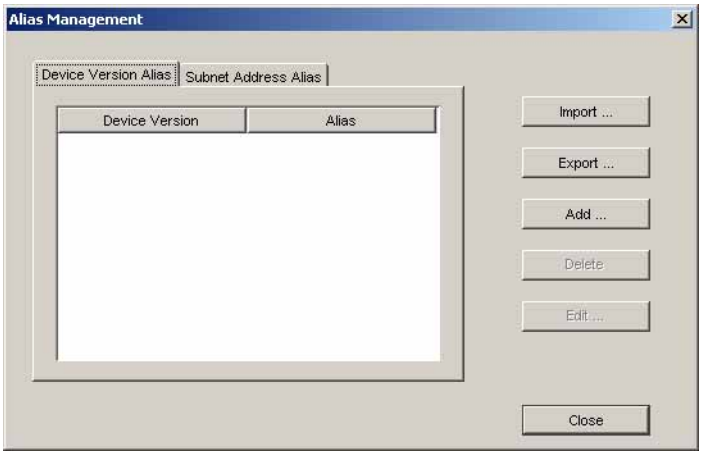


Alias Management

Device Version Alias

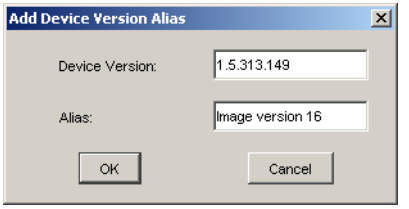
To add a device version alias:

1 Select **Tools** > **Alias Management** from the Console's menu bar to display the **Alias Management** window.

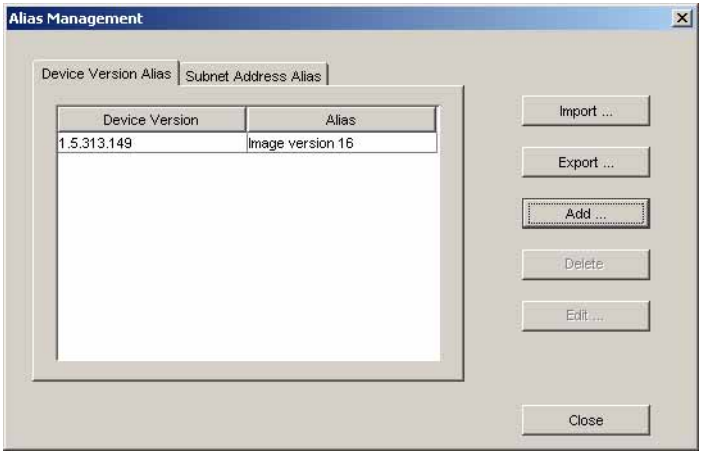


2 If necessary, click on the **Device Version Alias** tab to open the corresponding panel.

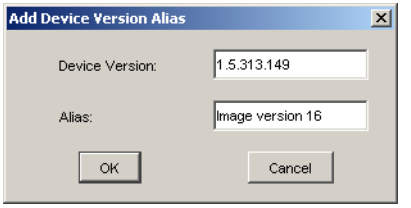
3 Click the **Add...** button to display the **Add Device Version Alias** dialog, in which you can add a new record.



4 Enter the device version and alias, then click **OK**. The new record will be added to the **Device Version Alias** panel.



To edit an existing device version alias, you need to select a record in the **Device Version Alias** panel then click the **Edit** button.



In the **Edit Device Version Alias** dialog, change the alias then click **OK** to save your modifications.

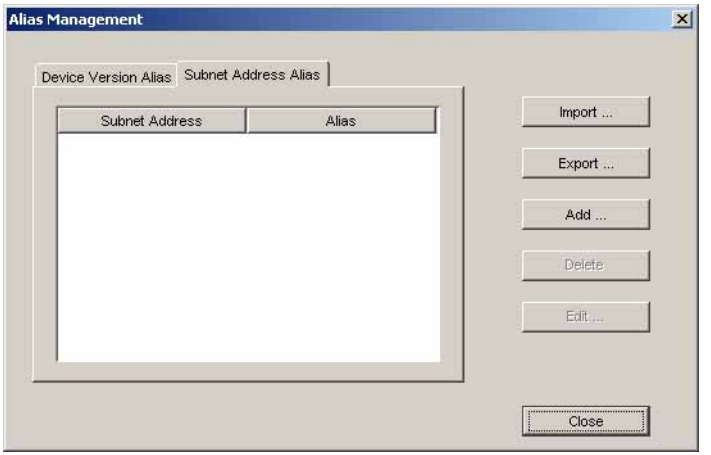
If you want to remove a record from the **Device Version Alias** panel, just select a record and click the **Delete** button.

Subnet Address Alias

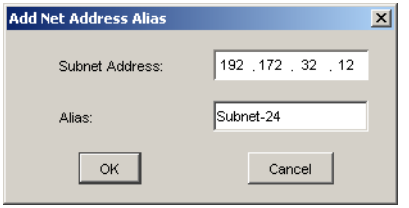
To add a subnet address alias:

1 Select **Tools** > **Alias Management** from the Console's menu bar to display the **Alias Management** window.

2 Click on the **Subnet Address Alias** tab.



3 Click the **Add...** button to display the **Add Net Address Alias** dialog, in which you can add a new record.



4 Input the subnet address and alias, then click **OK**. The new record will be added to the **Subnet Address Alias** panel.

To edit an existing subnet address alias, select a record in the **Subnet Address Alias** panel then click the **Edit** button. In the **Edit Subnet Address Alias** dialog you can change the alias then click **OK** to save your modifications.

If you want to remove a record from the **Subnet Address Alias** panel, just select a record and click the **Delete** button.

Exporting an Alias

To export an alias:

1. In the **Alias Management** window, select a record and click the **Export** button to open the **Export Alias** dialog.

2. Browse for a folder to save the current alias as an ***.xml** file, then click the **Export Alias** button.

Importing an Alias

To import an alias:

1. Click the **Import** button in the **Alias Management** window to display the **Import Alias** dialog.

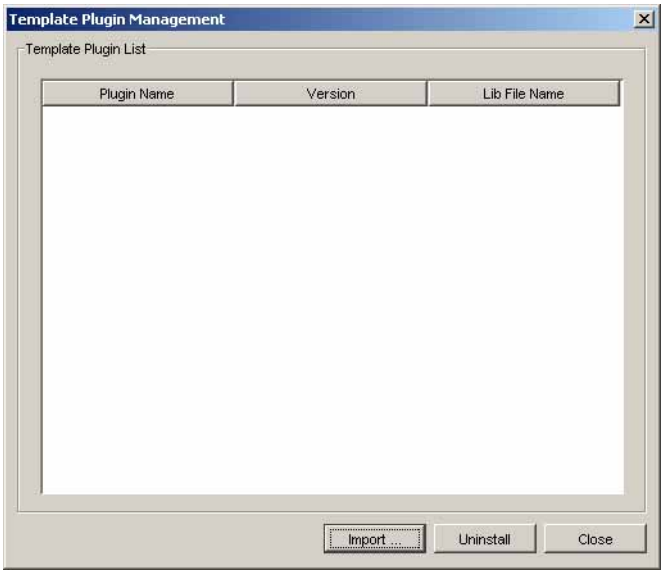
2 Browse for the exported ***.xml** file then click the **Import Alias** button. The imported alias will be added to the current list.

Template Plugin Management

Importing a Template Plugin

To import a Template Plug-in:

1 Select **Template** > **Template Plugin Management** from the Console's menu bar to display the **Template Plugin Management** window.



2 Click the **Import** button to display the **Select Import Files** dialog.

3 Browse for the exported ***.jar** file, select it then click the **OK** button.

4 The imported plugin will be displayed as a new tab with a new template in the **Template Pane**.

Removing a Template Plugin

To remove a Template Plugin:

1. In the **Template Plugin Management** window, select a record and click the **Uninstall** button.
2. You will be prompted to confirm that you want to uninstall the selected template. Click **Yes** to uninstall.
3. The template tab associated with the uninstalled template plugin will be deleted from the **Template Pane**.

APPENDIX A

Installing & Running JRE

This appendix describes how to install and run the Java Runtime Environment.

Introduction

A Java Runtime Environment of version 1.41 or later, including any Java2 platform system, is required to run HP Device Manager. You can install the correct Java Runtime Environment from the HP Device Manager installation CD.

Windows-based Server Installation

To install the Java Runtime Environment for Windows based servers:

1. Navigate to the directory **[CD]:\jre** (where **[cd]:** is the drive letter of your installation CD.)
2. Double-click **j2re-1_4_1_02-windows-i586-i.exe**.
3. Install the Java Runtime Environment following the on-screen instructions.

The Java Runtime Environment is now ready for HP Device Manager to be installed.

Linux-based Server Installation

To install the Java Runtime Environment for Linux based servers:

1. Login as **root**.
2. Enter the following commands:

   shell> **cd /usr/local**

   shell> **cp /[CD]/j2re-1_4_1_02-linux-i586.bin /usr/local**

   (where **[CD]** is the path to the HP Device Manager CD).

   shell> **sh j2re-1_4_1_02-linux-i586.bin**

   shell> **ln -s j2sdk1.4.1_02 j2sdk**
3. Set an environment variable **JAVA_HOME** to the pathname of the directory into which you install the JDK:

   shell> **vi /etc/profile**

   Add the following lines just before "**export PATH...**"

   PATH=/usr/local/j2sdk/bin:$PATH

   JAVA_HOME=/usr/local/j2sdk

   export PATH ... JAVA_HOME

APPENDIX B

Installing & Running MySQL

This appendix describes how to install and run MySQL.

Installing MySQL on Linux-based Servers

1. Login as **root**.
2. Enter the following commands:

   shell> **groupadd mysql**

   shell> **useradd -g mysql mysql**

   shell> **cd /usr/local**

   shell> **gunzip < /path/to/mysql-VERSION-OS.tar.gz | tar xvf -**

   shell> **ln -s full-path-to-mysql-VERSION-OS mysql**

   shell> **cd mysql**

   shell> **scripts/mysql_install_db**

   shell> **chown -R root**

   shell> **chown -R mysql data**

   shell> **chgrp -R mysql**

Running MySQL on Linux-based Servers

To run MySQL on Linux-based servers type the following:

shell> **bin/safe_mysqld --user=mysql &**

If you want to start MySQL automatically:

1. Copy **/support-files/mysql.server** to the directory which contains the startup files.
2. Enter the following commands:

   shell> **chmod a+x mysql.server**

   shell> **cp mysql.server /etc/rc.d/init.d/mysql**

   shell> **ln -s /etc/rc.d/init.d/mysql /etc/rc.d/rc3.d/S99mysql**

   shell> **ln -s /etc/rc.d/init.d/mysql /etc/rc.d/rc0.d/S01mysql**

   shell> **chkconfig --add mysql**
3. Reboot the server.

APPENDIX C

Error Code Reference

This appendix explains the meaning of error codes which may be generated by HP Device Manager.

Error Codes

The following table lists the error codes which may be generated by HP Device Manager and explains their meaning.

Error Code	Description
0	Success.
1	Could not connect with target Management Agent.
2	The system cannot find the file specified.
3	The system cannot find the path specified.
4	The system cannot open the file.
5	Access is denied.
7	Report is received, but the report is corrupt or malformed.
8	Task is not found in the Management Gateway.
9	Management Agent information is lost in Management Gateway. Management Server is synchronizing Management Agent information with Management Gateway. Please resend the task another time.
10	Management Gateway failed to send task to Agent.

Error Code	Description
201	Image size larger than flash size.
202	Cannot connect to FTP Server.
203	Login error.
204	Image file does not exist.
205	Image file transfer failed.
206	MD5 file does not exist.
207	MD5 file transfer failed.
208	MD5 verification error.
209	Read flash error.
210	Write flash error.
211	Offset too large.
212	Get MAC address error.
213	Unknown command error.
214	MD5 file creation error.
215	FTP path error.
216	Cannot use BINARY mode in FTP transfer.
217	File already exists.
218	File and flash of different OS type.
220	Cannot connect to FTP Server.
221	Login FTP error.
222	Unknown command error.
223	Error with both PASV and PORT modes in FTP transfer.
300	Unknown error.
301	Failure connecting to PXE Server.

Error Code	Description
302	Failure getting PXE task.
303	Invalid task format.
304	Failure pulling image (image file already exists).
305	Failure uploading file to FTP Server.
306	Failure executing PXE task (flash unsupported).
307	Failure uploading MD5 file.
308	Failure finding PXE server.
309	Failure pushing image file (file does not exist).
310	Failure pushing image MD5 file (file does not exist).
311	Failure downloading image file from FTP server.
312	Failure downloading MD5 file from FTP server.
313	Invalid image file size.
14000022	Unknown Error.
14000032	Time out.
14000042	Service terminated.
14000052	Unsupported task.
14000062	Allocate memory blocks error.
14000072	Child process crashed.
14001012	Registry path is empty.
14001022	Registry path is invalid.
14001032	Open HKEY_CURRENT_USER failure.
14001042	Registry task is empty.
14001052	Unknown registry type.
14001062	Open key failure.

Error Code	Description
14001072	Enumerate value failure.
14001082	Delete registry item failure.
14001082	Delete registry value failure.
14002012	Invalid XML format.
14002022	Invalid version.
14002032	Unknown Clone or not.
14002042	Unknown task ID.
14002052	Unknown item parameter.
14002062	Unknown FTP parameter.
14002072	Unknown task content.
14002082	Attachment error.
14003012	Set display parameter failure.
14003022	Set DNS failure.
14003032	Set Gateway failure.
14003042	Set host name failure.
14003052	Set IP mask failure.
14003062	Set IP failure.
14003072	Set DHCP failure.
14003082	Get display parameter failure.
14003092	Get DNS failure.
14003102	Get IP failure.
14003112	Get IP mask failure.
14003122	Get host name failure.
14003132	Get Gateway failure.

Error Code	Description
14003142	Get IP failure.
14003152	Not logged in.
14004012	Unknown registry parameter.
14004022	Command line error.
14004032	Unknown software component parameter.
14004042	Unknown VNC parameter.
14004052	Unknown pause parameter.
14004062	Cancelled by user.
14004072	Registry value is too long.
14004082	Get registry value failure.
14004092	Registry results overflowed.
14004102	No VNC password.
14004112	Set VNC password failure.
14004122	No element found.
14004132	Create VNC process failure.
14005002	Verify MD5 failure.
14006012	Connect FTP failure.
14006022	FTP error.
14006032	Could not find specified file or dir in FTP.
14006042	Invalid file.
14006052	No update file found.
14007012	Invalid Write Filter.
14007022	No Write Filter driver found.
14007032	Write Filter error.

Error Code	Description
14007042	Write Filter enabled.
14008012	Retry update key.
14008022	Get new key failure.
14008032	Get current key failure.
14008042	Decrypt new key failure.
14008052	Update new key failure.
14009012	Get Write Filter persistent data failure.
14009022	Set Write Filter persistent data failure.
14010012	Delete dir or file failure.
14010022	Open file failure.
14010032	Read file failure.
14010042	Write file failure.
14010052	File content error.
14011012	No Linux config file group found.
14011022	No Linux config file item found.
14012012	Linux platform response error.
14013012	Platform interface enumerate task error.
14013022	Platform Interface BeginTask() exception.
14013030	Platform interface reboot.
14013042	Platform interface BeginTask() error.
14014012	Invalid or unmatched type of web browser.
14020022	Open description file error.
14020032	Cloning failed because of missing parameters from Linux side.
14020042	Description file's format is not correct.

Error Code	Description
14020052	Create description file error.
14020062	Image info from task is different to info from description file on FTP Server.
14020072	Image file already exists on FTP Server.
14020082	Prepare info for update.ini error.
14020092	Write info to update.ini error.
14020102	Execute SwitchOS.cmd error.
14020112	Not enough space available.
14020122	Copy menu.1st file from 'C:\Windows\system32\Grub' to 'd:\Windows\System32\Grub' error.
14020132	Copy menu_update.1st file from 'C:\Windows\system32\ Grub' to 'd:\Windows\System32\Grub' error.
14020142	Copy stage2 file from 'C:\Windows\system32\Grub' to 'd:\Windows\System32\Grub' error.
14020152	Create directory: 'd:\Windows' error.
14020162	Create directory: 'd:\Windows\system32' error.
14020172	Create directory: 'd:\Windows\system32\Grub' error.
14020212	No suitable storage device found.
14020222	Cannot find partition on storage device.
14020232	Required file update.ini not found on writable.
14020242	Required parameters missing in update.ini.
14020252	None of the specified network interfaces could be configured.
14020262	Not enough space on the target partition.
14020272	The target partition is too large for the specified image.
14020282	Could not access the specified URL.
14020292	Streaming data to flash error.

Error Code	Description
14020302	Cloning error.
14020312	Failed to obtain return code from returned update file from cloning.
14020322	Failed to obtain return code from returned update file from cloning.
14020402	FTPException unknown error.
14020412	File or directory not found.
14020422	Get file error.
14020432	Read reply error.
14020442	Set PASV error.
14020452	Init reply error.
14020462	Change directory error.
14020472	Delete file error.
14020482	List directory error.
14020492	Get resume error.
14020502	User not accepted.
14020512	Password not accepted.
14020522	Create directory error.
14020532	Finish put error.
14020542	TypeI error.
14020552	Put file error.
14020562	Get finish error.
14020572	Remove directory error.
14020582	FTP quit error.
14020592	PWD error.

Error Code	Description
14020602	Connect error.
14020612	Put resume error.
14020622	Set port error.
14020632	Unknown.
14020712	FileException unknown Exception.
14020722	File does not exist.
14020732	No more free disk space.
14020742	Write forbidden.
14020752	Create forbidden.
14020762	Read forbidden.
14020772	Create directory forbidden.
14020782	File seek forbidden
14020792	Combine path error.
14020812	MFC initialization failed.
14020822	Invalid parameter number.
14020832	Failed to retrieve .2do file.
14020842	Failed to open .2do file.
14020852	Zero length for the .2do file.
14020862	Ack not received.
14020872	CMD failed.
14020882	Reboot requested.
14020892	The result file was not created or cannot be opened.
14021001	Bad command line.
14021002	Invalid file path name.

Error Code	Description
14021003	Cannot create file.
14021004	Cannot run programs.
14021007	Cannot get platform type.
14021008	Cannot allocate memory.
14021009	Cannot get FTP address from registry.
14021010	Cannot set platform type.
14021011	Invalid parameter.
14021012	Cannot open existing file.
14021013	Time out to wait for a thread.
14021014	File size read does not match its actual size.
14021015	Cannot crack FTP URL.
14021016	Server not using FTP.
14021017	Connection open failed.
14021018	Cannot connect to server.
14021019	No file found on server.
14021020	No available space on storage media to copy a file.
14021021	There is an error when running NetCopy command.
14021022	There is an error when running SafeNetCopy command.
14021023	There is an error when running general command.
14021024	Cannot get an exit code of a process.
14021025	Get unexpected exit code of a thread.
14021026	Cannot get file size.
14021027	Cannot read content from file.
14021028	Failed to convert string from ASCII to Unicode.

Error Code	Description
14021029	Cannot get file size.
14021030	Cannot rename file.
14021031	Cannot create directory.
14021099	RST file not found. Unknown error.
14022011	File corrupted (checksum error).
14022012	Failed to install firmware file.
14022013	Failed to install IPKG.
14022014	Failed to remove IPKG.
14022015	Unsupported format.
14022016	Not ready.
14022017	Not enough free disk space.
14022018	No such IPKG.
14022019	No such URL.
14022020	Failed to set registry.
14022021	Invalid parameter.
14022022	Remount error.
14022023	No such file.
14022024	No such path.
-2	Target agent timed out while executing task.
-100	Failed to get hostname.
-101	Hostname without domain part.
-102	Failed to set linger for socket.
-103	Reserved, no use.
-104	Reserved, no use.

Error Code	Description
-105	Failed to get host address.
-106	Failed to create data socket.
-107	Failed to duplicate a socket.
-108	Failed to open file for read.
-109	Failed to open file for write.
-110	Failed to get socket name.
-111	Failed to bind data socket.
-112	Failed to bind data socket.
-113	Failed to listen on data socket.
-114	Server sent a invalid port number.
-115	Failed to connect to data socket.
-116	Failed to accept on data socket.
-117	Failed to set start point for file.
-118	Misc error for connection.
-119	Failed to retry connection.
-120	Connection is refused by peer.
-121	Bad transfer type.
-122	Invalid parameter for dir command.
-123	Failed to malloc memory.
-124	PWD command failed.
-125	CWD command failed.
-126	RMD command failed.
-127	Line list is bad.
-128	Option is not implemented.

Error Code	Description
-129	Function is not implemented.
-130	LIST command failed.
-131	RETR command failed.
-132	STOR command failed.
-133	Failed to write file.
-134	Failed to read file.
-135	Failed to write to socket.
-136	Failed to read from socket.
-137	Failed to open file.
-138	Bad magic code.
-139	Bad parameter.
-140	Failed to create directory.
-141	Cannot go to previous directory.
-142	Failed to chmod.
-143	Failed to umask.
-144	DELETE command failed.
-145	SIZE command failed.
-146	MDTM command failed.
-147	TYPE command failed.
-148	SIZE command is not available.
-149	MDTM command is not available.
-150	Failed to rename.
-151	Glob is failed.
-152	Failed to set keepalive.

Error Code	Description
-153	Disconnected by FTP server when login in.
-154	Invalid user.
-155	Invalid password.
-156	Failed to login.
-157	Invalid relay from server.
-158	Connection is closed by peer.
-159	Not connected.
-160	Cannot start data transfer.
-161	Failed to transfer data.
-162	PORT command failed.
-163	PASV command failed.
-164	UTIME command failed.
-165	UTIME command is not available.
-166	HELP command failed.
-167	Failed to delete local file.
-168	Failed to seek local file.
-169	Data transfer is aborted.
-170	Symbol link is failed.
-171	Symbol link is not available.
-172	Glob is not match.
-173	FEAT command is not available.
-174	Specified file is not found.
-175	No buffer.
-176	Local file is newer.

Error Code	Description
-177	Remote file is newer.
-178	Local file is same as the remote file.
-179	LSD command failed.
-180	MLST command failed.
-181	Invalid response for MLST command.
-182	MLST command is not available.
-183	MLSD command is not available.
-184	STAT command failed.
-185	STAT for file command is not available.
-186	NLST command failed.
-187	NLST for file command is not available.
-188	No file or directory error.
-189	Cannot tell if file exists.
-190	File exists but cannot find the file type.
-191	Is not a directory.
-192	Recursion limit is reached.
-193	Control socket is timeout.
-194	Data socket is timeout.
-195	User canceled the FTP task.
-1000	Invalid XML format.
-1001	Invalid XML version.
-1002	Failure executing clone task.
-1003	Unknown task ID.
-1004	Unknown parameter.

Error Code	Description
-1005	Unknown FTP parameter.
-1101	Failure setting display settings.
-1102	Failure setting DNS.
-1103	Failure setting default Gateway.
-1104	Failure setting host name.
-1105	Failure setting IP mask.
-1106	Failure setting IP address.
-1107	Failure setting DHCP server.
-1108	Failure getting display settings.
-1109	Failure getting DHCP server.
-1110	Failure getting IP address.
-1111	Failure getting IP mask.
-1112	Failure getting host name.
-1113	Failure getting default Gateway.
-1114	Failure getting DNS.
-1115	User not logged in.
-1229	Unknown registry parameter.
-1230	Failure executing task (command could not be executed).
-1231	Error in 'software' tag.
-1232	Unknown VNC parameter.
-1233	Unknown pause parameter.
-1234	Task canceled by user.
-1235	Error in registry value (registry value too long).
-1236	Failure getting registry value.

Error Code	Description
-1237	Failure cloning registry (item too long).
-1301	Failure connecting to FTP Repository.
-1302	Unknown FTP error.
-1303	Failure looking for remote file or low space on local drive.
-1305	Failure looking for replace.exe.
-1401	Unknown FTP Error.
-1402	File or Directory not found.
-1403	Failed to get file.
-1404	Failed to receive reply from server.
-1405	Failed to set FTP mode PASV.
-1406	Server reply is invalid.
-1407	Failed to change current working directory.
-1408	Failed to delete file.
-1409	Failed to list directory.
-1410	Failed to resume getting a file.
-1411	User name error.
-1412	Password error.
-1413	Failed to create directory.
-1414	Failed to receive finish message about file is transferred.
-1415	Failed to set binary mode.
-1416	Failed to upload file.
-1417	No use.
-1418	Failed to remove directory.
-1419	Failed to receive QUIT reply from FTP server.

Error Code	Description
-1420	Failed to receive PWD reply from FTP server.
-1421	Failed to connect to FTP server.
-1422	Failed to resume uploading a file.
-1501	Unknown FTP file error.
-1502	File does not exist.
-1503	No more disk space.
-1504	Failed to open a file for write.
-1505	Failed to create a new file.
-1506	Failed to open a file for read.
-1507	Failed to create a directory.
-1508	Failed to seek a resumption point.
-1509	Failed to combine file path.
-2001	Error in configuration file.
-2002	Error in configuration file (invalid format).
-2003	Error in configuration file (no group).
-2004	Error in configuration file (no item).
-2005	Invalid name format.
-2006	Invalid task content.
-2007	Failure executing file (error executing after reboot).
-2008	Failure opening VNC password file.
-2009	Failure setting VNC password.
-2010	Failure connecting to configuration daemon.
-2011	Failure sending task to configuration daemon.
-2012	Configuration daemon message timeout.

Error Code	Description
-2013	Configuration daemon failure.
-2014	Update cannot be executed, an upgrade task is currently running.
-2015	Failure getting update information from setup.conf.
-2016	Network connection failure.
-2017	Failure downloading *.hdr file.
-2018	Update cannot be executed, incorrect patch version.
-2019	Update successful. Caution: TO_VERSION info in .hdr file differs from the /etc/.maxspeed.
-2020	Failure getting *.pch file or not enough disk space.
-5000	Failure accessing registry (blank path).
-5001	Failure accessing registry (invalid path).
-5002	Failure accessing registry (could not open current user).
-5003	Failure accessing registry (item does not exist).
-5004	Failure accessing registry (invalid value type).
-5005	Failure accessing registry (error opening key).
-5006	Failure accessing registry (error enumerating value).
-10001	The task type is unrecognized by the Gateway.
-10002	The task format is unrecognized by the Gateway.
-10003	The IP range is invalid.
-20001	Timed out while waiting for task result from target agent.
-20002	Task failed. Task became invalid before being sent. Task failed. Management Gateway cannot be connected, and no retry setting.
-20003	Could not connect with target Gateway.
-20004	Could not find target Gateway.

Error Code	Description
-20005	A device with the same MAC address already exists.
-20006	A grouping scheme with the same alias already exists.
-20007	An IP walking scopes with the same name already exists.
-20008	A user with the same name already exists.
-20009	A user group with the same name already exists.
-20010	An FTP Repository with the same name already exists.
-20011	Fail to send task because Management Server cannot get acknowledge from the Management Gateway.
-20012	The target Management Gateway is not authenticated by the Management Server.
-20013	FTP setting is not correct for the FTP mapped by the device.

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