HP ProLiant Support Pack and Deployment Utilities User Guide

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Contents

Introduction

In This Section

PSP Overview

PSPs are operating system specific bundles of ProLiant optimized drivers, utilities, and management agents. Each PSP includes setup and software maintenance tools designed to provide an efficient way to install, upgrade, and manage system software. These tools include PSP deployment utilities for Microsoft® Windows NT® 4.0, Windows® 2000, Windows® Server 2003, Novell NetWare, and Linux server environments that can deploy software updates from a central software repository to local or remote server systems.

For more information about PSPs, refer to the PSP website (http://www.hp.com/servers/psp).

To download the latest PSPs, refer to the software and drivers download page (http://www.hp.com/servers/swdrivers).

PSP Deployment Scenarios

PSPs can be deployed using operating system specific graphical- or command line-based utilities.

Operating System Environment	Scenario
Microsoft® Windows®	• Graphical deployment on a single-target system using the RDU • Command line deployment on a single-target system using the Remote Deployment Console Utility • Command line deployment on multiple-target systems using the Remote Deployment Console Utility • Command line deployment on multiple-target systems managed by HP Systems Insight Manager
Novell NetWare	• Command line deployment using CPQDPLOY.NLM • Graphical deployment using CPQDPLOY.NLM • Command line deployment of an individual package • Graphical deployment of an individual package
Linux	• Command line deployment using the terminal window • Graphical deployment using a gtk-based GUI

> **NOTE:** For a current list of supported operating systems, refer to the PSP website (http://www.hp.com/servers/psp).

This guide also describes additional functionality of the PSP deployment utilities and individual support software components, including several deployment script file examples that can be modified to fit specific Windows NT® 4.0, Windows® 2000, Windows® Server 2003, Novell NetWare, and Linux server environments.

> **NOTE:** If you install a PSP and then install an operating system Service Pack, a Support Pack, or other operating system updates, HP recommends reinstalling the PSP.

Benefits of the PSP Deployment Utilities

The PSP deployment utilities make software maintenance easier by:

- Increasing server manageability

- Enabling administrators to update systems remotely

    NOTE: Native remote functionality is provided by the Windows® PSP deployment utilities only.

- Reducing server maintenance costs

- Saving time

The PSP deployment utilities provide the following software maintenance benefits to system administrators on Windows®-, NetWare-, and Linux-based operating system platforms:

- Self-installable components with easy-to-understand software update descriptions

- Components that can be installed individually or as part of a Support Pack

- Installation logic and version control that automatically checks for hardware, software, firmware, and operating system dependencies, installing only the correct software updates and latest drivers for optimal system configuration

- Silent command line options and return codes that enable scripting and enhanced integration of the PSP deployment utilities with HP Systems Insight Manager (Windows® and Linux only) and the SmartStart Scripting Toolkit

- Integration with preconfigured server script files as part of the Rapid Deployment Pack

- Common log files that provide easy access to a consolidated view of software installation history on target servers

- Content in ready-to-run native operating system file formats that save time by installing directly from a CD or shared network drive

By following the procedures described in this guide, the scalability of the PSP deployment utilities is enhanced to support high-volume maintenance and deployment of software upgrades on Windows®-, NetWare-, and Linux-based platforms.

> △ **CAUTION:** The PSP deployment utilities, PSPs, and individual components should be used only by individuals who are experienced and knowledgeable in the use of these software components. Before using these utilities, PSPs, and components to deploy a server or maintain software components, be sure to make a backup of the data on the target server and take all other necessary precautions so that mission-critical systems are not disrupted if a failure occurs.

Obtaining the PSP Deployment Utilities

You can obtain the PSP deployment utilities from the HP website or HP CD media.

HP Website

The latest PSP deployment utilities, PSPs, and individual components for supported Microsoft® Windows®, Novell NetWare, and Linux operating systems are available at the PSP website (http://www.hp.com/servers/psp).

HP CD Media

When Web access is not available or download speeds are too slow, PSP deployment utilities, PSPs, and individual components can also be obtained from:

- The ProLiant Software Maintenance CD. This CD is provided with the ProLiant Essentials Foundation Pack subscription. This and other CDs can be downloaded free of charge from the SmartStart download page (http://www.hp.com/go/ssdownloads).

- The SmartStart 6.00 or later CD for Windows® and NetWare

- The SmartStart 6.30 or later CD for Linux

For information about the ProLiant Software Maintenance Subscription, refer to the SmartStart download page (http://www.hp.com/go/ssdownloads).

Updating the PSP Deployment Utilities

HP Subscriber's Choice and HP version control tools help ensure that you have the most current PSP deployment utilities, PSPs, and individual components.

Subscriber's Choice

Keep actively informed of new releases of SmartStart and other Foundation Pack software with e-mail alerts from Subscriber's Choice. Subscriber's Choice uses a secure website to proactively communicate product changes and Customer Advisories through e-mail to registered customers based on a customer-provided profile. Register for this free service at the HP Subscriber's Choice website (http://www.hp.com/go/subscriberschoice).

Version Control

The VCRM and VCA are Web-enabled Insight Management Agents. HP Systems Insight Manager uses these Insight Management Agents to facilitate software update tasks.

- The **VCRM** provides a graphical view of the Windows® and Linux PSPs that are stored in a repository and can be configured to automatically update the repository with the latest software from HP.

- The **VCA** can be configured to point to a repository being managed by the VCRM, enabling easy version comparison and software updates.

For more information about version control tools, refer to:

- The HP Systems Insight Manager Help Guide on the HP Systems Insight Manager website (http://www.hp.com/go/hpsim).

- The Version Control User Guide on the Insight Manager 7 website (http://h18004.www1.hp.com/products/servers/management/im/documentation.html).

Creating a Centralized, Network-Based Software Repository

The practice of deploying PSPs and individual components from a centralized, network-based software repository saves time and standardizes software maintenance and deployment procedures on Windows®-, NetWare-, and Linux-based systems.

For maximum flexibility across operating system platforms, the software repository should be on a Windows® shared network drive. The repository can be updated from any of the following sources.

HP Website   SmartStart CD

Network Share

Software Repository

Microsoft Internet Explorer

Administrative System
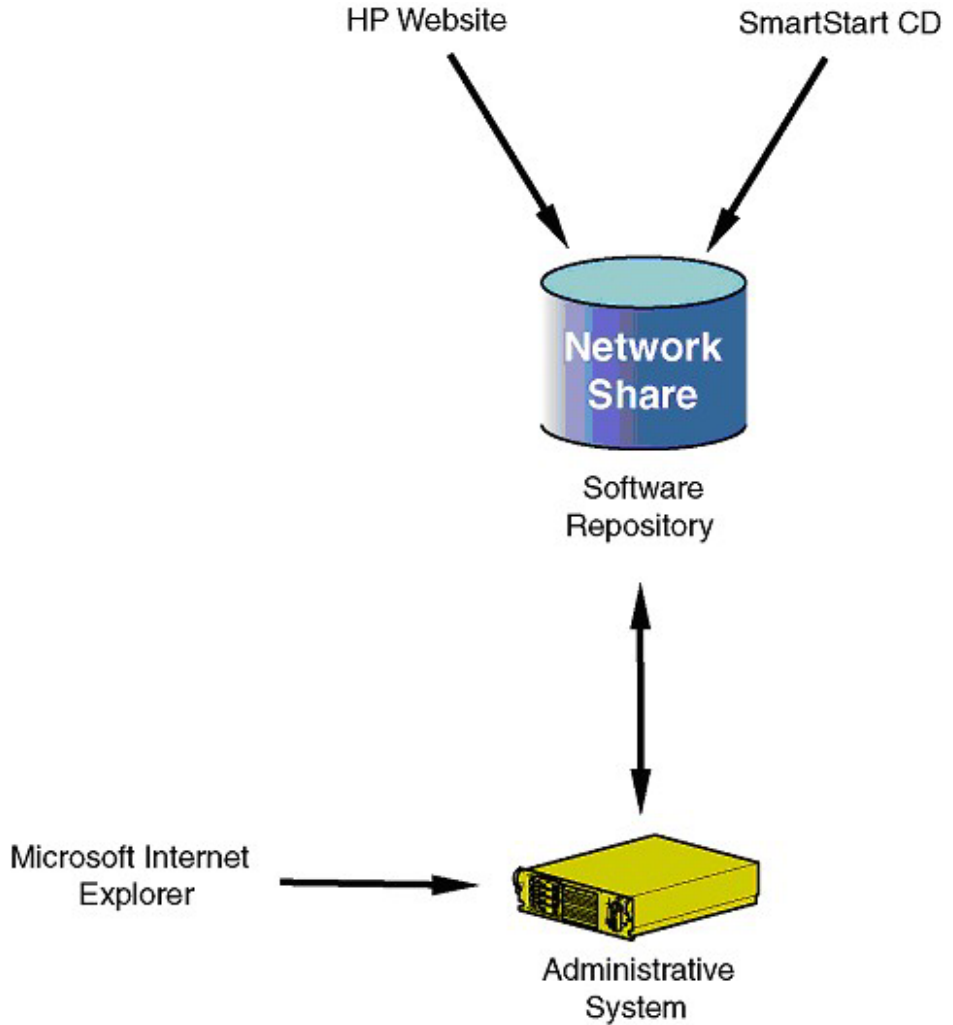
Deploying PSPs in Microsoft Windows

In This Section

Overview of PSPs for Microsoft Windows

This chapter discusses how to use PSPs for Microsoft® Windows®. HP provides the following tools for configuring components and deploying PSPs for Windows®:

- RDU for Microsoft® Windows®

- Remote Deployment Console Utility for Microsoft® Windows®

Several usage scenarios are provided as examples at the end of this chapter.

PSPs are operating system-specific bundles of HP server support software. Each PSP includes multiple self-installable components known as Smart Components (optimized drivers, management agents, and utilities). This PSP design improves and simplifies operating system integration, flexibility, and system configuration.

HP recommends the following procedure when working with PSPs:

1. Obtain the PSP, and place it on a software repository or other medium.

   > **IMPORTANT:** HP recommends that the PSP files are present on a non-read-only medium so that the various Smart Components in the PSP can be configured before deployment. For example, the Support Packs and components cannot be configured when they are on a CD-ROM.

2. Be sure the Smart Components do not have the read-only attributes set.

> **IMPORTANT:** When a Smart Component is copied from the SmartStart or Software Maintenance CD, the read-only attribute is set by default. Use Microsoft® Windows® Explorer or the attrib command to remove the read-only attributes of Smart Components copied from a SmartStart or Software Maintenance CD.

3. Configure the components using the configuration functionality in the RDU for Windows®.

> **NOTE:** Components must be configured only once. The configuration information is stored inside each Smart Component so that it is available when the component is installed. You do not need to configure components each time they are deployed. However, configuration is independent of the target computer you select. If you change the configuration of a component after deployment, you must redeploy the component.

4. Deploy the PSP using a deployment tool such as the RDU for Windows® or the Remote Deployment Console Utility for Windows®.

> **NOTE:** Smart Components can also be installed individually. For more information, refer to "Installing Single Components (on page 37)."

Minimum Requirements for Windows Servers

> **IMPORTANT:** Before deploying software updates on a target system, be sure that a recent backup of the target system is available in the event the deployment procedure fails.

> **NOTE:** For a current list of supported operating systems, refer to the PSP website (http://www.hp.com/servers/psp).

For successful component deployments on Windows®-based target systems, the following minimum requirements must be met:

- A local administrative system running Windows NT® 4.0 (with Service Pack 6 or later), Windows® 2000, or Windows® Server 2003 must be available.

- One or more remote target servers running Windows NT® 4.0, Windows® 2000, or Windows® Server 2003 in need of a software upgrade must be available. If the local administrative system is the only server that must be upgraded, remote target servers are not necessary.

- Sufficient hard drive space must be available on the target system. As a standard practice, sufficient hard drive space equals at least twice the file size of the PSP or individual components to be deployed.

- All remote target servers must be connected to the same network and use TCP/IP to enable the systems to be seen from the administrative system.

- There must be an account with administrator privileges on each target server. It is recommended that the user name and password for the administrator account on each target server are the same as on the local administrative system. If administrator privileges are not set up in this way, you must have the user name and password for each remote server. Alternatively, you can use a domain account on the local administrative system that has administrator privileges on the target servers.

To run the RDU, the local administrative system must be running:

- Microsoft® Internet Explorer 5.5 or later

- Microsoft® XML Parser 3.0 or later

> **NOTE:** If you obtain the Support Pack from a SmartStart CD, a Software Maintenance CD, or the HP website, the appropriate version of the Microsoft® XML Parser is stored in the msxm13.cab file. The RDU automatically installs the parser if it is not currently present on your system. A supported version of the Microsoft® XML Parser is also available as part of Internet Explorer 6.0.

RDU for Microsoft Windows

HP has developed the RDU for Windows® as a graphical application that provides enhanced PSP deployment capabilities. Using a point-and-click interface, the utility enables you to deploy and maintain PSPs and Smart Components on a local server or remote server accessible over a network connection.

The RDU is located with the rest of the Support Pack contents on the ProLiant Software Maintenance CD and in the \COMPAQ\CSP\NT subdirectory on the SmartStart CD. The executable file that launches the utility is SETUP.EXE.

In most instances, installing a Support Pack with the RDU is a simple three-step process:

1. Select a target machine in the Target Machine toolbar.

2. Select a Support Pack from the dropdown menu on the Support Pack Selected for Installation toolbar.

3. Click **Install** on the Target Machine toolbar, and follow the instructions that appear.

> **IMPORTANT:** Be sure that all components that require configuration are configured before deploying them.

Main Window

When the RDU is launched, a main control window appears.
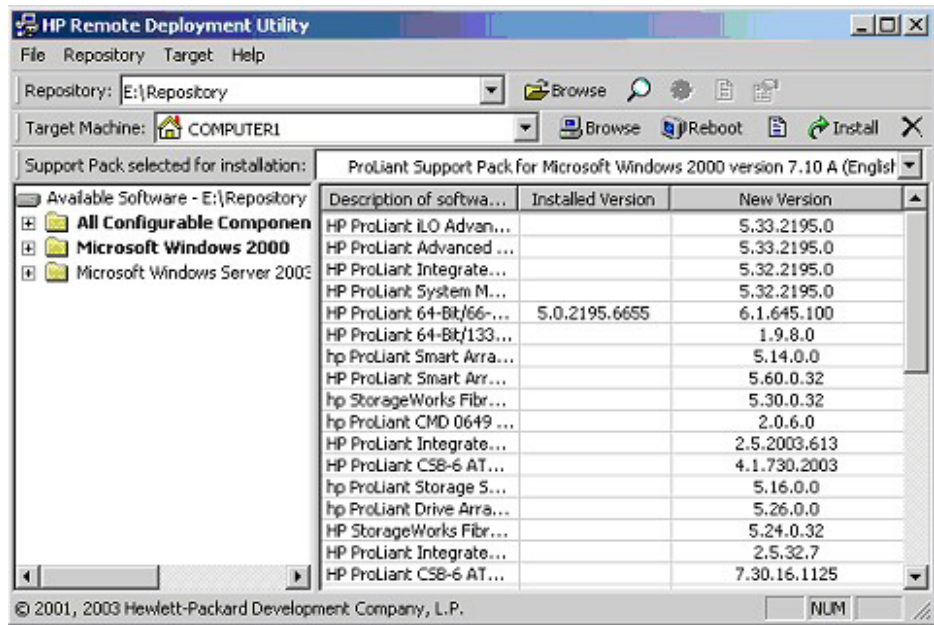
After startup, the RDU automatically selects the latest applicable Support Pack for the operating system of the target computer if one exists in the repository.

> **NOTE:** When selecting a new target computer, the RDU does not automatically select the latest applicable Support Pack for the new target computer. The previous contents of the target computer list are preserved.

The main window consists of the following elements:

- Menu bar

- Repository toolbar

- Target Machine toolbar

- Support Pack Selected for Installation toolbar

- Repository view tree

- Target computer list

Menu Bar

The menu bar consists of the following menu items:

- The **File** menu item enables you to exit the RDU.

- The **Repository** menu item provides options for browsing to the software repository and configuring and viewing details about PSPs and components.

- The **Target** menu item provides options for setting or rebooting the target machine and installing components.

- The **Help** menu item provides access to help files about the RDU.

Repository Toolbar

The Repository toolbar contains the Repository field, which enables you to enter the path to the software repository where the PSPs and other Smart Components are located.

> **NOTE:** The Repository field defaults to the directory containing the RDU.

The toolbar also contains the following buttons.

Icon	Description
📂	Enables you to browse the network for the repository
🔍	Rescans the repository for any changes that might have occurred since the previous scan and then repopulates the repository view tree

Icon	Description
⚙	Configures the selected repository item
📄	Displays the revision history for the selected repository item
📝	Displays the properties of the selected repository item

Target Machine Toolbar

The Target Machine toolbar contains the Target Machine field, which enables you to enter the path to the target server on which the PSP and other Smart Components will be deployed. The Target Machine field defaults to the name of the server that launches the RDU. If you are deploying to a remote server, change the Target Machine field to the remote server name.

The toolbar also contains the following buttons.

Icon	Description
💻	Enables you to browse the network for the target machine
🖥	Reboots the target machine
📄	Displays the target installation log file
↪	Deploys the selected components or PSPs on the target machine
✕	Deletes selected components from the target computer list

Support Pack Selected for Installation Toolbar

The Support Pack Selected for Installation toolbar consists of a dropdown list that contains all available PSPs in the current repository that are applicable to the target machine.

Selecting a Support Pack from the dropdown list clears the current contents of the target computer list and populates the list with all components contained in that Support Pack.

Repository View Tree

The repository view tree, located on the left side of the main RDU window, displays a categorized view of all Support Packs and Smart Components contained in the selected software repository. The Support Packs and components are sorted, with the most recent version listed first. The tree has three levels:

- **Operating system level**—If the repository contains Support Packs or components for multiple operating systems, the repository view tree shows a folder for each one. The All Configurable Components folder, which contains all the components that require or support configuration, is also at this level.

    TIP: The folder for the operating system that is applicable to the target machine is in bold text. The All Configurable Components folder is in bold text when it contains a component that requires configuration.

- **Category level**—This level contains folders of Smart Components grouped by categories (such as Network, Management Agents, or Storage). A Support Pack folder that contains all Support Packs is also available at this level.

- **Component level**—The individual Smart Components reside at this level. Refer to the following table for descriptions of the icons for each component.

Icon	Description
	The component requires configuration but has not yet been configured.
	The component is configurable but has not yet been configured.

Icon	Description
	The component is configurable and has been configured.
	The component does not require configuration.

Folders or files at any level in the repository view tree can be added to the target computer list using one of the following methods:

- Drag selected items or folders from the repository view tree, and drop them in the target computer list. The items are added to the end of the list.

- Select an item or folder in the repository view tree, then press the **Insert** key. The item is added to the end of the list.

Target Computer List

The target computer list, located on the right side of the main RDU window, contains all components that have been selected for installation on the target computer. This panel has three columns:

- **Description of Software to be Installed**—This column lists the names of components selected for installation.

- **Installed Version**—This column indicates the version number of any components that are currently installed on the target machine.

- **New Version**—This column lists the version number of the components from the software repository that have been selected for installation.

Items can be added to the target computer list using any of the following methods:

- Select a Support Pack from the Support Pack Selected for Installation toolbar to add all components in the Support Pack to the target computer list.

- Drag selected items or folders from the repository view tree and drop them in the target computer list. The items are added to the end of the list.

- Select an item or folder in the repository view tree, then press the **Insert** key. The item is added to the end of the list.

Items can be removed from the target computer list in either of the following ways:

- Click the **Remove selected items chosen for installation** button (✗) on the Target Machine toolbar to remove selected items from the target computer list.

- Select the items to be removed, then press the **Delete** key.

The target computer list supports multiple selections using the mouse. Multiple items can be selected using the standard Windows® combinations of Ctrl+click or Shift+click.

Revision History and Properties

The Revision History and Properties options enable you to view additional information about a component or PSP in the repository view tree.

To view the revision history for a component, right-click the component and select **View Revision History**, or click the revision history icon (📄) on the Repository toolbar. The revision history provides details about software enhancements and fixes.

To view the properties of a component, right-click the component and select

Properties, or click the properties icon (🖼) on the Repository toolbar. The Properties window displays the properties of the component or PSP, including file name, version number, and operating system information.

Description	Value
Filename	cp004126.exe
Location	C:\Documents and Settings\KochKi\Desktop\Repository\
Name	HP ProLiant Network Configuration Utility 7 for Windows 2000
Version	7.60.0.0
Description	With the HP ProLiant Network Configuration Utility, you can configure and monitor HP ProLiant Network Interface Controllers (NIC) running under Microsoft Windows 2000.
Languages	English (US), French, German, Italian, Japanese, Spanish
Operating System(s)	Microsoft Windows 2000
Category	Driver - Network

Component Preconfiguration

Some of the Smart Components included as part of a PSP must be configured before being deployed. If any components require configuration, the All Configurable Components folder in the repository view tree appears in bold text.

> **IMPORTANT:** The configuration information is stored inside each Smart Component so it is available when the component is installed. You do not need to configure components each time they are deployed. However, configuration is independent of the target computer you select. If you change the configuration of a component after deployment, you must redeploy the component.

Icons next to each component in the repository view tree indicate whether the component must be configured. Refer to "Repository View Tree (on page 21)" for descriptions of each of the icons. Configurable components include, but are not limited to, the following:

- System Management Homepage (PSP 7.20 or later)

- HP Insight Management Agents

- VCA

  NOTE: In PSP 7.10 and earlier, the Web-based Management portion of the Insight Management Agents and other utilities requires that a user ID, password, and trust level be configured in the Smart Component before installation if this is the first time the agents are being installed. If the agents are being updated and are already configured on the target system, the new agent component does not need to be configured before being deployed.

  In PSP 7.20 and later, component preconfiguration is optional. The System Management Homepage uses operating system-based authentication and accepts logins from local administrative accounts by default. You can add operating system user groups to the access list of the System Management Homepage through preconfiguration or by browsing to each individual system. If the agents are being upgraded from PSP 7.10 or earlier, the old login method is invalid for browsing to the agents.

  For more information, refer to the *HP Systems Insight Manager Installation and User Guide* on the HP Systems Insight Manager website (http://www.hp.com/go/hpsim).

To configure a Smart Component:

1.   Select a component in the repository view tree.
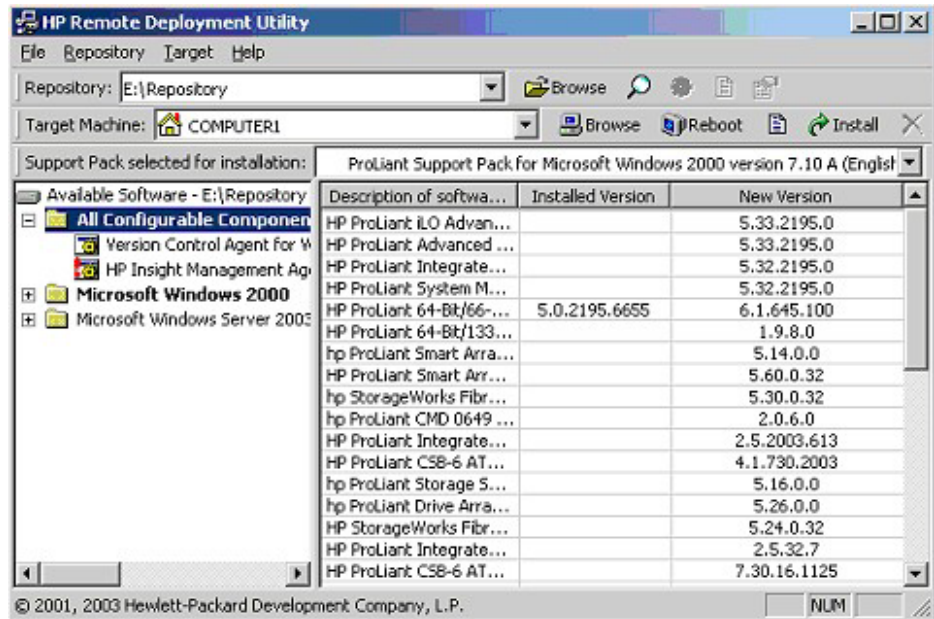
2. Select **Repository>Configure** from the menu bar, or right-click the component and select **Configure.** The configuration information screen for the selected component appears.

3. From the component configuration screen, set the configuration features that you want and click **Save.** To return to the component list without saving, click **Cancel.**

4. After the configuration is saved, the main window appears again. If the configuration operation is not successful, an error message appears.

> **NOTE:** In PSP 7.10 and earlier, the Web-based Management portion of the Insight Management Agents and other utilities requires that a user ID, password, and trust level be configured in the Smart Component before installation if this is the first time the agents are being installed. If the agents are being updated and are already configured on the target system, the new agent component does not need to be configured before being deployed.

In PSP 7.20 and later, component preconfiguration is optional. The System Management Homepage uses operating system-based authentication and accepts logins from local administrative accounts by default. You can add operating system user groups to the access list of the System Management Homepage through preconfiguration or by browsing to each individual system. If the agents are being upgraded from PSP 7.10 or earlier, the old login method is invalid for browsing to the agents.

For more information, refer to the *HP Systems Insight Manager Installation and User Guide* on the HP Systems Insight Manager website (http://www.hp.com/go/hpsim).

Deploying Components or PSPs in Windows

The RDU allows local and remote non-scripted deployments only. To deploy Smart Components or PSPs:

1. Select the components to be installed by dragging them from the repository view tree into the target computer list or by selecting a PSP from the Support Pack Selected for Installation dropdown list.

2. Click **Install** on the Target Machine toolbar. The following screen appears.
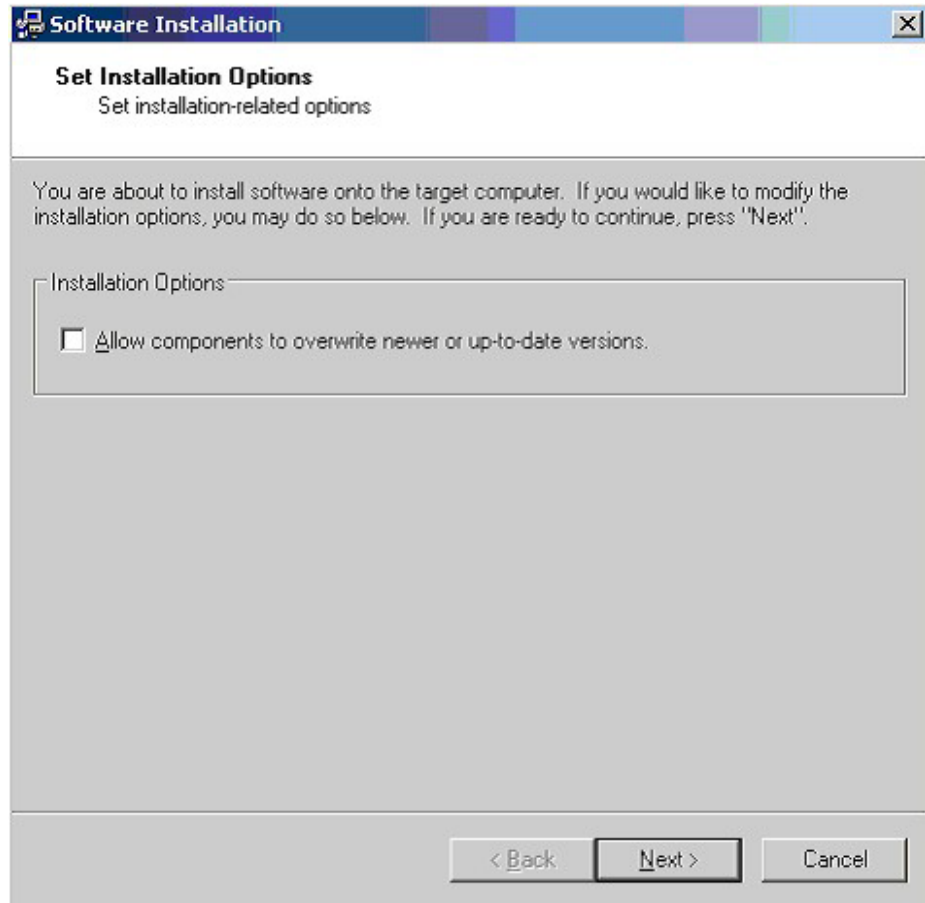
3. Modify the installation options, if desired, and click **Next.** A confirmation screen appears.

4. Click **Next** to begin the installation. An installation progress window appears.

Installation Results in Windows

After deploying the PSP on the target server, the RDU displays an installation confirmation screen. Click **Finish** to exit.
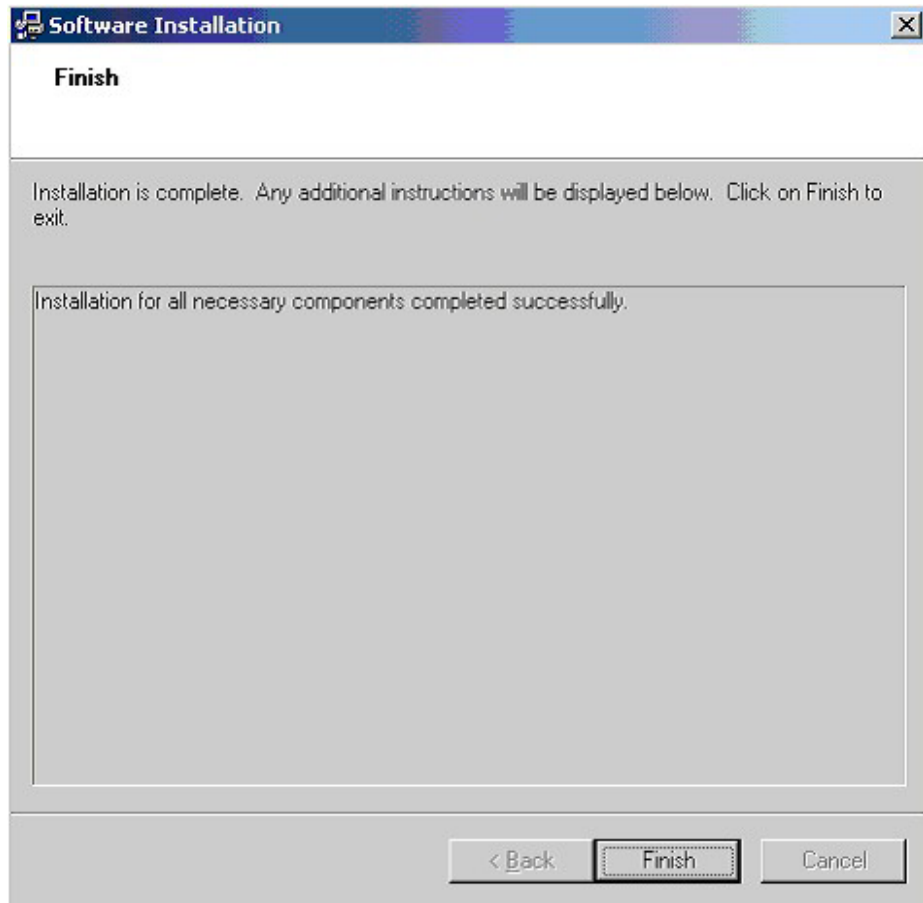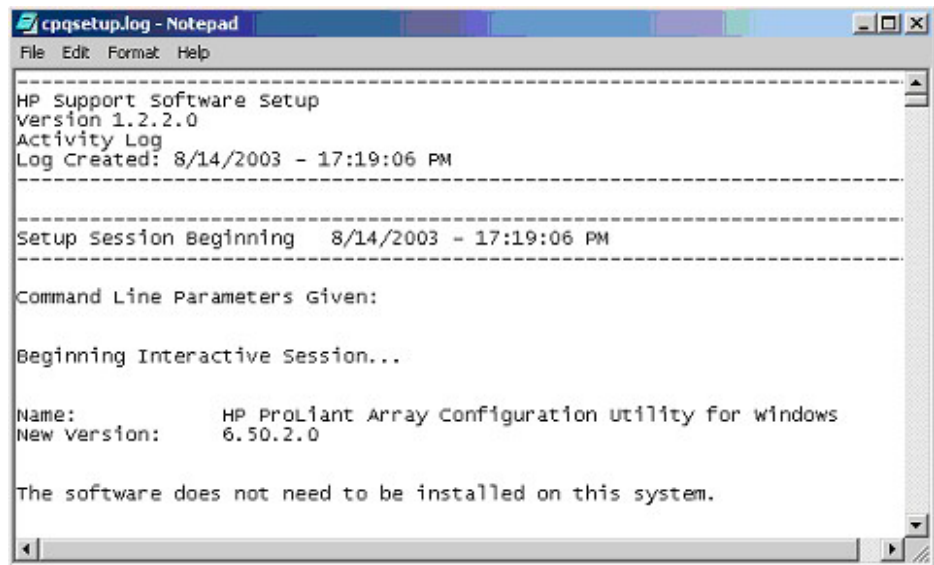
If one or more components are not installed successfully, a screen similar to the following appears.
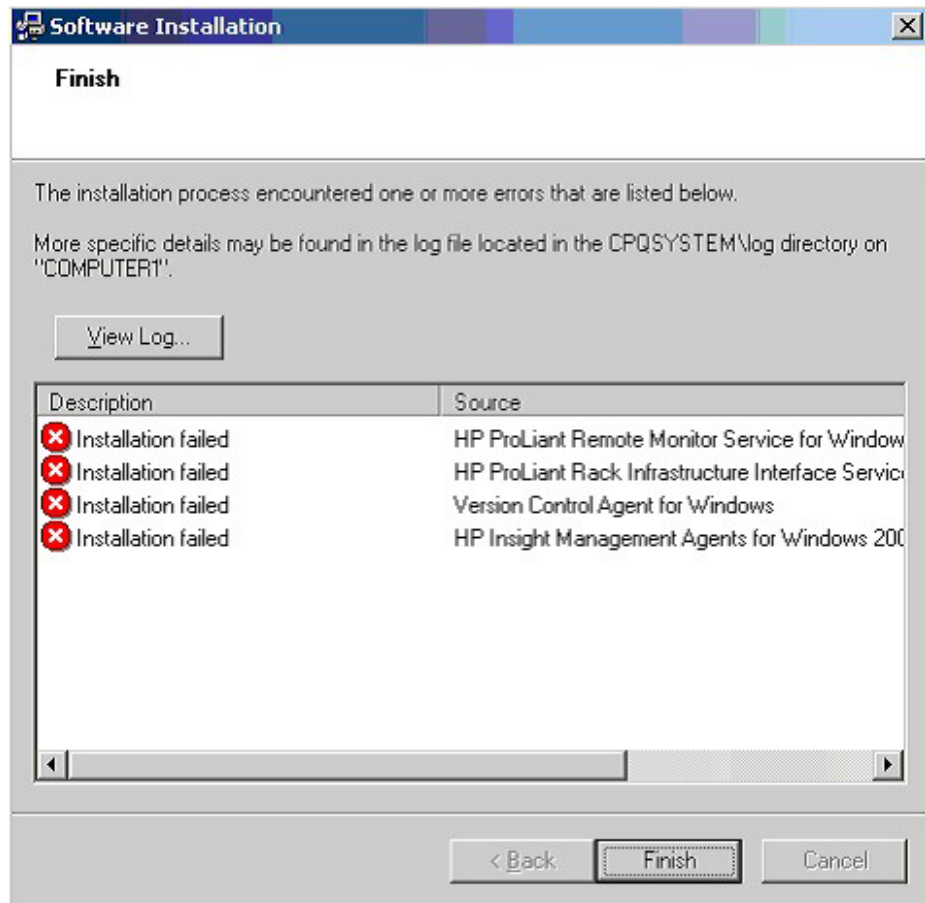
Each component writes an installation activity report (including errors) to a common installation log file called CPQSETUP.LOG on every target server. To view the installation log file, which is always located in the \CPQSYSTEM\LOG subdirectory on the boot partition of the target system, select **Target** from the menu bar and select **View Installation Log,** or click the **View target installation log** icon (📄) on the Target Machine toolbar. Information regarding installation activity is appended to the same log file, providing a chronological history of all component installation activity on the target server.

Remote Deployment Console Utility for Microsoft Windows

The Remote Deployment Console Utility for Microsoft® Windows® is a command line version of the RDU. The functionality of the command line-based Remote Deployment Console Utility is identical to the graphical RDU but enables unattended scripted deployment. The Remote Deployment Console Utility allows both local and single or multiple remote scripted deployments.

The Remote Deployment Console Utility is located along with the rest of the Support Pack contents on the ProLiant Software Maintenance CD and in the \COMPAQ\CSP\NT subdirectory on the SmartStart CD. The executable file that launches the utility is SETUPC.EXE.

Some components must be configured before being deployed. Use the RDU for Microsoft® Windows® to preconfigure components. For more information, refer to "Component Preconfiguration (on page 25)."

For more information about deployment using the Remote Deployment Console Utility, refer to Scenarios 2 and 3 in "Deployment Utilities Usage Scenarios for Windows-Based Systems (on page 40)."

All installation activity is logged by each component to the CPQSETUP.LOG file on the target system.

Command Line Syntax for the Remote Deployment Console Utility

The general command line syntax for the Remote Deployment Console Utility is:

```
setupc [/?] [/help] [/use-latest] [/t[arget]:computer]
[/f[orce]] [/r[eboot][:timeout]] [/reboot-
always[:timeout]] [/use-location:fileshare]
[/user:username] [/passwd:password] [/override-existing-
connection] [component] [support pack]...
```

If no command line arguments are passed on the command line, the Help information appears.

> **NOTE:** All arguments and information enclosed in brackets are optional.

Command Line Arguments for the Remote Deployment Console Utility

Command Line Argument	Description
/help	Displays command line Help information.
/?	Is identical to the /help argument.

Command Line Argument	Description
/use-latest	Instructs SETUPC to automatically install the latest available Support Pack for the target operating system. Any additional components or Support Packs passed on the command line are ignored.
	"Latest available" means the latest available version for the target operating system that can be found in either the file share specified by the /use-location parameter or in the directory containing SETUPC.EXE.
/t[arget]:*computer*	Specifies the name of the computer to use as the target for the deployment operation.
/f[orce]	Changes the behavior of a component installation in one of the following ways:
	• If the component is already installed and current, it will reinstall itself, and the installed version number will remain the same.
	• If a newer version of the component is already installed, the component will install itself and downgrade the component to the older version number.
/r[eboot][:*timeout*]	Causes the target system to reboot if the installation requires a reboot to complete installation. A timeout in seconds can be specified. The default timeout is 15 seconds.
	The timeout value must be between 15 and 3600 (1 hour).
	The reboot will only take place if no installation errors occur.
/reboot-always[:*timeout*]	Causes the target system to reboot after installation, even if a reboot is not required to complete installation. A timeout in seconds can be specified. The default timeout is 15 seconds.
	The timeout value must be between 15 and 3600 (1 hour).
/use-location:*fileshare*	Instructs SETUPC to look in the specified directory or file share for the Support Pack and components. If this parameter is not specified, the directory containing SETUPC.EXE is used by default.
	The current logged-in account must already have access to this location.
	The /user: and /passwd: arguments do not have any effect when attempting to access the file share. They are only used when connecting to a target computer.
/user:*username*	Sets the user name to use to connect to the target computer.
/passwd:*password*	Sets the password to use to connect to the target computer.

Command Line Argument	Description
/override-existing-connection	Instructs SETUPC.EXE to connect to the target computer and override any existing connection that might be present.
	It is not recommended that this flag be used as a default. It overrides important safety checks that ensure that only one client at a time is connected to a target computer.
	Use this parameter only for recovery in a situation where the Remote Deployment Console Utility is reporting that a connection to a target computer is present, even if no connection exists. This situation can occur if one of the remote deployment utilities does not shut down properly.
component	Specifies the component to install.
support pack	Specifies the Support Pack to install.

Command Line Examples for the Remote Deployment Console Utility

Although lowercase letters are used in these examples, the Remote Deployment Console Utility is not case sensitive, and either uppercase or lowercase letters can be used. However, the operating system environment variable is case sensitive. For example, %I is not the same as %i.

Command Line Input	Result
setupc /target:COMPUTER1 /use-latest	Installs the latest available version of the Support Pack that is located in the current directory and is applicable to the computer named COMPUTER1.
setupc /target:COMPUTER1 BP000001.XML	Installs the Support Pack defined by BP000001.XML from the current directory on the computer named COMPUTER1.
setupc /target:COMPUTER2 BP000001.XML CP000150.EXE	Installs the Support Pack defined by BP000001.XML and an additional component named CP000150.EXE located in the current directory on the computer named COMPUTER2.

Command Line Input	Result
setupc /target:HPSYS1 /use-latest /use-location:\\SWREPOS\SupportSoftware	Installs the latest available Support Pack from \\SWREPOS\SupportSoftware on the computer named HPSYS1.
@echo off for %%I in (HPSYS1 HPSYS2 HPSYS3) do setupc /t:%%I BP000002.XML	A Windows® .CMD script that installs the Support Pack defined by BP000002.XML on the following computers: HPSYS1, HPSYS2, and HPSYS3.

For additional information about the syntax of the FOR ... IN ... DO operating system command, refer to the operating system documentation.

Installing Single Components

In some instances, you might want to install a single component manually, rather than install an entire Support Pack. To install a single component on your local system:

1. Double-click the component to be installed (cpxxxxxx.EXE). A screen similar to the following appears.
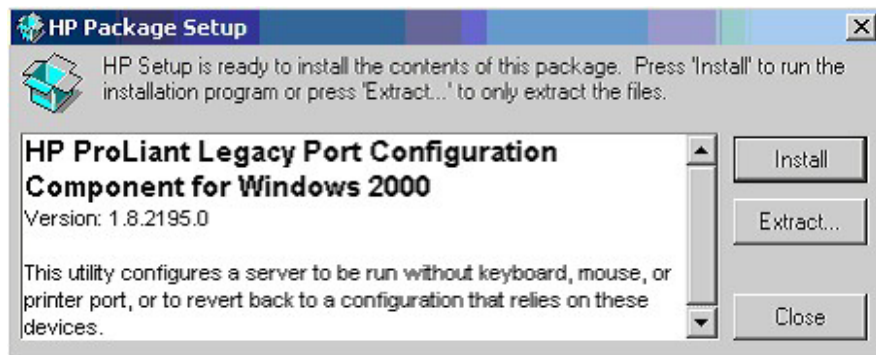
2. Click the **Install** button. A screen similar to the following appears.
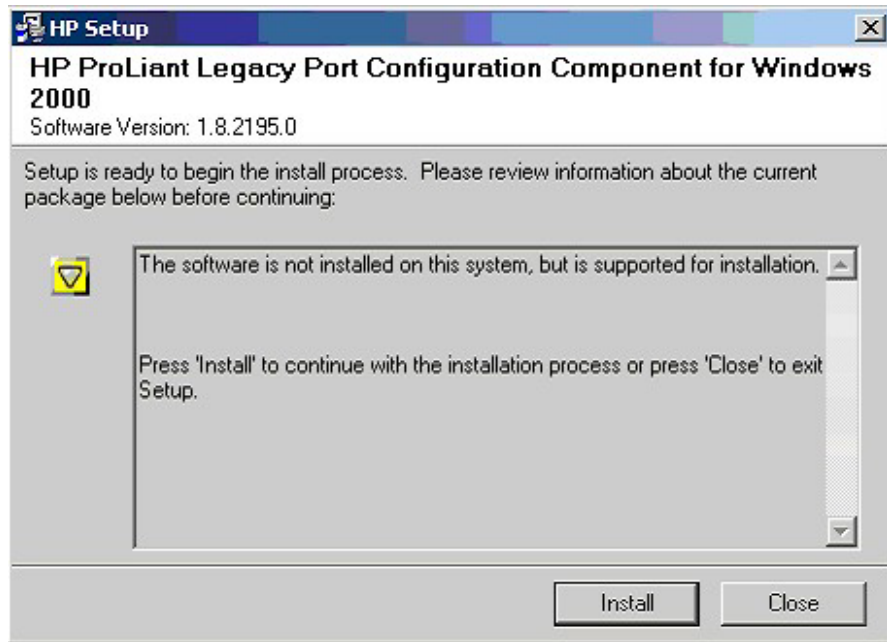
3. Click the **Install** button, then follow the instructions on the screen to complete the installation.

Command Line Syntax for Single Components

The general command line syntax for single-component installation is

```
cpxxxxxx [/h[elp]] [/?] [/s[ilent]] [/f[orce]]
[/r[eboot]]
```

where cpxxxxxx is the file name of the Smart Component; the Xs represent the component number.

> **NOTE:** All arguments and information enclosed in brackets are optional.

If no command line arguments are passed on the command line, the component GUI appears.

Command Line Arguments for Single Components

Command Line Argument	Description
/h[elp]	Displays command line Help information.
/?	Is identical to the /help argument.
/s[ilent]	Specifies whether the GUI appears. Use this argument when scripting the Smart Components to suppress the GUI. If this argument is omitted from the command line, the GUI appears.
/f[orce]	When used with the /silent command, installs the component in one of the following ways: • If the component is already installed and current, it will be reinstalled, and the installed version number will remain the same. • If a newer version of the component is already installed, the component will install itself and downgrade the originally installed component to the older version number. However, some components do not support downgrading and might require that the current version be uninstalled before installing a previous version. If this argument is omitted from the command line, the installation is not forced.
/r[eboot]	When used with the /silent command, causes the target system to reboot if the installation requires a reboot to complete the installation. If this argument is omitted from the command line, the server must be rebooted manually for the installation to take effect. The reboot will only take place if no installation errors occur.

Command Line Examples for Single Components

Although lowercase letters are used in these examples, either uppercase or lowercase letters can be used.

Command Line Input	Result
cp002575	Starts installation of the CP002575.EXE component.
cp002575 /s	Installs the CP002575.EXE component on the target server, using the defaults of the component. The GUI does not appear.

Command Line Input	Result
cp002575 /s /f /r	Installs the CP002575.EXE component, forcing the component to install over an existing version and allowing the server to reboot automatically if needed. The GUI does not appear.

Return Codes for Single Components

When each Smart Component has finished running, the component reports a return code to the operating system or the calling application.

These return codes are used to determine the status of the component installation. You can also use return codes in a script to control the execution of the script and determine any branching that is required.

Error Level	Meaning
0	The Smart Component failed to install. Refer to the log file for more details.
1	The Smart Component installed successfully.
2	The Smart Component installed successfully, but the system must be restarted.
3	The installation was not attempted because the required hardware was not present or the software was current.

Deployment Utilities Usage Scenarios for Windows-Based Systems

This section discusses deployment scenarios for PSPs and components stored in a centralized, network-based software repository.

All of the PSP deployment examples described in this guide assume a centralized, network-based software repository. The same deployment principles are applicable to PSP software that is stored locally on the administrative system, target system, SmartStart CD, or Software Maintenance CD.

TIP: To facilitate the use of the PSP deployment utilities, copy the utility files to their own subdirectory on the hard drive of the administrative system.

The following figure illustrates overall PSP and component deployment strategy for Windows®-based systems.

Scenario	Type of Deployment	Deployment Utility Used
1	• User is not familiar with operating system command line tools or does not need to deploy from a command line. • User must deploy on a single local or remote target system. • User does not need scripting capabilities.	RDU (SETUP.EXE)
2	• User is familiar with operating system command line tools. • User must deploy on a single local or remote target system. • User needs scripting capabilities.	Remote Deployment Console Utility (SETUPC.EXE)
3	• User is familiar with operating system command line tools. • User must deploy on a few remote target systems. • User needs scripting capabilities.	Remote Deployment Console Utility (SETUPC.EXE)

Scenario	Type of Deployment	Deployment Utility Used
4	• User is an expert with operating system tools, including command line scripting. • User is knowledgeable about HP Systems Insight Manager. • User must deploy on a multitude of remote target systems, all managed by HP Systems Insight Manager.	Remote Deployment Console Utility with HP Systems Insight Manager

> **IMPORTANT:** When using HP Systems Insight Manager in conjunction with the PSP deployment utilities, HP recommends deploying to no more than 100 remote target systems with any given Application Launch task.

For information on using HP Systems Insight Manager with the VCRM and the VCA, refer to the *HP Systems Insight Manager Help Guide* on the HP Systems Insight Manager website (http://www.hp.com/go/hpsim).

Scenario 1: Graphical Deployment on a Single-Target System Using the RDU

> **IMPORTANT:** Be sure that all components that require configuration are configured before deploying them.

Both the RDU and the Remote Deployment Console Utility can be used to maintain and deploy PSPs and individual components on a local or remote target system. However, the graphical RDU is the easiest utility to use when deploying on a single-target system.

The following figure illustrates the basic, single-target system deployment process using the RDU.

When to Use Windows PSP Deployment Scenario 1

Use the PSP deployment scenario described in this section when you:

- Are not familiar with operating system command line tools or do not need to deploy from a command line

- Are deploying PSPs or individual components on a single-target system that is either local or remote

- Do not have a need for scripting

Deploying a PSP Using Windows PSP Deployment Scenario 1

To deploy a PSP stored in a centralized, network-based software repository using the graphical RDU:

1. Be sure that all minimum requirements are fulfilled as listed in "Minimum Requirements for Windows Servers (on page 16)."

2. Be sure that the centralized, network-based software repository can be accessed by the administrative system.

3. Launch the RDU on the administrative system. It does not matter where the utility resides on the host system. However, HP recommends placing the utility in its own subdirectory.

If no PSPs or components are in the same directory as the RDU or if no applicable Support Packs are found, a blank screen similar to the following appears when the utility opens.
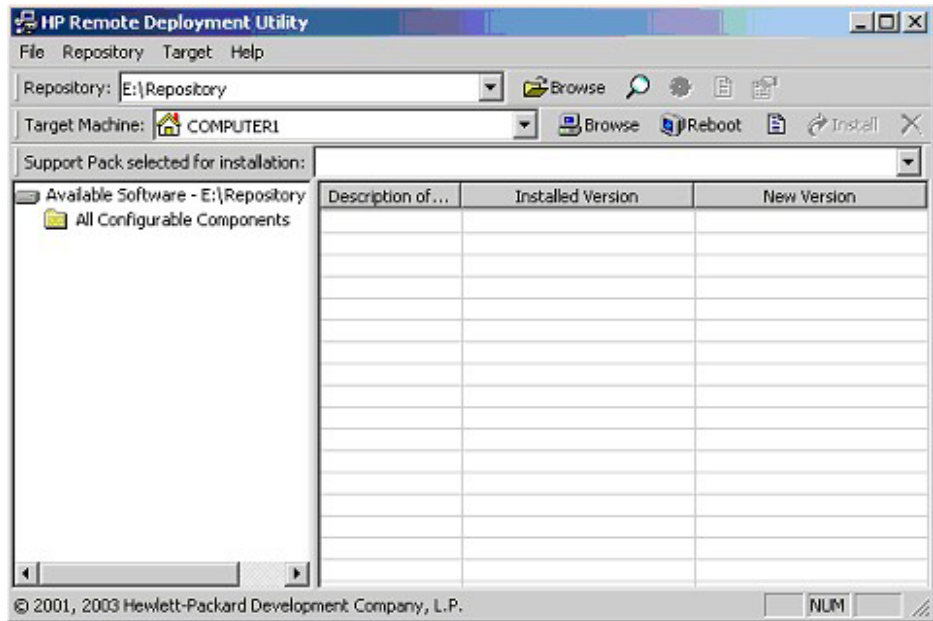
4. Click **Browse** on the Repository toolbar to navigate to the location of the centralized, network-based software repository.

5. Configure components by right-clicking a component in the repository view tree and selecting **Configure.** Icons next to each component indicate whether the icon must be configured. Refer to "Repository View Tree (on page 21)" for descriptions of the icons.

6. Select components to be installed:

   – To install all components in the applicable Support Pack, select a Support Pack from the Support Pack Selected for Installation toolbar. All the components in the Support Pack appear in the target computer list, as shown in the following figure.

   IMPORTANT: All components that make up a PSP must be present in the same directory as the Support Pack File.

– To select individual components or categories, drag selected files or folders from the repository view tree and drop them in the target computer list. You can also select a file or folder in the repository view tree, and then press the Insert key to move the file or folder to the target computer list.

– To remove any components that you do not want to install, select them in the target computer list and press the **Delete** key, or click the **Remove selected items chosen for installation** button (✗) on the Target Machine toolbar.
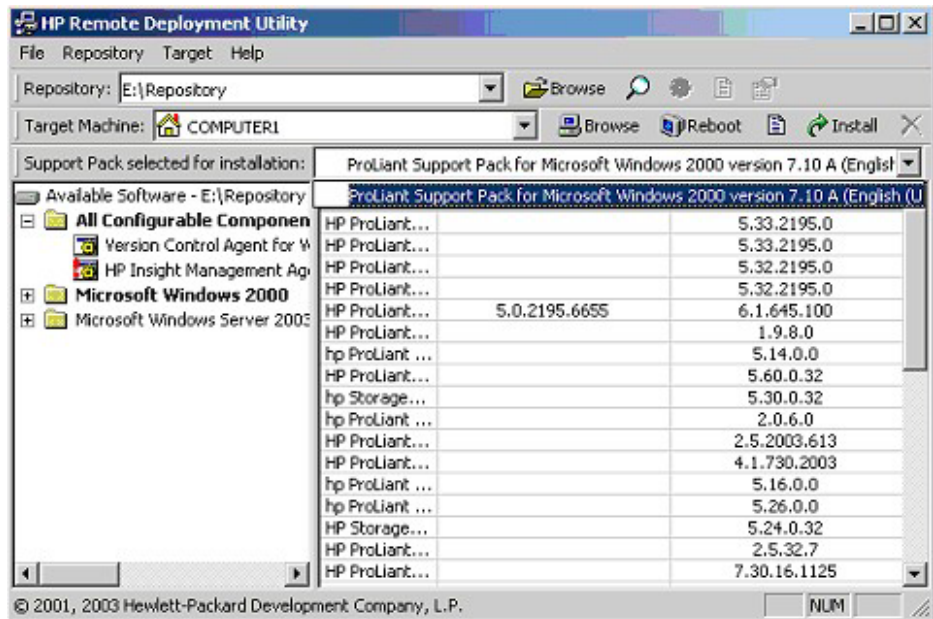
If error text appears under a Support Pack in the repository view tree, as in the following figure, a component referenced in the Support Pack is not available in the software repository.

To correct the situation, obtain the missing component from the HP
website, SmartStart CD, or Software Maintenance CD and copy it to the
software repository.
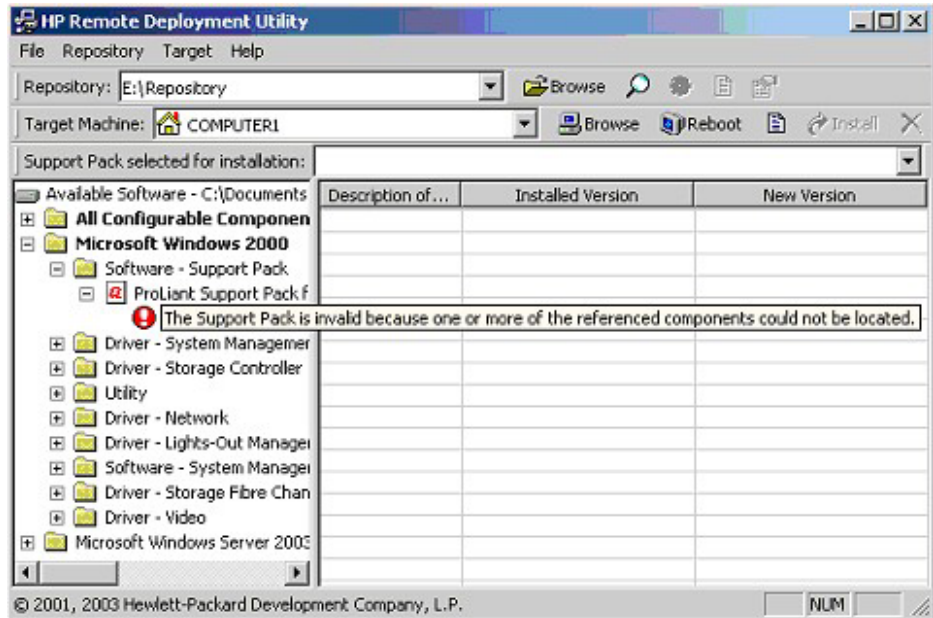
7. Select the target machine. By default, the RDU selects the system that
   launches the utility as the target system.

   If the target system is the local administrative system, there is no need to
   modify the Target Machine field. However, if the target system is a remote
   system accessible over the network, enter or browse to the name of the
   network target system in the Target Machine field and press the **Enter** key to
   connect to the target. You can also click **Target,** and use the Browse for
   Computer window to navigate to the system accessible over the network
   connection. Click **OK** to select the target and return to the RDU main
   window.

   > **NOTE:** To assist with entry of the target system name, the RDU
   > maintains a history of servers on which software has been developed.
   > Access this history from the Target Machine list.

If the user name and password for the target machine do not match those for the machine running the RDU, you are prompted to enter the user name and password for the target machine.

8. Deploy all components displayed in the target computer list by clicking **Install** after the RDU identifies the target system. A progress window tracks the progress of the deployment.

9. Click **Cancel** at any time to stop deployment. There might be a slight delay before the installation is canceled while the RDU finishes the last initiated task.

    IMPORTANT: Clicking **Cancel** stops the installation of the PSP at the point when **Cancel** is clicked, so the target server might end up with a partially installed PSP.

10. View the installation results. When the deployment process is complete, after deploying the PSP on the target server, the RDU displays an installation confirmation screen.

If one or more components are not installed successfully, a screen similar to the following appears.
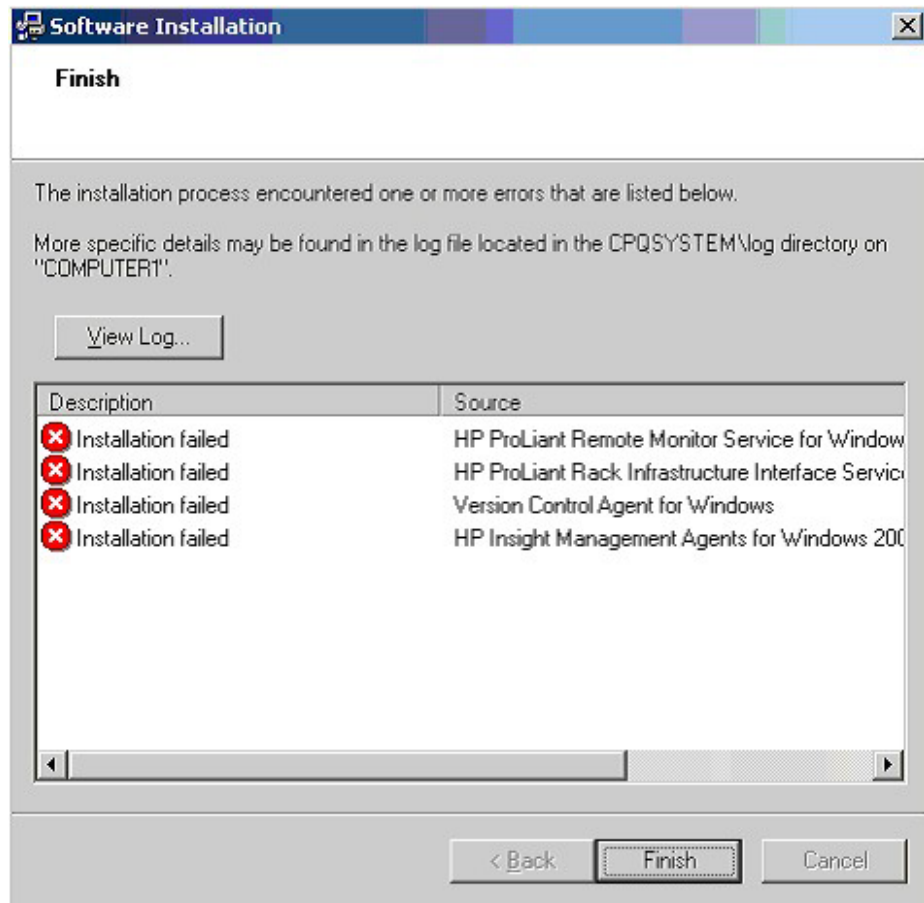
Each component writes installation activity (including errors) to a common installation log file called CPQSETUP.LOG on every target server. To view the installation log file, select **Target** from the menu bar and select **View Installation Log,** or click **View target installation log** on the Target toolbar.

11. If necessary, reboot the target server to complete the installation by clicking **Reboot** and confirming when prompted by the system. The deployment is complete.

> **NOTE:** If the target system is the local administrative system, clicking Reboot causes the system to reboot, and the RDU must be restarted to deploy components or PSPs on another target system.

12. Close the Installation Results window to deploy components or PSPs on another target server.

Scenario 2: Command Line Deployment on a Single-Target System Using the Remote Deployment Console Utility

> **IMPORTANT:** Be sure that all components that require configuration are configured before deploying them.

> **NOTE:** The Remote Deployment Console Utility is designed as a tool that can be scripted with the SmartStart Scripting Toolkit. For information about scripting server deployment, refer to the SmartStart Scripting Toolkit website (http://www.hp.com/servers/sstoolkit).

The following figure illustrates the basic, single-target system deployment process using the Remote Deployment Console Utility.

When to Use Windows PSP Deployment Scenario 2

Use the PSP deployment scenario described in this section when you:

- Are familiar with operating system command line tools
- Require deployment of PSPs or individual components on a single-target system that is either local or remote
- Have a need for scripting

Deploying a PSP Using Windows PSP Deployment Scenario 2

To deploy a PSP stored in a centralized, network-based software repository from a command line prompt on a single-target system:

1. Be sure that all minimum requirements are fulfilled as listed in "Minimum Requirements for Windows Servers (on page 16)."

2. Be sure that the software repository can be accessed by the administrative system.

3. Map a drive letter to the network-based software repository that contains the PSP files.

4. Preconfigure components using the RDU (SETUP.EXE). For more information, refer to "Component Preconfiguration (on page 25)."

5. Launch a command line prompt on the administrative system, and change to the subdirectory containing the Remote Deployment Console Utility.

6. Launch the Remote Deployment Console Utility. For more information, refer to "Remote Deployment Console Utility for Microsoft Windows (on page 33)."

   > **NOTE:** Command line help for the Remote Deployment Console Utility is accessible by running the SETUPC.EXE file from the command line. A screen displays all possible parameters that the utility accepts.

7. Deploy the specified PSP file on the target system by pressing the Enter key.

When the utility deploys a PSP or individual components to the target system, each component writes installation information to the file CPQSETUP.LOG on the target system.

Be sure that the target system is accessible over the network connection and that all files that make up a PSP are present in the same directory. If the target system is not accessible over the network connection, one of the following error messages might appear:

- ```
  Unable to connect to the target computer. All
  available connection methods were attempted with no
  success. A possible reason is that the operating
  system of the target computer is not supported.
  ```

- Access to the target computer was denied, possibly due to incorrect authentication information or permissions.

- The target computer could not be found. Please check the spelling of the computer name or the network connection and try again.

If installation errors occur, the command line window might display an error message followed by a list of components and the errors that occurred.

> **IMPORTANT:** You can stop a command line deployment on a local server at any time by pressing the **Ctrl+C** keys.

When the deployment process ends, control is returned to the command line prompt to run the Remote Deployment Console Utility on the next target server that must be deployed.

> **TIP:** You can view the centralized installation log file on the remote target system by connecting to the remote target system over the network with Windows® Explorer and opening the CPQSETUP.LOG file. You can also view the file in a command prompt window on the administrative system by using the TYPE or MORE commands, followed by the network path and name of the remote installation log file.

Scenario 3: Command Line Deployment on Multiple-Target Systems Using the Remote Deployment Console Utility

> **IMPORTANT:** Be sure that all components that require configuration are configured before deploying them.

> **NOTE:** The Remote Deployment Console Utility is designed as a tool that can be scripted with the SmartStart Scripting Toolkit. For information about scripting server deployment, refer to the SmartStart Scripting Toolkit website (http://www.hp.com/servers/sstoolkit).

The following figure illustrates the basic, multiple-target system deployment process using the Remote Deployment Console Utility.
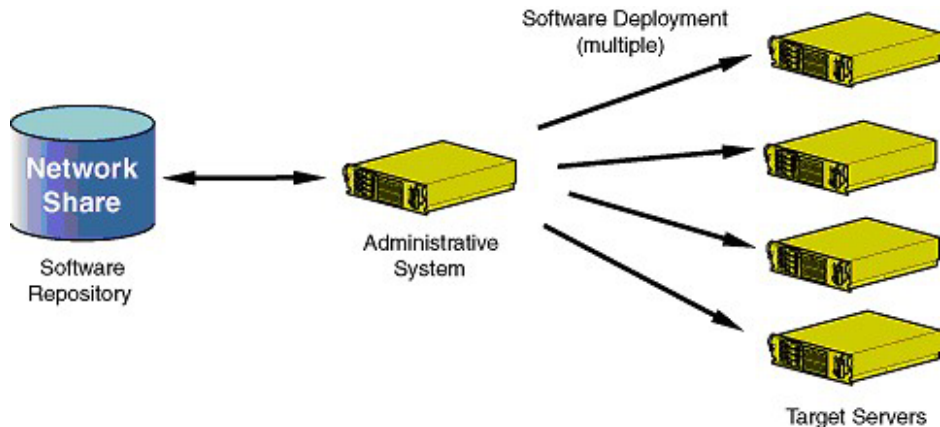
When to Use Windows PSP Deployment Scenario 3

Use the PSP deployment scenario described in this section when you:

- Are familiar with operating system command line tools

- Require deployment of PSPs or individual components on a few remote target systems

- Have a need for scripting

Deploying a PSP Using Windows PSP Deployment Scenario 3

Deploying software on multiple-target systems with the Remote Deployment Console Utility follows the same basic procedures outlined in "Scenario 2: Command Line Deployment on a Single-Target System Using the Remote Deployment Console Utility (on page 49)."

> **IMPORTANT:** If multiple-target server deployment requirements are for very high volumes, refer to "Scenario 4: Command Line Deployment on Multiple-Target Systems Managed by HP Systems Insight Manager (on page 53)." Using the Remote Deployment Console Utility from the command line to deploy to multiple-target servers is recommended only for a few target servers.

To deploy a PSP stored in a centralized, network-based software repository from a command line prompt on multiple-target servers:

1. Follow steps 1 through 5 in "Scenario 2: Command Line Deployment on a Single-Target System Using the Remote Deployment Console Utility (on page 49)."

2. Launch the Remote Deployment Console Utility, using command line parameters to specify each of the target systems. For more information, refer to "Remote Deployment Console Utility for Microsoft Windows (on page 33)."

    IMPORTANT: The target systems must be accessible over the network connection, and the account that is running the Remote Deployment Console Utility must have administrative access to the target system.

    NOTE: Command line help for the Remote Deployment Console Utility is accessible by running the SETUPC.EXE file from the command line. A screen displays all possible parameters that the utility accepts.

3. Complete the deployment. Refer to step 7 in "Scenario 2: Command Line Deployment on a Single-Target System Using the Remote Deployment Console Utility (on page 49)," for the remainder of the deployment process and any error messages that might appear.

    TIP: Although each component that is run will write installation information to the installation log file CPQSETUP.LOG on the target system, you can redirect screen output to text files that are local to the administrative system. This capability provides convenient local access to multiple-target server deployment information from one location. Refer to the operating system documentation for more information about output redirection.

Scenario 4: Command Line Deployment on Multiple-Target Systems Managed by HP Systems Insight Manager

IMPORTANT: Be sure that all components that require configuration are configured before deploying them.

For initial PSP deployment on multiple-target systems managed by HP Systems Insight Manager, use the Remote Deployment Console Utility. As in the previous scenarios, HP recommends that all deployments be performed from a centralized, network-based software repository.

After initial PSP deployment, HP recommends that you use the software deployment support in HP Systems Insight Manager.

The following figure illustrates the basic, multiple-target system deployment process using HP Systems Insight Manager and the Remote Deployment Console Utility.
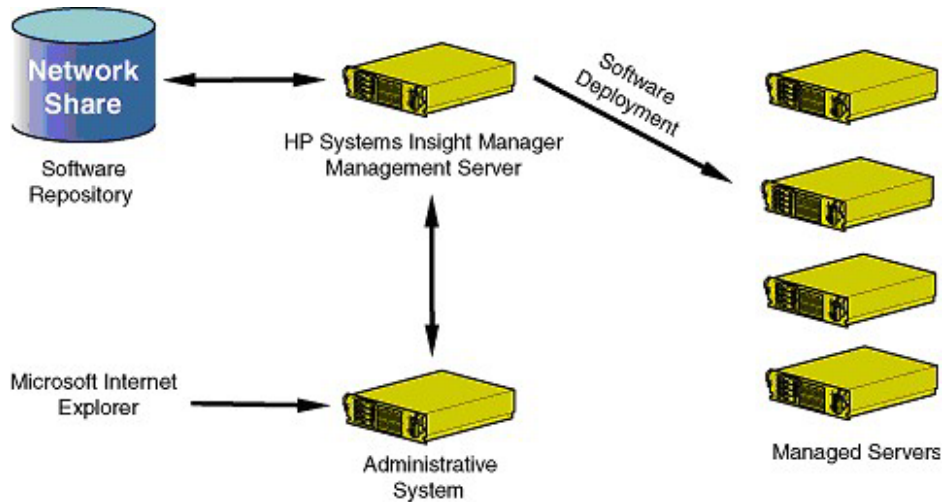
When to Use Windows PSP Deployment Scenario 4

Use the PSP deployment scenario described in this section when you are:

- Knowledgeable about operating system tools, including command line scripting

- Knowledgeable about HP Systems Insight Manager

- Deploying PSPs or individual components on many remote target systems that are all managed by HP Systems Insight Manager

Deploying a PSP Using Windows PSP Deployment Scenario 4

For information on using HP Systems Insight Manager with the VCRM and the VCA, refer to:

- The *HP Systems Insight Manager Help Guide* on the HP Systems Insight Manager website (http://www.hp.com/go/hpsim)

- The Version Control User Guide on the HP Insight Manager website (http://h18004.www1.hp.com/products/servers/management/im/documentation.html)

> **IMPORTANT:** When using HP Systems Insight Manager in conjunction with the PSP deployment utilities, HP recommends deploying to no more than 100 remote target systems with any given Application Launch task.

For detailed information about using HP Systems Insight Manager, refer to the *HP Systems Insight Manager Installation and User Guide* available on the Management CD, in every HP Systems Insight Manager download from the Web, or on the HP Systems Insight Manager website (http://www.hp.com/go/hpsim).

Alternatively, click **Help** in HP Systems Insight Manager.

Deploying PSPs in Novell NetWare

In This Section

Overview of PSPs for Novell NetWare

This chapter discusses how to use PSPs for Novell NetWare. HP provides the ProLiant Deployment Utility for Novell NetWare for deploying the PSPs for NetWare.

Several usage scenarios are provided as examples at the end of this chapter.

PSPs are operating system-specific bundles of HP server support software. Each PSP includes multiple self-installable components known as Smart Components (optimized drivers, management agents, utilities, and ROMs). This PSP design improves and simplifies operating system integration, flexibility, and system configuration.

Minimum Requirements for NetWare Servers

> **IMPORTANT:** Before deploying software updates on a target system, be sure that a recent backup of the target system is available in the event the deployment procedure fails.

The PSP is currently shipped in a single bundle that supports NetWare 5.1, 6.0, and 6.5. The bundle installs the appropriate software for the installed version of NetWare. The PSPs have the following minimum requirements:

- NetWare 5.1-Base installation. However, Support Pack 8 or later is recommended.

- NetWare 6.0-Base installation. However, Support Pack 4 or later is recommended.

- NetWare 6.5-Base installation. However, Support Pack 2 or later is recommended.

The PSP is designed for use after the operating system installation to update drivers and install HP utilities (such as Power Management and Health) and agents (Foundation, Server, NIC, and Storage).

> **IMPORTANT:** Although the PSP cannot be used during initial NetWare red-box installation, provides the necessary drivers for red-box installation on the SmartStart CD in the \compaq\drivers*os_version* directory in flat file format, where *os_version* is nw5, nw6, or nw65. Functionality to create driver diskettes needed for red-box installations is available from the Windows® and Linux "autoruns" on the SmartStart CD. Support for red-box installations can also be accomplished by copying the contents of the directory from the SmartStart CD in to the C:\NWUPDATE directory on the server after the hard drive has had a DOS partition defined and formatted but before NetWare driver detection.

After the installation is complete, use the PSP to complete the server configuration.

ProLiant Deployment Utility for Novell NetWare

HP has developed the ProLiant Deployment Utility for Novell NetWare to provide enhanced PSP deployment capabilities. Using a console interface, the utility enables you to deploy and maintain PSP software on a local server.

The Deployment Utility for Novell NetWare is available with PSPs for Novell NetWare at the software and drivers website (http://www.hp.com/servers/swdrivers).

The utility has two modes of operation:

- **User interface mode**—Provides a NUT-based graphical interface to guide the installation of a PSP or a subset of components in the PSP

- **Command line mode**—Enables non-graphical command line installation of a PSP or individual components

When the user interface mode of the Deployment Utility for Novell NetWare is launched, a main control window appears. The window provides details about the content of the PSP, including old and new version numbers and descriptions for each component in the PSP.

```
┌──────────────────────────────────────────────────────────────────────────┐
│ HP ProLiant Component Installer                    NetWare Loadable Module │
├──────────────────────────────────────────────────────────────────────────┤
│        Installing v6.00 of the Conpaq Support Paq for Novell NetWare       │
│              Press F10 to Install Component(s) or ESC to cancel            │
├──────────────────────────────────────────────────────────────────────────┤
│Installed Version  New Version  Component Name                              │
├──────────────────────────────────────────────────────────────────────────┤
│ Storage - Controllers                                                      │
│    Unknown            2.14      Conpaq Drive Array Driver for Novell NetWare 6│
│    Unknown            1.43      Conpaq 32-Bit SCSI Controller Driver for Novel│
│    Unknown           17.12m     Conpaq 64-Bit/66-MHz Wide Ultra3 Controller Dr│
│    Unknown            2.65b     Conpaq Online Array Configuration Utility for │
│    Unknown            2.11      Conpaq Integrated Ultra ATA-100 Dual Channel D│
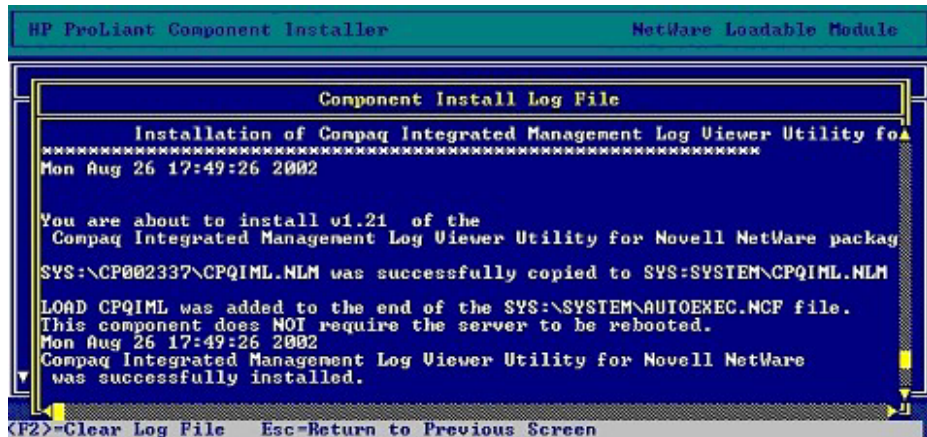│    2.03               2.04      Conpaq Unified RAID Host Adapter Module Driver│
│ Storage - Fibre Channel                                                    │
│    Unknown            2.52      Conpaq StorageWorks Fibre Channel Host Bus Ada│
│▼ Network                                                                   │
├──────────────────────────────────────────────────────────────────────────┤
│  Force Installation: No   Reboot if Required: No   Modify NCF Files: Yes   │
├──────────────────────────────────────────────────────────────────────────┤
│<F1>=Help  <F10>=Install Component(s)   Enter=Details   Esc=Exit   <F8>=More │
└──────────────────────────────────────────────────────────────────────────┘
```

After deploying the PSP on the target server, the Deployment Utility for Novell NetWare displays comprehensive installation results, listing the components that were successfully installed, components that were not needed for the target system, and any installation failures.

Each component writes installation activity (including errors) to a common installation log file called CPQLOG.LOG, which is located in the SYS:\ETC\ subdirectory. Information regarding subsequent installation activity is appended to the same log file, providing a chronological history of all component installation activity on the target server. The following figure shows a sample installation log file.

Deployment Utility Usage Scenarios for NetWare Servers

The ProLiant Deployment Utility for Novell NetWare is a software maintenance tool used to deploy PSPs and individual components on NetWare servers.

The overall PSP and component deployment strategy is consistent throughout all deployment scenarios on NetWare servers, as shown in the following figure. The software must be copied to the NetWare target server from either an administrative workstation or another server before it is deployed.

TIP: To facilitate the use of the PSP deployment utilities, copy the utility files to their own subdirectory on the hard drive of the administrative system.

Scenario	Type of Deployment	Deployment Method Used
1	• User can install one or more components by means of a command line or .NCF file. • User can install a bundle by means of a command line or .NCF file. • User is familiar with script files or wants to automate an installation of the NetWare PSP.	Command line by CPQDPLOY.NLM
2	• User can select which components to install from a list. • User can install all components with a few simple keystrokes. • User wants a graphical display of results of the installation by component. • User needs the ability to look at details of each component before installation. • User wants to choose which packages are installed graphically or does not want to work with script files.	Graphical (NUT-based) by CPQDPLOY.NLM
3	• User can install a single component by means of a command line or .NCF file. • User needs the ability to look at details of each component before installation using the -i switch. • User wants to install only selected components or wants to automate the installation of selected components.	Command line by individual component

Scenario	Type of Deployment	Deployment Method Used
4	• User can install the component with a few simple keystrokes. • User wants a graphical display of results of the installation by component. • User needs the ability to look at details of the component before installation. • User only wants to install a selected component and does not want to work with script files.	Graphical (NUT-based) by individual component

Command Line Parameters for the ProLiant Deployment Utility for Novell NetWare

This section explains the command line parameters used in the usage scenarios. Parameters can be entered in uppercase or lowercase, with either a slash (/) or dash (-) preceding them. For example, -h, -help, /h, or /help can be used. The order of parameters is not important.

Command Line Syntax for the ProLiant Deployment Utility for Novell NetWare

```
<VOLUME:\PATH\>CPQDPLOY [/H | /?] [/NUI] [/S] [/R] [/F]
[/NOMODS] [BP000xxx.XML | CP00xxxx.NLM]
```

Command Line Argument	Description
/H	This argument displays a list of command line parameters.
/NUI	This argument suppresses the user interface. However, during installation, output is shown at the system console unless the silent (/S) option is also used.
/S	This argument enables a silent installation. All messages are logged to the SYS:\ETC\CPQLOG.LOG file. No console output or GUI is shown.
/R	This argument reboots the system if any packages being installed require it and if no failures occurred during the installation.
/F	This argument forces the installation of all packages, regardless of the software version installed on the server, as long as the component is supported on the currently installed version of NetWare.

Command Line Argument	Description
/NOMODS	This argument prevents modifications to the STARTUP.NCF or AUTOEXEC.NCF files. The default option is to make all modifications as needed during the installation of each component bundle.

Command Line Syntax for Individual NetWare Component Installation

<*VOLUME*:*PATH*\>CP00XXXX [/H | /?] [/NUI] [/S | /F] [/I]
[/G] [/R] [/x*VOL*:*PATH*] [/NOMODS] [/b*VOL*:*PATH*]

Command Line Argument	Description
/H	This argument shows a list of command line parameters.
/NUI	This argument suppresses the user interface. However, during installation, output is shown at the system console unless the silent (/S) option is also used.
/S	This argument enables a silent installation. All messages are logged to the SYS:\ETC\CPQLOG.LOG file. No console output or GUI is shown.
/F	This argument forces the installation of a package, regardless of the software version installed on the server, as long as the component is supported on the currently installed version of NetWare.
/I	This argument displays the Package Payload information (no installation occurs).
/G	This argument displays Package Source and Destination information (no installation occurs).
/R	This argument reboots the system if the package being installed requires it and if no failures occurred during the installation.
/x*VOL*:*PATH*	This argument extracts the contents of the package to the directory pointed to by Vol:\Path.
/NOMODS*	This argument prevents modifications to the STARTUP.NCF or AUTOEXEC.NCF files. The default option is to make all modifications as needed during the installation of each component bundle.
/b*VOL*:*PATH**	This argument backs up all files that will be replaced by the installation of the package to the directory pointed to by Vol:\Path. Versioning of backups is not supported. Subsequent installs will overwrite existing files in the given directory.

*Not supported by HP Agents and the Survey Utility components

> **NOTE:** For /xVol:\Path and /bVol:\Path, there is no space between the x or b and the path. If Vol:\Path does not exist, an attempt is made to create the path. An invalid volume or path will be ignored, and the extraction will be terminated.

Command Line Examples for the ProLiant Deployment Utility for Novell NetWare

In the following examples, the PSP has been copied to the SYS:\DEPLOY directory.

Action	Command Line
Use normal program execution to launch the Deployment Utility.	SYS:\DEPLOY\CPQDPLOY
Use CPQDPLOY to deploy a specific Support Pack.	SYS:\DEPLOY\CPQDPLOY [BP000111.XML]
Use the force option.	SYS:\DEPLOY\CPQDPLOY -f
Use the "no user interface" option (no GUI).	SYS:\DEPLOY\CPQDPLOY -nui
Use the silent option (no command line or GUI output).	SYS:\DEPLOY\CPQDPLOY -s
Use the silent option and the force option.	SYS:\DEPLOY\CPQDPLOY -s -f
Install a single component with the GUI.	SYS:\DEPLOY\CP002345
Install a single component with force and "no user interface" options.	SYS:\DEPLOY\CP002351 -f -nui
Extract component contents to another directory.	SYS:\DEPLOY\CP002326 -xSYS:\TEMP
Determine the contents of a component without extracting or installing the component.	SYS:\DEPLOY\CP002341 -i
Determine the source directory, destination directory, primary NLM, and other component information to be installed by the component package without installing the component.	SYS:\DEPLOY\CP002346 -g
Deploy a single component from the Deployment Utility with the force option.	SYS:\DEPLOY\CPQDPLOY CP002349.NLM -f
Deploy a single component with the Deployment Utility without modifying the .NCF files.	SYS:\DEPLOY\CPQDPLOY CP002334.NLM -nomods

Action	Command Line
Deploy multiple components at one time, with no graphical user interface.	SYS:\DEPLOY\CPQDPLOY CP002341.NLM -nui CP002342.NLM
Deploy a single component from the command line, using the force option.	SYS:\DEPLOY\CP00*XXXX*.NLM -f
Deploy a single component from the command line, using the nomods option.	SYS:\DEPLOY\CP00*XXXX*.NLM -nomods

A Support Pack and an individual component cannot be passed as parameters to CPQDPLOY at the same time. Separate calls to CPQDPLOY must be made in this instance.

Invalid example:

```
SYS:\DEPLOY\CPQDPLOY CP002345.NLM BP000111.XML
```

Valid example:

```
SYS:\DEPLOY\CPQDPLOY BP000111.XML
SYS:\DEPLOY\CPQDPLOY CP002345.NLM
```

Return Codes for the ProLiant Deployment Utility for Novell NetWare

Value	Meaning
255	Invalid input parameter—Invalid parameter is displayed at the console or login screen.
0	Installation failed—Refer to the SYS:\ETC\CPQLOG.LOG for details of failure.
1	Installation successful—-Reboot is not required to activate the new components.
2	Installation successful—Reboot is required to activate one or more new components.
3	Installation not attempted—Software installed is current.
4	Installation not attempted—Hardware supported by the component is not present.
5	Installation canceled—Installation was canceled by the user during a GUI installation.
6	Installation not attempted—Prerequisite software requirements were not met. Typically, this means that the CPQHLTH driver was not installed before component installation.

Scenario 1: Command Line Deployment Using CPQDPLOY.NLM

Command line installation using CPQDPLOY.NLM is achieved by passing as arguments either a Support Pack file name or component file name to install along with either the -s or -nui switches. A Support Pack file name has the format BP00*XXXX*.XML. If the XML file is not in the start directory, CPQDPLOY.NLM prompts you for a path to a valid Support Pack XML file, attempts to use a Support Pack file if only one exists in the start directory, or provides a list of supported Support Packs if more than one is found in the start directory.

> **IMPORTANT:** If the -s or -nui switches are used and a valid Support Pack XML file is not found or more than one valid Support Pack XML file is found, the installation will fail.

A component file name has the format CP0*XXXXX*.NLM. CPQDPLOY.NLM can install one Support Pack or multiple components at a time. A Support Pack is an HP tested collection of component packages that includes device drivers, utilities, and agents. Regardless of the command line option passed, information about the success or failure of the installation is logged in the SYS:\ETC\CPQLOG.LOG file.

Scenario 2: Graphical Deployment Using CPQDPLOY.NLM

Graphical (NUT-based) installation using CPQDPLOY.NLM is done by omitting the -s and -nui parameters in CPQDPLOY.NLM. You can pass the name of the Support Pack XML file or component that you want installed. The deployment selection screen shows you the currently installed version of the software (if found), the version of the software selected for installation, and a description of the software. The following table lists the keystrokes that are available on the graphical screen.

Key	Description
F1	Displays user help screens
F2	Toggles the force option
F3	Toggles the reboot option

Key	Description
F4	Marks/unmarks all components for installation
F5	Marks/unmarks an individual component or category in the list
F7	Toggles the Modify NCF Files option
F8	Displays more options
F10	Installs the marked package
Enter	Shows the component package details and payload information
Esc	Returns to the previous screen or exits the deployment utility

After the installation is complete, an installation status screen appears showing the results of the installation. From this screen, you can press the **F3** key to view the SYS:\ETC\CPQLOG.LOG file or highlight a component and press the **Enter** key to view additional details of the installation. Pressing the **Esc** key exits the component installer.

Scenario 3: Command Line Deployment of an Individual Component

Command line installation of an individual component can be done by entering the LOAD command (optional), the full path name, the name of the component package (such as CP002345) to install, and either the -nui or -s switches. An individual component package file name is of the format CP0*XXXXX*.NLM. Regardless of the command line option passed, information about the success or failure of the installation is logged in the SYS:\ETC\CPQLOG.LOG file.

Scenario 4: Graphical Deployment of an Individual Component

Graphical (NUT-based) installation of an individual component is done by omitting the -s or -nui parameters from the command line used to install an individual component package. The deployment selection screen shows you the currently installed version of the component package (if found), the version of the component package selected for installation, and a description of the component package. Refer to "Scenario 2: Graphical Deployment Using CPQDPLOY.NLM (on page)" for the keystrokes that are available on the graphical screen.

After the installation is complete, a component installation status screen appears, showing the results of the installation. Pressing the **Esc** key terminates the component installer.

Troubleshooting Installation of the PSP for NetWare

The following issues might be encountered with the NetWare PSPs. The issues are in bold and their resolutions follow.

- **I used the /r flag to reboot the server, and one of the packages installed required a reboot, but the server did not reboot. What is happening?**

  If any of the packages chosen for installation fails the installation, a reboot will not occur. This enables the administrator to examine a server to determine and resolve a software installation failure before activating any changes.

- **When I examine the package contents, the version of the driver in the package is newer than what I have on my server. However, one of the support files is older than the version that is contained in the package. What happens during installation?**

  The key file version within each package is checked before the file is installed on the server. If the key file is newer than the file on the server, then the version in the package will be installed. Otherwise, the version currently installed on the server is retained, and the package is not installed.

  If the /force flag is used, then no version checking is done. All files in the package will be installed, even if one of the files on the server is newer than the one in the package.

- **When I install a driver and then run the installation utility a second time before rebooting the server, the version shown in the installation utility does not match the version loaded from the MODULES console command.**

  After an installation has occurred, the installation utility will check against the installed version on the fixed disk. Even if the version loaded is different, the version compared against it for installations is the version on the physical media.

- **When I perform a command line install and pass the /r parameter, the server does not reboot.**

  This usually occurs because the version of the software to be installed is the same or older than the version installed on the server, or a failure occurred during the installation (a prerequisite was not met). Check the SYS:\ETC\CPQLOG.LOG file to determine the cause of the failure.

- **During installation, I get the following error message:**
  `Unable to read xxx from an XML file.`

  This condition is usually caused by a corrupted package, which can occur during download. If a package XML file cannot be parsed correctly, the installation of that package will terminate with an error. To resolve this issue, try downloading the package again at the HP software and drivers website (http://www.hp.com/servers/swdrivers).

- **When I try to install the PSP, I get the following error message:**
  `The software in this package is not intended for this version of NetWare.`

  The package you have chosen to install might not be intended for the version of NetWare that is currently installed on the server.

- **When I start CPQDPLOY.NLM, I get a prompt asking me to enter a path to a supported Support Pack XML file.**

  This prompt is caused by having CPQDPLOY.NLM in a directory without a valid Support Pack XML file. A valid Support Pack XML file is of the format BP000XXX.XML and must support the installed version of NetWare on the target system. CPQDPLOY.NLM might be in a directory with a Support Pack file, but if the Support Pack file does not provide support for the currently installed version of NetWare, you will be prompted to enter a path to a valid Support Pack XML file. Press the **F1** key to view an example of a valid path.

  If you are prompted for a path to an XML file, the new path will be used as the default for locating components.

  > **IMPORTANT:** All components that make up a PSP must be present in the same directory as the Support Pack File.

Deploying PSPs in Linux

In This Section

Overview of PSPs for Linux

This chapter discusses how to use the PSPs for Linux, also known as LSPs. HP provides the HP ProLiant LDU for deploying the PSPs for Linux.

PSPs are operating system-specific bundles of HP server support software. Each PSP includes multiple installable components known as Smart Components (optimized drivers, management agents, and utilities). This PSP design improves and simplifies operating system integration, flexibility, and system configuration.

Separate PSPs are currently shipped for each supported distribution and version of Linux. Each PSP includes the software appropriate for its supported distribution and version of Linux. The LSPs support 32-bit and x86-64-based installations on both AMD- and Intel®-based servers. The LDU installer deploys only software that supports the detected hardware architecture.

Minimum Requirements for Linux Servers

> **IMPORTANT:** Before deploying software updates on a target system, be sure that a recent backup of the target system is available in the event the deployment procedure fails.

PSP installation has the following minimum requirements:

- glibc 2.2.4-26 or later

- gawk 3.1.0-3 or later

- sed 3.02-10 or later

- pciutils-2.1.8-25.i386.rpm or later

The following RPMs are also required:

- On Red Hat-based servers:

    - rpm 4.0.4 or later

    - rpm-build 4.0.4 or later

    - rpm-devel 4.0.4 or later

- On SUSE LINUX or UnitedLinux servers:

    - rpm 3.0.6 or later

In addition, components that are compiled from source code, such as NIC drivers, require the presence of the following build tools:

- gcc-2.96-108.1 or later

- cpp-2.96-108.1 or later

- binutils-2.11.90.0.8 or later

- glibc-devel-2.2.4-26 or later

- kernel-headers-<*version*> (the version number depends on which kernel is used)

To install using the GUI option, you also need the following RPMs:

- gtk+ -1.2.10-11 or later

- gtk- engines -0.11-3 or later

To support many of the HP value-add software deliverables included in the Linux PSP, you must install platform-specific compatibility libraries.

- For Red Hat Linux Enterprise Linux 3-based servers, install the following compatibility libraries:

    - compat-stdlibc++-7.3-2.96.122 or later

- compat-db-4.0.14 or later

- glut-3.7-8 or later

- For UnitedLinux 1.0 (SLES 8) Linux-based servers, install the following compatibility libraries:

    - compat-2002.8.15-29 or later

    - compat-2003.1.10-0 or later

- For SLES 9 Linux-based servers, install the following compatibility libraries:

    - compat-2004.7.1-1.2 or later

    - compat-sles8-1.3-93 or later

These RPMs are included in the hppldu-librpms-<*version*> tarball and will be installed by default unless otherwise directed by the user during installation.

> **NOTE:** Be sure to include the version of the compatibility libraries that is appropriate for your architecture. In some cases, there are separate 32-bit and 64-bit compatibility libraries for a given distribution.

For a current list of supported distributions and versions of Linux, and their associated errata kernels, refer to the operating system support matrices (http://www.hp.com/go/supportos).

If you are installing Red Hat Enterprise Linux 3, HP recommends installing Update 1 (2.4.21-9.EL kernel) or greater as well. For more information, refer to the Red Hat website (http://rhn.redhat.com/errata/RHSA-2004-017.html).

The PSPs are designed for use after the operating system installation to update drivers and install HP utilities (such as health, RILOE, RILOE II, and iLO drivers) and agents (Foundation, Server, NIC, and Storage).

ProLiant LDU

HP has developed the LDU to provide an easy and efficient method to upgrade and manage system software. The utility enables you to deploy and maintain PSP software on local servers through use of the terminal window and on remote servers through use of the ssh utility.

The LDU is available with PSPs for Linux at the software and drivers website (http://www.hp.com/servers/swdrivers).

> **IMPORTANT:** Root access is required for the LDU. If you do not have root access, the installation will not proceed.

The utility has two modes of operation:

- **Terminal window mode**—Enables non-graphical terminal window installation of a PSP or individual components. Using command line parameters, terminal window mode can be executed in three different ways:

  - Silent

  - No graphical user interface

  - Single step—Presents each component individually and prompts the user to decide whether to install it.

- **Graphical mode**—Provides a gtk-based graphical interface to guide the installation of a PSP or a subset of components in the PSP.

When the graphical mode of the LDU is launched, the main window appears. The window provides details about the contents of the PSP for the installed version of Linux.
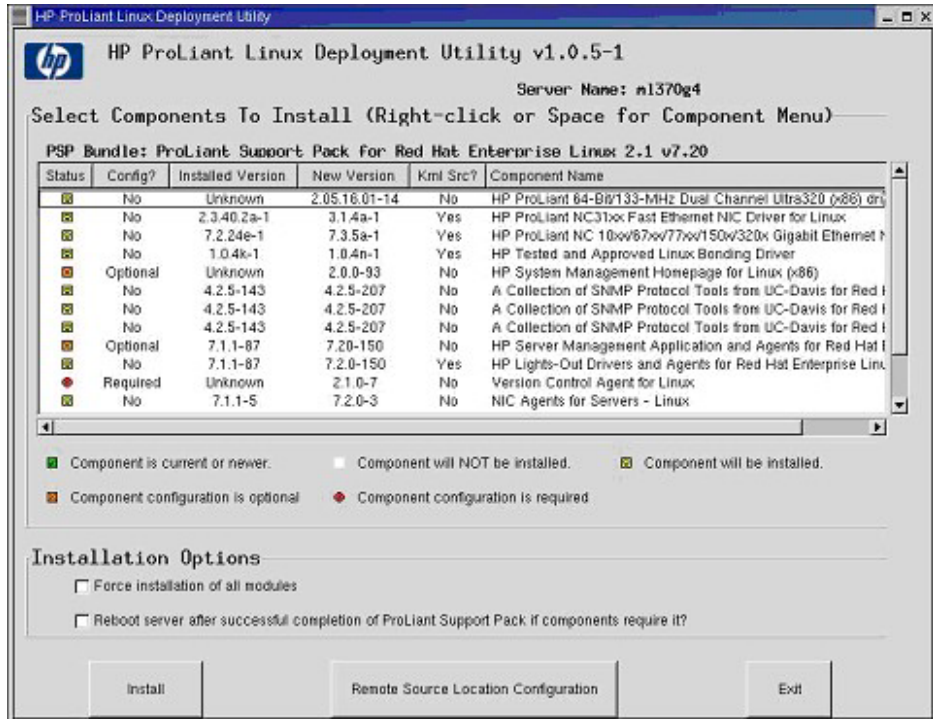
After deploying the PSP on the target server, the LDU displays comprehensive installation results listing the components that were successfully installed, components that were not needed for the target system, and any installation failures.

The LDU retrieves all installation activity (including errors) and writes this information to a common installation log file on the server called hppldu.log, which is located by default in the /var/log subdirectory. Information regarding subsequent installation activity is appended to the same log file, providing a chronological history of all component installation activity on the target server. The following figure shows a sample installation log file.

Deployment Utility Usage Scenarios for Linux Servers

The LDU is a software maintenance tool used to deploy PSPs on Linux servers.

The overall PSP and component deployment strategy is consistent throughout all deployment scenarios on Linux servers, as shown in the following figure. The software must be copied to the Linux target server before it is deployed. After the software is on the target server, the installation can be driven from either a terminal window on the target server or an ssh connection to the target server. The gtk interface is network aware, so the interface will display on remote X terminals if the local DISPLAY environment variable is configured appropriately.

Scenario	Type of Deployment	Deployment Method Used
1: Command line deployment using the terminal window	• User can install a PSP by means of a terminal window or shell script.	Terminal window installation using ./install???.sh --nui
	• User can silently install a PSP by means of a terminal window or shell script.	Terminal window installation using ./install???.sh --silent
	• User can select which components to install from a terminal window.	Terminal window installation using ./install???.sh -y --nui
	• User is familiar with script files or wants to automate an installation of the Linux PSP.	Terminal window installation using ./install???.sh --nui --inputfile filename
	• User wants to view details of a component RPM file at the terminal window	Terminal window installation using ./install???.sh --view rpmname

Scenario	Type of Deployment	Deployment Method Used
2: Graphical deployment using a gtk-based GUI	• User can select which components to install from a list. • User can install all components with a few simple keystrokes. • User wants a graphical display of results of the installation by component. • User needs the ability to look at details of each component before installation. • User wants to choose which components are installed graphically or does not want to work with script files.	Graphical (gtk-based) installation using ./install???.sh Graphical (gtk-based) installation using ./install???.sh --inputfile filename

Command Line Syntax for Linux PSPs

This section explains the command line parameters used in the usage scenarios. Parameters are case sensitive and must be preceded with a dash (-) or double-dash (--). If several parameters are listed for a description, any of them can be used. For example, -h, -?, and --help are equivalent. The order of parameters is not important.

```
./install???.sh [-h | -? | --help] [--nui] [-s | --
silent] [-r | --reboot] [-f | --force] [--inputfile
filename] [-t reboot_timeout_in_minutes] [-m
"reboot_message"] [-v | --verbose] [--view rpmname] [-y]
[-q | --querystatuscode returncode]
```

Command Line Argument	Description
-h, -?, --help	This argument displays a list of command line parameters.
--nui	This argument suppresses the user interface. However, during installation, output is shown at the terminal window unless the silent option is also used.
-s, --silent	This argument enables a silent installation. All messages are logged to the /var/log/hppldu.log file unless overridden. No console output or GUI is shown except for the final return code.
-r, --reboot	This argument reboots the system if any components being installed require it and no failures occurred during the installation.

Command Line Argument	Description
-f, --force	This argument attempts to force the installation of all components. This option will bypass the following install checks: • Minimum kernel version check • Maximum kernel version check • Installed library file requirements • Installed software version check The force option will not force a component to install if prerequisites such as required modules, files, source code, PCI device support, and build environment are not available.
--inputfile *filename*	This argument enables you to pass input parameters in to the LDU to enable scripted deployments of the PSPs. The file name can be any valid Linux text file name. Refer to the section on scripted installation in the "Advanced Installation Topics (on page 94)" section of this document to find the format of *filename.*
-t *reboot_timeout_in_minutes*	This argument enables you to delay a reboot by the specified number of minutes to enable users to save their data and log out from the server. If the --reboot parameter is not included, this parameter is ignored.
-m *"reboot_message"*	This argument enables you to send a message to all currently logged on users before rebooting the server. The message must be in double quotes to be sent properly. If the --reboot parameter is not included, this parameter is ignored.
-v, --verbose	This argument enables you to see more information during an installation than is normally displayed.
--view *rpmname*	This argument enables you to view the details associated with a given component RPM at the terminal window. The *rpmname* provided must be unique enough to enable the LDU to recognize the full RPM name.
-y	This argument enables you to step through a terminal window installation of a PSP. For each component, you will be prompted to decide whether it should be installed, or to exit out of the LDU. The -y switch will force the --nui switch option.
-q *returncode,* --querystatuscode *returncode*	This argument displays the text associated with any LDU return code. No installation is performed when this argument is used.

Return Codes for the LDU

Value	Meaning
0	Installation was successful. Reboot is not required.
1	Component XML files are missing or corrupt.
2	No components to be installed were found in the bundle XML file.
3	Bundle XML file is missing, or no bundle XML was found that supports the installed version of Linux.
4	Component RPM files are missing or corrupt.
5	A condition was not met for one or more components.
6	Reserved
7	Reserved
8	More than one bundle XML file was found that supports the currently installed distribution of Linux.
9	User did not install any components before exiting the LDU.
10	Installation of one or more components failed.
11	User did not configure a component requiring configuration.
12	Preconfiguration of one or more components failed.
14	Postconfiguration of one or more components failed.
15	Reserved
16	Component installation was successful. Reboot is required to complete the installation of one or more components.
17	Installation of the selected components was not attempted because the software version is the same as the previously installed version.
18	Installation of the selected components was not attempted because a newer version of the software is already installed.
19	Installation of the selected components was not attempted because the hardware supported by the component was not found in the server.
20	One or more command line parameters on the ./install???.sh command were incorrect and must be fixed for installation to occur.
21	The user canceled installation of the Linux PSP before completion using Ctrl+C.

Value	Meaning
22	Another instance of the LDU was found running on this server. Only one instance of the LDU can run at a time.
23	User aborted the installation during installation of components by clicking the **Abort** button.
24	The component does not support the server architecture or processor type. This could be returned by a component that does not support the processor vendor (such as AMD or Intel®) or the bit-width (32-bit or 64-bit) in use on the server.

Scenario 1: Command Line Deployment Using the Terminal Window

Terminal window installation using the ./install???.sh command is achieved by passing the -s, --nui, or -y switches as arguments. Root access is required for the LDU to operate. The install shell sets up the LDU for command line operation. The LDU determines the appropriate PSP bundle by comparing the available bundles with the installed version of Linux on that server. The LDU then proceeds with the installation of that PSP.

Silent Installation

During a silent installation, the LDU does not prompt for user input. Any components that would normally require user input will fail unless the necessary information has been provided in the input file using the --inputfile *filename* option on the ./install???.sh command. Installation of the PSP can require up to 30 minutes, especially if remote source code is required to compile drivers and multiple drivers must be built. With silent installation, the installation of all components is attempted.

To install silently, you must use the -s or --silent options on the ./install???.sh command:

```
./install???.sh --silent
```

All output that would normally be written to the terminal window during installation is saved in the default log file, /var/log/hppldu.log.

No Graphical User Interface Installation

During a "no graphical user interface" installation, the installation proceeds at the terminal window. When the LDU is in this mode, user input and program output are provided at the terminal window. Program output is also saved to the default log file, /var/log/hppldu.log.

To install with no graphical user interface, you must use the --nui option on the ./install???.sh command:

    ./install???.sh --nui

At the start of the --nui installation, the appropriate PSP for the installed version of Linux is determined. The PSP contains the components that support that version of Linux. These component contents are parsed to determine their installation requirements.

If any components require configuration, you are prompted for the configuration information during the installation of those components. If a password is required, you are prompted to verify the original password. After the configuration data has been confirmed as valid, the --nui installation continues installation of the components in the PSP.

During installation, information about each component to be installed is displayed. The name, version, and description of the component being installed are shown on the console. Any data generated by the installation, including output from RPM scripts, is shown on the terminal window. This continues until installation of all components has been attempted.

While the installation is in progress, the LDU might determine that a component requires files that are not located on the current server. If this occurs, you are given the option to provide remote source location information about how to obtain the source. The LDU can obtain source from other remote servers using NFS. If you choose to provide this information, follow the prompts to provide the required information. Refer to "Remote Source Location (on page 94)" for more information about how to use the Remote Source Location option in the LDU.

> **NOTE:** Components that require files located on a remote server can take up to 20 minutes to install. Installation time varies depending on the speed and the number of processors of the servers involved, as well as network loading.

After the installation is complete, the final status is returned by the LDU. If the reboot option has been selected and the installation was successful, the server reboots. If the reboot option has not been selected, you are returned to the terminal window prompt.

> **IMPORTANT:** If the -s switch is used and a valid Support Pack XML file is not found or more than one valid Support Pack XML file is found, the installation will fail.

Single-Step Installation

During a single-step installation, the installation proceeds at the terminal window. When the LDU is in this mode, user input and program output are provided at the terminal window. Program output is also saved to the default log file, /var/log/hppldu.log.

To install using single-step mode, you must use the -y option on the ./install???.sh command. The -y parameter forces a terminal window installation.

```
./install???.sh -y
```

At the start of the single-step installation, the appropriate PSP for the installed version of Linux is determined. The PSP contains the components that are to be deployed for that version of Linux. These components are parsed to determine their installation requirements.

If any components require configuration, you are prompted for the configuration information during the installation of those components. If a password is required, you are prompted to verify the original password.

After parsing the component XML files, the single-step installation prompts you to determine whether installation of a particular component should be attempted by displaying the following:

```
Do you wish to install the <component name> component?
[(Y)/(N)/(C)ancel]
```

If you select "y" or "Y," the component is installed. If you select "n" or "N," the LDU does not install that component and proceeds to the next component in the list of components to be installed. If you select "c" or "C," the LDU terminates and does not attempt to install any remaining components.

Regardless of whether you choose to install a particular component, the name, version, and description for the component are shown on the console. If you choose to install a component, any data generated by the installation, including output from RPM scripts, is shown in the terminal window. This continues until you have been prompted for each component in the bundle or until you have canceled out of the LDU.

While the installation is in progress, the LDU might determine that a component requires files that are not located on the current server. If this occurs, you are given the option to provide remote source location information about how to obtain the source. The LDU can obtain source from other remote servers using NFS. If you choose to provide this information, follow the prompts to provide the required information. After the connection information has been entered to locate remote source, this information is used on all subsequent components that require remote source code. Refer to "Remote Source Location (on page 94)" for more information about how to use the Remote Source Location option in the LDU.

After the installation is complete, the final status is returned by the LDU. If the reboot option has been selected and the installation was successful, the server reboots. If the reboot option has not been selected, you are returned to the terminal window prompt.

Viewing Component Data from a Terminal Window

From the terminal window, information can be obtained about what prerequisites and post-installation requirements are handled by the LDU without installing the component. This can be done by using the --view command line option. Information returned by the --view command line option includes:

- Component name
- RPM file name
- Currently installed version
- New version
- Whether a reboot is required to activate the component

- Configuration requirements and status

- Component description

- Pre- and post-installation commands, including minimum and maximum kernel versions supported, commands to be executed, PCI device IDs supported, required directories and files, and any environment variables necessary to build the component

The following is an example usage of the --view command:

```
./install???.sh --view hpasm-jlk
```

The output from the view command is shown in the following figure.

Scenario 2: Graphical Deployment Using a Gtk-Based GUI

Graphical installation uses the ./install???.sh command without the --nui, --silent, or -y parameters. A gtk-based GUI enables you to install the components in the PSP.

> **NOTE:** The LDU is designed to run on 1024 x 768 or higher screen resolutions. Running the LDU at 800 x 600 screen resolution might require hiding the user panel normally located at the bottom of the screen.

When the graphical mode of the LDU is launched, the main window appears.
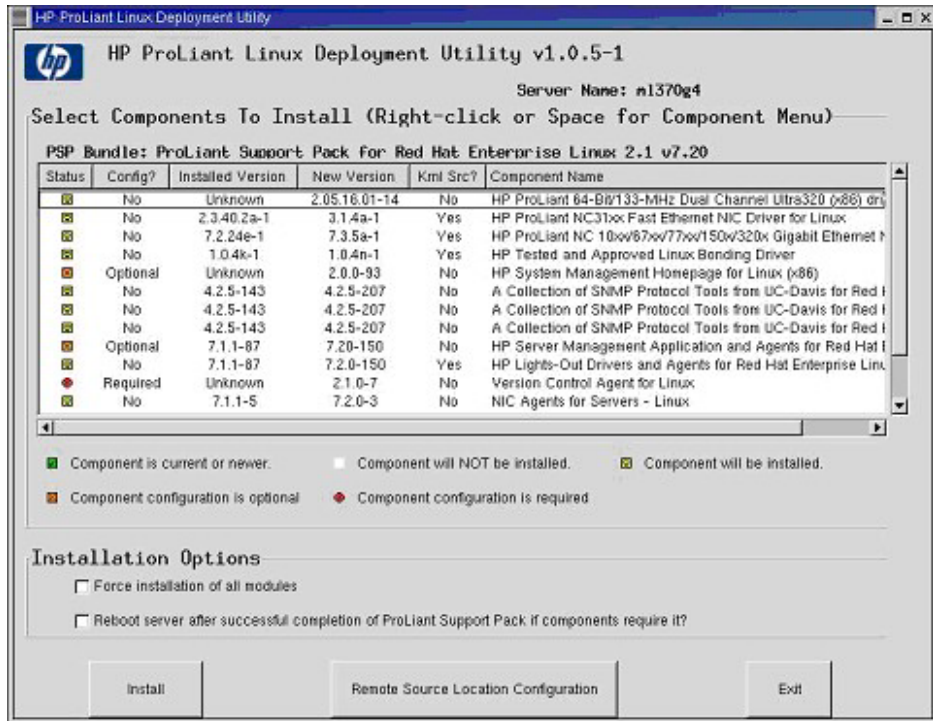
Information provided on the main installation screen includes:

- The name of the server on which the installation will occur

- The name of the PSP to be deployed on the server

- The **Select Components to Install** section

The **Select Components to Install** section has five columns:

- The **Status** column lists the current installation status for each component:

- ☑ The currently installed version of the component is the same as or newer than the component in the PSP. This component will not be installed if the **Install** button is clicked.

- ☑ The component is not installed, or the installed version is older than the component in the PSP. Installation of this component will be attempted if the **Install** button is clicked.

- ☒ The component can be optionally configured. The default values for the configuration parameters will be used if you do not change the parameters of the component. Installation of this component will be attempted if the **Install** button is clicked.

- ⊗ The component requires configuration. The component might install but will not be fully functional until configuration has been successfully completed. Installation of this component will be attempted if the **Install** button is clicked.

- [No icon] The component has been deselected. The component will not be installed.

- The **Config?** column lists the configuration needs for each component:

   - **Required**—Configuration is required for this component to be installed successfully.

   - **Optional**—Configuration is optional for this component. The configuration default values will be used unless they are altered.

   - **Completed**—Configuration of this component has been completed and installation can proceed.

   - **No**—No configuration is required for this component.

- The **Installed Version** column lists the currently installed version of each component.

- The **New Version** column lists the new version that can be installed for each component.

- The **Krnl Src?** column lists the components that require kernel source or kernel header files before they can be installed. Most of these components are built from source RPMs during installation.

- The **Description** column lists the description of each component.

The **Select Components to Install** section of the main window enables you to view details about components, configure components, and select components for installation.

To see the details for a given component:

1.   Select the component from the menu.

2.   Right-click the component to view the component information menu.

3.   Select the **Component Details** option to see the details for the selected component, as shown in the following figure.
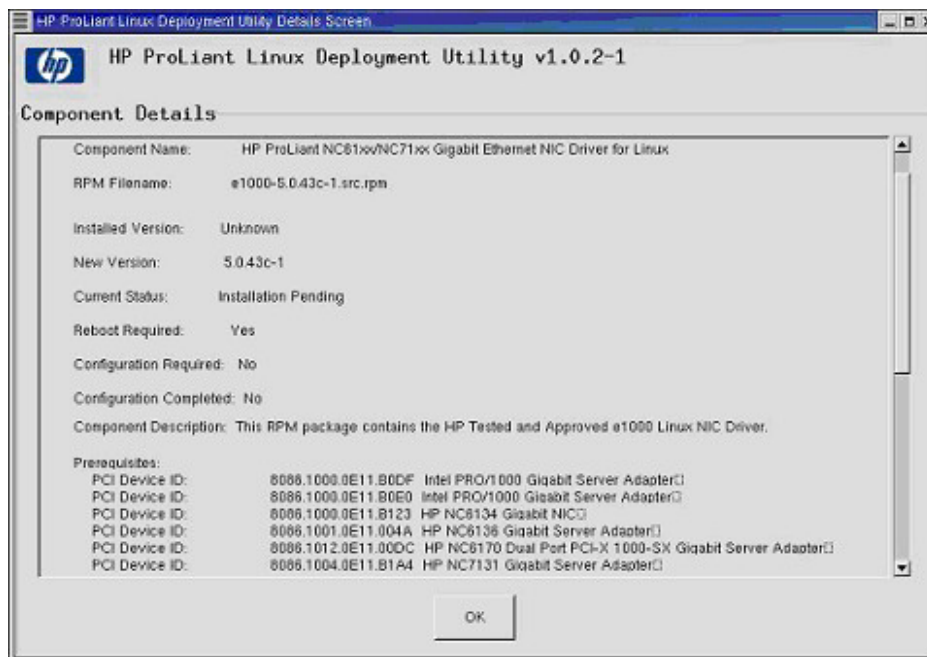
To configure a component that has optional configuration needs:

1.   Select the component.

2.   Right-click the component to view the component information menu.

3.   Select the Configure Component option. The configuration screen for the selected component appears. For more information, refer to "Component Configuration (on page 97)."

Components can be selected or deselected for installation from the **Selected Components to Install** section by:

- Double-clicking a component

- Selecting a single component

- Selecting multiple components while pressing the **Ctrl** or **Shift** key

After the components to be added or removed have been selected, right-click to view the component information menu and select **Install Component** or **Do Not Install Component.**

The **Installation Options** section of the main window enables you to set force or reboot options for component installation. The options are:

- **Force installation of all components,** regardless of installed version. This option causes the LDU to bypass several dependency checks and attempt to install all components in the PSP.

  The force option will bypass checks for the following:

  - Minimum kernel version

  - Maximum kernel version

  - Library file dependencies

  - Installed software version check

    NOTE: Some dependencies are required even with the force option, such as file and directory dependencies, PCI device presence check, successful execution of programs and scripts required to complete the installation, and others.

  This option also causes any components that are RPM-based to use the --force option during the RPM installation phase of the given component. For more information on the force option, refer to "Command Line Syntax for Linux PSPs (on page 78)." If the --force option is used with the ./install???.sh command, the force option will be set in the GUI.

- **Reboot the server after successful completion of ProLiant Support Pack installation if components require it.** This option causes the server to be shut down and rebooted after successful completion of the installation. If any component fails to install, the reboot does not occur. The reboot option in the GUI uses the parameters passed on the ./install???.sh command, such as -t and -m, to reboot the server using the /sbin/shutdown program. A shutdown can be canceled by using the /sbin/shutdown -c command at a terminal window as long as the timeout set by the -t command has not passed.

At the bottom of the LDU main screen are three buttons labeled **Install, Remote Source Location Configuration,** and **Exit.**

> **NOTE:** On some 800 x 600 display resolutions, the **Install, Remote Source Location Configuration,** and **Exit** buttons might be hidden beneath the user panel. To view the **Install, Remote Source Location Configuration,** and **Exit** buttons, hide the user panel or collapse it to one side of the screen.

- The **Install** button enables you to begin the actual installation after the components have been selected and configured if necessary, remote source location set up if desired, and other options selected.

- The **Remote Source Location Configuration** button enables you to set up the remote source location feature. This feature enables the LDU to use source code located on another server to compile modules, including NIC drivers, which require kernel source code when that kernel source is not located on the local server. Refer to "Remote Source Location (on page 94)" for more information on how to configure and use this feature.

- The **Exit** button enables you to exit the installation.

  > **NOTE:** Nothing is installed until the **Install** button is selected.

After **Install** is selected, the Installation in Progress appears (as shown in the following figure). This screen contains an **Abort** button to terminate the installation, if necessary.

NOTE: The **Abort** button leaves the installation at its current point. No cleanup or removal of components is attempted. If the installation of a component is in progress, it completes its current command and then terminates. If the command does not complete in approximately 45 seconds, the current command is canceled and the LDU terminates.
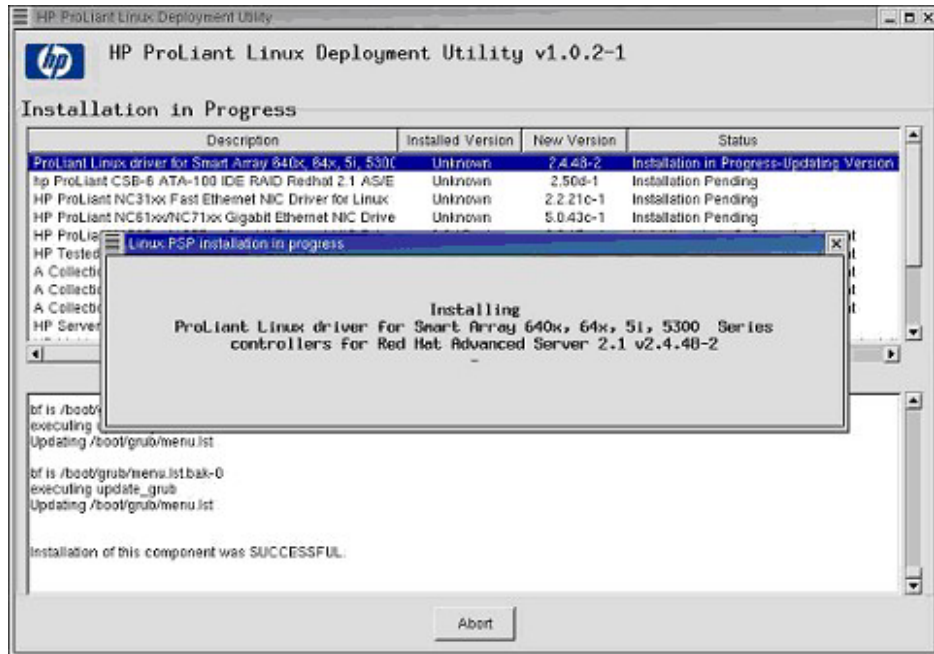
The **Installation in Progress** screen has four columns:

- The **Description** column lists the description of each component.

- The **Installed Version** column lists the currently installed version of each component.

- The **New Version** column lists the new version of the component included in the PSP.

- The **Status** column lists the installation status of each component. The component currently being installed is highlighted.

The pane at the bottom of the screen displays a log of the current progress of the installation.

> **NOTE:** Full installation of the Linux PSP can take up to 30 minutes, depending on the operations being performed. Operations such as compiling drivers, removing previous RPMs, and so on are processor- and I/O-intensive operations that take time to complete.

After the installation is finished, a window appears that indicates the installation is complete. Click **OK** to display the Installation Status Screen, as shown in the following figure.
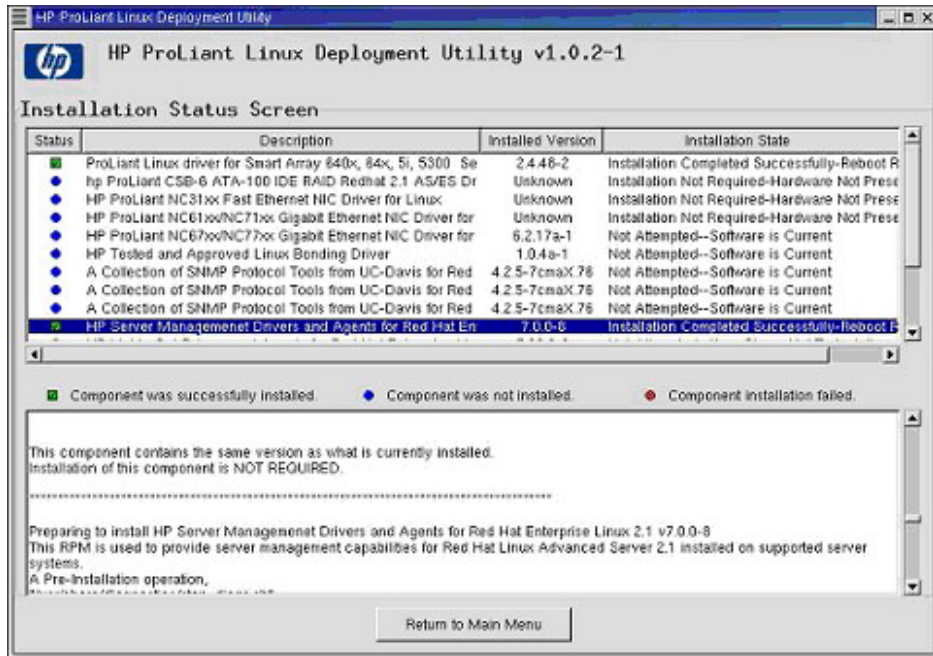
The **Status** column shows the final installation status of the components selected for installation. The icons are defined as follows:

- ☑ Installation of the component was successful.

- 🔴 Installation of the component failed.

- 🔵 Installation of the component was not required.

If a component installation fails, use the installation log in the lower portion of the Installation Status Screen to determine why. To view the portion of the log file that corresponds to a particular failed component, select the component in the upper window. The log file in the lower window displays the appropriate portion of the log.

A component is shown as "not required" if certain prerequisites are not met. For example, a driver only installs if the PCI device that the driver supports is present in the server. A component is also shown as "not required" if the version of a component is the same as or older than what has been previously installed or if you chose not to install a particular component.

After viewing the **Installation Status Screen,** click the **Return to Main Menu** button to return to the LDU main menu. It might take several seconds to update the main menu screen with the results of the previous installation. After this occurs, you can choose to install another component or exit the LDU.

Advanced Installation Topics

This section addresses advanced installation topics.

Remote Source Location

With Linux, many drivers, including all NIC drivers supported by HP, are compiled from source code. This source requires that certain files and libraries, including the kernel source, be made available for the component to install successfully. Because many users do not want to install the kernel source on every Linux server in their networks, the LDU enables the required source files to be located on another server in the network. The LDU dynamically connects to these resources using NFS. However, if the components selected do not require a kernel source to compile or the kernel source for the currently installed kernel is located on the local server, the remote source option is not used.

To use the Remote Source Location feature, you must install the kernel source on a server, then create an NFS mountpoint for the installed kernel source. After the mountpoint has been defined on the remote server, the information is provided to the LDU for use during component installation.

> **NOTE:** The kernel source must match the version of the kernel installed on the server where the LDU is executing, or the connection will fail.

Configuring the Remote Source Location in Graphical Installation Mode

To configure the Remote Source Location feature in graphical installation mode:

1. Click the **Remote Source Location Configuration** option on the main screen of the LDU.

2. Enter the required information for the NFS remote source location.

3. Click **Test** to verify that the LDU can mount the remote NFS source location. The LDU will display a message that confirms whether the test mount was successful. If it was unsuccessful, update the configuration until the test mount test is successful.

4. Click **OK** to save any data that has been provided for use during component installation. If **Cancel** is clicked, any data entered is lost.

An example of the NFS remote source location configuration screen is shown in the following figure.
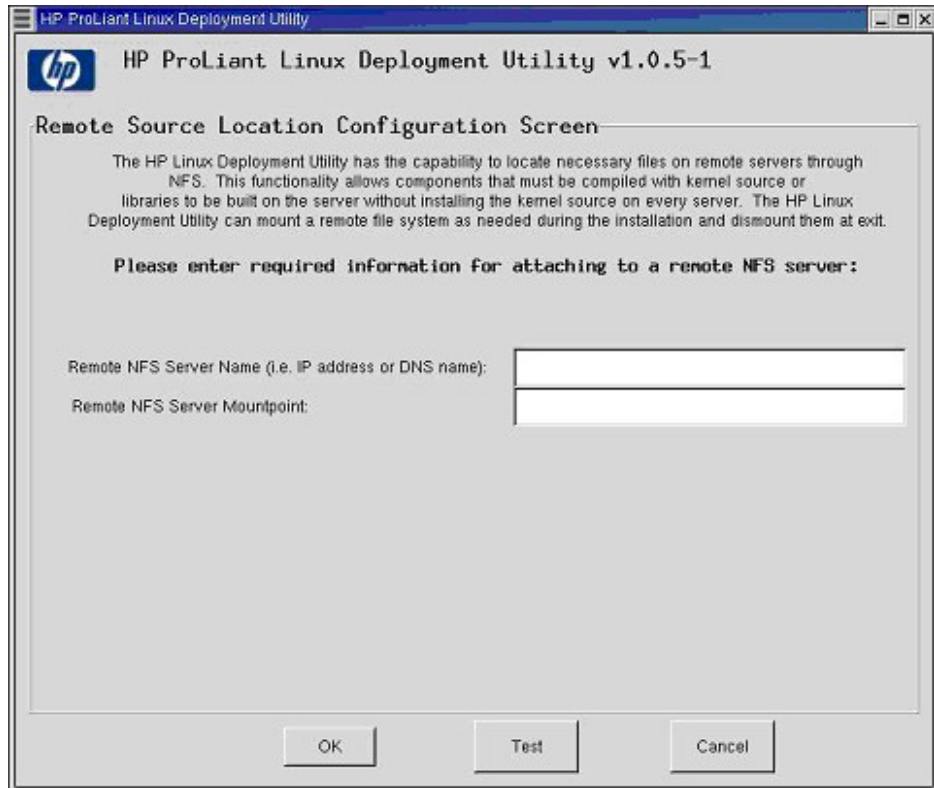
Configuring the Remote Source Location in Terminal Window Installation Mode

In terminal window installation mode, you are prompted only if remote source code is required to complete the installation of the current component. If the kernel source is located locally or the components selected for installation do not require source code to complete their installation, the installation continues without prompting. If the kernel source is needed to complete the installation of a component and it is not located on the local server, you are prompted to provide the NFS remote source location configuration or to cancel the installation of the given component.

For terminal window installation using the silent installation mode, you can predefine the NFS input values required for configuration of the remote source location functionality in an input file provided to the ./install???.sh command. For more information on the input file functionality, refer to "Scripted Installation (on page 100)."

Component Configuration

Some components might have required or optional configuration settings. Configuration parameters can include information necessary to set up the component correctly or passwords required for software installed by the component.

There are three methods for configuring a component:

- Using graphical installation mode

- Using terminal window installation mode

- Using a scripted installation

The configuration data used during each installation of the Linux PSP can be saved to the default /var/hp/hppldu.cfg file or to any valid Linux file name. This enables you to install one server and then use the resulting configuration file to script the installation of other servers in your network. To use the saved configuration data, use the hppldu.cfg file as an input file to the install shell:

```
./install???.sh --inputfile hppldu.cfg
```

If any parameters are not recognized, the LDU returns an error and terminates to enable the user to resolve the configuration error before continuing.

Starting with the Linux PSP 7.20, the configuration files are saved in an encrypted format. The LDU recognizes and uses both encrypted and unencrypted files for configuration data.

Configuring Components in Graphical Installation Mode

To configure components from graphical installation mode:

1. Select the component that has configuration options.

2. Right-click the component to bring up the component menu.

3. Select the **Configure Component** option. A window similar to the following appears.

4. Configure the component. The default value, if any, appears at the end of the prompt in brackets.

5. Click **Save** on any component configuration screen to save all the parameters to a file. This enables you to use the LDU to configure all the components and save the resulting configuration data to an encrypted data file. The data file can then be used with the -inputfile *<filename>* parameter to script future installations.

6. Click **OK** to save the configuration data for use during the installation. Clicking **Cancel** will cause any entered data to be lost.

If the optional configuration data of a component is not provided and the component has not been installed previously, it will use default values for that configuration data. If the component has been previously installed and configured, then the existing configuration information will be preserved if no changes are made to the configuration data.

> **NOTE:** In PSP 7.00 and 7.10, the HTTP server passwords no longer
> default to "compaq" if you do not specify them. If you do not set the
> HTTP server passwords, connectivity to the HTTP server will fail. In
> PSP 7.20, the HTTP server passwords are no longer required. The HP
> Systems Management Homepage RPM, using native OS authentication
> instead of the three server passwords previously required, now provides
> the HTTP server functionality.
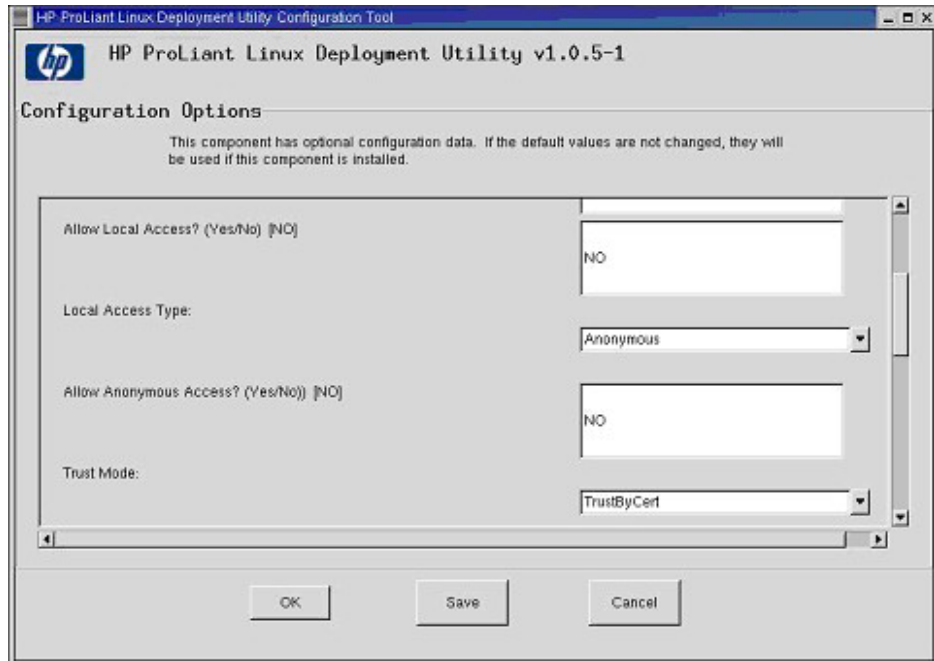
Configuring Components in Terminal Window Installation Mode

To configure components from the terminal window installation (except for
silent installations), respond to the prompts provided by the deployment utility. If
a configuration value has a default, it is shown in brackets at the prompt. If you
press the **Enter** key to continue without entering any values, the component will
use the default values, if available, or preexisting values if the component has
already been configured. An example of a component requiring configuration
data from a command line installation is shown in the following figure.

If the optional configuration data of a component is not provided and the component has not been installed previously, it will use default values for that configuration data. If the component has been previously installed and configured, then the existing configuration information will be preserved if no changes are made to the configuration data.

On a silent installation, configuration parameters must be provided through an input file, as described in "Scripted Installation (on page 100)." If an input file is not provided and the component has not been installed previously, a silent installation uses default values for the configuration data.

Scripted Installation

Scripted installation using the LDU can be performed using the --inputfile parameter. The syntax for this command is:

```
./install???.sh --inputfile test.in
```

In this example, the test.in file is the input file used to drive the scripted installation.

The format of the input file is:

```
parm=value
```

The following table list the parameters supported by the input file.

Parameter	Description
NFSREMOTESERVERNAME	This parameter is the exported directory path name (either DNS name or IP address) that contains the kernel source for use with the Remote Source Location feature of the LDU.
NFSREMOTEMOUNTPOINT	This parameter is the share name on the remote server that contains the kernel source code. The NFS mount on the local server is performed during the installation if it is required and dismounted at the completion of the installation.
LSPOPTIONS	This parameter is provided to enable you to pass normal command line options, such as --silent, --nui,--reboot, and so on, as input to the LDU.
LOGFILENAME	This parameter enables you to set the name of the log file generated by the LDU to something other than the default of /var/log/hppldu.log. The path must exist or the log file will remain the default file name.
HPHTTPSERVEROVERWRITE	This parameter sets the HTTP server passwords. Accepted values are: • Yes—Replaces existing HTTP server passwords with the newly supplied ones • No—Retains the existing passwords
HPHTTPSERVERADMINPASSWD (Obsolete—Not used in Linux PSP 7.20 or later)	This parameter enables you to specify a password for the default System Management Administrator. There is no default value for this parameter. If the password has not already been configured, the Web agent will not allow access through a Web browser.
HPHTTPSERVEROPERATORPASSWD (Obsolete—Not used in Linux PSP 7.20 or later)	This parameter enables you to specify a password for the System Management Operator. There is no default value for this parameter. If the password has not already been configured, the Web agent will not allow access through a Web browser.
HPHTTPSERVERUSERPASSWD (Obsolete—Not used in Linux PSP 7.20 or later)	This parameter enables you to specify a password for the System Management User. There is no default value for this parameter. If the password has not already been configured, the Web agent will not allow access through a Web browser.

Parameter	Description
CMALOCALHOSTRWCOMMSTR	This parameter enables you to specify an SNMP read/write community string for local host access.
CMALOCALHOSTROCOMMSTR	This parameter enables you to specify an SNMP read-only community string for local host access.
CMAMGMTSTATIONRWIPORDNS	This parameter enables you to specify the IP address or DNS host name of a system with read/write access to serve as a management station. Multiple locations can be specified, separated by a space.
CMAMGMTSTATIONRWCOMMSTR	This parameter enables you to specify an SNMP read/write community string for a system with read/write access that serves as a management station. Multiple strings can be specified, separated by a space.
CMAMGMTSTATIONROIPORDNS	This parameter enables you to specify the IP address or DNS host name of a system with read-only access to serve as a management station. Multiple locations can be specified, separated by a space.
CMAMGMTSTATIONROCOMMSTR	This parameter enables you to specify an SNMP read/write community string for a system with read only access that serves as a management station. Multiple strings can be specified, separated by a space.
CMADEFTRAPCOMMSTR	This parameter enables you to set a default SNMP community string for traps.
CMATRAPDESTINATIONCOMMSTR	This parameter enables you to specify the SNMP destination trap community string.
CMATRAPDESTINATIONIPORDNS	This parameter enables you to specify the IP address or DNS hostname of a server to send SNMP traps, such as Insight Manager 7.
CMASYSCONTACT	This parameter enables you to specify a person or phone number for administration of this system.
CMASYSLOCATION	This parameter enables you to designate the location of this system.
CMASTARTWEBAGENT	This parameter determines whether the HP Insight Manager Web agent is started when the health application loads. Accepted values are: • Yes—Start the Web agent • No—Do not start the Web agent

Parameter	Description
CMASTARTSTORAGEAGENT	This parameter determines whether the HP Insight Manager storage agent is started when the health application loads. Accepted values are: • Yes—Start the storage agent • No—Do not start the storage agent
CMANOTAINTEDKERNEL	This parameter determines whether the HP Lights-Out management driver is started when the health application loads. Accepted values are: • Yes—Start the HP Lights-Out management driver • No—Do not start the HP Lights-Out management driver
HPVCAVCRMSERVER	This parameter informs the VCA of the name of the VCRM to use as a software distribution repository.
HPVCAVCRMLOGINID	This parameter is the login ID that the VCA uses to communicate with the VCRM.
HPVCAVCRMLOGINPASSWD	This parameter is the password for the login ID specified in the HPVCAVCRMLOGINID parameter.
ADMIN-GROUP	This parameter is used by the HP Systems Management Homepage (hpsmh) to set up security for the web server. The parameter is a list of up to five Linux groups, separated by spaces or semicolons, to enable administrative access to the web server.
USER-GROUP	This parameter is used by the HP Systems Management Homepage to set up security for the web server. The parameter is a list of up to five Linux groups, separated by spaces or semicolons, to enable user-level access to the web services.
OPERATOR-GROUP	This parameter is used by the HP Systems Management Homepage to set up security for the web server. The parameter is a list of up to five Linux groups, separated by spaces or semicolons, to enable operator-level access to the web services.
ANONYMOUS-ACCESS	This parameter determines whether the HP Systems Management Homepage can be accessed by an anonymous user. Accepted values are "yes" and "no." The default value is "no."

Parameter	Description
IP-BINDING	This parameter is used by the HP Systems Management Homepage to determine whether hpsmh can use all available NICs and detected subnets for its web services. Accepted values are "yes" and "no." The default value is "no."
IP-BINDING-LIST	This parameter is used by the HP Systems Management Homepage to restrict the NICs and subnets to use for its web services. The IP-BINDING parameter must be set to "yes" for this parameter to be used during installation. The list format is a list of IP address/NetMask pairs separated by semicolons (for example, 10.1.1.1/255.255.255.0; 10.2.2..2/255.255.255.0).
IP-RESTRICTED-LOGINS	This parameter is used by the HP Systems Management Homepage to restrict login access. The accepted values are "yes" and "no." The default value is "no." To enable restrictions on who may log in to the web server, this parameter must be set to "yes" and values must be provided to the IP-RESTRICTED-EXCLUDE or IP-RESTRICTED-INCLUDE parameters.
IP-RESTRICTED-EXCLUDE	This parameter is used by the HP Systems Management Homepage to exclude specified IP address/NetMask pairs from being able to log in to the web services. The format of this parameter is a list of IP address ranges separated by semicolons (for instance, 10.1.1.1-10.1.1.10; 10.2.2.2-10.2.2.10). This parameter is ignored unless the IP-RESTRICTED-LOGINS parameter is set to "yes."
IP-RESTRICTED-INCLUDE	This parameter is used by the HP Systems Management Homepage to enable login only from the IP address/NetMask pairs specified. The format of this parameter is a list of IP address ranges separated by semicolons (for instance, 10.1.1.1-10.1.1.10; 10.2.2.2-10.2.2.10). This parameter is ignored unless the IP-RESTRICTED-LOGINS parameter is set to "yes."
LOCALACCESS-ENABLED	This parameter is used by the HP Systems Management Homepage to determine whether to enable local anonymous access to the web services. Accepted values are "yes" and "no." The default value is "yes" to enable anonymous access.

Parameter	Description
LOCALACCESS-TYPE	This parameter is used by the HP Systems Management Homepage to determine the type of access granted to local users. Accepted values are "Anonymous" and "Administrator." The default value is "Anonymous." ⚠ **CAUTION:** Selecting local access with administrator privileges as the login provides full access to any user with access to the local console, without prompting for a user name or password.
TRUSTMODE	This parameter is used by the HP Systems Management Homepage to set up the trust relationship mode. Accepted values are • TrustByCert—If this value is used, the CERTLIST parameter should be defined to enable access to the server. • TrustByName—If this value is used, the XENAMELIST parameter should be defined. • TrustByAll—HP does not recommend using this value because of possible negative security consequences. The accepted values are case-sensitive and must be capitalized as shown. Failure to do so will prevent the trust relationship from being set up properly during installation and could affect access to the web server.
CERTLIST	This parameter enables a user to provide a list of certificate files or servers where certificates can be obtained for trust relationships for the HP Systems Management Homepage. This parameter is only valid if the TRUSTMODE parameter is set to TrustByCert.
XENAMELIST	This parameter enables a user to provide a list of servers, separated by semicolons, for trust relationships for the HP Systems Management Homepage. This parameter is only valid if the TRUSTMODE parameter is set to TrustByName.
HPQLA2X00FO	This parameter is used by the hp_qla2x00 Qlogic Fibre Channel Driver to determine the failover mode to use. Accepted values are "SinglePath," "SecurePath," and "QLogicFailover." There is no default value.

Parameter	Description
HPQLA2X00FORCE	This parameter is used by the hp_qla2x00 QLogic Fibre Channel Driver to determine whether to skip detection of third-party storage. Accepted values are "Y" or "N." The default value is "N."

The following input file is an example.

```
#ProLiant Linux Deployment Utility options
LOGFILENAME=/var/log/temp.log
LSPOPTIONS=-v -f -r -t 5 -m "This system will reboot in
5 minutes"
#If using NFS, the file would have these parameters
#defined.
NFSREMOTESERVERNAME=10.1.1.1
NFSREMOTEMOUNTPOINT=/usr/src
#If configuring the SNMP component for the HPASM driver,
#the following parameters depict a sample entry.
HPHTTPSERVEROVERWRITE=no
CMALOCALHOSTRWCOMMSTR=private
CMALOCALHOSTROCOMMSTR=public
CMAMGMTSTATIONRWIPORDNS="192.133.17.4 dopey.domain.net"
CMAMGMTSTATIONRWCOMMSTR="first second"
CMASYSCONTACT="John Doe - Ext 1234"
CMASYSLOCATION="Bldg 5-Room 104C"
CMANOTAINTEDKERNEL=YES
CMASTARTSTORAGEAGENT=yes
CMASTARTWEBAGENT=yes

#These parameters are used by the HP Version Control
#Agent so that a connection can be made to the HP
#Version Control Repository Manager (VCRM).
HPVCAVCRMSERVER=test.hp.com
HPVCAVCRMLOGINID=myuserid
HPVCAVCRMLOGINPASSWD=myuseridpassword

#These parameters are used by the HP Systems Management
#Homepage to setup security and configuration for the
#web server used by most HP agents and value-add
#software

#Allow the hpsmh Linux group access to administrator
#services
```

```
ADMIN-GROUP="hpsmh"

#Allow the hpsmh Linux group access to operator
#services
OPERATOR-GROUP="hpsmh"

#Allow the hpsmh and the TapeBackupGroup Linux groups
#access to user services
USER-GROUP="hpsmh";"TapeBackupGroup"

ANONYMOUS-ACCESS="NO"

#Allow all adapters to be used by the web server
IP-BINDING="YES"
IP-BINDING-LIST=""

#Allow restrictions on who can login to the web server
#by setting IP-RESTRICTED-LOGINS to NO
IP-RESTRICTED-LOGINS="NO"

#We don't want 10.1.1.1 to have access to this server
IP-RESTRICTED-EXCLUDE="10.1.1.1"
#We want 10.1.1.2 through 10.1.1.10 to have access to
#this server
IP-RESTRICTED-INCLUDE=10.1.1.2-10.1.1.10

#We don't want anonymous local access to the web server
LOCALACCESS-ENABLED=NO

#We want people to login locally to get access to the
#web services
LOCALACCESS-TYPE="Anonymous"

#TRUSTMODE set to TrustByName, so we provide a list of
#servers.  If we had set TrustByCert, we would have
#filled in the CERTLIST parameter.  If we selected
#TrustByAll, we do not have to place values in either
#the XENAMELIST or CERTLIST parameters.
TRUSTMODE="TrustByName"
CERTLIST=""
XENAMELIST="SERVER1";"SERVER2";"SERVER101"

#The following parameters are used to configure the
#hp_qla2x00 HP QLogic Fibre Channel QL2xxx Adapter.
```

```
HPQLA2x00FO="SinglePath"
HPQLA2x00FORCE="N"
```

Troubleshooting Installation of the PSP for Linux

The following issues might be encountered when attempting to install Linux PSPs. The issues are in **bold** and their resolutions follow.

If your issue is not listed in this section, you can find additional advisories related to the PSP for Linux by performing a search on the HP website (http://www.hp.com) using the following keywords:

```
+ProLiant +advisory +note +linux|psp -"software and
drivers" -download
```

- **I used the -r flag to reboot the server, and one of the components installed required a reboot, but the server did not reboot. What is happening?**

  If any of the components chosen for installation fails the installation, a reboot does not occur. This enables the administrator to examine a server to determine and resolve a software installation failure before activating any changes.

- **When I try to install the PSP, I get the following error message:**
  `No supported Bundle XML files were found.`

  Either the BP00xxxx.xml file is missing for the operating system that you have installed or the version of Linux you installed is not supported by any current Linux PSP.

  If the BP00xxxx.xml file is missing, download the complete Linux PSP again from the software and drivers website (http://www.hp.com/servers/swdrivers).

  > **IMPORTANT:** All components that make up a PSP must be present in the same directory as the Support Pack File.

- **When I install the storage components and restart the server, there are one or more new entries in the LILO or GRUB tables for kernels to boot from. Is this normal?**

Yes, this is normal. Each of the storage drivers will relink its driver to the base kernel and add a new entry in the LILO or GRUB tables that are displayed at boot. To be sure that you get the kernel with the latest drivers, select the last entry in the table.

- **When I try to install the PSP for Linux remotely through ssh, I receive a message similar to the following:**

    The libraries necessary to use the GUI are not available. Would you like to install the ProLiant Support Pack for Linux without user interaction? [Y/N]

    NOTE: This message is not displayed in PSP 7.10 or later because the graphics libraries are no longer required.

This message appears for one of two reasons.

- The required gtk libraries are not installed on the local computer. You must install the required graphics libraries from the appropriate operating system installation CD or continue with the installation as a terminal window installation.

- The appropriate DISPLAY environment variable has not been set on the remote server. To set the variable, use one of the following methods:

    NOTE: You must know either the DNS name or IP address of the target server.

Method A

a. Be sure that the ForwardX11 parameter is set to "yes" in the /etc/ssh/ssh_config file on the local server.

b. Be sure that the X11Forwarding parameter is set to "yes" in the /etc/ssh/sshd_config file on the remote system.

c. Restart the sshd daemon on the remote system.

Method B

a. On the local system, issue the command

    xhost + [IPAddress | DNS name of Remote Server]

b. On the remote system, issue the command

    export DISPLAY=<[IP Address | DNS name] of Local system>:0

Method B is not recommended because it can open your server to unauthorized access.

- **When I start the LDU, I cannot see the Install, Remote Source Location, and Exit buttons at the bottom of the screen in 800 x 600 screen resolution.**

  On some 800 x 600 display resolutions, the **Install, Remote Source Location,** and **Exit** buttons might be hidden beneath the user panel. To view the **Install, Remote Source Location,** and **Exit** buttons, hide the user panel or collapse it to one side of the screen. HP recommends running the LDU in 1024 x 768 or higher resolution.

- **I attempt to connect to my NFS server, but I receive a message similar to the following:**
  ```
  A directory, /usr/src/linux-2.4... necessary to
  complete installation of the LSP package is not
  present.
  ```
  Use the following suggestions to help make NFS connectivity easier to debug:

  - Attempt to mount the remote source outside of the LDU to ensure access rights are correct.

  - Verify that the firewall settings are correct. Issuing ipchains commands to enable port access for NFS might be necessary to correctly configure firewall access. Although not recommended, the firewall can be temporarily suspended during LDU installation by using the following command:
    ```
    /etc/init.d/ipchains stop [use start to restart the
    firewall]
    ```

  - Be sure that the actual source directories are located at the remote source and not just the RPMs or source RPM for the kernel. To properly use remote source location, you must install the source on a server and then copy the entire /usr/src tree to the remote source server for use during future LDU installations.

  - Verify that the exported directory at the server is not exported at a higher directory layer. It is invalid to export a directory at multiple points in its directory tree.

  - Verify that no_root_squash has been set on any exported NFS directory.

- Verify that write permissions have been given to the directories where the remote kernel source is located. During compilation of driver source, the make dep command will write a .depend file in each directory in the kernel source tree. Without write access, this command will fail.

- **I attempt to install a component that compiles from source code, but the installation fails on the make command.**

  The cause of this problem is that the build tools necessary to complete the build from kernel source are not located on the server where the LDU is deploying. To build from source RPMs, the following RPMs must be installed on the server to which the LDU is deploying software:

  - gcc-2.96-108.1 or later

  - cpp-2.96-108.1 or later

  - binutil-2.11.90.0.8 or later

  - glibc-devel-2.2.4-26 or later

- **When I run the LDU and attempt to install NIC drivers using remote source code from an NFS server, I receive a return code 512, 1, or 2 from the make -C command or the $KERNELSRC command.**

  The most common causes of this issue are:

  - Root_squash has been set on the NFS export on the NFS server.

  - Write permissions have not been granted to the directory tree from which the files are exported.

  - The NFS server exports multiple directories in the same directory tree (for example, /tmp/share and /tmp/share/files are in the same directory tree) that have different permissions.

  The solutions to these causes are:

  - Use the no_root_squash option when exporting a directory on the NFS server. Be sure to reset the exports as well, using exportfs -a after the change has been made.

  - Enable write permissions on the share at the NFS server (use "rw" instead of "ro" when exporting the file system).

  - Export only one directory in any given directory tree.

- **When I install the bcm5700 and e100 drivers, the modules.conf file does not get updated. Why not?**

  The LDU installs these drivers but does not configure them because the LDU cannot determine all the information needed to properly configure the NIC drivers during installation. To configure these drivers, use the operating system-specific tools provided in the supported Linux distributions.

- **Why do some drivers report that they do not support the errata kernel that I have installed?**

  Some RPM components provided by the LDU contain prebuilt binaries for the specific errata kernels that they support. If a new prebuilt binary is not available for an errata kernel, the LDU prevents the installation of the component. Upgraded RPM components that support newer errata kernels are included in the Linux PSPs as soon as possible after they are made available. If support for an errata kernel is not available, then you must choose to use an errata kernel that enables the RPM component to install or to use alternate hardware that provides support for the errata kernel you want to use.

- **When I place multiple versions of the Linux PSP in a single directory, I get an Error 8 message and the Linux PSP exits. What does this error message mean?**

  Error 8 means that the Linux PSP found more than one bundle XML file that provides support for the currently installed distribution of Linux. The Linux PSP requires that a unique bundle XML file is found to install its contents. When more than one bundle XML file is found, the Linux PSP does not know which file to use, so it exits with the Error 8 message. To resolve this error, copy each version of the Linux PSP to a different directory. This problem will be resolved in a future version of the Linux PSP.

  > **NOTE:** This error message is no longer valid as of PSP 7.10. PSP 7.10 and later prompt you for the version to be installed if more than one supported bundle XML file is found, as long as you install in GUI or "no graphical user interface" mode. Silent mode will still fail in PSP 7.10 and later if multiple supported bundle XML files are found in one directory.

- **Why do I receive the following error message on Red Hat Enterprise Linux 3?:**

  ```
  A required library RPM, compat-libstdc++, necessary
  to complete installation of the Compaq Storage Agents
  for Linux component is not present.
  ```

Some RPM components, including cpqacuxe and cmastor, require the C++ compatibility libraries to function properly. Red Hat Enterprise Linux 3 does not install this library by default. As of HP SmartStart 7.10, this library is included in the Linux PSP for Red Hat Enterprise Linux 3 to ensure that HP value-add software can be installed on all Red Hat Enterprise Linux 3 servers.

If you want to install the compatibility library manually, use Red Hat Enterprise Linux 3 CD #3 and install compat-libstdc++-7.3-2.96.122.i386.rpm.

Technical Support

In This Section

Reference Documentation

For more information about PSPs, refer to the PSP website (http://www.hp.com/servers/psp).

To download the latest PSPs, refer to the software and drivers download page (http://www.hp.com/servers/swdrivers).

For information about HP Subscriber's Choice, refer to the Subscriber's Choice website (http://www.hp.com/go/subscriberschoice).

For information about Online ROM Flash Components, refer to the *Online ROM Flash User Guide* on the Online ROM Flash website (http://h18023.www1.hp.com/support/files/server/us/romflash.html).

For information on the HP Systems Insight Manager, refer to the following documents on the HP Systems Insight Manager website (http://www.hp.com/go/hpsim):

- *HP Systems Insight Manager Installation and User Guide*

- *HP Systems Insight Manager Help Guide*

For information about the SmartStart Scripting Toolkit, refer to the Toolkit website (http://www.hp.com/servers/sstoolkit).

To download the SmartStart and other CDs, refer to the SmartStart download website (http://www.hp.com/go/ssdownloads).

For information about the ProLiant Essentials Rapid Deployment Pack, refer to the Rapid Deployment Pack website (http://www.hp.com/servers/rdp).

For general information on management products, refer to the ProLiant Essentials website (http://www.hp.com/servers/proliantessentials).

For information about operating systems supported by ProLiant servers, refer to the operating system support matrices (http://www.hp.com/go/supportos).

For information about SmartStart support, refer to the SmartStart support matrices (http://www.hp.com/servers/smartstart/supportmatrices).

Operating System Information

For information about Microsoft® Windows® operating systems, refer to the Microsoft® website (http://www.microsoft.com).

For information about Novell NetWare operating systems, refer to the Novell website (http://www.novell.com).

For information about Linux operating systems, refer to one of the following websites:

- Red Hat Linux (http://www.redhat.com)
- SUSE LINUX (http://www.suse.com)
- UnitedLinux (http://www.unitedlinux.com)

HP Contact Information

For the name of the nearest HP authorized reseller:

- In the United States, call 1-800-345-1518.
- In Canada, call 1-800-263-5868.
- In other locations, refer to the HP website (http://www.hp.com).

For HP technical support:

- In North America:

    - Call 1-800-HP-INVENT (1-800-474-6836). This service is available 24 hours a day, 7 days a week. For continuous quality improvement, calls may be recorded or monitored.

    - If you have purchased a Care Pack (service upgrade), call 1-800-633-3600. For more information about Care Packs, refer to the HP website (http://www.hp.com).

- Outside North America, call the nearest HP Technical Support Phone Center. For telephone numbers for worldwide Technical Support Centers, refer to the HP website (http://www.hp.com).

Acronyms and Abbreviations

AMD

Advanced Micro Devices

DNS

domain name system

GRUB

Grand Unified Bootloader

GUI

graphical user interface

HTTP

hypertext transfer protocol

iLO

Integrated Lights-Out

IP

Internet Protocol

LDU

Linux Deployment Utility

LILO

Linux Loader

LSP

Linux Support Pack

NFS

network file system

NIC

network interface controller

NLM

NetWare Loadable Module

NUT

Novell User Technologies

PCI

peripheral component interface

PSP

ProLiant Support Pack

RDU

Remote Deployment Utility

RILOE

Remote Insight Lights-Out Edition

RILOE II

Remote Insight Lights-Out Edition II

RPM

Red Hat Package Manager

SLES

SUSE LINUX Enterprise Server

SNMP

Simple Network Management Protocol

SSH

Secure Shell

TCP/IP

Transmission Control Protocol/Internet Protocol

VCA

version control agent

VCRM

Version Control Repository Manager

XML

extensible markup language

Index