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About This Guide

This user guide is designed as a reference for implementing and using the ProLiant Support Pack (PSP) deployment utilities for Microsoft Windows NT 4.0, Windows 2000, Windows Server 2003, Novell NetWare, and Linux server environments.

Audience Assumptions

Because of the potential risk of data loss, the PSP deployment utilities should be used only by individuals who are experienced and knowledgeable in the use of such utilities.

Where to Go for Additional Help

In addition to this guide, the following information sources are available.

Reference Documentation

The ActiveUpdate User Guide is available at
www.hp.com/servers/management/activeupdate

The Online ROM Flash User Guide is available at

The Insight Manager 7 User Guide is available at
www.hp.com/servers/im7

The following documentation for the SmartStart Scripting Toolkit is available at
www.hp.com/servers/ss toolkit
  - SmartStart Scripting Toolkit User Guide
  - SmartStart Scripting Toolkit Best Practices
  - Next Generation Server Deployment Tools: SmartStart Scripting Toolkit white paper

For more information on management products in general, refer to
www.hp.com/servers/manage
Operating System Information

For Novell NetWare operating systems, visit the following website:
www.novell.com

For Microsoft Windows operating systems, visit the following website:
www.microsoft.com

Telephone Numbers

For the name of your nearest HP authorized reseller:
• In the United States, call 1-800-345-1518.
• In Canada, call 1-800-263-5868.

For HP technical support:
• In the United States and Canada, call 1-800-652-6672.
• Outside the United States and Canada, refer to
  www.hp.com
Introduction

ProLiant Support Pack (PSP) deployment utilities are server setup and software maintenance tools designed to provide an efficient way to manage routine software maintenance tasks. These utilities include PSP deployment utilities for Microsoft® Windows NT® 4.0, Windows® 2000, Windows Server 2003, Novell NetWare, and Linux server environments.

PSPs and the PSP deployment utilities integrate with other software maintenance, deployment, and operating system tools, providing the information and flexibility needed to efficiently install, upgrade, and manage system software, and reduce server maintenance costs.

Compaq Support Paqs Are Now ProLiant Support Packs

Beginning with the release of SmartStart 6.00 in September 2002, Compaq Support Paqs (CSPs) were officially renamed ProLiant Support Packs (PSPs). The newly named ProLiant Support Packs deliver the same functionality as, and are compatible with, Compaq Support Paqs. Some legacy applications or documents may refer to Compaq Support Paqs, but in all cases, the terms “Compaq Support Paq,” “CSP,” “ProLiant Support Pack,” and “PSP” should be regarded as equivalent.
PSP Deployment Scenarios

The PSP deployment scenarios discussed in this guide are summarized in Table 1-1.

Table 1-1: PSP Deployment Scenarios

<table>
<thead>
<tr>
<th>Operating System Environment</th>
<th>Scenario</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Microsoft Windows</strong></td>
<td></td>
</tr>
<tr>
<td>• Microsoft Windows NT 4.0</td>
<td>• Deployment to a local or remote single-target system using the graphical-based ProLiant Remote Deployment Utility</td>
</tr>
<tr>
<td>• Microsoft Windows 2000</td>
<td>• Deployment to a local or remote single-target system using the command line-based ProLiant Remote Deployment Console Utility</td>
</tr>
<tr>
<td>• Microsoft Windows Server 2003</td>
<td>• Deployment to remote multiple-target systems using the ProLiant Remote Deployment Console Utility</td>
</tr>
<tr>
<td></td>
<td>• Deployment to remote multiple-target systems using the ProLiant Remote Deployment Console Utility with Insight Manager 7</td>
</tr>
<tr>
<td><strong>Novell NetWare</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Deployment to a target system using the user interface mode of the ProLiant Deployment Utility for Novell NetWare</td>
</tr>
<tr>
<td></td>
<td>• Deployment to a target system using the command line mode of the ProLiant Deployment Utility for Novell NetWare</td>
</tr>
<tr>
<td><strong>Linux</strong></td>
<td></td>
</tr>
<tr>
<td>• Red Hat Linux Professional 7.3</td>
<td>• Deployment to a target system using the user interface mode of the ProLiant Deployment Utility for Linux</td>
</tr>
<tr>
<td>• Red Hat Linux Professional 8.0</td>
<td>• Deployment to a target system using the command line mode of the ProLiant Deployment Utility for Linux</td>
</tr>
<tr>
<td>• Red Hat Linux Advanced Server 2.1</td>
<td></td>
</tr>
<tr>
<td>• SuSE Linux Enterprise Server 7</td>
<td></td>
</tr>
<tr>
<td>• Conectiva S.A., The SCO Group, SuSE Linux AG, and Turbolinux, Inc. powered by UnitedLinux 1.0</td>
<td></td>
</tr>
</tbody>
</table>

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.
Benefits of the PSP Deployment Utilities

The improved software features of the PSP deployment utilities make software maintenance easier by:

- Increasing server manageability
- Allowing administrators to update systems remotely

**NOTE:** Remote updates are supported by Windows-based systems 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 check 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 allow scripting and enhanced integration of the PSP deployment utilities with Insight Manager 7 (Windows only) and the SmartStart Scripting Toolkit.
- 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 from a 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 deployments 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 such software components. Before using these utilities, PSPs, and components to deploy a server or to 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

The PSP deployment utilities can be obtained from several locations including:

- HP website
- HP ActiveUpdate
- SmartStart CD 5.3 or later

HP Website

The latest PSP deployment utilities, PSPs, and individual components for supported Microsoft Windows, Novell NetWare, and Linux operating systems are available at

www.hp.com/support/files

HP ActiveUpdate

The latest HP deployment utilities, PSPs, and individual components for Windows NT 4.0, Windows 2000, Windows Server 2003, and Novell NetWare are also available from ActiveUpdate.

ActiveUpdate is a Web-based client application for Windows systems only. The ActiveUpdate client reduces the time that administrators spend searching the Web for the latest server updates by proactively delivering updates to a centralized software repository. You can obtain the ActiveUpdate client at

www.hp.com/servers/management/activeupdate

NOTE: Although you can use ActiveUpdate to maintain a centralized, network-based software repository for all of the operating systems discussed in this guide, the ActiveUpdate client is a Windows-based application.

SmartStart CD

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 SmartStart CD 6.00 or later for Windows and NetWare
- The SmartStart CD 6.30 or later for Linux

For more information about SmartStart, refer to the documentation included on the SmartStart CD or at

www.hp.com/servers/smartstart
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 must be on a Windows NT shared network drive. The repository can be updated in any of the ways shown in Figure 1-1.

![Figure 1-1: Sources for updating the network-based software repository](image)

The ActiveUpdate Web-based client application provides an ideal solution for the automated maintenance of the centralized, network-based software repository. ActiveUpdate keeps you connected to HP for proactive notification of the latest PSPs and individual components, as well as delivery of those PSPs and components directly to your software repository.
Using the network-based software repository feature of ActiveUpdate ensures that all updates are always readily available from a standardized location for use with the PSP deployment utilities.

For more information about using ActiveUpdate, refer to the ActiveUpdate user guide included in the ActiveUpdate download or available at

www.hp.com/servers/management/activeupdate
This chapter discusses how to use PSPs for Microsoft Windows. HP provides the following tools for configuring components and deploying PSPs for Windows:

- ProLiant Remote Deployment Utility for Microsoft Windows
- ProLiant Remote Deployment Console Utility for Microsoft Windows

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

Overview

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 guidelines when working with PSPs:

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

   IMPORTANT: The PSP files must be 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 components do not have the read-only attributes set.

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

3. Configure the components using the configuration functionality in the ProLiant Remote Deployment Utility for Windows.

   NOTE: Components only need to be configured 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 you have deployed it, you must redeploy the component.

4. Deploy the PSP using a deployment tool such as the Remote Deployment Utility for Windows or the Remote Deployment Console Utility for Windows.
NOTE: Smart Components can also be installed individually. For more information, refer to the “Single-Component Installation” section in this chapter.

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 case the deployment procedure fails.

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

• A local administrative system with Windows NT 4.0 with Service Pack 6 or later, Windows 2000, or Windows Server 2003.

• 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 needs to 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. The administrative system and the remote servers must also have the Windows Internet Name Service (WINS) enabled.

• 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 login 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 Remote Deployment Utility, 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 or from the HP website, the appropriate version of the Microsoft XML Parser is stored in the msxml3.cab file. The Remote Deployment Utility 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 Microsoft Internet Explorer 6.0.
ProLiant Remote Deployment Utility for Microsoft Windows

HP has developed the Remote Deployment Utility (RDU) for Microsoft 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.

**NOTE:** The Remote Deployment Utility is located with the rest of the Support Pack contents 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 RDU is a simple three-step process:

1. Select a target machine in the **Target machine** toolbar.
2. Select a Support Pack from the drop-down menu on the **Applicable Support Packs** toolbar.
3. Click **Install** on the **Target Machine** toolbar and follow the instructions that are displayed.

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

For more information on deploying components and Support Packs, refer to the following sections.
Main Window

When the Remote Deployment Utility is launched, a main control window similar to Figure 2-1 is displayed.

![Figure 2-1: Remote Deployment Utility main control window](image)

After startup, the Remote Deployment Utility automatically loads 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 Remote Deployment Utility does not automatically load 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
- **Applicable Support Packs** toolbar
- Repository view tree
- Target computer list

The following sections describe each element of the main window in more detail.

**Menu Bar**

The menu bar consists of the following menu items:

- The **File** menu item enables you to exit the Remote Deployment Utility.
- 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 Remote Deployment Utility.

**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 Remote Deployment Utility.

The toolbar also contains the following buttons.

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Browse icon" /></td>
<td>Enables you to browse the network for the repository</td>
</tr>
<tr>
<td><img src="image" alt="View tree icon" /></td>
<td>Toggles the repository view tree in the left panel of the main window on and off</td>
</tr>
<tr>
<td><img src="image" alt="Rescan icon" /></td>
<td>Rescans the repository for any changes that may have occurred since the previous scan and then repopulates the repository view tree</td>
</tr>
<tr>
<td><img src="image" alt="Configure icon" /></td>
<td>Configures the selected repository item</td>
</tr>
<tr>
<td><img src="image" alt="Revision history icon" /></td>
<td>Displays the revision history for the selected repository item</td>
</tr>
<tr>
<td><img src="image" alt="Properties icon" /></td>
<td>Displays the properties of the selected repository item</td>
</tr>
</tbody>
</table>
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 Remote Deployment Utility. 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.

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>🗺️</td>
<td>Enables you to browse the network for the target machine</td>
</tr>
<tr>
<td>🖐️</td>
<td>Reboots the target machine</td>
</tr>
<tr>
<td>📄</td>
<td>Displays the target installation log file</td>
</tr>
<tr>
<td>🎨</td>
<td>Deploys the selected components or PSPs on the target machine</td>
</tr>
<tr>
<td>✗</td>
<td>Removes all items selected for installation from the target computer list</td>
</tr>
</tbody>
</table>

Applicable Support Packs Toolbar

The Applicable Support Packs toolbar consists of a drop-down list that contains all available PSPs in the current repository that are applicable to the target machine.

Selecting a Support Pack from the drop-down 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 is the pane on the left side of the main RDU window, as shown in Figure 2-1.

The repository view tree 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.

### Table 2-3: Component Configuration Icons

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Icon]</td>
<td>The component requires configuration but has not yet been configured.</td>
</tr>
<tr>
<td>![Icon]</td>
<td>The component is configurable but has not yet been configured.</td>
</tr>
<tr>
<td>![Icon]</td>
<td>The component is configurable and has been configured.</td>
</tr>
<tr>
<td>![Icon]</td>
<td>The component does not require configuration.</td>
</tr>
</tbody>
</table>

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

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

- Select an item or folder in the repository view tree, and then press the **Insert** key. The item or items are added to the end of the list.
Target Computer List

The target computer list is the pane on the right side of the main RDU window, as shown in Figure 2-1.

The target computer list contains all components that have been selected for installation on the target computer.

This panel has three columns:

- The **Description** column lists the names of components selected for installation.
- The **Installed Version** column indicates the version number of any components that are currently installed on the target machine.
- The **New Version** 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 by any of the following methods:

- Select a Support Pack from the **Applicable Support Packs** 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 item or items are added to the end of the list.
- Select an item or folder in the repository view tree, and then press the **Insert** key. The item or items are 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 all items selected for installation** button on the **Target Machine** toolbar to remove all items from the target computer list.
- Select the items to be removed and press the **Delete** key.

**NOTE:** 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. A sample revision history is shown in Figure 2-2. The revision history provides details about software enhancements and fixes.

![Sample revision history](image)

**Figure 2-2: Sample revision history**
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. A sample **Properties** window is shown in Figure 2-3.

![Properties window](image)

**Figure 2-3: Sample properties**

### 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 is displayed in **bold** text.

**IMPORTANT:** Components only need to be configured 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 you have deployed it, you must redeploy the component.

Icons next to each component in the repository view tree indicate whether the component must be configured. Refer to Table 2-3 for descriptions of each of the icons. Configurable components include, but are not limited to, the following:

- Foundation Agents
- Version Control Agent

**IMPORTANT:** The Web-based Management portion of the Foundation Agents 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. For more information, refer to the **HP Insight Manager 7 Technical Reference Guide** on the HP website at [www.hp.com/servers/im7](http://www.hp.com/servers/im7)
Figure 2-4: Configurable components in the Remote Deployment Utility
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 is displayed. An example is shown in Figure 2-5.

![Figure 2-5: Sample component configuration settings](image)

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 is displayed again. If the configuration operation is not successful, an error message is displayed.
Component or PSP Deployment

The Remote Deployment Utility 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 Applicable Support Packs drop-down list.
2. Click Install on the Target Machine toolbar. The following screen is displayed.

![Software Installation](image)

Set Installation Options
Set installation-related options

You are about to install software onto the target computer. If you would like to modify the installation options, you may do so below. If you are ready to continue, press "Next".

Installation Options

- Allow components to overwrite newer or up-to-date versions.

![Software installation confirmation](image)

Figure 2-6: Software installation confirmation

3. Modify the installation options, if desired, and click Next. A confirmation screen is displayed.
4. Click **Next** to begin the installation. A window similar to Figure 2-7 is displayed.

![Software Installation](image)

*Figure 2-7: Installation progress*
Installation Results

After deploying the PSP on the target server, the Remote Deployment Utility displays an installation confirmation screen.

![Software Installation](image)

Figure 2-8: Installation confirmation

Installation is complete. Any additional instructions will be displayed below. Click on Finish to exit.

Installation for all necessary components completed successfully.
If one or more components are not installed successfully, a screen similar to the following is displayed.

![Software Installation](image)

The installation process encountered one or more errors that are listed below.

More specific details may be found in the log file located in the CPQSYSTEM\Log directory on "megatron".

![View Log...]

<table>
<thead>
<tr>
<th>Description</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>✗ Installation failed</td>
<td>hp ProLiant Ethernet/Fast Ethernet or Gigabit NIC</td>
</tr>
<tr>
<td>✗ Silent installation is not supported by ...</td>
<td>hp ProLiant NetFlex/Netelligent Adapter Driver for ...</td>
</tr>
</tbody>
</table>

![Figure 2-9: Installation failure](image)

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, select Target from the menu bar and select View Installation Log, or click View target installation log on the Target toolbar. Figure 2-10 shows a sample installation log file.
Information regarding installation activity is appended to the same log file, providing a chronological history of all component installation activity on the target server.

**NOTE:** The CPQSETUP.LOG installation log file is always located in the `\CPQSYSTEM\LOG` subdirectory on the boot partition of the target system.

![Figure 2-10: PSP installation log example](image)

**Figure 2-10: PSP installation log example**
ProLiant Remote Deployment Console Utility for Microsoft Windows

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

**NOTE:** The Remote Deployment Utility is located along with the rest of the Support Pack contents in the `\COMPAQ\CSP\NT` subdirectory on the SmartStart CD. The executable file that launches the utility is `SETUP.EXE`.

Some components must be configured before being deployed. Use the Remote Deployment Utility for Microsoft Windows to preconfigure components. For more information, refer to the “Component Preconfiguration” section in this chapter.

For more information about deployment using the Remote Deployment Console Utility, refer to Scenarios 2 and 3 in the “Deployment Utilities Usage Scenarios for Windows-Based Systems” section of this chapter.

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

**Command Line Syntax**

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

```
```

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

**NOTE:** All arguments and information enclosed in brackets are optional. Refer to the "Command Line Arguments" section for a full description of the arguments the Remote Deployment Console Utility accepts.
Command Line Arguments

The following table lists the arguments recognized by the Remote Deployment Console Utility.

Table 2-4: Command Line Arguments

<table>
<thead>
<tr>
<th>Command Line Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>/help</td>
<td>Displays command line Help information.</td>
</tr>
<tr>
<td>/?</td>
<td>Is identical to the /help argument.</td>
</tr>
<tr>
<td>/use-latest</td>
<td>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 will be 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.</td>
</tr>
<tr>
<td>/target:computer</td>
<td>Specifies the name of the computer to use as the target for the deployment operation.</td>
</tr>
<tr>
<td>/force</td>
<td>Changes the behavior of a component installation in one of the following ways:</td>
</tr>
<tr>
<td></td>
<td>• If the component is already installed and current, it will reinstall itself and the installed version number will remain the same.</td>
</tr>
<tr>
<td></td>
<td>• If a newer version of the component is already installed, the component will install itself and downgrade the component to the older version number.</td>
</tr>
<tr>
<td>/reboot[:timeout]</td>
<td>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.</td>
</tr>
<tr>
<td>/reboot-always[:timeout]</td>
<td>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).</td>
</tr>
</tbody>
</table>
### Table 2-4: Command Line Arguments continued

<table>
<thead>
<tr>
<th>Command Line Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>/use-location:fileshare</td>
<td>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. Refer to the “Command Line Examples” section for a usage example.</td>
</tr>
<tr>
<td>/user:username</td>
<td>Sets the user name to use to connect to the target computer.</td>
</tr>
<tr>
<td>/passwd:password</td>
<td>Sets the password to use to connect to the target computer.</td>
</tr>
<tr>
<td>/override_existing_connection</td>
<td>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. This parameter should only be used 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.</td>
</tr>
</tbody>
</table>
Command Line Examples

The following table lists examples of command line input for the Remote Deployment Console Utility.

**NOTE:** 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`.

<table>
<thead>
<tr>
<th>Command Line Input</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>setupc /target:COMPUTER1 /use-latest</code></td>
<td>Installs the latest available version of the Support Pack that is located in the current directory and is applicable to the computer named COMPUTER1.</td>
</tr>
<tr>
<td><code>setupc /target:COMPUTER1 BP000001.XML</code></td>
<td>Installs the Support Pack named BP000001.XML from the current directory on the computer named COMPUTER1.</td>
</tr>
<tr>
<td><code>setupc /target:COMPUTER2 BP000001.XML CP000150.EXE</code></td>
<td>Installs the Support Pack named BP000001.XML and an additional component named CP000150.EXE located in the current directory on the computer named COMPUTER2.</td>
</tr>
<tr>
<td><code>setupc /target:CPQSYS1 /use-latest /use-location:\\SWREPOS\SupportSoftware</code></td>
<td>Installs the latest available Support Pack from \SWREPOS\SupportSoftware on the computer named CPQSYS1.</td>
</tr>
</tbody>
</table>
| `@echo off`  
  `for %%I in <CPQSYS1 CPQSYS2 CPQSYS3> do setupc /t:%%I BP000002.XML` | A Windows .CMD script that installs the Support Pack named BP000002.XML on the following computers: CPQSYS1, CPQSYS2, and CPQSYS3.* |

*For additional information about the syntax of the FOR ... IN ... DO operating system command, refer to the operating system documentation.*
Single-Component Installation

In some instances, you may want to install a single component manually, rather than installing 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 is displayed.

![Component installation](image1)

Figure 2-11: Component installation

2. Click the Install button. A screen similar to the following is displayed.

![Component installation confirmation](image2)

Figure 2-12: Component installation confirmation

3. Click the Install button, then follow the instructions on the screen to complete the installation.
Command Line Syntax

The general command line syntax for single-component installation is:

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

**NOTE:** All arguments and information enclosed in brackets are optional. Refer to the “Command Line Arguments” section for a full description of the arguments the Smart Components accept.

If no command line arguments are passed on the command line, the component graphical user interface (GUI) is displayed.

Command Line Arguments

The following table lists the arguments recognized by Smart Components.

<table>
<thead>
<tr>
<th>Command Line Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>/h[elp]</td>
<td>Displays command line Help information.</td>
</tr>
<tr>
<td>/?</td>
<td>Is identical to the /help argument.</td>
</tr>
<tr>
<td>/s[ilent]</td>
<td>Specifies whether the GUI is suppressed or displayed. Use this argument when scripting the Smart Components to suppress the GUI. If this argument is omitted from the command line, the GUI is displayed.</td>
</tr>
<tr>
<td>/f[orce]</td>
<td>When used with the /silent command, installs the component in one of the following ways:</td>
</tr>
<tr>
<td></td>
<td>• If the component is already installed and current, it will reinstall itself and the installed version number will remain the same.</td>
</tr>
<tr>
<td></td>
<td>• If a newer version of the component is already installed, the component will install itself and downgrade the component to the older version number.</td>
</tr>
<tr>
<td></td>
<td>If this argument is omitted from the command line, the installation is not forced.</td>
</tr>
<tr>
<td>/r[eboot]</td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td>The reboot will only take place if no installation errors occur.</td>
</tr>
</tbody>
</table>
Command Line Examples

The following table lists examples of command line input for single-component installation.

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

<table>
<thead>
<tr>
<th>Command Line Input</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>cp002575</td>
<td>This command line starts installation of the CP002575.EXE component.</td>
</tr>
<tr>
<td>cp002575 /s</td>
<td>This command line installs the CP002575.EXE component on the target server using the defaults of the component. The GUI is not displayed.</td>
</tr>
<tr>
<td>cp002575 /s /f /r</td>
<td>This command line 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 is not displayed.</td>
</tr>
</tbody>
</table>

Return Codes

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 to determine any branching that is required. Table 2-8 summarizes the Smart Component return codes.

<table>
<thead>
<tr>
<th>Error Level</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>The Smart Component failed to install. Refer to the log file for more details.</td>
</tr>
<tr>
<td>1</td>
<td>The Smart Component installed successfully.</td>
</tr>
<tr>
<td>2</td>
<td>The Smart Component installed successfully, but the system must be restarted.</td>
</tr>
<tr>
<td>3</td>
<td>The installation was not attempted because the required hardware was not present or the software was current.</td>
</tr>
</tbody>
</table>
Deployment Utilities Usage Scenarios for Windows-Based Systems

This section discusses deployment scenarios for PSPs and components obtained through ActiveUpdate and 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, proactively updated by HP ActiveUpdate. The same deployment principles are applicable to PSP software that is stored locally on the administrative system, on the target system, or on the SmartStart CD.

**TIP:** To facilitate the use of the PSP deployment utilities, copy the executable and Help files of the utilities to the hard drive of the administrative system. Place the executable and Help files in their own subdirectory.

The overall PSP and component deployment strategy for Windows-based systems is illustrated in Figure 2-13.

![Figure 2-13: Deployment strategy on Windows-based systems](image-url)
Table 2-9 summarizes the deployment scenarios on Windows-based systems and the utilities to use in each scenario.

### Table 2-9: Deployment Scenarios on Windows-Based Systems

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Type of Deployment</th>
<th>Deployment Utility Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>• User is not familiar with operating system command line tools or does not need to deploy from a command line. • User needs to deploy on a single local or remote target system. • User does not need scripting capabilities.</td>
<td>Remote Deployment Utility (SETUP.EXE)</td>
</tr>
<tr>
<td>2</td>
<td>• User is familiar with operating system command line tools. • User needs to deploy on a single local or remote target system. • User needs scripting capabilities.</td>
<td>Remote Deployment Console Utility (SETUPC.EXE)</td>
</tr>
<tr>
<td>3</td>
<td>• User is familiar with operating system command line tools. • User needs to deploy on a few remote target systems. • User needs scripting capabilities.</td>
<td>Remote Deployment Console Utility (SETUPC.EXE)</td>
</tr>
<tr>
<td>4</td>
<td>• User is an expert with operating system tools, including command line scripting. • User is knowledgeable about Insight Manager 7. • User needs to deploy on a multitude of remote target systems, all managed by Insight Manager 7.</td>
<td>Remote Deployment Console Utility with Insight Manager 7*</td>
</tr>
</tbody>
</table>

**IMPORTANT:** When using Insight Manager 7 in conjunction with the PSP deployment utilities, HP recommends deploying to no more than 100 remote target systems with any given Application Launch task.

Scenario 1: Deploying Software on a Single-Target System with the Remote Deployment Utility

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

Both the Remote Deployment Utility 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 Remote Deployment Utility is the easiest utility to use when deploying on a single-target system.

Figure 2-14 illustrates the basic single-target system deployment process with the Remote Deployment Utility.

![Diagram of single-target deployment process]

**Figure 2-14: Single-target deployment process**

**When to Use This Scenario**

Use the PSP deployment scenario described in this section when:

- You are not familiar with operating system command line tools, or you do not need to deploy from a command line.
- You are deploying PSPs or individual components on a single-target system that is either local or remote.
- You do not have a need for scripting.
Deploying a PSP

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

1. Be sure that all requirements are fulfilled as listed in the section “Minimum Requirements for Windows Servers.”

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

3. Launch the Remote Deployment Utility on the administrative system using one of the following methods:

   — Use the hard drive of the administrative system if the utility was copied to the system. It does not matter where the utility resides on the host system; however, HP recommends placing the utility in its own subdirectory.

   — Use the SmartStart CD. The executable file that launches the utility is called SETUP.EXE and is located in the \COMPAQ\CSP\NT subdirectory.

If no PSPs or components are in the same directory as the Remote Deployment Utility or if no applicable Support Packs are found, a blank screen similar to Figure 2-15 is displayed 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 Table 2-3 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 **Applicable Support Packs** toolbar. All the components in the Support Pack will be displayed in the target computer list, as shown in Figure 2-16.

   **IMPORTANT:** To install a PSP, all files that comprise the PSP must be present in the same directory.

   — 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.

![Figure 2-16: Selecting a PSP to be deployed from the drop-down menu](image-url)
If error text is displayed under a Support Pack in the repository view tree (refer to Figure 2-17 for an example), 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, ActiveUpdate, or the SmartStart CD, and copy it to the software repository.

![Remote Deployment Utility](image)

**Figure 2-17: Component missing from the PSP**

7. Select the target machine. By default, the Remote Deployment Utility 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, type 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 Remote Deployment Utility main window.

**NOTE:** To assist with entry of the target system name, the Remote Deployment Utility maintains a history of servers on which software has been deployed. 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 Remote Deployment Utility, you will be 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 Remote Deployment Utility identifies the target system. A progress window tracks the progress of the deployment.

9. Click **Cancel** at any time to stop deployment. There may be a slight delay before the installation is cancelled while the Remote Deployment Utility finishes the last initiated task.

   **IMPORTANT:** Clicking **Cancel** does not cancel the entire installation procedure and restore the target system to its previous driver versions. Instead, clicking **Cancel** stops the installation of the PSP at the point when **Cancel** is clicked, and the target server may 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 Remote Deployment Utility displays an installation confirmation screen.

    If one or more components are not installed successfully, a screen similar to the following is displayed.

    ![Software Installation](image)

    **Figure 2-18: Installation failure**
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.

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

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

Scenario 2: Deploying Software on a Single-Target System with the Remote Deployment Console Utility

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

NOTE: The ProLiant 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 User Guide, available at www.hp.com/servers/sstoolkit

Figure 2-19 illustrates the basic, single-target system deployment process with the Remote Deployment Console Utility.

When to Use This Scenario

Use the PSP deployment scenario described in this section when:

• You are familiar with operating system command line tools.
• You require deployment of PSPs or individual components on a single-target system that is either local or remote.
• You have a need for scripting.
Deploying a PSP

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 requirements are fulfilled as listed in the section “Minimum Requirements for Windows Servers.”
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 Remote Deployment Utility (SETUP.EXE). For more information, refer to the “Component Preconfiguration” section in this chapter.
5. Launch a command line prompt on the administrative system and change to the subdirectory containing the Remote Deployment Console Utility.

NOTE: Command line help for the utility is accessible by running the file SETUPC.EXE 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 log 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 may be displayed:

- 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 may 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 needs to 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: Deploying Software on Multiple-Target Systems with the Remote Deployment Console Utility

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

**NOTE:** The ProLiant 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 User Guide*, available at [www.hp.com/servers/sstoolkit](http://www.hp.com/servers/sstoolkit).

Figure 2-20 illustrates the basic, multiple-target system deployment process with the Remote Deployment Console Utility.

![Figure 2-20: Multiple-target deployment process](image)

**When to Use This Scenario**

Use the PSP deployment scenario described in this section when:

- You are familiar with operating system command line tools.
- You require deployment of PSPs or individual components on a few remote target systems.
- You have a need for scripting.
Deploying a PSP

Deploying software on multiple-target systems with the Remote Deployment Console Utility follows the same basic procedures outlined in the section “Deploying Software on a Single-Target System with the Remote Deployment Console Utility.”

**IMPORTANT:** If multiple-target server deployment requirements are for very high volumes, refer to the section “Scenario 4: Deploying Software on Multiple-Target Systems Managed by Insight Manager 7.” 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 the section “Deploying Software on a Single-Target System with the Remote Deployment Console Utility.”
2. Launch the Remote Deployment Console Utility. For more information, refer to “Command Line Examples” in the “ProLiant Remote Deployment Console Utility for Microsoft Windows” section in this chapter.

**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 utility is accessible by running the file SETUPC.EXE from the command line. A screen displays all possible parameters that the utility will accept.

3. Complete the deployment. Refer to step 7 in the section, “Deploying Software on a Single-Target System with the Remote Deployment Console Utility,” for the remainder of the deployment process and any error messages that may be generated.

**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: Deploying Software on Multiple-Target Systems Managed by Insight Manager 7

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

For initial PSP deployment on multiple-target systems managed by Insight Manager 7, 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 that is maintained proactively by ActiveUpdate.

After initial PSP deployment, HP recommends that you use the software deployment support in Insight Manager 7.

Figure 2-21 illustrates the basic, multiple-target system deployment process with Insight Manager 7 and the Remote Deployment Console Utility.

![Diagram of multiple-target deployment process with Insight Manager 7]

Figure 2-21: Multiple-target deployment process with Insight Manager 7

When to Use This Scenario

Use the PSP deployment scenario described in this section when:

- You are knowledgeable about operating system tools, including command line scripting.
- You are knowledgeable about Insight Manager 7.
- You are deploying PSPs or individual components on a large number of remote target systems that are all managed by Insight Manager 7.
Deploying a PSP

For information on deployments using Insight Manager 7, refer to the following white paper:


For information on using Insight Manager 7 with the Version Control Repository Manager and the Version Control Agent, refer to the Web-Based Software Maintenance User Guide at


**IMPORTANT:** When using Insight Manager 7 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 Insight Manager 7, refer to the *Insight Manager 7 User Guide* available on the Management CD, in every Insight Manager 7 download from the Web, or at

www.hp.com/servers/im7

Alternatively, click **Help** from within Insight Manager 7.
This chapter discusses how to use ProLiant Support Packs (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.

Overview

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

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

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

- NetWare 4.2—Not supported. NetWare 4.2 is no longer supported as of SmartStart 6.00. The last version of the CSP for NetWare 4.2 is available on the NetWare 4.2 driver page at www.hp.com/support/files
- NetWare 5.1—Base installation. However, Support Pack 5 or later is recommended.
- NetWare 6.0—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), agents (Foundation, Server, LAN, and Storage), and the Survey Utility.
IMPORTANT: Although the PSP cannot be used during initial NetWare red-box installation, HP 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 or NW6. Support for red-box installations can be accomplished by copying the contents of the directory from the SmartStart CD into 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 as described in the following procedures 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.

NOTE: The Deployment Utility for Novell NetWare is available with PSPs for Novell NetWare at www.hp.com/support/files

The utility has two modes of operation:

- **User interface mode**—Provides a Novell User Technologies (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 is displayed, as illustrated in Figure 3-1. The window provides details about the content of the PSP, including old and new version numbers and descriptions for each component in the PSP.

![Figure 3-1: Deployment Utility for Novell NetWare main window](image-url)
Component or PSP Deployment

The Deployment Utility for Novell NetWare supports local deployments only.

For more information about local deployment using the Deployment Utility for Novell NetWare, refer to the scenarios in the “Deployment Utility Usage Scenarios for NetWare Servers” section of this chapter.

Installation Results

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 on the server called CPQLOG.LOG. Figure 3-2 shows a sample installation log file. 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.

NOTE: The CPQLOG.LOG installation log file is always located in the SYS:ETC\ subdirectory.

Figure 3-2: Deployment Utility for Novell NetWare installation log
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 Figure 3-3. 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 .NLM files and associated files of the utilities to the hard drive of the NetWare server. Place the .NLM files and associated files in their own subdirectory.

![Figure 3-3: Single target deployment process for NetWare](image-url)
Table 3-1 summarizes the PSP and component deployment scenarios on NetWare-based systems.

### Table 3-1: Deployment Scenarios on NetWare-Based Systems

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Type of Deployment</th>
<th>Deployment Method Used</th>
</tr>
</thead>
</table>
| 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 |
| 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

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.

NOTE: The order of parameters is not important.

Command Line Syntax for ProLiant Support Packs

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

Table 3-2: Command Line Arguments for ProLiant Support Packs

<table>
<thead>
<tr>
<th>Command Line Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>/H</td>
<td>This argument displays a list of command line parameters.</td>
</tr>
<tr>
<td>/NUI</td>
<td>This argument suppresses the user interface. However, during installation, output is shown at the system console unless the silent (/S) option is also used.</td>
</tr>
<tr>
<td>/S</td>
<td>This argument enables a silent installation. All messages are logged to the SYS:ETC\CPQLOG.LOG file; no console output or GUI is shown.</td>
</tr>
<tr>
<td>/R</td>
<td>This argument reboots the system if any packages being installed require it and if no failures occurred during the installation.</td>
</tr>
<tr>
<td>/F</td>
<td>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.</td>
</tr>
<tr>
<td>/NOMODS*</td>
<td>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.</td>
</tr>
</tbody>
</table>

*Not supported by HP agents or the Survey Utility*
### Command Line Syntax for Individual Component Installation

```bash
<VOLUME:\PATH>CP00.XXX [ /H | /? ] [ /NUI ] [ /S | /F ] [ /I ] [ /G ] [ /R ]
[ /xVOL:\PATH ] [ /NOMODS ] [ /bVOL:\PATH ]
```

<table>
<thead>
<tr>
<th>Command Line Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>/H</td>
<td>This argument shows a list of command line parameters.</td>
</tr>
<tr>
<td>/NUI</td>
<td>This argument suppresses the user interface. However, during installation, output is shown at the system console unless the silent ( /S ) option is also used.</td>
</tr>
<tr>
<td>/S</td>
<td>This argument enables a silent installation. All messages are logged to the SYS:\ETC\CPQLOG.LOG file; no console output or GUI is shown.</td>
</tr>
<tr>
<td>/F</td>
<td>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.</td>
</tr>
<tr>
<td>/I</td>
<td>This argument displays the Package Payload information (no installation occurs).</td>
</tr>
<tr>
<td>/G</td>
<td>This argument displays Package Source and Destination information (no installation occurs).</td>
</tr>
<tr>
<td>/R</td>
<td>This argument reboots the system if the package being installed requires it and if no failures occurred during the installation.</td>
</tr>
<tr>
<td>/xVol:\Path</td>
<td>This argument extracts the contents of the package to the directory pointed to by Vol:\Path.</td>
</tr>
<tr>
<td>/NOMODS*</td>
<td>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.</td>
</tr>
<tr>
<td>/bVol:\Path*</td>
<td>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.</td>
</tr>
</tbody>
</table>

*Not supported by HP Agents and the Survey Utility

**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

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

Table 3-4: Command Line Examples

<table>
<thead>
<tr>
<th>Action</th>
<th>Command Line</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use normal program execution to deploy a bundle of components for NetWare 5.1 and 6.0</td>
<td>SYS:\DEPLOY\CPQDPLOY</td>
</tr>
<tr>
<td>Use CPQDPLOY to deploy a bundle</td>
<td>SYS:\DEPLOY\CPQDPLOY [BP000111.XML]</td>
</tr>
<tr>
<td>Use the force option for CPQDPLOY.NLM</td>
<td>SYS:\DEPLOY\CPQDPLOY -f</td>
</tr>
<tr>
<td>Use the &quot;no user interface&quot; option (No GUI)</td>
<td>SYS:\DEPLOY\CPQDPLOY -nui</td>
</tr>
<tr>
<td>Use the silent option (no command line or GUI output)</td>
<td>SYS:\DEPLOY\CPQDPLOY -s</td>
</tr>
<tr>
<td>Use the silent option and the force option</td>
<td>SYS:\DEPLOY\CPQDPLOY -s -f</td>
</tr>
<tr>
<td>Install a single component with the GUI</td>
<td>SYS:\DEPLOY\CPQDPLOY CP002345</td>
</tr>
<tr>
<td>Install a single component with force and &quot;no user interface&quot; options</td>
<td>SYS:\DEPLOY\CPQDPLOY CP002351 -f -nui</td>
</tr>
<tr>
<td>Extract component contents to another directory</td>
<td>SYS:\DEPLOY\CPQDPLOY CP002326 -xSYS:\TEMP</td>
</tr>
<tr>
<td>Determine the contents of a component without extracting or installing the component</td>
<td>SYS:\DEPLOY\CPQDPLOY CP002341 -i</td>
</tr>
<tr>
<td>Determine the source directory, destination directory, primary NLM, and other component information to be installed by the component package without installing the component</td>
<td>SYS:\DEPLOY\CPQDPLOY CP002346 -g</td>
</tr>
<tr>
<td>Deploy a single component from the deployment utility with the force option</td>
<td>SYS:\DEPLOY\CPQDPLOY CP002349.NLM -f</td>
</tr>
<tr>
<td>Deploy a single component without modifying the NCF files</td>
<td>SYS:\DEPLOY\CPQDPLOY CP002334.NLM -nomods</td>
</tr>
<tr>
<td>Deploy multiple components at one time, with no user interface</td>
<td>SYS:\DEPLOY\CPQDPLOY CP002341.NLM -nu CP002342.NLM</td>
</tr>
<tr>
<td>Deploy a single component from the command line using the force option</td>
<td>SYS:\DEPLOY\CPQDPLOY CP00XXXX.NLM -f</td>
</tr>
<tr>
<td>Deploy a single component from the command line using the nomods option</td>
<td>SYS:\DEPLOY\CPQDPLOY CP00XXXX.NLM -nomods</td>
</tr>
</tbody>
</table>

NOTE: A bundle and a 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

Table 3-5 lists the valid ProLiant Deployment Utility for Novell NetWare return codes.

Table 3-5: CPQDPLOY.NLM Return Codes

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

Scenario 1: Command Line Deployment Using CPQDPLOY.NLM

Command line installation using CPQDPLOY.NLM is achieved by passing as arguments either a bundle file name or component file name to install along with either the -s or -nui switches. A bundle file name has the format BP00XXXX.XML. If the XML file is not in the start directory, CPQDPLOY.NLM will prompt you for a path to a valid bundle XML file, attempt to use a bundle XML file if only one bundle XML file exists in the start directory, or provide a list of supported bundle XML files if more than one bundle XML file is found in the start directory.

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

A component file name has the format CP0XXXXX.NLM. CPQDPLOY.NLM can install one bundle or multiple components at a time. A bundle is an HP-tested collection of component packages that will deploy device drivers, utilities, agents, or the Survey Utility. 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 may pass the name of the bundle or component that you want installed. The deployment selection screen shows you the currently installed version of the software on the server (if found), the version that the component package will install, and a description of the component package. The keystrokes that are available on the graphical screen are listed in Table 3-6.
Table 3-6: NetWare Keystrokes for Graphical Installation of PSPs

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1</td>
<td>Displays user help screens</td>
</tr>
<tr>
<td>F2</td>
<td>Toggles the force option</td>
</tr>
<tr>
<td>F3</td>
<td>Toggles the reboot option</td>
</tr>
<tr>
<td>F4</td>
<td>Marks/unmarks all components for installation</td>
</tr>
<tr>
<td>F5</td>
<td>Marks/unmarks an individual component or category in the list</td>
</tr>
<tr>
<td>F7</td>
<td>Toggles the Modify NCF Files option</td>
</tr>
<tr>
<td>F8</td>
<td>Displays more options</td>
</tr>
<tr>
<td>F10</td>
<td>Installs the marked packages</td>
</tr>
<tr>
<td>Enter</td>
<td>Shows the component package details and payload information</td>
</tr>
<tr>
<td>Esc</td>
<td>Returns to the previous screen or exits the deployment utility</td>
</tr>
</tbody>
</table>

After the installation is complete, a component installation status screen is displayed 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 by Individual Package**

Command line installation of an individual component can be done by typing the LOAD command (optional), the full path name, the name of the component package (such as CP002345), and either the -nui or -s switches. An individual component package file name is of the format CP0XXXXX.NLM. The individual component installer can install one component at a time. A component package deploys device drivers, utilities, agents, or the Survey Utility. 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 by Individual Package**

Graphical (NUT-based) installation using the individual component installer is done by omitting the -s or -nui parameters from the component package. The deployment selection screen shows you the currently installed version of the component package on the server (if found), the version that the component package will install, and a description of the component package. Refer to Table 3-6 for the keystrokes that are available on the graphical screen.

After the installation is complete, a component installation status screen is displayed showing the results of the installation. Pressing the Esc key terminates the component installer.
Troubleshooting the NetWare ProLiant Support Pack

The following issues may be encountered with the NetWare PSP. 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 allows 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.

  **NOTE:** 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 may 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

  [www.hp.com/support/files](http://www.hp.com/support/files)
• **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 may not be intended for the version of NetWare that is currently installed on the server.

• **When I start the PSP with CPQDPLOY.NLM, I get a prompt asking me to enter a path to a supported bundle XML file.**

  This is caused by having CPQDPLOY.NLM in a directory without a valid bundle XML file. A valid bundle XML file is a bundle file of the format BP000XXX.XML, which is currently supported by the installed version of NetWare. CPQDPLOY.NLM may be in a directory with a bundle file, but if the bundle file does not provide support for the currently installed version of NetWare, you will be prompted to enter a path to a valid bundle 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.

  **NOTE:** All components that make up a PSP must be present in the same directory as the bundle file.
This chapter discusses how to use the ProLiant Support Packs (PSPs) for Linux. HP provides the HP ProLiant Linux Deployment Utility (LDU) for deploying the PSPs for Linux.

**Overview**

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, utilities, and ROMs). This PSP design improves and simplifies operating system integration, flexibility, and system configuration.

**Minimum Requirements for Linux Servers**

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

The PSP is currently shipped in bundles for each supported distribution and version of Linux. The bundle will install the appropriate software for the installed version of Linux. The PSPs have the following minimum requirements:

- glibc 2.2.5-34 or later
- GTK 1.2 libraries or later

**NOTE:** GTK 1.2 libraries are required for graphical installation. These will be installed in all normal server installations except minimal server Linux installs.

- gawk 3.1.0-4 or later
- sed 3.02-11 or later
- pcitools-2.1.9-2.i386.rpm 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 what kernel is used)

The Linux PSP supports the following distributions and versions of Linux and their associated errata kernels:

- Red Hat Linux Professional 7.3 (RH73)
- Red Hat Linux Professional 8.0 (RH80)
- Red Hat Linux Advanced Server 2.1 (RHAS21)
- SuSE Linux Enterprise Server 7 (SLES7)
- Conectiva S.A., The SCO Group, SuSE Linux AG, and Turbolinux, Inc. powered by UnitedLinux 1.0 (UL10)

The PSP is designed for use after the operating system installation to update drivers and install HP utilities (such as health, iLO, and RILOE drivers), agents (Foundation, Server, LAN, and Storage), and the Insight Manager Server Diagnostics Utility for Linux.

After the operating system installation is complete, use the PSP as described in the following procedures to complete the server configuration.

**ProLiant Linux Deployment Utility**

HP has developed the LDU to provide enhanced PSP deployment capabilities. The utility enables you to deploy and maintain PSP software on local servers through use of the terminal window, or on remote servers through use of the ssh (secure shell) utility.

**NOTE:** The LDU is available with PSPs for Linux at

[www.hp.com/support/files](http://www.hp.com/support/files)

**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. The terminal window mode is divided into three modes:
  - Silent
  - No user interface
  - Single step

- **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 is displayed, as illustrated in Figure 4-1. The window provides details about the contents of the PSP for the installed version of Linux.

![Figure 4-1: LDU main window](image)
PSP Deployment

The LDU supports deployments on the local server only. While the deployment can be executed from a secure shell into a server, it can only be deployed on the server that contains the PSP and the LDU.

For more information about how to deploy using the LDU, refer to the scenarios in the “Deployment Utility Usage Scenarios for Linux Servers” section of this chapter.

Installation Results

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. Figure 4-2 shows a sample installation log file. 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.

NOTE: The hppldu.log installation log file is located by default in the /var/log subdirectory.

Figure 4-2: LDU installation log (/var/log/hppldu.log)
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 Figure 4-3. The software must be copied to the Linux target server from either an administrative workstation or another 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 required GTK libraries and the local DISPLAY environment variable are configured appropriately.

Figure 4-3: Single target deployment process for Linux

Table 4-1 summarizes the PSP and component deployment scenarios on Linux-based systems.

Table 4-1: Deployment Scenarios on Linux-Based Systems

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Type of Deployment</th>
<th>Deployment Method Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>User can install a bundle by means of a terminal window or shell script.</td>
<td>Terminal window installation using ./install.sh --nui</td>
</tr>
<tr>
<td></td>
<td>User can silently install a bundle by means of a terminal window or shell script.</td>
<td>Terminal window installation using ./install.sh --silent</td>
</tr>
<tr>
<td></td>
<td>User can select which components to install from a terminal window.</td>
<td>Terminal window installation using ./install.sh -y --nui</td>
</tr>
<tr>
<td></td>
<td>User is familiar with script files or wants to automate an installation of the Linux PSP.</td>
<td>Terminal window installation using ./install.sh --inputfile filename</td>
</tr>
<tr>
<td>2</td>
<td>User can select which components to install from a list.</td>
<td>Graphical (GTK-based) installation using ./install.sh</td>
</tr>
<tr>
<td></td>
<td>User can install all components with a few simple keystrokes.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>User wants a graphical display of results of the installation by component.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>User needs the ability to look at details of each component before installation.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>User wants to choose which components are installed graphically or does not want to work with script files.</td>
<td></td>
</tr>
</tbody>
</table>
## Command Line Parameters

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 (--) as shown in Table 4-2. For example, -h, -?, and --help are equivalent.

**NOTE:** The order of parameters is not important.

### Command Line Syntax for ProLiant Support Packs

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

### Table 4-2: Command Line Arguments for ProLiant Support Packs

<table>
<thead>
<tr>
<th>Command Line Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-h, -?, --help</td>
<td>This argument displays a list of command line parameters.</td>
</tr>
<tr>
<td>--nui</td>
<td>This argument suppresses the user interface. However, during installation, output is shown at the terminal window unless the silent (--silent) option is also used.</td>
</tr>
<tr>
<td>-s, --silent</td>
<td>This argument enables a silent installation. All messages are logged to the /var/log/hppldu.log file unless overridden. No console output or graphical user interface (GUI) is shown except for the final return code.</td>
</tr>
<tr>
<td>-r, --reboot</td>
<td>This argument reboots the system if any components being installed require it and if no failures occurred during the installation.</td>
</tr>
<tr>
<td>-f, --force</td>
<td>This argument attempts to force the installation of all components. This option will bypass the following install checks:</td>
</tr>
<tr>
<td></td>
<td>• Minimum kernel version check</td>
</tr>
<tr>
<td></td>
<td>• Maximum kernel version check</td>
</tr>
<tr>
<td></td>
<td>• PCI device presence check</td>
</tr>
<tr>
<td></td>
<td>• Installed library file requirements</td>
</tr>
<tr>
<td></td>
<td>• Installed software version check</td>
</tr>
<tr>
<td></td>
<td>The force option will not force a component to install if prerequisites such as required modules, files, source code, and build environment are not available.</td>
</tr>
<tr>
<td>--inputfile filename</td>
<td>This argument enables you to pass input parameters into the LDU to enable scripted deployments of the PSPs. Refer to the section on scripted installation in the “Advanced Installation Topics” section of this document to find the format of filename.</td>
</tr>
</tbody>
</table>

[continued]
Table 4-2: Command Line Arguments for ProLiant Support Packs continued

<table>
<thead>
<tr>
<th>Command Line Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-t reboot_timeout_in_minutes</td>
<td>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.</td>
</tr>
<tr>
<td>-m &quot;reboot_message&quot;</td>
<td>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.</td>
</tr>
<tr>
<td>-v, --verbose</td>
<td>This argument enables you to see more information during an installation than is normally displayed.</td>
</tr>
<tr>
<td>-y</td>
<td>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 not, or to exit out of the LDU. The -y switch will force the --nui switch option.</td>
</tr>
</tbody>
</table>

Return Codes

Table 4-3 lists the valid LDU return codes.

Table 4-3: ./install.sh Return Codes

<table>
<thead>
<tr>
<th>Value</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Installation was successful. Reboot is not required.</td>
</tr>
<tr>
<td>1</td>
<td>Component XML files are missing or corrupt.</td>
</tr>
<tr>
<td>2</td>
<td>No components to be installed were found in the bundle XML file.</td>
</tr>
<tr>
<td>3</td>
<td>Bundle XML file is missing, or no bundle XML was found that supports the installed version of Linux.</td>
</tr>
<tr>
<td>4</td>
<td>Component RPM files are missing or corrupt.</td>
</tr>
<tr>
<td>5</td>
<td>A prerequisite or postrequisite was not met for one or more components.</td>
</tr>
<tr>
<td>6</td>
<td>Reserved</td>
</tr>
<tr>
<td>7</td>
<td>Reserved</td>
</tr>
<tr>
<td>8</td>
<td>Reserved</td>
</tr>
<tr>
<td>9</td>
<td>User did not install any components prior to exiting the LDU.</td>
</tr>
<tr>
<td>10</td>
<td>Installation of one or more components failed.</td>
</tr>
<tr>
<td>11</td>
<td>User did not configure a component requiring configuration.</td>
</tr>
<tr>
<td>12</td>
<td>Preconfiguration of one or more components failed.</td>
</tr>
<tr>
<td>14</td>
<td>Postconfiguration of one or more components failed.</td>
</tr>
<tr>
<td>15</td>
<td>Reserved</td>
</tr>
</tbody>
</table>

continued
Table 4-3: /install.sh Return Codes continued

<table>
<thead>
<tr>
<th>Value</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>Component installation was successful. Reboot is required to complete the installation of one or more components.</td>
</tr>
<tr>
<td>17</td>
<td>Reserved</td>
</tr>
<tr>
<td>18</td>
<td>Reserved</td>
</tr>
<tr>
<td>19</td>
<td>Reserved</td>
</tr>
<tr>
<td>20</td>
<td>One or more command line parameters on the ./install.sh command was incorrect and must be fixed for installation to occur.</td>
</tr>
<tr>
<td>21</td>
<td>User aborted the installation during installation of components.</td>
</tr>
</tbody>
</table>

Scenario 1: Terminal Window Installation

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

**NOTE:** A bundle is a collection of component packages tested by HP that deploys device drivers, utilities, agents, or the Insight Manager Server Diagnostics Utility.

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 inputfile using the --inputfile filename option on the ./install.sh command. The only output to the terminal window is the final return code. Installation of the PSP may require 15 to 20 minutes to complete, 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 User Interface Installation

During a “no user interface” installation, the installation will proceed 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 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 bundle for the installed version of Linux is determined. The PSP bundle 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. 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 will start installing components.

During component 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 may determine that a component requires files that are not located on the current server. If this occurs, you will be given the option to provide remote source location information about how to obtain the source. The LDU can obtain source information from other remote servers using NFS or SAMBA. If you choose to provide this information, follow the prompts to provide the required information. Refer to the “Remote Source Location” section 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 may 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.
Figure 4-4: LDU “no user interface” installation

IMPORTANT: If the -s or --nui switches are used and a valid bundle XML file is not found or more than one valid bundle 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 --nui and -y options on the ./install.sh command.

./install.sh --nui -y

At the start of the single step installation, the appropriate PSP bundle for the installed version of Linux is determined. The PSP bundle 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. If a password is required, you are prompted to verify the original password. After the configuration data has been confirmed as valid, 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 may determine that a component requires files that are not located on the current server. If this occurs, you will be given the option to provide remote source location information about how to obtain the source. The LDU can obtain source information from other remote servers using NFS or SAMBA. If you choose to provide this information, follow the prompts to provide the required information. Refer to the “Remote Source Location” section 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.
Scenario 2: Graphical (GTK-based) Installation

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 bundle.

**NOTE:** The LDU is designed to run on 1024 x 768 or higher screen resolutions. Running the LDU at 800 x 600 screen resolution may 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 is displayed, as illustrated in Figure 4-6.
Information provided on the main installation screen includes:

- The name of the server on which the installation is occurring
- The name of the PSP bundle that is being 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. This component will be installed 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. This component will be installed 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:
  — **Optional**—Configuration is optional for the given component. The configuration default values will be used unless they are altered.
  — **Completed**—Configuration of the given 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 may be installed for each component.

• 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. A sample **Component Details** screen is shown in Figure 4-7.

![Figure 4-7: LDU Component Details screen](image)
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 is displayed. For more information, refer to the “Component Configuration” section later in this chapter.

Components can be added or removed from the selected components to install by:

- Double-clicking a component.
- Selecting a single component.
- Selecting multiple components while holding 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 bundle. The force option will bypass checks for the following:
  - Minimum kernel version
  - Maximum kernel version
  - Library file dependencies
  - PCI device presence check
  - Installed software version check

  **NOTE:** Some dependencies are required even with the force option, such as file and directory dependencies, 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 the “Command Line Syntax for ProLiant Support Packs” section. 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 -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** and **Exit** buttons may be hidden beneath the user panel. To view the **Install** 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 that require kernel source code when that kernel source is not located on the local server. Refer to the “Remote Source Location” section of this chapter 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** screen is displayed (refer to Figure 4-8 for an example). 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.
The Installation in Progress screen has four columns:

- The **Status** column lists the installation status of each component.
- The **Description** column lists the description of each component.
- The **Installed Version** column lists the currently installed version of each component.
- The **Installation Status** column lists the state 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:** It is normal for processing of prerequisites and postrequisites to take several minutes depending on the operation 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 is displayed that indicates the installation is complete. Click **OK** to display the **Installation Status Screen**, as shown in Figure 4-9.

![Installation Status Screen](image)

**Figure 4-9: LDU Installation Status Screen**

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 may 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 or SAMBA, as required by the installation. 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 or SAMBA 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 installed kernel on the server where the LDU is executing or the connection will fail.

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 NFS or SAMBA remote source location.
3. Click **OK** to save any data that has been provided for use during component installation. If **Cancel** is clicked, any data entered is lost.
Examples of the NFS and SAMBA remote source location configuration screens are shown in Figure 4-10 and Figure 4-11.

Figure 4-10: NFS Remote Source Location Configuration Screen
Terminal Window Installation Mode

In terminal window installation mode, you will be 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. 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 or SAMBA 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 and SAMBA 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 the “Scripted Installation” section in this chapter.
Component Configuration

Some components may have required or optional configuration settings. Configuration parameters can include information necessary to set up the component correctly or passwords required for software deployed from within the component.

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 Figure 4-12 is displayed.
4. Configure the component. The default value, if any, is displayed at the end of the prompt in brackets.
5. Click OK to save the configuration data for use during the installation. Clicking Cancel will cause any entered data to be lost.

NOTE: If required configuration is not completed, the component that requires the configuration data may not function correctly after installation.

If optional configuration is not completed, the component that needs the configuration data will be set with default values based on standard component defaults.

Figure 4-12: Graphical installation mode configuration example
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 Enter to continue without entering any values, the component will use the default values, if available. An example of a component requiring configuration data from a command line installation is shown in Figure 4-13.

**NOTE:** If required configuration is not completed, the component that requires the configuration data may not function correctly after installation.

If optional configuration is not completed, the component that needs the configuration data will be set with default values based on standard component defaults.

Figure 4-13: Terminal window configuration example
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 supported parameters are listed in Table 4-4.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>NFSREMOTESERVERNAME</td>
<td>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.</td>
</tr>
<tr>
<td>NFSREMOTEMOUNTPOINT</td>
<td>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.</td>
</tr>
<tr>
<td>SAMBAREMOTESERVERNAME</td>
<td>This parameter is the name of the remote SAMBA server (either DNS name or IP address) that contains the kernel source for use with the Remote Source Location feature of the LDU.</td>
</tr>
<tr>
<td>SAMBAREMOTEMOUNTPOINT</td>
<td>This parameter is the share name on the remote server that contains the kernel source code. The SAMBA mount on the local server is performed during the installation if it is required and dismounted at the completion of the installation.</td>
</tr>
<tr>
<td>SAMBAREMOTEUSERNAME</td>
<td>This parameter is the user name (UID) that has access to the share name on the remote server.</td>
</tr>
<tr>
<td>SAMBAREMOTEPASSWORD</td>
<td>This parameter is the password associated with the remote user name provided.</td>
</tr>
<tr>
<td>SAMBAREMOTEWORKGROUP</td>
<td>This parameter is the workgroup in which the user name provided resides.</td>
</tr>
<tr>
<td>LSPOPTIONS</td>
<td>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.</td>
</tr>
<tr>
<td>LOGFILENAME</td>
<td>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.</td>
</tr>
</tbody>
</table>
The following input file is an example. If both NFS and SAMBA values are provided, only the NFS values will be used.

```bash
#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.
NFSREMOOTESERVERNAME=10.1.1.1
NFSREMOTEMOUNTPOINT=/usr/src

#If using SAMBA, the file would have these parameters defined.
#The example is equivalent to the \sambasrv\sharename SAMBA share.
SAMBAREMOOTESERVERNAME=sambasrv
SAMBAREMOTEMOUNTPOINT=sharename
SAMBAREMOTEUSERNAME=MyUserName
SAMBAREMOTEPASSWORD=MyPassword
SAMBAREMOTEWORKGROUP=workgroup
```

## Troubleshooting the ProLiant Support Pack for Linux

The following issues may be encountered with the Linux PSP. The issues are in **bold** and their resolutions follow:

- **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.**
  
  The BP00xxxx.xml file is missing for the operating system that you have installed. Download the complete Linux PSP again from the [www.hp.com/support/files](http://www.hp.com/support/files) Web page.

  **NOTE:** All components that comprise a PSP must be present in the same directory as the bundle file.

- **When I install the storage components and restart the server, there are one or more new entries in my 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 execute 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]

This is displayed for one of two reasons.

— The required GTK libraries are not installed. 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 need to know either the DNS name or IP address of the target server.

Method A:

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

b. Be sure 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

NOTE: Method B is not recommended because it may open your server to unauthorized access.

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

On some 800 x 600 display resolutions, the Install and Exit buttons may be hidden beneath the user panel. To view the Install 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/SAMBA 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.

Here are a few pointers to help make NFS/SAMBA 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 allow port access for NFS or SAMBA may 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 need to 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.

**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 that the LDU is deploying software to:

— 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 from the `make -C` 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.
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