

HP NetServer LH Pro User Guide



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Audience Assumptions

The user guide is for the person who installs, administers, and troubleshoots LAN servers. Hewlett-Packard Company assumes you are qualified in the servicing of computer equipment and trained in recognizing hazards in products with hazardous energy levels.

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1 HP NetServer Navigator

Contents of the HP NetServer Navigator CD-ROM

The HP NetServer Navigator CD-ROM Main Menu directs you to modules where you can perform configuration tasks or access online system documentation. The following is a description of the contents of the CD-ROM as accessed from the Main Menu.

Readme File

This file includes the most recent information that was not included in the printed installation documentation. It is important to check this file before installation.

HP NetServer Information Assistant

HP NetServer Information Assistant gives you complete access to all the HP NetServer information and documentation. The information includes the complete user and service information available in online format that can be viewed on the screen and printed. The information includes system and accessory installation documentation, NOS Guides, troubleshooting, error messages, part numbers, replacement information, and other important information.

HP NetServer Information Assistant allows you to search, display, and print a topic or a series of topics. Also, the information is available in a print-file format that will print complete manuals.

HP NetServer Information Assistant can be accessed in three ways:

- From the HP NetServer Navigator Main Menu after booting from the HP NetServer Navigator CD-ROM
- Directly from the HP Navigator CD-ROM on any Windows system that has a CD-ROM drive
- On an HP Vectra or other PC running Windows 3.1 and above, Windows 95 or Windows NT, where HP NetServer Information Assistant has been installed

For more information on installing and using HP NetServer Information Assistant, see Chapter 2.

Configuration Assistant

Configuration Assistant guides you through the steps necessary to configure the NetServer. Three methods of configuration are available: Express, Custom and Replicate.

Express configuration is the preferred method to configure your HP NetServer since it leads you through the configuration process in sequence and offers you default selections. An Express configuration includes the following steps:

- **Update System BIOS:** This step appears if Configuration Assistant detects that a newer version of the BIOS is available on the HP Navigator CD-ROM. You must update your BIOS to the new version if you want to continue in Express mode.
- **Select NOS:** HP NetServer Navigator uses the NOS (Network Operating System) information to create the drivers diskette that you need to install your operating system and to create a file that contains the appropriate NOS installation and optimization instructions. The information may also be used to select the appropriate default configuration settings.
- **Execute EISA Configuration Utility:** This step runs the EISA Configuration Utility (ECU) in automatic mode (if you are not installing ISA cards) or manual mode (if you are installing ISA cards). Before and after running the ECU, Configuration Assistant will run Configuration Advisor to detect and notify you of any known problems with your current configuration.
- **Show Configured Cards:** This step shows the cards configured by the ECU, including PCI cards, and allows you to make changes if necessary.
- **Configure Disk Array (JetSet Utility):** If you have an installed HP disk array, you must configure it with JetSet Utility.
- **Install Utility Partition:** This step creates an 8 MB utility partition on the server hard disk where HP NetServer Navigator will copy the EISA Configuration Utility (ECU), Diagnostic Assistant, BIOS Update Utility, system and accessory CFG and OVL files, Error Message Utility (EMU) and other utilities. This is not available for SCO UNIX.

- **Execute Card Utilities:** When HP NetServer Navigator finds installed boards for which there are additional configuration utilities on the CD-ROM, the configuration utilities are executed automatically to complete the configuration of the boards.
- **Create Drivers Diskette:** This step creates a customized diskette that contains HP drivers and configuration files to use when you are installing your NOS.
- **Show NOS Installation Instructions:** This step provides important customized information about installing your NOS with your hardware configuration. You should save this information to a DOS ASCII file that can be copied to a DOS formatted diskette. Take this diskette to a system with an attached printer to print the file.
- **Diagnostic Assistant:** An easy-to-use hardware diagnostic for system verification, burn-in, and rapid troubleshooting.

In **Custom Configuration**, you can perform the configuration steps in any order. Select Custom if you are experienced in NetServer configuration and have a preferred sequence of steps or prefer to configure your system one component at a time.

In **Replicate Configuration**, you can save a copy of your current system configuration or load a previously saved configuration. This method saves time when configuring multiple, identical systems.

HP Management Solutions

HP Management Solutions is a comprehensive suite of utilities, applications, and built-in features to manage multiple servers locally or from remote locations. If you are unfamiliar with these products or concepts, try the interactive demonstration of HP NetServer Assistant, HP Remote Assistant, and other HP and third-party management applications.

HP NetServer Assistant (NSA) is included on the HP Navigator CD-ROM. NSA is for managing servers from an HP OpenView console. The software is customizable and contains easy-to-use troubleshooting tools. HP Management Solutions contains an interactive demonstration of HP NetServer Assistant and an overview of installing HP NetServer Assistant.

Some of the features of NSA include:

- Disk capacity threshold alert and usage tracking
- SCSI controller and device failure notification
- Predictive disk problem warning backed by HP proactive warranty replacement
- PC LAN adapter card performance statistics, configuration, and problem information
- Error alerting and identification for the server's Power-On Self Tests
- HP memory, HP Disk Array, HP UPS management software, and HP Remote Assistant products, including management agents with event notification integrated into the HP NetServer Assistant/HP OpenView alarm log
- Over-the-network temperature monitoring and redundant power supply status
- View of critical server information, such as the BIOS version, EISA and PCI slot contents, SMP information, serial and parallel ports, and security status, from a single network management console
- Control of management console from a remote PC, allowing the same features to be used at a local management console or non-network-connected remote PC

HP NetServer Utilities

HP NetServer Utilities takes you to a menu where you can directly execute utilities such as the following:

- **Diagnostic Assistant:** An easy-to-use hardware diagnostic for system verification, burn-in, and rapid troubleshooting
- **Event Log Report Utility:** Displays all logged server management events, Power-On Self Test (POST) errors and other system events

- **Diskette Library:** Allows you to conveniently generate any flexible disk available on the NetServer Navigator CD-ROM. For example, you can create the following flexible disk: BIOS Update, EISA Configuration Utility, NOS Drivers, NetServer Assistant, PowerWise Assistant, Diagnostic Assistant and Remote Assistant Upgrade.
- **Error Message Utility:** Lets you view descriptions for errors that occur during the Power-On Self Test (POST) and tells how to handle the errors
- **Print or View Configuration:** Allows you to print or view the current system configuration, including details of which cards are detected in the system and which resources are allocated to the cards

Change User Preferences

Change User Preferences lets you change the language and the system date and time.

2 HP NetServer Information Assistant

HP Information Assistant Overview

HP NetServer Information Assistant provides a quick and efficient means to locate information about installing, managing and servicing your HP NetServer.

Information Assistant has complete documentation on the HP NetServer and accessories as well as important information on your NOS. Reference information, such as functional descriptions and technical papers, help you better understand your HP NetServer and make choices compatible with your network.

The following section briefly describes the functionality of Information Assistant. The final section describes how Information Assistant can be read or installed on other systems.

Using HP NetServer Information Assistant

Information Assistant has many features that help you quickly find the information you need. The following is a brief description of these features. To understand how to use each function, use the Information Assistant help system.

Getting Help



The Help button displays the help system for Information Assistant. The Information Assistant help system explains how to use Information Assistant to find the information you need.

Finding Information

Information Assistant provides you with many ways of navigating through its topics and locating information. For example, you can:



Select a topic from the Map. Displays a window with an outline of every module, and topic in the Information Assistant for the selected product. The Map enables you to view the contents of the Information Assistant in outline view, and then select a topic to view.



Search for a word or phrase using the Index. The Index allows you to browse through a list of keywords or type in a word or phrase. When the entry is found, the Information Assistant displays the topic, or a list of topics containing the word or phrase.



Search for a word or phrase using Search. Search performs full-text searches for topic text that not only takes you to the topic found, but highlights the word or words found by the search. You can use search operators such as AND, OR, NOT, and NEAR to further narrow your search.



Select a topic from the Reference Button list. Reference modules are arranged by subject, not by task. The Reference Button list shows reference documents available for the selected product.



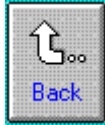
Select a Task button. Each button represents a task you can perform, and each task contains multiple topics.



Go to a topic with Previous button. Displays the previous topic in a module.



Go to a topic with Next button. Displays the next topic in a module.

**Go to a previously viewed topic with Back button.**

Displays the previous topic viewed. Clicking this button more than once backtracks through topics in the order that you viewed them.

You can also find information using drop-down menus and hot spots.
For example:

- **Lookup error number.** This drop-down menu displays the Error Number dialog box in which you enter the error number for which you need information.
- **Lookup part number.** This drop-down menu displays the Part Number dialog box where you enter the part number for which you need information.
- **Jump to other topics.** Click on hot spots in graphics and text that link to other topics or to more information about the current topic. Hot spot text appears as bold green text. Hot spots on graphics are identified by moving the pointer over the graphic. When you point to a hot spot, the pointer changes to a hand.
- **Return to any previously viewed topic by choosing History from the Topic menu.** As you view topics, Information Assistant keeps a record of where you have been. The History button displays a list of the topics you have viewed, starting with the most recent. Select any topic from this list to return to it.

Copying and Printing Information

You can copy topic text in Information Assistant for use in other applications, such as word processors, by copying text onto the Windows Clipboard and pasting the text into any Windows application.

To print topics in Information Assistant, use one of the print options on the File drop-down menu. You can choose to print the current topic or a series of previously marked topics using the Mark for Print command.

With the Mark for Print command, you can choose to mark either the currently displayed topic or all the topics in the group to which the current topic belongs. Then use the Print Marked Topics option to print out all marked topics as a group.

After selecting the print option, a Print Setup box or Print dialog box appears. In the Print dialog box, you can choose from several options: number of copies to print, collate, print quality (dots per inch, and print to a file.) In the Print Setup box, you can select a printer, the page orientation, and the type or source of paper on which to print.

Installing HP Information Assistant Software

HP Information Assistant runs on an HP Vectra or other PC running Windows 3.1 and above, Windows 95 or Windows NT. HP Information Assistant can be installed in one of two ways:

- From the CD-ROM
- From a Network Server on which the HP Information Assistant application files are installed

The installation program gives you the option of accessing the data files from your hard disk or from the CD-ROM. The default is to access the data files from the CD-ROM. You can copy the data files to your hard disk to improve access time, but this could take up a significant amount of disk space.

Installing from the CD-ROM

To install HP Information Assistant from the HP NetServer Navigator CD-ROM, do the following:

1. Turn on your computer and CD-ROM drive.
2. Run Windows and display the Program Manager.
3. Insert the HP NetServer Navigator CD-ROM into the CD-ROM drive.
4. From Program Manager, select the File menu and choose "Run."
5. At the command prompt, type the following:

`{drive}:\infoasst\setup /a`

where *{drive}* is the letter of the CD-ROM drive.

6. Follow the instructions that appear on your screen.

In Program Manager, the Setup Program creates a new program group called HP NetServer Information Assistant, with an icon for running the application.

Installing from the Network

To install the HP NetServer Information Assistant from a network, you must first install the run-time files onto a network hard disk from the CD-ROM, and then run setup on the client PC.

If you plan to let multiple users run the HP NetServer Information Assistant from the network, it is advisable to copy the data files to the network.

Installing the Application Files onto the Network

To install the HP NetServer Information Assistant onto the network, do the following:

1. Run Windows as you normally would, and display the Program Manager.
2. Insert the HP NetServer Information Assistant CD-ROM into the CD-ROM drive.
3. From Program Manager, select the File menu and choose Run.
4. At the command prompt, type the following:

```
{drive}:\infoasst\setup /a
```

where *{drive}* is the letter of the CD-ROM drive.

5. Follow the instructions that appear on your screen.

Running the Setup Program on a Client PC

To run the HP NetServer Information Assistant from a client PC, it is necessary for the client to run the setup program that was installed onto the network hard disk, as follows:

1. Run Windows and display the Program Manager.
2. From Program Manager, select the File menu and choose Run.

3. At the command prompt, type the network location where the HP NetServer Information Assistant files were installed, followed by **setup**.

For example, if Information Assistant was installed on drive “N:\windows\iaclient,” you would enter the following:

N:\windows\iaclient\setup

4. Follow the instructions that appear on your screen.

3 Configuring Mass Storage

The HP NetServer LH Pro chassis contains three horizontal mass storage shelves and a hot swap subsystem with six hot swap shelves. There are also external connector openings for connection to exterior mass storage subsystems. The NetServer LH Pro can be configured to accommodate a number of different configurations.

NOTE

For cabling configuration information, see the Technical Information Label on the mass storage side of the chassis and Information Assistant on the HP NetServer Navigator CD-ROM.

Mass Storage Indicator Lights

The front of the NetServer has a number of lights that indicate the status of the mass storage devices and controller boards as shown in Figure 3-1.

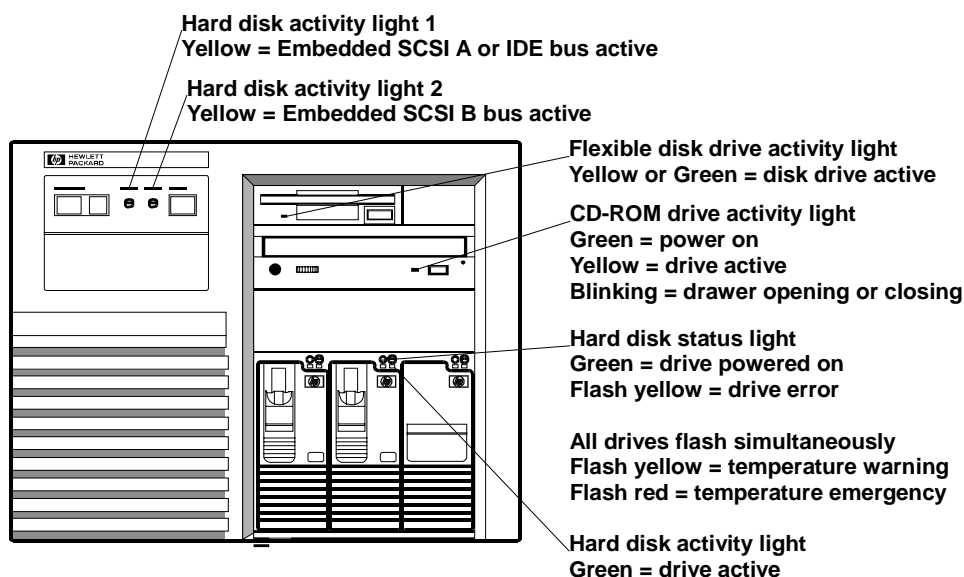


Figure 3-1. Mass Storage Indicator Lights

Shelf Location

The HP NetServer has three horizontal upper shelves and 6 hot swap shelves. The shelf number is not the SCSI address. The SCSI address is set by the switches on the devices in the upper horizontal shelves and the switches on the rear of the hot swap subsystem cages. Figure 3-2 shows the shelf numbers.

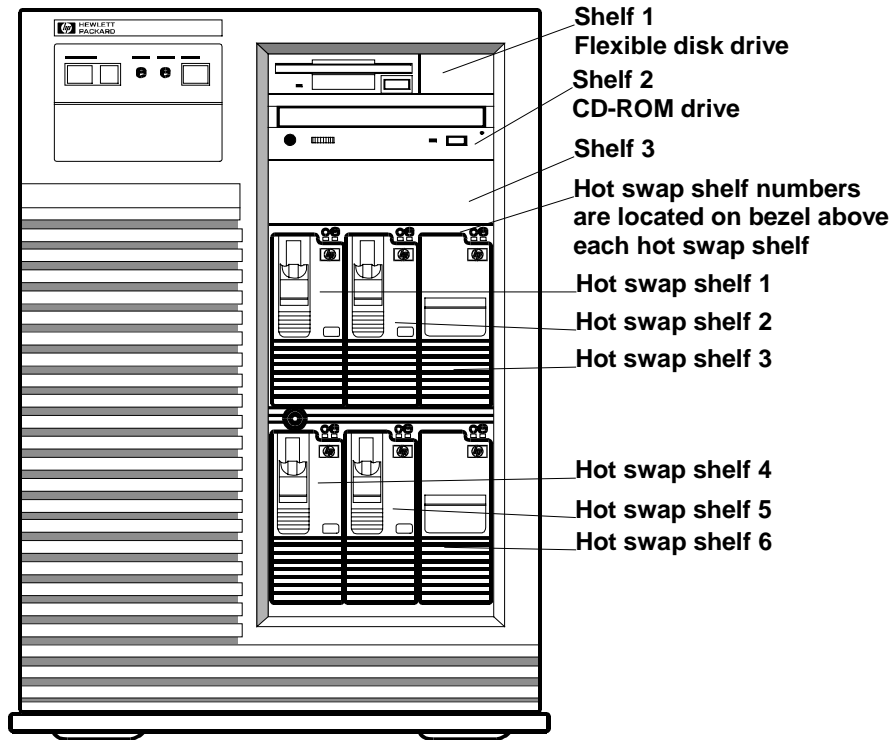


Figure 3-2. Mass Storage Shelf Location

Switch Settings on the Hot Swap Subsystem

Figure 3-3 shows the switch settings on the rear of the hot swap subsystem cage. The default settings depend on the model and are described on the Technical Information Label on the side of the chassis and in Information Assistant.

Switches 3, 4, and 6 determine the SCSI address of the shelf. Switch setting combinations are listed in the next section.

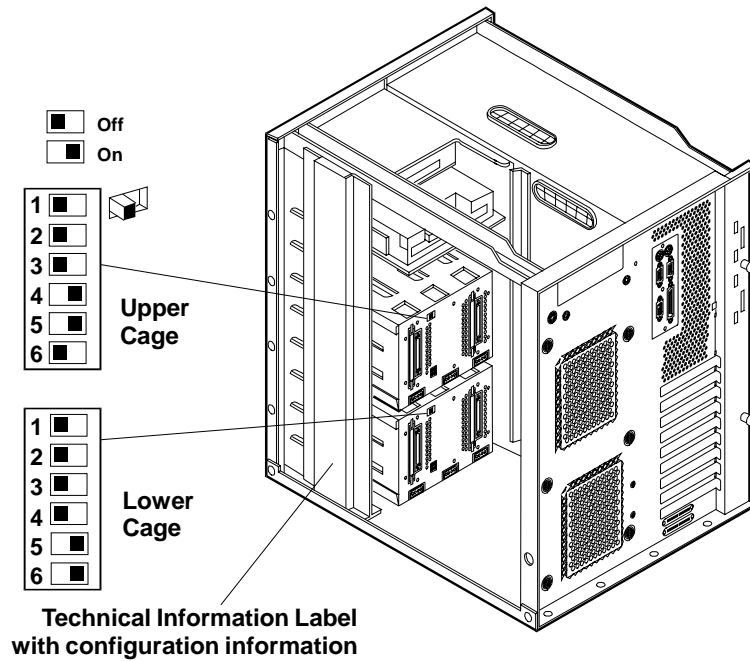


Figure 3-3. Hot Swap Subsystem Switch Location

The switch setting location and functions are the same on both cages. The settings for switch 6 determines upper and lower cage functionality. Switches 1 and 2 are always set to Off.

Table 3-1 lists the functional settings for each switch.

Table 3-1. Switch Functions and Settings

Switch	Function	Settings
1	I²C Bus Setting	Always set to Off
2	I²C Bus Setting	Always set to Off
3	High/Low Addresses Fast-Wide (68 pin) SCSI Only Sets SCSI addresses for upper or lower eight addresses	On Sets drives to upper eight SCSI addresses. Off Sets drives to lower eight SCSI addresses. See SCSI Address Settings table below for description of settings.
4	SCSI Address Zero Sets middle shelf in cage to SCSI ID 0.	On Sets middle shelf in the cage (shelf 2 or shelf 5) to SCSI ID 0. Off Sets middle shelf to normal SCSI address sequence. See Table 3-2 for a description of SCSI address settings.
5	Remote Start Determines control of the hot swap disk module power-on sequence.	On Internal control: Upper cage is set to delayed start and lower cage is set to power-on at startup. <i>Recommended setting.</i> Off Power-on sequence is determined by the disk array controller. <i>Not supported by HP SCSI controller boards.</i>
6	Upper/Lower Cage Identifies cage location. This is important information for the SCSI addresses and for the I ² C bus.	On Lower cage Off Upper cage See Table 3-2 for a description of SCSI address settings.

Hot Swap Subsystem SCSI Address Settings

Switches 4 and 6 determine the SCSI address setting for each shelf in the hot swap subsystem. Table 3-2 lists the shelf SCSI address for each switch setting.

NOTE For information on changing the SCSI address setting on the CD-ROM drive, see the Technical Information Label on the CD-ROM drive.

Table 3-2. SCSI Address Settings

Upper Cage		Lower Cage	
Switch Settings	SCSI Address	Switch Settings	SCSI Address
3 - Off	Shelf 1 = ID 1	3 - Off	Shelf 4 = ID 4
4 - Off	Shelf 2 = ID 2	4 - Off	Shelf 5 = ID 5
6 - Off	Shelf 3 = ID 3	6 - On	Shelf 6 = ID 6
3 - Off	Shelf 1 = ID 1	3 - Off	Shelf 4 = ID 4
4 - On	Shelf 2 = ID 0	4 - On	Shelf 5 = ID 0
6 - Off	Shelf 3 = ID 3	6 - On	Shelf 6 = ID 6
3 - On	Shelf 1 = ID 9	3 - On	Shelf 4 = ID 12
4 - Off	Shelf 2 = ID 10	4 - Off	Shelf 5 = ID 13
6 - Off	Shelf 3 = ID 11	6 - On	Shelf 6 = ID 14
3 - On	Shelf 1 = ID 9	3 - On	Shelf 4 = ID 12
4 - On	Shelf 2 = ID 8	4 - On	Shelf 5 = ID 8
6 - Off	Shelf 3 = ID 11	6 - On	Shelf 6 = ID 14

4 Installing UPS Software

Before Installing UPS Software

Software for configuring, monitoring and managing the HP PowerWise UPS is located on the HP NetServer Navigator CD-ROM.

Before installing your UPS software, you must first do the following steps:

- Install your UPS using the instructions in Step 2 of the *HP NetServer LH Pro Road Map*.
- Install your Network Operating System.
- (Optional) Install server management software using the instructions in the *NetServer Assistant Installation Guide*.

The following sections describe the UPS installation procedures for Microsoft Windows NT and Novell NetWare.

UPS Installation for Microsoft Windows NT

NOTE

Refer to the README file located in the \pwa\winnt\disk1 directory for any updates to the installation procedure.

Before installing the software, make sure that:

- Your HP PowerWise UPS is plugged in, turned on, and connected to the server via the serial cable. (See the instructions in the *HP NetServer LH Pro Road Map*.)
- Microsoft Windows NT is up and running on your HP NetServer.

If you are using HP OpenView for Windows to manage your HP PowerWise UPS, make sure that:

- HP OpenView for Windows is installed on your central management console
- TCP/IP and SNMP services are installed and properly set up on your server

- (Optional) HP NetServer Assistant is installed on your server and central management console, if you are using it to manage the server

To Install the UPS Software on the HP NetServer

NOTE

You must have administrator capabilities to install this software.

To install the UPS Software on the HP NetServer to which the UPS is connected, perform the following steps:

1. Insert the HP NetServer Navigator CD-ROM into the CD-ROM drive.
2. In the Windows NT Program Manager, select Run from the File drop-down menu.
3. At the Command Line prompt, type the following:
{drive}:\PWA\WINNT\DISK1\SETUP.EXE
where *{drive}* is the letter of the CD-ROM drive.
4. Follow the instructions on the screen.
 - ◇ You will be prompted to identify an installation path for the software.
 - ◇ In the Installation Options window, select **PowerWise Assistant**.
 - ◇ You will need to identify the serial port on the server to which the HP PowerWise UPS is connected.

To Install the UPS User Interface on a Local Client PC

Optionally, you can install the HP PowerWise Assistant user interface on a local client PC that you will be using to manage the HP PowerWise UPS. Do the following steps:

1. If the server's CD-ROM drive is accessible from the client, keep the CD-ROM at its present location. Otherwise, put the HP NetServer Navigator CD-ROM in the CD-ROM drive of the client. If you do not have access to a CD-ROM drive at the client, run the installation procedure to create installation diskettes.
2. In the Windows NT Program Manager, select Run from the File drop-down menu.

3. At the Command Line prompt, type the following:

***{drive}*:\PWA\WINNT\DISK1\SETUP.EXE**

where *{drive}* is the letter of the CD-ROM drive.

4. Follow the instructions on the screen.

- ◇ You will be prompted to identify an installation path for the software.
- ◇ In the Installation Options window, select **PowerWise Assistant (user interface only)**.

To Install the UPS Manager Application

Optionally, you can install the HP PowerWise Manager application on the central management console running HP OpenView for Windows or NetServer Assistant.

1. If the server's CD-ROM drive is accessible, keep the CD-ROM at its present location. Otherwise, put the HP NetServer Navigator CD-ROM in the CD-ROM drive of the central management console. If you do not have access to another CD-ROM drive, run the installation procedure to create installation diskettes.
2. In the Windows NT Program Manager, select Run from the File drop-down menu.
3. At the Command Line prompt, type the following:
***{drive}*:\PWA\WINNT\DISK1\SETUP.EXE**
where *{drive}* is the letter of the CD-ROM drive.
4. Follow the instructions on the screen.
 - ◇ You will be prompted to identify an installation path for the software.
 - ◇ In the Installation Options window, select **PowerWise Manager**.

UPS Installation for Novell NetWare

NOTE

Refer to the README file located in the \pwa\netware\disk1 directory on the HP NetServer Navigator CD-ROM for any updates to the installation procedure.

If you do not have a client with Windows to manage the HP PowerWise UPS, refer to the README file located in the \pwa\netware\dos directory on the HP NetServer Navigator CD-ROM for the installation procedure.

Before installing the software, make sure that:

- Your HP PowerWise UPS is plugged in, turned on, and connected to the server via the serial cable. (See the instructions in the *HP NetServer LH Pro Road Map*.)
- Novell NetWare is running on your HP NetServer.
- You have unloaded any earlier versions of HP PowerWise Assistant, and removed it from the AUTOEXEC.NCF file. Refer to the UPS README file for details.

If you are using HP OpenView for Windows to manage your HP PowerWise UPS, make sure that:

- HP OpenView for Windows is installed on your central management console
- SNMP services are installed and properly set up
- (Optional) HP NetServer Assistant is installed on your server and central management console, if you are using it to manage the server

To Install the UPS Software on the HP NetServer

NOTE You must have administrator capabilities to install this software.

Install the HP PowerWise Assistant application on the HP NetServer to which the UPS is connected and on a local Windows client used to manage the server. With Novell NetWare, you can have more than one server connected to a UPS. The server to which the UPS is connected via the serial cable is the “Master” server. Other servers powered by the UPS are “Slave” servers.

To install the UPS Software, follow these steps:

1. Insert the HP NetServer Navigator CD-ROM into the CD-ROM drive that is accessible from the Windows client.
2. In the Windows Program Manager, select Run from the File drop-down menu.
3. At the Command Line prompt, type the following:
`{drive}:\PWA\NETWARE\DISK1\SETUP.EXE`
where *{drive}* is the letter of the CD-ROM drive.
4. Follow the instructions on the screen.
 - ◇ You will be prompted to identify an installation path for the software.
 - ◇ In the Installation Options window, select **PowerWise Assistant**.
 - ◇ You will need to identify the server as a Master or a Slave. For the Master server, you must identify the port on the server to which the HP PowerWise UPS is connected. For a Slave server, you must provide the name of the Master.
5. Depending on your installation choices, one or more of the following commands are added to the AUTOEXEC.NCF file:

```
load aiocomx
load hpups
load hpslave
load hpupscag
load hpupssd
```

Either reboot the server to load these files, or manually load them by entering **pwaload** at the server console.

To Install the User Interface on a Local Client PC

Optionally, you can install the HP PowerWise user interface on an additional local client PC that you will be using to manage the HP PowerWise UPS.

To install the UPS Software, follow these steps:

1. Insert the HP NetServer Navigator CD-ROM into the CD-ROM drive that is accessible from the Windows client.
2. In the Windows Program Manager, select Run from the File drop-down menu.
3. At the Command Line prompt, type the following:

{drive}:\PWA\NETWARE\DISK1\SETUP.EXE

where *{drive}* is the letter of the CD-ROM drive.

4. Follow the instructions on the screen.
 - ◇ You will be prompted to identify an installation path for the software.
 - ◇ In the Installation Options window, select **PowerWise Assistant (user interface only)**.

To Install the UPS Manager Application

Optionally, you can install the HP PowerWise Manager application on the central management console running HP OpenView for Windows, or NetServer Assistant.

To install the UPS Software, perform the following steps:

1. Insert the HP NetServer Navigator CD-ROM into the CD-ROM drive that is accessible from the Windows client.
2. In the Windows Program Manager, select Run from the File drop-down menu.
3. At the Command Line prompt, type the following:

{drive}:\PWA\NETWARE\DISK1\SETUP.EXE

where *{drive}* is the letter of the CD-ROM drive.

4. Follow the instructions on the screen.
 - ◇ You will be prompted to identify an installation path for the software.
 - ◇ In the Installation Options window, select **PowerWise Manager**.

5 Installing a Monochrome Monitor

The HP NetServer LH Pro supports both color and monochrome monitors. The NetServer is factory-configured for a color monitor. To configure the NetServer for a monochrome monitor, you must change the J16 jumper setting on the system board to the setting shown in Figure 5-1.

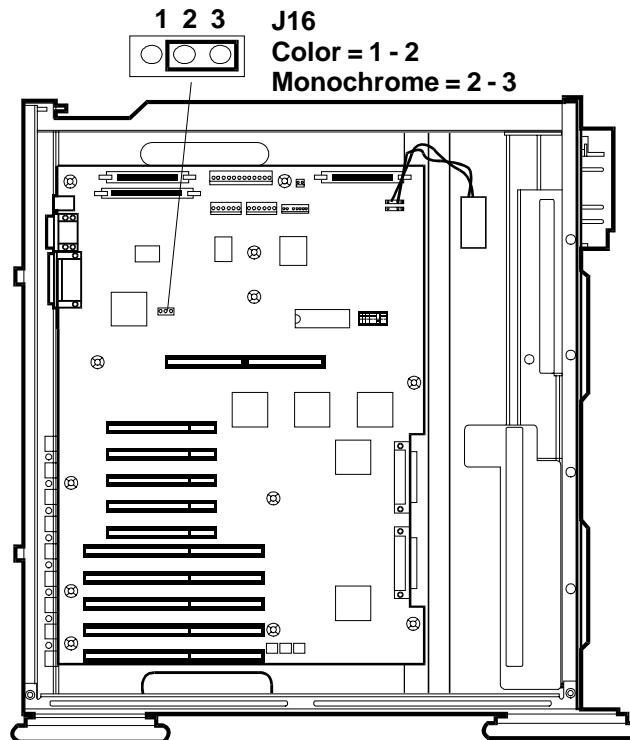


Figure 5-1. Monitor Settings on the System Board

6 Troubleshooting

Troubleshooting Tools

If you are having problems installing your HP NetServer, there are a number of different tools available for troubleshooting. The following tools are available on your HP NetServer Navigator CD-ROM:

- HP NetServer Information Assistant: At the HP NetServer Navigator Main Menu, select “Access Information Assistant” and follow the menus to use the following tools:
 - ◇ Troubleshooting Information
 - ◇ Part Information
 - ◇ List of Error Messages and Beep Error Messages
- NetServer Utilities: At the HP NetServer Navigator Main Menu, select “Access NetServer Utilities” to use the following utilities:
 - ◇ HP Diagnostic Assistant Utility: An easy-to-use hardware diagnostic for system verification, burn-in, and rapid troubleshooting. The Diagnostic Assistant is also located on a flexible disk mounted inside your HP NetServer cabinet in a plastic pouch.
 - ◇ Print or View Configuration: Enables you to print or view the current system configuration, including details of which cards are detected in the system and which resources are allocated to the cards
 - ◇ Diskette Library: Enables you to conveniently generate any flexible diskette available on the NetServer Navigator CD-ROM. For example, you can create the following diskettes: BIOS Update, EISA Configuration, NOS Drivers, NetServer Assistant, PowerWise Assistant, Diagnostic Assistant and Remote Assistant Upgrade.

- ◇ Error Message Utility: Lets you view descriptions of errors that occur during the Power-On Self Test (POST) and tells you how to handle the errors.
- ◇ Event Log Report Utility: Describes server management events and lets you review a list of errors and other system events.

Common Installation Problems

The following sections contain general procedures to help you locate installation problems. If you need assistance, it is recommended that you contact your reseller first. If you need to get assistance from Hewlett-Packard, refer to Chapter 7 for information on service and support.

WARNING

Before removing the cover, always disconnect the power cord and unplug telephone cables. Disconnect telephone cables to avoid exposure to shock hazard from telephone ringing voltages. Disconnect the power cord to avoid exposure to high energy levels that may cause burns when parts are short-circuited by metal objects such as tools or jewelry.

Troubleshooting Sequence

To troubleshoot an installation problem, do the following:

- First make sure that the system is configured properly. Most system problems are the result of incorrect system and SCSI subsystem configurations. Check the EISA Configuration Utility and if your NetServer is configured with a disk array, check the JetSet Utility.
- If it is a network-related error, determine if the server has enough memory and hard disk drive capacity. Consult your network operating system manual.
- Verify that all cables and boards are securely plugged into their appropriate connectors or slots.
- Remove all added options and always change one thing, and only one thing, at a time.

If it is a hardware error, follow these steps:

1. Log users off the LAN and power down the server. Remove the NetServer cover.
2. Simplify the HP NetServer configuration to the minimum required: a monitor, one flexible and one hard disk drive and a keyboard. Remove all third-party options, and reinstall one at a time, checking the system after each installation.
3. Boot the system. If the system does not function, refer to the following procedures. If you get an error message, see the section “Error Messages.”

If the System Will Not Power On

Follow these steps:

1. Check to ensure that all cables and power cords are firmly plugged into their proper receptacles.
2. Check to ensure that all parts of the system are turned on and properly adjusted.
3. If the server is plugged into a switched multiple-outlet box, make sure the switch on the outlet box is turned on.
4. Plug a different electrical device (such as a printer) into the power outlet, and turn it on.

If the System Powers On but the System Fails the POST (Power-On Self Test)

Do one of the following:

- If the system gives a series of beeps, this indicates a system error. Contact HP or your reseller.
- If the system fails POST and an error message displays on the screen, see the section “Error Messages.” If the suggested solutions do not solve your problem, contact HP or your reseller.

If the System Passes the POST (Power-On Self Test) but Will Not Function

If an error message displays on the screen, read the error message text for actions to take. If the actions do not solve your problem, contact your reseller.

If there is no error message, follow these steps:

1. Check to ensure that the HP NetServer is configured correctly in the EISA Configuration Utility.
2. If the server still does not work, turn it off and remove all external peripherals, except the monitor and keyboard. Test to see if the server now works.
3. If the server still doesn't work, turn off the monitor, the server, and all external devices, and check the internal hardware, as follows:
 - a. Unplug the power cord and all telephone cables. Remove the HP NetServer cover.
 - b. Check that all accessory boards are firmly seated in their slots.
 - c. Ensure that all disk drive power and data cables are securely and properly connected. Verify the mass storage configuration with the cabling and switch diagrams in Chapter 3.
 - d. Verify that switches and jumpers on the upper-shelf mass storage devices and boards are properly set. Check the manuals that came with the devices.
 - e. Verify that the DIMMs are firmly seated on the Processor Board. Verify that added DIMMs are HP DIMMs (see the Technical Information Label on top of the chassis for order numbers).

- f. Replace the NetServer cover, and lock the system.
 - g. Replace all power cords and power cables.
 - h. Turn on the monitor.
 - i. Turn on the server.
 - j. Check for error messages.
4. Run the HP NetServer Diagnostic Assistant Disk located on a flexible disk mounted inside your HP NetServer in a plastic pouch.

Error Messages

If you get an error message, insert your HP Navigator CD-ROM into the CD-ROM drive and press the Reset button on the front of the HP NetServer. An error message utility will automatically display the error message and a possible solution.

For a complete list of error messages and solutions see the HP NetServer Information Assistant program on the HP Navigator CD-ROM.

7 Service and Support

System Design, Integration, and Support

The hardware, utility software, and any operating system or environment software supplied by Hewlett-Packard provide an enhanced industry-standard base. A network operating system, utilities, and application software have been added to create your complete system.

The most effective source of system and software support is the organization that designed and configured your complete system. This can be a reseller, a consultant, or your company's information systems department.

The organization that worked with you to define your application and configuration—including hardware or software not supplied by HP—knows your unique operating procedures and can provide local, personal, and uniquely responsive support.

Your Authorized Reseller is backed by special HP resources; your company's information systems department is normally backed by a Response Center telephone support contract from HP.

If you have designed and configured the system yourself, you are filling the role of reseller, consultant, or information systems department yourself—and you must work with the different hardware and software manufacturers to obtain assistance. Refer to each manufacturer's documentation for information on obtaining telephone support, repair service, World Wide Web, Internet FTP, BBS, and/or automated fax support. If you are performing system integration, we recommend that you subscribe to CompuServe, as described later in this chapter.

For topics that require on-site visits or continuing contact, such as network design, performance tuning, and mainframe communication, paid consulting is available from value-added resellers, independent consultants, and HP's Professional Services Organization.

Information and Support When You Need It

Hewlett-Packard offers a complete set of support and information sources—each discussed in this chapter:

- HP NetServer Navigator CD-ROM Status Report
- HP NetServer Information Assistant
- CompuServe discussion forum and library
- World Wide Web and Internet FTP
- Bulletin Board System
- Automated Fax
- HP Repair and Telephone Support

HP provides a complete communications program to help you keep up to date with your HP NetServer:

- HP NetServer Support News
- HP NetServer Navigator CD-ROM Subscription

This chapter also covers the following:

- Ordering HP cables, drive trays, and manuals
- Contacting HP's Regional Headquarters
- Joining CompuServe

HP NetServer Navigator CD-ROM Status Report

To ensure that you have the latest versions of the software, obtain the current Status Report for your HP NetServer Navigator CD-ROM. This report describes any software updates since the CD-ROM was created—plus recommendations as to whether you need any updates and instructions for obtaining them.

Each version of the HP NetServer Navigator CD-ROM has a four-digit Document Number printed on the disk. You can obtain the Status Report for your CD-ROM in one of these ways:

- Internet WWW: start at HP's home page—<http://www.hp.com/go/netserver>.
- Internet FTP: Address: <ftp://ftp.netserver.hp.com>; login: anonymous; password: <your e-mail address>; cd nsnavcd; get <document number>.txt
- BBS: Call (1 408) 553-3500; download <document number>.txt from the NSNAVCD library
- CompuServe: GO HPPC; download <document number>.txt from the NetServer library
- Fax: Call HP's fax system at (1 800) 333-1917. Outside the U.S. and Canada, call (1 208) 344-4809 from your fax machine. Request the fax using the Document Number.

HP NetServer Information Assistant

The HP NetServer Information Assistant is an information retrieval system for quick access to information on HP NetServers and accessories, NOS installation and tuning, and product service and support. It is included on the HP NetServer Navigator CD-ROM shipped with your HP NetServer system.

The HP NetServer Information Assistant gives you access to technical and product information while you are installing and configuring your HP NetServer using the HP Configuration Assistant. It is also installable from the HP NetServer Navigator CD-ROM for information retrieval from any PC running Microsoft Windows 3.1, Windows for Workgroups 3.11, or Windows NT.

The HP NetServer Information Assistant uses advanced hypertext techniques to make the information highly retrievable.

For subscription information on the HP NetServer Navigator CD-ROM, which contains the HP NetServer Information Assistant, obtain ordering instructions from the library of the HPPC forum on CompuServe, via HP's World Wide Web home page, or from HP's automated fax system. Each of these services is described elsewhere in this chapter.

CompuServe Discussion Forum and Library

CompuServe, the worldwide electronic information utility, provides support, technical data, and updated software drivers for the products of over 900 hardware and software manufacturers, including Hewlett-Packard.

With a CompuServe account, you post your question publicly in a managed, focused forum dedicated to one manufacturer or topic. People who regularly visit that forum read your question and reply within a day or two. If the topic is complex or controversial, an electronic discussion may start among several people—providing you with a group consensus.

HP products are covered on CompuServe in forums operated by independent consultants. The NetServer section of the HPPC forum is visited regularly by HP employees and a group of knowledgeable and friendly NetServer users. Libraries are maintained that contain newsletters, technical articles, drivers, and other software modules. Enter “GO HPPC” to reach the HP Systems Forum.

There are CompuServe forums covering most hardware and software manufacturers. In addition to the HPPC forum, some other forums of interest to HP NetServer owners include those for Banyan®, IBM® OS/2, Intel, HP Peripherals, Lotus®, Microsoft Windows NT®, Novell®, Oracle®, SCO, and Sybase®.

See “Joining CompuServe,” at the end of this chapter, to open a CompuServe account (with a free introductory membership and free usage credit).

World Wide Web and Internet FTP

HP has a home page on the Internet World Wide Web:

`http://www.hp.com/go/netserver`

From there, you can jump to the NetServer home page.

You can also download NetServer files from HP via Internet FTP by entering the following:

`address: ftp://ftp.netserver.hp.com`

`logon: anonymous`

`password: <your e-mail address>`

Bulletin Board System

The HP NetServer Support BBS is for downloading only. Messages asking support questions should be left in the HPPC forum on CompuServe.

The HP NetServer Support BBS has eight lines. The Datacomm specifications are as follows:

- 300/1200/2400/9600/14400 baud
- 103/212/V22bis/HST/V32/V32bis/V42 bis/MNP standards
- No parity, 8 data bits, 1 stop bit (N,8,1)
- ASCII, XMODEM, 1K-XMODEM, YMODEM, YMODEM-G, YMODEM-batch, ZMODEM, KERMIT, and Super Kermit file transfer protocols

Call (1 408) 553-3500 to connect to the HP NetServer Support BBS.

Automated Fax

HP's automated fax system contains full product data sheets, configuration and price guides, and a subset of the HP NetServer support information.

In the U.S., call (1 800) 333-1917 from a push button tone phone to request that an index of available documents be sent to your fax machine. Call again to select the documents that you want transmitted.

Outside the U.S. and Canada, call (1 208) 344-4809 from your fax machine. Use the handset and touch-tone keyboard on your fax machine to request an index of available documents. After you have made your choice, you are instructed to press START on your fax machine and hang up the handset. The telephone connection is maintained and used to send the fax to your machine. Call again from your fax machine to select the documents that you want transmitted to you. If you are using a fax modem instead of a fax machine, this process works only if your fax software provides a START command.

HP NetServer Support News

HP NetServer Support News is an electronic newsletter dedicated to bringing you late-breaking product and support information on HP NetServer products.

This newsletter is published once a month and it contains the latest news since the last edition of the HP Support Assistant CD-ROM (described earlier in this chapter). The information in the newsletters is added to the next edition of the HP Support Assistant CD-ROM.

HP NetServer Support News can be obtained in several ways:

- From the library of the HPPC forum on CompuServe
- Via HP's World Wide Web home pages
- Via Internet FTP
- From HP's Bulletin Board System

Each of these electronic sources is described in this chapter.

The most convenient way to keep up-to-date is to visit the HPPC forum on CompuServe regularly. Issues of *HP NetServer Support News* are posted in the forum as they come out—part of the ongoing seminar on HP NetServer systems.

Telephone Support

The HP-supplied hardware and software in HP servers are covered by no-charge telephone assistance during the warranty period. In some geographic areas this telephone support is provided by Hewlett-Packard; in other areas, telephone support is provided by your reseller.

Telephone support is generally available from the manufacturers and resellers of the various non-HP hardware and software components.

Hewlett-Packard provides telephone assistance in installing, configuring, and diagnosing the server such that one local client PC is able to log into an HP-supported network operating system.

Assistance with additional functions, such as system design, operating system upgrades, or performance optimization—and assistance with other technical areas, such as cabling, non-HP hardware, or multiple operating system environments—is available from Hewlett-Packard, resellers, or consultants at additional charge. For example, HP offers Network Phone-In Support Service with a 7-day, 24-hour option for network operating systems and multi-vendor hardware. Contact your local HP office for details.

For non-HP products, support numbers are included in the product documentation or are available from your reseller.

Obtaining HP Repair and Telephone Support

The “Warranty and Software License” chapter of this guide gives details of the hardware warranty—including which HP products are covered, travel limitations, charges for non-HP-caused service calls, etc.

Please refer to the “Troubleshooting” chapter for the steps to follow before calling for service.

U.S. and Canada. For hardware service and telephone support, contact either:

- Participating Service Authorized HP Personal Computer Reseller
- HP Customer Support Center (Colorado) (1 970) 635-1000- from 6 AM to 8 PM Mountain Time on Monday through Friday and from 9 AM to 3 PM Mountain Time on Saturday

Europe. For hardware service and telephone support, contact either:

- Participating Service Authorized HP Personal Computer Reseller
- HP Customer Support Center (Amsterdam):

Dutch language	(+31 20) 581-3331
English language	(+31 20) 581-3330
German language	(+31 20) 581-3333
French language	(+31 20) 581-3332
Italian language	(+31 20) 581-3338
Spanish language	(+31 20) 581-3339

Other countries. For hardware service, contact your local HP office. For telephone support, contact your authorized HP reseller.

Ordering HP Cables, Drive Trays, and Technical Publications

If you need more technical information, Hewlett-Packard publishes other references, such as the *HP NetServer Product Line Service Handbook*, that you can order from HP:

Service information and reference documents, such as the *Dealer Configuration (CFG) File Creation Guide*, are also available in Information Assistant on the HP NetServer Navigator CD-ROM.

Telephone Ordering Information

U.S.

- To identify a part or manual: BBS (1 800) 635-7278; automated fax (1 800) 333-1917; voice (1 916) 783-0804.
- To order with a credit card: (1 800) 227-8164.
- Emergency order with a credit card: (1 916) 785-8468 (7-day/24-hour; additional expedite charge).

Canada

- Call (1 800) 387-3154.
- Also available for part or manual identification: automated fax (1 800) 333-1917; voice (1 916) 783-0804.

Latin America

- Call your local HP office or (1 305) 267-4220 (Miami).
- Also available for part or manual identification: call (1 208) 344-4809 from your fax machine; voice (1 916) 783-0804.

Other countries.

- Call your local HP office.
- Also available for part or manual identification: call (1 208) 344-4809 from your fax machine; voice (1 916) 783-0804.

Contacting HP Regional Headquarters

Should you need to contact Hewlett-Packard, check your local telephone directory for the HP Sales and Service Office near you. If you cannot locate an HP office, contact one of the Worldwide HP Marketing Headquarters listed here:

Asia/Pacific Headquarters

Hewlett-Packard Asia Pacific Ltd.
17-21/F Shell Tower, Times Sq.
1 Matheson Street, Causeway Bay
Hong Kong
Phone: (+852) 599-7777
Fax: (+852) 506-9261

Latin America Headquarters

Hewlett-Packard Company
Waterford Building, 9th Floor
5200 Blue Lagoon
Miami, FL 33126, USA
Phone: (+1 305) 267-4220
Fax: (+1 305) 267-4247

Europe/Middle East/Africa

Hewlett-Packard S.A.
150, route du Nant-d'Avril
1217 Meyrin 2/Geneva
Switzerland
Phone: (+41 22) 780-8111
Fax: (+41 22) 780-8542

Joining CompuServe

To open a CompuServe account or to obtain information on access numbers and charges in your country, you can purchase a CompuServe startup kit at a computer software reseller or you can contact CompuServe directly.

Mention “Representative 133” to receive a free introductory membership with a free usage credit.

CompuServe

P.O. Box 20212
Columbus, Ohio 43220
(1 800) 524-3388
Direct: (1 614) 529-1349
Fax: (1 614) 529-1610

CompuServe Europe

Postfach 11 69
82001 Unterbaching/Muenchen Germany
Freephone: 0130-37-32
Direct: (+49 89) 66-535-111
Fax: (+49 89) 66-535-242

CompuServe also has offices and agents in the following countries:

- Argentina—CompuServe S.A., Buenos Aires
- Australia/NZ—CompuServe Pacific, Fujitsu Australia, Chatswood NSW
- Chile—ChilePac, Santiago
- France—CompuServe SARL, Rueil
- Hong Kong—CompuServe Hong Kong, Motorola AirCommunications
- Hungary—CompuServe Hungary, Middle Europe Network, Budapest
- Israel—CompuServe Israel, Trendline Info. Comm., Tel Aviv
- Japan—NIFTY Corporation, Tokyo
- Mexico—CompuServe Mexico, Infoacces S.A. de C.V., Mexico City
- South Africa—CompuServe Africa, Lynnwood Ridge
- South Korea—ATEL Co. , Seoul

- Taiwan—TTN-Serve, Taiwan Telecomm, Taipei
- United Kingdom—CompuServe Ltd., Bristol
- Venezuela—CompuServe C.A. Venezuela, Caracas

From elsewhere, call CompuServe in the U.S. at (1 614) 529-1349.

Fax: (1 614) 529-1610.

8 Warranty and Software License

This chapter contains the following warranties:

- HP NetServer LH Pro On-Site Limited Warranty
- HP Software Product License Agreement and Limited Warranty

HP NetServer LH Pro On-Site Limited Warranty

Three Year On-Site Limited Hardware Warranty

Hewlett-Packard (HP) warrants this hardware product against defects in materials and workmanship for a period of three years from receipt by the original end-user purchaser.

If HP receives notice of such defects during the warranty period, HP will either, at its option, repair or replace products that prove to be defective. Some newly-manufactured products may contain remanufactured parts equivalent to new in performance. Service parts are new or equivalent to new.

Should HP be unable to repair or replace the product within a reasonable amount of time, the customer's alternate exclusive remedy shall be a refund of the purchase price upon return of the product.

Limitation of Warranty

The above warranty shall not apply to defects resulting from misuse (including burned monitor screens and incorrect input voltage); unauthorized modification; operation or storage outside the environmental specifications for the product; in-transit damage; improper maintenance; or defects resulting from use of non-HP software, accessories, media, supplies, consumables, or such items not designed for use with the product.

HP makes no other express warranty, whether written or oral, with respect to this product. Any implied warranty of merchantability or fitness is limited to the one-year duration of this written warranty. Some states or provinces do not allow limitations on how long an implied warranty lasts, so the above limitation or exclusion may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights that vary from state to state, or province to province.

Limitation of Liability and Remedies

The remedies provided above are the customer's sole and exclusive remedies. In no event shall HP be liable for any direct, indirect, special, incidental, or consequential damages, whether based on warranty, contract, tort, or any other legal theory.

The foregoing limitation of liability shall not apply in the event that any HP product sold hereunder is determined by a court of competent jurisdiction to be defective and to have directly caused bodily injury, death, or property damage; provided, that in no event shall HP's liability for property damage exceed the greater of \$50,000 or the purchase price of the specific product that caused such damage.

Some states or provinces do not allow the exclusion or limitation of incidental or consequential damages—including lost profit—so the above limitation or exclusion may not apply to you.

Obtaining Warranty Service

U.S. and Canada. For hardware service and telephone support, contact either:

- A participating Service Authorized HP Personal Computer Reseller.
- HP Customer Support Center (Colorado) (1 970) 635-1000

Europe. For hardware service and telephone support, contact either:

- A participating Service Authorized HP Personal Computer Reseller.
- HP Customer Support Center (Amsterdam)

Dutch language	(+31 20) 581-3331
English language	(+31 20) 581-3330
German language	(+31 20) 581-3333
French language	(+31 20) 581-3332
Italian language	(+31 20) 581-3338
Spanish language	(+31 20) 581-3339

Other countries. For hardware service, contact your local HP office. For telephone support, contact your authorized HP reseller.

Warranty start date. The customer must be prepared to supply proof of the purchase date.

Equipment location. The on-site warranty is limited to products that remain in the country of original end-user purchase from HP or an Authorized HP Personal Computer Reseller.

Outside the country of original purchase, on-site warranty service is available only by prior arrangement—either through purchase of the product at HP's International Price, with the destination specified at time of order, or through purchase of a service contract from the HP Subsidiary or Distributor in the destination country. Otherwise, the product must be returned by the customer to the country of original purchase for service.

Parts covered. The system processor unit, monitor, keyboard, and Hewlett-Packard accessories inside the system processor unit—such as mass storage devices sold as complete HP system accessory kits, HP SIMMs, HP video adapters, and HP interface controllers—are covered by this warranty.

Customer-replaceable parts—such as the keyboard or monitor— may be serviced through expedited part shipment. In this event, HP will prepay shipping charges, duty, and taxes; provide telephone assistance on replacement of the component; and pay shipping charges, duty, and taxes for any part that HP asks to be returned.

HP mass storage devices—such as hard drives and DAT drives—**sold as component mechanisms** are not covered by this on-site warranty. They are covered under a component replacement warranty provided by the distributor.

HP/Colorado Memory Systems internal tape drives are not covered by this on-site warranty—they are covered under a replacement warranty included with the product.

HP products external to the system processor unit—such as external storage subsystems, printers, and other peripherals—are covered by the applicable warranties for those products; HP software is covered by the HP Software Product Limited Warranty.

Non-HP products. On-site visits caused by non-Hewlett-Packard products—whether internal to the system processor unit (such as non-HP SIMMs) or external to the system processor unit (such as LAN cabling)—are subject to standard per-incident travel and labor charges.

Travel restrictions and response time. On-site service for this product is restricted or unavailable in certain locations. In HP Excluded Travel Areas—areas where geographical obstacles, undeveloped roads, or unsuitable public transportation prohibit routine travel—service is provided on a negotiated basis at extra charge.

Response time for HP on-site service in an HP Service Travel Area is normally next business day (excluding HP holidays) for HP Travel Zones 1, 2, and 3 (generally 100 miles or 160 km from the HP office). Response time is second business day for Zones 4 and 5 (200 miles, 320 km); third business day for Zone 6 (300 miles, 480 km); and negotiated beyond Zone 6. The HP Worldwide Customer Support Travel Guide is available from any HP Sales Office.

Travel restrictions and response time for reseller service are defined by the participating reseller.

Service contracts that provide after-hours or weekend coverage, faster response time, or service in an HP Excluded Travel Area are generally available from HP or an authorized reseller at additional charge.

Customer Responsibilities

The customer may be required to run HP-supplied configuration and diagnostic programs before an on-site visit or replacement part will be dispatched.

The customer is responsible for the security of its proprietary and confidential information and for maintaining a procedure external to the products for reconstruction of lost or altered files, data, or programs.

For on-site service, the customer must provide the following: access to the product; adequate working space and facilities within a reasonable distance of the product; access to and use of all information and facilities determined necessary by HP to service the product; and operating supplies and consumables such as the customer would use during normal operation.

When service is being performed on-site, an adult representative of the customer must be present at all times. The customer must state if the product is being used in an environment that poses a potential health hazard to repair personnel; HP or the servicing reseller may require that the product be maintained by customer personnel under direct HP or reseller supervision.

Obtaining Return Warranty Service

If on-site warranty service is not applicable, the product must be returned to a service facility designated by HP. The customer must enclose a copy of a document proving date of purchase.

The customer shall prepay shipping charges (and shall pay all duty and taxes) for products returned to HP for warranty service. HP shall pay for return of products to the customer except for products returned to the customer from another country.

HP Software Product License and Limited Warranty

Please carefully read this License Agreement before proceeding to operate this equipment. Rights in the software are offered only on the condition that the Customer agrees to all terms and conditions of the License Agreement. Proceeding to operate the equipment indicates your acceptance of these terms and conditions. If you do not agree to the License Agreement, you must now either remove the software from your hard disk drive and destroy the master diskettes, or return the complete computer and software for a full refund.

Software License Agreement

In return for payment of the applicable fee, Hewlett-Packard grants the Customer a license in the software, subject to the following:

- Use

Customer may use the software on any one computer. Customer may not network the software or otherwise use it on more than one computer. Customer may not reverse assemble or decompile the software unless authorized by law.

- Copies and Adaptations

Customer may make copies or adaptations of the software (a) for archival purposes or (b) when copying or adaptation is an essential step in the use of the software with a computer so long as the copies and adaptations are used in no other manner.

- Ownership

Customer agrees that he/she does not have any title or ownership of the software, other than ownership of the physical media. Customer acknowledges and agrees that the software is copyrighted and protected under the copyright laws. Customer acknowledges and agrees that the software may have been developed by a third-party software supplier named in the copyright notices included with the software, who shall be authorized to hold the Customer responsible for any copyright infringement or violation of this Agreement.

- Transfer of Rights in Software

Customer may transfer rights in the software to a third party only as part of the transfer of all rights and only if Customer obtains the prior agreement of the third party to be bound by the terms of this License Agreement. Upon such a transfer, Customer agrees that his/her rights in the software are terminated and that he/she will either destroy his/her copies and adaptations or deliver them to the third party.

- Sublicensing and Distribution

Customer may not lease, sublicense the software, or distribute copies or adaptations of the software to the public in physical media or by telecommunication without the prior written consent of Hewlett-Packard.

- Termination

Hewlett-Packard may terminate this software license for failure to comply with any of these terms provided Hewlett-Packard has requested Customer to cure the failure and Customer has failed to do so within thirty (30) days of such notice.

- Updates and Upgrades

Customer agrees that the software does not include updates and upgrades that may be available from Hewlett-Packard under a separate support agreement.

- Export Clause

Customer agrees not to export or reexport the software or any copy or adaptation in violation of the U.S. Export Administration regulations or other applicable regulation.

- U.S. Government Restricted Rights

Use, duplication, or disclosure by the U.S. Government is subject to restrictions as set forth in subparagraph (c)(1)(ii) of the Rights in Technical Data and Computer Software clause in DFARS 252.227-7013. Hewlett-Packard Company. 3000 Hanover Street, Palo Alto, CA 94304 U.S.A. Rights for non-DOD U.S. Government Departments and Agencies are as set forth in FAR 52.227-19(c)(1,2).

Software Product Limited Warranty

Ninety-Day Limited Software Warranty

HP warrants for a period of ninety (90) days from the date of the purchase that the software product will execute its programming instructions when all files are properly installed. HP does not warrant that the operation of the software will be uninterrupted or error free. In the event that this software product fails to execute its programming instructions during the warranty period, Customer's remedy shall be a refund or repair. Should HP be unable to replace the media within a reasonable amount of time, Customer's alternate remedy shall be a refund of the purchase price upon return of the product and all copies.

Removable Media (if supplied)

HP warrants the removable media, if supplied, upon which this product is recorded to be free from defects in materials and workmanship under normal use for a period of ninety (90) days from the date of purchase. In the event the media prove to be defective during the warranty period, Customer's remedy shall be to return the media to HP for replacement. Should HP be unable to replace the media within a reasonable amount of time, Customer's alternate remedy shall be a refund of the purchase price upon return of the product and destruction of all other non-removable media copies of the software product.

Notice of Warranty Claims

Customer must notify HP in writing of any warranty claim not later than thirty (30) days after the expiration of the warranty period.

Limitation of Warranty

HP makes no other express warranty, whether written or oral, with respect to this product. Any implied warranty of merchantability or fitness for a particular purpose is limited to the 90-day duration of this written warranty. Some states or provinces do not allow limitations on how long an implied warranty lasts, so the above limitation or exclusion may not apply to you.

This warranty gives specific legal rights, and you may also have other rights that vary from state to state, or province to province.

Limitation of Liability and Remedies

The remedies provided above are Customer's sole and exclusive remedies. In no event shall HP be liable for any direct, indirect, special, incidental, or consequential damages (including lost profit) whether based on warranty, contract, tort, or any other legal theory. Some states or provinces do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

Obtaining Warranty Service

You may obtain Warranty service from your Authorized HP Reseller or HP Sales and Service Office.

Consumer transactions in Australia and the United Kingdom: The disclaimers and limitations above shall not apply and shall not affect the statutory rights of a Consumer.

A Control Panel Description

Table A-1 describes each item on the control panel shown in Figure A-1:

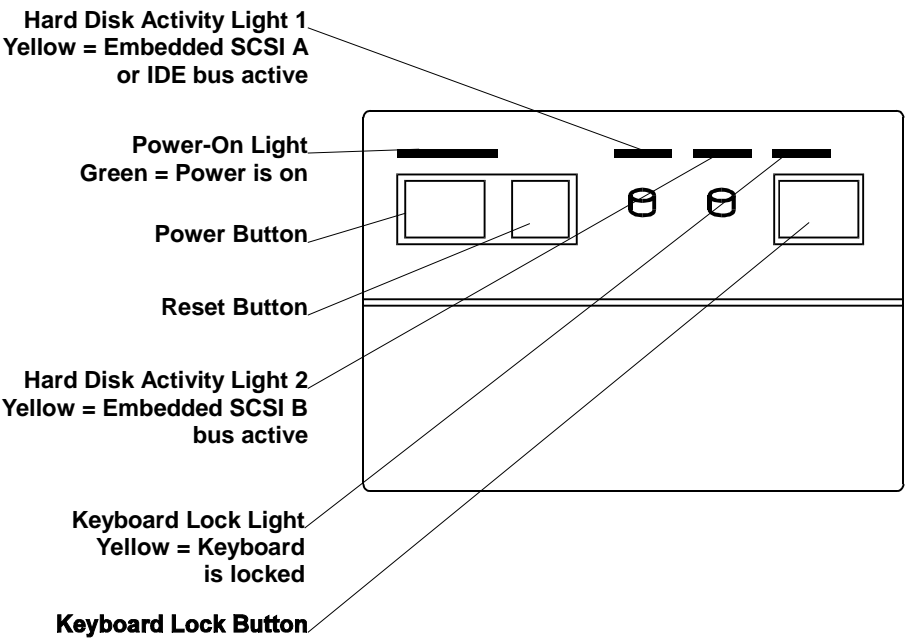


Figure A-1. Control Panel Description

Table A-1. Control Panel Description

Control Panel Item	Description
Power Button	Turns the NetServer on and off. Note that when the NetServer is turned off, the power to the internal circuitry and mass storage devices is disabled; however, AC power is still applied to the power supply. Always disconnect the power cord before removing the cover.
Power-On Light	One Power Supply: Turns green when the NetServer is on. Two Power Supplies: Turns green when both power supplies are on. Flashing light when one power supply or one line cord has a fault.
Reset Button	Restarts the NetServer. You can press this button if the NetServer “hangs” or “locks up”—it has the same effect as turning the NetServer off and on. Save any work before pressing the Reset button. Any information not saved is lost when the NetServer shuts down.
Hard Disk Activity Light 1	Yellow indicates activity on the Embedded SCSI A bus or IDE bus.
Hard Disk Activity Light 2	Yellow indicates activity on the Embedded SCSI B bus.
Keyboard Lock Button	Prevents unauthorized use of the keyboard. Press the keyboard lock button to lock the keyboard. Enter the password to unlock the keyboard. For more information, see “Configuring System Security” in Information Assistant.
Keyboard Lock Light	Turns yellow when the keyboard is locked.

B Specifications

The specifications listed below can vary if you install a mass storage device in your server that has more stringent environmental limits. Make sure that the operating environment for your server is suitable for all the mass storage devices that you are using.

Environment

Temperature

Operating	5° to 35° C (41° to 95° F)
Non-operating	–40° to +70° C (–40° to +158° F)

Humidity (noncondensing)

Operating	20% to 80% relative humidity
Non-operating	90% relative humidity

Altitude

Operating	3,046 m (10,000 ft)
Non-operating	12,200 m (40,000 ft)

Maximum Air Conditioning Load

Less than 530 KCal (2100 BTU)

Minimum Clearance

Front	1 m (39 inches)
Sides	2.5 cm (1 inch)
Top	2.5 cm (1 inch)
Back	15 cm (6 inches)

Weight and Dimensions

System Processing Unit (SPU)		
Height		491 mm (19.33 in)
Width		349 mm (13.74 in)
Depth		460 mm (18.11 in)
Weight		31 – 41 kg (67 – 90 lb) depending on other model configurations. Weight excludes monitor and keyboard.
System footprint		369 x 474.71 mm (14.53 x 18.89 in)
Keyboard		
Height		3.4 cm (1.4 in)
Width		46.8 cm (18.4 in)
Depth		19.8 cm (7.8 in)
Weight		1.9 kilograms (4.2 lb.)
Cable Length		
Keyboard cable		3 m (9.9 ft)

Power Supply Specifications

Power supply input voltage	Auto-Ranging Power Supply 100 to 127 VAC ~ 8 A at 50/60 Hz 200 to 240 VAC ~ 4 A at 50/60 Hz
Power supply output	410 W continuous; 458 W peak

C Regulatory Information

Notice for USA

FCC Radio Frequency Emissions Statements

Class B Product Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates and uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/television technician for help.

Hewlett-Packard's system certification tests were conducted with HP-supported peripheral devices and HP shielded cables, such as those you receive with your computer. Changes or modifications not expressly approved by Hewlett-Packard could void the user's authority to operate the equipment. Cables used with this device must be properly shielded to comply with the requirements of the FCC.

Class A Product Statement: Warning for Accessories

Installation and use of a Class A accessory (such as a network interface card) creates a system that meets the requirements for industrial and commercial environments. This equipment has been tested and found to comply with the limits for Class A digital devices, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates,

uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user is required to correct the interference at their own expense.

CD-ROM

CD-ROM Electrical Safety Statement

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

CD-ROM Laser Safety Statements

CAUTION

This CD-ROM mass storage system contains a laser system and is classified as a “Class-1 Laser Product” under a U.S. Department of Health and Human Services (DHHS) Radiation Performance standard according to the Radiation Control for Health and Safety Act of 1968.

To ensure proper use of this product, please read this instruction manual carefully and retain for future reference. Should the unit ever require maintenance, contact an authorized service location.

CAUTION

Use of controls, adjustments or the performance procedures other than those specified herein may result in hazardous radiation exposure. To prevent direct exposure to laser beam, do not try to open the enclosure.

Notice for Canada: DOC Requirements

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

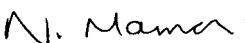

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Notice for EU:

Radio Frequency Emissions Warning for Accessories

Installation and use of a Class A accessory (such as a network interface card) creates a system that meets the requirements for industrial and commercial environments. This connection has been found to comply with CISPR 22 Class A EMC emission limits. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

Declaration of Conformity

DECLARATION OF CONFORMITY according to ISO/IEC Guide 22 and EN 45014		
Manufacturer's Name:	Hewlett-Packard Company	Hewlett-Packard Pte Ltd
Manufacturer's Address:	5301 Stevens Creek Blvd. Santa Clara, CA 95052 USA	452 Alexandra Road Singapore 119961
declares, that the product		
Product Name:	Network Server	
Model Number(s):	HP NetServer 6/200 LH Pro and 6/200 LH2 Pro	
Product Options:	All	
conforms to the following Product Specifications:		
Safety:	IEC 950:1991 + A1, A2 / EN 60950:1992 + A1, A2	
EMC:	EN55022: 1994/CISPR 22:1993 Class B ^{1, 2} EN61000-3-2:1995 EN 50082-1:1992 - Generic Immunity IEC 801-2:1991, 4 kV CD, 8 kV AD IEC 801-3:1984, 3V/m IEC 801-4:1988, 0.5 kV Signal Lines, 1 kV Power Lines	
Supplementary Information:		
The product herewith complies with the requirements of the Low Voltage Directive 73/23/EEC and the EMC Directive 89/336/EEC.		
1) The Product was tested in a typical configuration with Hewlett-Packard peripherals. 2) Models configured with a network interface card comply with CISPR 22 / EN 55022 Class A limits.		
Santa Clara, May 20, 1996	 _____ Nigel Marrion / Quality Manager	
Singapore, May 20, 1996	 _____ Seah Beng Geok / Quality Manager	
European Contact: Your local Hewlett-Packard Sales and Service Office or Hewlett-Packard GmbH, Department ZQ / Standards Europe, Herrenberger Straße 130, D-7030 Böblingen (FAX: + 49-7031-143143)		

Notice for Finland: Laser Safety Statement

LASERTURVALLISUUS

LUOKAN 1 LASERLAITE

KLASS 1 LASER APPARAT

HP NetServer LH Pro - verkkopalvelimeen voidaan asentaa lisävarusteena laitteensisainen CD-ROM-lukulaite, joka on laserlaite.

Kyseinen CD-ROM-lukulaite on käyttäjän kannalta turvallinen luokan 1 laserlaite. Normaalisissa käytössä lukulaitteen suojakotelo estää laseräteen pääsyn laiteen ulkopuolelle. Laitteen turvallisuusluokka on määritetty standardin EN 60825 (1991) mukaisesti.

Notice for Germany

Noise Declaration and Ergonomics

$L_{pA} < 60 \text{ dB (A)}$

am Arbeitsplatz (operator position)

normaler Betrieb (normal position)

nach DIN 45635 T. 19 (per ISO 7779)

This product has not been evaluated for compliance with the ZH1/618 ergonomic requirements.

Laser Safety Statement

VORSICHT

Dieses Gerät enthält ein Laser-System und ist als "LASER PRODUKT DER KLASSE 1" klassifiziert. Für den richtigen Gebrauch dieses Modells die Bedienungsanleitung sorgfältig durchlesen und als Referenz aufbewahren. Falls Probleme mit diesem Modell auftreten, die nächste "authorisierte Services-Verrtetung" benachrichtigen. Um einen direkten Kontakt mit dem Laserstrahl zu vermeiden, soll das Gehäuse nicht geöffnet werden.

VORSICHT

Die Verwendung von anderen Steuerungen oder Einstellungen oder das Durchführen von anderen Vorgängen als in der Bedienungsanleitung beschrieben kann gefährliche Strahlenexpositionen zur Folge haben.

CLASS 1
LASER
PRODUCT

This CD-ROM Drive Unit is classified as a CLASS 1 LASER PRODUCT.

LASSER
KLASSE 1
PRODUKT

The CLASS 1 LASER PRODUCT label is located on the top of the drive.

Bei diesem CD-ROM-Laufwerk CDU56S handelt es sich um ein Laser-Produkt der Klasse 1. Ein entsprechender Aufkelber mit der Beschriftung LASER KLASSE 1 PRODUKT befindet sich der Obersiete des Geräts.

Notice for Japan

VCCI Statement

この装置は、第二種情報処理装置（住宅地域又はその隣接した地域において使用されるべき情報処理装置）で住宅地域での電波障害防止を目的とした情報処理装置等電波障害自主規制協議会（VCCI）基準に適合しております。

しかし、本装置をラジオ、テレビジョン受信機等に近接してご使用になると、受信障害の原因となることがあります。

取扱説明書に従って正しい取り扱いをして下さい。

(Translation)

This equipment is in the 2nd Class category (information technology equipment to be used in a residential area or an adjacent area thereto) and conforms to the standards set by the Voluntary Control Council For Interference by Information Technology Equipment aimed at preventing radio interference in such residential area.

When used near a radio or TV receiver, it may become the cause of radio interference. Read the instructions for correct handling.

Power Line Harmonics

高調波ガイドライン適合品

This product conforms to the Power Line Harmonics guideline.

Notice for Korea: RFI Statement

사용자 안내문(A 급)

이 기기는 업무용으로 전자파해검정을 받은 기기이오니,
판매자 또는 사용자는 이점을 주의하시기 바라며, 만약
잘못구입하였을 때에는 구입한 곳에서 비업무용으로 교환
하시기바랍니다.

(Translation)

User Guide (Class A)

Please note that this equipment has been approved for business purposes with regard to electromagnetic interference. If purchased in error for use in a residential area, you may wish to exchange the equipment where you purchased it.

Mexico: Hardware Warranty Statement

This warranty statement applies only to sales in Mexico.

Póliza de Garantía

Hewlett-Packard de México, S. A. de C. V. con domicilios en:

Guadalajara, Jalisco
Montemorelos No. 299
Fracc. Loma Bonita, 45060
Tel. 669 95 00

Monterrey, Nvo. León
Calz. Del Valle O. No. 409
4° Piso, Col. Del Valle
Garza García, 76030
Tel. 378 42 40

México, D.F.

Prolongación Reforma No. 470
Col. Lomas de Sta. Fe, 01210
Delegación Alvaro Obregón
Tel. 326 46 00

Garantiza este producto por el término de treinta y seis meses en todas sus partes y mano de obra contra cualquier defecto de fabricación y funcionamiento a partir de la fecha de entrega al consumidor final. En el caso de productos que requieran de enseñanza o adiestramiento en su manejo o en su instalación, a partir de la fecha en que hubiese quedado operando normalmente el producto después de su instalación en el domicilio que señale el consumidor.

CONDICIONES**1. Centros de Servicio, Refacciones y Partes:**

Para hacer efectiva esta garantía, no podrán exigirse mayores requisitos que la presentación de esta póliza junta con el producto en el lugar donde fue adquirido o en cualquiera de los centros de servicio ubicados en los domicilios de la parte superior de esta hoja, mismos en los que se pueden adquirir refacciones y partes.

2. Cobertura:

La Empresa se compromete a reparar o cambiar el producto, así como las piezas y componentes defectuosos del mismo, sin ningún cargo para el consumidor. Los gastos de transportación que se deriven de su cumplimiento serán cubiertos por Hewlett-Packard de México, S. A. de C. V.

3. Tiempo de Reparación:

El tiempo de reparación en ningún caso será mayor a treinta días contados a partir de la recepción del producto en cualquiera de los sitios en donde pueda hacerse efectiva la garantía.

4. Limitaciones:

Esta garantía no es válida en los siguientes casos:

- A. Cuando el producto ha sido utilizado en condiciones distintas a las normales.
- B. Cuando el producto no ha sido operado de acuerdo con el instructivo de uso en idioma Español proporcionado.

C. Cuando el producto ha sido alterado o reparado por personas no autorizadas por Hewlett-Packard de México, S.A. de C. V.

Producto	Marca	Modelo	
No. de Serie	Nombre del Distribuidor		
Dirección : (Calle, Número, Colonia o Poblado, Delegación o Municipio)			
C.P.	Ciudad.	Estado	Teléfono
Fecha de entrega o instalación			

Notas

El consumidor podrá solicitar que se haga efectiva la garantía ante la propia casa comercial donde adquirió el producto.

En caso de que la presente garantía se extraviara, el consumidor puede recurrir a su proveedor para que se le expida otra póliza de garantía, previa presentación de la nota de compra o factura respectiva.

Notice for U.K.: General Approval

The HP NetServer LH Pro is approved under approval number NS/G/1234/J/100003 for indirect connection to Public Telecommunication Systems in the U.K.

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