

HP NetServer LC 3 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 Installation Overview

This chapter contains simplified setup information about your HP NetServer LC 3. For more detailed setup instructions, consult the *HP NetServer LC 3 Installation Road Map*. You may also want to consult HP Information Assistant, located on the *HP NetServer Online Documentation CD-ROM*. See Chapter 3 of this guide for a description.

Verify Contents

Unpack and verify the contents of the shipping box against the Contents Checklist included with your HP NetServer. If anything is missing or damaged, contact your reseller.

- If you do **not** plan to install the HP NetServer in a rack assembly, mount it on the anti-tip pedestal now, as instructed in the *HP NetServer LC 3 Installation Road Map*.
- If you **do** plan to install the HP NetServer in a rack assembly, do **not** mount it on the anti-tip pedestal. Install it in the rack assembly after all options are installed and the system is configured.

To remove the pedestal at a later time, refer to "Pedestal Removal" in Chapter 5, "Installation in Rack (Optional)."

View the Readme File

1. Connect the HP NetServer to a power source. Press the power-on button. Press the CD-ROM drive eject button. Place the HP NetServer Online Documentation CD-ROM CD-ROM in the drive, and press the eject button again to close the drive. Turn the power off, wait 10 seconds, and turn the power on again. If the system fails to boot, follow the diagnostic instructions on the screen.
2. Go to the Main Menu. If the language needs to be changed, select **User Preferences** and the language you want.
3. Select **Readme File**. The Readme file contains the latest information to help you install your HP NetServer. Read it carefully before beginning your installation.

Test the System Hardware (Optional)

If you want to verify the system hardware as shipped, you can now run HP Diagnostic Assistant from the HP Navigator CD-ROM, as follows:

1. If you are not already running HP Navigator on the HP NetServer LC 3, boot the HP NetServer LC 3 from the HP Navigator CD-ROM:
 - a. Press the power-on button. Press the CD-ROM drive eject button. Place the HP Navigator CD-ROM in the drive, and press the eject button again to close the drive. Turn the power off, wait 10 seconds, and turn the power on again. If the system fails to start, follow the diagnostic instructions on the screen.
 - b. Go to the HP Navigator Main Menu. If the language needs to be changed, select **User Preferences** and the language you want.
2. From the HP Navigator Main Menu, select **NetServer Utilities**.
3. From the NetServer Utilities menu, select **Diagnostic Assistant**.
4. To understand Diagnostic Assistant and the hardware it can test, view the Readme text, as follows:
 - a. From the Diagnostic Assistant Main Menu, select either **Quick Tests** or **Continuous Tests**.
 - b. From the next menu displayed, select **On-Line Manual**.
 - c. When you have finished viewing the Readme text, press ESC twice to return to the Diagnostic Assistant Main Menu.

Snap on the Anti-Tip Pedestal

In order to ensure stability, mount the server on its accompanying anti-tip pedestal. See the illustration on the top side of the pedestal for guidance.

Remove the Covers

If you are not installing additional hardware (or only hot-swap disk drive modules), you do not need to remove any covers. Go to the heading, "Configure the HP NetServer."

If you are installing any hardware options (other than hot-swap disk drive modules), you must remove the front bezel and top cover.

- If you are installing accessory boards or additional mass storage devices (other than hot-swap disk drive modules), you must also remove the side cover farthest from the system board. Refer to Figure 1-1.
- If you are only installing additional memory, do not remove the side cover.

To install options, you will need a flat 1/4-inch screwdriver and T15 TORX® driver.

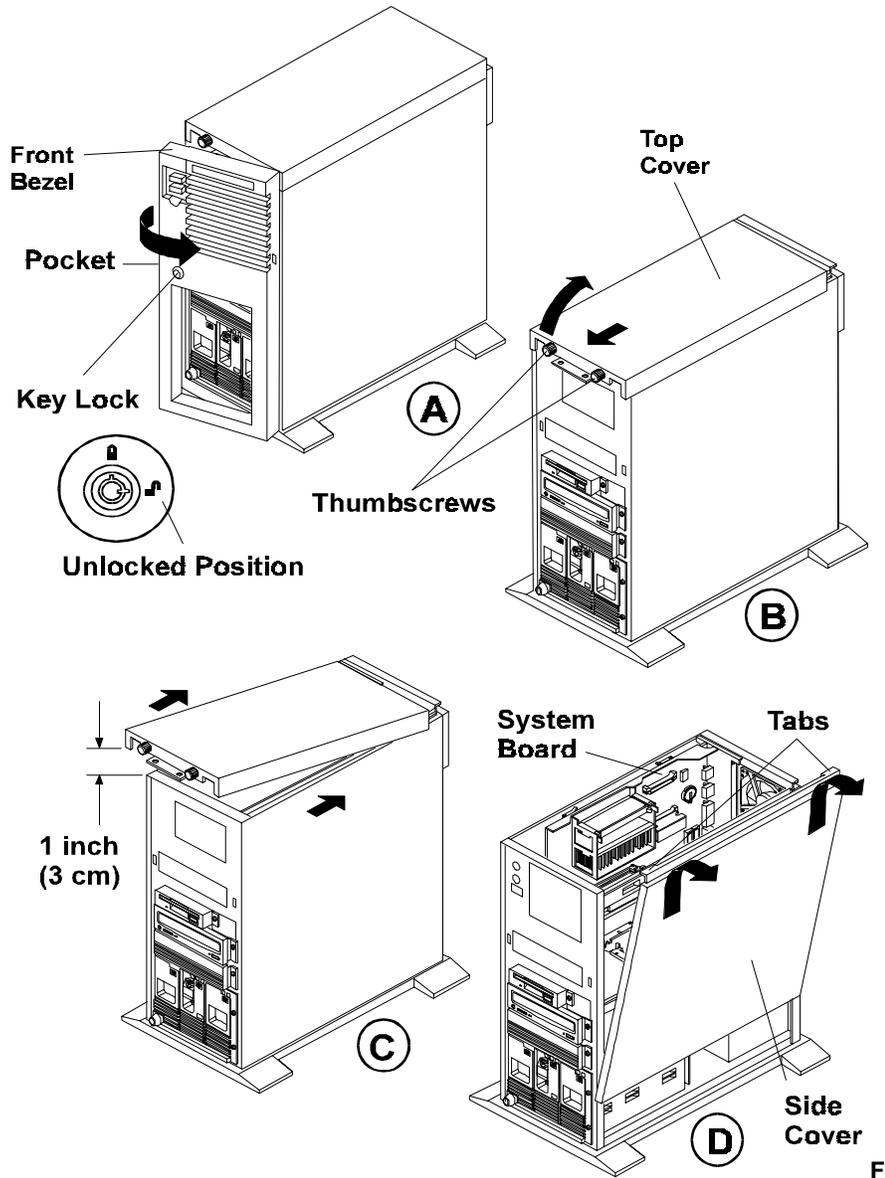


Figure 1-1. Remove the Front Bezel (A), Top Cover (B & C) and Side Cover (D)

To remove the covers, refer to Figure 1-1 and do the following:

1. Turn off the HP NetServer and disconnect the power cord.

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

Note that the power switch does NOT turn off the standby power. Disconnect the power cord from the HP NetServer to turn off the standby power before handling components.

CAUTION Wear a wrist strap and use a static-dissipating work surface connected to the chassis when handling components.

2. Unlock the front bezel with the key in the key bag located on the rear of the HP NetServer.
3. Remove the front bezel (See Figure 1-1, Step A.):
 - a. Pull on the pocket on the side of the front bezel to swing that side of the bezel outward.
 - b. Pull the front bezel off the HP NetServer. This exposes the thumbscrews on the top cover.
4. Remove the top cover:
 - a. Loosen both thumbscrews on the front of the HP NetServer. (See Figure 1-1, Step B.)
 - b. Pull the front of the top cover forward 1/16 inch (1.5 mm), and then lift the front up only far enough to create a gap of 1 inch (3 cm) between the top cover and the chassis.

CAUTION Only lift the front of the top cover high enough to create a gap of 1 inch (3 cm) between the top cover and the chassis. Lifting the top cover higher can damage it and the chassis. (See Figure 1-1, Step C.)

- c. Push the top cover back, and lift it off. The Technical Reference Label is inside the top cover.
5. If you are installing any accessory boards or additional mass storage devices (other than hot-swap disk drive modules), also remove the side cover farthest from the system board (See Figure 1-1, Step D.):
 - a. Grasp the two tabs at the top of the side cover.
 - b. Pull upward and outward to lift the side cover off.

CAUTION	Handle the side cover only by its top and bottom edges to avoid damaging the EMI spring fingers inside its side edges.
----------------	--

Install Additional Memory

CAUTION	The LC 3 uses 100 MHz SDRAM DIMMs, which are electrically different from the EDO memory modules used with earlier models. (Even though the EDO DIMM from earlier models does fit in the DIMM sockets, it does not function.) Do not install EDO DIMMs from previous models in the LC 3.
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CAUTION	<p>Use only DIMMs acquired from HP. Refer to the following for a list of qualified DIMMs:</p> <ul style="list-style-type: none">• Technical Reference Label inside the HP NetServer top cover• HP Order Assistant on the HP Web Site at http://www.hp.com/go/netserver• Information Assistant on the HP Navigator CD-ROM• HP Customer Service <p>When handling DIMMs, observe antistatic precautions to avoid damage.</p>
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Remove the System Board

If you are adding additional memory, remove the system board first. Use the retaining latches to start lifting the system board. Grasp the metal bracket at the top of the system board, and lift the system board straight up and out of the HP NetServer, as shown in Figure 1-2.

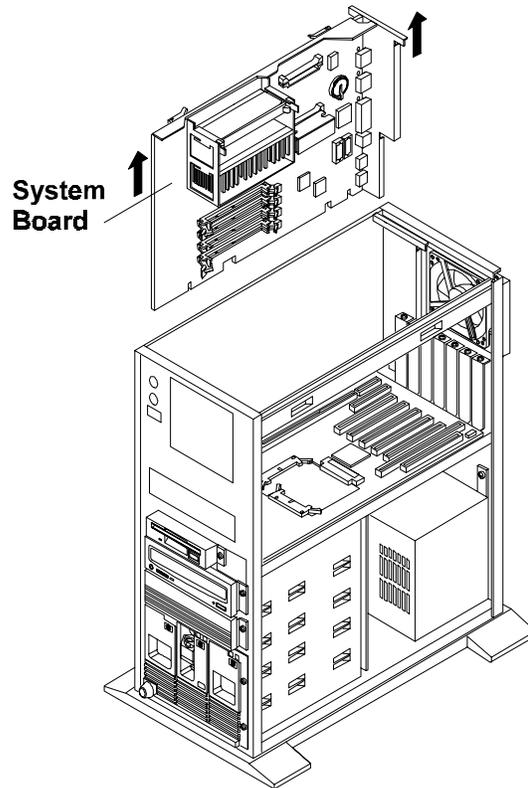


Figure 1-2. Remove the System Board

Lay the system board component-side up on a static-dissipating work surface with the metal cross piece on the top rear corner of the system board extending off the work surface, as shown in Figure 1-3.

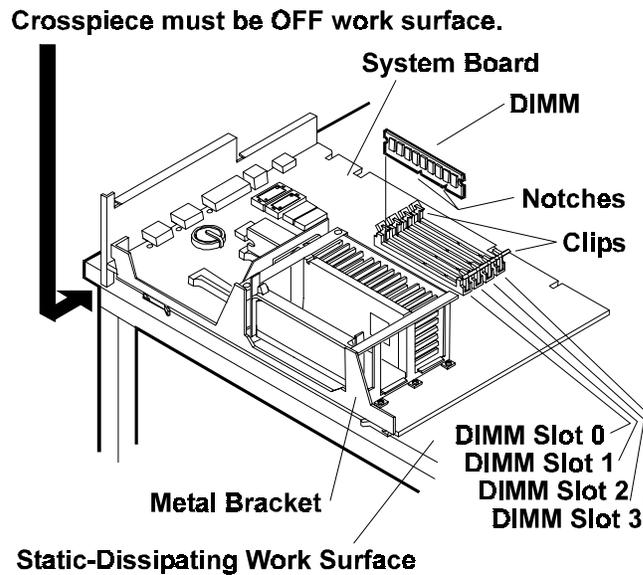


Figure 1-3. Insert the DIMM

CAUTION

Only install DIMMs on a system board lying flat on a static-dissipating work surface. The metal crosspiece indicated by the arrow in Figure 1-3 must be OFF the work surface. Otherwise, flexing can damage the system board.

Follow these steps to install each DIMM in a DIMM socket on the system board. DIMMs can be 64 MB, 128 MB or 256 MB in any combination. They can be installed in any order in any of the DIMM sockets on the system board.

1. Remove an HP DIMM from its container, handling the module by its edges. If you must set it down, place it on an antistatic mat.
2. Locate the socket where you will install the DIMM, and spread outward the two retaining clips shown in Figure 1-3.
3. Align the notches on the DIMM with the keys on the socket, and hold the DIMM at a 90° angle to the system board.

4. Insert the DIMM fully the into the socket. The retaining clips will grasp the DIMM automatically if it is inserted properly. If the clips do not close, the DIMM is not inserted correctly.

CAUTION	Do not rock the DIMM into place, but apply firm and even pressure (significantly more than you would when installing SIMMs). If the retaining clips do not close, remove the DIMM and repeat Steps 2-4.
----------------	---

Reinsert the System Board

Insert the plastic rails on the back side of the system board into the metal guides on the side of the chassis, and push the system board downward, as follows:

- If you will install any accessory boards into slot 5 or 6, leave the system board in its raised position, extending about 5 inches (about 12 cm) above the chassis.
- If not, hold the handles of the retaining latches vertical, and push the system board down to seat it firmly in its slot. Then, lower the retaining latches simultaneously to secure the board.

NOTE	Lower both retaining latches at the same time to avoid jamming the system board.
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Install All Accessory Boards

Raise the System Board

If you are installing accessory boards in slot 5 or 6, raise the system board (if it is not already raised) to provide easier access to those accessory board slots. To raise the system board, use the retaining latches to start lifting the system board. Grasp the metal bracket at the top of the system board, and lift the system board straight up until its top extends about 5 inches (about 12 cm) above the top of the chassis, as shown in Figure 1-4. Friction stops automatically hold it in this position.

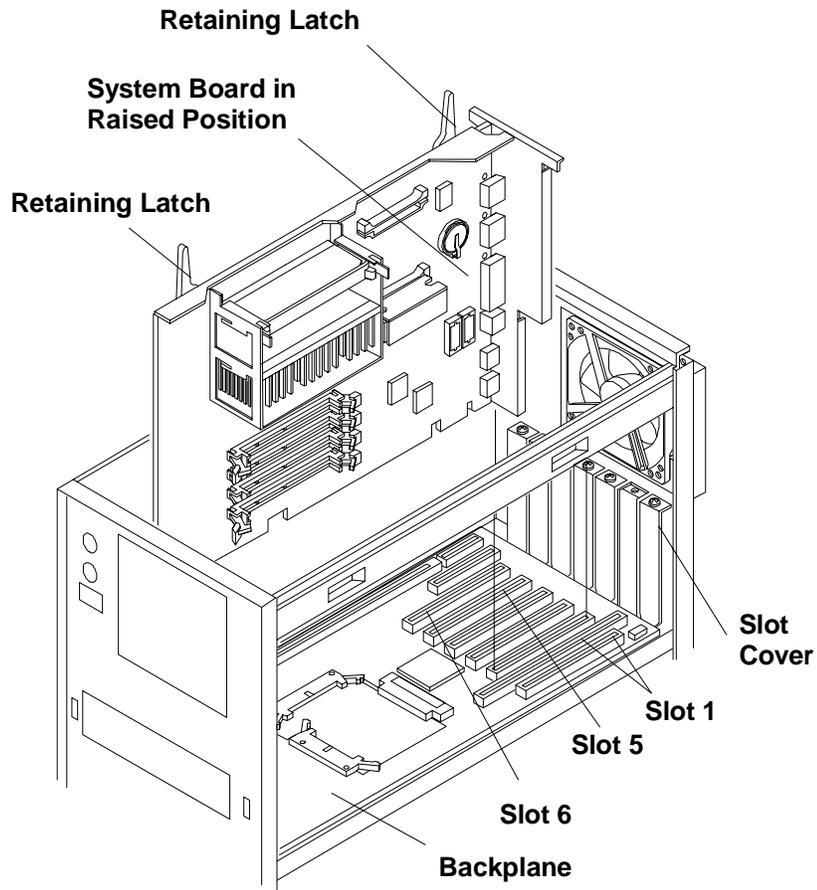


Figure 1-4. System Board in Raised Position

Install Accessory Boards

Install all accessory boards at this point. The backplane in the HP NetServer has five PCI-only slots (numbered 2 through 6) and one combined PCI/ISA slot (number 1).

Boards can be identified by the shape of their connectors, as shown in Figure 1-5.

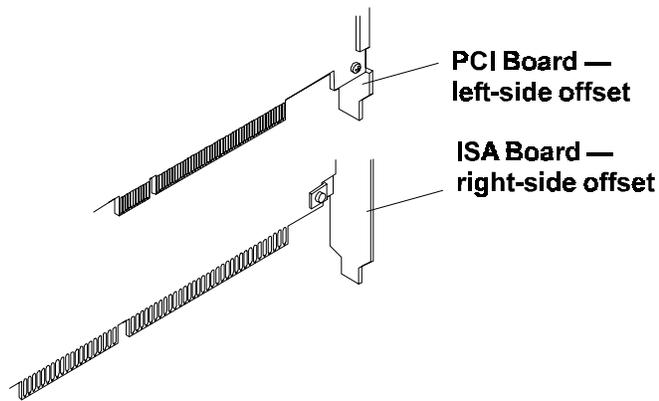


Figure 1-5. PCI/ISA Board Identification

For a list of boards HP has tested, view the Tested Products List located in the following:

- HP Order Assistant on the HP Web Site at
<http://www.hp.com/go/netserver>
Click the hot spot "search" and enter the words "tested products list."
Browse through the search results list to find the topic you want.
- Help topic "Tested Products List" on the HP Navigator CD-ROM

For tips on configuring accessory boards, refer to the following:

- The Readme file on the Navigator CD-ROM
- Configuration advisories in Configuration Advisor. To read them, do the following:
 - a. From the HP Navigator Main Menu, select **Configuration Assistant and Installation Advisor**.
 - b. From the Configuration Assistant menu, select **Custom**.
 - c. Select the NOS (network operating system) you plan to install later, and the version, if necessary.
 - d. To the question, "Would you like to use HP's automated mode of NOS installation?" select **No**.

- e. Configuration Advisor displays the Configuration Advisories. You can print them out by saving them to disk (diskette) and later printing out from the diskette.

Read the documentation supplied with the accessory boards. If you are installing an ISA non-plug-and-play board, write down the switch and jumper settings and all system resource requirements (such as memory range, I/O port range, DMA channel, and IRQ level). Refer to these notes when you allocate system resources to the ISA non-plug-and-play board when you configure the HP NetServer.

Install Additional Mass Storage Devices

Certain mass storage configurations may require additional cables or adapters. For part numbers for HP cables, adapters, and trays, and configuration information, see Information Assistant on the HP Navigator CD-ROM. For new products, you can use Order Assistant on the HP Web Site at <http://www.hp.com/go/netserver>. Click the hot spot "Ordering NetServers" and choose your desired option.

Replace All Covers and Connect All Cables

Refer to Figure 1-6 and replace all covers.

CAUTION	Covers are necessary for proper air flow through the system. Please replace ALL covers before operating the HP NetServer, even for a short time. Otherwise, overheating can damage processors, boards, and mass storage devices.
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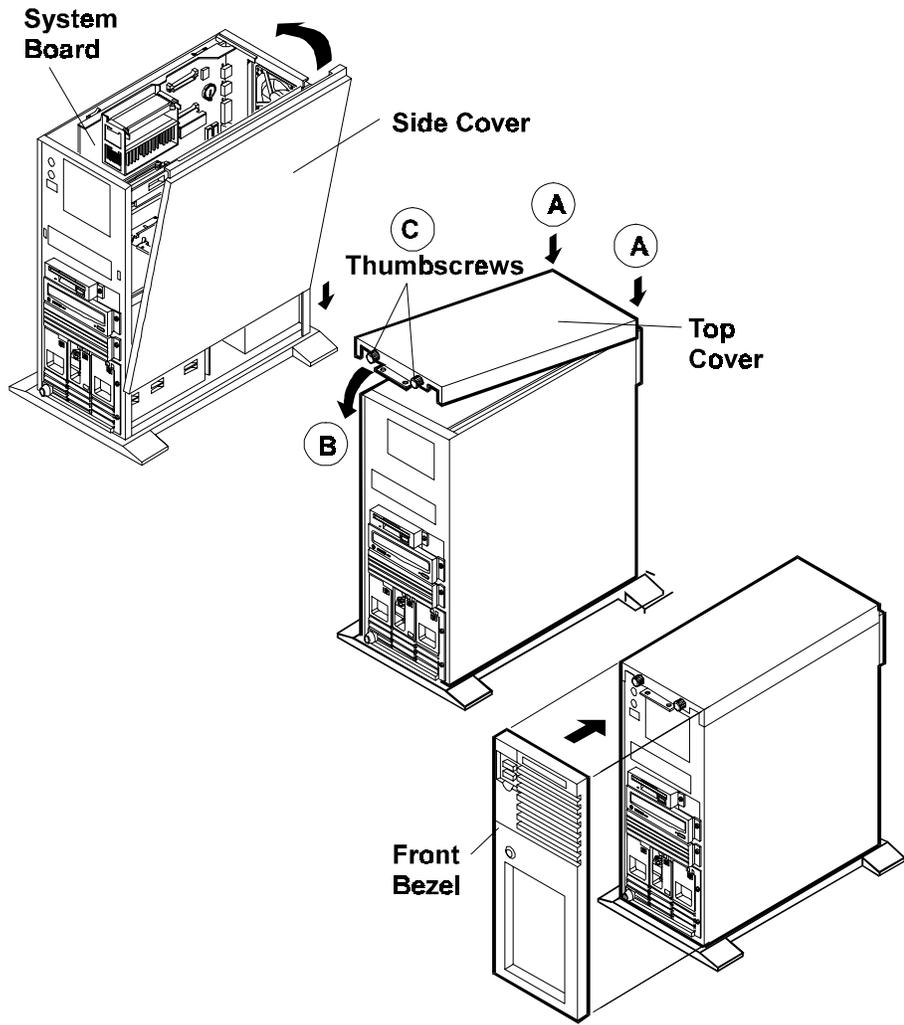


Figure 1-6. Replace All Covers

1. If the system board is in the raised position, lift the handles of its retaining latches to vertical, and push the system board down to seat it firmly in its slot. Lower the retaining latches simultaneously to secure the board.

NOTE Lower both retaining latches at the same time to avoid jamming the system board.

2. If a side cover was removed, insert the channel on its lower edge onto the lip at the bottom of the chassis. Press the top of the side cover against the chassis to snap it into place.
3. To replace the top cover, see the illustration in Figure 1-6, Steps A, B, and C, and do the following:
 - A. Align both of its rear corners against the similar metal on the rear of the HP NetServer.
 - B. Lower the front of the top cover, and pull it forward slightly to catch on the rear of the HP NetServer and to clear the front edge of the HP NetServer.
 - C. With the top cover in place, tighten both thumbscrews.
4. Align the front bezel against the front of the HP NetServer, and press it firmly into place.
5. Lock the front bezel with the key.
6. Connect the power cord and all other cables.

Configure the HP NetServer

Run SCSISelect Utility

If you need to verify or modify SCSI host adapter settings, or if you need to low-level format SCSI disks or verify SCSI disk media, run the SCSISelect utility, as follows:

1. Turn on or reboot your system.

During system start-up or reset, when the message

```
Press <Ctrl> <A> for SCSISelect(TM) Utility
```

appears, press the CTRL and A keys at the same time.

2. From the Options menu, select one of the following:
 - ◇ **Configure/View Host Adapter Settings:** Select this option to configure or view SCSI bus interface definitions, boot device options, SCSI configurations, and advanced configuration options.
 - ◇ **SCSI Disk Utilities:** Select this option to format disks or verify disk media.
3. Use the arrow keys to move the cursor, press ENTER to select an option, and press ESC to exit.

Reserve Resources for ISA Non-Plug-and-Play Board

If you have installed an ISA non-plug-and-play accessory board, you must reserve system resources for it. Turn on the monitor and the HP NetServer, and start the Setup utility by pressing the F2 key when

Press <F2> to enter SETUP

appears on the boot screen.

NOTE

Pressing the F2 key when prompted should start the Setup utility. For some ISA boards, the Setup utility will not start, and you must remove the ISA board, use the Setup utility to reserve system resources for the ISA board, and then replace the ISA board.

Use the Setup utility to allocate system resources to the ISA non-plug-and-play accessory board. Refer to the "Installing ISA Non-Plug-and-Play Boards" in Chapter 4, "Accessories," for instructions.

Run Configuration Assistant and Installation Assistant

Turn on the monitor and the HP NetServer, and insert the HP Navigator CD-ROM into the drive. Turn the power off, wait 10 seconds, and turn the power on again. If the system fails to start, follow the instructions on the screen.

1. When HP Navigator starts, you may need to set the language and the time and date. Follow the onscreen instructions. You can also change the language of the BIOS when prompted.
2. Go to the HP Navigator Main Menu and select "Configuration and Installation Assistant."

3. Follow the onscreen instructions in Configuration Assistant to continue your HP NetServer installation. For details, refer to the *HP NetServer LC 3 Installation Road Map*, to Chapter 2, "HP Navigator," in this guide, or to Information Assistant.

Install HP TopTools

HP TopTools is browser-based management software that provides remote administration and monitoring of critical server components. You must install TopTools before technical support can be provided. Refer to the *HP NetServer Management Reference Guide*, and install TopTools.

2 HP Navigator

Contents of the HP NetServer Navigator CD-ROM

Before the HP Navigator Main Menu is displayed, you may be prompted to set the language and the time and date. You can also set the language that the BIOS displays.

The Main Menu of HP Navigator directs you to modules where you can perform configuration tasks. The menu buttons for these modules are as follows:

- Readme File
- Configuration Assistant and Installation Assistant
- HP Management Solutions
- NetServer Utilities
- User Preferences

Another CD-ROM entitled *HP NetServer Online Documentation* gives you access to relevant system documentation. See the chapter of this guide entitled "Information Assistant."

The following is a description of the contents of HP Navigator, as accessed from the Main Menu.

Readme File

This file includes the most recent information that was not available at the time that the installation documentation was printed. It is important to check this file before proceeding with the installation.

Configuration Assistant and Installation Assistant

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

Before you run Configuration Assistant and Installation Assistant, run the SCSISelect utility and the Setup utility, if necessary:

- If you need to verify or modify SCSI host adapter settings, or if you need to low-level format SCSI disks or verify SCSI disk media, run the SCSISelect utility. Refer to "Run SCSISelect Utility" in Chapter 1, "Installation Overview."
- If you have installed an ISA non-plug-and play accessory board, you must reserve system resources for it. Refer to the "Installing ISA Non-Plug-and-Play Boards" in Chapter 4, "Accessories," for instructions.

After you run Configuration Assistant and Installation Assistant, remember to install TopTools. Refer to the *HP NetServer Management Reference Guide*.

Express Configuration

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. 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. You can also update the language that the BIOS displays.
- **Configure ISA Non-Plug-and-Play Board:** If you have installed an ISA non-plug-and-play board, and you have not reserved system resources for it, select **Configure Non-PnP board** on the information window that pops up.
- **Select NOS:** You will be asked to select the NOS and version that you plan to install.
- **Select NOS Installation Mode:** For certain versions of Novell NetWare / IntranetWare and Microsoft Windows NT Server, you will be asked, "Would you like to use HP's automated mode of NOS installation?"
 - ◇ Select **Yes** for automated NOS installation, which will guide you through the NOS installation, set up the hard disk drive, and configure your NOS with appropriate drivers for HP-bundled configurations. Perform an automated NOS installation for first-time installation of Novell NetWare / IntranetWare or Microsoft Windows NT Server on a factory-configured HP NetServer.

- ◇ Select **No** for manual NOS installation. Perform a manual NOS installation if you are installing a NOS other than certain versions of Novell NetWare / IntranetWare or Microsoft Windows NT Server, or if you have replaced any HP components.
- **View Configuration Advisories:** Read the configuration advisories, and print them out if necessary. You can change your hardware at this time to conform to the advisories.
- **Configure Remote Management:** This utility configures the Integrated Remote Assistant device for improved remote management. It enables remote, dial-up server management. To configure Integrated Remote Assistant, select **Configure Remote Management** on the Configure Remote Management screen.
- **Show System Information:** Use this screen to display information about standard and accessory boards and devices in the system, as well as the used and available system resources.
 - ◇ Select **View System Information** on the Show System Information screen to display information about standard and accessory boards and devices in the system.
 - ◇ Select **View Resources** on the Show System Information screen to display used and available system resources, such as memory ranges, I/O port ranges, DMA channels, and interrupt (IRQ) levels.
- **Configure Disk Array:** If you have an HP disk array, you must configure it with the disk array utility. Select **Execute** on the Configure Disk Array screen to start the disk array utility.
- **Install Utility Partition:** This step creates a utility partition on the server hard disk where HP Navigator will copy Diagnostic Assistant, the BIOS update utility, the event log report utility, the disk array utility, the Network Interface Card (NIC) configuration utility, the Remote Assistant utilities, troubleshooting utilities, and other utilities. It is not available for SCO UNIX. Select **Execute** on the Install Utility Partition screen.
- **Execute Card Utilities:** When Configuration Assistant detects installed boards for which there are additional configuration utilities on the HP Navigator CD-ROM, you can execute these utilities to complete the configuration of the boards by selecting **Execute** on the Execute Card Utilities screen.

- **For Manual NOS Installation Only:** Before you perform a manual NOS installation, you must print out instructions and manually create NOS-specific drivers diskettes, as follows:
 - ◇ **Create Drivers Diskette(s):** On the Create Drivers Diskette(s) screen, select **Create Drivers Diskette(s)** to create one or more customized diskettes containing HP drivers and configuration files to use when you install the NOS.
 - ◇ **Print and Read Instructions:** On the Show NOS Installation Instructions screen, select **Save to Disk** to copy the *Network Operating System Installation Instructions* to disk. Then print them out from the disk. Read the instructions first, and then follow them to manually install the NOS.
- **Install NOS:**
 - ◇ **Automated NOS Installation:** For certain versions of Novell NetWare / IntranetWare or Microsoft Windows NT Server, Configuration Assistant partitions and formats the hard drive, and Installation Assistant guides you through the NOS installation and configures the NOS with the appropriate drivers for the HP-bundled configuration.
 - ◇ **Manual NOS Installation:** Follow the instructions on the screen and the *Network Operating System Installation Instructions* that you printed out.

Custom Configuration

In Custom configuration mode, you perform the same configuration steps as for Express configuration mode, but you can do them in any order. Select **Custom** on the Configuration Assistant menu if you are experienced in HP NetServer configuration and have a preferred sequence of steps, or if you prefer to configure your system one component at a time.

After you have selected the NOS, version, and NOS installation mode (automated or manual), and after you have viewed the Configuration Advisories, the Custom Configuration screen displays the following menu:

- Essential Steps:
 - ◇ **Configure Remote Management:** This utility configures the Integrated Remote Assistant device for improved remote management. It enables remote, dial-up server management. To configure Integrated

Remote Assistant, select **Configure Remote Management** on the Configure Remote Management screen.

- ◇ **Configure Disk Array:** If you have an HP disk array, you must configure it with the disk array utility. Select **Execute** on the Configure Disk Array screen.
- ◇ **Execute Card Utilities:** When HP Navigator finds installed boards for which there are additional configuration utilities on the CD-ROM, this option becomes available to complete the configuration of the boards. Select **Execute** on the Execute Card Utilities screen.
- ◇ **Install NOS** (in automated NOS installation mode), or **Create Drivers Diskette(s)** (in manual NOS installation mode).
- Recommended Steps:
 - ◇ **Update System BIOS:** Use this to update the system BIOS to the newer version on the HP Navigator CD-ROM.
 - ◇ **Install Utility Partition:** This step creates an 8 MB utility partition on the server hard disk where HP Navigator will copy Diagnostic Assistant, the BIOS update utility, the event log report utility, the disk array utility, the NIC configuration utility, the Remote Assistant utilities, troubleshooting utilities, and other utilities. It is not available for SCO UNIX. Select **Execute** on the Install Utility Partition screen.
 - ◇ **Show System Information:**
 - * Select **View System Information** on the Show System Information screen to display information about standard and accessory boards and devices in the system.
 - * Select **View Resources** on the Show System Information screen to display used and available system resources, such as memory ranges, I/O port ranges, DMA channels, and interrupt (IRQ) levels.
 - ◇ **Show NOS Installation Instructions:** Select this option and **Save to Disk** to copy the *Network Operating System Installation Instructions* to disk. Then print them out from the disk. Read the instructions first, and then follow them to manually install the NOS.

The NOS installation process, whether automated or manual, is the same as in Express configuration mode:

- **For Manual NOS Installation Only:** Before you perform a manual NOS installation, you must print out instructions and manually create NOS-specific drivers diskettes, as follows:
 - ◇ **Create Drivers Diskette(s):** On the Create Drivers Diskette(s) screen, select **Create Drivers Diskette(s)** to create one or more customized diskettes containing HP drivers and configuration files to use when you install the NOS.
 - ◇ **Print and Read Instructions:** You may already have done this directly from the Custom Configuration menu option **Show NOS Instructions**. If not, on the Show NOS Installation Instructions screen, select **Save to Disk** to copy the *Network Operating System Installation Instructions* to disk. Then print them out from the disk. Read the instructions first, and then follow them to manually install the NOS.
- **Install NOS:**
 - ◇ **Automated NOS Installation:** For certain versions of Novell NetWare / IntranetWare or Microsoft Windows NT Server, Configuration Assistant partitions and formats the hard drive, and Installation Assistant guides you through the NOS installation and configures the NOS with the appropriate drivers for the HP-bundled configuration.
 - ◇ **Manual NOS Installation:** Follow the instructions on the screen and the *Network Operating System Installation Instructions* that you printed out.

Replicate Configuration

In Replicate configuration mode, 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. Select **Replicate** on the Configuration Assistant menu.

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,

- View the information about TopTools for Servers on the HP Web Site at http://www.hp.com/go/netserver_mgmt.
- View information about HP Remote Assistant. On the HP Navigator CD-ROM, select **HP Management Solutions** on the Main Menu, and then select the desired option to learn more.

TopTools for Servers

HP TopTools for Servers is a browser-based management application that provides remote administration and monitoring of critical server components. TopTools provides vital information for quick and efficient troubleshooting and proactive management of HP NetServers. Processors, memory, storage, and NICs are a few examples of the components managed by TopTools.

Some of the features of TopTools include:

- Notification of system operators about problems with key hardware components, including memory, disk drives, SCSI controllers, NIC, and power supply, as well as environmental problems with temperature and voltage
- Unified event log to enable the system operator to review a complete history of server activity in one place
- Predictive disk problem warning backed by HP pre-failure warranty replacement.
- Disk capacity threshold alert and usage tracking
- View of critical server inventory information, such as BIOS version, driver and firmware versions, ISA and PCI slot contents, and serial and parallel ports
- Remote management capabilities enhanced with pcANYWHERE, providing full remote control of Microsoft Windows NT servers across the network or over a modem connection
- Easy linkage with leading management platforms
- Support for DMI 2.0, which provides the same Desktop Management Interface inventory information for HP NetServers as for desktop PCs

TopTools is included with every HP NetServer L series server and should be installed to help your service provider troubleshoot your system. TopTools is located on HP Navigator CD-ROM versions L.11.00 and beyond.

- If your system came with this version of the CD-ROM, then TopTools is located on the CD-ROM. See the *TopTools Administrator Guide* for detailed installation instructions.
- If you would like the latest version, please download the TopTools software and documentation from the HP NetServer Web Site at

http://www.hp.com/go/netserver_mgmt

See the *TopTools Administrator Guide* on the HP Web Site for detailed installation instructions.

Integrated Remote Assistant

Integrated Remote Assistant is a separate management controller built into your HP NetServer LC 3. It enables remote modem-based server management and alerting through a pager for improved remote administration of your HP NetServer. Integrated Remote Assistant provides:

- Console redirection, independent of server state
- Access regardless of system state for troubleshooting and problem resolution
- Pager notification of critical server events to alert you earlier to problems
- Access to the server event log
- Server reset and power control
- Remote BIOS update
- Password and dial-back security

See the *HP NetServer Remote Administrator Guide* for details.

pcANYWHERE

pcANYWHERE is remote-control graphics-redirection software that can manage Microsoft Windows NT servers across the network or over a modem. Refer to Information Assistant in the HP Navigator CD-ROM for details.

Information Assistant

HP NetServer Information Assistant, located on the *HP NetServer Online Documentation CD-ROM*, gives you access to relevant HP NetServer documentation. It includes user and service guides in online format, and these can be viewed on screen or printed. You can get specifics about system and accessory installation, Network Operating Systems, troubleshooting, error messages, part numbers, replacement information, and more.

Information Assistant allows you to search, display, and print a topic or series of topics. Also, the information is available in a print-file format, so you can print whatever you need.

For more information on installing and using HP Information Assistant, see Chapter 3, "HP Information Assistant."

HP NetServer Utilities

The HP NetServer Utilities application displays a menu where you can directly execute utilities, such as the following:

- **Diagnostic Assistant:** Provides an easy-to-use hardware diagnostic for system verification, burn-in, and rapid troubleshooting.
- **Diskette Library:** Allows you to conveniently generate any flexible diskette available on the HP Navigator CD-ROM. For example, you can create the following diskettes: BIOS Update, NOS Drivers, and Diagnostic Assistant.
- **Event Log Reporting Utility:** Displays all logged server management events, Power-On Self Test (POST) errors, and other system events.

NOTE This log should be checked on a regular basis.

- **Print or View Information:** Allows you to print or view the current system configuration, including details of which boards are detected in the system and which resources are allocated to the boards.
- **System BIOS Update Utility:** Allows you to update the BIOS of your HP NetServer.

User Preferences

User Preferences lets you change the language and the system date and time. You can also change the language of the BIOS.

3 HP Information Assistant

Overview

The *HP NetServer Online Documentation CD-ROM* includes Information Assistant, which contains the entire set of documentation for your NetServer.

Information Assistant provides a quick and efficient means to locate information about installing, managing and servicing your NetServer. It has relevant documentation on the NetServer and accessories; important information on your NOS; and reference information, such as functional descriptions and technical papers to help you better understand your NetServer and make choices compatible with your network.

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

Audience Assumptions

Information Assistant is for the person who installs, administers, and troubleshoots network servers. It contains basic, intermediate, and advanced information to allow the user to set up, configure, and perform maintenance service on the NetServer. Hewlett-Packard Company assumes users of Information Assistant are qualified in the operation of computer equipment and trained in recognizing hazards in products with hazardous energy levels.

Using Information Assistant

You can get to Information Assistant in either of two ways:

- From the *HP NetServer Online Documentation* Main Menu after inserting the CD-ROM disk in the reader
- 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

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.

Install Information Assistant from the *HP NetServer Online Documentation CD-ROM* as an application program on a Windows client machine (see "Installing HP Information Assistant Software" below).

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 many ways to navigate through its topics and locate information. For example, you can:



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



Search for a word or phrase using Search. The Search button performs full-text searches for topic text. It 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 Product button. Each button represents a product or group of products. Press the button of the product you want to learn about.



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 navigate between topics by using hot spots and by using the History button to revisit previously viewed topics. For example:

- **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. Identify hot spots on graphics 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 text for any topic in Information Assistant for use in other applications, such as word processors. Simply copy the desired text onto the Windows Clipboard and paste it 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 all of the topics in a product book.

After selecting the print option, the Windows Print dialog box appears. Print options vary with the capabilities of your printer.

Installing HP Information Assistant Software

HP Information Assistant runs on a PC running Windows 3.1 and above, Windows 95 or Windows NT. Install it from the *HP NetServer Online Documentation CD-ROM* onto the client system that will manage the NetServer.

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 Information Assistant onto a Windows PC from the *HP NetServer Online Documentation CD-ROM*, perform these steps:

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

where drive is the letter of the CD-ROM drive.

6. Follow the instructions that appear on your screen.

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

4 Accessories

Installing Accessories

If you are installing an ISA non-plug-and-play accessory board, follow the directions in the *HP NetServer LC 3 Installation Road Map*. If it is not available, refer to Information Assistant. Refer to "Configuring ISA Non-Plug-and-Play Board" in this chapter to reserve system resources for the board.

If you are installing additional memory (DIMMs), PCI accessory boards, or SCSI mass storage devices follow the instructions in the *HP NetServer LC 3 Installation Road Map*. If it is not available, refer to Information Assistant.

The backplane in the HP NetServer LC 3 has five PCI-only slots and one combined ISA/PCI slot for accessory boards. They are numbered 1-6 from left to right, as viewed from the rear of the HP NetServer.

- Slot 1 is the combined ISA/PCI slot.
- An optional disk array controller board (DAC) may be preinstalled in Slot 5.
- Slot 6 contains a network interface controller board (NIC).

The HP NetServer LC 3 chassis contains three hot-swap mass-storage slots and one open shelf for installation of an optional hard disk.

- Shelf 1 contains a flexible disk drive.
- Shelf 2 contains an IDE CD-ROM drive.
- Shelf 3 can be used to install either a hard disk drive or another accessory.
- The hot-swap subsystem occupies the lower area of the front panel. It can hold up to three hot-swap disk drive modules.

Configuring ISA Non-Plug-and-Play Board

If you installed an ISA non-plug-and-play accessory board (such as certain modem boards, network interface boards, or multi-port boards) in an HP NetServer, you must reserve system resources for the board by using the Setup utility.

1. Read the documentation for the accessory board and determine what system resources it requires. These resources may include memory range, I/O port range, DMA channel, and interrupt (IRQ) level. For some resources there may be one value, or several values from which you may select by configuring jumpers or switches on the board. A board may not require resources from all of these categories. If the documentation for the board does not discuss some of these resources, they may not be required, and need not be reserved.
2. Turn on power to the HP NetServer and display monitor.
3. When you see the message
"Press <F2> to enter SETUP"
appear on the display monitor, press the F2 function key.
4. If a password has been set, provide it when prompted.
5. When the Setup Utility menu is displayed, use the left and right arrow keys to select the **Configuration** menu.
6. Use the up and down arrow keys to highlight **ISA non-Plug-and-Play Devices**, and press ENTER to select that submenu.
7. Use the up and down arrow keys to highlight **Memory Resources**, and press ENTER to select that submenu.
8. Use the up and down arrow keys to highlight the memory block that corresponds to the memory range required for the ISA board you are installing, and press the + or - key on the keypad to reserve it. If the memory range required for a board spans two or more blocks shown on the screen, reserve all blocks required by the board. If the memory range required for the board is less than one block, select the whole block that contains the range.
9. When all the necessary memory blocks are reserved, press ESC to return to the ISA non-Plug-and-Play Devices submenu.
10. Use the up and down arrow keys to highlight the **DMA Resources** item, and press ENTER to select that submenu.

11. Use the up and down arrow keys to select the DMA channel that corresponds to the DMA channel required for the ISA board you are installing, and press the + or - key on the keypad to reserve it. Reserve all DMA channels needed for the board.
12. When all the necessary DMA channels are reserved, press ESC to return to the ISA non-Plug-and-Play Devices submenu.
13. Use the up and down arrow keys to highlight **I/O Resources**, and press ENTER to select that submenu.
14. Use the up and down arrow keys to highlight the I/O port block that corresponds to the I/O port range required by the board you are installing, and press the + or - key on the keypad to reserve that block. If the I/O port range required for the board spans two or more blocks shown on the screen, reserve all blocks required by the board. If the I/O port range required for the board is less than one block, select the whole block that contains the range.
15. When all the necessary I/O port blocks are reserved, press ESC to return to the ISA non-Plug-and-Play Devices submenu.
16. Use the up and down arrow keys to highlight **Interrupt Resources**, and press ENTER to select that submenu.
17. Use the up and down arrow keys to highlight the IRQ that corresponds to the IRQ required for the board you are installing, and press the + or - key on the keypad to reserve that IRQ. Reserve all IRQs needed for the board.
18. When all the necessary IRQs and other resources are reserved, press the F10 function key to save and exit.
19. In the Setup Confirmation dialog box, press ENTER to answer "Yes" to the question, "Save configuration and exit now?" The HP NetServer will reboot.

NOTE

If you change your mind and want to exit the Setup utility **without** making the changes you have selected, press ESC once or twice to return to the Setup Utility menu. Use the right arrow key to select the **Exit** menu. Use the down arrow key to highlight **Exit Discarding Changes**. In the Setup Warning dialog box, use the spacebar or right arrow key to highlight **No**. Press ENTER to answer "No" to the question, "Configuration has not been saved! Save before exiting?"

Upgrade Video Memory

You can upgrade video memory from the standard 1 MB to the optional 2 MB. To do so, the following steps are necessary:

WARNING The video memory upgrade chips must be oriented correctly, and it is possible to insert them into their sockets backwards (turned by 180 degrees). Doing so will cause the chips to fail, and may create an overtemperature hazard on the board.

Open the top cover and remove the system board. (See "Remove the System Board" in Chapter 1 of this Guide). Follow directions that accompany the video memory chips available separately. See Figure 4-1.

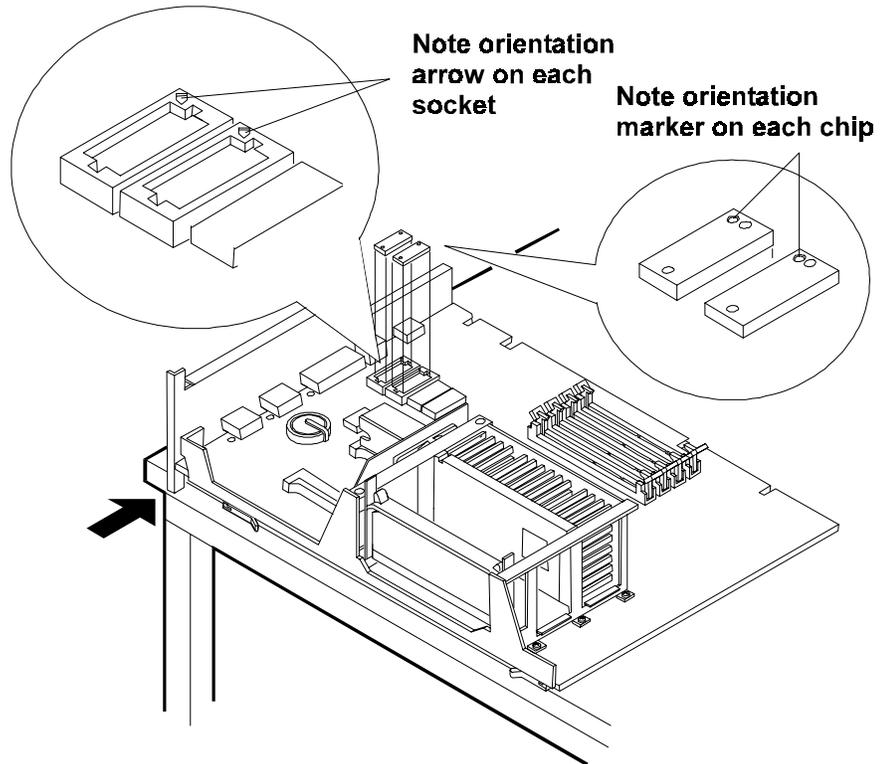


Figure 4-1. Upgrade of Video Memory

5 Installation in Rack (Optional)

Rack Installation Overview

Before you install the HP NetServer in a rack assembly, install any optional hardware in the HP NetServer. You can configure the HP NetServer before or after you install it in the rack. Before you start, read the rack installation kit instructions.

In general the steps to prepare for mounting the HP NetServer in a rack assembly are as follow:

- Remove the rack from the shipping carton and assemble the rack enclosure(s).
- Tie together any multiple rack enclosures.
- Plan the order of installation for all units in the rack enclosure.
- Install the power distribution unit or units (PDU), the optional fan, ballast, and uninterruptible power supply (UPS) (if you have any of these options) in the rack enclosure.
- Install all units in the rack enclosure that are below the level of the HP NetServer LC 3.
- Install the base assembly that will hold the HP NetServer LC 3, as described in the rack installation kit instructions. Instructions for one rack type are included in this chapter
- Ensure that the anti-tip foot of the rack enclosure is extended.

Remove the front bezel and all covers from the HP NetServer LC 3. If the HP NetServer is mounted on an anti-tip pedestal, remove it as shown below.

CAUTION	Do not operate the HP NetServer LC 3 with its covers removed. Doing so interrupts the cooling air flow and may cause overtemperature problems.
	Once mounted in the rack, all covers are to be replaced.

Pedestal Removal

An anti-tip pedestal is shipped with each LC 3.

You must remove the anti-tip pedestal (if it is installed) from the HP NetServer before you install it in a rack assembly. You may also need to remove it to facilitate shipping the HP NetServer. To remove the pedestal, first remove the HP NetServer covers, and then detach the pedestal and lift the HP NetServer off it, as described in "Remove Covers" and "Remove Pedestal" below.

After the pedestal is removed, you may mount the HP NetServer in a rack assembly, as instructed in the next section of this chapter.

- If you are shipping the NetServer to another location, before packing it, replace all covers and the front bezel. See "Replace All Covers . . ." in Chapter 1, "Installation Overview."

Remove Covers

1. Turn off the HP NetServer, and disconnect the power cord and all other cables.
2. Remove the front bezel, top cover, and one or both side covers, as described in Chapter 1: "Installation Overview."

Remove Pedestal

1. Depress the two plastic buttons that protrude through the metal base plate of the HP NetServer, as shown in Figure 5-1.

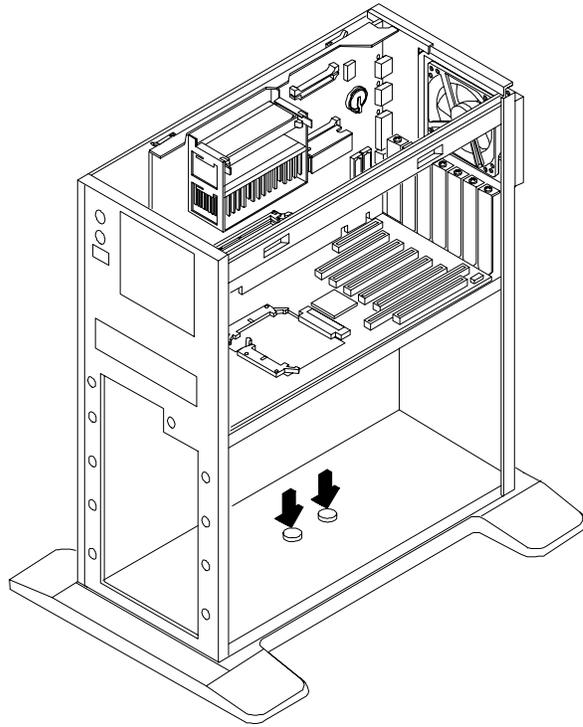


Figure 5-1. Depress the Two Plastic Buttons

2. Hold down both plastic buttons, and slide the HP NetServer forward on the pedestal, as shown in Figure 5-2, to disengage the hooks holding the pedestal.

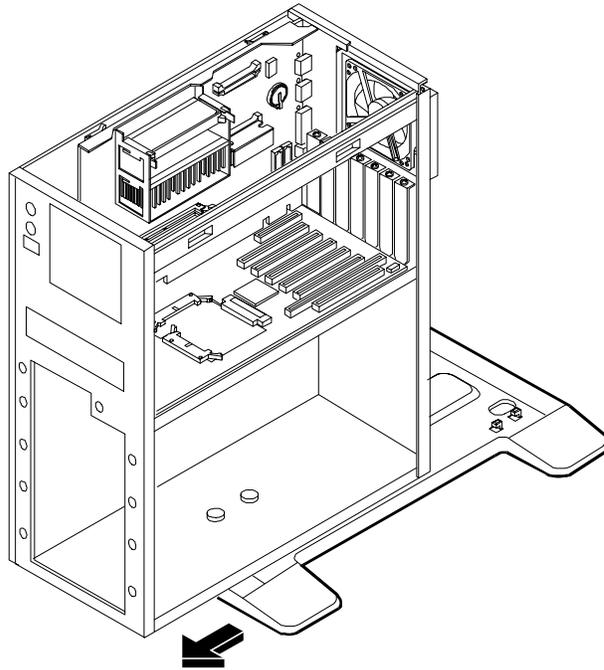


Figure 5-2. Slide the HP NetServer Forward

3. Lift the HP NetServer off the pedestal.

Rack Installation Instructions for the HP NetServer LC 3

NOTE

The instructions which follow are specifically for the "HP Systems" rack enclosure, product number 1487A and 1487A option AXH. For information on other rack installations, see the rack mount kit instructions that come with your rack or NetServer, or refer to the following website:

<http://www.hp.com/enclosures>

To mount the LC 3 in an "HP Systems" rack enclosure, use the rack mount kit.

1. Determine the baseline of the LC 3 base assembly. See Figure 5-3.

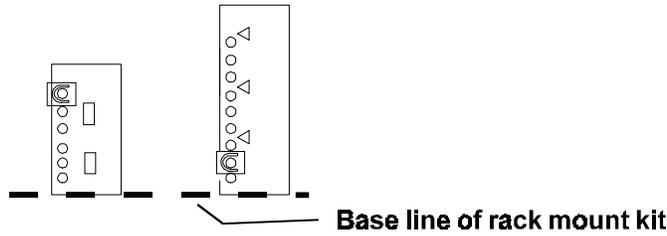


Figure 5-3. Map of Rack Nut Positioning for LC 3 base

2. Attach rack nuts to the inside face of all four vertical columns. The nuts should be positioned six holes above the base line of the unit as shown in Figure 5-3. (One type of rack may require a spacer as well, see documentation which accompanies your rack and rack mount kit for more information.)
3. Attach a rack nut on each of the outside faces of both front columns at the second hole up from the baseline of the unit.
4. Start a screw two turns in both of the rack nuts (or spacers) on the rear inside columns.
5. Tilt the base assembly (to avoid hitting its sides on the columns) and move it into position. Align the rear slots of the base assembly with the screws started in the rear columns (or spacers) in the previous step. Rest the base assembly on these screws and push rearward until the front of the base is against the front columns.
6. Insert screws through slots on the front of the base assembly and into the rack nuts positioned in step 2.
7. Tighten all four of the screws to secure the base assembly to the rack columns.
8. If you are mounting two NetServers at the same level, skip ahead to step 11.

If you are mounting only one NetServer, mount it on the right and fill the remaining opening in the rack front with the large filler panel provided. To do so, use the large filler panel as a template to place rack nuts in the correct holes of the left vertical column at the top and bottom of the panel. Insert cosmetic screws through the panel and into the rack nuts.

9. Insert one M4 button-headed screw through the filler panel and into the threaded insert in the sliding shelf of the base assembly.
10. Insert one cosmetic screw through the flange on the left sliding shelf and into the rack nut you positioned there in step 3.
11. Prepare each HP NetServer LC 3 for mounting in the rack.

WARNING	Extend the anti-tip foot from the front lower section of the rack before placing the LC 3 on the base assembly. Also ensure the leveler screws at each corner are in firm contact with the floor.
----------------	---

- ◇ Turn off and disconnect the HP NetServer from power and telephone.
- ◇ Remove the covers of the LC 3 as discussed in Chapter 1, "Remove the Covers."

WARNING	Always disconnect the power cord and unplug telephone cables. Doing so prevents any possibility for electrical burns or exposure to high energy levels.
----------------	---

12. Be sure the anti-tip foot and the leveler screws are fully extended to prevent the rack from rolling away or tipping over. Get help to lift the NetServer onto the right side of the extended base unit, as shown in Figures 5-4 and 5-5.

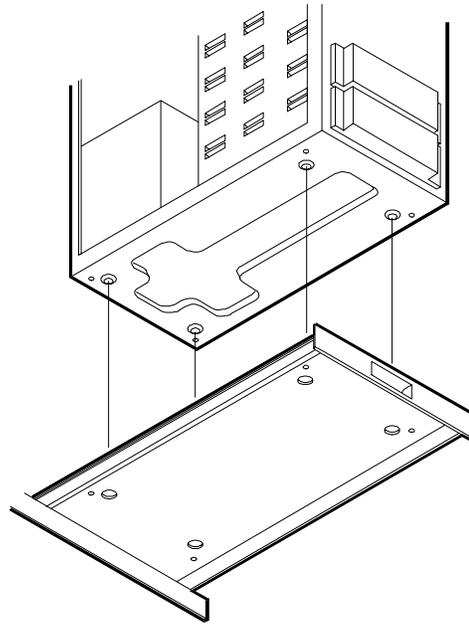


Figure 5-4. Lift the LC 3 onto the Base Unit (View from Underneath)

13. Insert four M4 type screws through the server chassis and into the threaded inserts in the base unit. Figure 5-5 illustrates placement and screws.

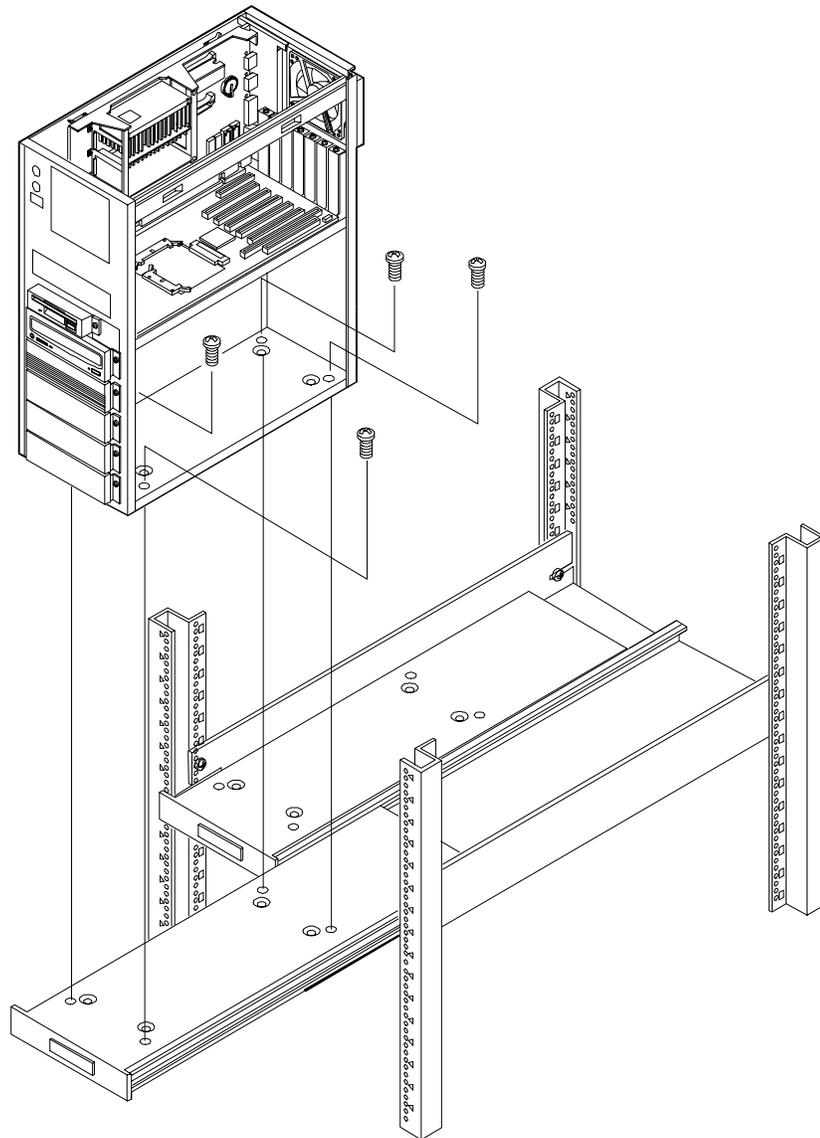


Figure 5-5. Alignment of LC 3

14. Re-install the side covers, top cover, and front bezel. Doing so assures proper air flow and cooling. See the section entitled "Replace All Covers" in Chapter 1.

15. One of the narrow filler panels which come with the rack mount kit is to be attached at the right side of the server. Use the panel to determine the location of rack nuts to mount it. Place the rack nuts at the correct location and fasten the filler panel to the right front column of the rack.
16. If you are installing two LC 3 units, slide the first unit mounted completely into the rack and secure it using cosmetic screws. Repeat steps 11 - 16 to install the second unit.
17. After completing the installation of the left unit, place the narrow left filler panel against the rack, position the rack nuts, and attach the filler panel to the rack. Use two cosmetic screws to attach the sliding base to each side of the rack front column.

PDU Placement and Power Cabling

The HP NetServer LC 3 employs a wide ranging power supply, which can receive input voltages in the range of 90 - 240 VAC.

The PDU can be located behind the unit without interfering with cabling or access.

Plug one power cable into each LC 3 and into the nearest power distribution unit.

Creating the Cable Management Loop for the LC 3

The LC 3 requires a cable management loop of 30 inches (75 cm) for the server on the right, and 38 inches (95 cm) for the server on the left, assuming the Cable Guide is installed on the left rear vertical column. If the Cable Guide is to be mounted on the right rear column, reverse the lengths of the cable management loops, using 30 inches (75 cm) for the left and 38 inches (95 cm) for the right.

Route data cables through the Cable Guide and attach each cable to its respective component.

6 Troubleshooting

Precautions

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. Note that the power switch does NOT turn off the standby power. Disconnect the power cord from the HP NetServer before handling components.
----------------	---

CAUTION	Replace ALL covers before operating the HP NetServer, even for a short time. Otherwise, overheating can damage chips, boards, and mass storage devices.
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Troubleshooting Tools

If you are having problems installing your HP NetServer, there are a number of different tools available for troubleshooting:

- HP NetServer Information Assistant (see Chapter 3) contains the following tools:
 - ◊ Troubleshooting Information
 - ◊ Parts Information
 - ◊ List of Error Messages and Beep Codes
- HP Navigator contains HP NetServer Utilities. At the Main Menu, select "NetServer Utilities" to use the following tools:
 - ◊ **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.

- ◊ **More NetServer Utilities>>Diskette Library:** Enables you to conveniently generate any flexible diskette available on the HP Navigator CD-ROM. For example, you can create the following diskettes: BIOS Update, NOS Drivers, and Diagnostic Assistant.
- For problems with hard disk drives, refer to the *HP NetServer Hard Disk Drive Troubleshooting Guide*.
- For problems with Integrated Remote Assistant, refer to the *HP NetServer Remote Administrator Guide* or Information Assistant.
- For problems with the network interface controller board (NIC), refer to its documentation in Information Assistant.
- For problems with the disk array controller board (DAC), if you have one, refer to the *HP NetRAID Series User Guide for HP NetRAID and HP NetRAID-1* in Information Assistant.
- For problems with HP TopTools, refer to the *HP TopTools Administrator Guide* on the HP Web Site at
<http://www.hp.com/toptools> .
- For general information on management products, refer to
<http://www.hp.com/go/netserver>
and search for "management."

Common Installation Problems

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

If the System Will Not Power On

Follow these steps if the power/activity light does not light green after you press the power-on button:

1. Check to ensure that all cables and power cords are firmly plugged into their proper receptacles.

2. If the HP NetServer is plugged into a switched multiple-outlet box, make sure the switch on the outlet box is turned on.
3. Plug a different electrical device (such as a printer) into the power outlet, and turn it on to check if the fault is with the power supply.
4. Unplug the power cord, wait 20 seconds, plug the power cord in again, and restart the system.

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.
- If it is a network-related error, determine if the HP NetServer 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.
- Unplug the power cord, wait 20 seconds, plug the power cord in again, and restart the system.

NOTE If the HP NetServer has a large amount of memory installed, it may take one minute for the first screen to display.

If you suspect a hardware error, follow these steps:

1. Log users off the LAN and power down the HP NetServer. Remove the front bezel, top cover, and side cover.
2. Simplify the HP NetServer LC 3 configuration to the minimum required: a monitor, one flexible disk drive, one CD-ROM drive, keyboard, mouse, and a NIC in slot 6. Remove all third-party options, and reinstall one at a time, checking the system after each installation.
3. Replace all covers, and reconnect the power cord and other cables.

4. Restart the system. If the system does not function, refer to one of the following sections, depending upon whether an error message is displayed:
 - ◇ "Error Message Is Displayed"
 - ◇ "No Error Message Displayed"
5. If the system still will not restart, clear the system configuration memory and restart the system, as described in "Clearing the System Configuration."

Error Message Is Displayed

There are two kinds of error messages that may prevent the HP NetServer from booting. These are:

- Highlighted error messages (white text on gray background). Press ENTER to see a definition of the message and what action to take to remedy the problem.
- Error messages displayed in normal video.

If an HP NetServer configuration error is reported during the startup routine, clear the system configuration memory and reconfigure as described under "Clearing the System Configuration," and restart the HP NetServer.

Power-On System Hardware Test Error Messages

If an error occurs during the power-on system hardware test (POST) when the HP NetServer starts, press ENTER to view system error to display details of the error. Follow the instructions on the screen. Correct the error before proceeding, even if the HP NetServer appears to start successfully.

If the HP NetServer starts, but the power-on system hardware test still reports an error message, clear the system configuration memory, as described in "Clearing the System Configuration."

The following table describes common errors and the corrective action you may take to remedy the problem:

Message	Corrective Action
Operating system not found	<p>Check whether the drive from which you are booting has the power and SCSI flat cables connected. Verify that the SCSI cable is securely plugged into the SCSI controller board. Narrow (50-pin) SCSI devices require the wide-to-narrow SCSI adapter with the white body on the SCSI cable.</p> <p>Check that the boot device is enabled in the Hardware Security submenu under the Security menu of the Setup utility. If possible, check the drive by moving it to another system. If the problem persists, contact your HP support organization.</p> <p>Verify that the boot device has an operating system installed.</p>
Keyboard error	<p>Check that the keyboard is connected to the correct connector (not the mouse connector) at the rear of the system.</p> <p>Replace the keyboard. If the problem persists, contact your HP support organization.</p>
Mouse error	<p>Check that the mouse is connected to the correct connector (not the keyboard connector) at the rear of the system.</p> <p>Replace the mouse. If the problem persists, contact your HP support organization.</p>
Incorrect System Configuration	<p>Press the F2 key to run the Setup utility. Change settings as required. Press the F10 function key to exit, and answer "Yes" to save the changes.</p>

No Error Messages Displayed

If a POST error is detected before video display starts, a beep error message may be generated. If so, refer to the list of Beep Codes in Information Assistant.

General Checks

1. All external cables and power cables are firmly plugged in.
2. The power outlet is working.

3. The computer and display are turned on. (The power-on indicator should be illuminated.)
4. The display's contrast and brightness settings are correct.
5. All internal cables are properly connected, and all boards are firmly seated.
6. Check that the system board is fully seated in the backplane slot and that the retaining latches at the top of the system board are fully lowered.
7. Check that the primary CPU module is fully seated in the lower (primary) CPU socket on the system board. Also check that the system board retaining latches are fully latched.
8. Check that either a terminator board or the second CPU module is fully seated in the upper (secondary) CPU socket on the system board. Also check that the system board retaining latches are fully latched.
9. Check that the voltage regulator module (VRM) is fully seated in the lower VRM socket on the system board. If two CPU modules are installed, check that both VRMs are fully seated. See the Technical Reference Label inside the top cover for the location of the VRM(s).

NOTE A VRM module is required for each CPU module installed. Install a VRM next to each installed CPU.

After Installing an Accessory

1. Turn off the display, the computer, and any external devices.
2. Unplug all cables from the power outlet.
3. Remove the front bezel, top cover, and side cover. Raise the system board if you need access to Slots 5 and 6 on the backplane.
4. Check the following:
 - ◇ If you have installed an accessory board, check that the board is firmly seated in its slot and that any switches or jumpers on the accessory board are properly set. (Refer to the manuals that came with the board.)
 - ◇ Check that the CPU, terminator board, and VRM are seated properly in their correct positions, as listed above in "General Checks."

- ◇ Check that all DIMMs are HP-supplied and are seated properly. The boot screen provides information on the installed DIMMs.
 - ◇ Check all internal cabling and connections.
 - ◇ If you have changed any switches on the system board, check that they are properly set.
5. Lower the system board if it was raised and lower the retaining latches simultaneously. Replace the covers and front bezel, and connect all cables.
 6. Turn on the display and HP NetServer.
 7. If the HP NetServer still does not work:
 - ◇ Repeat steps 1, 2, and 3 of this section.
 - ◇ Remove all accessories, except the primary boot hard disk drive.
 - ◇ Replace the covers and connect all cables.
 - ◇ Turn on the display and the HP NetServer.
 - ◇ If the HP NetServer now works, replace the boards and accessories one at a time to determine which one is causing the problem.

Clearing the System Configuration

You may need to clear the system configuration if the configuration has been corrupted by a program, or if incorrect settings made in the Setup utility have made the display unreadable.

3. Plug in the power cord, and turn on power to the HP NetServer. The message

```
Configuration has been cleared, set Clear Config  
switch to the OFF position before rebooting
```

is displayed.
4. Turn off power to the HP NetServer, and unplug the power cord.
5. Return switch 5 on the system board to the OFF position.
6. Replace the system board, the top cover, and the front bezel, and plug in the power cord.
7. Turn on power to the HP NetServer. The error message

```
0012-34 : Incorrect System Configuration
```

may be displayed. If the error message above is displayed, it is followed by the explanation

```
The BIOS has detected a serious problem that  
prevents your PC from booting
```

This is normal.
8. Press the F2 key to run the Setup utility.
9. Make any configuration changes that are required.
10. Press the F10 function key and answer "Yes" to save the configuration and exit the Setup utility.

Hardware Problems

This section describes what to do if you have problems with your display, mass storage devices, printer, accessory boards, keyboard, or mouse.

The Display Does Not Work

NOTE	If the HP NetServer has a large amount of memory installed, it may take one minute for the first screen to display.
-------------	---

1. If nothing is displayed on the screen, but the computer starts and, the keyboard, flexible disk drive, other disk drives, and other peripheral devices seem to operate properly, do the following:
 - ◇ Check that the monitor is plugged in and power is turned on.

- ◇ Check that the brightness and contrast controls of the display are properly set.
 - ◇ Check that the display video cable is securely connected to the computer.
 - ◇ Turn off the display and computer, and unplug them from the power outlet. Disconnect the video cable from the computer and examine the video cable connector pins to see if they are bent. If they are, carefully straighten them. Reconnect the video cable and all power cords, and turn on the display and computer.
 - ◇ If you have manually configured any accessories, verify that none use the same I/O address as the integrated video interface (03B0h to 03DFh). Refer to the documentation supplied with the accessories you configured for more information.
2. If the display image does not align with the screen (usually after you have changed the resolution), use the display's controls to center the image. Refer to the display's manual for information about the controls.
 3. If the screens generated by the applications do not look right, check the application manual to find out which video standard is required.
 4. If the screen goes blank after the HP NetServer has booted, contact your HP support organization.
 5. If the screen is blank, video blanking may be enabled. If the keyboard lock LED is illuminated, type the password to disable video blanking.
 6. If a video board is installed in an accessory slot, contact the manufacturer of the video board.

The Keyboard or Mouse Does Not Work

1. Check that the keyboard and mouse are connected to the correct sockets. Refer to the I/O panel label on the rear panel of the HP NetServer.
2. For a mouse error, check that the mouse is configured correctly in the Pointing Devices submenu under the Integrated I/O Ports submenu under the Configuration menu in the Setup utility.
3. If the screen is blank and the password is enabled, type the password.
4. Clean the mouse ball and rollers by using a lint-free cloth.
5. If the screen is blank, video blanking may be enabled. If the keyboard lock LED is illuminated, type the password to disable video blanking.

The CD-ROM Drive Does Not Work

1. Check that a CD-ROM is inserted in the drive.
2. Check that the power and data cables are correctly connected to the device.
3. If you intend to boot from the CD-ROM, make sure that **Start from CD-ROM** is enabled in the Hardware Security submenu located under the Security menu in the Setup utility.
4. For further information, see your CD-ROM documentation.
5. If the screen is blank, video blanking may be enabled. If the keyboard lock LED is illuminated, type the password to disable video blanking.

The Hard Disk Drive Does Not Work

If error messages displayed on the monitor indicate a hard disk failure, perform these checks:

1. Verify that the power cable is securely connected to the drive, and that the flat SCSI cable is securely connected to the drive and to the SCSI connector on the backplane. For a narrow (50-pin) SCSI device, use the wide-to-narrow SCSI adapter with the white body on the HP NetServer SCSI cable.
2. Check that all SCSI devices have unique SCSI IDs. Refer to the *HP NetServer LC 3 Installation Road Map*, the Technical Reference Label on the inside the top cover, or Information Assistant for more details on setting SCSI IDs. Also be sure to check the SCSI IDs of the hot-swap subsystem.
3. If you intend to boot from the hard disk drive, make sure that **Start from Hard Disk** is enabled in the Hardware Security submenu located under the Security menu in the Setup utility. Also verify that the SCSI ID of the hard disk drive is correct for booting.
4. Refer to the *HP NetServer Hard Disk Drive Troubleshooting Guide* on the HP Web Site at <http://www.hp.com/netserver/servsup/trouble/>.

Password Problems

If you have forgotten the password, your HP NetServer will function normally, but you will not be able to change the system configuration settings in the Setup utility. To reset the password:

1. Turn off power to the HP NetServer, and unplug the power cord.
2. Remove the front bezel and top cover.
3. Refer to Figure 6-1, and move switch 6 on the system board (labeled "Clear Password") to the ON position.
4. Plug in the power cord, turn on power to the HP NetServer, and allow it to complete its startup routine. The old password will be erased.
5. Turn off power to the HP NetServer, and unplug the power cord.
6. Return switch 6 on the system board to the OFF position.
7. Replace the top cover and front bezel.
8. Plug in the power cord, turn on power to the HP NetServer, and allow it to complete its startup routine.
9. If you wish to set the password again, during the power-on system hardware test press the F2 function key to start the Setup utility.
10. Set the new password in the Security menu.
11. Press the F10 function key and answer "Yes" to save the configuration, including the new password, and exit the Setup utility.

Battery Problems

If your HP NetServer repeatedly loses its configuration or the CPU clock stops, you should replace the battery or install an auxiliary battery.

WARNING

There is a danger of explosion if the battery is incorrectly installed. For your safety, never attempt to recharge, disassemble, or burn the old battery. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries safely.

To Install a Replacement Battery

1. Turn off power to the HP NetServer, and unplug it.
2. Remove the front bezel and top cover.
3. Remove the old battery, which is shown in Figure 6-2.

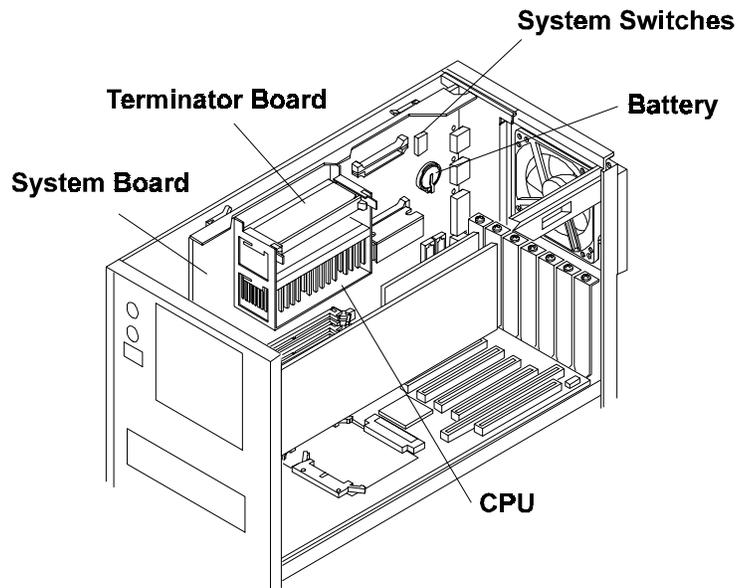


Figure 6-2. Battery on System Board

4. Insert the new battery with the positive sign (+) facing out, and ensure that it is seated completely. Make sure that the retaining clip is in place, and holds the battery firmly.
5. Replace the top cover and the front bezel, and reconnect the power cord.
6. Secure the auxiliary battery.
7. Remove the old battery, which is shown in Figure 6-2.
8. Replace the top cover and the front bezel, and reconnect the power cord.

A Specifications

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

Environment

Temperature

Operating	5° C to 35° C (41° F to 95° F)
Non-operating	-40° C to +65° C (-40° F to +149° F)

Humidity (noncondensing)

Operating	20% to 80% relative humidity
Non-operating	5% to 95% relative humidity

Altitude

Operating	-30 to 3,045 m (10,000 ft)
Non-operating	-30 to 12,180 m (40,000 ft)

Minimum Clearance

Front	1 m (39 inches)
Sides	7.5 cm (3 inches) from pedestal
Top	5 cm (2 inches) from pedestal
Back	15 cm (6 inches) from fan housing

Weight and Dimensions

System Processing Unit (SPU)

Height	552 mm (21.7 in) without pedestal
	568 mm (22.3 in) with pedestal
Width	217 mm (8.5 in) without pedestal
	346 mm (13.6 in) with pedestal
Depth	527 mm (20.7 in) with or without pedestal
Weight	21-28 kg (46-60 Lb) with pedestal
	Weight excludes monitor and keyboard.
System footprint	0.12 m ² (1.28 ft ²) without pedestal
	0.20 m ² (2.11 ft ²) with pedestal
	0.84 m ² (8.34 ft ²) with pedestal and all clearances

Keyboard

Height	35 mm (1.4 in)
Width	467 mm (18.4 in)
Depth	198 mm (7.8 in)
Weight	1.9 kg (4.2 Lb)

Cable Length

Keyboard cable	2 m (6.6 ft)
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Power Supply

AC voltage setting switches found in other file servers are not needed in this equipment. Voltage selection for your server is automatically determined by the power supply.

The power cord set found in your shipping box has been approved for use in the country where the server was purchased. If any other power cord set is used, it must meet appropriate safety requirements in the country in which the server is to be used.

General Cord Set Requirements

Cord set approved or recognized by safety agency in country of use

125 V AC, 10 A

250 V AC, 10 A

Maximum length: 2.4 m (8 ft)

Power Supply Input Requirements

100 to 127 VAC, 6 A

200 to 240 VAC, 3 A

50 / 60 Hz

Power Requirements

470 watts maximum

Power Supply Output

350 watts maximum

Heat Output

1604 BTU/hr maximum

Acoustic Emissions

Sound Level: (LpA) < 50 dB(A) bystander position

B Regulatory Information

Regulatory Notices - Electromagnetic Compliance

Electromagnetic Compatibility (EMC) requirements have been established in many countries to regulate the radio frequency energy generated by Information Technology Equipment (ITE). This energy is generated during the normal and intended use of this equipment and so it is limited by country regulations to levels intended to minimize potential interference to other electrical equipment, including public safety services.

Two levels of radio frequency energy are allowed according to the type or use of equipment. Class A levels have been established for use in commercial or business environments. Class B levels are lower than the class A requirement and have been established for use in residential environments. Class B levels are also suitable when the environment includes electrically sensitive equipment.

The server equipment you have purchased has been provided with a compliance label to indicate where it may be used with reasonable protection to the environment in which it is used. Additional statements are provided below as required by the requirements of international and domestic regulations.

NOTE Check the label on your product to determine the level of operation.

Notice for United States (Federal Communications Commission)

Class B Equipment

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 Equipment

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.

Class A Accessories

Installation and use of a Class A accessory creates a system that meets the requirements for industrial and commercial environments. If you are installing a class A accessory in a system that has been labeled as a class B product, the requirements and notice for class A equipment shall be applied.

Notice for Canada (Industry Canada)

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

Cet appareil numérique respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Notice for Japan

The configuration of the server you have purchased may be in either the class A or class B category.

For products labeled as Class B:

This equipment is in the Class B category information technology equipment based on the rules of Voluntary Control Council For Interference by Information Technology Equipment (VCCI). Although aimed for residential area operation, radio interference may be caused when used near a radio or TV receiver.

Read the instructions for correct operation.

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラスB情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると受信障害を引き起こすことがあります。
取り扱い説明書に従って正しい取り扱いをして下さい。

For products labeled as Class A:

This equipment is in the Class A category information technology equipment based on the rules of Voluntary Control Council For Interference by Information Technology Equipment (VCCI). When used in a residential area, radio interference may be caused. In this case, user may be required to take appropriate corrective actions.

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

Notice for Korea

The configuration of the server you have purchased may be in either the class A or class B category.

Class A Equipment :

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

Class B Equipment :

Please note that this equipment has been approved for non-business purposes with regards to electromagnetic interference. This equipment can be allowed for use in all areas as well as residential areas.

A급 기기 :

이 기기는 업무용으로 전자파 장애검정을 받은 기기이오니 판매자 또는 사용자는 이점을 주의하시기 바라며, 만약 잘못 구입하셨을 때에는 구입한 곳에서 비업무용으로 교환하시기 바랍니다.

B급 기기 :

이 기기는 비업무용으로 전자파 장애검정을 받은 기기서 주거지역은 물론 모든 지역에서 사용할 수 있습니다.

Notice for European Union

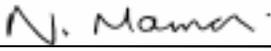
Radio Frequency Emissions Warning for Accessories

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

Notice for the United Kingdom: General Approval

This HP NetServer LC 3 Product is approved under approval number NS/G/1234/J/100003 for indirect connection to Public Telecommunication Systems in the UK.

Declaration of Conformity (US, EU, Australia)

DECLARATION OF CONFORMITY according to ISO/IEC Guide 22 and EN 45014	
Manufacturer's/Supplier Name:	Hewlett-Packard Company
Manufacturer's/Supplier Address:	5301 Stevens Creek Blvd. Santa Clara, CA 95052 USA
declares, that the product	
Product Name:	Network Server
Model Number(s):	HP NetServer LC 3
Product Options:	ALL
conforms to the following Product Specifications:	
Safety:	IEC 950: 1991+A1, A2, A3, A4 / EN 60950: 1992+A1, A2, A3
EMC:	CISPR 22:1993 / EN 55022:1994 EN 50081-1:1992 - Generic Emission EN 50082-1:1992 - Generic Immunity IEC 801-2:1991, 4 kV CD, 8 kV AD IEC 801-3:1984, 3 V/m IEC 801-4:1988, 0.5 kV Signal Lines, 1 kV Power Lines FCC Title 47 CFR, Part 15
Supplementary Information:	
1) The product was tested in a typical configuration with Hewlett-Packard peripherals.	
2) Models were configured with a network interface board and shielded twisted-pair data cable.	
3) The product complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:	
<ul style="list-style-type: none"> • This device may not cause harmful interference, and • This device must accept any interference received, including interference that may cause undesired operation. 	
The product herewith complies with the requirements of the following directives and carries the CE marking accordingly:	
<ul style="list-style-type: none"> - EMC Directive 89/336/EEC including CE Marking Directive 93/68/EEC - Low Voltage Directive 73/23/EEC 	
Santa Clara, June 4, 1998	 <hr style="width: 20%; margin: 0 auto;"/> Nigel Marrion/Regulatory Engineering Manager
North American Contact: Hewlett-Packard Company Product Regulations Manager 3000 Hanover Street, Palo Alto, CA 94304 Phone: 415-857-1501 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	

Regulatory Notices - Product Safety

The following information applies only to servers with factory-installed drives.

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.
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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.
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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.
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LASER Safety - Finland**LASERTURVALLISUUS****LUOKAN 1 LASERLAITE****KLASS 1 LASER APPARAT**

HP NetServer LC 3 - 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 laitteen ulkopuolelle. Laitteen turvallisuusluokka on määritetty standardin EN 60825 (1991) mukaisesti.

Laser Safety - Germany

VORSICHT	Diese 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.
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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.
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**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.

Batteries

This product uses a lithium battery.

WARNING Danger of explosion if battery is incorrectly replaced.

Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

AVERTISSEMENT Il y a danger d'explosion s'il y a remplacement incorrect de la batterie.

Remplacer uniquement avec une batterie du même type ou d'un type équivalent recommandé par le constructeur. Mettre au rebut les batteries usagées conformément aux instructions du fabricant.

Noise Declaration and Ergonomics

Germany

Sound Pressure: LpA < 55 dB (A)

am Arbeitsplatz, Beobachter Position (workplace, bystander position)

normaler Betrieb (normal operation)

nach DIN 45635 T. 19 (per ISO 7779)

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

C Warranty and Software License

Hardware Product Limited Warranty

HP warrants this hardware product against defects in materials and workmanship, under normal use, for the period specified in the section titled HP NetServer Limited Warranty Coverage. The warranty commences on receipt of this product by Customer from HP or an Authorized HP Reseller (hereafter referred to as "Reseller"). If Customer schedules or delays HP/Reseller installation more than 30 days after delivery, warranty begins on the 31st day from delivery. HP products may contain remanufactured parts equivalent to new in performance, or may have been subject to incidental use.

If HP or Reseller receives notice of such defects during the warranty period, HP or Reseller will either, at its option, repair or replace products that prove to be defective. Repair or replacement will be performed by HP or Reseller, at its option, at Customer's premises or "On-site", by the Return-to-HP/Reseller process, or by use of the Customer Replacement Part process.

Replacement parts assume the remaining warranty of the parts they replace. Replacement parts are new or equivalent to new. When service involves the exchange of an HP NetServer or a part, all removed parts, in their entirety, become the property of HP and must be returned to HP. The replacement part becomes Customer's property.

HP or Reseller will restore the warranted hardware product to factory original hardware functionality. Customer is responsible for restoring any Network Operating System, applications, or data. Should HP or Reseller be unable to repair or replace the product within a reasonable amount of time, Customer's alternate remedy shall be a refund of the purchase price upon return of the hardware product.

Software Product Limited Warranty

Hewlett-Packard Utility Software

HP utility software is covered by the HP Software Product Limited Warranty.

Third-Party Software Products

HP does not warrant the performance, quality, form or content of third-party software or documentation that is distributed by HP, such as Network Operating Systems or applications and HP provides such products "As Is." These products may be warranted by the third party in accordance with the third-party warranty statement accompanying the product. On-site visits caused by third-party software products are subject to standard per-incident travel and labor charges.

Hardware Accessories Limited Warranty

Hewlett-Packard Hardware Accessories

An HP NetServer Hardware Accessory is an HP hardware product, specifically designated for use with HP NetServers, that is added on or integrated into an HP NetServer in order to provide higher performance, capacity, or increased capability; and is listed as a product in HP's Corporate Price List. Upon installation inside an HP NetServer, the HP NetServer Hardware Accessory carries a one-year Return-to-HP warranty or the remainder of the warranty period for the original HP NetServer in which it is installed, whichever is longer.

HP warrants this HP NetServer Hardware Accessory against defects in material and workmanship, under normal use, for the period specified in the section titled HP NetServer Limited Warranty Coverage. The warranty commences on receipt of this product by Customer from HP or Reseller. If HP or Reseller receives notice of such defects during the warranty period, HP or Reseller will either, at its option, repair or replace products that prove to be defective.

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

Colorado Memory Systems internal tape drives are not covered by this 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, or other peripherals, are covered by the applicable warranty for those products.

Third-Party Hardware Products

HP does not warrant third-party hardware products. Third-party hardware products may be warranted in accordance with the third-party warranty statement

accompanying the product. On-site visits caused by third-party hardware products -- whether internal to the HP NetServer system processor unit (such as non-HP DIMMs) or external to the system processor unit (such as LAN cabling) -- are subject to standard per-incident travel and labor charges.

Pre-Failure Warranty

During the warranty period of the HP NetServer system processor unit, selected HP hardware components monitored by HP TopTools for Servers are eligible for the HP Pre-Failure Warranty. HP TopTools for Servers performs predictive disk failure analysis on the components and if a pre-established threshold is exceeded, the monitored component can be replaced prior to an actual failure. HP components covered by the Pre-Failure Warranty are HP SCSI-based hard disk drives.

Limitation of Warranty

HP does not warrant uninterrupted or error-free operation of an HP NetServer.

This warranty extends only to the original owner in the original country of purchase and is not transferable. Consumables, such as batteries, have no warranty.

The above warranties shall not apply to products from which serial numbers have been removed or to defects resulting from misuse (including operation of HP NetServers without covers 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 third-party software, accessories, media, supplies, consumables, or such items not designed for use with the product.

TO THE EXTENT ALLOWED BY LOCAL LAW, THE ABOVE WARRANTIES ARE EXCLUSIVE AND NO OTHER WARRANTY OR CONDITION, WHETHER WRITTEN OR ORAL, IS EXPRESSED OR IMPLIED AND HP SPECIFICALLY DISCLAIMS ANY IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY, SATISFACTORY QUALITY, AND FITNESS FOR A PARTICULAR PURPOSE.

Some Countries, states or provinces do not allow limitations on the duration of an implied warranty, so the above limitation or exclusion might not apply to you. The warranty gives you specific legal rights and you might also have other rights that vary from country to country, state to state or province to province.

Limitation of Liability and Remedies

In no event will HP or its affiliates, subcontractors, or suppliers be liable for any of the following:

1. Damages for loss of data, or software restoration;
2. Damages relating to Customer's procurement of substitute products or services (i.e., "cost of cover");
3. Incidental, special, or consequential damages (including lost profits, loss of use, Customer downtime, cost of data recovery/re-creation), even if HP is informed of their possibility;
4. Third-party claims against Customer for losses or damages.

HP NetServers are not specifically designed, manufactured or intended for sale as parts, components or assemblies for the planning, construction, maintenance, or direct operation of a nuclear facility. Customer is solely liable if Products or Support purchased by Customer are used for these applications.

HP will be liable for damage to tangible property per incident up to the greater of \$300,000 or the actual amount paid for the product that is the subject of the claim, and for damages for bodily injury or death, to the extent that all such damages are determined by a court of competent jurisdiction to have been directly caused by a defective HP product.

TO THE EXTENT ALLOWED BY LOCAL LAW, THE REMEDIES IN THIS WARRANTY STATEMENT ARE CUSTOMER'S SOLE AND EXCLUSIVE REMEDIES. EXCEPT AS INDICATED ABOVE, IN NO EVENT WILL HP OR ITS SUPPLIERS BE LIABLE FOR LOSS OF DATA OR FOR DIRECT, SPECIAL, INCIDENTAL, CONSEQUENTIAL (INCLUDING LOST PROFIT OR DATA), OR OTHER DAMAGE, WHETHER BASED IN CONTRACT, TORT, OR OTHERWISE.

Some countries, 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.

THE WARRANTY TERMS CONTAINED HERE, EXCEPT TO THE EXTENT LAWFULLY PERMITTED, DO NOT EXCLUDE, RESTRICT OR MODIFY AND ARE IN ADDITION TO THE MANDATORY STATUTORY RIGHTS APPLICABLE TO THE SALE OF THIS PRODUCT TO YOU.

Customer Responsibilities

Customer is responsible for the following:

1. Where applicable, before service is provided --
 - a. Having the HP NetServer's system administrator available for consultation with HP or Reseller;
 - b. Installing HP TopTools for Servers management software;
 - c. Running HP-supplied configuration and diagnostics programs or following the problem determination, problem analysis, and service request procedures that HP or Reseller provides;
 - d. Securing all proprietary and confidential information;
 - e. Securing all programs and data;
 - f. Maintaining a procedure external to the products for reconstruction of lost or altered files, data, or programs;
 - g. Informing HP or Reseller of changes in location of the HP NetServer; and,
 - h. Obtaining any necessary licenses or permits with regard to information provided to HP or Reseller;
2. Travel and labor charges for on-site repairs caused by third-party hardware or software;
3. Loss of, or damage to, an HP NetServer in transit when Customer is responsible for the transportation charges.

For on-site service, Customer must provide the following:

1. Access to the product,
2. Adequate working space and facilities within a reasonable distance of the product,
3. Access to and use of all information and facilities determined necessary by HP or Reseller to service the product, and,
4. Operating supplies and consumables such as Customer would use during normal operation.

When service is being performed on-site, an authorized representative of Customer must be present or made available upon request at all times. Customer must state if the product is being used in an environment that poses a potential

health hazard to repair personnel. HP or Reseller may refuse to provide on-site service if HP or Reseller determines, in its sole discretion, that such product is located in an environment that poses a potential health hazard to service personnel. HP or Reseller may require that the product be maintained by Customer personnel under direct HP or Reseller supervision.

Obtaining Warranty Service

To obtain warranty service, Customer must contact HP or Reseller. The customer must be prepared to provide the product model number and serial number and may be required to provide dated proof of purchase.

Depending on the product, warranty repair or replacement may be provided, at HP or Reseller's sole discretion, at Customer's location or "On-site", by the Return-to-HP/Reseller process, or by use of the Customer Replacement Part process.

Customer Replacement Part

Customer replaceable parts, such as the keyboard, mouse, and selected other products, 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 part(s) to be returned to HP.

Return to HP/Reseller

If on-site warranty service is not applicable, the product must be returned to a service facility designated by HP or Reseller. Customer must enclose a copy of a document proving date of purchase. Customer will prepay shipping charges (and will pay all duty and taxes) for products returned to HP or Reseller for warranty service. HP or Reseller will pay for return of products to Customer except for products returned to Customer in another country.

On-site

Response time for HP on-site service in an HP Service Travel Area is normally next business day (excluding HP holidays) and during normal business hours for HP Travel Zones 1-3 (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. Additional information is available in The HP Service and Support Travel and Office Directory, available from any HP Sales and Service Office.

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.

Travel restrictions and response time for Reseller is defined by the participating reseller.

On-site service is limited to products that remain in the country of original Customer purchase from HP or 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 Customer to the country of original purchase for service.

HP may provide Customer Replacement Parts in lieu of on-site services.

Consult the purchase documents for the product or consult directly with HP or Reseller in the country of purchase if you have any questions concerning your warranty terms and conditions.

HP NetServer Limited Warranty Coverage

Product	Warranty Coverage Periods		
	Year 1	Year 2	Year 3
HP NetServer L Series	On-site ¹	On-site	On-site
HP NetServer E Series	On-site ¹	n/a	n/a
HP Internal Accessories (i.e. HP hard disk, HP memory) Purchased with NetServer L Series	On-site ¹	On-site	On-site
Purchased with NetServer E Series	On-site ¹	n/a	n/a
Purchased separately	RHP ²		
HP Surestore products	Exchange ³	Exchange ³	Exchange ³
HP External Accessories HP Storage System/6	On-site ¹	On-site	On-site
HP Surestore products	Exchange ³	Exchange ³	Exchange ³

RHP = Return-to-HP/Reseller

- 1 For all instances of "On-site" coverage, HP may provide a Customer Replacement Part in lieu of on-site services.
- 2 HP NetServer Hardware Accessories, purchased separately after the initial server purchase, carry the longer of a one year Return-to-HP/Reseller warranty or the remaining warranty of the original HP NetServer in which it is installed.
- 3 If ordered and purchased with the L Series or E Series, HP Surestore products are eligible for on-site service during the server warranty period.

Technical Support

During the warranty period, telephone technical support is available to assist with setup, configuration, startup, and troubleshooting of your hardware product.

Prior to calling HP or Reseller, please follow this checklist. This will allow HP or Reseller to assist you more quickly and efficiently.

1. Consult the documentation provided with your product to assure that your system features are properly configured.
2. Execute the diagnostics provided and record the information. Consult the accompanying documentation for instructions.
3. Record the following information:
 - Product model name and number
 - Product serial number
 - Applicable error messages from system or diagnostics
 - Applicable hardware driver revision levels
 - Add-on boards or hardware
 - Third-party hardware or software
 - Operating system type and revision level

Most of this information can be obtained by using TopTools.

U.S. and Canada

For hardware service and telephone support, contact either:

- A participating Reseller
or
- HP Customer Support Center (Colorado): 970-635-1000

Europe

For hardware service and telephone support, contact either:

- A participating Reseller
or
- HP Customer Support Center (Netherlands):

Country	Number
Austria:	0660 6386
Belgium (Dutch):	02 626 8806
Belgium (French):	02 626 8807
Czech Republic:	42 (2) 471 7321

Denmark:	3929 4099
English (non-UK):	+44 171 512 52 02
Finland:	02 03 47 288
France:	01 43 62 3434
Germany:	0180 525 8143
Hungary:	36 (1) 252 4505
Ireland:	01 662 5525
Italy:	02 2 641 0350
Netherlands:	020 6068751
Norway:	22 11 6299
Poland:	48 22 37 50 65
Portugal:	01 441 7199
Russia:	7095 923 50 01
Spain:	902 321 123
Sweden:	08 619 2170
Switzerland:	084 880 1111
Turkey:	90 1 224 59 25
United Kingdom:	0171 512 5202

Other Countries

For hardware service, contact your local Reseller or HP sales office. For telephone support, contact your Reseller.

Self-Help Tools

Extensive technical information, product updates, and interactive forums are available 24 hours a day, 7 days a week. More detailed information regarding these tools may be obtained at HP's home page on the Internet World Wide Web.

Internet World Wide Web:	http://www.hp.com/go/netserver
Internet FTP Server:	ftp://ftp.hp.com/pub/servers
HP Forum on CompuServe:	GO HPPC
Fax Retrieval System:	800-333-1917 (U.S.) 208-344-4809 (outside U.S.)

Supplemental Warranty Service and Support

Enhanced hardware warranty services, such as after-hour or weekend coverage, faster response time, and service in an HP Excluded Travel Area, may be available from HP or Reseller at additional charge.

To complement HP's hardware warranty services, network and software support services are also available:

- "Bundled" per-incident network support,
- Annual network support, and
- Annual network support and server application support

These services are available to provide a total hardware and software solution. These services are available from HP or Reseller at additional charge.

Notice for Consumers in Australia:

The warranty terms contained in the enclosed manual(s) or any other warranty statement enclosed with this product , except to the extent lawfully permitted, do not exclude, restrict or modify and are, in addition to the, statutory rights implied by the Trade Practices Act 1974 or any corresponding state or territory legislation applicable to the sale of this product to you. If you have any queries about your rights contact the Hewlett-Packard Customer Care Centre on 1800131347.

Notice For Consumers In New Zealand:

The warranty terms contained in the enclosed manual(s) or any other warranty statement enclosed with this product , except to the extent lawfully permitted, do not exclude, restrict or modify and are in addition to the statutory guarantees implied by the Consumer Guarantees Act 1993 applicable to the sale of this product to you. If you have any queries about your rights contact the Hewlett-Packard End User Support Line on (09) 3566640.

Notice for 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
4º 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.

Software Product Limited Warranty

The HP Software Product Limited Warranty will govern all Software which is provided to you (including Microsoft software) as part of the HP computer product. This HP Product Limited Warranty will supersede any non-HP software warranty terms that may be found in any documentation or other materials contained in the computer product packaging.

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 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 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 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 proves 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 nonremovable 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 Liability and Remedies. TO THE EXTENT ALLOWED BY LOCAL LAW, 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 countries, 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.

THE WARRANTY TERMS CONTAINED HERE, EXCEPT TO THE EXTENT LAWFULLY PERMITTED, DO NOT EXCLUDE, RESTRICT OR MODIFY AND ARE IN ADDITION TO THE MANDATORY STATUTORY RIGHTS APPLICABLE TO THE SALE OF THIS PRODUCT TO YOU.

Obtaining Warranty Service. Warranty service may be obtained from the nearest HP sales office or other location indicated in the owner's manual or service booklet.

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.

ATTENTION: USE OF THE SOFTWARE IS SUBJECT TO THE HP SOFTWARE LICENSE TERMS SET FORTH BELOW. USING THE SOFTWARE INDICATES YOUR ACCEPTANCE OF THESE LICENSE TERMS. IF YOU DO NOT ACCEPT THESE LICENSE TERMS, YOU MAY RETURN THE SOFTWARE FOR A FULL REFUND. IF THE SOFTWARE IS BUNDLED WITH ANOTHER PRODUCT, YOU MAY RETURN THE ENTIRE UNUSED PRODUCT FOR A FULL REFUND.

The HP Software Product License Agreement will govern all Software which is provided to you with the exception of Microsoft Software. Microsoft Products are licensed to you under the Microsoft End User License Agreement (EULA) contained in the Microsoft documentation.

HP Software Product License Agreement

The following License Terms govern your use of the accompanying Software unless you have a separate signed agreement with HP.

License Grant. HP grants you a license to Use one copy of the Software. "Use" means storing, loading, installing, executing or displaying the Software. You may not modify the Software or disable any licensing or control features of the Software. If the Software is licensed for "concurrent use," you may not allow more than the maximum number of authorized users to Use the Software concurrently.

Ownership. The Software is owned and copyrighted by HP or its third party suppliers. Your license confers no title to, or ownership in, the Software and is not a sale of any rights in the Software. HP's third party suppliers may protect their rights in the event of any violation of these License Terms.

Copies and Adaptations. You may only make copies or adaptations of the Software for archival purposes or when copying or adaptation is an essential step in the authorized Use of the Software. You must reproduce all copyright notices in the original Software on all copies or adaptations. You may not copy the Software onto any public network.

If your Computer was shipped with a Recovery CD, (i) the Recovery CD and/or Support Utility software may be used only for restoring the hard disk of the HP computer system with which the Recovery CD originally was provided, and (ii) if separate EULA(s) are included with your Computer for any other MS products which are included on the Recovery CD, those MS products are subject to the terms of their respective EULA(s).

No Disassembly or Decryption. You may not disassemble or decompile the Software unless HP's prior written consent is obtained. In some jurisdictions, HP's consent may not be required for limited disassembly or decompilation. Upon request, you will provide HP with reasonably detailed information regarding any disassembly or decompilation. You may not decrypt the Software unless decryption is a necessary part of the operation of the Software.

Transfer. Your license will automatically terminate upon any transfer of the Software. Upon transfer, you must deliver the Software, including any copies and related documentation, to the transferee. The transferee must accept these License Terms as a condition to the transfer.

Termination. HP may terminate your license upon notice for failure to comply with any of these License Terms. Upon termination, you must immediately destroy the Software, together with all copies, adaptations and merged portions in any form.

Export Requirements. You may not export or re-export the Software or any copy or adaptation in violation of any applicable laws or regulations.

U.S. Government Restricted Rights. The Software and any accompanying documentation have been developed entirely at private expense. They are delivered and licensed as "commercial computer software" as defined in DFARS 252.227-7013 (Oct 1988), DFARS 252.211-7015 (May 1991) or DFARS 252.227-7014 (Jun 1995), as a "commercial item" as defined in FAR 2.101(a), or as "Restricted computer software" as defined in FAR 52.227-19 (Jun 1987)(or any equivalent agency regulation or contract clause), whichever is applicable. You have only those rights provided for such Software and any accompanying documentation by the applicable FAR or DFARS clause or the HP standard software agreement for the product involved.

HP NetServer Warranty Frequently-Asked Questions

- Q: What is the intention of the HP NetServer Warranty?
- A: The HP NetServer Warranty is intended to protect you from any defects in workmanship or materials of the hardware product for a period of time after your purchase. Though some limited technical support is available during the warranty period to assist you with installation and setup, the HP NetServer Warranty is NOT a substitute for network or server application support services to assist you during normal operation of your HP NetServer.
- Q: When does the warranty begin?
- A: HP's warranty begins when you receive your HP NetServer.
- Q: What is the warranty on HP hardware add-ons to the HP NetServer?
- A: There are two scenarios to consider here: whether the HP NetServer Hardware Accessory was purchased with the HP NetServer; or separately at some later date. If the HP NetServer Hardware Accessory was purchased with the server, then the accessory can take on the warranty of the server, except as noted in the warranty statement. If the accessory was purchased after the initial server purchase, then the accessory has a one year Return-to-HP/Reseller warranty, OR assumes the remaining warranty of the original HP NetServer in which it is installed, whichever is longer.
- Q: What are some examples of HP NetServer Hardware Accessories that would qualify?
- A: Accessories that are specifically designed to be used with HP NetServers, such as HP memory modules, HP disk drives, and HP processor upgrade kits, that are integrated into the system processor unit are some examples of accessories that qualify. Additionally, these accessories must be listed as products on HP's Corporate Price List.
- Q: What about HP Printers or HP External Storage Subsystems?
- A: Accessories or peripherals, external to the HP NetServer system processor unit, carry their own warranty. Check the documentation accompanying the product for additional information.

Q: Will adding third-party memory or disk drives void the warranty?

A: Adding third-party memory or disk drives does not void the warranty. However, there are some implications when you need technical support. For example, when the memory used may relate to the problem you are experiencing, you will be asked to remove the third-party memory to confirm the problem still exists before a service provider is dispatched. HP does not cover on-site visits caused by third-party products, whether internal or external to the HP NetServer system processor unit.

Q: What is not covered by this limited warranty?

A: The following are some examples of items that are not covered:

- ◊ Product purchased from anyone other than HP or an Authorized HP Reseller;
- ◊ Consumables such as batteries;
- ◊ Software products, except for HP-developed utility software;
- ◊ Routine cleaning, or normal cosmetic and mechanical wear;
- ◊ Damage from misuse, abuse, or neglect;
- ◊ Damage from use outside the product's usage or storage parameters;
- ◊ Damage from use of parts not manufactured or sold by HP;
- ◊ Damage from modification or incorporation into other products;
- ◊ Damage from repair or replacement of warranted parts by other than HP or an Authorized Service Provider;
- ◊ Damage to or loss of any programs, data, or removable storage media.

Q: How will my HP NetServer be serviced during the warranty period?

A: Depending on the component needing repair or replacement, HP or your reseller will select one of three options for servicing your HP NetServer. Service will be provided at your premises or "on-site", by the Return-to-HP/Reseller process, or by the Customer Replacement Part process.

Q: What is the Customer Replacement Part process?

A: HP NetServer components, such as the keyboard, mouse, and selected other components, can be sent directly to you to replace at your convenience. HP will prepay shipping charges, duty, and taxes; provide telephone assistance on replacement of the component; and pay shipping charges, duty, and taxes for components to be returned to HP.

- Q: What is the response time for on-site warranty service?
- A: The standard response time for on-site warranty service is end of next business day. All response commitments are based on commercially reasonable efforts by HP and HP Authorized Service Providers.
- Q: Can I keep the defective part that is being replaced?
- A: No. All removed parts, in their entirety, become the property of HP. The replacement part then becomes your property.
- Q: What is the warranty on the replacement part?
- A: The replacement part assumes the remaining warranty of the part it replaces.
- Q: Are product upgrades, such as new drivers or BIOS, eligible for on-site warranty service?
- A: Product upgrades, such as new revisions of drivers or BIOS, are not eligible for on-site services under warranty. Self-help tools, described later in this document, are available for you to download drivers at the recommendation of HP or your reseller support representative. If you need professional services to assist you with upgrades, contact your reseller or HP.
- Q: If I have a hardware failure, how will my HP NetServer be restored?
- A: HP or your reseller will restore your HP NetServer to factory original hardware functionality. You are responsible for restoring any Network Operating System, applications, or data. Therefore, it is important that you back up your software and data, and keep them in a secure location in case you need to reconstruct lost or altered files, data, or programs.

Q: What are my options if I want network or server application software support?

A: Network or server application software support services are available to complement the HP NetServer Warranty. Examples of these services include:

- ◊ Per-incident bundled (5-pack or 10-pack) network support,
- ◊ Annual network support, and
- ◊ Annual network support and server application support.

Additionally, these services can be customized to your business requirements (standard hours or 7x24 coverage) to provide a total hardware and software solution. These services are available from HP or an Authorized HP Reseller at additional charge.

Q: What are my responsibilities during warranty?

A: Your responsibilities, before service is provided under warranty, include the following:

- a. Have the HP NetServer system administrator available for consultation with HP or your reseller support representative; and
- b. Run HP-supplied configuration and diagnostics programs or follow the problem determination, problem analysis, and service request procedures that HP or your reseller support representative provides.
- c. In many cases, your problem can be resolved over the telephone or the problem can be further isolated so that the correct parts are identified if on-site service is necessary.

Q: Where can I find warranty documentation?

A: The HP NetServer is packaged with warranty and service information that details the warranty terms and conditions. The warranty and service information is the legal warranty document and contains information on your warranty coverage type and length.

Q: What can I do to optimize the reliability of my system and the integrity of my data?

A: For maximum system reliability and data integrity, here are some recommendations:

- a. Ensure that all HP NetServer covers, panels, and board retainers are in place to provide proper airflow whether the system is free-standing, rack-mounted, or being shipped;

- b. Establish and practice back-up procedures for your data and programs to minimize any disruptions to your business in case of a hardware failure; and
- c. Use current driver and software revision levels to optimize your server environment.

Q: Is the warranty still valid if I ship my HP NetServer to another location within my company?

A: The warranty is valid as long as the HP NetServer remains in the country where you purchased it. When shipping or transporting an HP NetServer, use proper care in packaging and securing the unit. Any damages will be your responsibility that you will have to address with your transportation carrier.

Q: If I sell my HP NetServer during the warranty period, is the warranty transferable to the new owner?

A: No, the warranty only applies to the original owner.

Q: How do I obtain technical support?

A: During the warranty period, telephone technical support is available to assist with setup, configuration, startup, and troubleshooting of your hardware product. For a listing of support telephone numbers and other support services, see Appendix D, "Service and Support" in this User Guide.

Q: What information do I need to provide when I call for technical support?

A: To enable HP to assist you more quickly and efficiently, please follow this checklist:

- a. Consult the documentation provided with your product to assure that your system features are properly configured.
- b. Execute the diagnostics provided and record the information. Consult the accompanying documentation for instructions.
- c. Record the following information:
 - * Product model name and number
 - * Product serial number
 - * Applicable error messages from system or diagnostics
 - * Applicable hardware driver revision levels

- * Add-on boards or hardware
- * Third-party hardware or software
- * Operating system type and revision level

Most of this information can be obtained by using TopTools.

Q: How can I track changes that could affect the operation of my HP NetServer?

A: Many customers have found it extremely useful to keep a system log. This could be a simple binder with a log of when hardware, software, and firmware changes are made, copies of proof of purchase documents for the HP NetServer and all accessories, and copies of key configuration files. The ongoing investment of a few minutes to document changes will enable HP or your reseller to assist you more quickly and efficiently.

Q: What can I do to stay current on product updates or enhancements to my server?

A: Self-help tools are available that enable you to obtain technical information, download product updates, or participate in interactive forums with other HP NetServer customers. These tools are available for you to use 24 hours a day, 7 days a week. More detailed information regarding these tools may be obtained at the HP home page on the Internet World Wide Web.

Internet World Wide Web: <http://www.hp.com/go/netserver>

Internet FTP Server: <ftp://ftp.hp.com/pub/servers>

HP Forum on CompuServe: GO HPPC

Fax Retrieval System: 800-333-1917 (U.S.)

208-344-4809 (outside U.S.)

Q: What kind of warranty upgrades are available?

A: If your business environment requires coverage after business hours, 24 hours a day, or faster response time, enhanced hardware warranty services are available from HP or an Authorized HP Reseller at an additional charge.

D 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 HP 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, and/or automated fax support. If you are performing system integration, we recommend that you subscribe to CompuServe, as described later in this appendix.

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 appendix:

- HP Navigator release history and status report

- HP NetServer Information Assistant
- CompuServe discussion forum and library
- World Wide Web and Internet FTP
- 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 Proactive Notifications
- HP Navigator CD-ROM Subscription

This appendix also covers the following:

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

HP Navigator Release History and Status Report

To ensure that you have the latest versions of the software, obtain the current HP Navigator CD-ROM release history. The release history is updated for each new release of the CD-ROM.

The release history briefly describes the following for each release:

- Major changes to the HP Navigator CD-ROM that were made for that release
- Version number
- Release date
- Part number of the HP Navigator CD-ROM
- Document number

The status report for your specific HP Navigator CD-ROM describes in detail any software updates between this version of the CD-ROM and the previous version.

To obtain a release history or a status report, you will need one of these document numbers:

- Release history: document number is 6005
- Status report: The number is different for each status report. Each version of the HP Navigator CD-ROM has a four-digit document number printed on the disk.

You can obtain the release history and status report for your CD-ROM in one of these ways:

- Internet WWW:
<http://www.hp.com/netserver/servsup>
- Internet FTP:
<ftp.hp.com/pub/servers>
- CompuServe:
GO HPPC
download document 6005.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 document number 6005.

HP Navigator CD-ROM Subscription Service

Subscribe to the HP NetServer Navigator CD-ROM Subscription Service to automatically receive CD-ROM updates. The subscription service issues up to 12 releases per year.

The updates include the following:

- Updates to your system software, such as BIOS and driver upgrades
- Enhancements to server management tools

For a subscription form and subscription rates see:

- Internet WWW: <http://www.hp.com/netserver/servsup>
- 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.

HP Navigator CD-ROM

The HP NetServer Navigator CD-ROM is an information retrieval system for quick access to information on HP NetServers and accessories, NOS installation and tuning, and product service and support.

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

Information Assistant uses advanced hypertext techniques to make the information easily accessible.

For subscription information on the HP Navigator CD-ROM, obtain ordering instructions from the library at 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 appendix.

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 appendix, 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 specifically for the HP NetServer. For information or to download drivers:

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

To download HP NetServer drivers from HP via Internet FTP, enter the following:

`ftp://ftp.hp.com/pub/servers`

Automated Fax

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

In the U.S., call (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 (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.

Proactive Notification for HP NetServer Products

HP Proactive Notification is a web-based information service that provides timely technical support information on HP NetServer products via email.

As a new user of HP Proactive Notification, you will be asked to complete a simple web-based questionnaire that profiles your specific support needs. This free service then searches HP NetServer information and, based on your profile, proactively provides you with the important information that you need to effectively manage your network.

The types of technical information that will be emailed to you include:

- Software driver notifications, such as BIOS updates, patches, and NOS-specific drivers
- HP Navigator CD-ROM Release History
- HP Proactive Notification articles
- Frequently Asked Questions (FAQ) documents
- Accessory information

You can sign up HP for Proactive Notification by visiting the following World Wide Web URL:

<http://proact.hp.com:8088/NetServer>

NOTE This address is case-sensitive. The 'N' and 'S' in 'NetServer' must be capitalized.

Telephone Support

During the warranty period, telephone technical support is available to assist you with setup, configuration, startup, and troubleshooting of your HP hardware product.

Telephone support is generally available from the manufacturers and resellers of the various non-HP hardware and software components. Refer to the product documentation or your reseller for additional information.

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 LAN Support Service, or Comprehensive Network Support Service with a 7-day, 24-hour option for network operating systems and multi-vendor hardware. Contact your local HP office for details.

Before Telephoning for Technical Support

Please consult the documentation provided with your product to assure that the features of your system are properly configured. Also consult the documentation provided with any software and accessories installed in your system.

In particular, if you selected the NOS vendor's installation process (manual installation, rather than HP automated installation), you should have printed out and read the *Network Operating System Installation Instructions*. Please review those instructions before telephoning for support.

If you need to print out the *HP Network Operating System Installation Instructions* now, do the following:

1. Restart the system from the HP Navigator CD-ROM.
2. From the HP Navigator Main Menu, select **Configuration Assistant and Installation Assistant**.
3. From the Configuration Assistant menu, select **Custom**.
4. From the Select NOS menu, select your network operating system, and the version, if necessary.
5. Select **No** when the Select NOS screen asks, "Would you like to use HP's automated mode of NOS installation?"
6. Configuration Advisor displays configuration advisories. Read them to see if any relate to your problem. You can also do the following:
 - ◇ Save the configuration advisories to disk as ASCII file "advisor.txt" to print out later, as described in Step 9.
 - ◇ View the Tested Products List to verify that all accessories are compatible with your system.
7. Select **Continue** to display the Custom Configuration menu.
8. From the Custom Configuration menu, select **Show NOS Installation Instructions**.

9. Insert a flexible disk into the drive, and select **Save to Disk**. After the ASCII file has been written, remove the flexible disk from the drive. Print it out later from a computer connected to a printer.
10. Select **Exit**, and then select **Yes** to exit and restart the system.
11. Print the *HP Network Operating System Installation Instructions* out from a computer connected to a printer.

The NOS vendor's HP NOS installation instructions, the *Network Operating System Installation Instructions*, and this user guide contain troubleshooting sections. Please refer to them and to Configuration Advisor on the HP Navigator CD-ROM before telephoning for support.

Obtaining HP Repair and Telephone Support

Appendix C, "Warranty and Software License" 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 Chapter 6, "Troubleshooting," for the steps to follow before calling for service.

Prior to calling for support, record this information:

- Product model name and number
- Product serial number
- Applicable error messages from system or diagnostics
- Applicable hardware driver revision levels
- Add-on boards or hardware installed
- Third-party hardware or software
- Operating system type and revision level

For hardware repair or telephone support in the **U.S. and Canada**, contact either:

- Participating Service Authorized HP Personal Computer Reseller
or
- HP Customer Support Center (Colorado) (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

For hardware repair or telephone support in **Europe**, contact either:

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

Country	Number
Austria:	0660 6386
Belgium (Dutch):	02 626 8806
Belgium (French):	02 626 8807
Czech Republic:	42 (2) 471 7321
Denmark:	3929 4099
English (non-UK):	+44 171 512 52 02
Finland:	02 03 47 288
France:	01 43 62 3434
Germany:	0180 525 8143
Hungary:	36 (1) 252 4505
Ireland:	01 662 5525
Italy:	02 2 641 0350
Netherlands:	020 6068751
Norway:	22 11 6299
Poland:	48 22 37 50 65
Portugal:	01 441 7199
Russia:	7095 923 50 01
Spain:	902 321 123
Sweden:	08 619 2170
Switzerland:	084 880 1111
Turkey:	90 1 224 59 25
United Kingdom:	0171 512 5202

Other countries. For hardware service, contact your local reseller or 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 that you can order from HP, such as the *HP NetServer Product Line Service Handbook*.

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

Telephone Ordering Information

U.S.

- To identify a part or manual: automated fax (800) 333-1917; voice (916) 783-0804.
- To order with a credit card: (800) 227-8164.

Canada

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

Latin America

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

Other Countries

- Call your local HP office.
- Also available for part or manual identification: call (208) 344-4809 from your fax machine; voice (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 USA
(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, Infoaces 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 (614) 529-1349.

Fax: (614) 529-1610.

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