English

HP NetServer LH 3/LH 3r
User Guide

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Hewlett-Packard Company
Network Server Division
Technical Marketing / MS 49EU-FQ
5301 Stevens Creek Boulevard
P.O. Box 58059
Santa Clara, CA 95052-8059 USA

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Audience Assumptions

The user guide is for the person who installs, administers, and troubleshoots network 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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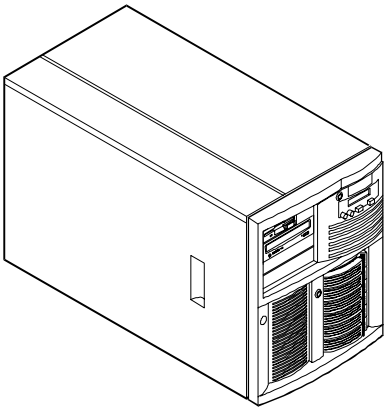
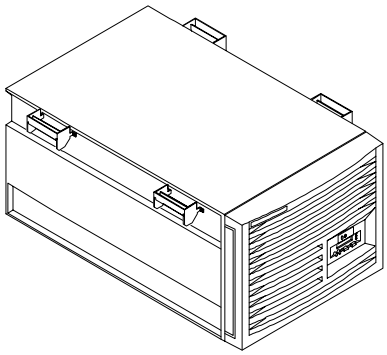
1 Introduction

This User Guide contains information for both the HP NetServer LH 3 (the floor standing pedestal configuration) and LH 3r (the rack-optimized configuration).

The NetServer configurations are shown below.



HP NetServer LH 3 (Pedestal)



HP NetServer LH 3r (Rack-Optimized)

Figure 1-1. NetServer Configurations

Verifying 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.

CAUTION	The HP NetServer weighs approximately 120 pounds as shipped. Do not attempt to lift the NetServer by yourself. Follow local regulations, and use one person for every 40 pounds of NetServer weight when lifting the NetServer. Failure to observe this warning could result in serious injury, or damage to the NetServer.

Store the empty boxes and packing material in a safe place. This is especially important if you plan to ship the NetServer elsewhere for final installation.

CAUTION	It is critical to disassemble and rebox all electronic components before reshipment. Electronic components (especially hard disk drives) can sustain damage when shipped in rack enclosures.

HP NetServer LH 3 Installation Procedures

Refer to the *HP NetServer LH 3 Installation Road Map* for step-by-step installation instructions.

If you are installing any accessories, refer to the documentation shipped with the accessory package.

HP NetServer LH 3r Installation Procedures

Refer to the *HP NetServer LH 3r Installation Road Map*, for step-by-step installation instructions.

NOTE	The *HP NetServer LH 3r Installation Road Map* does not include procedures for installing the system in a rack. Refer to Chapter 8, "Mounting the HP NetServer LH 3r in a Rack," for detailed rack installation instructions.

If you are installing any accessories, refer to the documentation shipped with the accessory package.

You should also review:

- All documentation that comes with your rack, such as the *Rack Installation Road Map*.
- The *Rack Cabling Reference for the HP NetServer LH 3r*.
- The user guide for your mass storage units: for example, the *HP Rack Storage/8 System Installation Guide*.

HP NetServer LH 3 to LH 3r Conversion Kit

The HP NetServer LH 3 is a stand-alone pedestal model. If you want to install the LH 3 in a rack, contact your reseller for information about the *HP NetServer LH 3 to LH 3r Conversion Kit*. This kit contains all components needed to convert your HP NetServer LH 3 into a rack-optimized HP NetServer LH 3r.

English

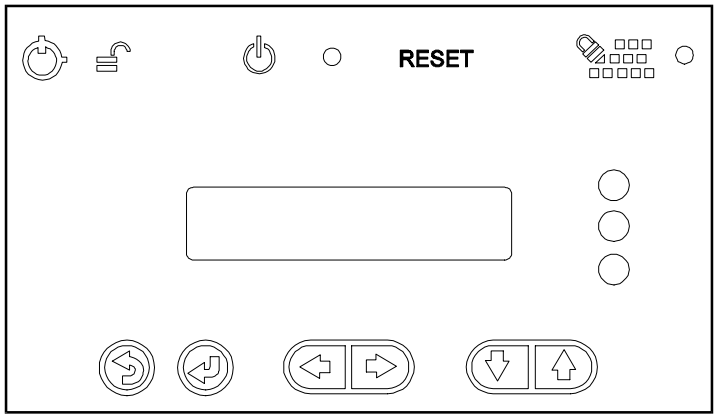
2 Controls, Ports, and Indicators

Overview of Controls, Ports, and Indicators

You control the HP NetServer with the Front Panel located on the front of the NetServer. The NetServer communicates to the network and other devices through the connectors on the rear panel. This section covers these controls and communication connectors.

Front Panel

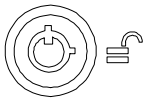
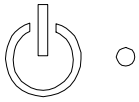
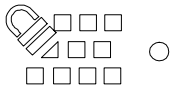
Before installation, familiarize yourself with the HP NetServer's switches and indicators. The figure below shows the HP NetServer LH 3's Front Panel (the HP NetServer LH 3r is similar, but has no lock).



LH 3 Front Panel

Figure 2-1. HP NetServer LH 3's Front Panel

Table 2-1. Front Panel Switch and Indicator Definitions

Control	Description
Lock (LH 3 only) 	Locks system to prevent unauthorized use.
DC Power Switch and indicator light 	Turns the NetServer on and off. This switch is behind the protective door on the front panel. Push once to turn on, again to turn off. (To disconnect the NetServer from AC power, remove the AC power cord from the power supply cage on the rear.)
RESET	Resets the NetServer from internal ROM. This switch is behind the protective door on the front panel.
Keyboard lock and indicator light 	Locks system keyboard to prevent unauthorized use.

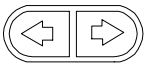
English

Status screen

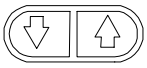
Reports various types of system status. The buttons below the screen control these menu functions:

Return to a previous selection.

Select a menu item.



Reserved for future use.



Scroll down or up.

NOTE At the time of this printing, the Status LEDs were not enabled. If you register for the Proactive Notification Service, HP will notify you via e-mail when the next firmware version is ready to download and use. See Chapter 13, "Service and Support," for more details.

Status LEDs

Indicates various types of system status:

Green = Normal operation
Yellow = Abnormal operation
Red = Problem detected

Table 2-2. Front Panel Menu, as Shown on Status Screen

System Information	Reports system hardware details and software version numbers.
Field Replaceable Unit Information	Identifies part and revision numbers for components.
Contrast Adjustment	Use the arrow keys to change the LCD contrast for better readability.

Rear Panel Controls, Ports, and Indicators

Refer to Figure 2-2 below to locate features on the NetServer's rear panel:

- The Remote Management Port links the NetServer to a console for real-time diagnosis of system operation.
- The Serial B Port is a standard serial port.
- The Serial A Port is a standard serial port.
- The Parallel Port is a standard parallel port.
- The Mouse Port accepts a standard PC mouse.
- The Keyboard Port accepts a standard PC keyboard.
- The Monitor Port accepts a monitor with up to 1024 x 768 x 256 resolution, with a 60-75Hz video refresh rate. The NetServer contains 1MB of video RAM.
- The NetServer comes with two 550W power supplies installed on the left rear. The optional Redundancy Kit provides a power supply and power supply cage for installation on the right rear. Since the NetServer only requires two power supplies to run, installing a third power supply prevents service interruptions from a single power supply failure. With the Redundancy Kit installed a new power supply can be hot-swapped in.
- The Power Connector accepts a standard power cable to connect the NetServer with the site AC power source.

English

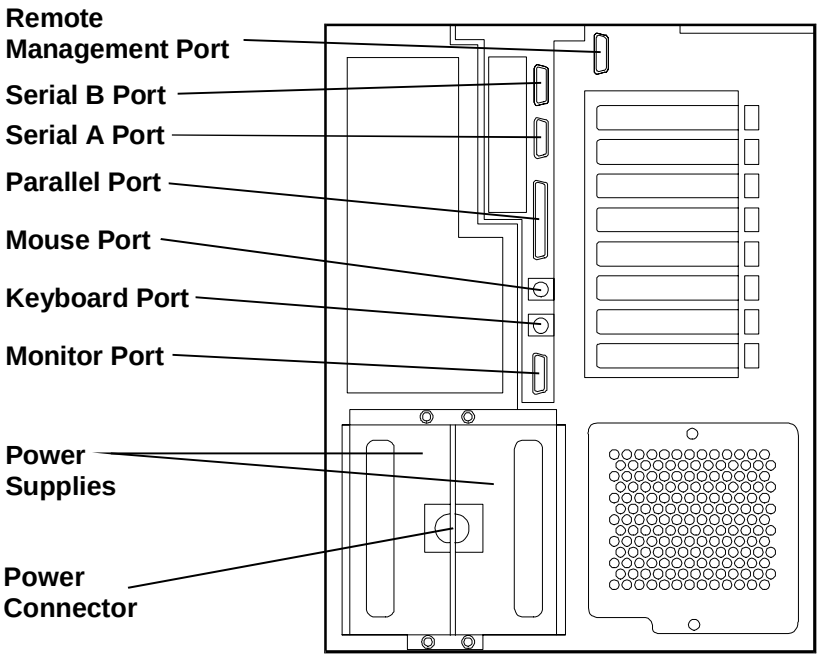


Figure 2-2. Rear Panel and Ports

Connecting the NetServer to AC Power

When you connect the NetServer to an AC power source, the server temporarily draws additional current. This occurs even when the system is in standby mode. This "inrush current" is much greater than the server's normal operating needs. Generally, your external AC power source can handle the inrush current.

If you install several NetServers on one circuit, however, precautions are necessary. If there is a power failure and power is then restored, all the servers immediately begin to draw inrush current at the same time. If the circuit breakers on the incoming power line have insufficient capacity, they may trip and thus prevent the servers from powering up.

When preparing your site for installation, allow for the additional inrush current. Follow these circuit breaker recommendations before installing the server at your site:

- In North American, use a 20-amp-minimum circuit with one NEMA AB1 class 14B breaker for each 16-amp Power Distribution Unit (PDU).

- In Europe:
  - ◊ For a single NetServer in a rack, use a 15-amp-minimum circuit with one IEC MCB C-type breaker for each 16-amp PDU.
  - ◊ For multiple NetServers in a rack, use a 15-amp-minimum circuit with one IEC MCB D-type breaker for each 16-amp power distribution unit.

Each 16-amp PDU can accommodate a maximum of two NetServers.

When the proper power supply is available, connect the NetServer to the AC power source.

Power-On Tests

The NetServer runs a set of diagnostic tests when it is first connected to a power source. If the NetServer passes the tests, you will see:

```
HP NetServer
LH 3
```

If the NetServer does not pass the tests, you will see:

```
<error code>
Display now?
```

Press Enter to view the error message. Write the error message down and refer to "POST Codes" in Chapter 12, "Troubleshooting."

English

3 Removing and Replacing Covers

NetServer Covers

The NetServer has three removable cover panels:

- Cover 1 covers the side where the I/O Board is located.
- Cover 2 covers the area above the processor.
- Cover 3 covers the side where the processor is located.

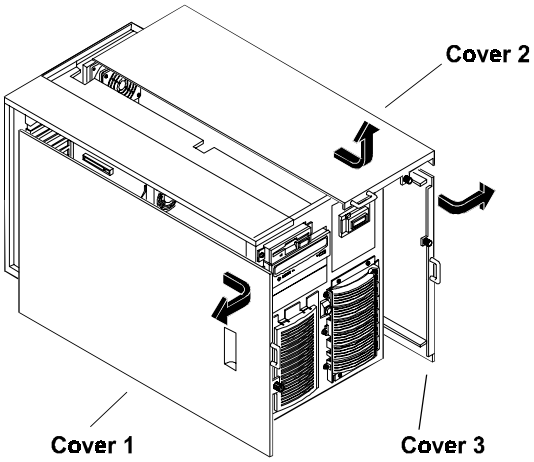


Figure 3-1. HP NetServer LH 3 Covers

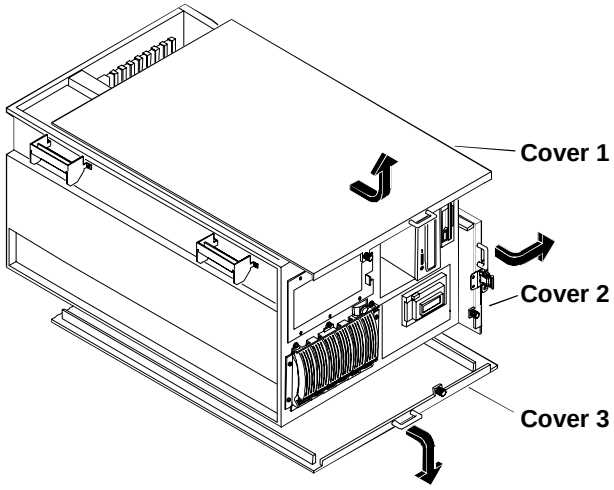


Figure 3-2. HP NetServer LH 3r Covers

WARNING	Before removing covers, always disconnect the power cord and unplug telephone cables. 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. Disconnect telephone cables to avoid exposure to shock hazard from telephone ringing voltages. Note that the power switch does not turn off the standby power. Disconnect the power cord to turn off standby power. If the backlight on the LCD display is on, standby power is on.

CAUTION	Wear a wrist strap and use a static-dissipating work surface connected to the chassis at all times.

Removing the HP NetServer LH 3 Covers

To remove the covers, first unlock the bezel, using the supplied key, and remove it from the front of the NetServer.

English

Bezel

The bezel connects to the front of the NetServer chassis with two snap-in connectors at the top front of the chassis and three tabs that fit into three slots the bottom front of the chassis. To remove, pull the bezel forward until it unsnaps, then lift the bezel forward and upward from the chassis face.

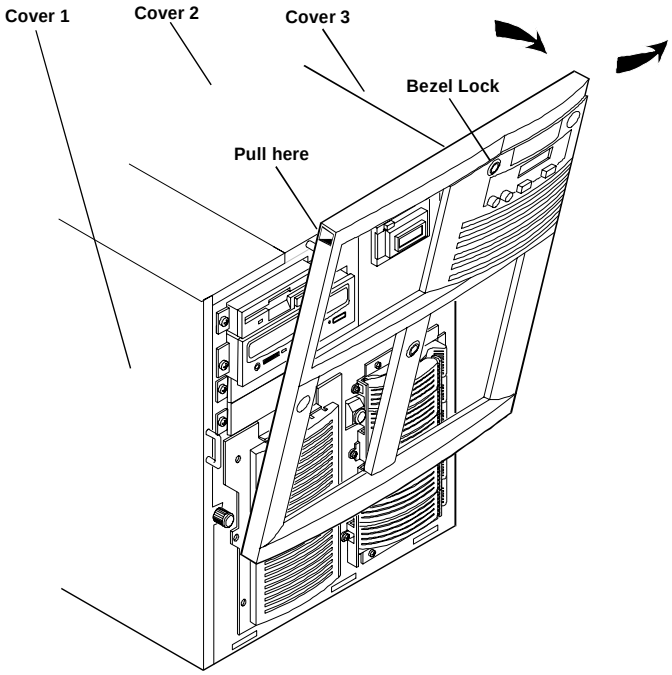


Figure 3-3. Removing the HP NetServer LH 3 Bezel

CAUTION	The NetServer covers are heavy. Support them as you remove them, and allow room to move them away from the NetServer and for storage.

Cover 1

Once you have removed the bezel, remove cover 1 by unscrewing the thumbscrew and then pulling the cover forward to disengage it. Lift it outward and away from the chassis.

Cover 2

Remove cover 2 by unscrewing the thumbscrew, pulling the cover forward and then slightly sideways to disengage it. Lift it up and away from the chassis.

Cover 3

Remove cover 3 by unscrewing the thumbscrew and pulling it forward to disengage it. Lift it outward and away from the chassis.

Replacing the HP NetServer LH 3 Covers

CAUTION	Replace all covers before operating this NetServer, even for a short time. Otherwise, damage to system components may result due to improper cooling air flow.

Insert the tabs inside the rear of the cover into the slots at the rear of the chassis and slide the cover toward the rear. Tighten the thumbscrew at the front of the cover.

Removing the HP NetServer LH 3r Covers

To remove the covers, first remove the bezel from the front of the NetServer.

Bezel

The bezel has three clips that mount onto a hinge assembly, which is secured to the NetServer chassis. To remove the bezel, simply pull it toward you until it comes free.

English

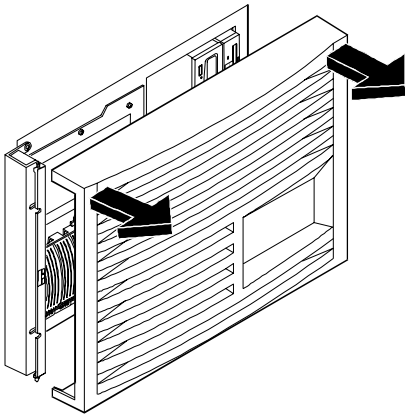


Figure 3-4. Removing the HP NetServer LH 3r Bezel

CAUTION	Do not unscrew the NetServer from the rack until you have extended the anti-tip foot from under the front of the rack. This anti-tip device must be extended to prevent the rack and NetServer from tipping over, which could damage the NetServer and injure people.

If it is secured to the rack, unscrew the NetServer chassis from the rack, as shown in Figure 3-5. Do not unscrew the entire hinge or bracket from the chassis; remove only the outer screws, so the hinge and the bracket remain attached to the NetServer chassis. Pull the NetServer forward from the rack until the lockout device engages with a click.

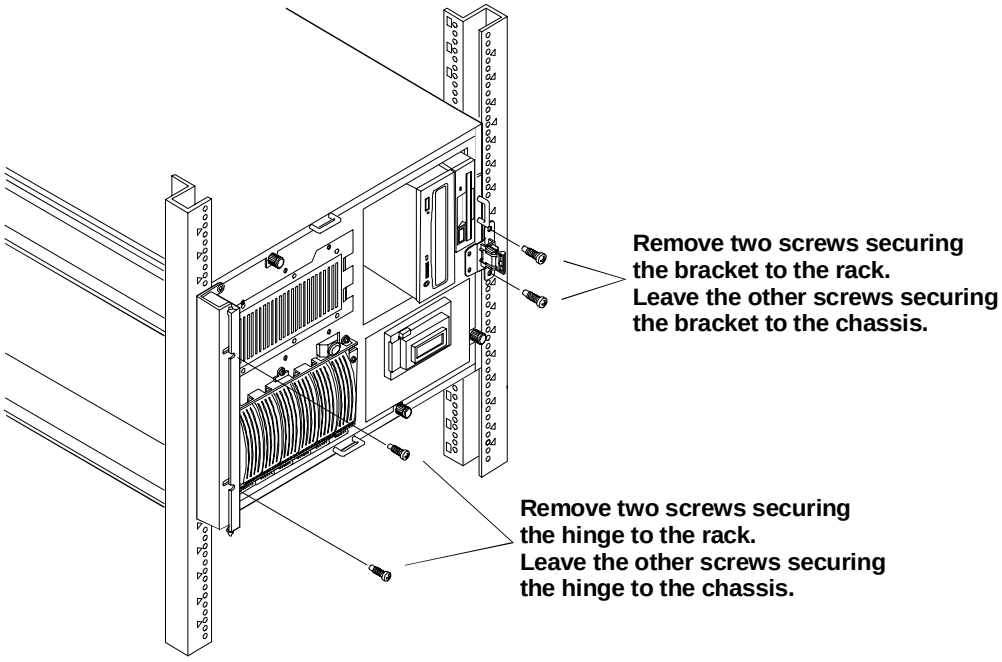


Figure 3-5. Unscrewing the HP NetServer LH 3r Chassis From the Rack

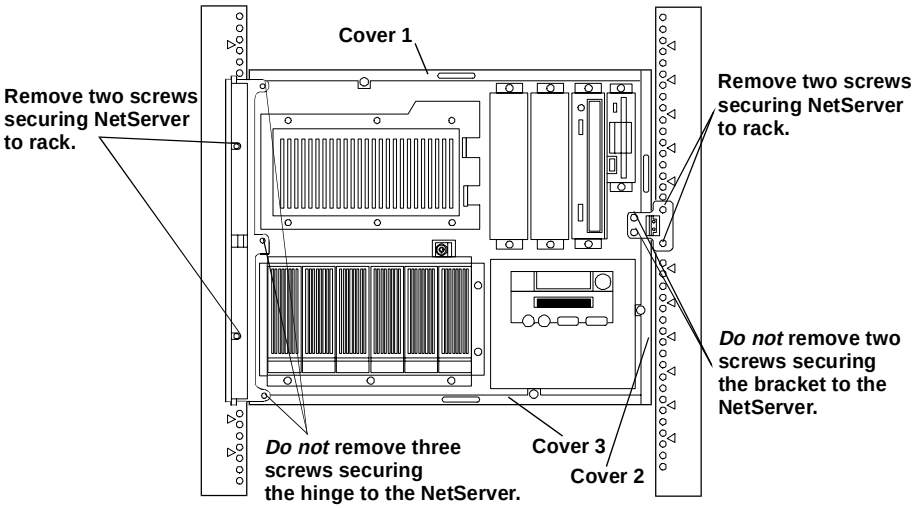


Figure 3-6. Screw and Cover Locations

English

CAUTION	The NetServer covers are heavy. Support them as you remove them, and allow room to move them away from the NetServer and for storage.

Cover 1

Remove cover 1 by unscrewing the thumbscrew and pulling the cover forward to disengage it. Lift it up and away from the chassis.

Cover 2

Remove cover 2 by supporting it with your hand, then unscrewing the thumbscrew and pulling the cover forward to disengage it. Lift it away from the chassis.

Cover 3

Remove cover 3 by supporting it with your hand, then unscrewing the thumbscrew. Pull the cover forward to disengage it and catch it as it falls away from the chassis.

Replacing the HP NetServer LH 3r Covers

CAUTION	Replace all covers before operating this NetServer, even for a short time. Otherwise, damage to system components may result due to improper cooling air flow.

Insert the tabs inside the rear of the cover into the slots at the rear of the chassis and slide the cover toward the rear. Tighten the thumbscrew at the front of the cover.

4 Installing Accessory Boards

English

Accessory Boards

The HP NetServer accepts PCI and ISA accessory boards connected to the I/O Board. An accessory board can be identified by the offset of the bracket and the shape of the edge connector:

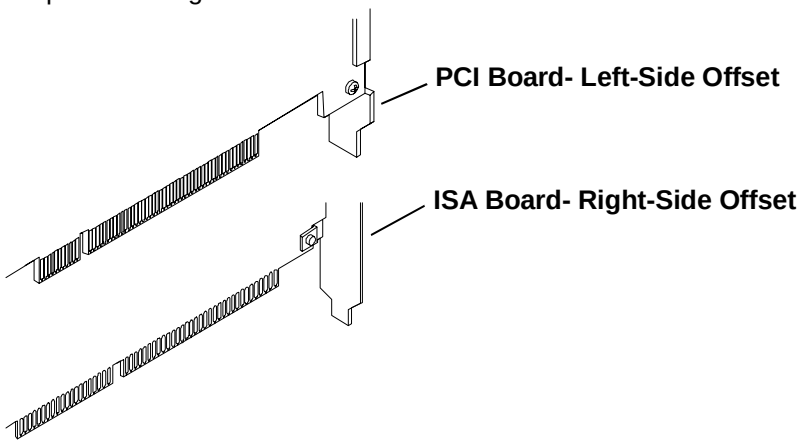


Figure 4-1. Accessory Board Identification

The I/O Board

The I/O board contains:

- The Remote Management connector, linking the I/O board to the external connector on the rear panel.
- The I/0 Memory slot, which contains cache memory used by the Intel i960RD I/O processor.
- The SE SCSI connector, which services any single-ended SCSI device installed in the internal (non-hot-swap) trays.
- The PCI Board Slots, which are eight connectors that accept PCI boards.

- The ISA Board Slot, which accepts a single ISA board. This slot is shared with PCI slot 1. Either slot can be occupied, but not both.
- The two SCSI connectors, A and B, which are separate channels that control the disk arrays in the right (standard) and left (optional) hot-swap mass storage cages, respectively. The base configuration of the NetServer has one hot-swap mass storage cage on the right side, controlled by a connection to SCSI connector A. By default, this disk array is controlled by the integrated HP NetRAID controller.

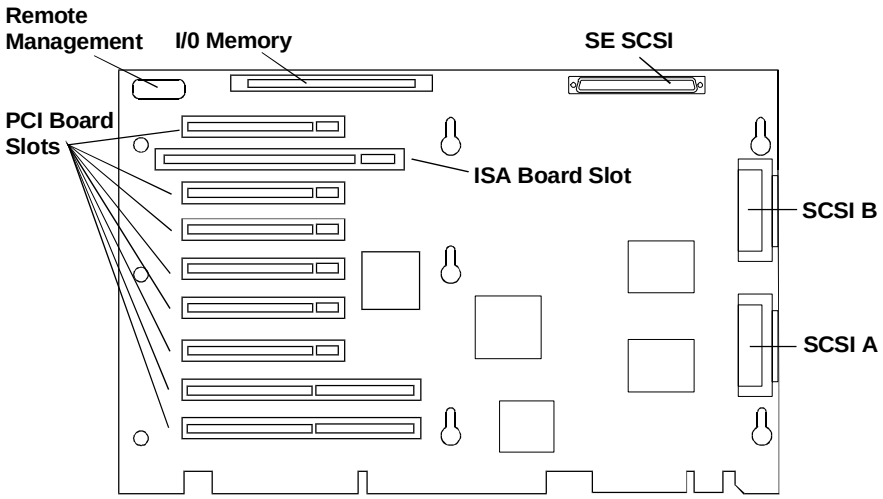


Figure 4-2. I/O Board With Devices and Bus Structure

NOTE For a list of boards HP has tested with the NetServer, see the Help topic "Tested Parts List" on the HP NetServer Navigator CD-ROM.

Installing Accessory Boards

Remove the NetServer's cover: (See Chapter 3, "Removing and Replacing Covers.")

To install accessory boards:

1. Read the documentation included with each accessory board. Follow any special instructions and installation recommendations. Some boards have

English

preferred slot locations. If not, consider the boot order (see Figure 4-3) when choosing the accessory board socket in which to install the board.

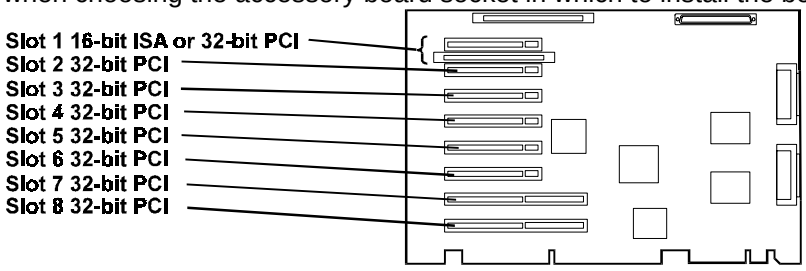


Figure 4-3. Accessory Board PCI and ISA Slots

Boot order for PCI controllers is determined by slot location. The system searches for a bootable device in the following order:

1. IDE CD-ROM drive with a bootable CD-ROM.
2. Flexible disk drive with a bootable flexible disk.
3. Embedded SCSI controller or embedded DAC.
4. PCI boards in slots in the following order: 8, 7, 6, 5, 4, 3, 2, 1.

This boot order can be changed using the SETUP utility (press [F2] during the boot process).

2. Remove the slot cover for each slot to be used, and store it for future use. If you are installing any full-length PCI boards, also remove the accessory board retainer. Push on the tab on the retainer to release it, and then slide it out of the board guide.

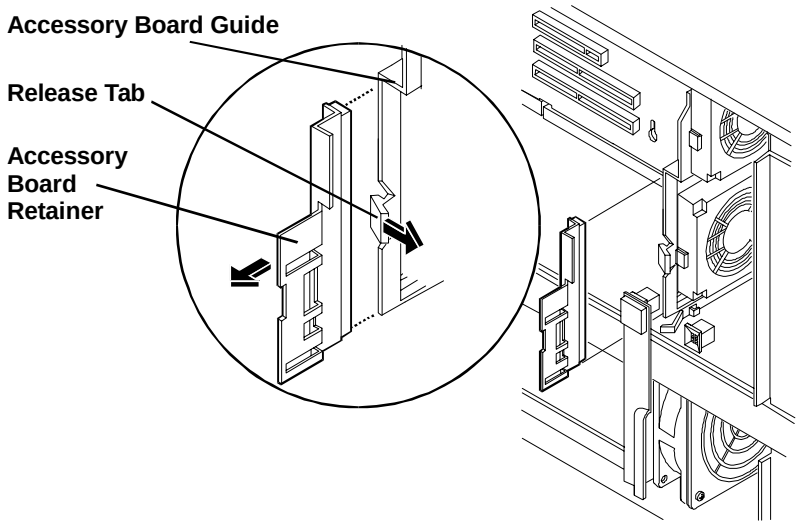


Figure 4-4. Accessory Board Retainer and Guide

3. Install the boards: Insert each board in the desired slot and fasten the board's mounting screw at the slot opening at the rear of the chassis. Connect any required cables to the boards. If you removed the board retainer, reinstall it.

NOTE If you install an ISA non-Plug-and-Play board, you must reserve system resources (some or all of: memory addresses, I/O addresses, IRQs, and DMA channels) for it. Write down that information now for reference when you reserve system resouces. See "Configuring the NetServer" for details of using ISA Plug and Play boards.

4. Replace cover 1.

5 Installing Additional Memory

English

The System Board

The System Board contains memory used by the NetServer, one or two Pentium II processors, support devices for the processors, bus speed jumpers, and various support devices:

- The primary processor slot contains a Pentium II processor. There is space for a second processor, but the base configuration has a terminator installed in the second processor's socket.
- There is space for two Voltage Regulator Modules (VRM), one for each installed processor. The base configuration has a single VRM for the single processor.
- The processor system switches synchronize the processor to the system bus. Refer to the switch settings key printed on the System Board in the upper right corner.
- The Bus Speed Jumpers set 100 MHz or 66 MHz bus speed.
- The DIMM sockets hold up to four 5V DIMM modules.

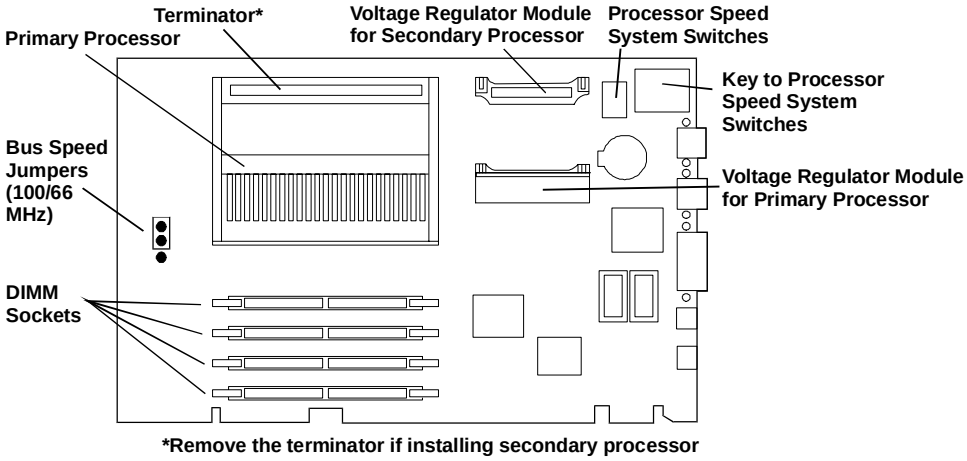


Figure 5-1. System Board

NOTE Use only HP DIMMs listed in HP Information Assistant or in HP Order Assistant.

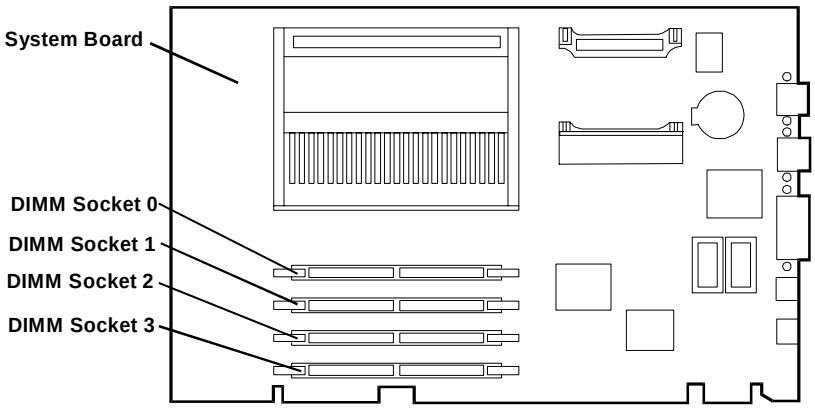


Figure 5-2. DIMM Sockets

Installing Additional Memory

Installing Additional Memory in the LH 3

1. Remove the NetServer's cover 3 (see Chapter 3, "Removing and Replacing the Covers.")
2. Install the DIMMs (see Figure 5-3):
   a. Remove a DIMM from its container, handling the module by its edges. Lay it on an anti-static surface.
   b. Choose a socket into which you want to install a DIMM. DIMMs may be installed in any combination, in any socket.
   c. Spread the two retaining clips on the socket outward.
   d. Align the notches on the DIMM with the keys on the socket.
   e. Holding the DIMM at 90 degrees to the system board, press the DIMM fully into the socket until the retaining clips close. If the clips do not close, the DIMM is not inserted correctly.

English

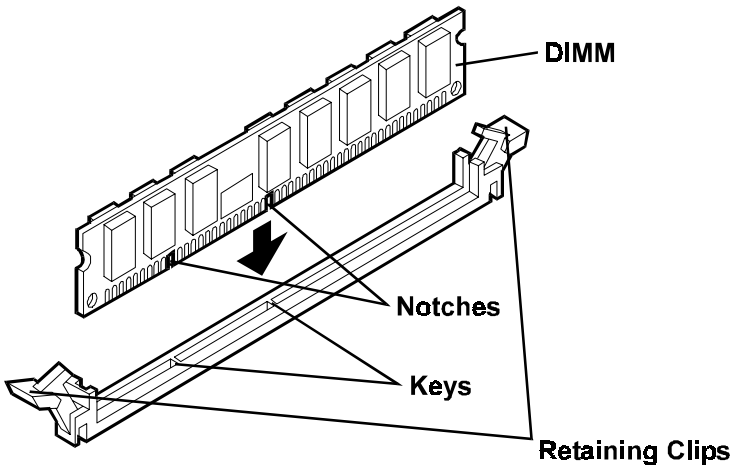


Figure 5-3. Inserting DIMM Into Connector

3. Repeat step 2 to install all of the DIMMs for your memory configuration.
4. If you are not installing any other accessories, replace cover 3. (See Chapter 3, "Removing and Replacing the Covers.")

Installing Additional Memory in the LH 3r

1. Remove the NetServer's cover 2 (see Chapter 3, "Removing and Replacing the Covers.")
2. Remove the system board by raising the retaining latches to disengage it from the socket, then pull it out until it clears the chassis guides. (See Figure 5-4.)

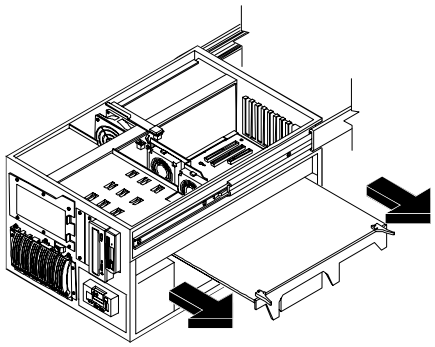


Figure 5-4. Removing System Board From LH 3r

3. Position the system board flat and component side up on an anti-static surface. Ensure that the corner clears the table surface, as shown in Figure 5-5.

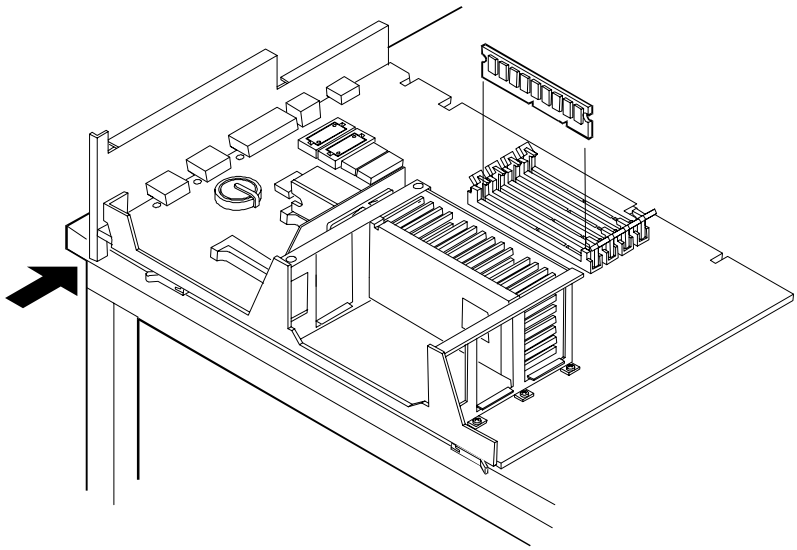


Figure 5-5. Installing DIMMs in System Board

4. Install the DIMMs (see Figures 5-2, 5-3, and 5-5):

   a. Remove a DIMM from its container, handling the module by its edges. Lay it on an anti-static surface.

b. Choose a socket into which you want to install a DIMM. DIMMs may be installed in any combination, in any socket.

c. Spread the two retaining clips on the socket outward.

d. Align the notches on the DIMM with the keys on the socket.

e. Holding the DIMM at 90 degrees to the system board, press the DIMM fully into the socket until the retaining clips close. If the clips do not close, the DIMM is not inserted correctly.

5. Repeat step 4 to install all of the DIMMs for your memory configuration.
6. Reinstall the system board in the HP NetServer LH 3r by inserting it into the chassis guides and pushing it inward as far as it will go. Refasten the latches to engage the system board with its socket and lock it into place.
7. Replace cover 3. (See Chapter 3, "Removing and Replacing the Covers.")

6 Installing Mass Storage Devices

English

Mass Storage

The NetServer chassis has space for two hot-swap mass storage shelves, and is shipped with a single hot-swap mass storage cage. If you need more storage than your configuration allows, you can purchase the *HP NetServer Mass Storage Upgrade Kit* to obtain a second hot-swap mass storage cage. Like the primary cage, the secondary cage can hold up to six low-profile Ultra2 hot-swap hard disk drives.

There are two empty shelves in the non-hot-swap shelf area. These shelves can be used to install 3.5-inch or 5.25-inch SE SCSI mass storage devices, LUN tape drives, or other HP-tested accessories.

Supported Mass Storage Devices

NOTE Do not mix devices with high voltage differential (HVD) drivers and receivers and devices with SE, LVD or multimode drivers and receivers on the same SCSI bus. I/O circuits used by devices with SE, LVD (Ultra2) or multimode drivers and receivers do not operate at HVD levels and should never be exposed to HVD environments. If you mix SCSI SE and SCSI LVD (Ultra2) devices, system performance will be adversely affected. For best performance, use only LVD devices.

The NetServer supports two classes of mass storage devices - SCSI devices installed in the two non-hot-swap shelves next to the CD-ROM player and the flexible disk drive, and the Ultra2 SCSI hot-swap hard disk drives installed in the hot-swap mass storage cage. If you need additional mass storage capacity, you can order a second hot-swap mass storage cage. Use only high-performance Ultra2 hot-swap drives in the hot-swap mass storage cage.

You can add any standard (non-Ultra2) wide, single-ended SCSI device in the two non-hot-swap shelves, such as removable hard disk drives or tape backups. Use the SE connector on the provided cable.

For the latest list of HP-tested products, refer to the "Tested Products List" Help topic on the *HP NetServer Navigator CD-ROM*.

Table 6-1. Supported SCSI Devices

Location	Drive Types
Hot-Swap Mass Storage Shelves	4.2, 9.1, or 18.2 GB Ultra2 7200 rpm or 10K rpm drives (up to 35W power consumption)
Non-Hot-Swap Mass Storage Shelves	4.2 or 9.1 GB Ultra Wide or Single-Ended SCSI Drives, 7200 rpm
	DAT backup systems or Tape Drives (DLT, DDS, autoloader)

SCSI Addressing

NOTE Do not set up any devices with SCSI address 7. This address is reserved for the SCSI controller.

Hot Swap Drive Cage Addresses

The HP NetServer comes with a single hot-swap mass storage cage installed. In the HP NetServer LH 3, the cage is on the lower right front. In the HP NetServer LH 3r, the cage is at the lower left front.

The SCSI addressing scheme associated with the hot-swap mass storage cage begins with SCSI address 0, and continues with addresses 1, 2, 3, 8, and 9.

You can install a second hot-swap mass storage cage. Addresses in the second cage are independent of the drive addresses in the primary cage. Do not install a narrow SCSI drive in any hot-swap mass storage shelves with an address higher than 6; narrow SCSI is limited to SCSI addresses 0 - 7, and the NetServer will not be able to communicate with it.

Other SCSI Device Addresses

SCSI devices installed in the two non-hot-swap shelves next to the flexible drive and CD-ROM drive are attached to the SE SCSI connection, and must use a SCSI address that does not conflict with the SCSI addresses used by drives in hot-swap mass storage shelves. Do not install a narrow SCSI drive in any location with an address higher than 6; narrow SCSI is limited to SCSI addresses 0 - 7, and the NetServer will not be able to communicate with it.

English

Hot-Swap Mass Storage Cage

Low-Profile and Half-Height Drives

SCSI hot-swap hard disk drives come in two heights: the 1-inch low-profile driv and the 1.6-inch half-height drive.

Ultra2 drives are LVD (low voltage differential) drives, which allow the integration of the differential drivers and receivers into SCSI drive controllers. Ultra2 technology provides increased signal quality, and ensures the same data integrity as the previous high voltage differential designs at a reduced cost.

An added benefit of the low voltage design is that the SCSI bus cable can extend up to 12 meters.

CAUTION	Do not mix devices with high voltage differential (HVD) drivers and receivers and devices with SE, Ultra2 or multimode drivers and receivers on the same SCSI bus. I/O circuits used by devices with SE, Ultra2 or multimode drivers and receivers do not operate at HVD levels and should never be exposed to HVD environments. If you mix SCSI SE and SCSI Ultra2 devices, system performance will be adversely affected. For best performance, use only Ultra2 devices.

Filler Panels

When you have fewer drives than the hot-swap mass storage cage supports, a 1-inch *filler panel* must be inserted in each empty disk location. Filler panels ensure that drive cage has the proper ventilation and air flow. Remove the filler panel when you insert a new drive.

CAUTION	The filler panels serve an important purpose by helping the internal components ventilate and preventing excessive electromagnetic radiation. If these fillers are left out of the drive shelves, thermal damage and/or excessive EMI could occur.

Drive Spacers

When your drive cage holds a mix of 1-inch and 1.6-inch drives, you may need to add 0.5-inch *drive spacers*. The drive spacer fills the gap between adjacent drives

or between a drive and a filler panel. Disk spacers can be mounted on 1-inch low-profile drives or 1.6-inch half-height drives, so a drive spacer and low-profile drive are the same size as a half-height drive, and a drive spacer and a half-height drive are as large as two low-profile drives.

CAUTION	The drive spacers serve an important purpose by helping the internal components ventilate and preventing excessive electromagnetic radiation. If these drive spacers are left out of the drive shelves, thermal damage and/or excessive EMI could occur.

Configurations

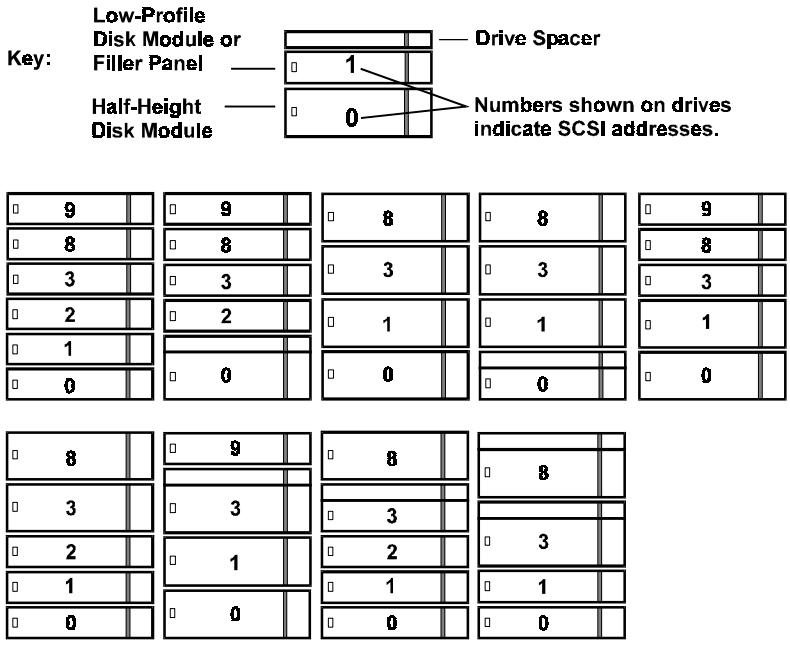
Figure 6-1 shows the supported configurations of SCSI hot-swap hard disk drives in both versions of the NetServer. The arrows indicate the order that you insert hard disk drives.

These configurations may use filler panels and drive spacers to close up the front of the hot-swap mass storage cage. If there are gaps in the cage, the drives may not receive the proper ventilation and could suffer thermal damage.

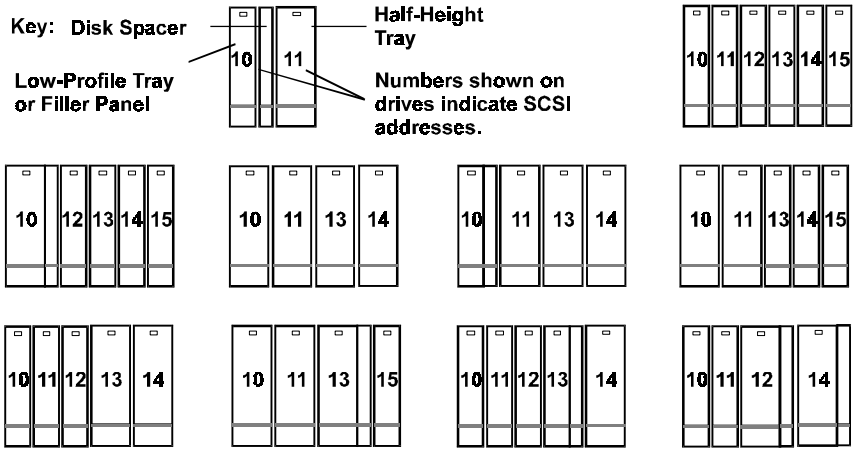
- If you have an HP NetServer LH 3, add hard disk drives starting from the bottom of the hot-swap mass storage cage. If you are using one or more filler panels, insert them at the *top* of the cage.
- If you have an HP NetServer LH 3r, add hard disk drives starting from the left. If you are using one or more filler panels, insert them on the *right* side of the drive cage.

NOTE	Do not install a narrow SCSI drive in any location with a SCSI address greater than 6. Narrow SCSI is limited to SCSI addresses 0 - 6, and the NetServer will not be able to communicate with a narrow SCSI drive.

English



HP NetServer LH 3 SCSI Configurations for the Primary Hot-Swap Mass Storage Cage



HP NetServer LH 3r SCSI Configurations for the Primary Hot-Swap Mass Storage Cage

Figure 6-1. Hot-Swap Drive Configurations

Installing a Hot-Swap Hard Disk Drive

CAUTION	Protect the drive from static electricity by leaving it in its anti-static bag until you are ready to install it. Before handling the drive, touch any unpainted metal surface to discharge static electricity. When you remove the drive from the anti-static bag, handle it only by the frame *Do not touch* the electrical components. Place the drive on the anti-static bag whenever you set it down. Hard disk drives are very susceptible to mechanical shock and can be damaged by a drop as short as one-quarter of an inch. Take care when unpacking and handling the drive. If the drop would crack an egg, it will damage the drive.

1. If there is a filler panel in the hot-swap mass storage location, remove the filler as follows:
   - Press the locking latch and insert your fingers.
   - Using your fingers, pull the filler panel straight out.

English

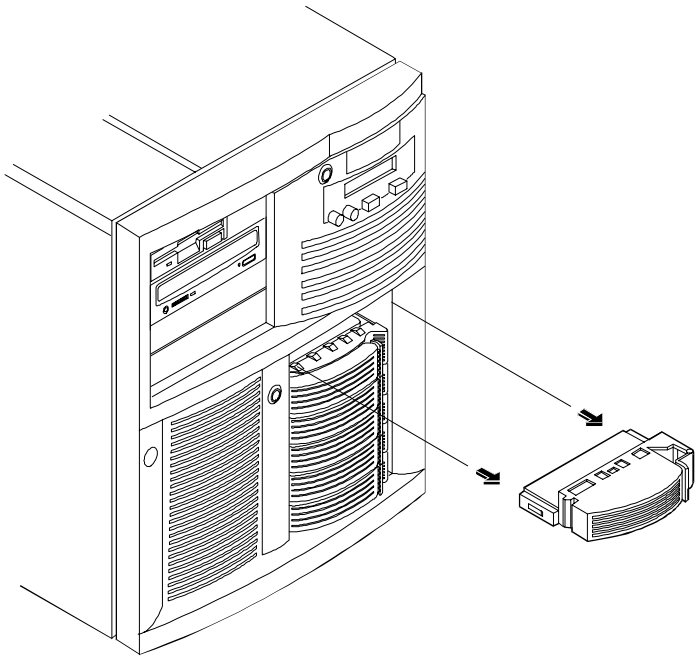


Figure 6-2. Removing a Filler Panel From the Hot-Swap Mass Storage Location

2. Drive spacers attach to the disk drive module with four small feet. If you need to remove a drive spacer from the adjacent disk drive module, remove it as follows:

   - Slide the drive spacer back, a fraction of an inch away from your body.
   - Tilt up the front of the drive spacer to disengage the front two feet.
   - Pull the drive spacer forward slightly to disengage the back two feet and lift.

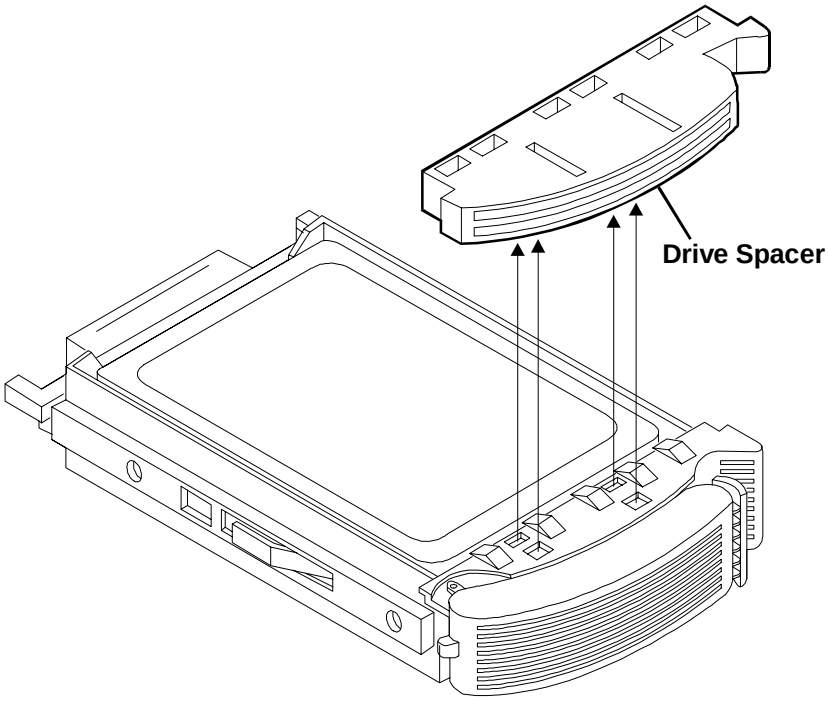


Figure 6-3. Removing the Drive Spacer

3. On the drive, press the locking latch in and pull the ejector handle out as far as it can go, as shown in Figure 6-4.

CAUTION	Be careful when you open the ejector handle. Extreme force can snap off the handle.

English

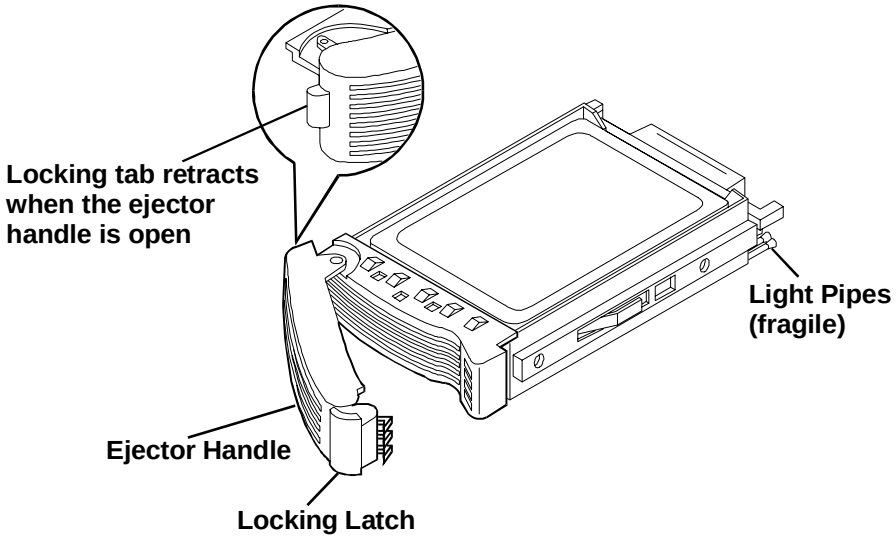


Figure 6-4. Readying Drive For Installation

4. Slide the drive slowly into the location until it stops. (See Figures 6-5 and 6-6).

CAUTION	Be careful not to damage the light pipes as you insert the drive. They are very fragile. *You must insert the drive slowly and gently*. If the drive is inserted too quickly when the system is on, in-rush current can cause the power supply to shut down.

5. Press the ejector handle in until you feel the latch click into place. Closing the ejector handle engages the drive with the electrical connector in the hot-swap mass storage cage and seats the drive. If the drive is unseated in the cage after closing the ejector handle, the handle was probably not pulled out far enough, and the locking latch failed to engage the hot-swap mass storage cage. Repeat the procedure from step 3.

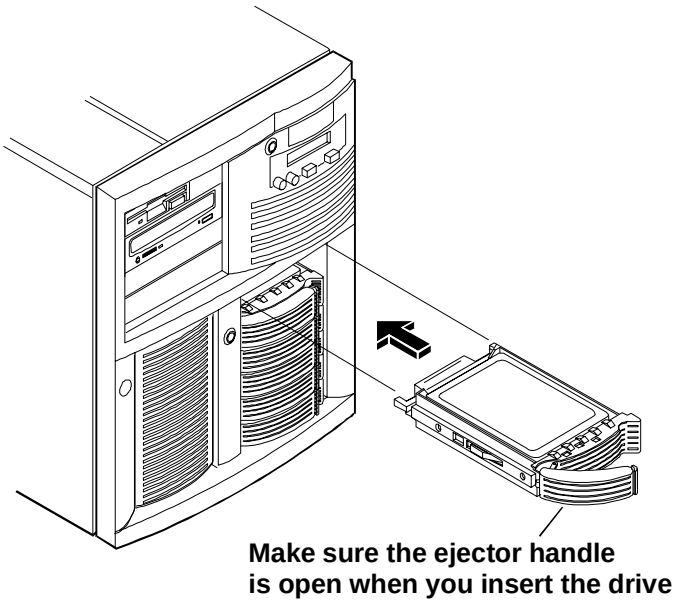


Figure 6-5. Installing a Drive in the HP NetServer LH 3

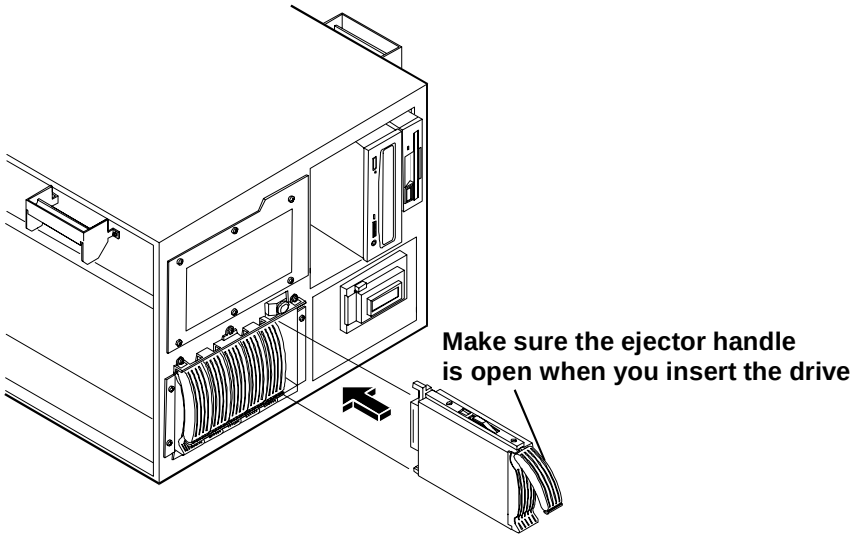


Figure 6-6. Installing a Drive in the HP NetServer LH 3r

English

Removing a Hot-Swap Hard Disk Drive

CAUTION	*You must remove the drive slowly to ensure that the drive heads are parked prior to removal.* Be sure to follow these instructions carefully to prevent handling damage, such as head slaps or head actuator unlocking.

1. To unlock the drive, push the locking latch in and then pull the ejector handle toward you.
2. Gently pull the drive out about an inch to disengage the power connection.
3. Wait about 30 seconds for the drive to stop spinning and the drive heads to park.
4. Use your hand to support the bottom of the drive. Slowly pull the drive straight out. *Do not allow the drive to fall.*
5. If you are removing the drive from an HP NetServer LH 3r, turn the drive slowly to its horizontal storage orientation.
6. Place the drive in an electrostatic protected container. *Do not stack drives.*

Integrated HP NetRAID

The HP NetServer contains an Integrated HP NetRAID controller, which puts the power of the HP NetRAID series of disk array controllers in the NetServer with no additional hardware.

HP NetRAID technology lets you link multiple hard disk drives together and write data across them as if they were one large drive. With the Integrated HP NetRAID controller, you can configure your linked drives into a RAID (Redundant Array of Independent Disks) subsystem.

Refer to the *Integrated HP NetRAID Controller Configuration Guide* for configuration information. You can also find the guide on the following HP website:

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

7 Installing Additional Power Supplies

English

Power Supplies

The NetServer is shipped with one power supply cage (containing two power supplies) and one empty power supply bay (covered with a protective panel). The NetServer operates with just two power supplies, but you can add another power supply and cage in the optional power supply bay for continuous operation if a power supply were to fail.

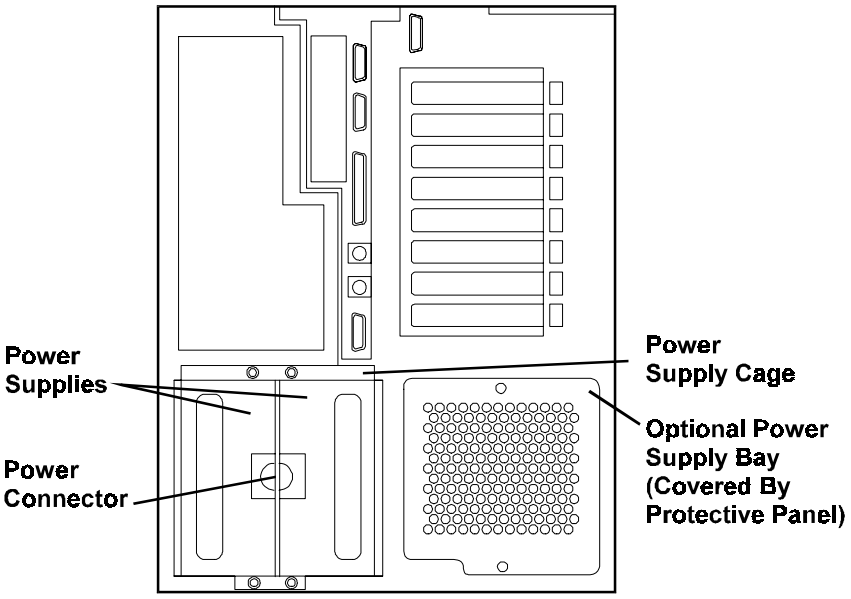


Figure 7-1. Power Supplies and Optional Power Supply Bay

If you desire an additional power supply for redundancy, you can purchase the *HP NetServer Redundancy Kit*. This kit includes:

- a power supply
- a power supply cage
- a small protective panel

- a fan assembly
- a user guide

Installing Additional Power Supplies

Refer to the *HP NetServer Redundancy Kit User Guide* for instructions on how to install additional power supplies.

Ventilating Fans

HP NetServer fans are placed to ventilate and cool internal components. The Redundancy Kit includes a fan assembly with two fans that mounts directly in front of the fans cooling the power supplies. In general, if any one fan fails, the NetServer continues operation, but if two fans fail, thermal shutdown will occur.

CAUTION	The NetServer must have its covers in place for proper cooling. If you open the NetServer while it is operating, do not run it for more than 3 minutes. Do not run the NetServer for more than 2 minutes without at least one working fan in the fan assembly mounted immediately behind the power supplies or in the exhaust fan assemblyFailure to observe these precautions may result in thermal damage to the NetServer. Servicerscan hot-swap any fan except the processor fan. If this fan fails, or if the metal baffle is removed, thermal damage to the NetServer can occur.

8 Mounting the NetServer in a Rack

Prevent Rack Tip-Over, Equipment Damage and Injury

WARNING	To prevent the rack from tipping over, extend the anti-tip foot from under the front of the enclosure prior to mounting any components. See Figure 8-12. Also lower the leveler feet at the four corners of the rack to improve stability and prevent the rack from rolling away as devices are inserted into their rack mounts. Failure to use the anti-tip foot and leveler feet could result in serious injury.

CAUTION	The HP NetServer LH 3r weighs up to 160 pounds (73 kg.) when fully loaded. Take out power supplies and hot-swap hard disk drives before lifting the NetServer into the rack.

CAUTION	Use two people when moving the NetServer or lifting it into the rack.

These Instructions for the HP NetServer LH 3r Only

Use the instructions in this chapter to put an HP NetServer LH 3r into an HP rack. These instructions cannot be used to put an HP NetServer LH 3 (the pedestal version of the NetServer) into a rack. The HP NetServer LH 3 and LH 3r are shown in Figure 8-1.

NOTE If you want to convert an LH 3 to an LH 3r, contact your HP Reseller for information about the conversion kit.

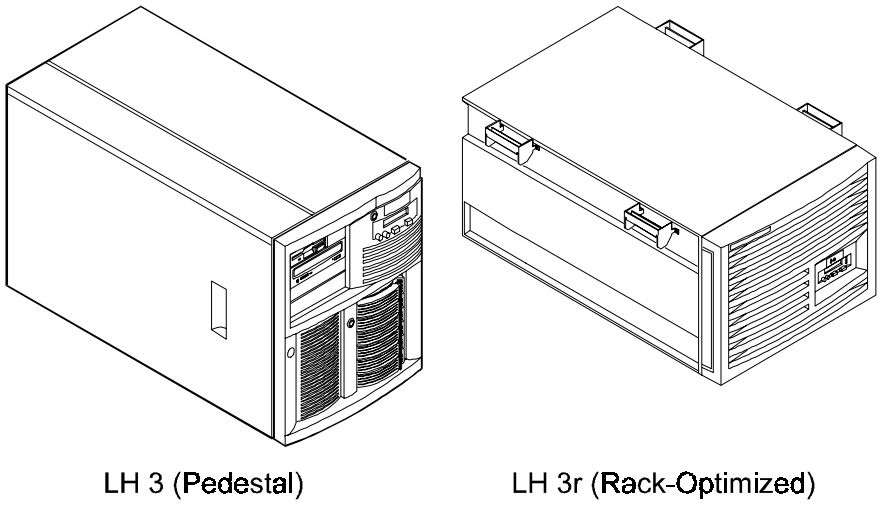


Figure 8-1. NetServer Configurations

English

Overview and Terminology

Terms used in this chapter are defined in Figure 8-2.

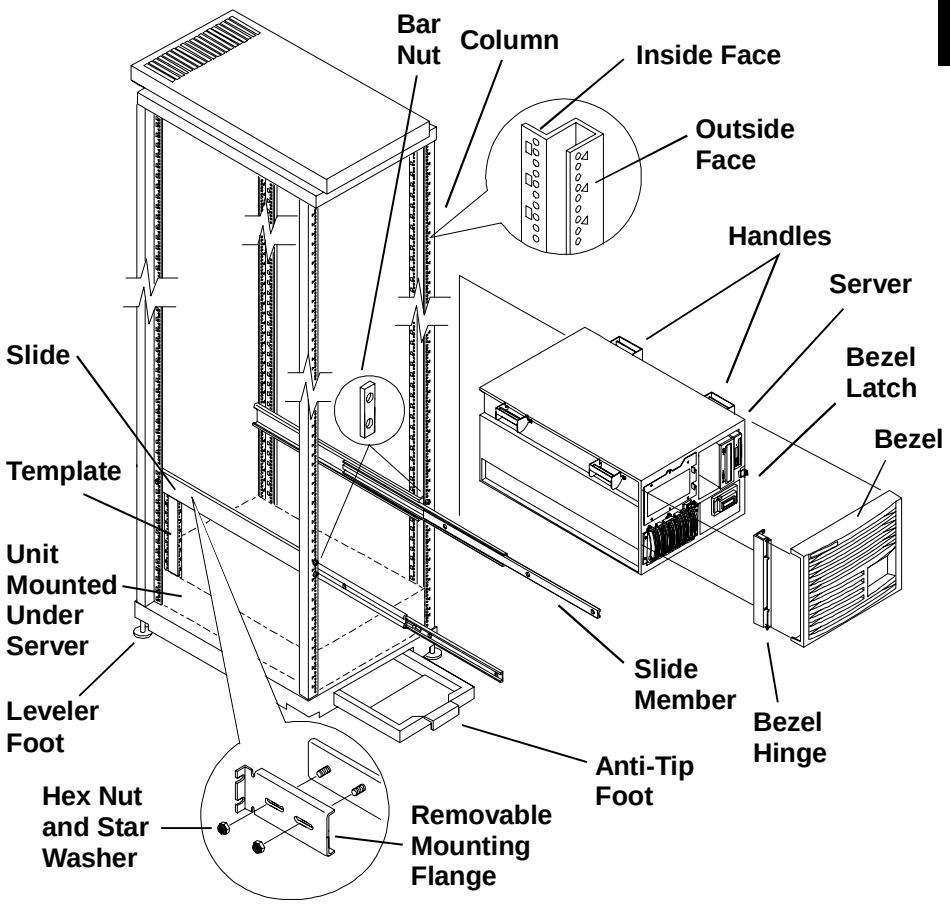
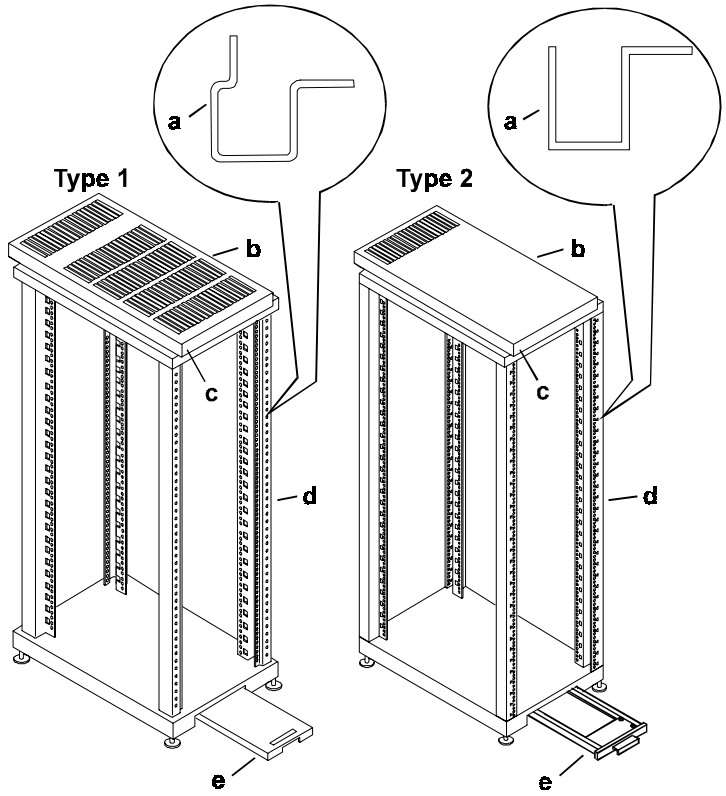


Figure 8-2. Overview of Terms

Determine HP Rack Enclosure Type



NOTES:

Type 1
a. 5-Cornered Columns
b. Full Panel Vent
c. "HP Rack System/E" Name Plate
d. Numbered EIA Units
e. Anti-Tip Foot Extends Out Front or Back

Type 2
a. 3-Cornered Columns
b. Fan-Only Vent
c. "HP Systems" Name Plate
d. EIA Units Marked by Triangles
e. Anti-Tip Foot Extends Out Front Only

Figure 8-3. Comparison of the Two HP Rack Versions

There are two types of HP NetServer Racks which are available or in use. Refer to Figure 8-3 and Table 8-1 for a comparison of the two types.

English

Note which rack type you have and follow the instructions for your version.

Table 8-1. The Two Rack Types Compared

Rack Feature	Type 1	Type 2
Product Nameplate	Hewlett Packard Rack System/E	Hewlett Packard HP Systems
Front and Rear Doors	Curved	Flat
Outside Panels	Plastic and Modular	Sheet Metal and Full-Length
Column Cross Section (See Figure 8-3)	5-Cornered	3-Cornered
Marking of EIA Units	Numbers Stamped in Metal	Triangular Cut Outs
Anti-Tip Foot	Extends from Front or Rear	Extends from Front Only
Columns Attached to Base	Offset from Edge of Base	Flush with Edge of Base

You can mount the HP NetServer LH 3r in either the Type 1 rack (HP Rack System/E) or in the Type 2 rack (HP Rack Systems). The procedures for mounting are similar, except that there are two different templates included and the mounting slides fasten to the rear columns differently.

Type 1 and Type 2--Mounting the HP NetServer LH 3r in the Rack

NOTE If you want to put your NetServer into a third-party rack, you may be able to find relevant documentation on HP's web site at the following URL:

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

1. First, determine and mark the height at which the NetServer is to be located in the rack enclosure.

   Use the original ordering information to locate where each component goes in the rack. See Figure 8-4.

   If the original ordering information is not available, use HP rack configuration tools to plan the location of the components.

   You can also use the HP NetServer rack configuration tools to make ordering easier and to automatically check that orders are complete. These tools can be found on the HP web site. Use the Search function with the words "rack configuration tools" at the following URL:

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

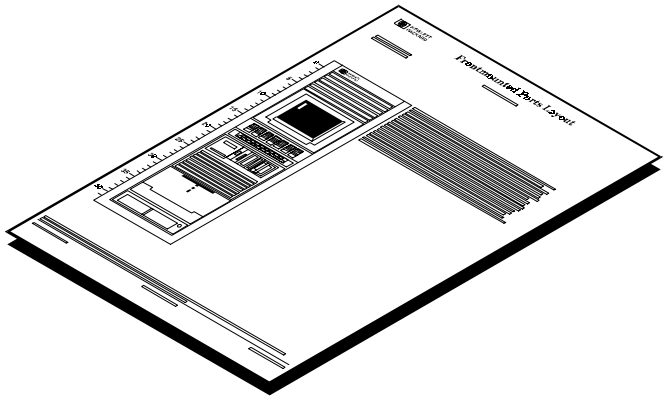


Figure 8-4. Rack Configuration Tools Layout

2. Determine where to put the mounting slides and install them in the rack.

NOTE	The slides are mounted differently, depending upon the rack type you have. To determine your rack's type, compare Figure 8-3 to your rack, especially noting the shapes of the columns and the doors and the method for marking EIA Units. For example, the Type 1 doors are curved, and EIA Unit numbers are stamped in the sheet metal of the columns.

English

Type 1 and Type 2 --What You Need to Know to Determine Location of the Slides

To find the correct location for mounting the slides, you need to know the following:

- Note that the HP NetServer LH 3r is 8 EIA Units high. The mounting slides for the server attach first to the rack enclosure. Then the server attaches to the slides near its top.
- Unlike some slides, these (for the LH 3r) do not come apart.
- Use the template which is shipped with the server to measure where the slides will be located. Choose the template to use based on which rack type (refer to Figure 8-3) you have:
  - use part number 5967-5201 for Type 1, the "Hewlett-Packard Rack System/E" rack
  - use part number 5064-5869 for Type 2, the "Hewlett-Packard Systems" rack
- Note the base line of the server (the line where the bottom of the server will be when mounted).
- When marking, use tape or a marker pen to show the correct holes on each column. (Either Figure 8-7 or Figure 8-9 can be used to determine which holes are correct.) Do not place rack nuts in the holes, only mark them. Screws will be inserted through these holes into bar nuts to secure the mounting flange on the slide to the rack column.

◊ The "bar nut" is a two-holed metal bar used to secure the mounting flanges of the slide to the rack columns (see Figure 8-5).

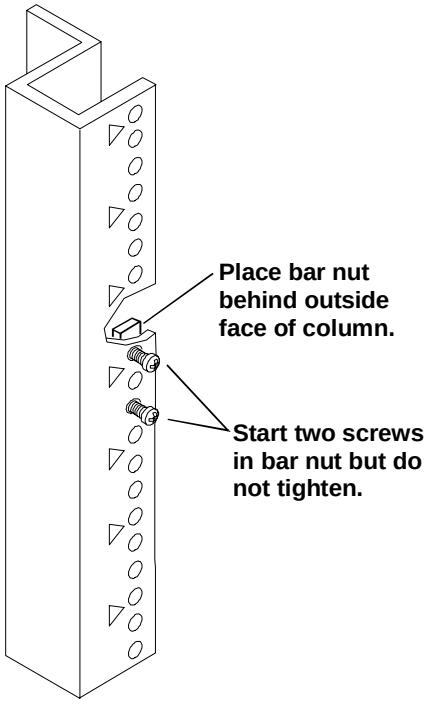


Figure 8-5. Where to Place Bar Nuts

◊ The bar nut is placed behind the outside face of the column, at the correct height as determined elsewhere in this chapter. Two screws are inserted through the correct holes on the front columns. Start (but do not tighten) both screws in the bar nut.

◊ The slots in the mounting flange allow you to insert the flange in place behind the outside face but in front of the bar nut.

◊ The mounting flange is then positioned behind the column face, but in front of the bar nut (see Figure 8-6).

English

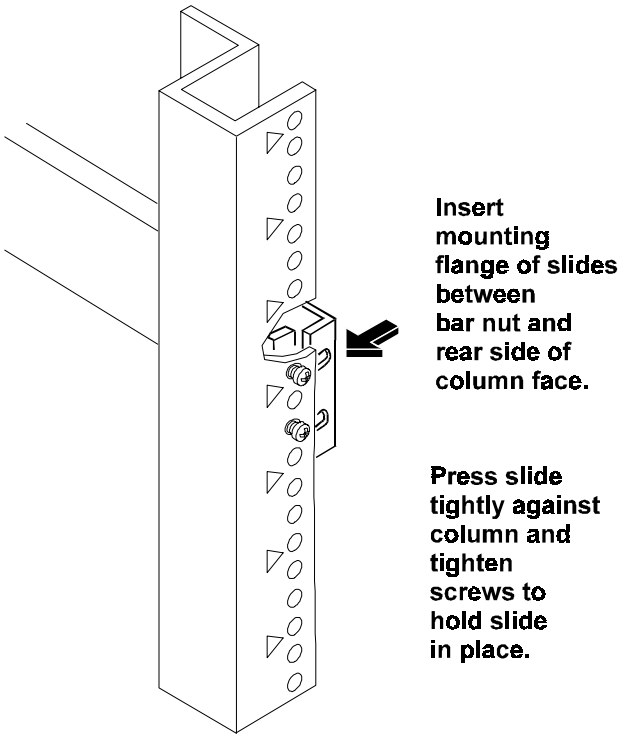


Figure 8-6. Securing Slide to the Front Column

Once you understand how to use the bar nut, use the template (or count if you no longer have the template) to mark the correct holes for mounting (on all four columns).

2a. To mount the slides in a Type 1 rack, follow the instructions titled "Type 1--Locating the Slides" (see Figure 8-7), and "Type 1--Mounting the Slides" (see Figure 8-8).

2b. To mount the slides in a Type 2 rack, follow the instructions titled "Type 2--Locating the Slides" (see Figure 8-9), and "Type 2--Mounting the Slides" (see Figure 8-10).

Type 1--Locating and Mounting the Slides

Type 1--Locating the Slides

For Type 1, see Figure 8-7. All four mounting brackets on the slides attach behind the outside faces of the columns. Use the template (or if you no longer have it, count) and mark the 20th and 22nd holes on the outside faces of each column. These holes correspond to the bottom hole of the eighth EIA unit (and the middle hole of the 7th EIA unit) above the unit under the server.

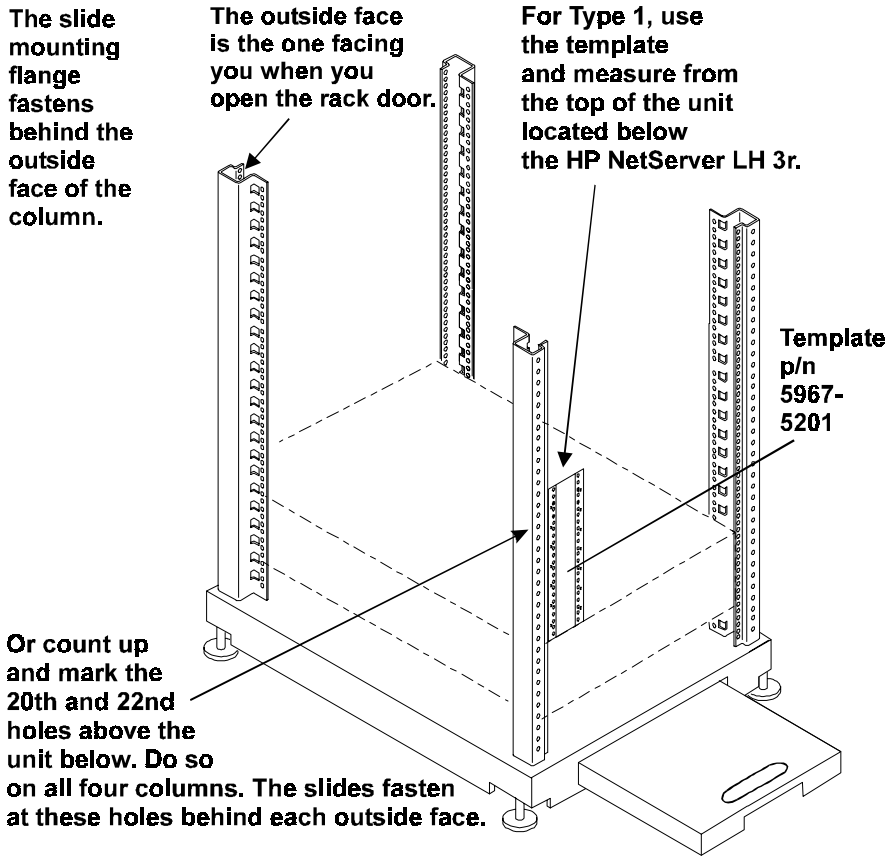


Figure 8-7. Locating the Slides for the Type 1 Rack

English

Type 1--Mounting the Slides

Once you have marked the locations of the slides, attach them. To do so for th "Type 1" Rack, follow these steps :

- ◊ First, orient the slides so the slide members extend out the front of the rack.
- ◊ Insert screws through the rack column and start them in one bar nut at the correct location on each column (see Figure 8-5). Prepare to insert the mounting flange of the slides between the column and the bar nut. (Refer to Figure 8-6.)
- ◊ Then line up the front and rear mounting flanges of the slide with the screws started in the bar nuts. Press the slide firmly against the rack column. See Figure 8-8.
- ◊ Tighten all four screws in the mounting flanges of each slide.

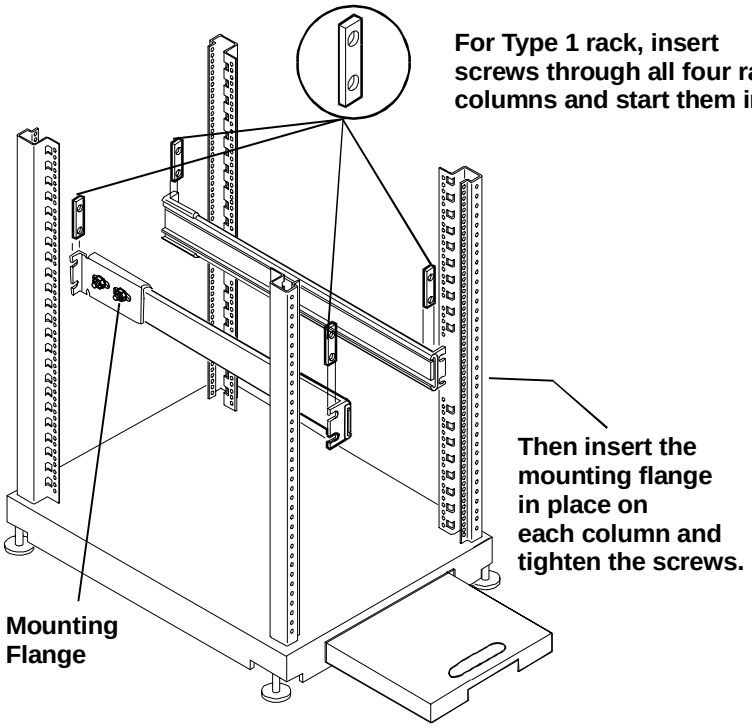


Figure 8-8. Orientation and Fastening of Type 1 Slides

Type 2--Locating and Mounting the Slides

Type 2--Locating the Slides

For Type 2, see Figure 8-9. The two front mounting brackets attach behind the outside faces of the front columns. The rear attachments for the slides in this case attach by means of a threaded stud and hex nut to the inside faces of the rear columns. Locate the hole for this stud using the template or by counting up 21 holes from the unit below.

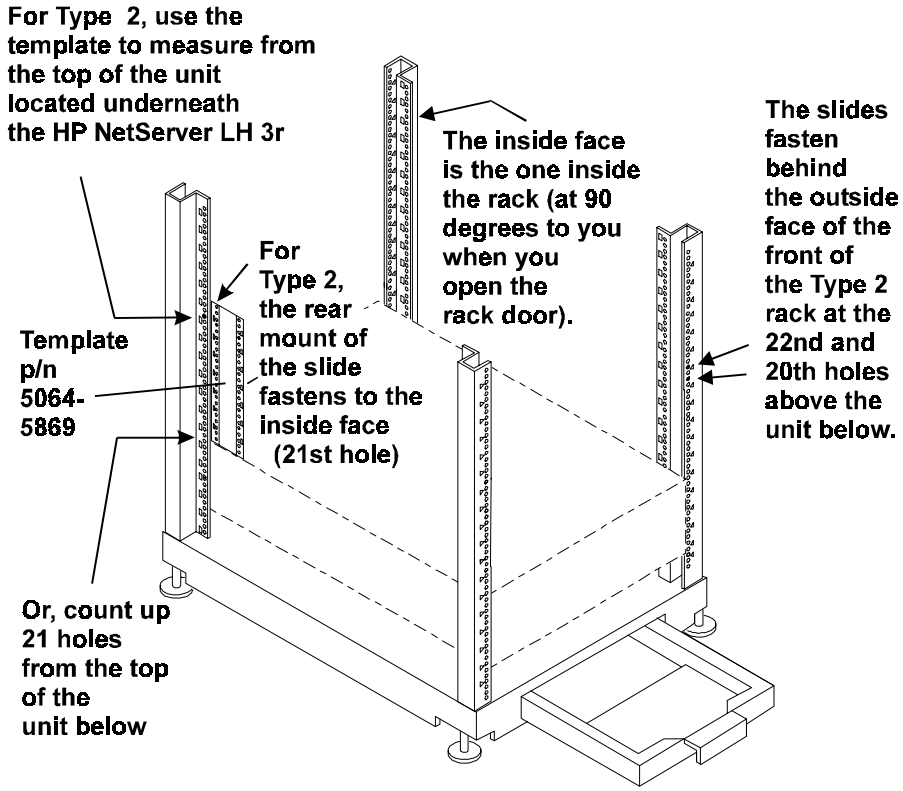


Figure 8-9. Location of Slides for Type 2

Type 2--Mounting the Slides

Once you have marked the locations of the slides, attach them to the rack. For the "Type 2" Rack, follow these steps to mount the slides:

English

- Before attaching the slides, take off the removable mounting flanges from the rear of each slide and save two hex nuts and lock washers.
- Next, orient the slides so the slide members extend out the front of the rack.
- Start screws in one bar nut at the correct location on the front columns. Leave the screws loose enough to accept the slide mounting flange. Refer to Figures 8-5 and 8-6.
- Insert the threaded stud on the rear of the slide through the inside face on the rear column of the rack. Fasten it in place using the lock washer and hex nut that held the mounting flanges in place. See Figure 8-10.
- Press the slide tightly against the rack columns.
- Tighten the screws inserted in the bar nuts to hold the front flanges of the slides in place.

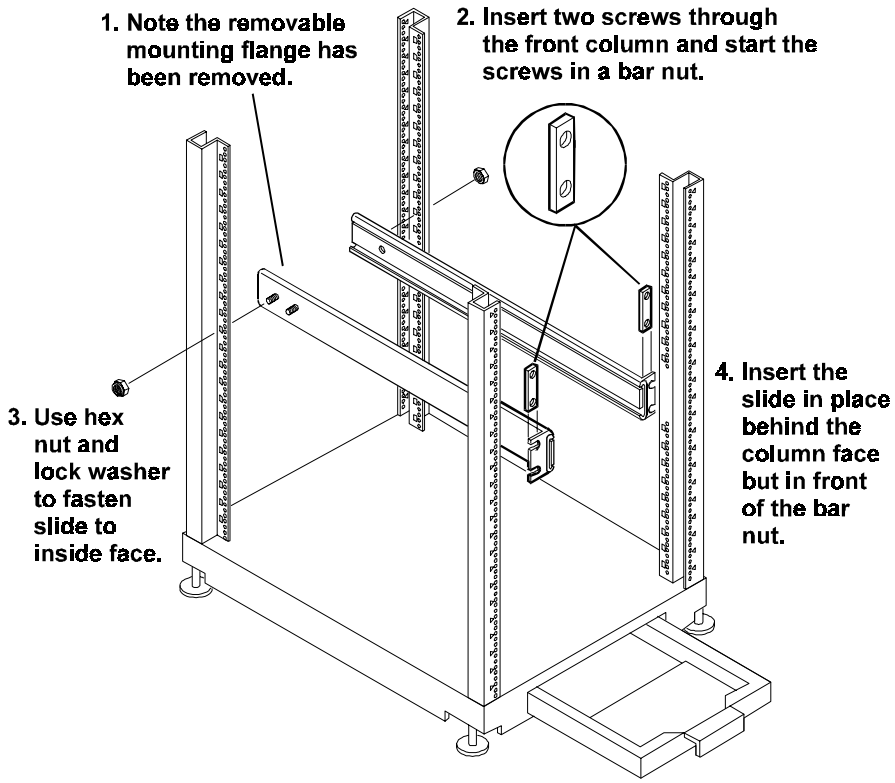


Figure 8-10. Orientation and Fastening of Type 2 Slides

English

Type 1 and Type 2--Completing the Installation

1. For either rack type, place four rack nuts on the outside faces of both front columns for use in mounting the front bezel.
   - ◊ Use the template for your rack type to place rack nuts in the front columns. You will need these rack nuts in place later in order to secure the server to the rack columns.
   - ◊ The rack nuts are placed in different positions on the front right-hand column than they are on the front left-hand column. See Figure 8-11.

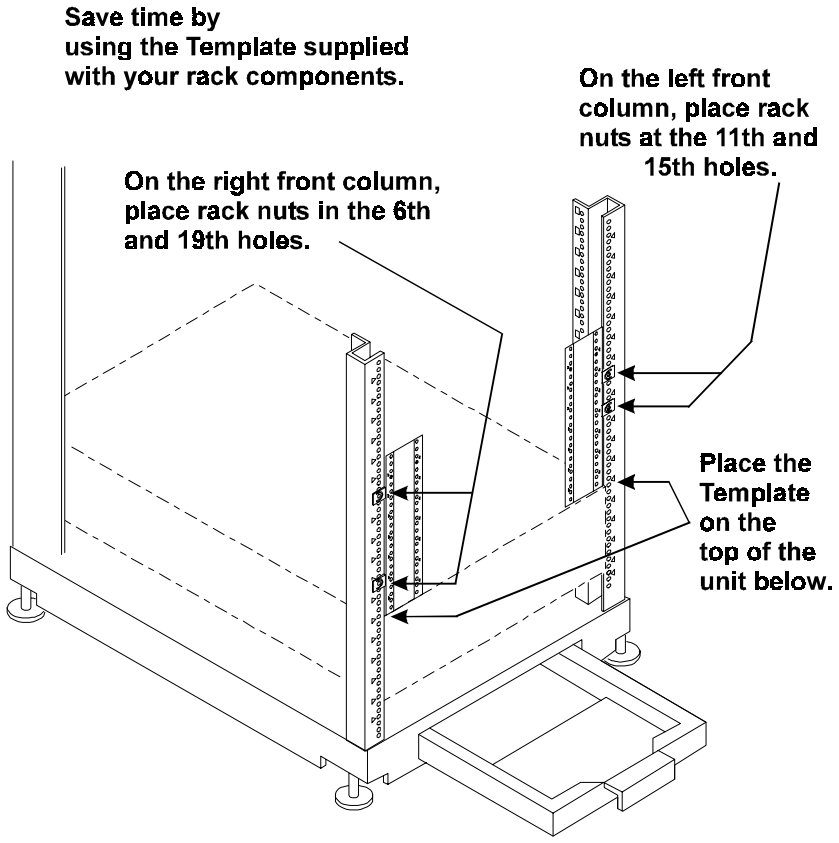


Figure 8-11. Place Rack Nuts for Later Use in Securing the Bezel

◊ If you no longer have a template, place the rack nuts for the bezel latch on the right front column in the 11th and 15th EIA holes above the unit mounted below the HP NetServer. Place the rack nuts for the bezel hinge on the left front column in the 6th and 19th EIA holes above the unit mounted below the HP NetServer. See Figure 8-11.

2. Extend the slides fully until you hear a click, indicating they are in the locked out position. Note that slides do not come apart. See Figure 8-12.

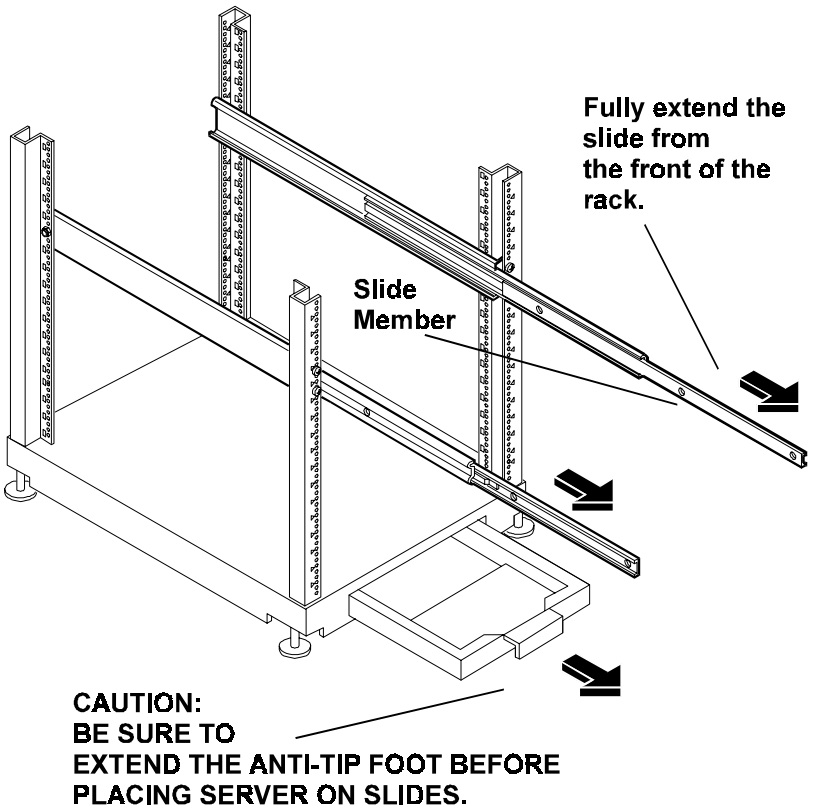


Figure 8-12. Fully Extend Slides and Anti-Tip Foot from Rack Front

English

CAUTION	Both rack types feature an anti-tip foot which must be extended out the front to prevent rack tip-over. See Figure 8-12. You can tell the front from the rear (for both types of rack) by the overhanging top panel at the rear of the rack.

3. Prepare to lift the server into the rack. To do so, extend the anti-tip foot from the front of the rack, then remove power supplies from the server to reduce the total weight to be lifted. See Figure 8-13.
4. Using two people, grasp the handles and lift the HP NetServer LH 3r. Move the server in between the extended slide members. Position the server so it is supported by the handles resting on the extended slide members.

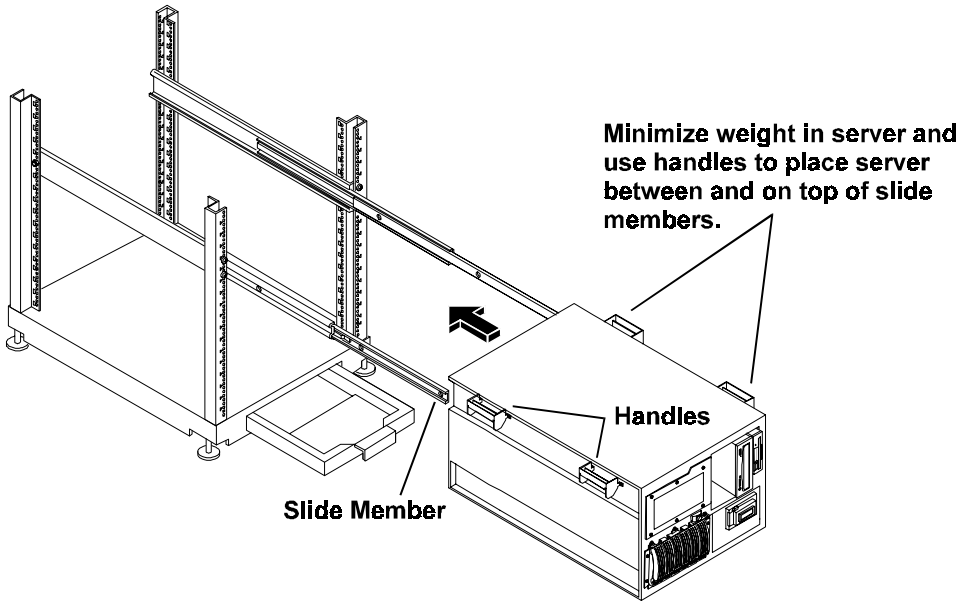


Figure 8-13. Lift and Place Server Handles on Slide Members

5. Let the NetServer rest on its handles while you line up the mounting holes in the top of the HP NetServer LH 3r chassis with the screw holes in the slides. See Figure 8-14.
6. Insert all three screws on each side through the slide members and into the sides of the HP NetServer LH 3r, so that the slides are securely fastened to the server. See Figure 8-14.

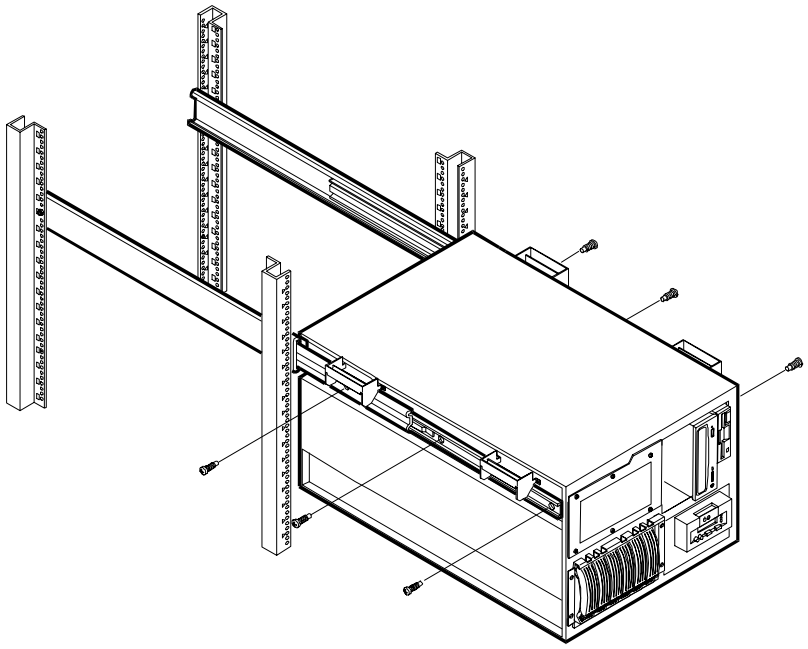


Figure 8-14. Insert Screws through Slides into Server Chassis

English

7. Remove two screws from each handle and take them off the server. See Figure 8-15. HP recommends that you retain these handles and the associated screws in case of removal and reshipping of the server.

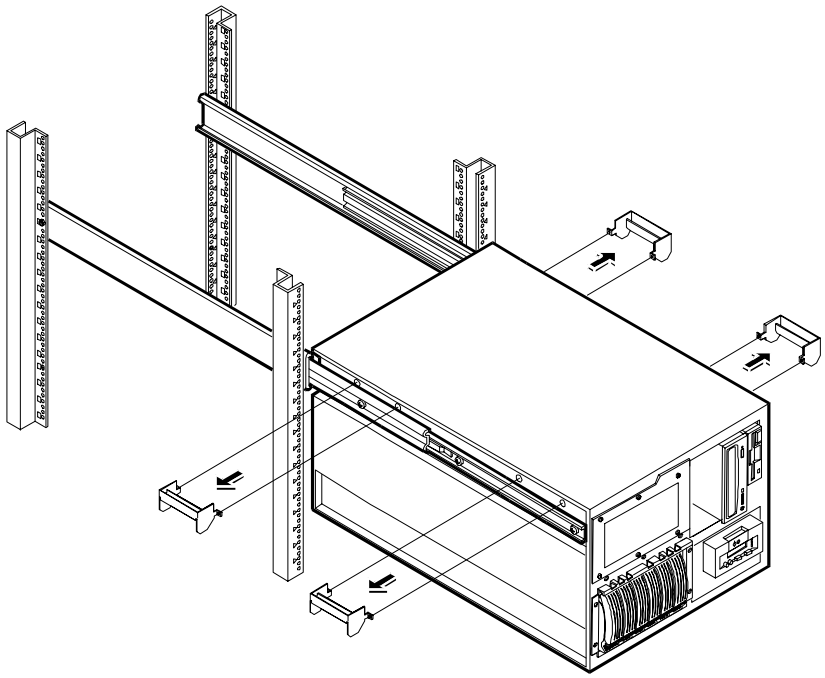


Figure 8-15. Remove Mounting Handles

8. The HP NetServer LH 3r is fastened to the front of the rack by screws which are placed through sheet metal brackets that are also used for the mounting of the front bezel hinge and latch.
9. Attach the bezel hinge to the server by inserting three screws through the right edge of the bezel hinge bracket and into the left front of the server. See Figure 8-16.
10. Attach the bezel latch to the right side of the server using screws provided.

11. Depress the lockout releases, and push the server completely into the rack. See Figure 8-16.

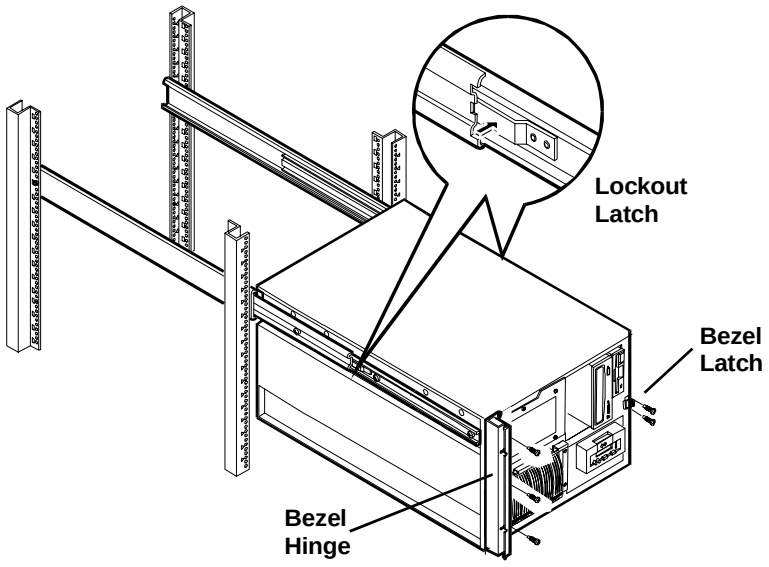


Figure 8-16. Location of Lockout Releases, Bezel Latch, and Bezel Hinge

English

12. Slide the server into the rack and attach the bezel hinge to the two (previously installed) rack nuts on the left column (refer to Figure 8-11) by means of two screws. Secure the latch plate on the right side of the server to the two previously installed rack nuts on the right column. See Figure 8-17.

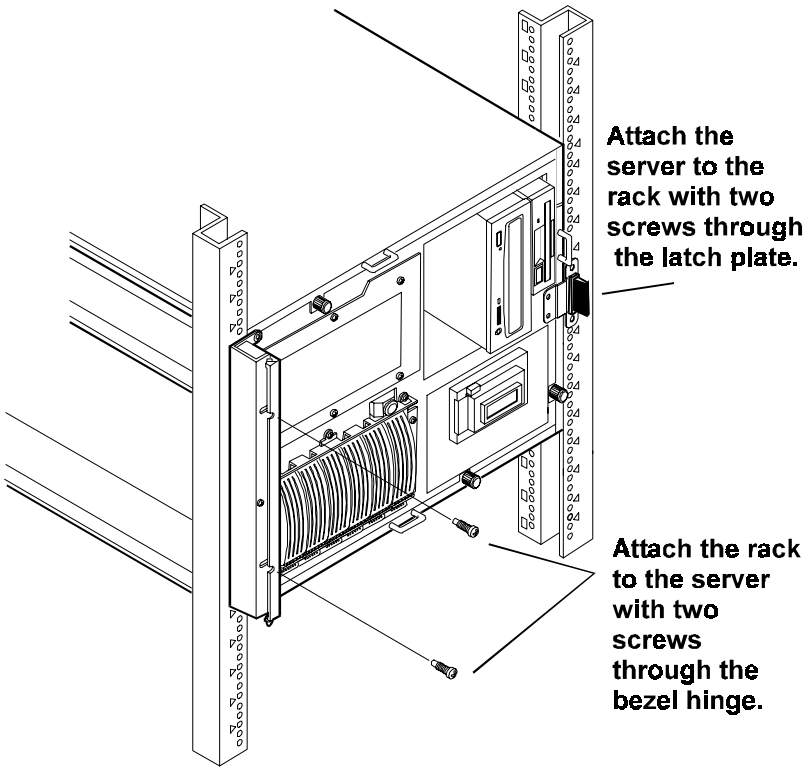


Figure 8-17. Fasten Bezel Mount in Place

13. Snap the bezel in place so it swings open to access the HP NetServer LH 3r internal mass storage cage. See Figure 8-18.

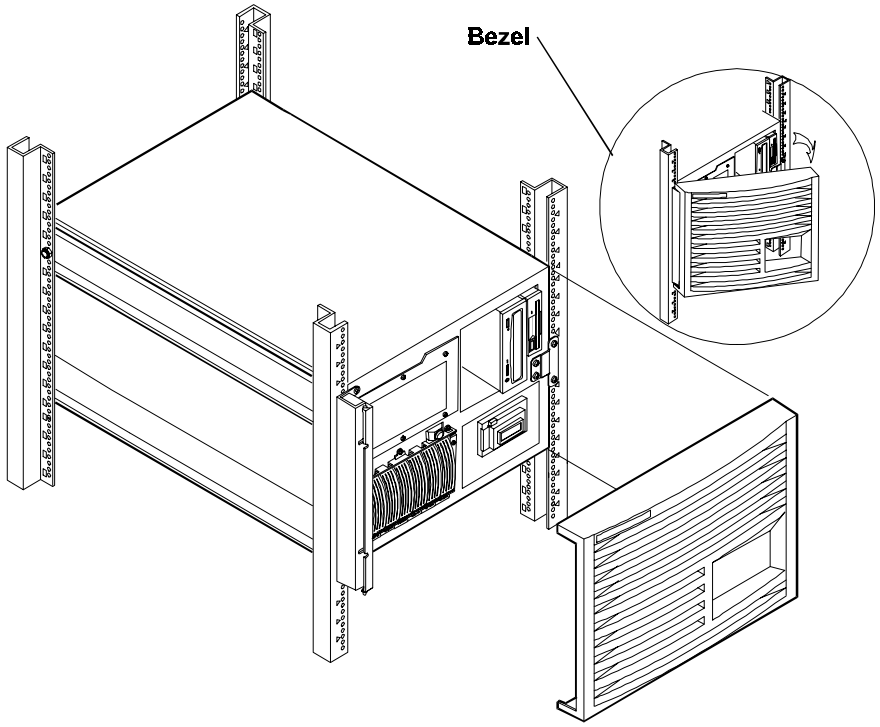


Figure 8-18. Snap Bezel into Place

9 Connecting the Monitor, Keyboard, Mouse, and UPS

Connect the monitor, keyboard, and mouse cables and the AC power cord to the appropriate connectors on the rear of the chassis.

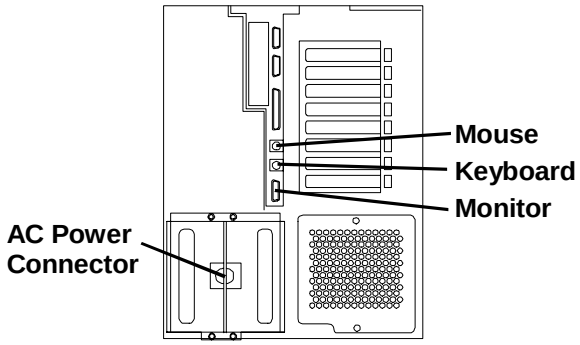


Figure 9-1. Rear View of LH 3/LH 3r

If you have an uninterruptible power supply (UPS), refer to the instructions supplied with it. Install and turn on the UPS.

NOTE	If you have installed your HP NetServer LH 3r into a rack, refer to the *Rack Cabling Reference for the HP NetServer LH 3r* for instructions on how to cable the NetServer to external connections.

The HP NetServer performs a diagnostic test when it is connected to an external power source, and then performs another test when the power switch is turned on. If an error condition occurs, note any error code appearing on the front panel, then refer to the troubleshooting section in Chapter 12.

10 Configuring the NetServer

English

The *HP NetServer Navigator CD-ROM* is shipped with your NetServer. You will use this CD-ROM to configure your NetServer.

Contents of the NetServer Navigator CD-ROM

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

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

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 following is a description of the contents of the *HP NetServer Navigator CD-ROM*, as accessed from the Main Menu.

Obtaining NetServer Product History

When the NetServer is connected to its monitor, keyboard, and power supply, you are ready to begin installation and configuration. As you configure the NetServer for use, it's important to have the very latest configuration information. This will inform you of any applicable compatibility issues, and provide you an up-to-date list of HP-tested peripherals and accessories. Refer to the "Tested Products List" on the *HP NetServer Navigator CD-ROM*.

You should also be familiar with HP Diagnostic Assistant (on the *HP NetServer Navigator CD-ROM*) and Information Assistant (on the *HP NetServer Online Documentation CD-ROM*) to help you configure the NetServer.

Follow the instructions in your *HP NetServer LH 3* (or *LH 3r*) *Installation Road Map* to complete these steps.

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.

Viewing the Readme File

1. Press the power-on button. Press the CD-ROM drive eject button. Place the *HP NetServer 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 boot, follow the diagnostic instructions on the screen.
2. Go to the HP Navigator Main Menu. If the language needs to be changed, select User Preferences and the language you want. You can also change the language of the BIOS when prompted.
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.

Configuration Assistant and Installation Assistant

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

HP Installation Assistant guides you through the NOS installation and configures the NOS with the appropriate drivers for the HP-bundled configuration

Before you run Configuration Assistant and Installation Assistant, you may need to run the Symbios Configuration utility and the Setup utility to do the following:

- 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 Symbios Configuration utility. Refer to "Run Symbios Configuration utility" later in this chapter.
- If you have installed an ISA non-Plug-and-Play accessory board, you must reserve system resources for it. Refer to the "Configuring an ISA Non-Plug-and-Play Board" later in this chapter.

English

Run Configuration Assistant and Installation Assistant

Insert the *HP NetServer Navigator CD-ROM* into the CD-ROM 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 NetServer Navigator starts, you may need to set the language, time, and date. Follow the onscreen instructions. You can also change the language of the BIOS when prompted.
2. Go to the HP NetServer Navigator Main Menu and select "Configuration Assistant and Installation Assistant."
3. Follow the onscreen instructions in Configuration Assistant to continue your NetServer installation.

Express Configuration

Express configuration is the preferred method to configure your 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 NetServer 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 NetServer. This installation also loads the Local Support Tool onto Windows NT or NetWare systems. The Local Support Tool is a stand-alone support tool accessed directly from the NetServer. It gives you information to help you manage the NetServer.

- ◊ Select No for manual NOS installation. Perform a manual NOS installation ifyou 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 if necessary. You can change your hardware at this time to conform to the advisories.

- Configure Remote Management: This utility configures the Integrated Remote Management device for 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 Mass Storage: The HP NetServer is shipped with the hot-swap drive unconfigured. Do ONE of the following:

  1. Run HP NetRAID Assistant to configure one or more RAID logical drives. Select "Execute" on the Configure Disk Array screen to start the HP NetRAID Assistant. For more information, refer to the *Integrated HP NetRAID Controller Configuration Guide*.

  2. Exclude SCSI A channel from the integrated HP NetRAID controller, as follows:

     a. Restart the HP NetServer.

English

b. When you see the message "Press <F2> to enter SETUP" on the monitor, press the F2 function key.

c. When the Setup Utility menu appears, use the up and down arrow keys to highlight "Included SCSI A Channel [Yes]."

d. Use the +/- keys to change it to "Included SCSI A Channel [No]."

e. Press the F10 function key to save and exit.

f. Answer "Yes" to the question, "Save configuration and exit now?" The NetServer will start up again, and HP Navigator will restart.

- 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 Integrated Remote Assistant utilities, troubleshooting utilities, and other utilities. It is not available for SCO UNIX. Select Execute on the Install Utility Partition screen.
- Execute Board Utilities: When Configuration Assistant detects installed boards for which there are additional configuration utilities on the HP NetServer Navigator CD-ROM, you can execute these utilities to complete the configuration of the boards by selecting Execute on the Execute Board Utilities screen.
- For Manual NOS Installation Only: Before you perform a manual NOS installation, you must print 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 disk 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 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 Management device for 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 Mass Storage: The HP NetServer is shipped with the hot-swap drive unconfigured. Do ONE of the following:
    1. Run HP NetRAID Assistant to configure one or more RAID logical drives. Select "Execute" on the Configure Disk Array screen to start the HP NetRAID Assistant. For more information, refer to the *Integrated HP NetRAID Controller Configuration Guide*.
    2. Exclude SCSI A channel from the integrated HP NetRAID controller, as follows:
       a. Restart the HP NetServer.
       b. When you see the message "Press <F2> to enter SETUP" on the monitor, press the F2 function key.

English

c. When the Setup Utility menu appears, use the up and down arrow keys to highlight "Included SCSI A Channel [Yes]."

d. Use the +/- keys to change it to "Included SCSI A Channel [No]."

e. Press the F10 function key to save and exit.

f. Answer "Yes" to the question, "Save configuration and exit now?" The NetServer will start up again, and HP Navigator will restart.

◊ Execute Board 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 Board 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 NetServer 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 Integrated Remote Assistant utilities, troubleshooting utilities, and other utilities. It is not available for SCO UNIX. Select Execute on the Install Utility Partition screen.

- 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 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 disk 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.

English

HP Management Solutions

HP Management Solutions is a comprehensive suite of utilities, applications, a built-in features to manage multiple servers locally or from remote locations. If you are unfamiliar with these products or concepts:

- Go to the Management Web site on the HP Web Site at **`http://www.hp.com/go/netserver_mgmt`** to view information on HP TopTools and all server management options for your NetServer.
- Read the *HP NetServer Server Management Reference Guide* included with your NetServer. This guide covers TopTools and all other server management utilities and options for the NetServer.
- View demonstrations of HP Remote Assistant and other third-party management applications. On the *HP NetServer Navigator CD-ROM*, select HP Management Solutions on the Main Menu, and then select "Execute HP Management Solutions Demonstration."

TopTools for Servers

HP TopTools for Servers is new browser-based management software that provides remote administration and monitoring of critical server components. TopTools provides vital information for the fastest troubleshooting and proactive management of 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 problems with key hardware components, including memory, disk drives, SCSI controllers, NICs, and power supplies, as well as environmental problems with temperature and voltage
- Unified event log 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 the BIOS version, driver and firmware versions, ISA and PCI slot contents, and serial and parallel ports

- Easy linkage with leading management platforms, including HP OpenView Network Node Manager and Workgroup Node Manager
- Support for DMI 2.0, which provides the same Desktop Management Interface inventory information for NetServers as for desktop PCs

TopTools is included with every NetServer L series server and should be installed to help your service provider troubleshoot your system. TopTools is located on HP NetServer Navigator CD-ROM versions G.01.50 and later G versions, as well as L.10.00 and later L versions.

- See the *HP NetServer Management Reference Guide* for detailed installation instructions.
- You can also download the TopTools software and documentation from the NetServer Web Site at

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

Integrated Remote Assistant

Integrated Remote Assistant is a separate management controller built into the NetServer. It enables remote modem-based server management and alerting through a pager for improved remote administration of your 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 system BIOS update
- Password and dial-back security
- Remote management capabilities enhanced with pcANYWHERE-32, providing full remote control of Microsoft Windows NT servers across the network or over a modem connection

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

English

PcANYWHERE-32

pcANYWHERE-32 is remote-control graphics-redirection software from Symantec Corporation that allows you to take control of Microsoft Windows NT servers across the network or over a modem. Refer to the *HP NetServer Online Documentation CD-ROM* for details, or the *HP NetServer Remote Administrator Guide*.

NetServer Utilities

NetServer Utilities 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 NetServer 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.
- 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 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.

Symbios Configuration 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 Symbios Configuration utility, as follows:

Turn on or reboot your system.

During system start-up or reset, when the message

```
Press <Ctrl> <C> to start Symbios Configuration
Utility
```

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

Use the arrow keys to move the cursor, press ENTER to select an option, and press ESC to exit.

1. To change adapter settings:
   - Select an adapter from the list in the Main Menu
   - Select "Adapter Setup". This option configures the SCSI ID setting and other advanced adapter settings.
2. To format a hard disk or change hard disk parameters:
   - Select an adapter from the list in the Main Menu
   - Select "Device Selections"
   - Select the hard disk to format
   - Select "format" menu option

For more details, including default settings, refer to Information Assistant on the *HP NetServer Online Documentation CD-ROM*.

ISA Non-Plug-and-Play Boards (Optional)

Reserving Resources for ISA Non-Plug-and-Play Boards

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 NetServer, and start the Setup utility by pressing the F2 key when

```
Press <F2> to enter SETUP
```

appears on the boot screen.

English

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 reinstall the ISA board.

Use the Setup utility to allocate system resources to the ISA non-Plug-and-Play accessory board.

Configuring an 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 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 NetServer and display monitor.
3. When you see the message

   `"Press <F2> to enter SETUP"`

   appears 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 NetServer will reboot.

English

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 Yes. Press ENTER to answer "Yes" to the question.

English

11 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 complete 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.

Using Information Assistant

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

Restart from the *HP NetServer Online Documentation CD-ROM* on the NetServer and run Information Assistant, or install Information Assistant as an application program on a Windows client machine (see the section "Installing HP Information Assistant Software").

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. 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 the Information Assistant in outline format, and then select a topic to view.

Search for a word or phrase using Search. Search 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.

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

English

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 Online Documentation 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.

12 Troubleshooting

Troubleshooting Tools

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

1. Indicator lights on the NetServer front panel are described in Chapter 1.
2. The *HP NetServer Online Documentation CD-ROM* contains:
   - ◊ Troubleshooting Information
   - ◊ Part Information
   - ◊ A List of Error Messages and Beep Error Messages
3. HP NetServer Utilities (on the *HP NetServer Navigator CD-ROM*): At the NetServer Navigator Main Menu, select "NetServer Utilities" to use the following utilities:
   - ◊ HP Diagnostic Assistant Utility: An easy-to-use hardware diagnostic for system verification, burn-in, and rapid troubleshooting. The Diagnostic Assistant is also located on a flexible disk mounted inside your NetServer cabinet in a plastic pouch.
   - ◊ Print or View Configuration: Enables 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
   - ◊ Diskette Library: Enables you to conveniently generate any flexible diskette available on the NetServer Navigator CD-ROM. For example, you can create the following diskettes: BIOS Update, NOS Drivers, NetServer Assistant, NetServer SNMP Agents, NetServer DMI Instrumentation, Diagnostic Assistant and Remote Assistant Upgrade.
   - ◊ Error Message Utility: Lets you view descriptions of errors that occur during the Power-On Self Test (POST) and tells you how to handle the errors.
   - ◊ Event Log Report Utility: Describes server management events and lets you review a list of errors and other system events.

For problems with HP TopTools, refer to the *HP NetServer Management Reference Guide* on the HP Web Site at

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

Common Installation Problems

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

CAUTION	The NetServer must have its covers in place for proper cooling. When you replace a hot-swappable item (or open the NetServer while it is operating for any other reason) do not run it for more than 2 minutes with the covers off. The processor has its own fan and fan baffle, and the processor must not run for more than 1 minute without the fan baffle in place. Failure to observe these precautions may result in thermal damage to the NetServer.

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

Troubleshooting Sequence

To troubleshoot an installation problem, do the following:

- First make sure that the system is configured properly. Most system problems are the result of incorrect system and SCSI subsystem configurations.
  - ◊ The HP NetServer is shipped with the hot-swap drive unconfigured. Do ONE of the following:
    - ◊ Run HP NetRAID Assistant to configure one or more RAID logical drives. Select "Execute" on the Configure Disk Array

English

screen to start the HP NetRAID Assistant. For more information, refer to the *Integrated HP NetRAID Controller Configuration Guide*.

◊ Exclude SCSI A channel from the integrated HP NetRAID controller, as follows:

a. Restart the HP NetServer.

b. When you see the message "Press <F2> to enter SETUP" on the monitor, press the F2 function key.

c. When the Setup Utility menu appears, use the up and down arrow keys to highlight "Included SCSI A Channel [Yes]."

d. Use the +/- keys to change it to "Included SCSI A Channel [No]."

e. Press the F10 function key to save and exit.

f. Answer "Yes" to the question, "Save configuration and exit now?" The NetServer will start up again, and HP Navigator will restart.

- If it is a network-related error, determine if the server has enough memory and hard disk drive capacity. Consult your network operating system manual.
- Verify that all cables and boards are securely plugged into their appropriate connectors or slots.
- Remove all added options and always change one thing, and only one thing, at a time.
- Unplug the power cord, wait 20 seconds, plug the power cord in again, and restart the system.

If it is a hardware error, follow these steps:

1. Log users off the LAN and power down the server. Disconnect the power cord and unplug telephone cables. Remove the NetServer cover.
2. Simplify the NetServer configuration to the minimum required: a monitor, one flexible and one hard disk drive and a keyboard. Remove all third-party options, and reinstall one at a time, checking the system after each installation. Reconnect the power cord and telephone cables.

3. Restart the system. If the system does not function, refer to "If the System Will Not Power On." If you get an error message, follow the instructions on the screen.

If the System Does Not Power On

Follow these steps:

1. Check to ensure that all cables and power cords are firmly plugged into their proper receptacles.
2. Check to ensure that all parts of the system are turned on and properly adjusted.
3. If the server is plugged into a switched multiple-outlet box, make sure the switch on the outlet box is turned on.
4. Plug a different electrical device (such as a printer) into the power outlet, and turn it on.
5. Unplug the power cord, wait 20 seconds, plug the power cord in again, and restart the system.

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

Do one of the following:

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

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

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

If there is no error message, follow these steps:

1. Check to ensure that the NetServer is configured correctly in the Setup Utility.

English

2. If the server still does not work, turn it off and remove all external peripherals, except the monitor and keyboard. Test to see if the server now works.
3. If the server still does not work, turn off the monitor, the server, and all external devices, and check the internal hardware, as follows:
   a. Unplug the power cord and all telephone cables. Remove the NetServer cover.
   b. Check that all accessory boards are firmly seated in their slots.
   c. Ensure that all disk drive power and data cables are securely and properly connected. Verify the mass storage configuration with the cabling and switch diagrams shown on the HP NetServer Reference Board, located in a plastic pouch on the interior of the NetServer covers.
   d. Verify that the DIMMs are firmly seated on the System Board. Verify that added DIMMs are HP DIMMs.
   e. Replace the NetServer covers, and lock the system.
   f. Replace all power cords and power cables.
   g. Turn on the monitor.
   h. Turn on the server.
   i. Check for error messages.
4. Run Diagnostic Assistant from the *HP NetServer Navigator CD-ROM*. Diagnostic Assistant is also provided on a diskette mounted inside your NetServer in a plastic pouch.

Error Messages

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

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

POST Error Codes

Refer to this list if error codes appear after the NetServer is powered on.

Table 12-1. POST Error Codes

Code	Message
00B00h	Missing Microcode Update data block for Pentium II CPU
00B0lh	Missing Microcode Update data block for Pentium II CPU
00Bl0h	Failure Loading Microcode Update data block for Pentium II CPU
00Bllh	Failure Loading Microcode Update data block for Pentium II CPU
00B20h	Defective Microcode Update data block for Pentium II CPU
00B2lh	Defective Microcode Update data block for Pentium II CPU
00090h	DIMM management failure
00080h	HP NetServer Management Controller Selftest Failure
00510h	IDE Device #0 Error
00l00h	Keyboard Error
00l0lh	Keyboard Error
00012h	Incorrect System Configuration
000llh	Date and Time Lost
00300h	Flexible Disk Drive A Error
00301h	Flexible Disk Drive B Error
00801h	System Cache Error
00400h	CD-ROM Error
00500h	IDE Device Error
00501h	IDE Device Error
00040h	Invalid PC Serial Number, correct with F2
00020h	Option ROM Error
00105h	Mouse Error
00102h	Keyboard Error
00106h	Mouse Error
00103h	Keyboard Error
00800h	System Cache Error
00700h	System Memory Error

English

Code	Message
00401h	CD-ROM Error
00310h	Flexible Disk Drive Error
00311h	Flexible Disk Drive Error
00600h	Video Memory Error
00520h	IDE Device0 Error
00521h	IDE Device1 Error
00522h	IDE Device2 Error
00523h	IDE Device3 Error
00305h	Flexible Disk Drive Error
000llh	Date and Time Lost
00041h	Invalid internal product type, correct with F2
00306h	Flexible Disk Drive Error
00070h	Proteus FPGA data loading failed
00071h	Proteus FPGA data checksum failed
00072h	Integrated HP NetRAID controller firmware not responding

13 Service and Support

English

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, 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
- HP TopTools server management software
- 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 chapter 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.

English

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://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.

For subscription information on the *HP NetServer 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.

HP Information Assistant

HP Information Assistant on the *HP NetServer Online Documentation 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 (or higher), Windows 95, or Windows NT.

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

HP TopTools

HP TopTools provides a set of web-based management tools you can use to maintain and control your HP NetServers running Microsoft Windows NT or Novell NetWare/IntranetWare.

To help maintain your network, HP TopTools provides you with extensive and timely information about your network servers. Using HP TopTools, you know when a server is experiencing problems, what to do about it, or if it is likely to have problems in the near future.

HP TopTools is available on the HP Navigator CD-ROM, or at the HP internet web site at:

`http://www.hp.com/netserver/products/management`

Refer to the *HP TopTools Administrator Guide* included with your NetServer, or at the internet web site, above.

English

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 NetServer 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`

English

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.

NOTE	Sales and support for this Hewlett-Packard product may not be currently available in all countries listed below.

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 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 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

Chapter 15, "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 12, "Troubleshooting," for the steps to follow before calling for service.

English

Prior to calling for support, record this information:

- Product model name and number
- Product serial number
- Operating system type and revision level
- Add-on boards or hardware installed
- Third-party hardware or software
- Applicable hardware driver revision levels
- A list of system resources, both used and available. Use the configuration utility to obtain this list
- Any system or diagnostic error messages. Run Diagnostic Assistant (from the HP Navigator CD-ROM, the Diagnostic Assistant diskette, or downloaded from the HP web site) and print a list of all errors reported

Provide a detailed description of the problem(s) including:

- Exact error message(s)
- When and where the message occurs
- What was the server doing at the time of the error
- What is the frequency of the error
- What was the last display on the monitor
- What changes were made to the server recently (including hardware and/or software)

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):

Austria:	0660 6386
Belgium (Dutch):	02 626 8806
Belgium (French):	02 626 8807
Denmark:	3929 4099
Finland:	02 03 47 288
France:	01 43 62 3434
Germany:	0180 525 8143
Ireland:	01 662 5525
Italy:	02 2 641 0350
Netherlands:	020 6068751
Norway:	22 116299
Portugal:	01 441 7199
Spain:	902 321 123
Sweden:	08 619 2170
Switzerland:	084 880 1111
United Kingdom:	0171 512 5202
International (English):	44 171 512 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 *Server Configuration File Creation Guide (CFG),* are also available in Information Assistant on the HP Navigator CD-ROM.

English

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

English

- Chile--ChilePac, Santiago
- France--CompuServe SARL, Rueil
- Hong Kong--CompuServe Hong Kong, Motorola AirCommunications
- Hungary--CompuServe Hungary, Middle Europe Network, Budapest
- Israel--CompuServe Israel, Trendline Info. Comm., Tel Aviv
- Japan--NIFTY Corporation, Tokyo
- Mexico--CompuServe Mexico, Infoacces S.A. de C.V., Mexico City
- South Africa--CompuServe Africa, Lynnwood Ridge
- South Korea--ATEL Co., Seoul
- Taiwan--TTN-Serve, Taiwan Telecomm, Taipei
- United Kingdom--CompuServe Ltd., Bristol
- Venezuela--CompuServe C.A. Venezuela, Caracas

From elsewhere, call CompuServe in the U.S. at (614) 529-1349.
Fax: (614) 529-1610.

14 Specifications

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

Environment

Temperature

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

Humidity (noncondensing)

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

Altitude

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

Minimum Clearance

HP NetServer LH 3

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

HP NetServer LH 3r

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

Weight and Dimensions

HP NetServer LH 3

Height	494.8 mm (19.5 in)
Width	350.5 mm (13.8 in)
Depth	724.2 mm (28.5 in)
Weight	35 - 50 kg (77 - 110 lb)

NOTE A fully-loaded NetServer can weigh up to 160 pounds. Follow local regulations, and use one person for every 40 pounds of NetServer weight when lifting it.

HP NetServer LH 3r

Height	354.7 mm (14 in)
Width	482.6 mm (19 in)
Depth	749.2 mm (29.5 in)
Weight	35 - 50 kg (77 - 110 lb)

NOTE A fully-loaded NetServer can weigh up to 160 pounds. Follow local regulations, and use one person for every 40 pounds of NetServer weight when lifting it.

Power Supply Specifications

Power supply type	Auto-Ranging
Input voltages:	
Nominal:	100 to 127 VAC ~ nn A at 50/60 Hz 200 to 240 VAC ~ nn A at 50/60 Hz
Range:	90 to 132 VAC at 47 - 63 Hz 180 to 264 VAC at 47 - 63 Hz
Power supply:	550 W continuous

15 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 NetServer Limited Warranty Table section below. The warranty period begins on the date of delivery or on the date of installation if installed by 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 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 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." Third-party software may be warranted 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

HP warrants this NetServer Hardware Accessory against defects in material and workmanship, under normal use, for the period specified in the NetServer Limited Warranty Table section below. 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.

An NetServer Hardware Accessory is an HP hardware product, specifically designated for use with NetServers, that is added on or integrated into an 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 NetServer, the NetServer Hardware Accessory carries a one-year Return-to-HP warranty or the remainder of the warranty period for the original NetServer in which it is installed, whichever is longer.

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.

HP/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 warra 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 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 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 NetServer.

This warranty extends only to the original owner 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 NetServers without covers and incorrect input voltage), unauthorized modification, operation or storage outside the environmental specifications for the product, in-transit damage, improper site preparation or maintenance, or defects resulting from use of software, accessories, media, supplies, consumables, or such items not supplied by HP.

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.

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.

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. Customer will indemnify and hold HP harmless from all loss, damage, expense or liability in connection with such use.

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.

English

Customer Responsibilities

Customer is responsible for the following:

1. Where applicable, before service is provided--
   a. Having the NetServer's system administrator available for consultation with HP or Reseller;
   b. Running HP-supplied configuration and diagnostics programs or following the problem determination, problem analysis, and service request procedures that HP or Reseller provides;
   c. Securing all proprietary and confidential information;
   d. Securing all programs and data;
   e. Maintaining a procedure external to the products for reconstruction of lost or altered files, data, or programs;
   f. Informing HP or Reseller of changes in location of the NetServer; and
   g. 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 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 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 which 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 shall prepay shipping charges (and shall pay all duty and taxes) for products returned to HP or Reseller for warranty service. HP or Reseller shall 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.

English

On-site service for this product is restricted or unavailable in certain locations. 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.

NetServer Limited Warranty Coverage

Product	Warranty Coverage Periods		
	Year 1	Year 2	Year 3
NetServer L Series	On-site[1]	On-site	On-site
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] RHP[2]	n/a	n/a
Purchased separately 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 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 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.

English

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

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):

Austria:	0660 6386
Belgium (Dutch):	02 626 8806
Belgium (French):	02 626 8807
Denmark:	3929 4099
Finland:	02 03 47 288
France:	01 43 62 3434
Germany:	0180 525 8143
Ireland:	01 662 5525

Italy:	02 2 641 0350
Netherlands:	020 6068751
Norway:	22 116299
Portugal:	01 441 7199
Spain:	902 321 123
Sweden:	08 619 2170
Switzerland:	084 880 1111
United Kingdom:	0171 512 5202
International (English):	44 171 512 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/netserver/servsup`**
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.)
Audio Tips:	800-333-1917 (U.S.)
	208-344-4809 (outside U.S.)

English

Supplemental Warranty Service and Support

Enhanced hardware warranty services, such as after-hour or weekend coverag 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 such as

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

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

Notice for Australia and New Zealand:

There may be warranty statements enclosed with your HP product (such as in the user manuals or guides) which purport to restrict a consumer's rights to compensation for example by providing that the manufacturer's express written warranties are the exclusive warranties, that there are no other warranties such as the implied warranties of merchantability and fitness for a particular purpose and/or that those implied warranties are limited to the duration of the manufacturer's express written warranties. These do not apply to consumer transactions in Australia or New Zealand, so if this is a consumer transaction please disregard them.

The manufacturer's express written warranty terms, except to the extent lawfully permitted, do not exclude, restrict or modify and are in addition to (i) the statutory rights implied by the Australian Trade Practices Act ("TPA") or any corresponding Australian State or Territory legislation applicable to the supply of HP products to you in Australia; and (ii) the statutory guarantees implied by the New Zealand Consumer Guarantees Act ("CGA") applicable to the supply of HP products to you in New Zealand.

In Australia, the TPA provides consumers who acquire personal, domestic or household products with rights to compensation against the local manufacturer/importer of products even where the local manufacturer/importer has not supplied those products directly to such consumers. For HP products, the local importer for Australia would usually be Hewlett-Packard Australia Limited.

Under the TPA, if at the time such a product is acquired by the first consumer, that product is not of merchantable quality, does not correspond with a sample or description given by the local manufacturer/importer, or is not reasonably fit for any particular purpose made known at or before the acquisition to the local manufacturer/importer by the first consumer, then, subject to the exceptions under, and other requirements of, the Act, the first and subsequent consumers who have suffered loss or damage because of that have a right to claim compensation against the local manufacturer/importer for up to three years from the date the cause of action arose.

In New Zealand, the CGA provides consumers who acquire personal, domestic or household products have rights to damages against the local manufacturer/importer of products even where the local manufacturer/importer has not supplied those products directly to such consumers. For HP products, the local importer for New Zealand would usually be Hewlett-Packard (NZ) Limited.

Under the CGA, if at the time such a product is acquired by the first consumer, that product is not of acceptable quality or does not correspond with a description given by the local manufacturer/importer, then, subject to the exceptions under, and other requirements of, the Act, the first and subsequent consumers may have a claim for damages.

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 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 that HP software will not fail to execute its programming instructions, for a period of NINETY (90) DAYS from the date of the purchase, due to defects in material and workmanship when properly installed and used. HP does not warrant that the software will be uninterrupted or error free. If HP receives notice of such defects during the warranty period, HP will replace software media which does not execute its programming instructions due to such defects. 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

English

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 med copies of the software product.

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

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

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

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the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply 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.

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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).

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NetServer Warranty Frequently-Asked Questions

Q: What is the intention of the NetServer Warranty?

A: The 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 NetServer Warranty is NOT a substitute for network or server application support services to assist you during normal operation of your NetServer.

Q: When does the warranty begin?

A: HP's warranty begins when you receive your NetServer.

Q: What is the warranty on HP hardware add-ons to the NetServer?

A: There are two scenarios to consider here: whether the NetServer Hardware Accessory was purchased with the NetServer; or separately at some later date. If the 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 NetServer in which it is installed, whichever is longer.

Q: What are some examples of NetServer Hardware Accessories that would qualify?

A: Accessories that are specifically designed to be used with 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 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 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;

English

- ◊ 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 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 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: 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: Can NetServer hardware components be replaced prior to an actual failure?

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

Q: If I have a hardware failure, how will my NetServer be restored?

A: HP or your reseller will restore your 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 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 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.

English

Q: Where can I find warranty documentation?

A: The 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 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 NetServer to another location within my company?

A: The warranty is valid as long as the NetServer remains in the country where you purchased it. When shipping or transporting an 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 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

Q: How can I track changes that could affect the operation of my 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 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 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.

English

Internet World Wide Web:	**http://www.hp.com/netserver/servsup**
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.)
Audio Tips:	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.

16 Regulatory Information

Your server may fit into either the Class A or Class B configuration. Please che
the product compliance label to determine the class of the product and refer to
appropriate information below.

Notice for USA

FCC Radio Frequency Emissions Statements

For Products Labeled "Class B"

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.

For Products Labeled "Class A"

This equipment has been tested and found to comply with the limits for Class A digital devices, pursuant to Part 15 of the FCC Rules. These limits are designed

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

CD-ROM

CD-ROM Electrical Safety Statement

WARNING	To prevent fire or shock hazard, do not expose the unit to rain or moisture. To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

CD-ROM Laser Safety Statements

CAUTION	This CD-ROM mass storage system contains a laser system and is classified as a "Class-1 Laser Product" under a U.S. Department of Health and Human Services (DHHS) Radiation Performance standard according to the Radiation Control for Health and Safety Act of 1968. To ensure proper use of this product, please read this instruction manual carefully and retain for future reference. Should the unit ever require maintenance, contact an authorized service location. 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.

English

Notice for Canada: DOC Requirements

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

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

Battery

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.

Notice for EU:

Radio Frequency Emissions Warning for Accessories

This connection has been found to comply with CISPR 22 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.

DECLARATION OF CONFORMITY
per ISO/IEC Guide 22 and EN 45014

Manufacturer's Name: Hewlett-Packard Company

Manufacturer's Address: 5301 Stevens Creek Blvd.
Santa Clara, CA 95052 USA

declares, that the product

Product Name: Network Server
Model(s): LH 3 and LH 3r
Product Options: All

conforms to the following Product Specifications:

Safety: IEC 950:1991 + A1+ A2 + A3 / 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, 3V/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 cable.
3) The product complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:
   - 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:
-EMC Directive 89/336/EEC
-Low Voltage Directive 73/23/EEC

Santa Clara, April 6, 1998

N. Marrion

Nigel Marrion / Quality Manager

North American Contact:
Hewlett-Packard Company Product Regulations Manager
3000 Hanover Street
Palo Alto, CA 94304
650-857-1501
European Contact: Your local Hewlett-Packard Sales and Service Office or
Hewlett-Packard GmbH,
Department HQ-TRE
Herrenberger Straße 130
D-71034 Böblingen
(FAX: + 49-7031-143143)

English

Notice for Finland: Laser Safety Statement

LASERTURVALLISUUS

LUOKAN 1 LASERLAITE

KLASS 1 LASER APPARAT

LH 3 - verkkopalvelimeen voidaan asentaa lisävarusteena laitteensisainen CD-ROM-lukulaite, joka on laserlaite.

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

Notice for Germany

Noise Declaration and Ergonomics

LpA < 60 dB (A)

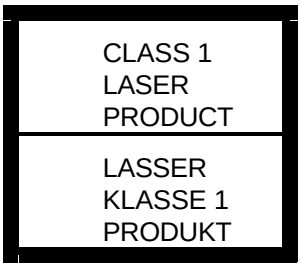
am Arbeitsplatz, Beobachter Position (workplace, bystander position)
normaler Betrieb (normal operation)
nach DIN 45635 T. 19 (per ISO 7779)

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

Laser Safety Statement

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 aufreten, die nächste "authorisierte Services-Verrtetung" benachrichtigen. Um einen direkten Kontakt mit dem Laserstrahl zu vermeiden, soll das Gehäuse nicht geöffnet werden.

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



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

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

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

Notice for Japan

For Products Labeled as Class B

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。

(Translation)

This equipment is in the Class B category information technology equipment based on the rules of the 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.

English

For Products Labeled as Class A

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(Translation)

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.

Power Line Harmonics

高調波ガイドライン適合品

This product conforms to the Power Line Harmonics guideline.

Notice for Korea: RFI Statement

사용자 안내문(A 급)

이 기기는 업무용으로 전자파장해검정을 받은 기기이오니, 판매자 또는 사용자는 이점을 주의하시기 바라며, 만약 잘못구입하였을 때에는 구입한 곳에서 비업무용으로 교환하시기바랍니다.

(Translation)

User Guide (Class A)

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

Notice for Taiwan: Class A Warning Statement

警告使用者:
這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

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.

English

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.

<table>
<tr><td colspan="2">Producto</td><td colspan="2">Marca</td><td>Modelo</td></tr>
<tr><td colspan="2">No. de Serie</td><td colspan="3">Nombre del Distribuidor</td></tr>
<tr><td colspan="5">Dirección : (Calle, Número, Colonia o Poblado, Delegación o Municipio)</td></tr>
<tr><td>C.P.</td><td>Ciudad.</td><td>Estado</td><td colspan="2">Teléfono</td></tr>
<tr><td colspan="5">Fecha de entrega o instalación</td></tr>
</table>

Notas

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

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

Notice for U.K.: General Approval

The LH 3 is approved under approval number NS/G/ 1234/J/100003 for indirect connection to Public Telecommunication Systems in the U.K.

English

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