HP NetServer Product Line
Service Reference Guide

Volume 3
High-End

HEWLETT® PACKARD

Version 1

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Audience Assumptions

The guide is for HP authorized service personnel who install, administer, and troubleshoot HP NetServers. The Hewlett-Packard Company assumes you are qualified in the servicing of computer equipment and trained in recognizing hazards in products with hazardous energy levels.

Table of Contents

HP NetServer LX

Front Panel Controls
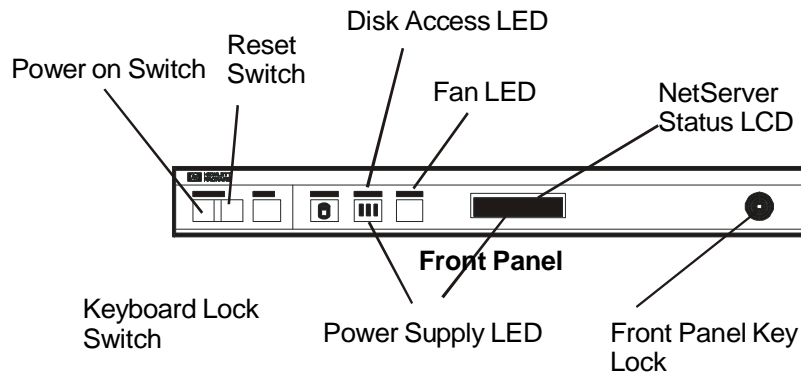
Control	Description
Power on Switch	Turns NetServer power on and off. Press once to turn it on; press again to turn it off.
Reset Switch	Resets all processors and reboots the system, as if the power was cycled off and on, except that the mass storage devices do not power-cycle.
Keyboard Lock Switch	Prevents or allows use of the keyboard via a password.
Disk Access LED	Lights whenever performing a read or write to a disk drive.
Power Supply LED	See Power Supply Status LED Definition below.
Fan LED	See Fan Status LED Definition below.
LCD Readout	Displays the current operating status of the NetServer, and system messages.
Front Panel Lock	Locks the top cover, providing security to the components inside the NetServer. The mass storage devices are secured by three other locks, one located between the front doors, and one on each hot-swap drive cage.

CAUTION	If the front panel power supply status LED indicator is lit red or yellow, look at the LED indicators on each of the power supply modules located at the rear of the NetServer.

Power Supply Status LED Definition

LED color	One PSM	Two PSMs	Three PSMs
Green	OK	OK	OK
Yellow	Power cage temperature warning	Power cage temperature warning	Power cage temperature warning, or one PSM LED indicator is red or yellow
Red	Power cage temperature is critical, or one PSM LED indicator is red or yellow	Power cage temperature is critical, or one PSM LED indicator is red or yellow	Power cage temperature is critical, or two PSM LED indicators are red or yellow

Cooling Fan Status LED Definition

LED Color	Description
Green	OK
Red	One or more internal cooling fans have failed (this does not include power supply module fans)

Covers

CAUTION	Internal and external NetServer covers provide proper cooling airflow. To ensure data integrity, all covers must be in place, regardless of the external environment (stand-alone or rack-mounted) or temperature (e.g. air conditioned). Even at low room temperatures, ensuring that all covers and panels are in place provides controlled airflow and system reliability. This does not include the front doors, which may be removed without risk.

Top cover

2

Lumber or
other spacer
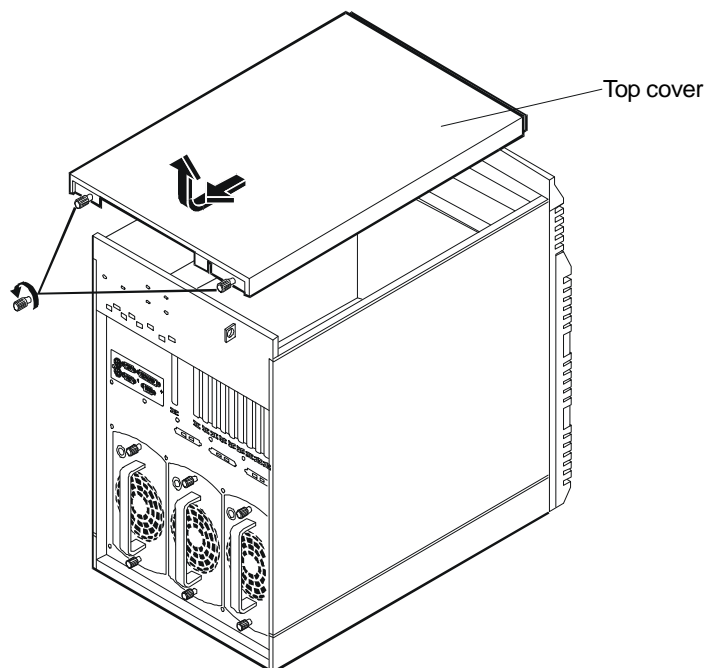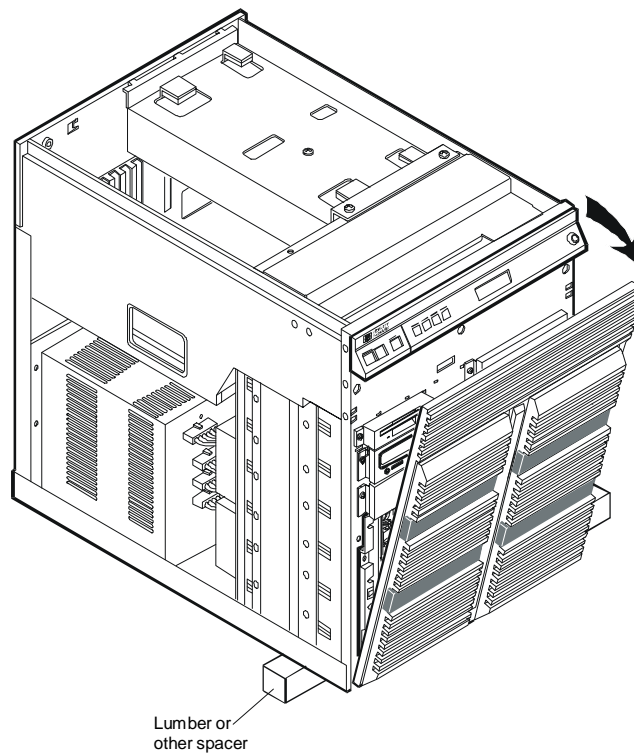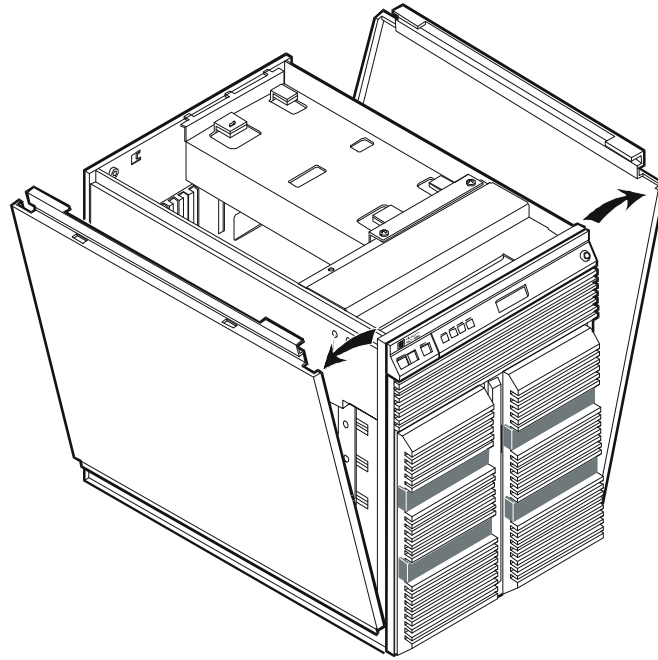
Processor and memory board
cooling duct cover
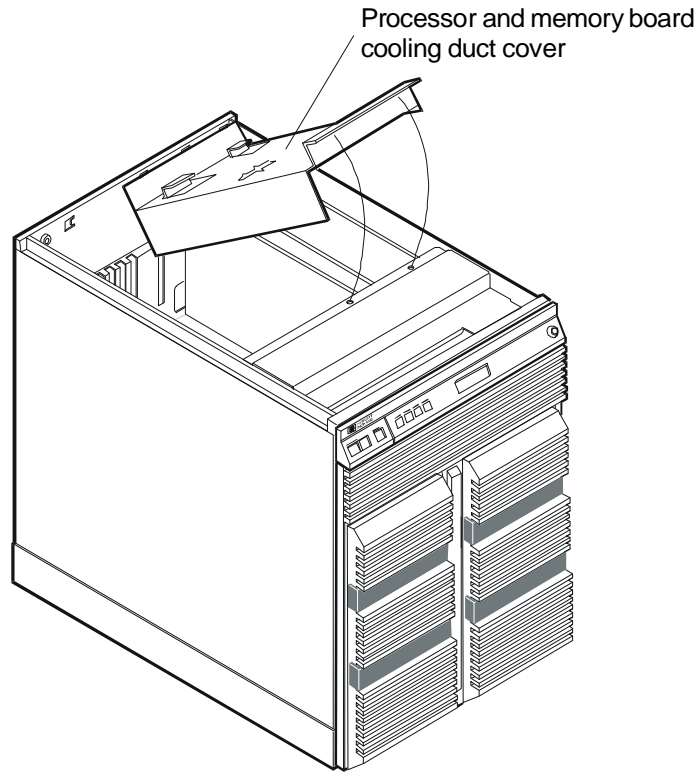
CAUTION	Do not force the cover down onto the boards. Forcing the cover may result in damage to the NetServer. Damage due to improper board installation is not covered by the warranty.

Memory or
processor boards

Correct alignment

Board guides

Incorrect alignment

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EISA/PCI Board Retainer

Exploded Views

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LXe Pro

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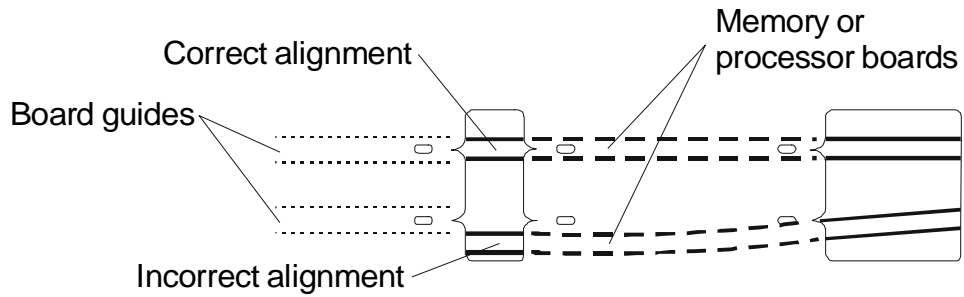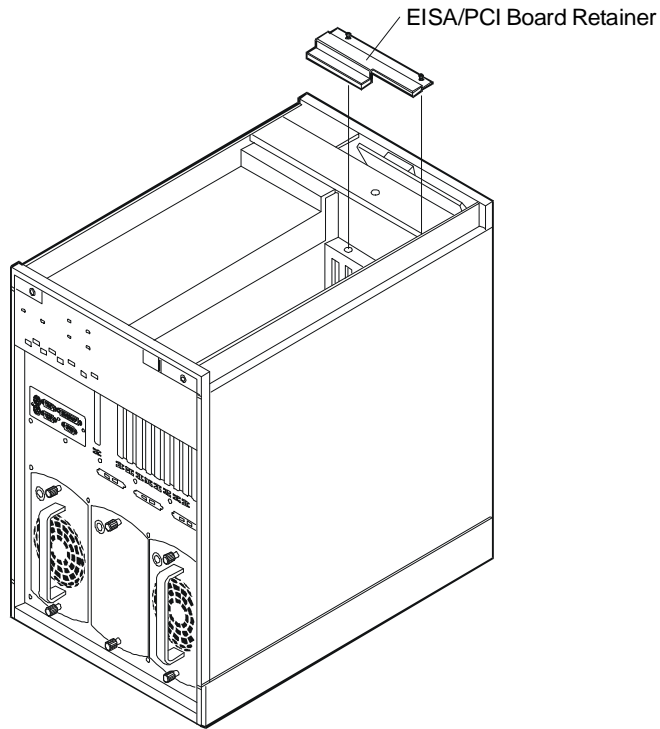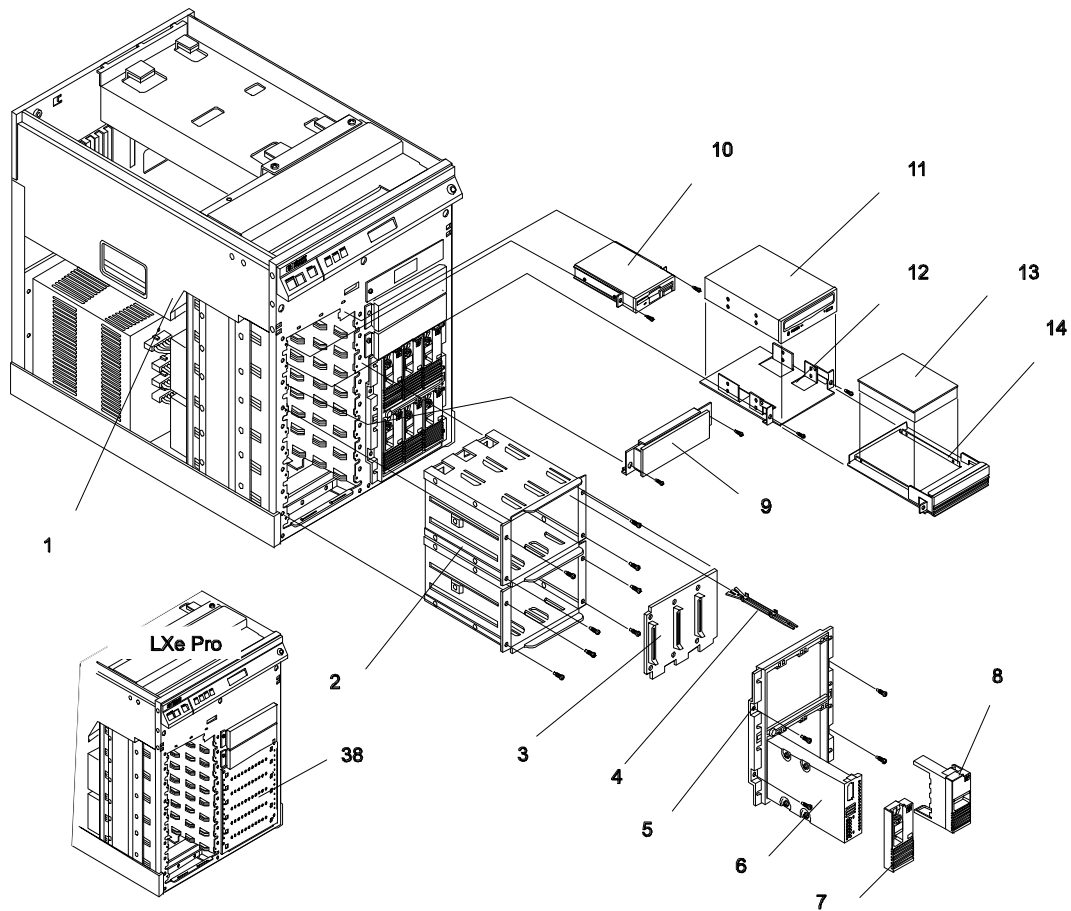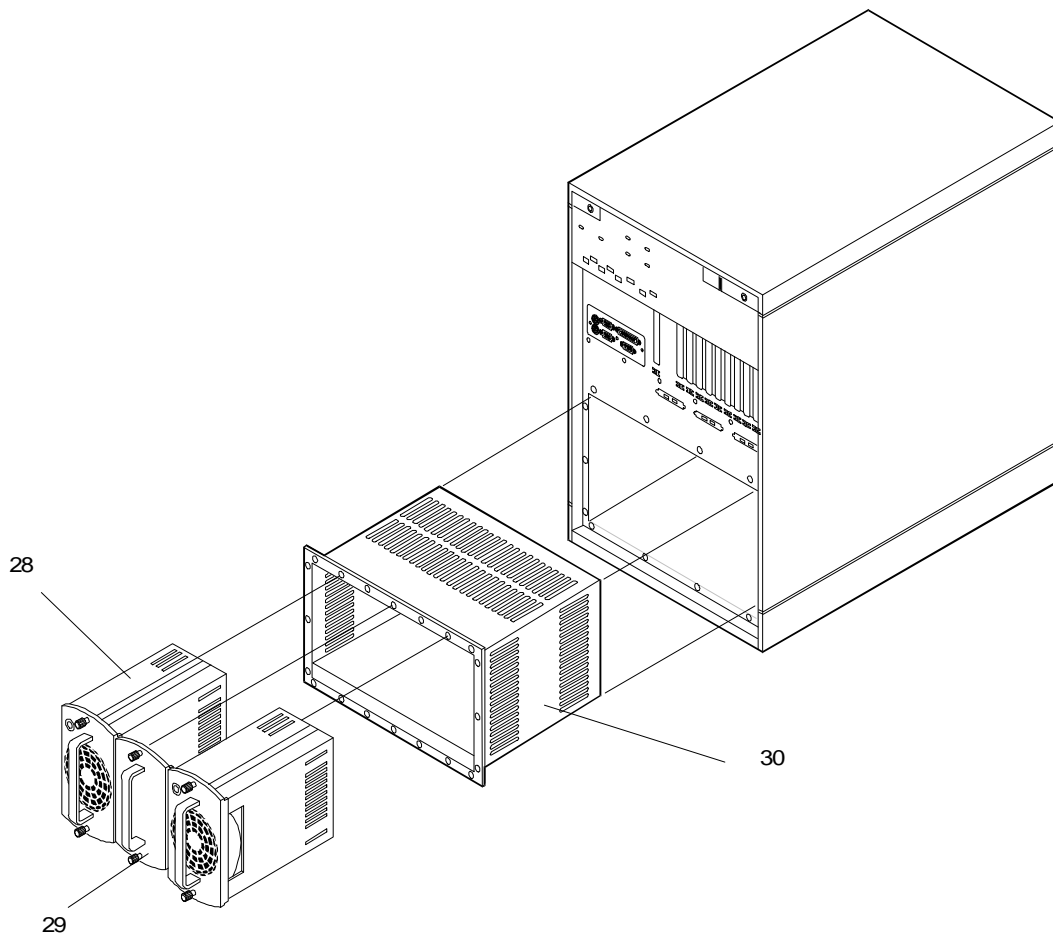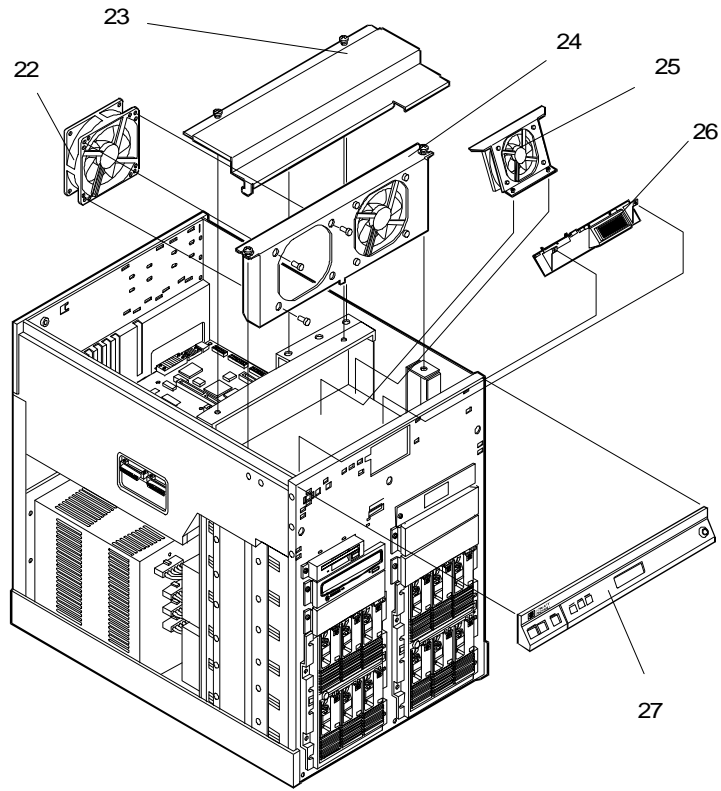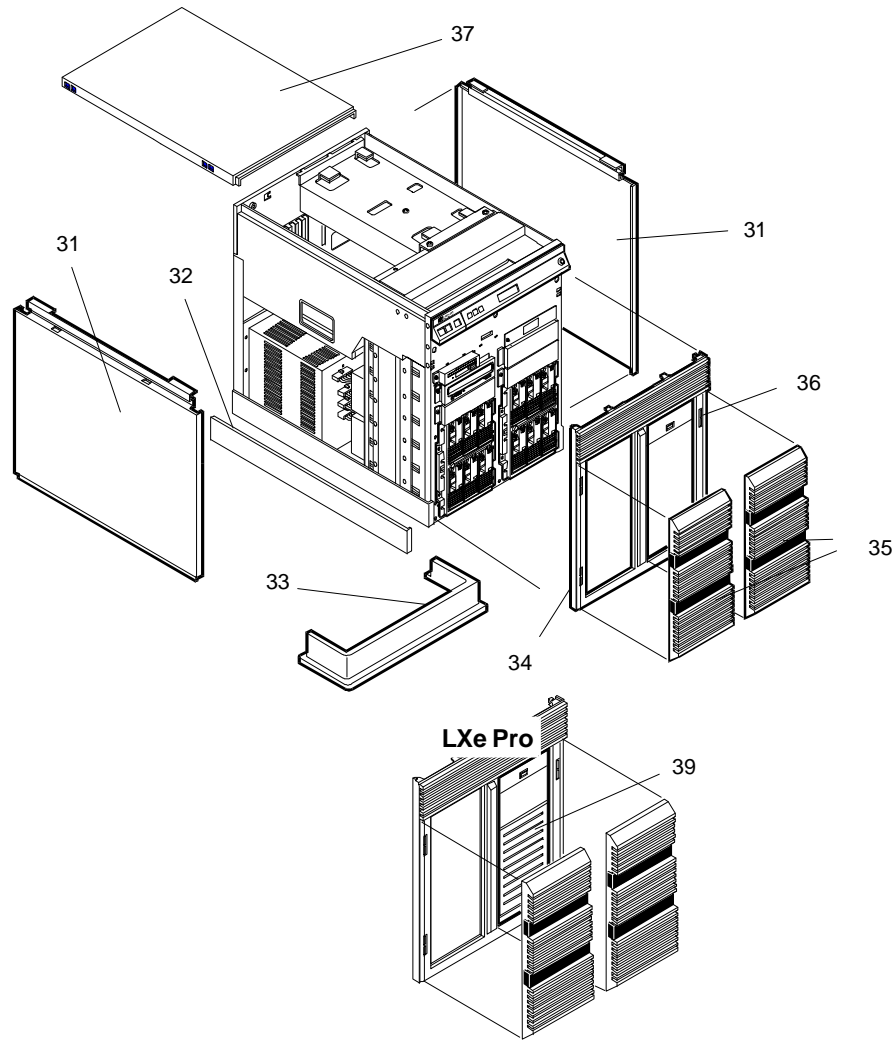
HP NetServer LX Pro and LXe Pro Parts List

NOTE	The part numbers in the list were those available at the time of publication. Part numbers may change after publication. HP's parts price list database will generally contain a reference to the revised part number. If a system board needs to be replaced, remove processor board, video DRAM, and any added accessory boards, and keep them with the server under repair.

Fig	Description	Replacement	Exchange
1	Chassis	not orderable	
2	Hot Swap Assy-Chassis	5063-5671	
3	Hot Swap Cage PCA	5064-0717	
4	Hot Swap Lightpipe	5041-1099	
5	Hot Swap Assy-Bezel Trim	5063-8390	
6a	2.1GB Hot Swap HDD	D3582-63002	D3582-69002
6b	4.2GB Hot Swap HDD	D3583-63002	D3583-69002
7	Hot Swap Assy-Tray Bezel	5063-8398	

Fig	Description	Replacement	Exchange
8	Hot Swap Assy-Filler Panel	5063-8391	
9	Filler Panel	5063-8389	
10	1.44MB Floppy (a)	D2035-63121[2]	
11	CD-ROM Drive	D2992-63004	
12	Tray - CD-ROM	C2260-00025	
13a	2.1GB SCSI-2 HDD 5400	D2077-63100	D2077-69001
13b	2.1GB SCSI-2 HDD 7200	D3340-63001	
13c	4GB SCSI-2 HDD	D3341-63001	D3341-69001
14a	3 ½" Disk drive tray (b)	D2198B10	
14b	Tray HDD, non hot swap, single	C2260-60078	
14c	Tray Bezel (new color)	5064-0715	
15	Processor Cooling Duct	5002-3282	
16	Memory Board	D4262-63006	D4262-69006
17	Terminator Board (c)	D4262-63002	
18a	6/166 CPU Board, A1	D4262-63003	D4262-69003
18b	6/200 CPU Board, A1	D4262-63010	D4311-690103
19a	P6 166/512 CPU Chip, A0	1821-2529	5182-9385
19b	P6 166/512 CPU Chip, A1	1821-2536	5182-9341
20	LX System Board	D4262-63008	D4262-69004
21	Hold down plate	5002-3281	
22	Fan	5182-6790	
23	Cover Fan	5002-3267	
24	Chassis support bracket	not orderable	
25	Chassis fan cage	not orderable	
26	Control Panel PCA	5064-0756	
27	Control Panel Bezel	5063-8330	
28a	Power Supply Module	5064-0780	5064-0779
29	Panel, Filler, Power Supply	5002-3709	
30	Cage, Power Supply LX/LXe	5064-07515	5064-0750
31	Side Covers, Left and Right	5002-3764	
32	Side panel	5002-3274	
33	Skirt, Base, Plastic	5041-5323	
34	Lower Bezel Assy & Doors	5063-8329	
*	Bezel fill Labels (cover hinge slot)	5182-6795	
35a	Front Door Left - 5063-83276	5063-8329	
35b	Front Door Right - 5063-83286	5063-8329	
36	Hinge	5041-5320	
37	Top Cover	5063-8317	
38*	Panel Filler, Metal (d)	5002-3761[7]	
39	Panel Filler, Mass Storage (d)	5042-2152[7]	

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Fig	Description	Replacement	Exchange
*	Heat Sink/Clip	5064-0752 (assy)	
*	Heat Sink or use 5064-0752 (assy)	5182-9343	
*	PCI DAC Fast/Wide	C3610-63050	C3610-69050
*	Adapter, SCSI	5182-4550	
*	Cable, Flex Disk Data (F11)	5182-6735	
*	Cable, SCSI, Term 50-pin C11	5182-6748	
*	Cable, SCSI, Term 50-pin, long (C21)	5182-9413	
*	Cable, SCSI, Bridge 68-pin (C14)	5182-6747	
*	Cable, I^{2}C Management Bus 400mm (B11)	5182-6730	
*	Cable, SCSI, Port 68-pin (C13)	5182-6740	
*	Cable, SCSI, 500mm Int 68-p (C12)	5182-4574	
*	Cable, Power 14 Circuit	5182-4578	
*	Cable, Mass Storage Power 8 HDD + FDD (P11)	5182-4579	
*	Cable, Power, 20 Circuit system board	5182-4580	
*	Cable, Power, Control Panel	5182-4581	
*	Control Panel Ribbon Cable	5182-4582	
*	Cable,SCSI,Intl,68-pin (C15)	5182-4572	
*	Cable, IDE HDD Data (D11)	5182-6725	
*	Panel, Lower Side	5002-3274	
*	Jumper, Fan**** (e)	5182-4598	
*	Caster, Fixed locking	5182-9416	
*	Caster, Swivel	1490-1007	
*	Guide, Skirt	5002-3728	
*	Plastic Rivets	5042-2110	
*	Door, Control Panel	5041-5325	
*	LS RTC/Battery	D3330-63002	
*	SIMM, 16MB, 60 ns	D4891-63001	D4891-69001
*	SIMM, 32MB, 60 ns	D4892-63001	D4892-69001
*	SIMM, 64MB, 60 ns B (f)	D4290-63002	D4290-69002
*	SIMM, 128MB, 60 ns	D4893-63001	D4893-69001
*	Hot Swap Chassis Key	5182-4534	
	CD-ROM Setup Kit ***(g)	5064-0766	
	Mouse	C3751-60201	
	Video DRAM	1818-5728	
	Navigator CD G (h)	5064-0793[9]	
	Plug, LX for B1 CPU (i)	D4311-60003[8]	

Footnotes

(a) Use only Epson drives for repair.

(b) The B version will be available fourth quarter 1997.

(c) Terminator board must be installed when there is only 1 processor board in the system.

(d) Early machines use several small single-slot panels.

(e) This fan jumper must be installed on the system board.

(f) Replace all A rev 64MB SIMMs with B rev parts.

(g) This part number is constantly revised for each new release. When you order using this number you will be sent the current revision of the CD-ROM.

(h) Price list points from this part number to current part number.

(I) Must install B1 plug on system board if any B1 CPUs in system.

Abbreviation	Description
166-512	166MHz with 512K cache
200-512	200MHz with 512K cache
150-ohm	Older SCSI cable impedance
90-	Ohm New SCSI cable impedance
Common Tray	An HP-standard drive mounting tray
DAC	Disk Array Controller
Dove	A color
FDD	Flexible Disk Dive
Flint	A color in the new color scheme
HDD	Hard Disk Drive
I2C	"I squared C" management bus
P6	Pentium Pro chip
PCA	Printed Circuit Assembly
SIMM	Single In-line Memory Module

HP NetServer LX Keyboards

Language	HP Part Number	Product No. Option	Language	HP Part Number	Product No. Option
United States	C1405-61301	#ABA	Dutch	C1405-61306	#ABH
French	C1405-61305	#ABF	Czech	C1405-61336	#AKB
Danish	C1405-61316	#ABY	German	C1405-61303	#ABD
Russian	C1405-61330	#ACB	Spanish	C1405-61304	#ABE
Japanese	C3755-60224	#ABJ	Fr. Canadian	C1405-61302	#ABC
Italian	C1405-61317	#ABZ	Norwegian	C1405-61309	#ABN
Belgian	C1405-61314	#ABW	Swiss German	C1405-61311	#ABP
Korean/Hangu	C1405-63121	#AB1	Swedish	C1405-61312	#ABS
Taiwanese	C1405-63232	#AB0	UK/Ireland	C1405-61313	#ABU
Turkish	C1405-61333	#AB8	Portuguese	C1405-61327	#AB9
Arabic/French	C1405-61325	#AB6	Polish	C1405-61335	#AKD
Hungarian	C1405-61337	#AKC	Greek	C1405-61332	#AB7
Arabic/English	C1405-61320	#ABV			
* Keyboard product number is C1405C (flint gray).					

HP NetServer LX Power Cords

Country	Keyboard	Power Cord	Setup Kit
US	C1405C #ABA	8120-5395	ABA
Europe	C1405B #ABA	8120-5394	ABB
Canada/French	C1405B #ABC	8120-5395	ABC
Germany	C1405C #ABD	8120-5394	ABD
Spain	C1405C #ABE	8120-5394	ABE
French	C1405C #ABF	8120-5394	ABF
Australia	C1405B #ABA	8120-5393	ABG
Dutch	C1405B #ABH	8120-5398	ABH
Japan	C3755A #ABJ	8120-5400	ABJ
Intercon	C1405B #ABA	none	ABK
Spanish	C1405C #ABE	8120-5395	ABM
Taiwan	C1405B #AB0	8120-5395	AB0
Swiss/German	C1405B #ABP	8120-5397	ABP
Swiss/French	C1405B #ABP	8120-5397	ABQ
UK	C1405C #ABA	8120-5392	ABU
Italy	C1405C #ABZ	8120-5394	ABZ
Korea	C1405B #AB1	8120-5395	AB1
China	C1405C #ABA	8120-5393	AB2
Arabic/French	C1405B #AB6	8120-5394	AB6
Greek	C1405B #AB7	8120-5394	AB7

Turkish	C1405B #AB8	8120-5394	AB8
Portugal	C1405B #AB9	8120-5394	AB9
Russia	C1405B #ACB	8120-5394	ACB
Denmark	C1405B #ABY	8120-5394	ACE
Japan	C1405B #ABA	8120-5400	ACF
Norway	C1405B #ABN	8120-5394	ACK
Belgium	C1405B #ABW	8120-5394	ACO
Arabic/English	C1405B #ABV	8120-5394	ABV
South Africa/India	C1405B #ABA	8120-5399	ACQ
Sweden	C1405B #ABS	8120-5394	ACY
Czech	C1405B #AKB	8120-5394	AKB
Hungarian	C1405B #AKC	8120-5394	AKC
Polish	C1405B #AKD	8120-5394	AKD

Mass Storage Cables

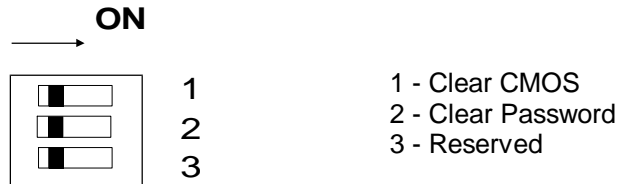| Cable	Part Number
Adapter, SCSI, 68F/50M (A1)	5182-4550
Cable, Flex Disk Data (F11)	5182-6735
Cable, SCSI, Term 50-pin (C11)	5182-6748
Cable, SCSI, Term 50-pin, long (C21)	5182-9413
Cable, SCSI, Bridge 68-pin (C14)	5182-6747
Cable, I^2C Management Bus 400mm (B11)	5182-6730
Cable, SCSI, Port 68-pin (C13)	5182-6740
Cable, SCSI, 500mm Internal 68-pin (C12)	5182-4574
Cable, Power 14 Circuit	5182-4578
Cable, Mass Storage Power 8 HDD + FDD (P11)	5182-4579
Cable, Power, 20 Circuit system board	5182-4580
Cable, Power, Control Panel	5182-4581
Control Panel Ribbon Cable	5182-4582
Cable, SCSI, Intl, 68-pin (C15)	5182-4572
Cable, IDE HDD Data (D11)	5182-6725

System Board
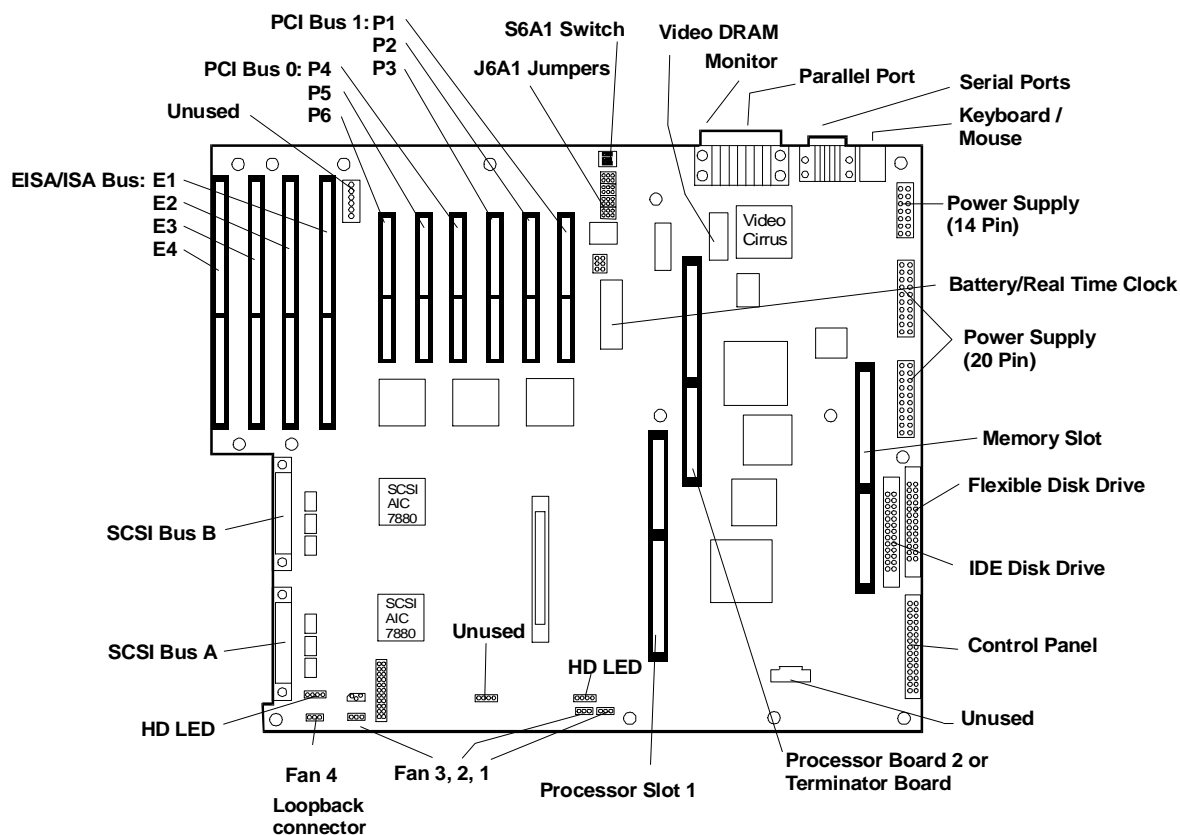
System Board Connectors

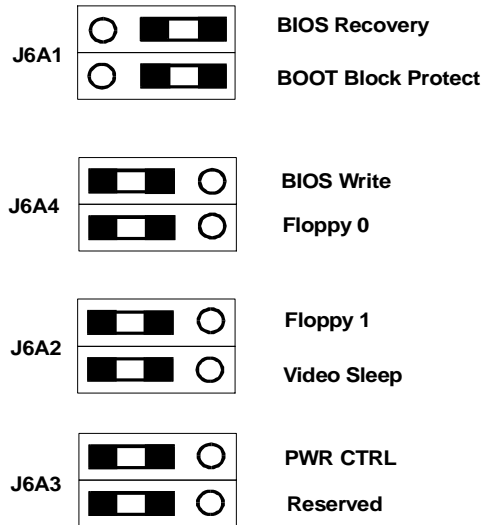| Connector Name	Connector Label	Connector Name	Connector Label
EISA/ISA E1, E2, E3, E4	J1A1, J1A2, J2A1, J2A2	Real Time Clock Module	U5B1
PCI	P6 - J3A1 P5 - J3A2 P4 - J4A1 P3 - J4A2 P2 - J5A3 P1 - J5A2	System Switch	S6A1
Jumpers	J6A1, J6A4, J6A2, J6A3	Video DRAM	U7A1
Monitor/Parallel Port	J7A1	Serial Ports	J8A1
Keyboard/mouse	J9A1	Power Supply (14 Pin) PS3	J9A2
Power Supply (20 Pin) PS1 or PS2	J9B1	Power Supply (20 Pin) PS1 or PS2	J9D1
Memory Slot	J9C1	Flexible Disk	J9E2
IDE Disk	J9E1	Control Panel	J9F1

Connector Name	Connector Label	Connector Name	Connector Label
		Processor Slot 2	J7D1
Processor Slot 1	J6D1	Fan 1 Fan 2 Fan 3	J5G3 J5G2 J2G4
Fan 4 (loop back connector installed)	J2G3	HD LED1	J5G1
HD LED	J2G1	I2C	J2G
SCSI-A	J1G1	SCSI-B	J1F1
Unused	J5E1	Unused	J4G1
Unused	J5A1	Unused	J8G1
Unused	J2A3		

System Switches and Jumpers

Always refer to the Technical Reference Label for the latest settings for any jumpers and switches.

ON

1
2
3

1 - Clear CMOS
2 - Clear Password
3 - Reserved

S6A1

J6A1

BIOS Recovery

BOOT Block Protect

J6A4

BIOS Write

Floppy 0

**J6A2**

Floppy 1

Video Sleep

J6A3

PWR CTRL

Reserved

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Cabinet and Redundant Power Supply

The chart below explains the power supply and processor board configurations for the LX Pro and LXe Pro systems.

System Model	System Configuration		Power Supply Modules Required		
	Mass Storage Devices in Right Hand rear	Number of Processor Boards	Non-Redundant Operation	Redundant Operation	Power Available
LXe Pro	no	1	1	2	410W
	no	2	2	3	790W
	yes	1 or 2	2	3	790W
LX Pro	yes	1 or 2	2	3	790W
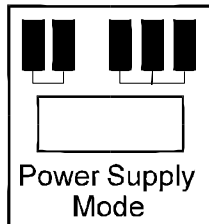
Original Power Supply Mode switch (LX Pro only)

OR
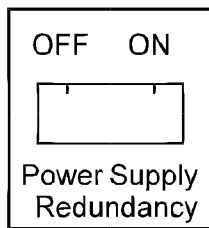
New Power Supply Redundancy switch (LX Pro and LXe Pro)

Power Supply Redundancy Switch

Power Supply Status LED Display

The Front Panel Power Supply Status LED display is controlled by the Power Supply Redundancy (or Mode) switch and displays real-time power supply status. The table below shows the correlation between the statuses of individual power supply modules and the Front Panel LED indicators.

**Front Panel Power Supply Status LED Definitions**

Front Panel LED Color	Power Status
Green	Power system OK
Yellow	Power system functioning. Power Cage temperature warning or PSM warning
Red	Power System not functioning. Power Cage temperature critical or PSM critical

Memory

There are two different memory boards available for the HP NetServer LX Pro and LXe Pro. The memory board that comes standard in the LX-Series NetServers uses SIMMs, and is identified by its 16 memory module sockets. The DIMM memory board is an optional accessory, using DIMMs instead of SIMMs, and is identified by its 32 memory module sockets.   The SIMM-type memory board may be configured in one of two ways, depending on whether the board is in a Model A LX Pro or LXe Pro NetServer, or in a Model B LX Pro or LXe Pro NetServer.

Model A SIMMs

A memory board has 16 SIMM sockets, each of which may contain a 16 MB, 32 MB, 64 MB, or 128 MB SIMM. You can install any of these size SIMMs; however, all eight SIMMs within a bank must be the same size. For model A SIMMs, you can mix either 16 MB and 32 MB **or** 64 MB and 128 MB SIMMs in Bank 2.
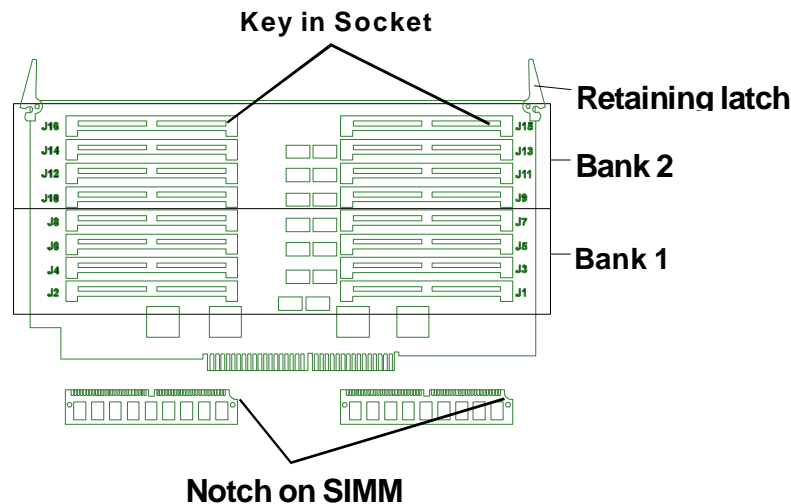

Follow these rules when installing memory:

- Only one size and speed SIMM may be installed in each bank.
- SIMMs must be installed in sets of four.
- If installing only four SIMMs, install them in bank 1.

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●

	Model A	Model B
Size SIMMs installed in Bank 1	Size SIMMs permitted in Bank 2	Size SIMMs permitted in Bank 2
16 MB	16 MB or 32 MB	16 MB, 32 MB, 64 MB, or 128 MB
32 MB	16 MB or 32 MB	16 MB, 32 MB, 64 MB, or 128 MB
64 MB	64 MB or 128 MB	16 MB, 32 MB, 64 MB, or 128 MB
128 MB	64 MB or 128 MB	16 MB, 32 MB, 64 MB, or 128 MB

Only these memory configurations are supported:
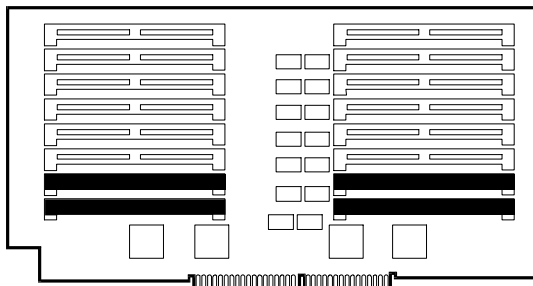
SIMM size #1

SIMM size #2

4-SIMM Configuration
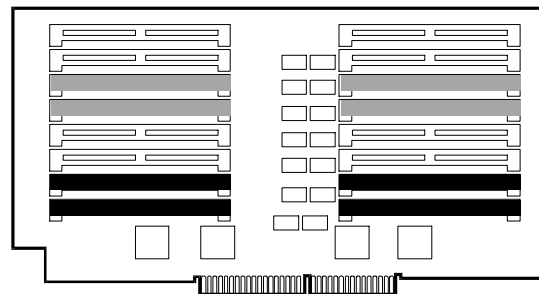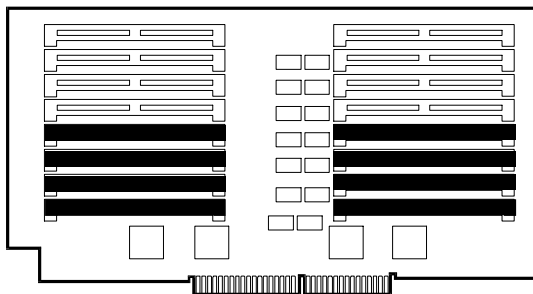
8-SIMM Configurations
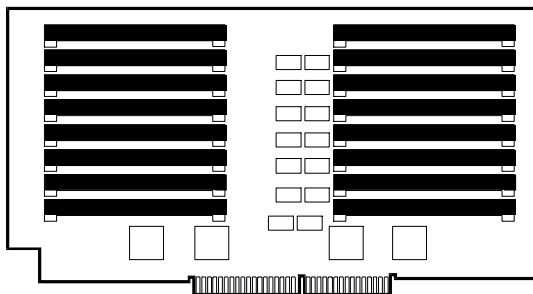
16-SIMM Configurations

Model B SIMMs

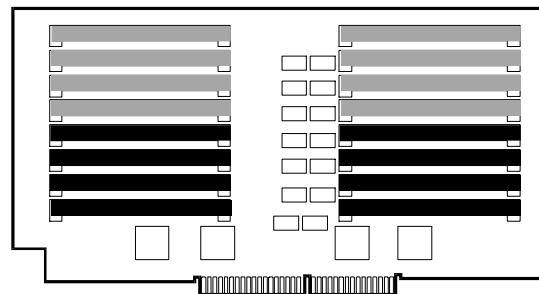A Model B SIMM memory board has 16 sockets, each of which may contain a 16 MB, 32 MB, 64 MB, or 128 MB SIMM. For model B SIMMs, you can mix any two sizes from 16 MB, 32 MB, 64 MB, or 128 MB SIMMs in Bank 2.

Key in Socket

Retaining latch

Bank 2

Bank 1

Notch on SIMM
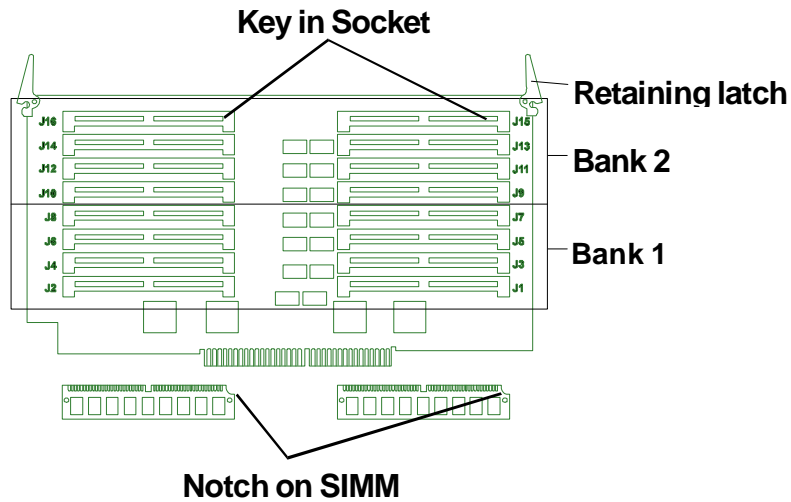
Follow these rules when installing memory on this board:

- Use only 60 ns HP SIMMs listed on the Product Reference Label, which is located on the side of the HP NetServer chassis.

- Two different SIMM sizes may be combined in the configurations shown below.

- Only one size of SIMM may be installed in each bank.

Only these memory configurations are supported:

One SIMM size
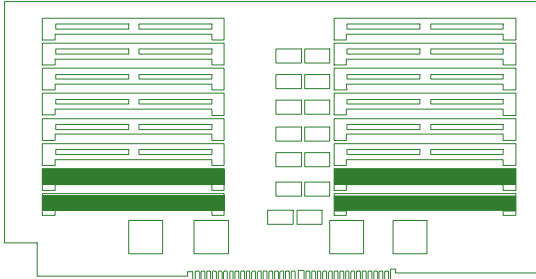
4-SIMM Configuration

8-SIMM Configuration

16-SIMM Configuration

Two SIMM sizes

Choose two of the following SIMM sizes: 16, 32, 64 or 128

SIMM size #1 � green

SIMM size #2 ▉ gray

8-SIMM Configuration

16-SIMM Configuration

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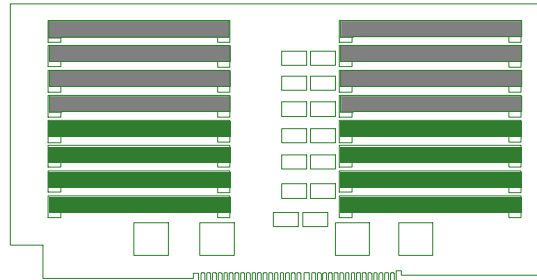
Supported Memory Configurations

The following HP SIMMs are supported:

SIMM Type	HP Part Number
16 MB SIMM	D4891A-69001
32 MB SIMM	D4892A-69001
64 MB SIMM	D4290A-69002
128 MB SIMM	D4893A-69001

DIMMs

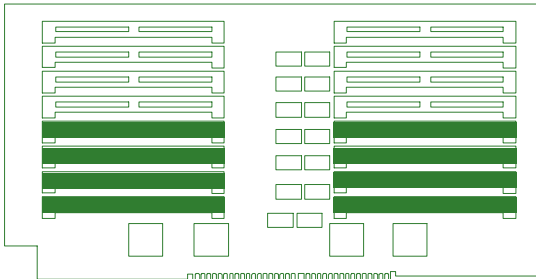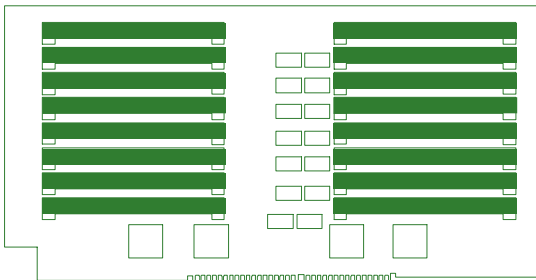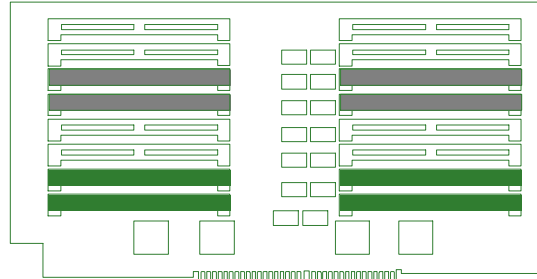The 4 GB memory board, which uses DIMMs (Dual In-Line Memory Modules), replaces the existing SIMM-based memory that is part of the original configuration of HP LX and LXe NetServers. The 4 GB memory board enables the installation of as few as 512 MB or as many as four GB.

Please note the following installation guidelines:

- You can only add memory in 512 MB increments (four 128 MB DIMMs).

- Within the 512 MB increment guideline, you can install memory in quantities from 512 MB to 4 GB.

- DIMM slots are numbered from J2 to J33. You place the first DIMM in Slot J2, and fill 4 slots until 512 MB has been added. A complete 4 GB installation requires that you fill all 32 slots. See Figure 1-2 for the complete 4 GB memory installation sequence.

The following figure illustrates the installation sequence for 512 MB of DIMM memory. The slot numbers correspond to the exact order of DIMM installation.
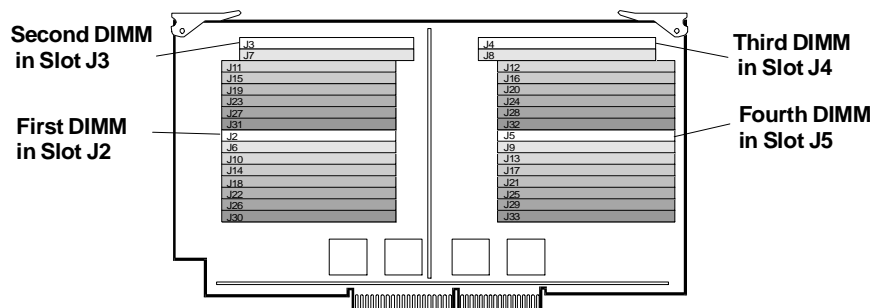
Sequence for 512 MB Memory Configuration

The following table shows the order in which slots and rows are filled as you add DIMMs to the 4 GB board: An "X" indicates that a 128 MB DIMM is installed in each of the four slots shown:

Installed DIMMs	512 MB	1. 0 GB	1.5 GB	2.0 GB	2.5 GB	3.0 GB	3.5 GB	4.0 GB
J2, 3, 4, 5	X	X	X	X	X	X	X	X
J6, 7, 8, 9		X	X	X	X	X	X	X
J10, 11, 12, 13			X	X	X	X	X	X
J14, 15, 16, 17				X	X	X	X	X
J18, 19, 20, 21					X	X	X	X
J22, 23, 24, 25						X	X	X
J26, 27, 28, 29							X	X
J30, 31, 32, 33								X

Video Memory - DRAM

The on-board video circuitry supports several screen resolutions. Increasing the video memory buffer size to 1 MB allows the controller to support 132-column text mode and high resolution graphics mode. Expand video memory by installing a 256 K x 16 (512 KB), 70 Ns, 40-pin SOJ package DRAM IC. Obtain this memory IC from a local electronics supplier.

For the Model A, the video RAM chip is not standard. The part number is 5182-9404.

Boot Device Priority

1. **CD-ROM**
2. **Flexible Disk Drive***
3. **IDE Device***
4. **EISA slot - E1**
5. **EISA slot - E2**
6. **EISA slot - E3**
7. **EISA slot - E4**
8. **PCI slot - P1**
9. **PCI slot - P2**
10. **PCI slot - P3**
11. **PCI slot - P4**
12. **SCSI A connector**
13. **SCSI B connector**
14. **PCI slot - P5**
15. **PCI slot - P6**

*

* Must be enabled using the EISA configuration Utility.
** If "Boot from Embedded SCSI" is set to "Onboard," using EISA Configuration Utility.

Cabling Configurations

Duplex, Non-Disk Array Model using the Internal Controller
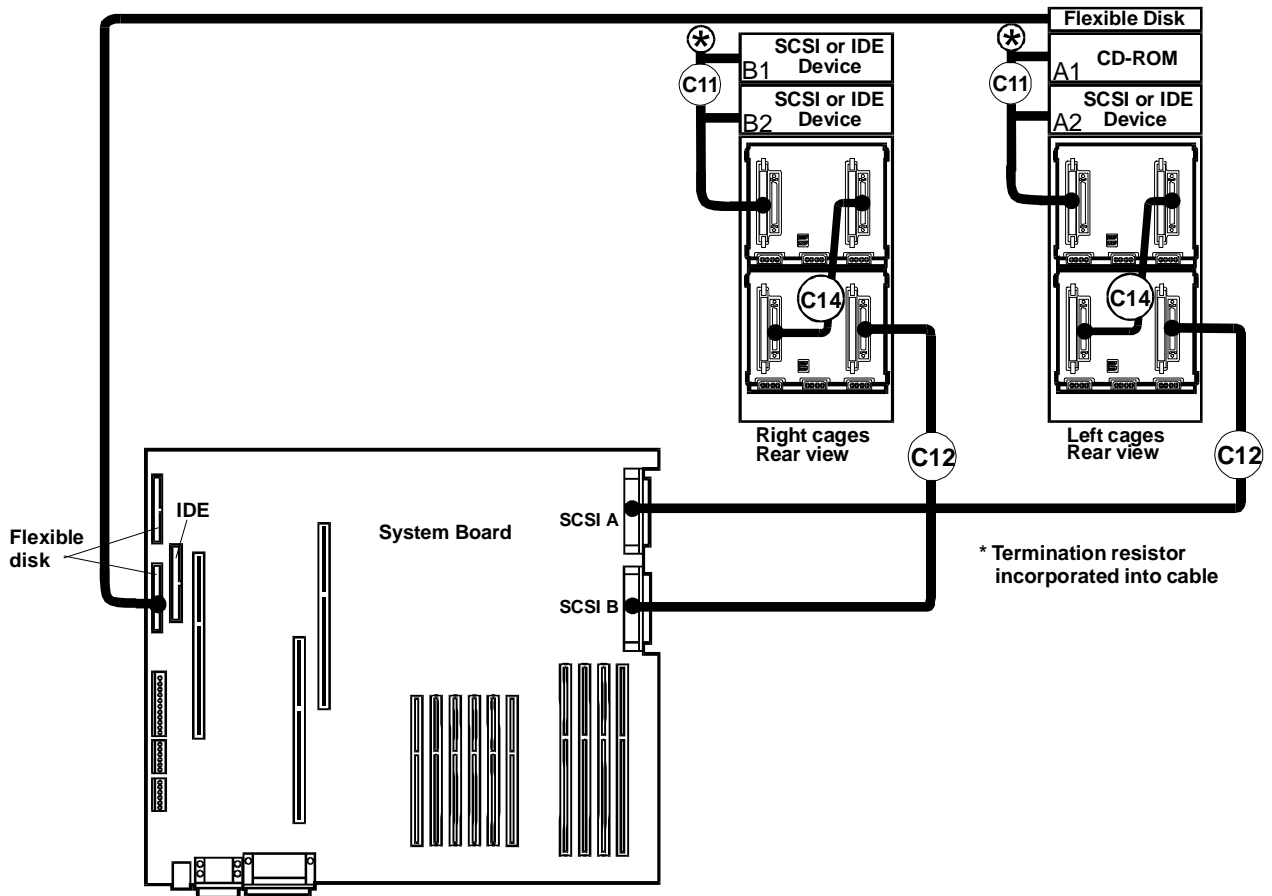
Default Switch Settings
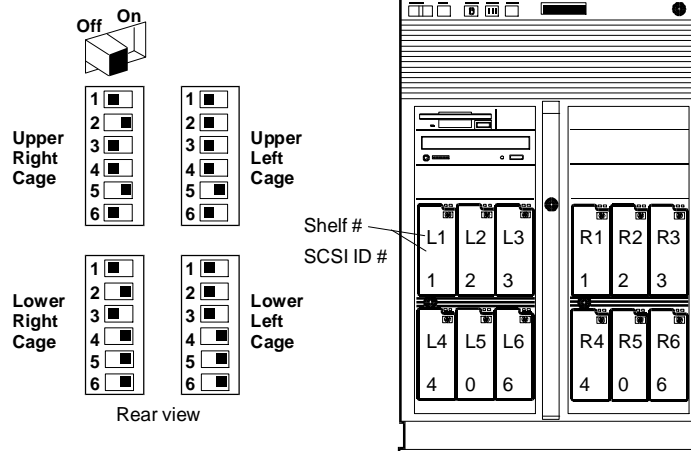
Non-Duplex, Disk Array with PCI Controller Board
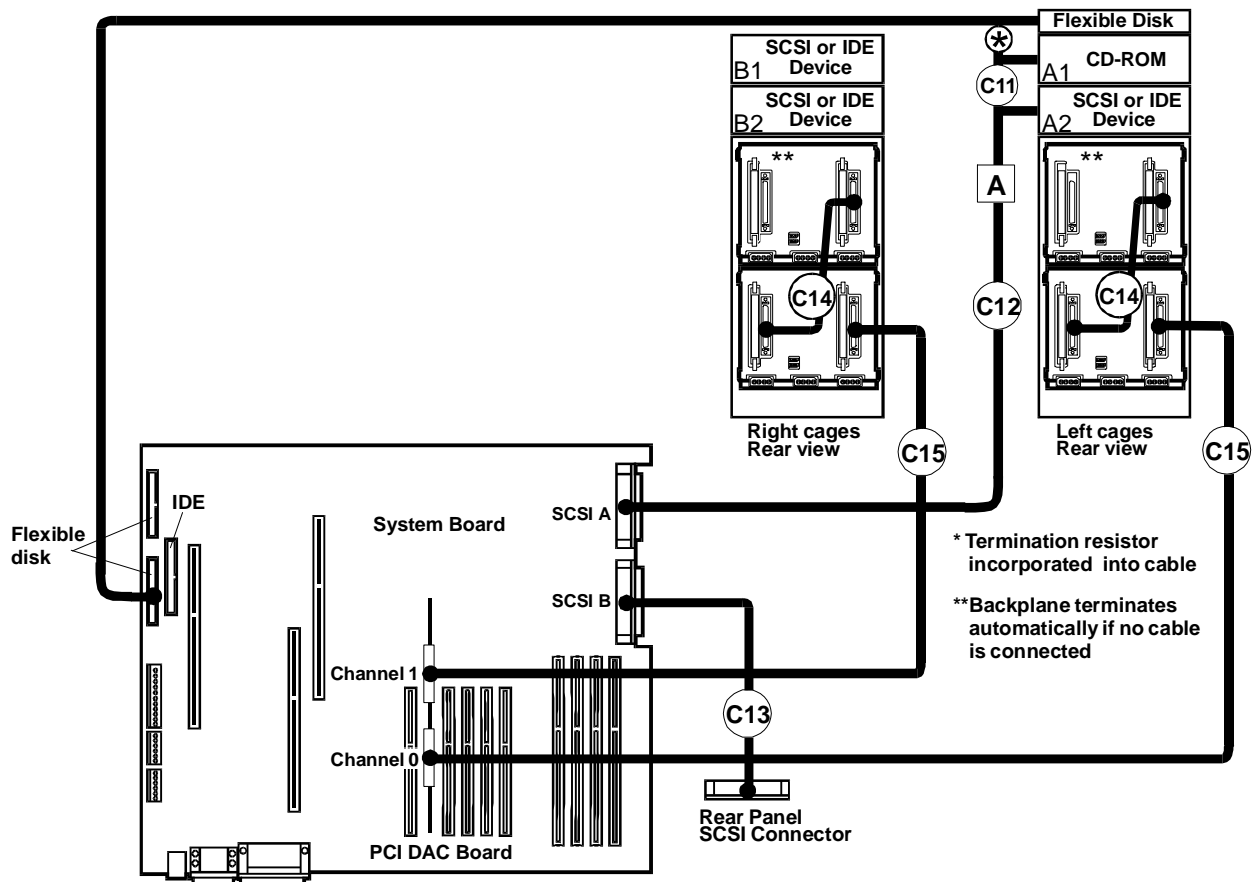
Default Switch Settings
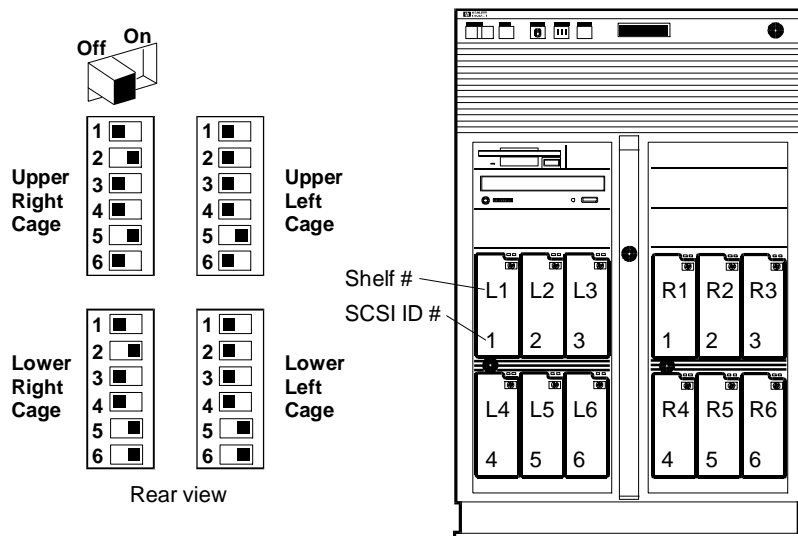
Hot Swap Subsystem SCSI Address Settings

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

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LXe Cabling Configurations

LXe Pro: Duplex, Non-Disk Array Model using the Internal Controller

CAUTION	Do not attempt to run the NetServer with *any* mass storage devices installed in the right side (including shelves B1 or B2, illustrated above) without first installing a second power supply module.

Flexible Disk

CD-ROM

A1

SCSI or IDE
Device

A2

B1

B2

C21

Right cages
Rear view

Left cages
Rear view

C12

C12

IDE

Flexible
disk

System Board

SCSI A

SCSI B

* Termination resistor
  incorporated into cable

Default Switch Settings

Off On

1 ■	
2 ■	**Upper**
3 ■	**Left**
4 ■	**Cage**
5 ■	
6 ■	

1 ■	
2 ■	**Lower**
3 ■	**Left**
4 ■	**Cage**
5 ■	
6 ■	

Rear view

Shelf # ———
SCSI ID # ———

L1	L2	L3
1	2	3

L4	L5	L6
4	0	6
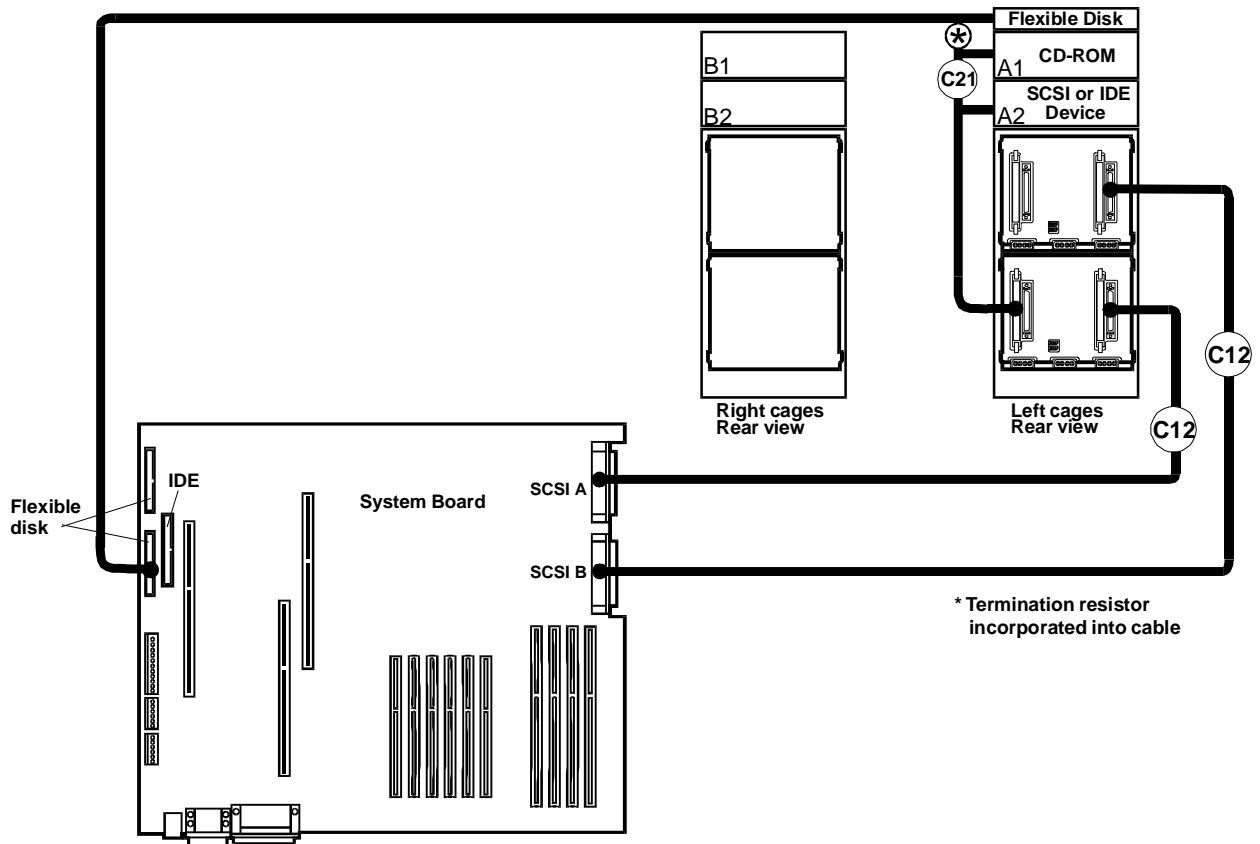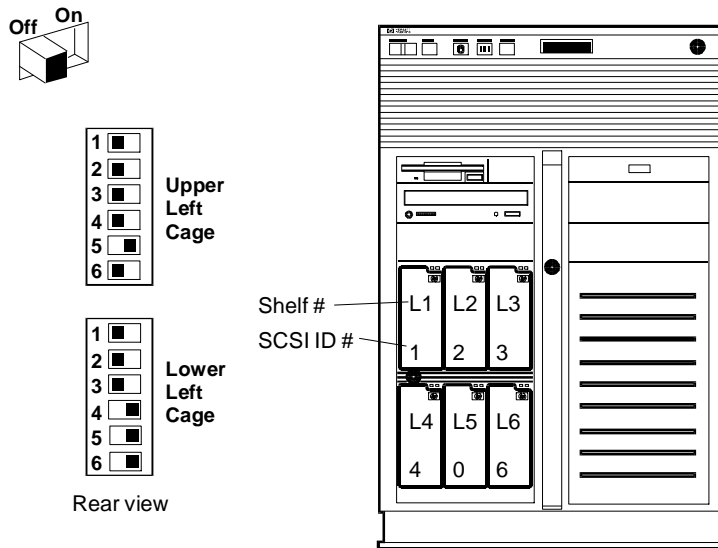
LXe Pro: Non-Duplex, Disk Array with PCI Controller Board

CAUTION	Do not attempt to run the NetServer with *any* mass storage devices installed in the right side (including shelves B1 or B2, illustrated above) without first installing a second power supply module.

Flexible Disk

B1

CD-ROM
A1

SCSI or IDE Device
A2

**

A

C11

C12

C14

C15

B2

**Right cages
Rear view**

**Left cages
Rear view**

IDE

**Flexible
disk**

System Board

SCSI A

*** Termination resistor
incorporated into cable**

****Backplane terminates
automatically if no cable
is connected**

SCSI B

Channel 1

C13

Channel 0

**Rear Panel
SCSI Connector**

PCI DAC Board

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Default Switch Settings

Rear view
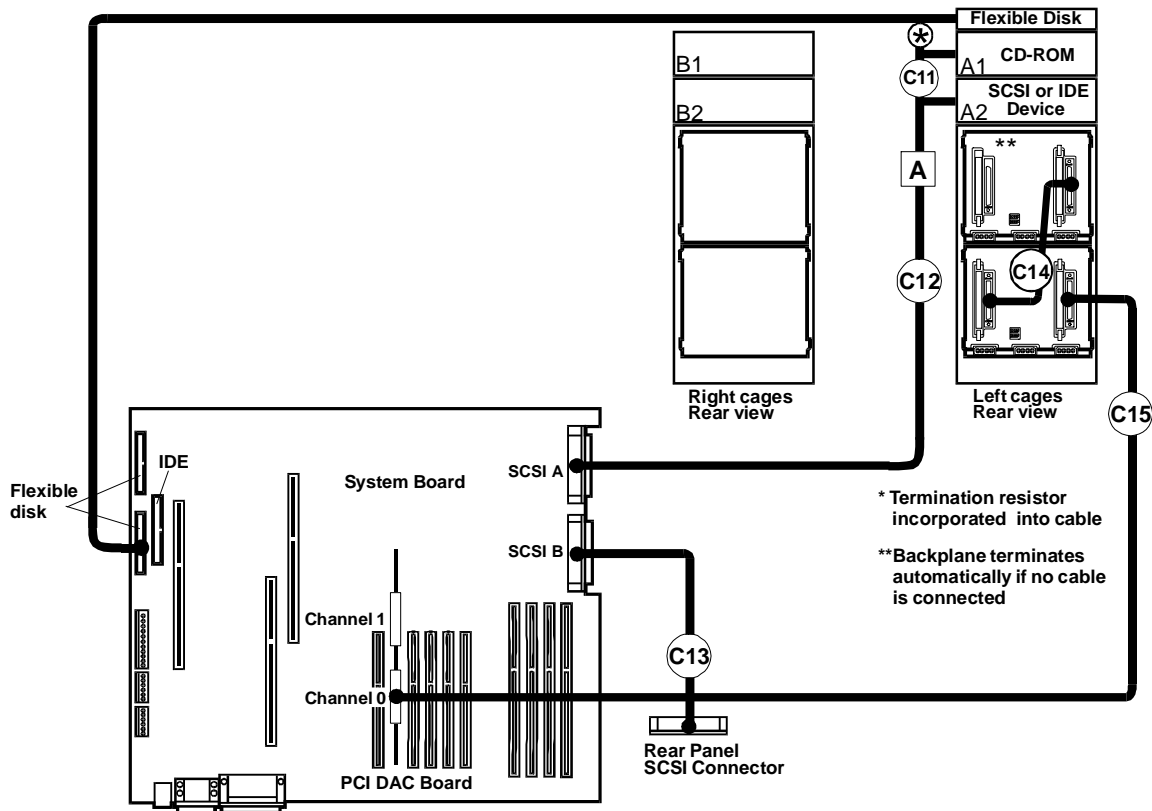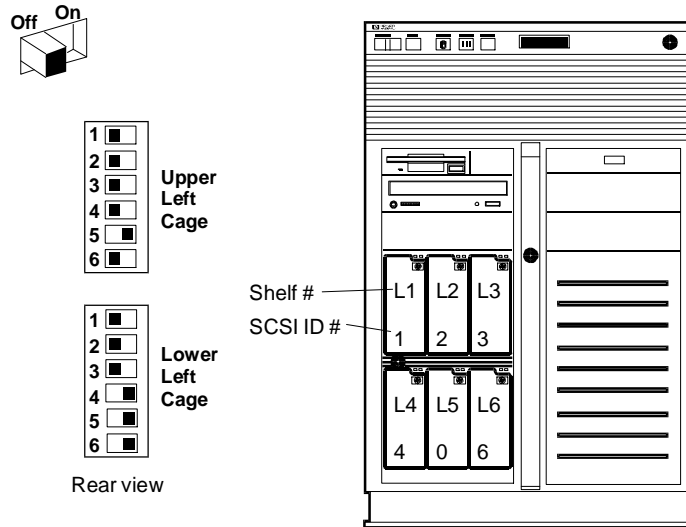
LXe Hot Swap Subsystem SCSI ID Settings

Switch	Function	Description
1 and 2	I^{2}C Bus Address	Upper Left Cage: 1=Off (I^{2}C address=7) 2=Off Lower Left Cage: 1=Off (I^{2}C address=6) 2=Off
3	High/Low SCSI IDs Determines whether the SCSI IDs used for the cage will be the lower IDs or the higher IDs. Applies to Wide-SCSI devices only. See tables below for settings. Note: Setting this switch may cause time-out problems with your NOS due to delayed start of devices with high SCSI ID numbers.	On Assigns high SCSI IDs to the cage. Off Assigns low SCSI IDs to the cage.
4	SCSI ID Zero Determines SCSI ID of middle shelf in cage (see tables below for settings).	On Sets middle shelf in the cage (shelf 2 or shelf 5) to SCSI ID 0. Off Sets middle shelf to normal SCSI ID sequence (ID 2 or ID 5).
5	Remote Start Determines power-on sequence of the hot swap disk modules.	On All disk drives in upper cage power-on sequentially after a delay determined by each drive's SCSI ID. All disk drives in lower cage power on immediately when NetServer power is turned on. Recommended setting. Off Not supported.
6	Upper/Lower Cage Identifies the hot-swap card cage as either upper or lower.	On For lower cage Off For upper cage

Left upper hot swap drive cage switch settings and SCSI ID numbers

Switch Position						Hot Swap Drive Shelf		
1	2	3	4	5	6	1	2	3
off	off	off	off	on	off	ID=1	ID=2	ID=3
off	off	off	on	on	off	ID=1	ID=0	ID=3
off	off	on	off	on	off	ID=9	ID=10	ID=11
off	off	on	on	on	off	ID=9	ID=8	ID=11

Left lower hot swap drive cage switch settings and SCSI ID numbers

Switch Position						Hot Swap Drive Shelf		
1	2	3	4	5	6	4	5	6
off	off	off	off	on	on	ID=4	ID=5	ID=6
off	off	off	on	on	on	ID=4	ID=0	ID=6
off	off	on	off	on	on	ID=12	ID=13	ID=14
off	off	on	on	on	on	ID=12	ID=8	ID=14

Specifications

Temperature

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

Humidity (noncondensing)

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

Altitude

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

Maximum Air Conditioning Load

LX Pro	Less than 1058 KCal (4200 BTU)
LXe Pro	110V: 1032 KCal/Hour (4100 BTU/Hour)
	220V: 1234 KCal/Hour (4900 BTU/Hour)

Minimum Clearance

Front	1m (39 in)
Back	15 cm (6 in) ventilated space

Weight and Dimensions

	With Casters	Without Casters
Height	630 mm (24.57 in)	570 mm (22.23 in)

Width	425 mm (16.58 in)	425 mm (16.58 in)
Depth	650 mm (25.35 in)	650 mm (25.35 in)
Weight	Minimum: 59 kg (131 lb)	
	Maximum: 85 kg (187 lb)	
System footprint	676 x 454 mm (26.625 x 17.875 in)	

Keyboard

Height	3.4 cm (1.4 in)
Width	46.8 cm (18.4 in)
Depth	19.8 cm (7.8 in)
Weight	1.9 kilograms (4.2 lb)

Cable Length

Keyboard cable	3 m (9.9 ft)

Power Supply Specifications

Power Supply Module

AC input	Auto-Ranging Power Supply
	100 to 127 VAC ~ 8 A at 50/60 Hz
	200 to 240 VAC ~ 4 A at 50/60 Hz
DC output	410 W maximum, continuous

Power Supply System

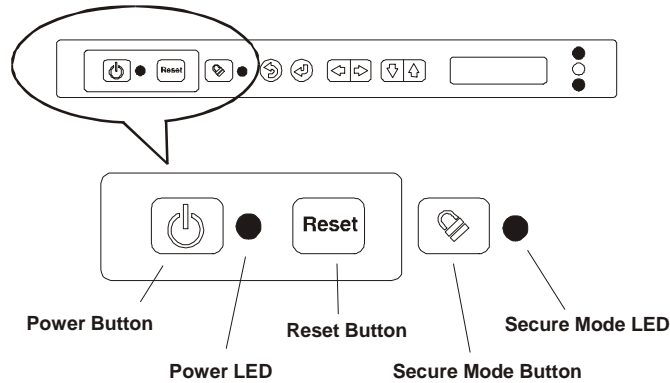| AC input	Auto-Ranging Power Supply
	100 to 127 VAC ~ 12 A at 50/60 Hz
	200 to 240 VAC ~ 6 A at 50/60 Hz
DC output	790 W maximum, continuous
	LXe: 790W continuous (410W continuous with one PSM)

HP NetServer LXr 8000 System Information

System Views

Front Control Panel

Control	Description
⏻ Power Button	Turns server power on and off.
Power LED	Glows steady green when power is on, and flashing green when the server is in ACPI Sleep. If the LED is dark, system power is off.
Reset Button	Performs a hard reset.
Secure Mode Button	Puts the server in Secure Mode, if your server was configured for Secure Mode. Secure Mode can include such restrictions as keyboard lock, power button lock, and screen blanking. The reset button and scroll keys are also disabled. You configure Secure Mode through the server's Setup Utility.
Secure Mode LED	Glows solid green when the server is in Secure Mode, and is dark at all other times.

Control Panel LCD Screen and Navigation Buttons

Escape
Enter
Not Used
Scroll Down One Line
Scroll Up One Line
Two-Line Display
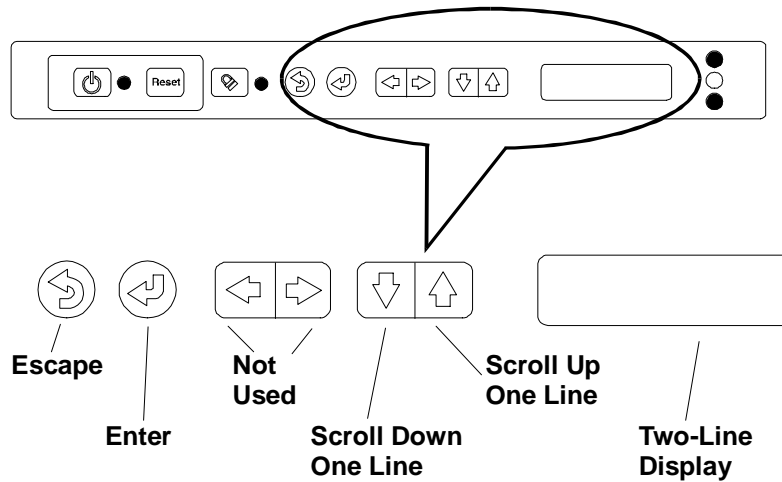
Button Name	Function
Escape	Return to previous menu.
Enter	Select an item from a menu.
Down Arrow	Scroll down one line through the current screen or menu.
Up Arrow	Scroll up one line through the current screen or menu.
Left Arrow	Not used
Right Arrow	Not used

Server Status LEDs

Green

Yellow

Red
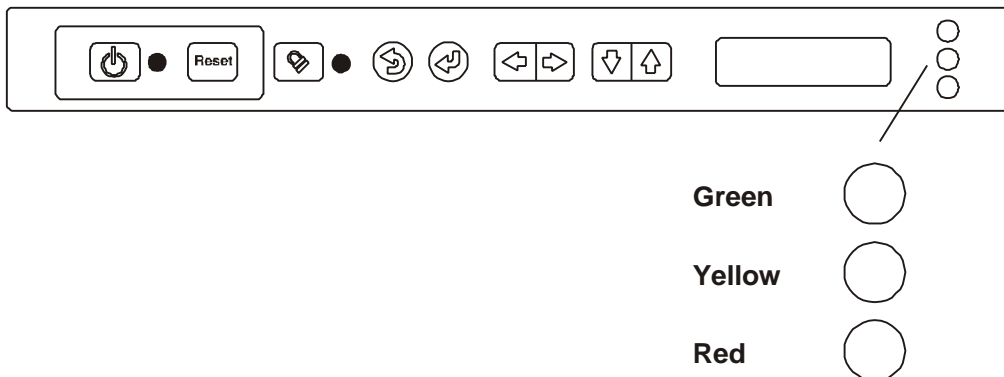
Red LED	Yellow LED	Green LED	Indicates This Server Status:
●	●	●	Main power is off. Server may or may not have standby power.
			A server component has failed. If the component was redundant (a

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☼	●	●	power supply or fan, for example), the server may still be operating.
●	☼	●	A condition exists which may cause the failure of a server component.
●	●	○	The server is operating normally.

key: ● = LED off   ○ = LED on   ☼ = LED blinking

The Main Menu

By default, the HP NetServer's control panel display shows something like this:

```
HP LXr 8000
```

To reach the main menu from this default screen, press the control panel's Enter button. The main menu appears:

The menu selections are:

- HW Sys Info. Information on the server's hardware configuration.

- FW Info. The version numbers of the server's firmware.

- HW P/N. Part number and serial number of the server's chassis.

- Event Log. The server's log of current and resolved error conditions.

Rear View
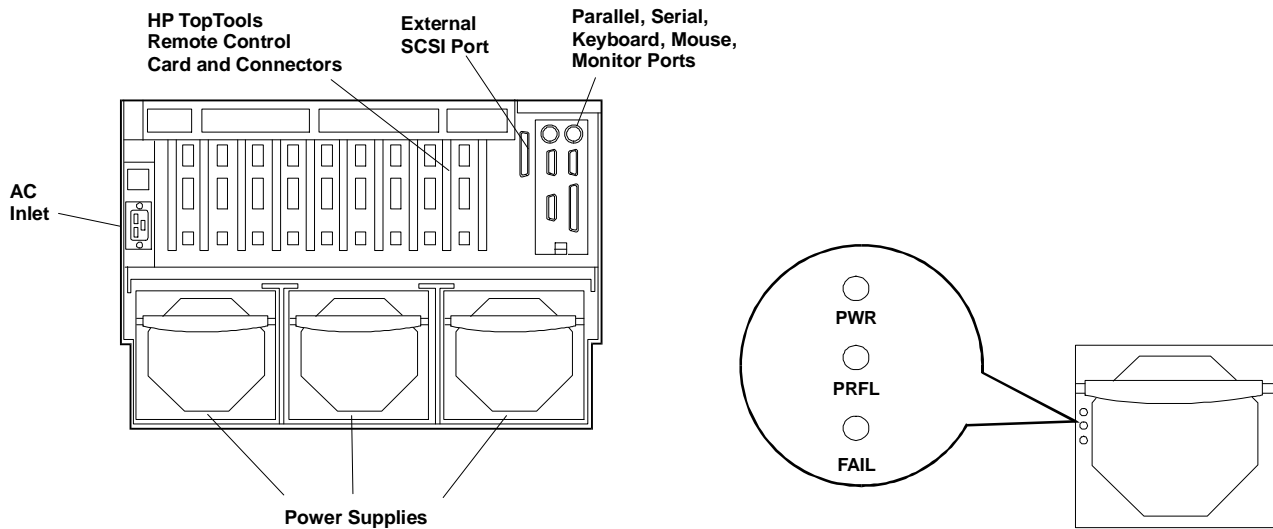
| Control	Description
PWR (Power)	Lights solid green when system is powered up. If the system is not powered up but is connected to AC power (so that standby voltage is available), the LED blinks green. If there is no AC power, the LED is dark.
PRFL (Predictive Fail)	Blinks yellow if the speed of the power supply's internal fan falls below acceptable levels. Power supply has not failed, but may do so soon.

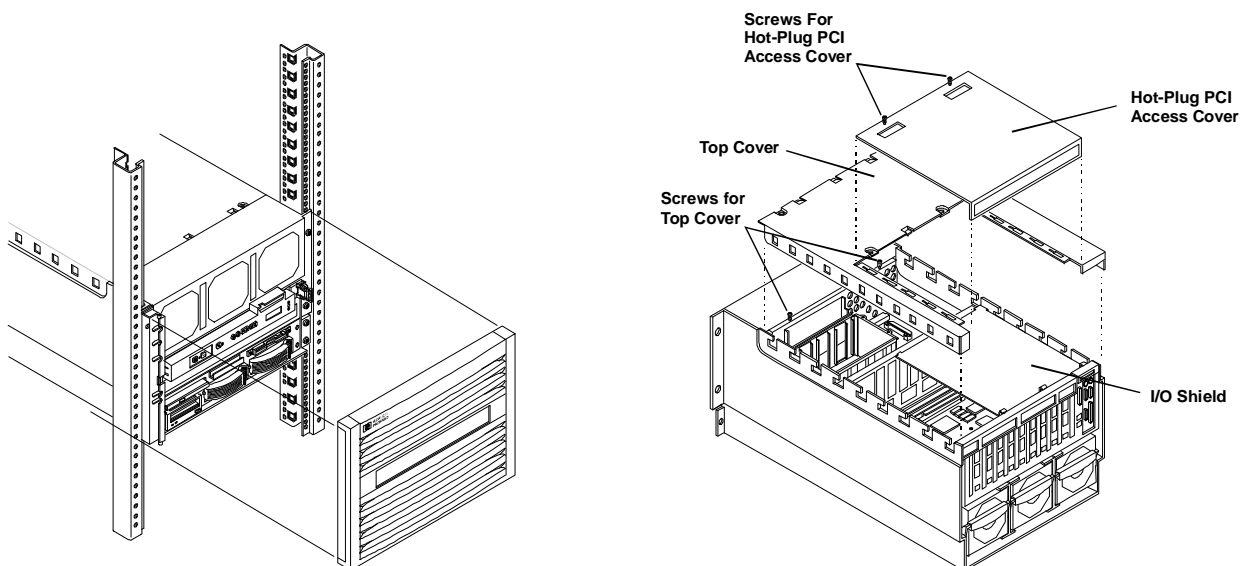|	
FAIL (Power Supply Failure)	Lights solid yellow when power supply fails. Blinks yellow when power supply is drawing more current than it should, because of a short-circuit in the power supply or elsewhere in the server. If the short is in the power supply, the power supply shuts down. If the short is in the server, the server shuts down.

Communication Ports
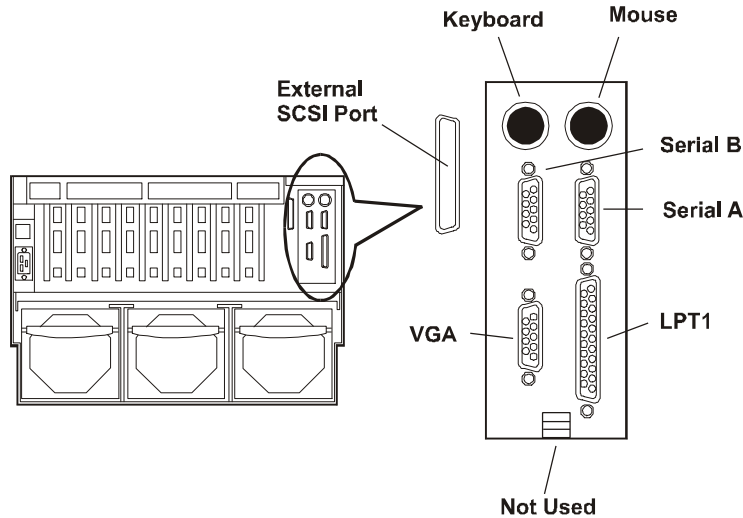
PCI Hot Plug Slot LEDs

Slots P7 through P10 on the I/O baseboard are 64-bit PCI slots that can be individually powered down through system software. These four PCI Hot Plug slots each have two LEDs. The LEDs are on the I/O baseboard, but you can see them through the server's rear panel. The green LED indicates whether power to the slot is on or off. The amber LED indicates whether the slot needs attention.

Green LED	Amber LED	Indicates This Status
On	Off	Power to the slot is on, and the slot is operating normally. Do not remove the board from the slot.
On	On	Power to the slot is on, but the slot needs attention. Do not remove the board from the slot.
Off	On	Power to the slot is off, and the slot needs attention. You can remove the board from this slot..
Off	Off	Power to the slot is off. You can remove the board from this slot.

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Covers

Screws For Hot-Plug PCI Access Cover

Hot-Plug PCI Access Cover

Top Cover

Screws for Top Cover

I/O Shield

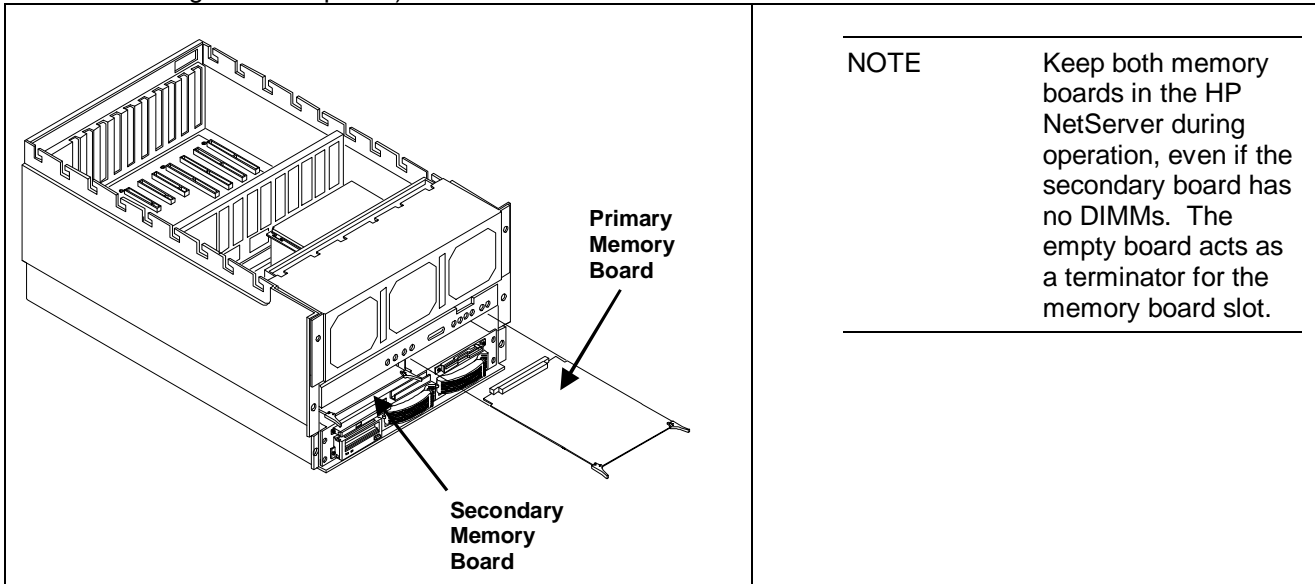| WARNING	Before removing the top cover, always disconnect the power cord and unplug telephone cables. Disconnect the power cord to avoid exposure to high energy levels that may cause burns when parts are short-circuited by metal objects such as tools or jewelry. Unplug telephone cables to avoid exposure to shock hazard from telephone ringing voltages.
	Note that standby power does not turn off when the front panel power switch is turned off. If the control panel backlight is on, standby power is on. Unplug the AC power cord to turn off standby power. Wait 20 seconds before opening the NetServer; the hi-current power supply modules will take this long to dissipate the stored energy.

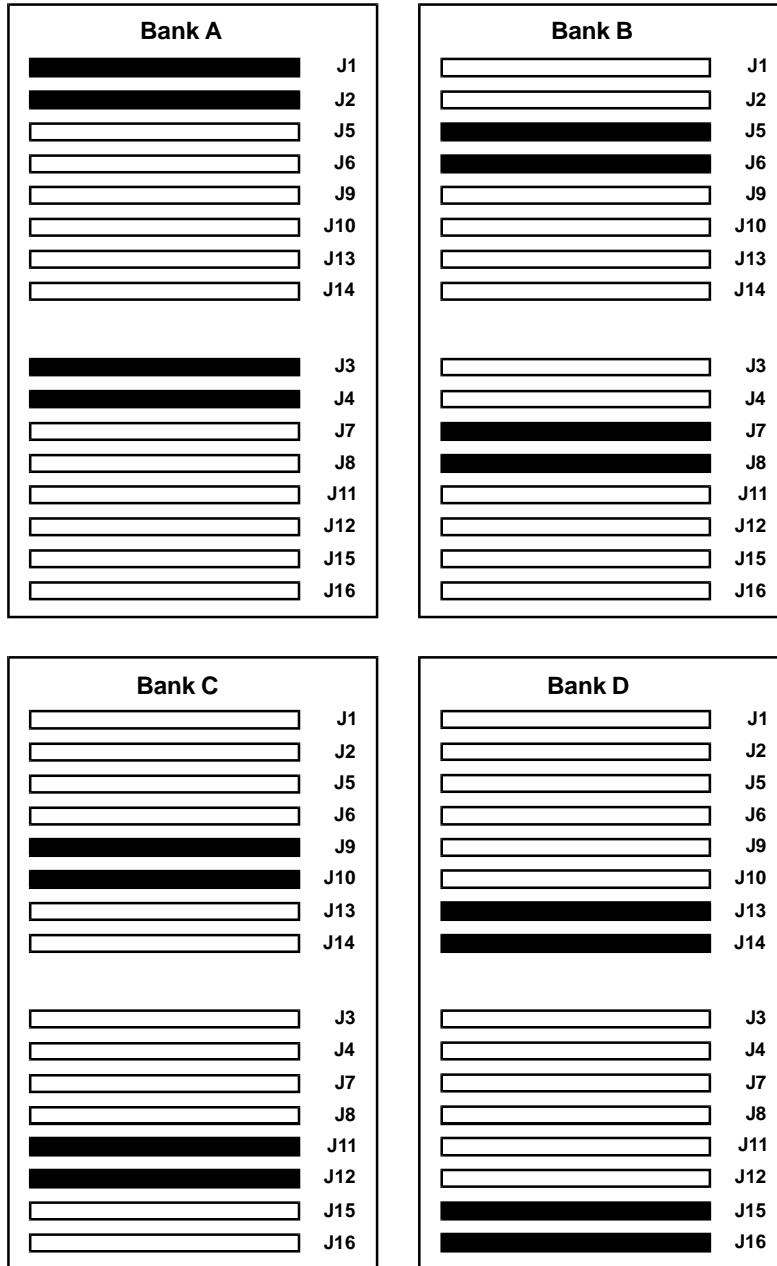| NOTE	After unplugging the AC power cord, the Power (green) LEDs at the back of the power supply modules will continue to flash for about 20 seconds. This is normal.

Memory

- **Add (or remove) DIMMs to the memory board in groups of four**. Each group of four DIMMs must fill one bank on a memory board. A bank must be either fully populated or completely empty.

- **When populating a memory board, fill Bank A first, then Bank B, then Bank C, and finally Bank D.** You must do this if a board is to have four-way interleaving.

- **All DIMMs within a bank must be identical in size and speed**. A bank must contain either all 64 MB DIMMs or all 256 MB DIMMs.

- **Banks of 64 MB DIMMs and 256 MB DIMMs can coexist on the same memory board**.

- **The minimum memory configuration is four 64 MB DIMMs in one bank on the primary (right-hand) memory board, and no DIMMs on the left-hand board.** When the system has two memory boards but only four DIMMs, all four DIMMs must be on the primary memory board. (The left-hand, secondary, board must always be in the system, even if it holds no DIMMs.)

- **For board-to-board interleaving, each memory board must hold the same number of DIMMs**. If one board holds two types of DIMMs, the other board must also, and in the same banks. (For example, if one memory board holds eight 256 MB DIMMs in Banks A and B and eight 64MB DIMMs in Banks C and D, the other board must match this configuration exactly if card-to-card interleaving is to take place.)
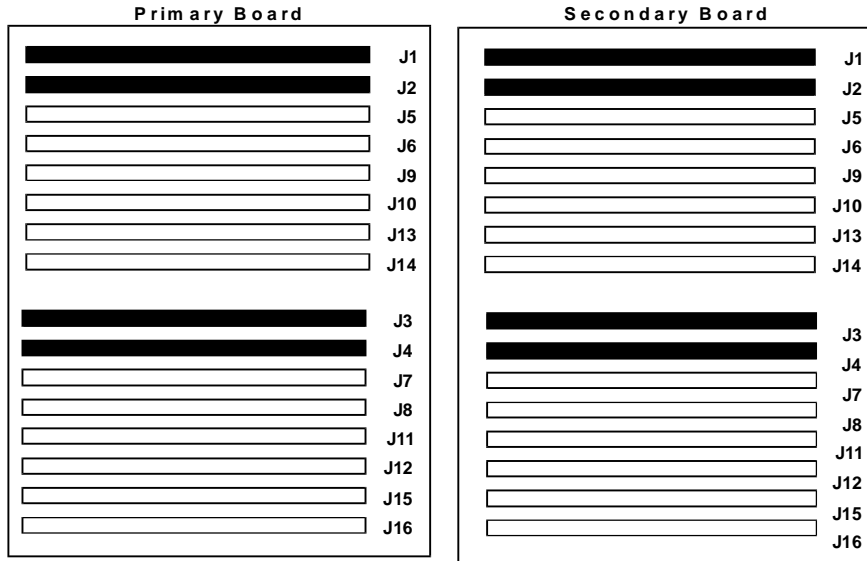

Primary Memory Board
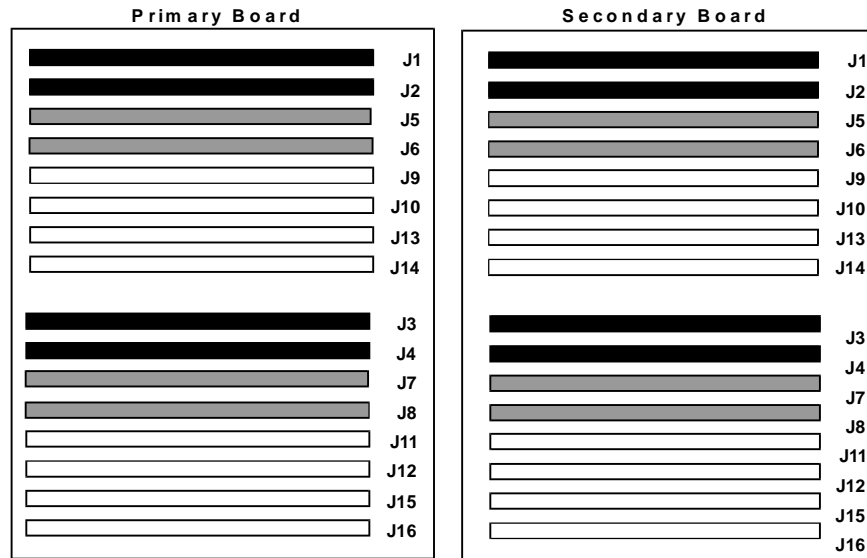
Secondary Memory Board

| NOTE | Keep both memory boards in the HP NetServer during operation, even if the secondary board has no DIMMs. The empty board acts as a terminator for the memory board slot. |

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The Primary and Secondary Memory Boards

Bank A		Bank B	
▮▮▮▮▮▮▮▮▮▮	J1	▭▭▭▭▭▭▭▭▭▭	J1
▮▮▮▮▮▮▮▮▮▮	J2	▭▭▭▭▭▭▭▭▭▭	J2
▭▭▭▭▭▭▭▭▭▭	J5	▮▮▮▮▮▮▮▮▮▮	J5
▭▭▭▭▭▭▭▭▭▭	J6	▮▮▮▮▮▮▮▮▮▮	J6
▭▭▭▭▭▭▭▭▭▭	J9	▭▭▭▭▭▭▭▭▭▭	J9
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▭▭▭▭▭▭▭▭▭▭	J13	▭▭▭▭▭▭▭▭▭▭	J13
▭▭▭▭▭▭▭▭▭▭	J14	▭▭▭▭▭▭▭▭▭▭	J14
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▮▮▮▮▮▮▮▮▮▮	J4	▭▭▭▭▭▭▭▭▭▭	J4
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▭▭▭▭▭▭▭▭▭▭	J11	▭▭▭▭▭▭▭▭▭▭	J11
▭▭▭▭▭▭▭▭▭▭	J12	▭▭▭▭▭▭▭▭▭▭	J12
▭▭▭▭▭▭▭▭▭▭	J15	▭▭▭▭▭▭▭▭▭▭	J15
▭▭▭▭▭▭▭▭▭▭	J16	▭▭▭▭▭▭▭▭▭▭	J16

Bank C		Bank D	
▭▭▭▭▭▭▭▭▭▭	J1	▭▭▭▭▭▭▭▭▭▭	J1
▭▭▭▭▭▭▭▭▭▭	J2	▭▭▭▭▭▭▭▭▭▭	J2
▭▭▭▭▭▭▭▭▭▭	J5	▭▭▭▭▭▭▭▭▭▭	J5
▭▭▭▭▭▭▭▭▭▭	J6	▭▭▭▭▭▭▭▭▭▭	J6
▮▮▮▮▮▮▮▮▮▮	J9	▭▭▭▭▭▭▭▭▭▭	J9
▮▮▮▮▮▮▮▮▮▮	J10	▭▭▭▭▭▭▭▭▭▭	J10
▭▭▭▭▭▭▭▭▭▭	J13	▮▮▮▮▮▮▮▮▮▮	J13
▭▭▭▭▭▭▭▭▭▭	J14	▮▮▮▮▮▮▮▮▮▮	J14
▭▭▭▭▭▭▭▭▭▭	J3	▭▭▭▭▭▭▭▭▭▭	J3
▭▭▭▭▭▭▭▭▭▭	J4	▭▭▭▭▭▭▭▭▭▭	J4
▭▭▭▭▭▭▭▭▭▭	J7	▭▭▭▭▭▭▭▭▭▭	J7
▭▭▭▭▭▭▭▭▭▭	J8	▭▭▭▭▭▭▭▭▭▭	J8
▮▮▮▮▮▮▮▮▮▮	J11	▭▭▭▭▭▭▭▭▭▭	J11
▮▮▮▮▮▮▮▮▮▮	J12	▭▭▭▭▭▭▭▭▭▭	J12
▭▭▭▭▭▭▭▭▭▭	J15	▮▮▮▮▮▮▮▮▮▮	J15
▭▭▭▭▭▭▭▭▭▭	J16	▮▮▮▮▮▮▮▮▮▮	J16

DIMM Slot Numbers and Bank Numbers

Primary Board   **Secondary Board**

Primary Board		Secondary Board	
▮▮▮▮▮▮▮▮	J1	▮▮▮▮▮▮▮▮	J1
▮▮▮▮▮▮▮▮	J2	▮▮▮▮▮▮▮▮	J2
▯▯▯▯▯▯▯▯	J5	▯▯▯▯▯▯▯▯	J5
▯▯▯▯▯▯▯▯	J6	▯▯▯▯▯▯▯▯	J6
▯▯▯▯▯▯▯▯	J9	▯▯▯▯▯▯▯▯	J9
▯▯▯▯▯▯▯▯	J10	▯▯▯▯▯▯▯▯	J10
▯▯▯▯▯▯▯▯	J13	▯▯▯▯▯▯▯▯	J13
▯▯▯▯▯▯▯▯	J14	▯▯▯▯▯▯▯▯	J14
▮▮▮▮▮▮▮▮	J3	▮▮▮▮▮▮▮▮	J3
▮▮▮▮▮▮▮▮	J4	▮▮▮▮▮▮▮▮	J4
▯▯▯▯▯▯▯▯	J7	▯▯▯▯▯▯▯▯	J7
▯▯▯▯▯▯▯▯	J8	▯▯▯▯▯▯▯▯	J8
▯▯▯▯▯▯▯▯	J11	▯▯▯▯▯▯▯▯	J11
▯▯▯▯▯▯▯▯	J12	▯▯▯▯▯▯▯▯	J12
▯▯▯▯▯▯▯▯	J15	▯▯▯▯▯▯▯▯	J15
▯▯▯▯▯▯▯▯	J16	▯▯▯▯▯▯▯▯	J16

Board-to-Board Interleaving: 8 DIMMS

Primary Board   **Secondary Board**

Primary Board		Secondary Board	
▮▮▮▮▮▮▮▮	J1	▮▮▮▮▮▮▮▮	J1
▮▮▮▮▮▮▮▮	J2	▮▮▮▮▮▮▮▮	J2
▨▨▨▨▨▨▨▨	J5	▨▨▨▨▨▨▨▨	J5
▨▨▨▨▨▨▨▨	J6	▨▨▨▨▨▨▨▨	J6
▯▯▯▯▯▯▯▯	J9	▯▯▯▯▯▯▯▯	J9
▯▯▯▯▯▯▯▯	J10	▯▯▯▯▯▯▯▯	J10
▯▯▯▯▯▯▯▯	J13	▯▯▯▯▯▯▯▯	J13
▯▯▯▯▯▯▯▯	J14	▯▯▯▯▯▯▯▯	J14
▮▮▮▮▮▮▮▮	J3	▮▮▮▮▮▮▮▮	J3
▮▮▮▮▮▮▮▮	J4	▮▮▮▮▮▮▮▮	J4
▨▨▨▨▨▨▨▨	J7	▨▨▨▨▨▨▨▨	J7
▨▨▨▨▨▨▨▨	J8	▨▨▨▨▨▨▨▨	J8
▯▯▯▯▯▯▯▯	J11	▯▯▯▯▯▯▯▯	J11
▯▯▯▯▯▯▯▯	J12	▯▯▯▯▯▯▯▯	J12
▯▯▯▯▯▯▯▯	J15	▯▯▯▯▯▯▯▯	J15
▯▯▯▯▯▯▯▯	J16	▯▯▯▯▯▯▯▯	J16

Board-to-Board Interleaving: 16 DIMMS

DIMM and 16-DIMM Configuration for Interleaved Memory Boards

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Key: Bank A ▮ Bank C ▯
      Bank B ▮ Bank D ▮

Primary Board   **Secondary Board**

Primary Board: J1, J2, J5, J6, J9, J10, J13, J14, J3, J4, J7, J8, J11, J12, J15, J16

Secondary Board: J1, J2, J5, J6, J9, J10, J13, J14, J3, J4, J7, J8, J11, J12, J15, J16
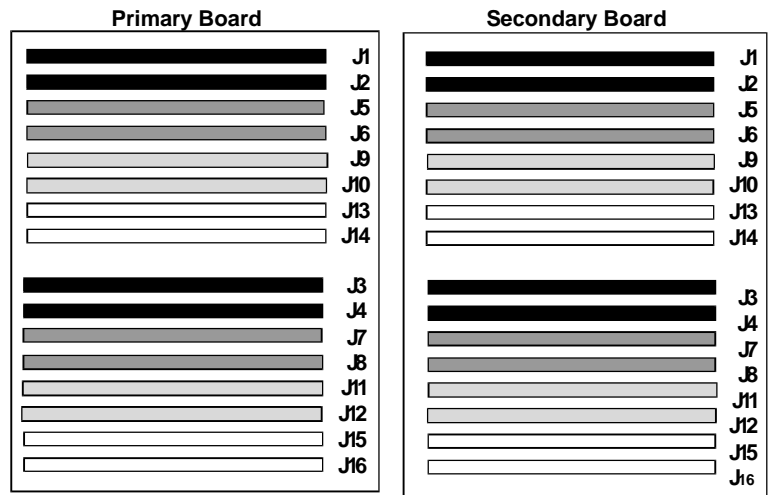
Board-to-Board Interleaving: 24 DIMMS

Primary Board   **Secondary Board**

Primary Board: J1, J2, J5, J6, J9, J10, J13, J14, J3, J4, J7, J8, J11, J12, J15, J16

Secondary Board: J1, J2, J5, J6, J9, J10, J13, J14, J3, J4, J7, J8, J11, J12, J15, J16
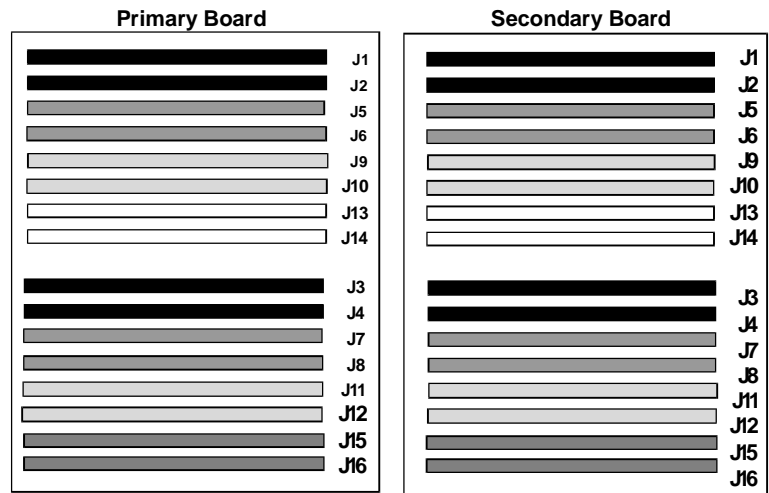
Board-to-Board Interleaving: 32 DIMMS

DIMM and 32-DIMM Configuration for Interleaved Memory Boards

Boot Device Priority

NOTE	Plugging the HP TopTools Remote Management card (board) in any slot other than slot 2 may cause it to malfunction.

By default, the HP NetServer searches for bootable devices in the order shown below. (This boot sequence is configurable.)

1. IDE CD-ROM drive

2. Flexible disk drive

3. ISA board

4. Slot P1

5. On-board SCSI

6. Slots P2 through P10

On-board SCSI consists of two channels, A and B. Channel A controls the HP NetServer's internal hard disk drives. Channel B handles the server's external SCSI port. On each SCSI channel, the server scans for a boot device starting at device ID 0 and works up from there.

Hot Replacement of PCI Hot Plug Boards

To replace one PCI Hot Plug board with another while the server is running, you must:

- Turn off power to the slot through your server's NOS. If you are a Windows NT 4.0 user, choose Programs from the Start menu, then select PCI Hot Plug from the Programs menu.

- Physically remove the hot plug board and replace it with another.

CAUTION	Never remove a PCI Hot Plug board from a hot-plug slot without first powering down the slot through software. Doing so interferes with the operation of the board's Hot Plug driver. As a consequence, the board will not resume I/O operation when replaced. Also, you will not be able to power up the slot again through software. If the board in a Hot Plug slot does not have Hot Plug drivers, you cannot power it down through software. Do not remove the board while the server is running.

Reading Hot Plug PCI Slot LEDs to Determine Slot Status

Green LED	Amber LED	Indicates This Status
On	Off	Power to the slot is on, and the slot is operating normally. Do not remove the board from the slot.
On	On	Power to the slot is on, but the slot needs attention. Do not remove the board from the slot.
Off	On	Power to the slot is off, and the slot needs attention. You can remove the board from this slot.
Off	Off	Power to the slot is off. You can remove the board from this slot.

NOTE	If you have a non-hot-plug board in one of the hot-plug slots, the board will show up on the interface. But the interface will not allow you to power down the board's slot If you do not replace the Hot Plug bracket, you cannot power up the slot again.

Exploded Views
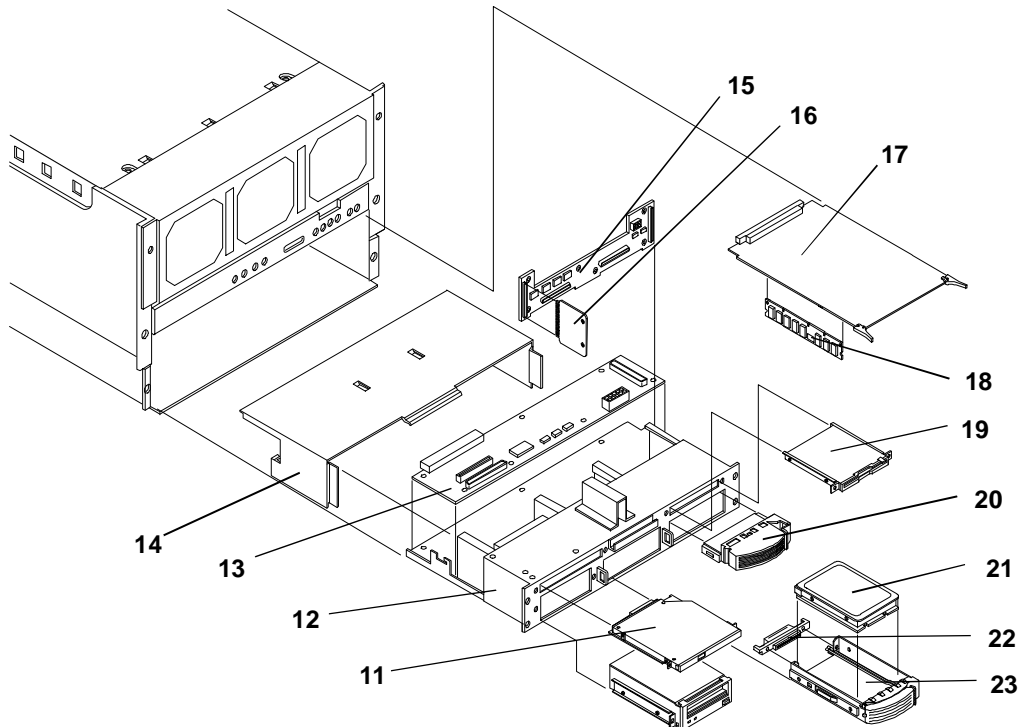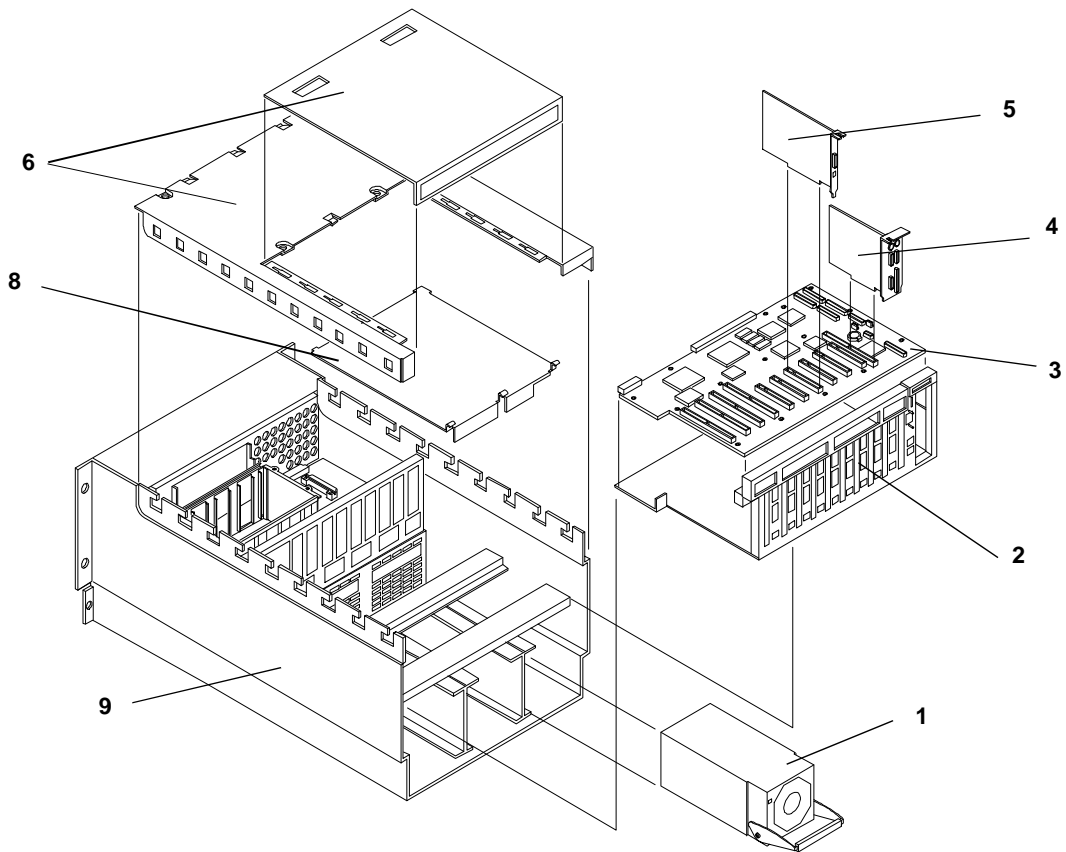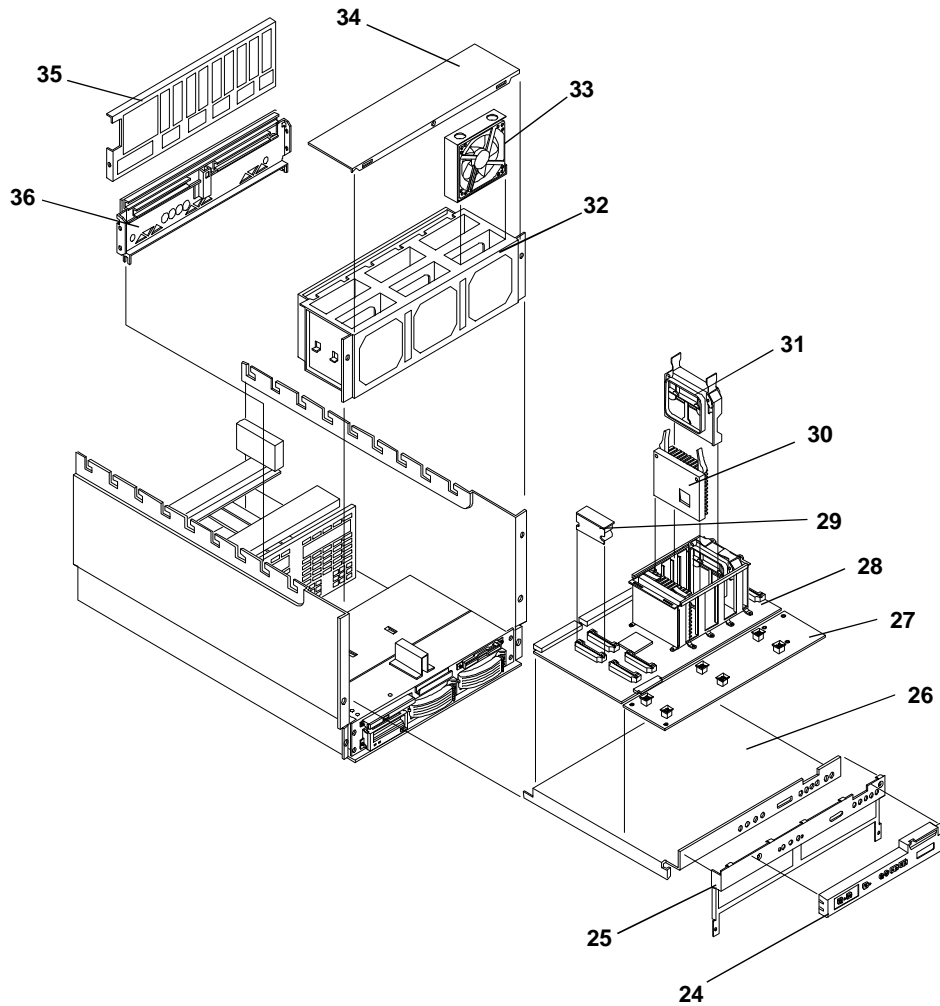
Parts List

Fig	Description	Replacement	Exchange
1	750W Power Supply Module	5064-6607	5064-6608
2	I/O Baseboard tray	Not orderable	
3	I/O Baseboard PCA	D6021-63004	D6021-69004
4	I/O Riser PCA	D6021-63007	
5	Remote Control Board	D6028-63001	
6	Top Cover Assembly w/label	D6021-63059	
8	Non-Hot-Plug PCI Board Cover	Not orderable	
9	Chassis	Not orderable	
11	CD-ROM Drive, Slimline	5064-7040	
12	Peripheral Bay Chassis	Not orderable	
13	Peripheral Bay Backplane PCA	D6021-63040	
14	Peripheral Bay Cover	Not orderable	
15	Hot-Swap SCSI Backplane	D6021-63030	
16	Hot-Swap SCSI Management PCA	D6021-63031	

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Fig	Description	Replacement	Exchange
17	Memory PCA	D6021-63005	D6021-69005
18a	DIMM, 64 MB, 50ns	D6112-63000	D6112-69000
18b	DIMM, 256 MB, 50ns	D6114-63000	D6114-69000
19	3.5 Floppy Drive, Slimline	D6021-63041	
20	Hot-Swap Filler Panel, Low-Profile	5064-4689	
21a	SCSI Ultra2 HDD, 4.2 GB, 7200 rpm	D6104-69001	
21b	SCSI Ultra2 HDD, 9 GB, 7200 rpm	D6106-69001	
21c	SCSI Ultra2 HDD, 9 GB, 10000 rpm	D6107-69001	
22	SCSI Ultra2 Extender	Not orderable (supplied w/ HDD)	
23	Low-Profile Hot-Swap HDD Tray	D6128-63001	
24	Front Panel LCD Display Assembly	D6021-63058	
25	Front Sheet Metal Trim	Not orderable	
26	Processor Baseboard Tray	Not orderable	
27	Front Panel/Control PCA (w/o LCD display)	D6021-63002	
28	Processor Baseboard PCA	D6021-63003	D6021-69003
29	VRM, processor	D6021-63046	
30a	Processor, Assy, PII Xeon, 400/512	D7007-63001	D7007-69001
30b	Processor, Assy, PII Xeon, 400/1 MB	D6119-63001	D6119-69001
31	Processor Terminator PCA	D6021-63006	
32	Fan Cage	Not orderable	
33	Fan, Assy	D6021-63034	
34	Fan Cover Assy w/label	D6021-63062	
35	Midplane Support Member	Not orderable	
36	Midplane PCA	D6021-63001	D6021-69001
*	Peripheral Bay Interconnect PCA	D6021-63039	
*	Mounting Rails, Rack Enclosure	5064-6140	
*	Cable, Long LVDS SCSI	5183-6872	
*	Cable, External LVDS	5183-6873	
*	Cable, Long Floppy	5183-6874	
*	Cable, Long IDE	5183-6875	
*	Cable, Long DC Power	5183-6876	
*	Cable, Long I2C	5183-6877	
*	Cable, Short LVDS SCSI	5183-6878	
*	Cable, Short IDE	5183-6879	
*	Cable, Short Floppy	5183-6880	
*	Cable, DAT SCSI	5183-6881	
*	Cable, Hot Swap Cage Power	5183-6882	
*	Cable, Hot Swap Cage I2C	5183-6884	
*	Cable, I2C, Remote Mgmt	5183-6821	
*	Cable, Power	8120-6884	

Fig	Description	Replacement	Exchange
*	Bezel Kit for HP Rack Enclosures	D6021-63043	
*	Bezel Kit, for 3rd Party Rack Enclosures	D6021-63061	
*	Ejector Handles, CPU (Kit)	D6021-63044	
*	Battery, Remote Control PCA	5183-6570	
*	Hot-Plug PCI Slot Cover Bracket	D6021-63063	
*	Bezel, LCD Display (HP)	D6021-63064	
*	Bezel, LCD Display (non-HP)	D6021-63065	
*	Battery, I/O baseboard, type CR 2032	1420-0356	

* This part is not on an exploded view.

I/O Baseboard

CAUTION	Some jumpers, if incorrectly set, may result in damage to system components. Damage due to incorrect jumper settings is not covered by the HP warranty.

I/O Baseboard Jumper Settings

		A	B	C	
Update BMC Code	1	○	●	●	No Operation
BIOS Recover	2	○	●	●	Normal Boot
Spare Jumper	3	○	●	●	Spare Jumper
Flash VPP=No Write	4	○	●	●	FlashVPP = +12V
CMOS CLEAR	5	○	●	●	No Operation
Clear CMOS Password	6	○	●	●	No Operation
PHP Switch Override	7	○	●	●	No Operation
Enable SPI Chain	8	○	●	●	No Operation
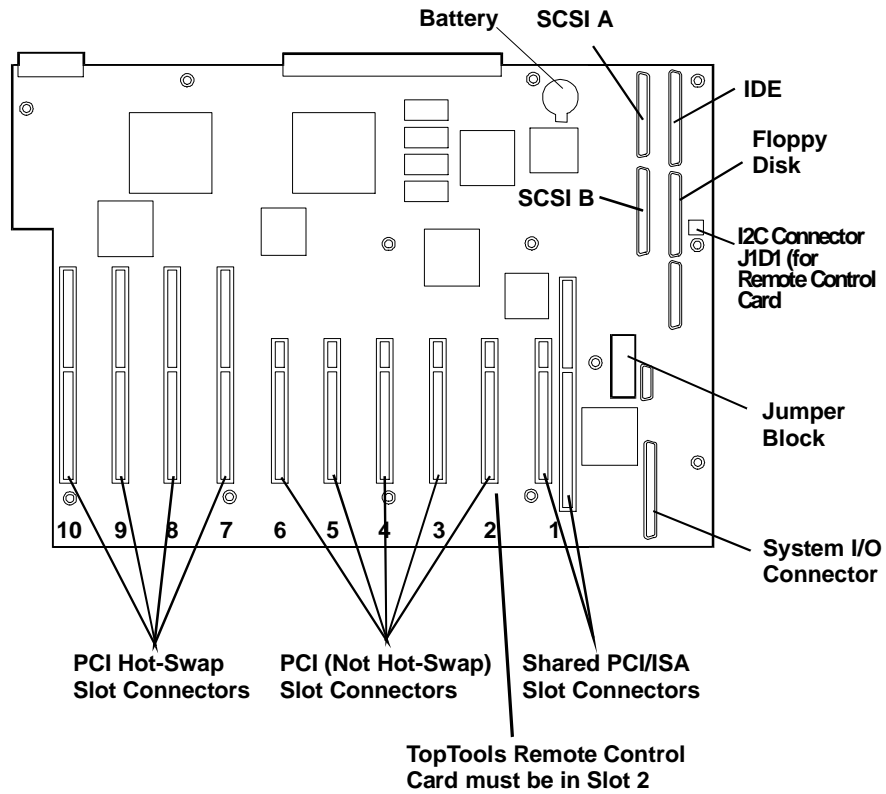
Default Jumper Settings → B C

Processor Baseboard

VRM 2

VRM 1

VRM 4

Jumper Block J31

VRM 3

VRM 6

VRM 5

Processor 1

Processor 2

Processor 3

Processor 4

Front of NetServer
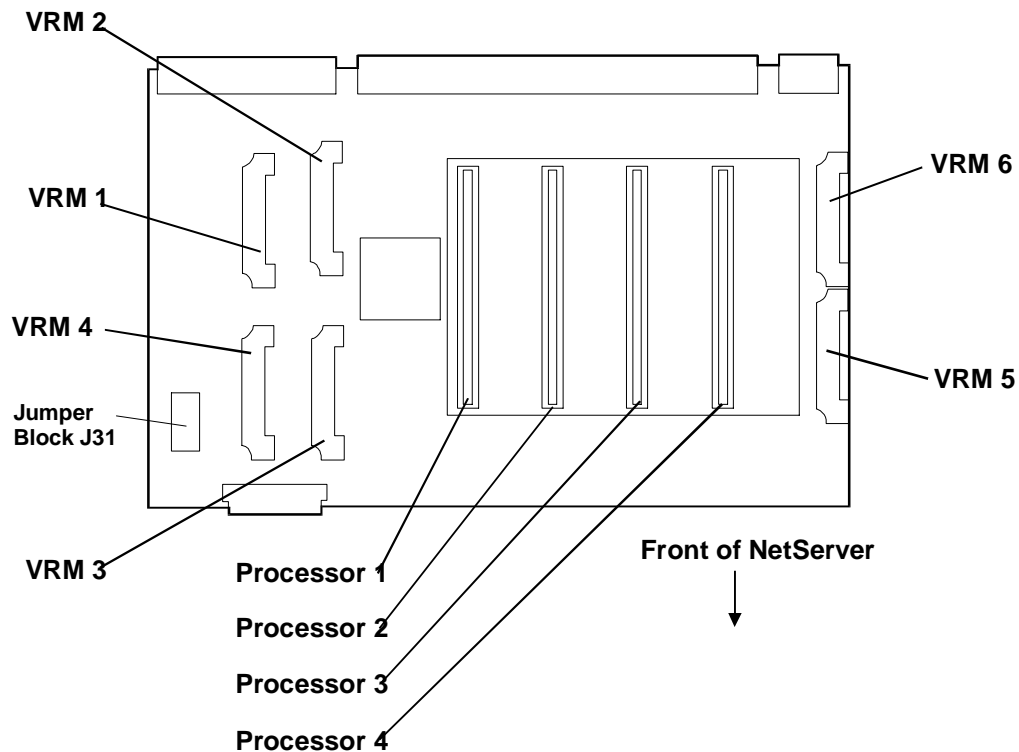
Number of Processors	Install Processor in These Slots	Terminators Required for These Slots	Voltage Regulator Modules Required in These Slots
1	Proc 1	Proc 2 Proc 3 Proc 4	VRM 1 VRM 2 VRM 3
2	Proc 1 Proc 2	Proc 3 Proc 4	VRM 1 VRM 2 VRM 3 VRM 4
3	Proc 1 Proc 2 Proc 3	Proc 4	VRM 1 VRM 2 VRM 3 VRM 4 VRM 5
4	Proc 1 Proc 2 Proc 3 Proc 4	None	VRM 1 VRM 2 VRM 3 VRM 4 VRM 5 VRM 6

Processor Baseboard Configurations for 1 Through 4 Processors

Processor Baseboard Jumper Settings

1	2	Disable VRMs
3	4	Disable Server Management
5	6	Bus Ratio Bit 1
7	8	Bus Ratio Bit 0
9	10	Bus Ratio Bit 0
11	12	
13	14	Pins 11-16 are unused; spare jumpers may be placed here
15	16	

400 Mhz Processor

1	2	Disable VRMs
3	4	Disable Server Management
5	6	Bus Ratio Bit 1
7	8	Bus Ratio Bit 0
9	10	Bus Ratio Bit 0
11	12	
13	14	Pins 11-16 are unused; spare jumpers may be placed here
15	16	
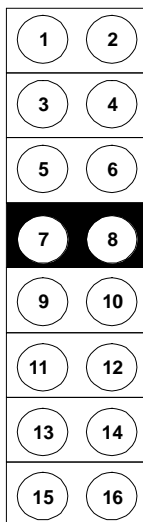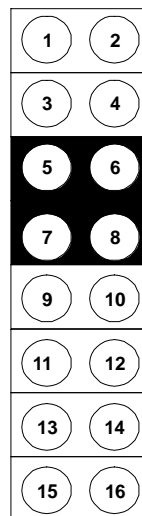
450 Mhz Processor

Specifications

Video	Integrated 1024x768sx256 60-75hz Video, 1 meg video RAM (Cirrus 5446)
Expansion Slots	Total PCI Buses:3, Total I/O slots:10 • 4 64-bit PCI Full Length on PCI 2 (Hot Swap) • 5 32-bit PCI Full Length on PCI 1 • 1 shared 32-bit PCI/ISA Full Length on PCI 0

Dimensions

System dimensions	12.25 in. high x 17.5 in. wide x 28 in. deep (31.1 cm high x 44.5 cm wide x nn 71.1 deep)
Rack space	7 EIA units
System weight	130 lb. (59 kg)

Cooling Specifications

Maximum heat output	3675 BTU/hour
Operating temperature	41 to 95 degrees F (5 to 35 degrees C)
Operating humidity	20% to 80% Rh

Power Specifications

Voltage and frequency	200-240 VAC; 50/60 Hz
Maximum continuous power input	1100 W for a four-CPU configuration; 5.6 A at 200/208 V, 4.9 A at 230/240 V.
Maximum inrush current	150 A for 4 ms
Delayed action circuit breaker recommended	North America: a 20 A minimum circuit is to be used with one NEMA AB1 class 14B breaker for each 16 A power distribution unit (PDU) that is connected to an HP NetServer LXr 8000. Europe (a single server in a rack): use a 16 A-minimum circuit with one IEC MCB C-type breaker for each 16-amp PDU. Europe (multiple servers in a rack): use a 16-amp-minimum circuit with one IEC MCB D-type breaker for each 16 A PDU.
Power availability	1500 DC watts continuous

NOTE   Some local electrical codes do not allow a 16-amp device to be connected to a 16-amp service. Consult a qualified electrician or local regulatory authority before beginning electrical site preparation.

HP NetServer LXr 8500

System Views

Front View

Control Panel

Front Control Panel

Power Button

Power LED

Reset Button
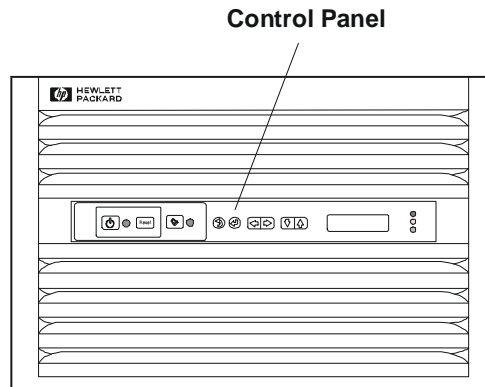
Secure Mode Button
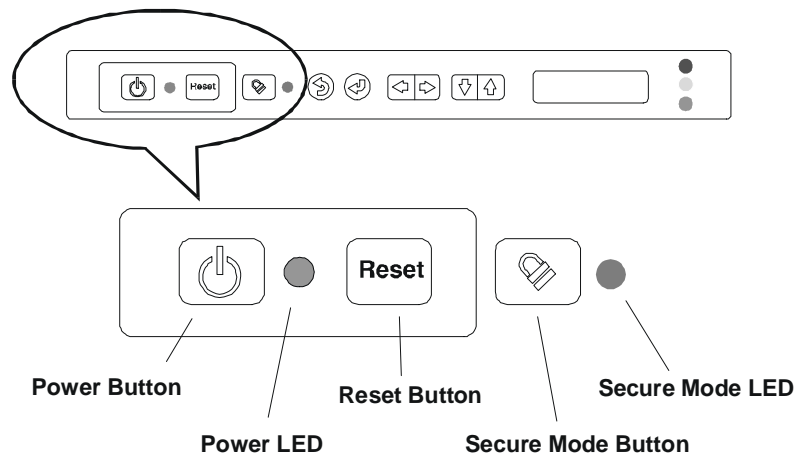
Secure Mode LED

**Power, Reset, and Secure Mode Buttons and LEDs**

NOTE	A small protective cover is provided on the HP NetServer's control panel to cover the Power and Reset buttons. This cover prevents an accidental resetting or powering down of the HP NetServer during normal operation. It can also be easily opened for access to the Power and Reset buttons.

Power, Reset, and Control Buttons and LEDs

Control	Description
Power On/Off/ Sleep	This button turns the HP NetServer's power On or Off, and if available, also transitions the HP NetServer between Power On, various sleep states, and Power Off.

Button	If sleep states are not available, then this button only turns power On or Off.
(power button icon)	The sleep states are NOS dependent and not available if your NOS does not support power management based on the ACPI standard. A NOS supporting ACPI allows this button to be configured through a user interface. Refer to "Applying Power to the HP NetServer" and "Using Sleep States".
Power On/Off/ Sleep LED (LED icon)	This LED glows a steady green when power is On, and dark, when the HP NetServer is powered Off. If the HP NetServer is under ACPI control, this LED will flash between green and dark (off), when in an ACPI sleep state.
Reset Button Reset	This button performs a system reset (hard reset or cold boot).
Secure Mode Button (icon)	Puts the HP NetServer in the Secure Mode, if it is configured in the Setup Utility (BIOS) for the Secure Mode feature. Secure mode can include such restrictions as keyboard lock, power button lock, and window blanking. The reset button and scroll keys will also be disabled. Refer to Security to configure the NetServer's Setup Utility for Secure Mode.
Secure Mode LED (LED icon)	This LED glows a steady green when the HP NetServer is in Secure Mode, and is dark (off) at all other times.

Control Panel LCD Screen and Navigation Buttons

Escape

Enter

Not Used

Scroll Down One Line

Scroll Up One Line

Two-Line Display
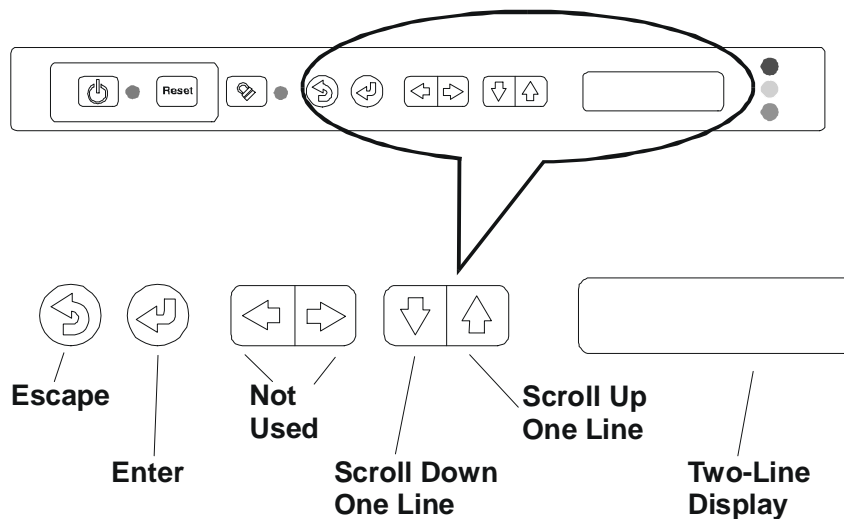
Control Panel Display Window and Navigation Buttons

NOTE	The LCD display can present a custom defined text string used to identify the HP NetServer, instead of the default **HP NetServer LXr 8500**. Use the Setup Utility (BIOS) to create the custom text string.

Control Panel Display Control Buttons

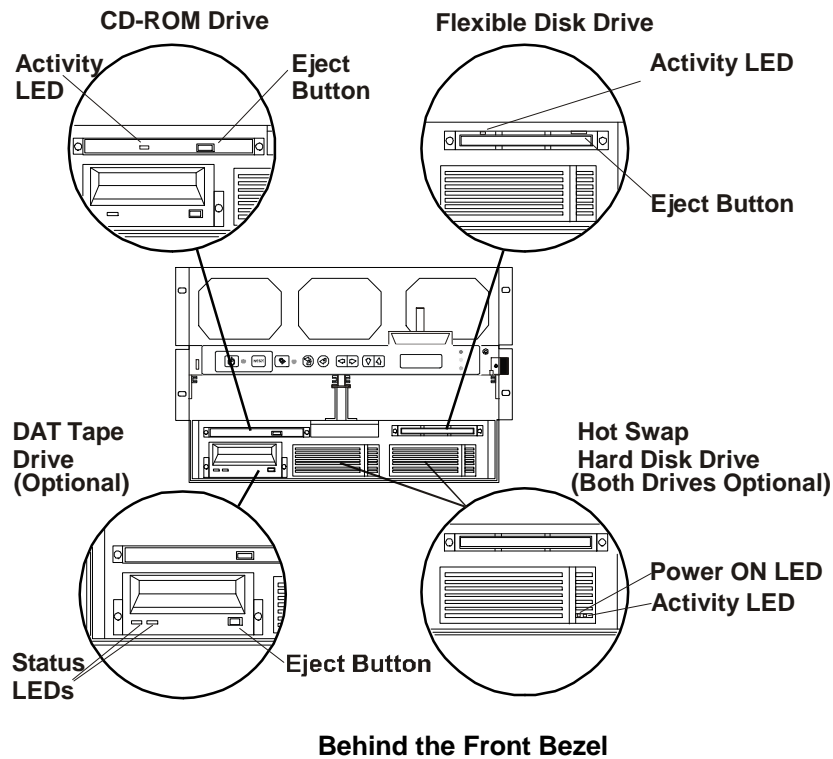| Button Name	Description
Escape	Return to previous menu.
Enter	Select an item from a menu.
Down Arrow	Scroll down one line through the current screen or menu.
Up Arrow	Scroll up one line through the current screen or menu.
Left Arrow	Not used.
Right Arrow	Not used.

Status LEDs

Red

Yellow

Green

Interpreting the HP NetServer Status LEDs

Red LED	Yellow LED	Green LED	Indicates HP NetServer Status:
Off	Off	Off	Main power is off and the HP NetServer may or may not be on standby power.
Flashing	Off	Off	Immediate attention required due to a failed component in the HP NetServer. The HP NetServer may not be fully operational, due to this condition, such as POST errors.
Off	Flashing	Off	Attention required due to a pre-failure condition. This condition may be caused by a component failure (for example, a redundant fan or power supply) that could lead to a critical component failure, such as a processor module exceeding its operating temperature. If the failed component is redundant, the HP NetServer may still be operating normally.
Off	Off	On	The HP NetServer is operating normally.

Indicators and Controls Directly Behind the Front Bezel

CD-ROM Drive

Activity LED

Eject Button

Flexible Disk Drive

Activity LED

Eject Button

DAT Tape Drive (Optional)

Hot Swap Hard Disk Drive (Both Drives Optional)

Power ON LED

Activity LED

Status LEDs

Eject Button

Behind the Front Bezel

Tape Drive LED Codes

If the optional HP DAT tape driver is used:

Left LED	Right LED	Definition
Off	Off	No Power.
On	Off	Cartridge Loaded, but No activity.
Flashing*	Off	Cartridge Loaded and Active.
Pulsing**	Off	Loading/Unloading/Ejecting/Power-On
Off	On	Self Test Fail
Off	Pulsing**	No Cartridge, but Caution (cleaning required)
On	Pulsing**	Cartridge Loaded, but Caution (cleaning required)
Flashing*	Pulsing**	Cartridge Loaded, Drive Active, Caution (cleaning required)
Pulsing**	Pulsing**	Cartridge Loading/Unloading, Caution (cleaning required)

* Flashing at 4 Hz rate. ** Pulsing at 2 Hz rate.

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Fan Indicators

The fan indicators are only visible when the fan cover is removed and each one identifies which fan is defective.

Fan Indicators
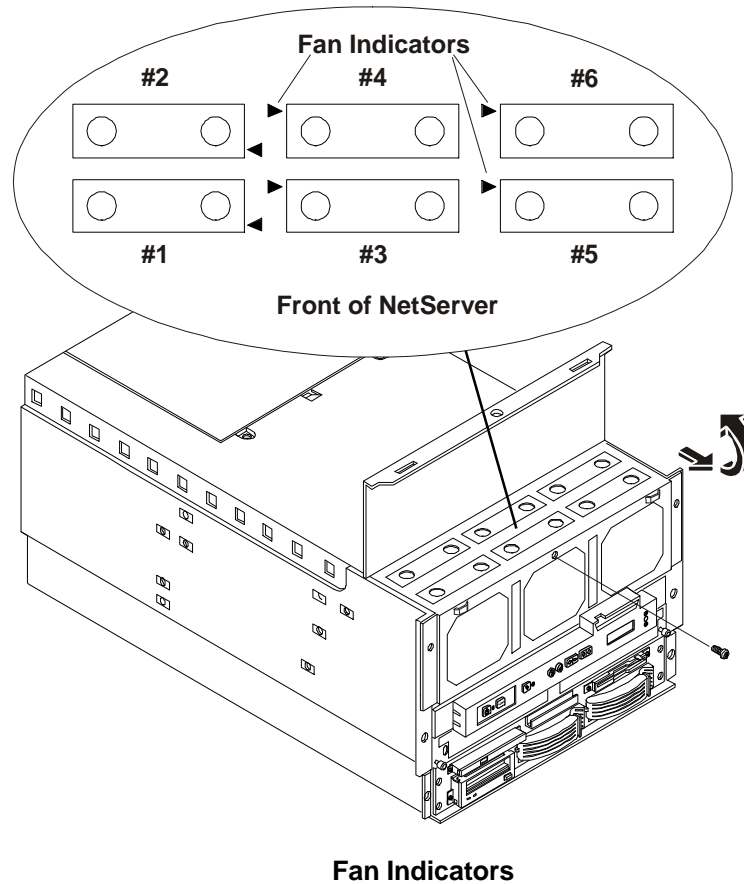
The Main Menu

Use this topic to view and use the Main menu to make selections on the control panel LCD window. The following message (default) displays when no other activity is present on the LCD window:

The menu selections are:

◊ HW Sys Info. (Hardware System Information) – This menu provides the hardware configuration of the HP NetServer.

◊ FW Info. (Firmware Information) – This menu provides the version numbers of all the firmware used with HP NetServer.

◊ HW P/N. (Hardware Part Numbers) - This menu provides part numbers and serial numbers for particular items used in the HP NetServer's chassis.

◊ Event Log - This menu provides a log of current and resolved error conditions occurring during the HP NetServer's operation.

◊ Service - This menu provides a NMI (non-maskable interrupt) for diagnostics purposes.

Rear View
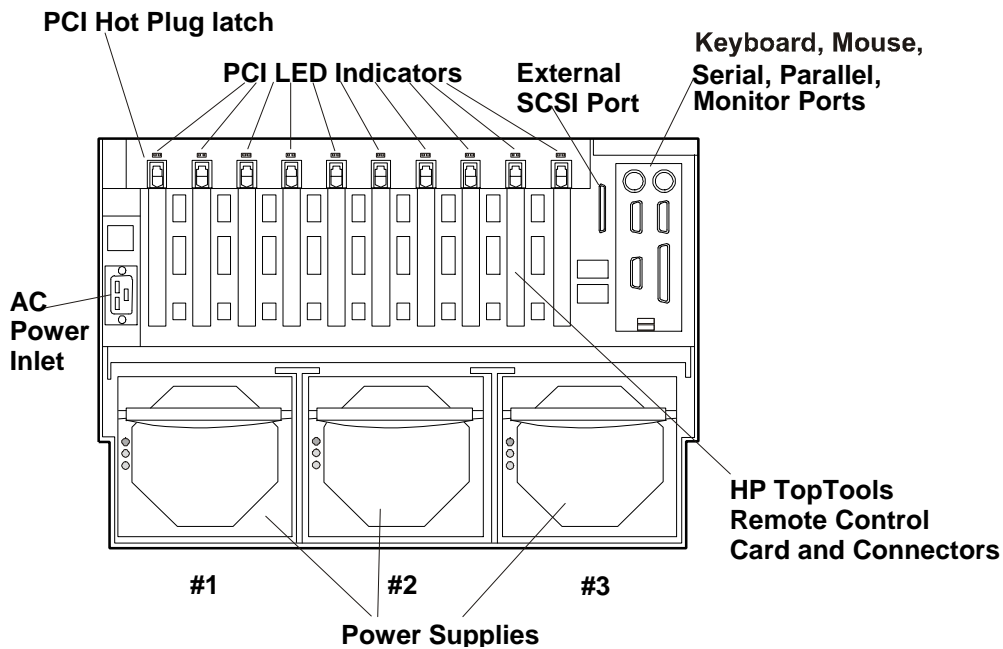
Rear Panel of the HP NetServer

Power Supply LEDs
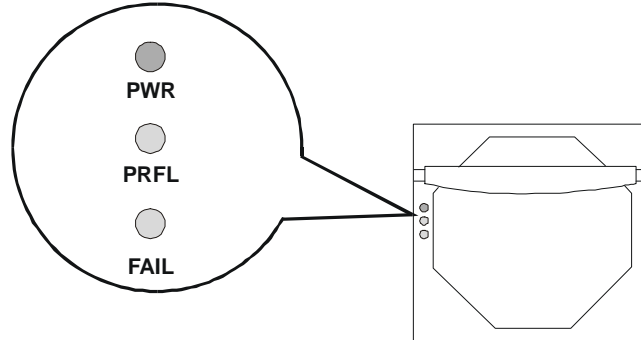
Power Supply LEDs

Power Supply Module LED Descriptions

Control	Description
PWR (Power)	Glows steady green when HP NetServer is powered up. If the server is not powered up but is connected to AC power (so that standby voltage is available), the LED blinks green. If there is no AC power, the LED is dark.
PRFL (Predictive Fail)	Blinks yellow if the speed of the power supply's internal fan falls below acceptable levels. Power supply has not failed, but may do so soon.
FAIL (Power Supply Failure)	Glows steady yellow when power supply fails. Blinks yellow when power supply is drawing more current than it should, because of a short-circuit in the power supply or elsewhere in the HP NetServer. If the short-circuit is in the power supply, the power supply shuts down. If the short-circuit is in the HP NetServer, the HP

NetServer shuts down.

Communication Ports
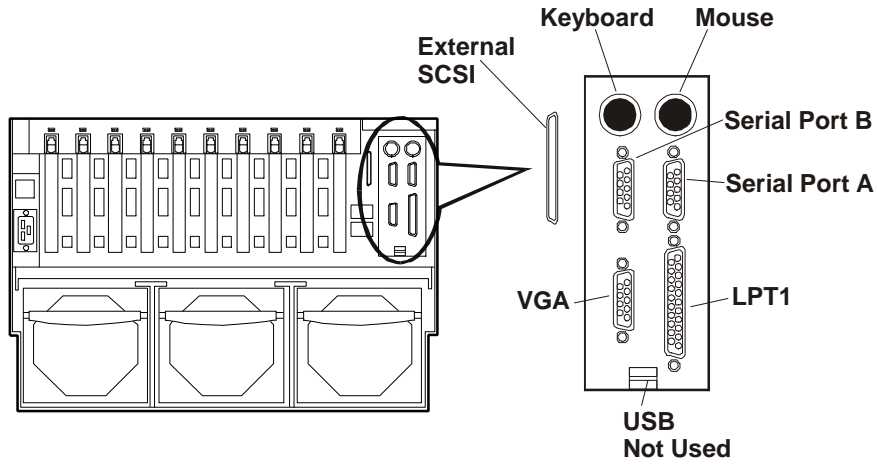
Rear Panel Ports

NOTE	The keyboard and mouse ports are interchangeable and at boot time the I/O Riser board automatically detects which device is connected to the port.

PCI Hot Plug Slot LEDs
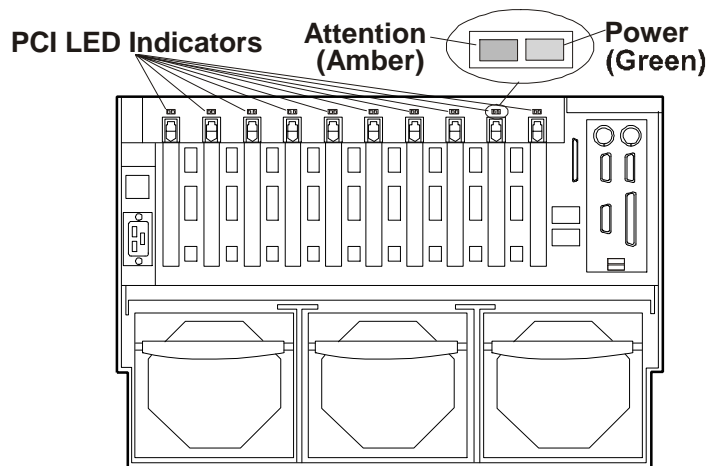
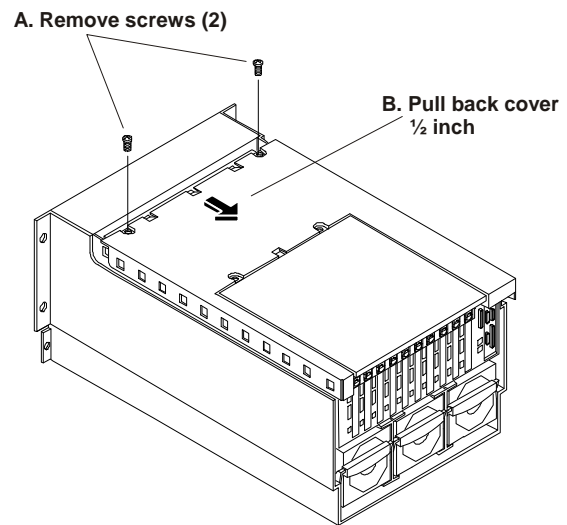**PCI LEDs on the Rear Panel**

PCI LED Status (viewed from rear)

Amber LED	Green LED	Status Indicated
Off	On	Power to the slot is on, and the slot is operating normally. Do not remove the board from the slot.
On	On	Power to the slot is on, but the slot needs attention. Do not remove the board from the slot.
On	Off	Power to the slot is off, and the slot needs attention. You can safely remove

		the board from this slot.
Off	Off	Power to the slot is off. You can safely remove the board from this slot.

Covers
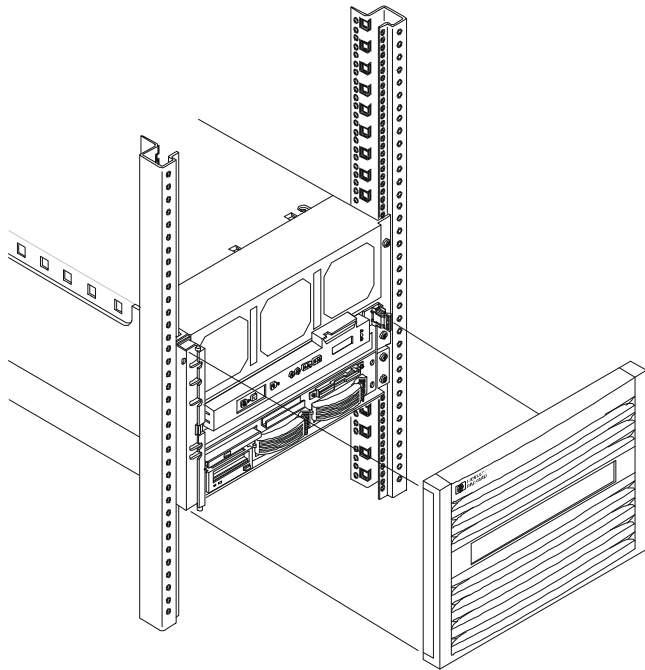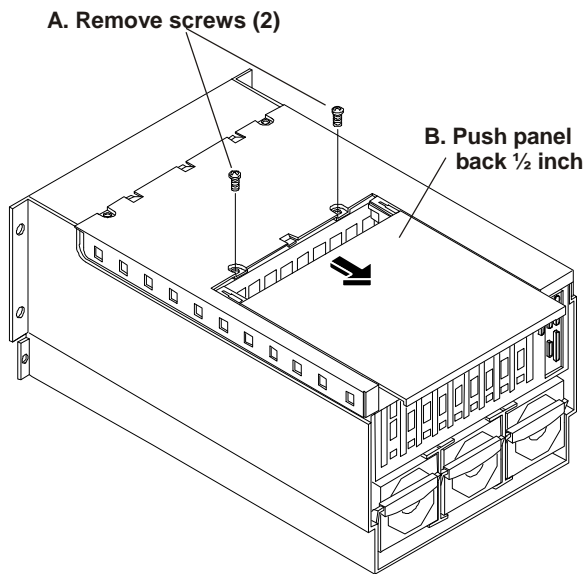
Removing and Replacing the Front Bezel the Cover Back

A. Remove screws (2)

B. Pull back cover ½ inch

Removing Screws and Sliding

Embedded I/O Cover

Lifting Off the Cover

Finger Holes (2)

I^{2}C Cable

Embedded I/O Cover
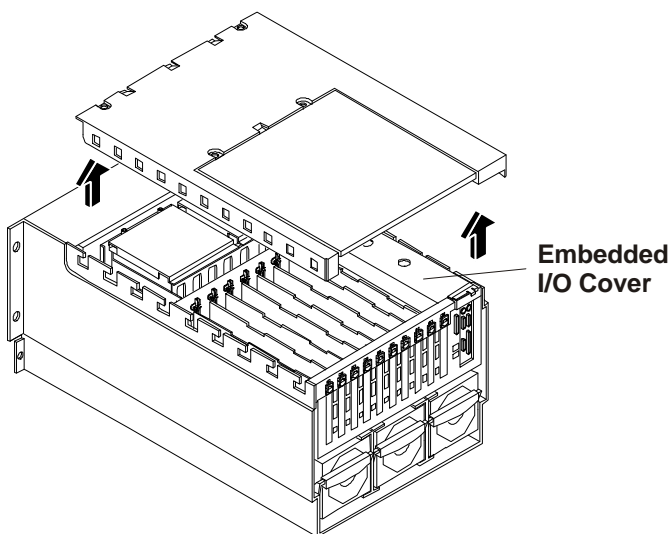
Rear of HP NetServer

Replacing the I/O Cover

A. Remove screws (2)

B. Push panel back ½ inch
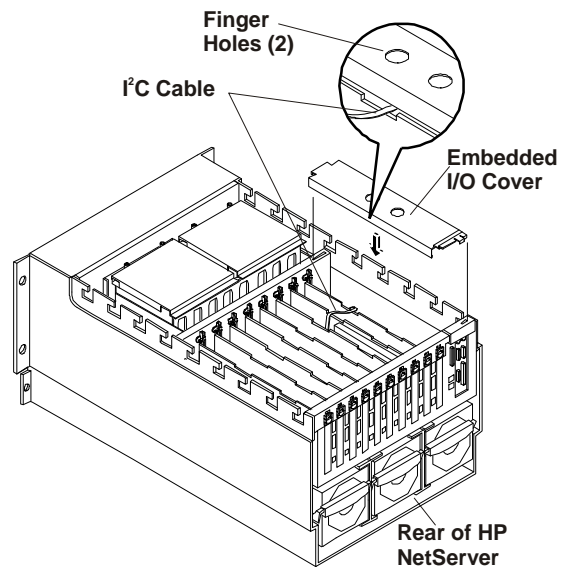
Remove the PCI Access Panel

Removing the PCI Access Panel's Screws Panel
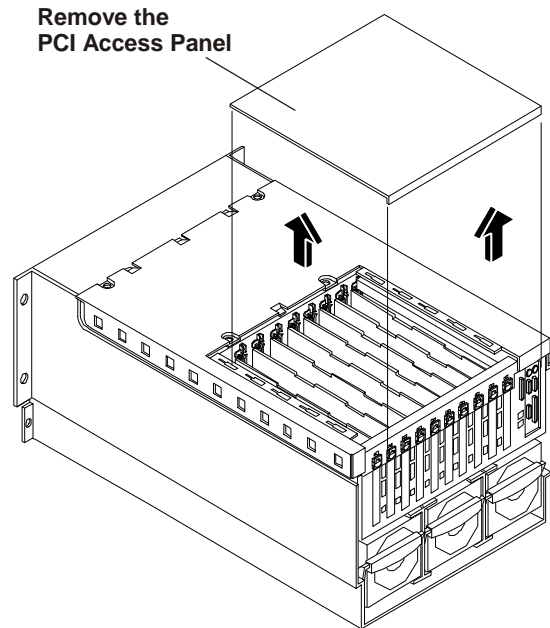
Lifting Off the Access

Memory

CAUTION	The memory boards and DIMMs from the HP NetServer LXr 8000 will not function in the HP NetServer LXr 8500.

Single Memory Board

- A single memory board may be installed in the HP NetServer, for up to eight DIMMs, in either slot, left or right. However, for more than eight DIMMs, a second memory board must be installed to maintain compliance with Electromagnetic Compatibility Standards.

  If only one memory board is installed there is no need for a terminator in the open memory slot. The BIOS automatically detects if there is one or two memory boards in the HP NetServer during boot-up.

- DIMM sizes can be mixed on a single board.

- DIMMs can be placed in any DIMM slot, since there are no restrictions.

- Open slots between DIMMs are permitted.

- DIMMs can be installed in any order, since there are no requirements to load the slots in any specific sequence.

Dual Memory Boards

- If both memory boards are installed, you may install up to 16 DIMMs on one board, leaving the other board empty.

  If you install any DIMMs on the second memory board, then both boards must be identically configured.

- For DIMM configurations of more than 16 DIMMs, both boards must be identically configured.

- Open slots between DIMMs is also permitted.

- Mixing DIMM sizes and placing the DIMMs in any order on both memory boards is still permitted, but the same size DIMM must be placed in the corresponding slots on both boards.

| NOTE	If a mismatch is detected during the boot up memory tests, both mismatched DIMMs will be de-configured to the lower value of the two DIMMs.

Memory Capacity

- The minimum capacity is 256 MB (one DIMM) using one memory board.

- Supported memory capacity is 8 GB (4 GB per memory board) at a total of 32 DIMMs (16 DIMMs per memory board).

  As an increase in single DIMM sizes becomes available for the HP NetServer, the maximum allowable memory will increase, but the maximum number of DIMMs will remain at 32. For example, a 512 MB DIMM would increase memory capacity to 16 GB, (8 GB per memory board).

NOTE	DIMM sizes larger than 256 MB may be available after the initial release of the HP NetServer LXr 8500.

(Shown installed in HP NetServer, underside displayed.)
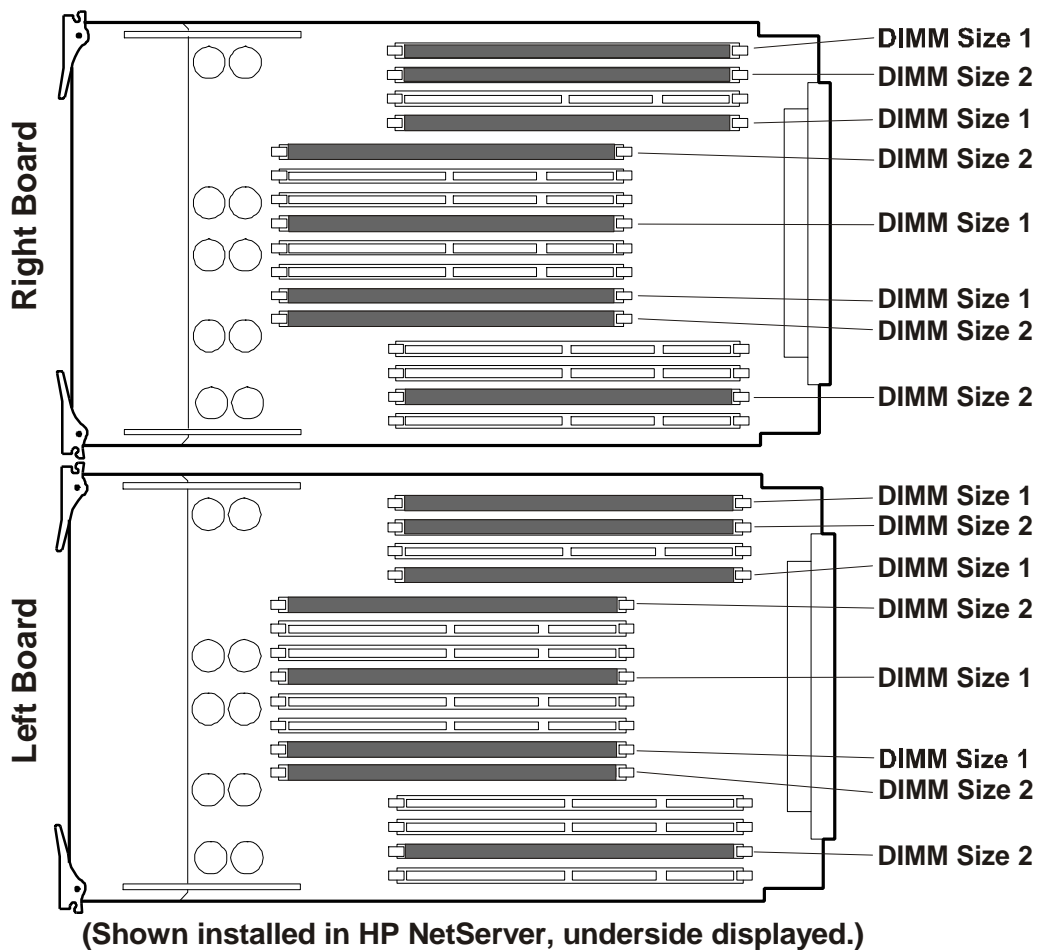
**Dual Memory Board Configuration Example**

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Boot Device Priority

The on-board SCSI channels consists of two SCSI-2 (Low-Voltage Differential - LVD) channels A and B.

- Channel A controls the HP NetServer's internal hard disk drives.
- Channel B controls the HP NetServer's external SCSI port.

The NetServer starts the SCSI channel scan at device ID 0, and goes up to ID 15 before starting to scan the other SCSI channel. The NetServer searches for bootable devices (by default) in the order listed in this topic.

1. IDE CD-ROM drive
2. Flexible disk drive
3. Slot P1
4. Slot P2
5. On-board SCSI (Channel A)

   ◊ SCSI device ID 0
   ◊ SCSI device ID 1
   ◊ SCSI device ID 15
6. External SCSI (Channel B)

   ◊ SCSI device ID 0
   ◊ SCSI device ID 1
   ◊ SCSI device ID 15
7. Slot P3
8. Slot P4
9. Slot P5
10. Slot P6
11. Slot P7
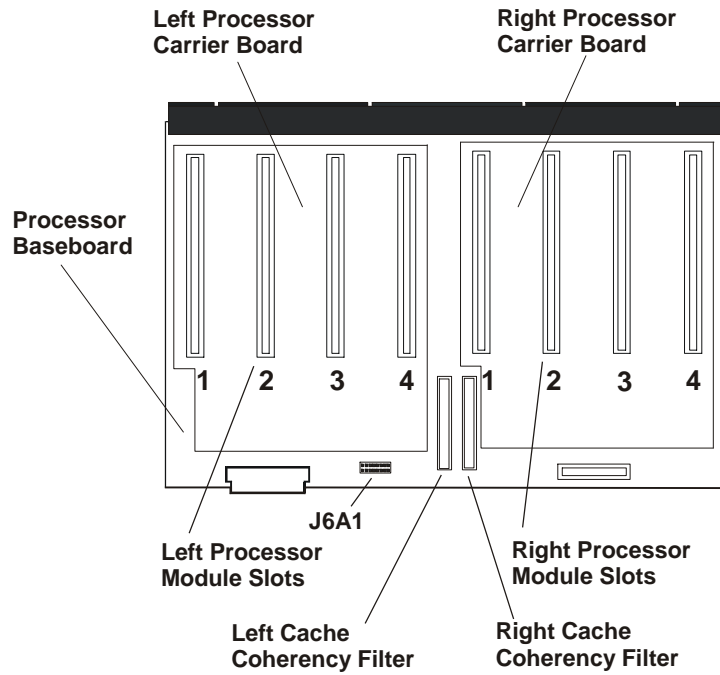12. Slot P8
13. Slot P9
14. Slot P10

I/O Baseboard
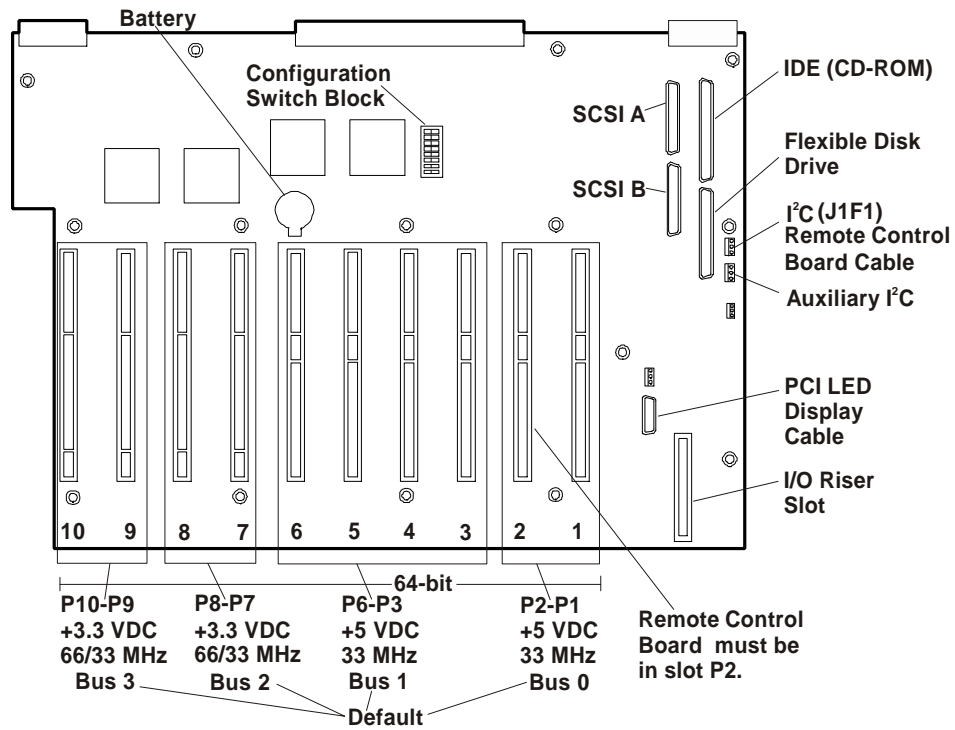
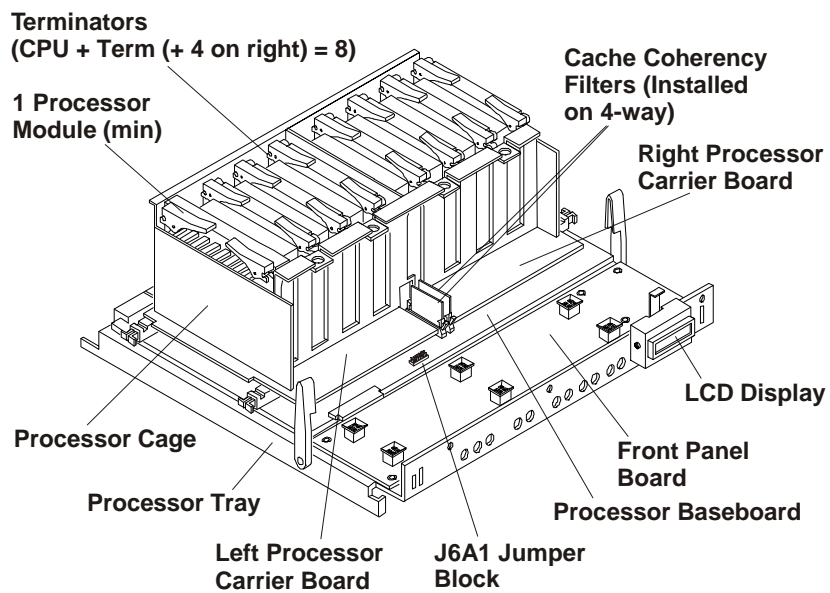**HP NetServer I/O Baseboard**

Open = Off   Closed = On
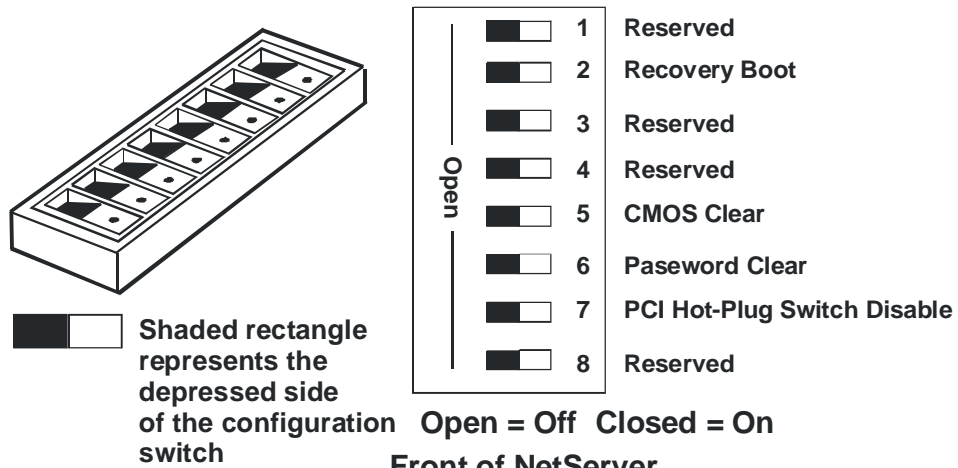
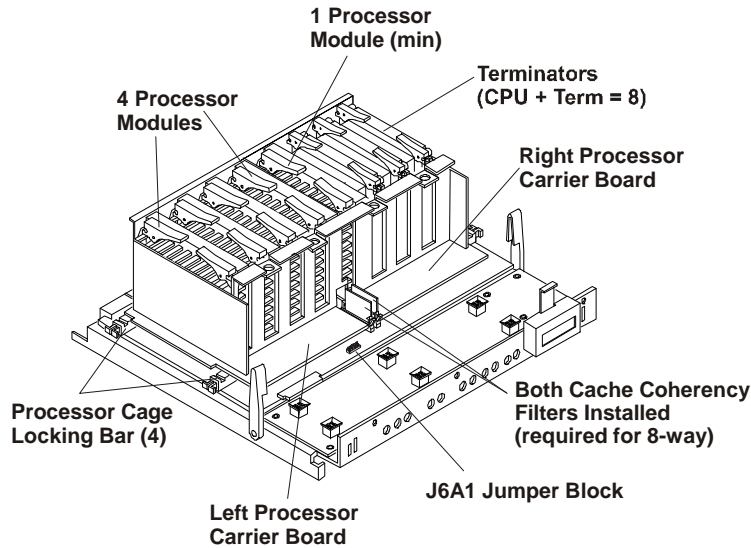**Front of NetServer**

I/O Baseboard Jumper Settings

Processor Baseboard

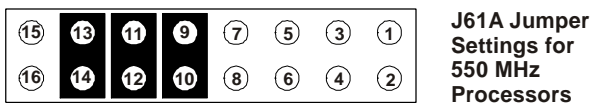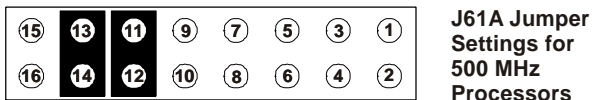**Processor Baseboard (top view)**

4-Way Configuration (Standard)

1 Processor Module (min)

4 Processor Modules

Terminators (CPU + Term = 8)

Right Processor Carrier Board

Processor Cage Locking Bar (4)

Both Cache Coherency Filters Installed (required for 8-way)

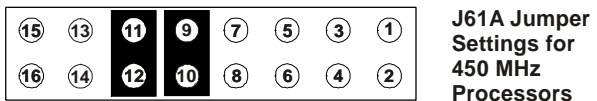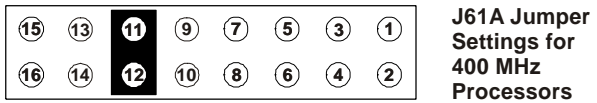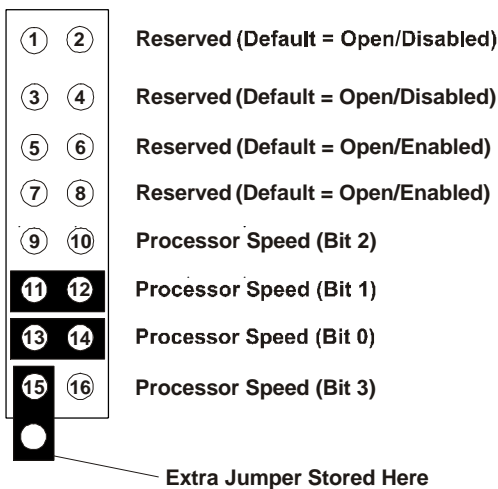**J6A1 Jumper Block**

Left Processor Carrier Board

8-Way Configuration

Processor Baseboard Jumper Settings

See the *Service Technical Reference Label* for the latest switch settings.

Open = No Jumper
Closed = Jumper

①	②	Reserved (Default = Open/Disabled)
③	④	Reserved (Default = Open/Disabled)
⑤	⑥	Reserved (Default = Open/Enabled)
⑦	⑧	Reserved (Default = Open/Enabled)
⑨	⑩	Processor Speed (Bit 2)
⑪	⑫	Processor Speed (Bit 1)
⑬	⑭	Processor Speed (Bit 0)
⑮	⑯	Processor Speed (Bit 3)

Extra Jumper Stored Here

J61A Jumper Settings for 400 MHz Processors

J61A Jumper Settings for 450 MHz Processors

J61A Jumper Settings for 500 MHz Processors

J61A Jumper Settings for 550 MHz Processors

J6A1 Jumper Block Positions 400, 450, 500, and 550 MHz Processors (Processor Baseboard Jumper Block J6A1)

IRQ Settings

The hardware interrupts (IRQs) are automatically assigned for each PCI slot and embedded device in the NetServer. The automatic IRQ assignments are made by the BIOS during the boot process. Additional IRQs are required beyond the standard set of 15 since some accessory boards, like multi-port adapter boards, may require more than one IRQ per slot. A special hardware feature (APIC) eliminates interrupt conflicts by providing an expanded set of IRQs with up to four dedicated interrupts for each PCI slot.

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IRQ Assignments

PID Interrupt	PCI Interrupt	Component/ PCI Slot Number
0	D	Slot 10
1	C	Slot 10
2	B	Onboard SCSI Channel B
3	B	Slot 10
4	A	Slot 10
5	D	Slot 9
6	C	Slot 9
7	B	Slot 9
8	A	Slot 9
9	D	Slot 8
10	C	Slot 8
11	B	Slot 8
12	A	Slot 8
13	D	Slot 7
14	C	Slot 7
15	B	Slot 7
16	A	Slot 7
17	D	Slot 6
18	C	Slot 6
19	B	Slot 6
20	A	Slot 6
21	D	Slot 5
22	C	Slot 5
23	B	Slot 5
24	A	Slot 5
25	D	Slot 4
26	C	Slot 4
27	B	Slot 4
28	A	Slot 4
29	D	Slot 3
30	C	Slot 3
31	B	Slot 3
32	A	Video
33	D	PIIX4E
34	A	Slot 3
35	D	Slot 2
36	C	Slot 2
37	B	Slot 2
38	A	Slot 2

39	D	Slot 1
40	C	Slot 1
41	B	Slot 1
42	A	Onboard SCSI Channel A
43	PCI Hot Plug Interrupt	Embedded Devices
44	SCBERR#	MAC
45	A	Slot 1
46	NMI	PIIX4E
47	Unused	N/A

PCI Hot Plug Boards

The PCI Hot Plug option is Network Operating System (NOS) dependent. To use the Hot Plug option, the PCI board must have a hot plug compliant driver and a Hot Plug Utility must be loaded for the respective NOS. The Hot Plug Utility is used to turn power off/on to the PCI slot, while the HP NetServer continues to operate normally. If the hot plug compliant driver and the Hot Plug Utility are not loaded during the configuration process (NOS installation), you will not be able to use the Hot Plug option until the utility and drivers are loaded. Refer to the respective NOS and HP NetServer Hot Plug Help files to load the Hot Plug Utility and hot plug compliant drivers and then initialize the driver(s) if it is not done automatically. To access the PCI Hot Plug Replacement procedures in Information Assistant for the respective NOS, you must have the *HP NetServer Online Documentation CD-ROM* provided with the HP NetServer LXr 8500.

Exploded Views
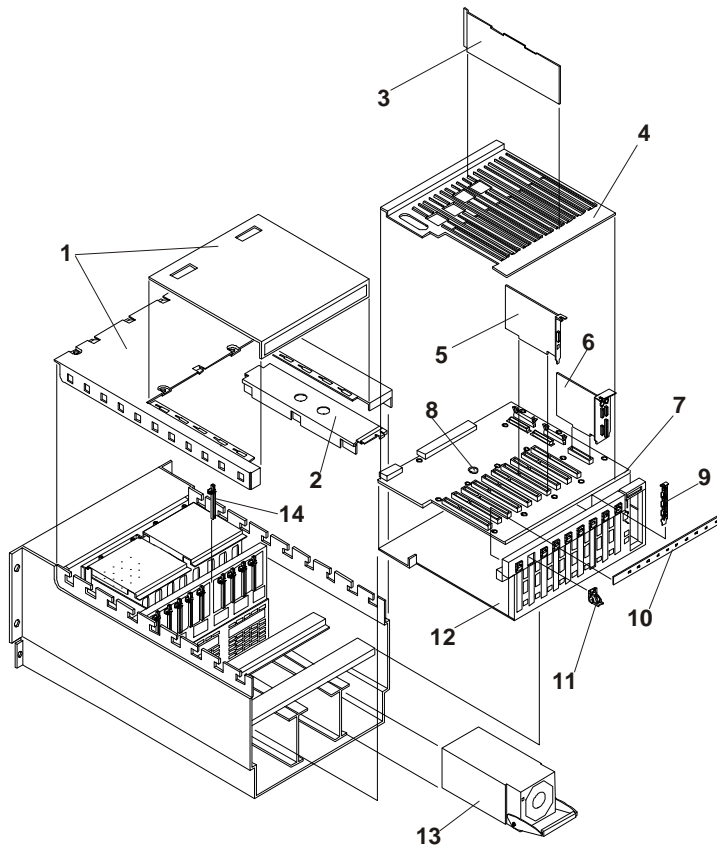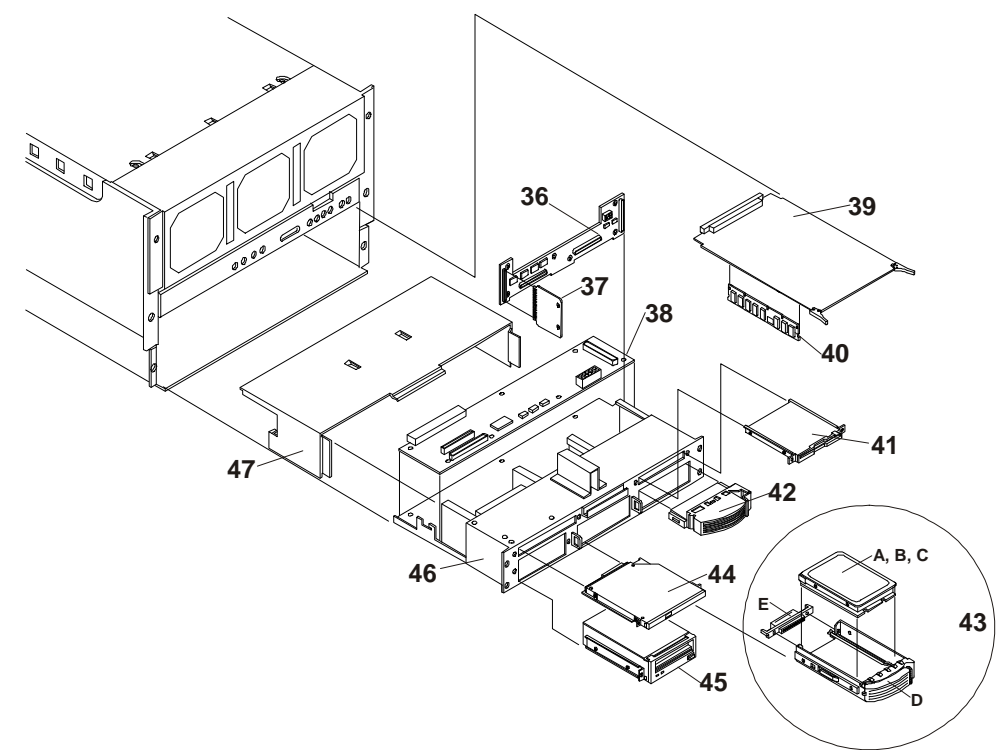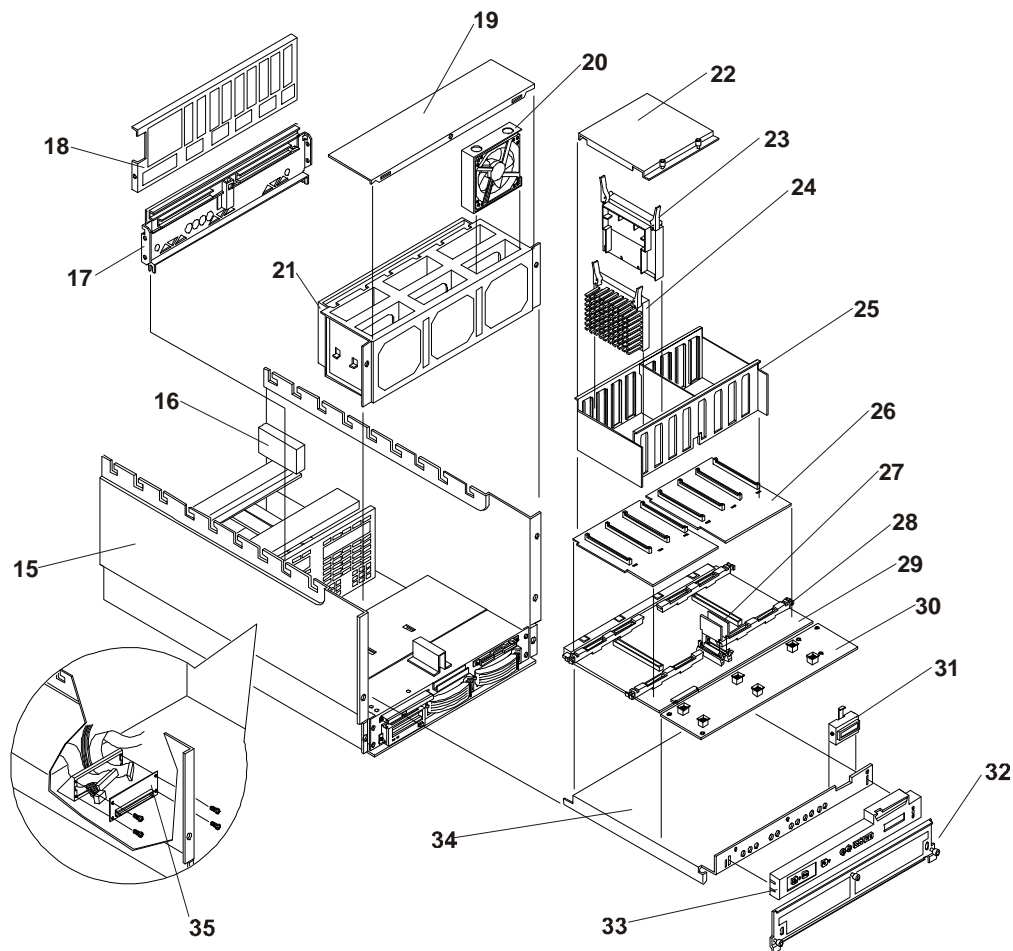
Parts List

Fig	Description	Replacement	Exchange
1	Top cover assembly w/ref labels	D7054-63014	
2	I/O shield	Not orderable	
3	PCI Slot Divider	Not orderable	
4	I/O baseboard shield	Not orderable	
5	Remote control board	D6028-60001	D6028-69001
6a	I/O riser board	D6021-63007	
6b	I/O Riser PCA	D6021-6372	
7	I/O baseboard	D7054-63003	D7054-69003
8	Battery, I/O baseboard, type CR 2032	1420-0356	
9	PCI slot filler panel	D7054-63008	
10	PCI LED board	D7054-63006	
11	PCI hold-down latch	D7054-63015	
12	I/O tray	Not orderable	
13	750W power supply module**	D6021-63070	D6021-69070
14	PCI card guide	Not orderable	
15	Chassis	Not orderable	
16	AC line receptacle	Not orderable	
17	Midplane Board	D7054-63001	D7054-69001
18	Center support	Not orderable	
19	Fan bay cover assy w/ref label	D7054-63017	
20	Fan assy	D6021-63034	
21	Fan cage	Not orderable	
22	CPU cage top cover	Not orderable	
23	CPU Terminator	D6021-63006	
24A	CPU DS2P 400 MHz / 512 KB cache	D7007-63001	D7007-69001
24B	CPU DS2P 400 MHz / 1 MB cache	D6119-63001	D6119-69001
24C	CPU 450 MHz / 512 KB cache	D7001-63001	D7001-69001
24D	CPU 450 MHz / 1 MB cache	D6121-63001	D6121-69001
24E	CPU 450 MHz / 2 MB cache	D6122-63001	D6122-69001
24F	CPU 500 MHz / 512 KB cache	D7109-63001	D7109-69001
24G	CPU 500 MHz / 1 MB cache	D7110-63001	D7110-69001
24H	CPU 500 MHz / 2 MB cache	D7091-63001	D7091-69001
24I	CPU 550 MHz / 512 KB cache	D9417-63000	D9417-69000
24J	CPU 550 MHz / 1 MB cache	D9418-63000	D9418-69000
24K	CPU 550 MHz / 2 MB cache	D8531-63001	D8531-69001
25	CPU card cage	Not orderable	
26	CPU carrier board	D7054-63004	D7054-69004
27	Coherency filter	D7054-63007	D7054-69007

Fig	Description	Replacement	Exchange
28	Processor cage locking bar	Not orderable	
29a	CPU baseboard, rev A	D7054-63002	D7054-69002
29b	CPU baseboard, rev B	D8540-63001	D8540-69001
30	Front panel controller board w/ LCD	D6021-63002	D6021-69002
*	Front panel Ctrl PCA		
31	Front Panel LCD Display Assembly		
32	Memory cover	Not orderable	
33A	Bezel, LCD Display (HP)	D6021-63064	
33b	Bezel, LCD Display (non-HP)		
34	CPU tray	Not orderable	
35	Peripheral Bay Interconnect PCA	D6021-63039	
36	Hot-Swap SCSI Backplane	D6021-63030	
37	Hot-Swap SCSI Management PCA	D6021-63031	
38	Peripheral Bay Backplane	D6021-63040	
39	Memory PCA	D7054-63005	D7054-69005
40a	DIMM, 256 MB	D6099-63001	D6099-69001
40b	DIMM, 512 MB	D7138-63001	D7138-69001
41	3.5 Floppy Drive, Slimline	D6021-63041	
42	Hot swap filler panel, low profile	5064-4689	
43A	SCSI Ultra2 HDD, 4.2 GB, 7200 rpm	D6106-63001	D6106-69001
43B	SCSI Ultra2 HDD, 9 GB, 10K	D6107-63001	D6107-69001
43C	SCSI Ultra2 HDD, 18 GB, 7200 rpm	D7174-63000	D7174-69000
43D	SCSI Ultra2 HDD, 18GB, 10K	D7175-63000	D7175-69000
43E	SCSI Ultra2 extender	Not orderable (supplied w/HDD)	
43E	SCSI Ultra2 extender	Not orderable (supplied w/HDD)	
44	CD-ROM Drive, Slimline	D6021-63067	
45	Tape drive, see Accessories		
*	Cable management arm	5064-6170	
*	EFIGS Navig L.16.05	5065-0261	
*	Battery, Rem Ctrl PCA	5183-6570	
TBD	HP bezel kit	D7054-63011	
*	Mounting Rails, Rack Enclosure	5064-6140	
*	Cable, PCI LED board	D7054-63013	
*	Cable, Long LVDS SCSI	5183-6872	
*	Cable, External LVDS	5183-6873	
*	Cable, Long Floppy	5183-6874	
	Cable, Long IDE	5183-6875	
*	Cable, Long DC Power	5183-6876	

Fig	Description	Replacement	Exchange
*	Cable, Short LVDS SCSI	5183-6878	
*	Cable, Short IDE	5183-6879	
*	Cable, Short Floppy	5183-6880	
*	Cable, DAT SCSI	5183-6881	
*	Cable, Hot Swap Cage Power	5183-6882	
*	Cable, Hot Swap Cage I2C	5183-6884	
*	Cable, I2C, Remote Mgmt	5183-6821	
*	Cable, AC Power	8120-6884	
*	Cable, Pbay Pwr, Short	8120-6884	
*	Ejector Handles, CPU (Kit)	D6021-63044	
*	EMI Gasket Kit	D7054-63018	
*	ECCJAFAsian Nav L.16.05	Not Orderable	
*	Lifting Handles	Not Orderable	
*	EMI Filter Assembly	Not Orderable	
TBA	Non-HP Bezel Kit	See note	

* This part is not on an exploded view.

** There are restrictions on using LXr 8000 power supplies with the LXr 8500.

Specifications

Memory:	256MB SDRAMs, 3.3 VDC, 100 MHz, 6 ns access time
Standard	256 MB
Maximum	32 GB, two memory boards fully populated with 1 GB DIMMs
DIMM size	256, SDRAM
Cache Memory	512KB or 1, and 2 MB
Video	Integrated 1024x768sx256 60-75hz Video, 1 meg video RAM (Cirrus 5446)
Expansion Slots	Total PCI Buses (meet PCI 2.1) : 4, total I/O slots:10
	• four 64-bit, 66 MHz +3.3 VDC PCI
	• six 64-bit, 33 MHz +5 VDC PCI
Built-in I/O Ports:	Keyboard
	Video
	Mouse
	2 Serial Ports
	1 Parallel Port

Dimensions

System dimensions	12.25 in. high x 17.5 in. wide x 28 in. deep (31.1 cm high x 44.5 cm wide x 71.1 cm deep)
Rack space	7 EIA units
System weight	130 lb. (59 kg)

Cooling Specifications

Maximum heat output	3675 BTU/hour
Operating temperature	41 to 95 degrees F (5 to 35 degrees C)
Operating humidity	20% to 80% Rh

Power Specifications

Voltage and frequency	200-240 VAC; 50/60 Hz
Maximum continuous power input	1100 W for a four-CPU configuration; 5.6 A at 200/208 V, 4.9 A at 230/240 V.
Maximum inrush current	150 A for 4 ms
Delayed action circuit breaker recommended	North America: a 20 A minimum circuit is to be used with one NEMA AB1 class 14B breaker for each 16 A power distribution unit (PDU) that is connected to an HP NetServer LXr 8000. Europe (a single server in a rack): use a 16 A-minimum circuit with one IEC MCB C-type breaker for each 16-amp PDU. Europe (multiple servers in a rack): use a 16-amp-minimum circuit with one IEC MCB D-type breaker for each 16 A PDU.
Power availability	1500 DC watts continuous (with 2 power supply modules)

Video Resolutions

The NetServer is equipped with built-in video support provided by a Cirrus Logic CL-0GD5446 controller.

BIOS Video Resolutions

The video resolutions available for the NetServer depend on the operating system. The table below shows the available video resolutions.

Video Resolutions With Standard 2 MB Video Memory

Resolution	Number of Colors	Video Refresh Rate
640 x 480	16, 256, 32K, 64K, or 16M	60, 72, or 75 Hz
800 x 600	16, 256, 32K, 64K, or 16M	60, 72, or 75 Hz
1024 x 768	16, 256, 32K, or 64K	i43, 60, 70, or 75 Hz
1280 x 1024	16, or 256	i45, 60, 70, or 75 Hz

HP NetServer LXr Pro

System Views

Front View
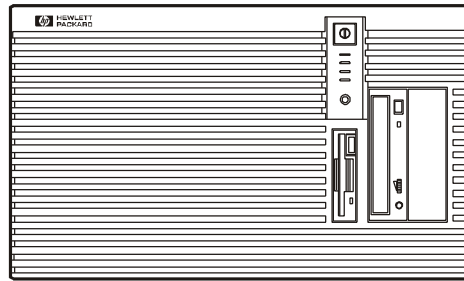
Controls and Indicators

DC Power Switch
Power Status
System Warning
Temperature Status
Power Supply Status
Reset Switch

Reset

Control	Description
DC Power Switch	Turns the NetServer on and off. Push once to turn on, again to turn off. (To disconnect the NetServer from AC power, turn off the AC power switch on the unit's rear panel.)
Power Status LED	Lights green when the NetServer is on.
Warning LED	Normally off. Lights yellow when there is a problem with the processor board, power supplies, or fans.
Temperature LED	Lights green when all fans are operating normally. When not lit, indicates problems with the fan module or processor fans.
Power Supply LED	Lights green when power supplies are functioning normally. If not green, a power p has failed.
Fan LED (not shown)	Normally off. Lights yellow if a fan in the fan module fails. (If more than one fan fails, the system shuts down.) This indicator is not visible unless the front bezel is removed, when you will find it underneath the Power

		Supply LED This indicator does not report on processor fans..
Reset Switch	⊙ Reset	Press to perform a warm boot of the system.

|	
CAUTION	If the front panel power supply status LED indicator is not lit, look at the LED indicators on each of the NetServer's power supplies. You must remove the NetServer's front bezel to see the power supply LEDs.

Interpreting System Status from the Control Panel

	Normal system status:	Check power supplies and processor fans:	Check power supplies and all fans:
Power LED	Green	Green	Green
Warning LED	Off	Yellow	Yellow
Temp LED	Green	Off	Off
Power Supply LED	Green	Off	Off
Fan LED	Off	Off	Yellow

	Check processor fans:	Check all fans:	Power Supply Fault
Power LED	Green	Green	Green
Warning LED	Yellow	Yellow	Yellow
Temp LED	Off	Off	Green
Power Supply LED	Green	Green	Off
Fan LED	Off	Yellow	Off

Rear View

SCSI connector plate

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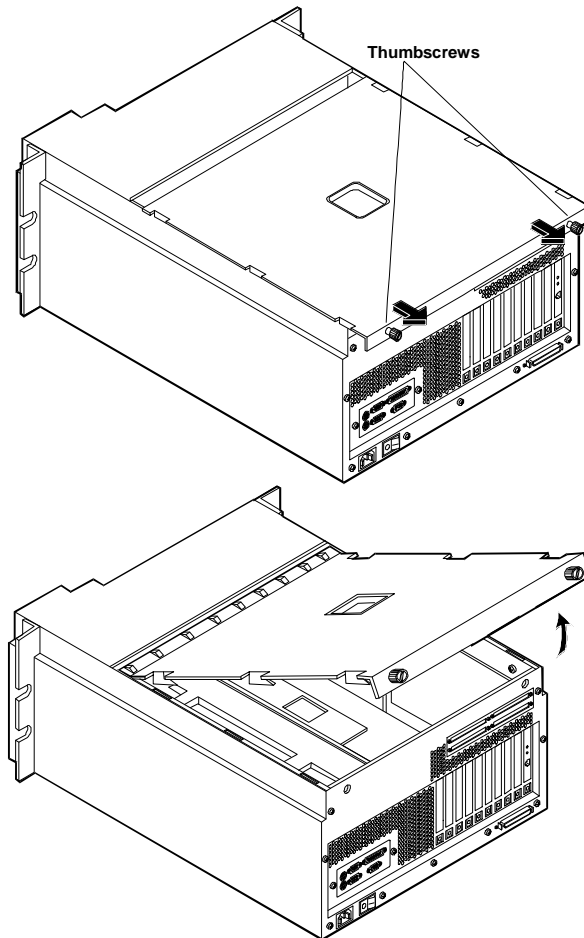**Serial**

Parallel

Keyboard or Mouse

Video
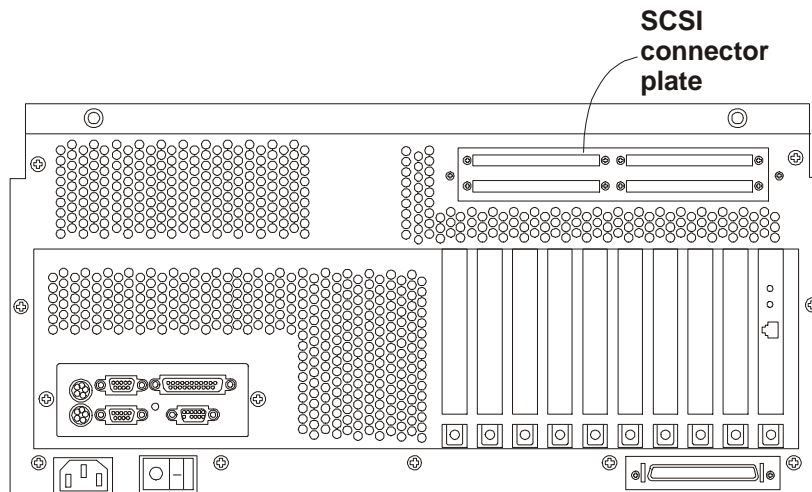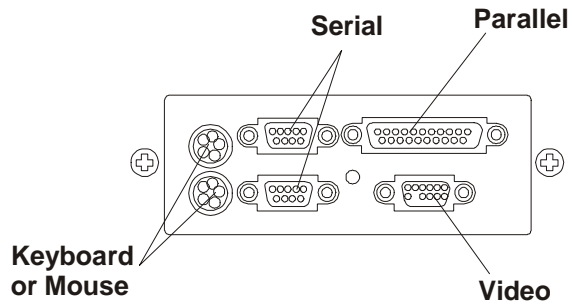
Covers

CAUTION	Removing the NetServer's top cover causes the system to power down automatically. The system cannot power up until the cover is replaced. This is a safety feature.

Thumbscrews
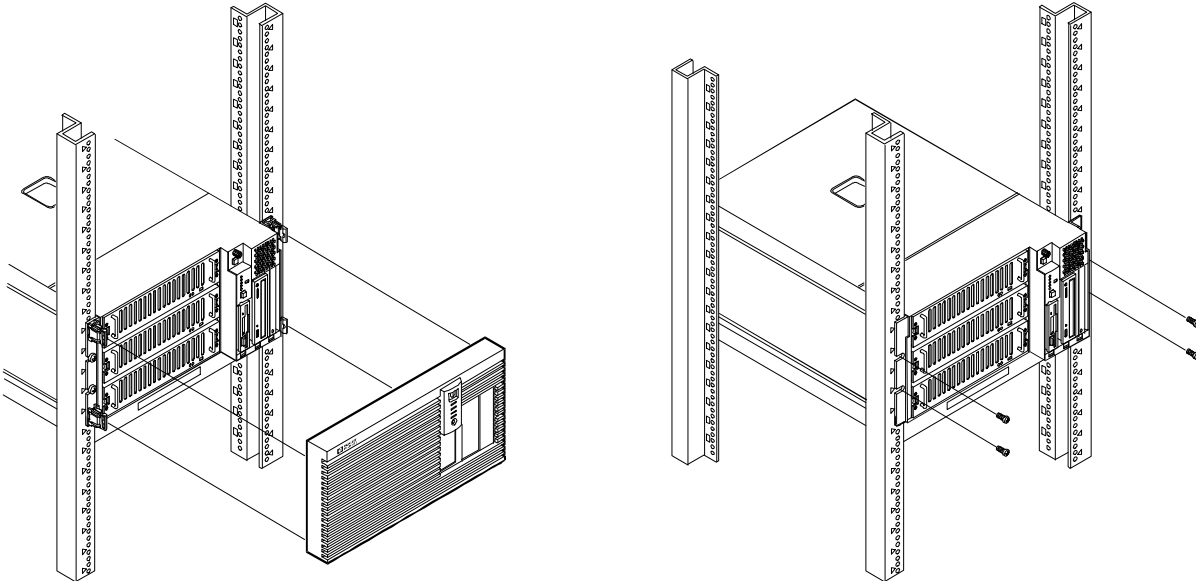
| CAUTION	When working with electronic components, wear an anti-static wrist strap and take precautions to prevent component damage from electrostatic discharge.

Memory

- Use only 60 ns HP SIMMs listed on the Product Reference Label found on the side of the HP NetServer chassis.

- Two different SIMM sizes may be combined in the configuration shown below.

- Only one size of SIMM may be installed in each bank.

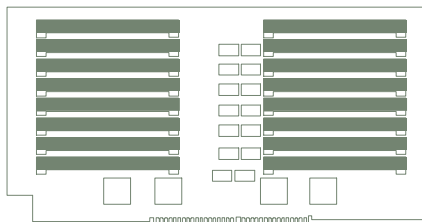| NOTE	HP does not cover performance problems, equipment problems, or service calls resulting from the use of non-HP SIMMs.
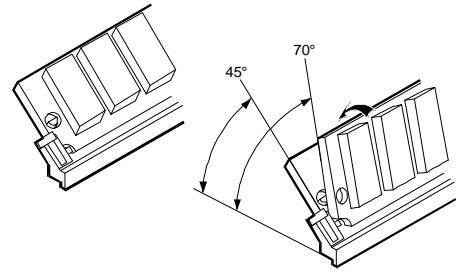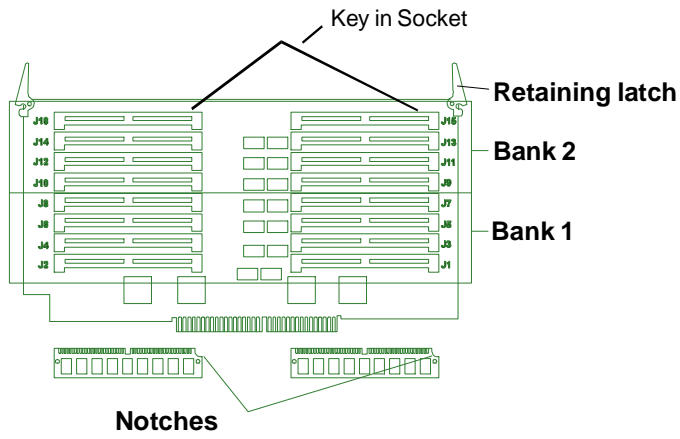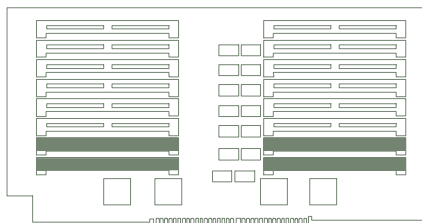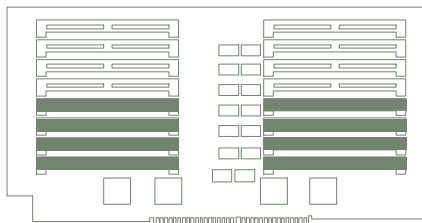
74

Key in Socket

Retaining latch

Bank 2

Bank 1

Notches

45° 70°

One SIMM size

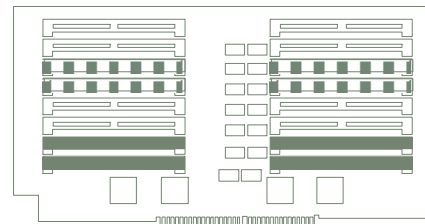
4-SIMM Configuration

8-SIMM Configuration
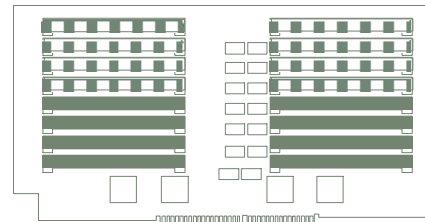

16-SIMM Configuration

Two SIMM sizes

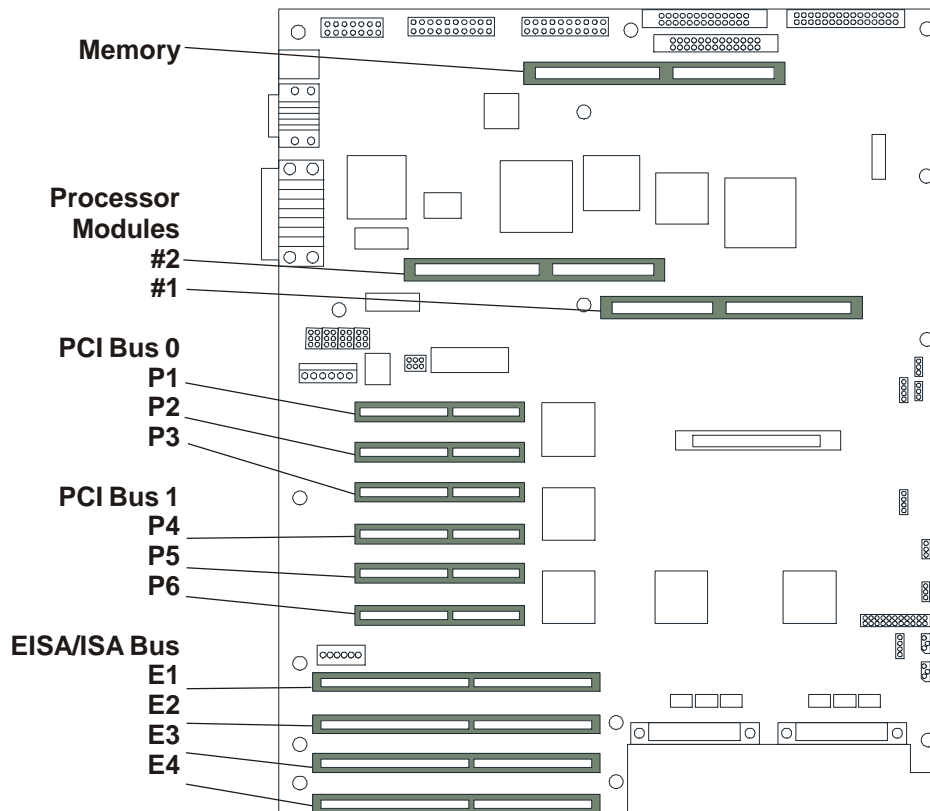Choose two of the following SIMM sizes: 32, 64 or 128

SIMM size #1

SIMM size #2

8-SIMM Configuration

16-SIMM Configuration

Supported Memory Configurations

Accessory Boards

Memory	
Processor Modules #2 #1	
PCI Bus 0 P1 P2 P3	
PCI Bus 1 P4 P5 P6	
EISA/ISA Bus E1 E2 E3 E4	

NOTE	Most PCI boards do not need any additional configuration. If the board that you are installing does require configuration, run the EISA Configuration Utility.

Boot Device Priority

If you are installing a SCSI controller board, the priority of the controllers (where the BIOS will search for the boot drive) is set by the slot location where the board is installed.

NOTE	To ease the routing of cables, install the PCI controller boards in the high numbered slots, such as P5 or P6,.

The following is the search path in order of the highest boot device priority:

1. CD-ROM drive with bootable CD-ROM

2. Flexible disk drive with bootable flexible disk (must be enabled by the EISA Configuration Utility)

3. IDE drive (can be disabled by the EISA Configuration Utility)

4. EISA or ISA controller in EISA/ISA bus slots in the following order:
   E1, E2, E3, E4

5. PCI controller **(see Note below)**

   a. PCI bus slots in the following order: P1, P2, P3, P4

   b. Embedded SCSI A controller

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c. Embedded SCSI B controller

d. PCI bus slots in the following order: P5, P6

| NOTE	The PCI controller boot priority can be changed so that the embedded SCSI controllers precede the PCI bus slots. To do so, run the EISA Configuration Utility and enable the option called "Boot from Embedded SCSI."

Processors

NOTE:	See the Technical Reference Label for the latest switch settings.

Two processor boards, each with a maximum of two CPU chips, can be installed in the system. Check jumpers and heat sinks using the diagrams below. Speed jumpers on the board have tamper-evident seals.
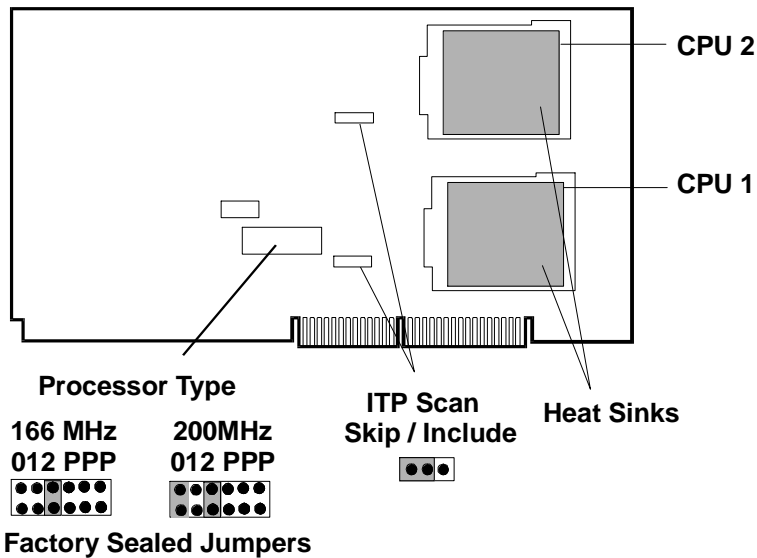
200MHz / 512K Processor Board
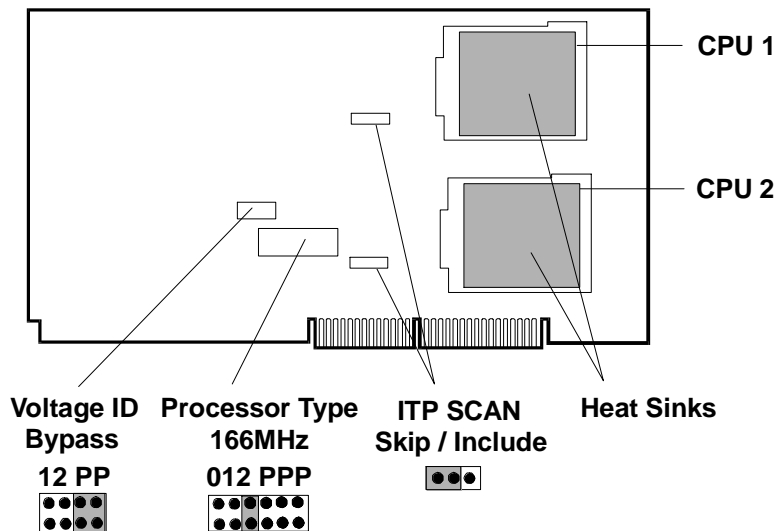
166MHz / 512K Processor Board

All CPU chips and Processor Boards in the system must be the same speed/cache combination. Each Processor Board is marked. For instance, "166/512K" = 166 MHz with 512K cache.

CAUTION	Operating a CPU chip on an incorrect Processor Board or at a lower or higher than it was designed, or at incorrect voltage may result in unreliable operation, or may cause catastrophic or hidden damage to the chip. CPU chips supplied and warranted by HP for NetServers have an "HP" label. Repairs caused by unauthorized jumper modification or use of incorrect chip and board combinations are not covered under the warranty.

If replacing a processor board with one that has jumpers installed on the Voltage ID Bypass block (jumpers should **never** be in positions 1 or 2), check that the system matches one of these configurations:

| Total number of CPU chips in system	Processor Board Slot #1	Processor Board Slot #2
1	CPU 1	Terminator Board *
2	CPU 1 and CPU 2	Terminator Board *
3	CPU 1 and CPU 2	CPU 1
4	CPU 1 and CPU 2	CPU 1 and CPU 2

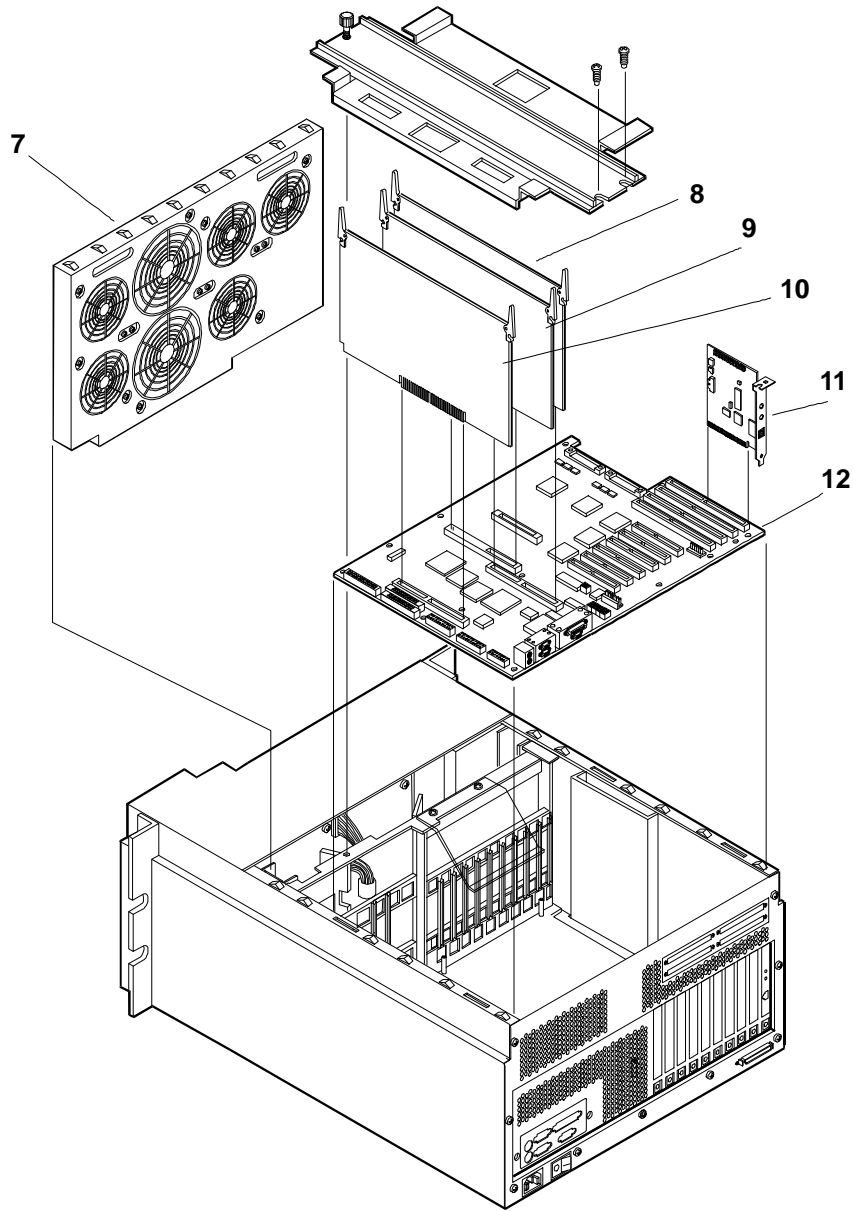* Termination Board D4262-60002 or D4262-63002

Processor Board in Slot #1 must have two chips before adding a board in Slot #2. All board slots must be filled. A Processor Board without chips cannot be used as a terminator.

NOTE	If two processor boards are installed in the system, both must be the same speed, as indicated by the board part number labels.

Exploded Views
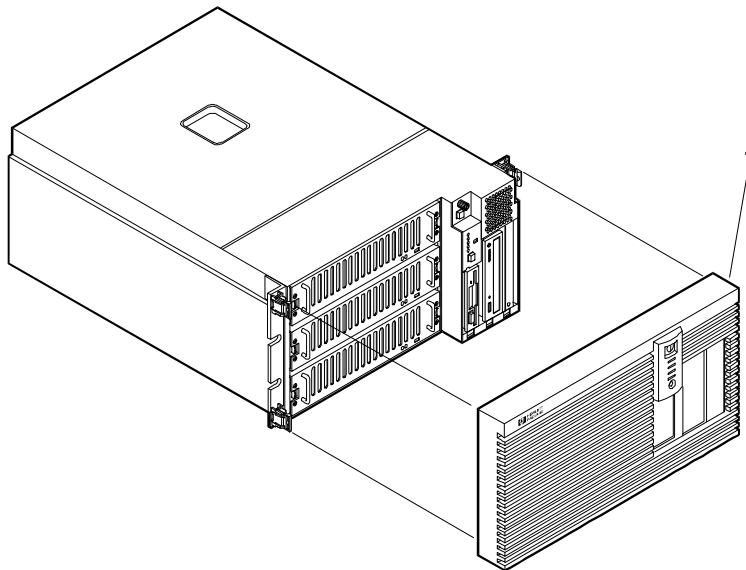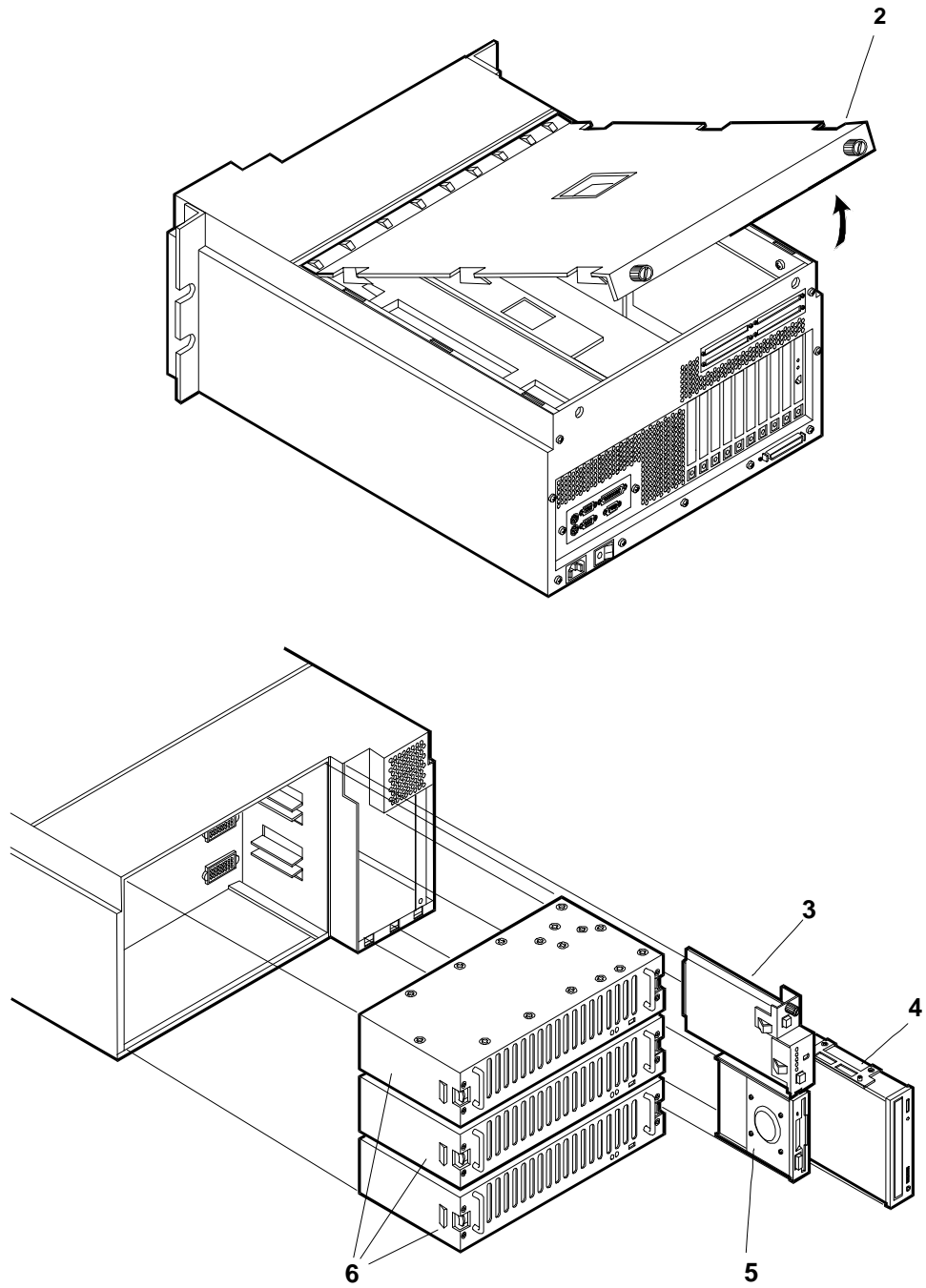
Parts List

> **NOTE:** The part numbers in the list were the ones that were available at the time of publication. Part numbers may change after publication.

* This part is not on an exploded view.

Fig	Description	Replacement	Exchange
1	Front Bezel	D4898-63018	
2	Top Cover	D4898-63013	
3	Power Monitor Controller	D4898-63024	D4898-69024
4	CD-ROM Drive	D2992-63004	

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5	Floppy Drive	D2035-63121	
6	Power Supply	D4898-63003	D4898-69003
7	Fan Module	D4898-63001	D4898-69001
8	CPU Board, B1, 200-512	D4311-60008	D4311-69008
9	Terminator Board**	D4262-63002	D4262-69002
10	Memory Board	D4262-63006	D4262-69006
11	System Management Board (SMB)	5064-1965	
12	System Board	D4311-60007	D4311-69007
*	Power Interconnect Board (PIB)	D4898-63004	
*	Disk Array Controller	D4943-63004	D4943-69004
*	Cable, AC Distribution Harness	D4898-63005	
*	Cable, DC Distribution Harness	D4989-63014	
*	Cable, CD-ROM Power	D4898-63006	
*	Cable, SCSI A	D4898-63021	
*	Cable, SCSI B	D4898-63019	
*	Cable, Floppy	D4898-63008	
*	Cable, SMB Pair	D4898-63017	
*	SCSI Adapter (68W50N)	5182-4551	
*	SIMM, 32MB, 60-ns	D4892-63001	D4892-69001
*	SIMM, 64MB, 60-ns	D4290-63002	D4290-69002
*	SIMM, 128MB, 60-ns	D4893-63001	D4893-69001
*	P6 200/512 CPU Chip	1821-3452	
*	Heat Sink and Clip Assembly P6	5064-0752	
*	Heat Sink (P6) (or use 5064-0752)	5182-9343	
*	Heat Sink Clip (P6) (or use 5064-0752)	5182-9344	
*	CD-ROM Setup Kit, Navigator ***	5064-0793	
*	Video DRAM Chip - 512 KB	1818-5728	
*	Mouse	C3751-60201	

** Terminator board must be installed when there is only 1 processor board in the system.

*** This part number is constantly revised for each new release. When you order using this number you will be sent the current revision of the CD-ROM.

Keyboards

Language	Part Number/Option	Language	Part Number/Option
United States	C1405-61301 #ABA	Dutch	C1405-61306 #ABH
French	C1405-61305 #ABF	Czech	C1405-61336 #AKB
Danish	C1405-61316 #ABY	German	C1405-61303 #ABD
Russian	C1405-61330 #ACB	Spanish	C1405-61304 #ABE
Japanese	C3755B #ABJ	Canadian	C1405-61302 #ABC
Italian	C1405-61317 #ABZ	Norway	C1405-61309 #ABN

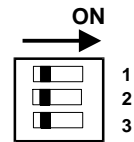| Belgium	C1405-61314 #ABW	Swiss	C1405-61311 #ABP
Korea/Hangu	C1405-61321 #AB1	Swedish	C1405-61312 #ABS
Taiwanese	C1405-61323 #AB0	UK/Ireland	C1405-61313 #ABU
Turkish	C1405-61333 #AB8	China	C1405-61301 # ABA
Arabic/French	C1405-61325 #AB6	Portugal	C1405-61327 #AB9
Hungarian	C1405-61337 #AKC	Poland	C1405-61335 #AKD

Power Cords

Country	Keyboard	Power Cord	Setup Kit
US	C1405C #ABA	8120-5395	ABA
Europe	C1405B #ABA	8120-5394	ABB
Canada/French	C1405B #ABC	8120-5395	ABC
Germany	C1405C #ABD	8120-5394	ABD
Spain	C1405C #ABE	8120-5394	ABE
French	C1405C #ABF	8120-5394	ABF
Australia	C1405B #ABA	8120-5393	ABG
Dutch	C1405B #ABH	8120-5398	ABH
Japan	C3755A #ABJ	8120-5400	ABJ
Intercon	C1405B #ABA	none-	ABK
Spanish	C1405C #ABE	8120-5395	ABM
Taiwan	C1405B #AB0	8120-5395	AB0
Sw/German	C1405B #ABP	8120-5397	ABP
Sw/French	C1405B #ABP	8120-5397	ABQ
UK	C1405C #ABA	8120-5392	ABU
Italy	C1405C #ABZ	8120-5394	ABZ
Korea	C1405B #AB1	8120-5395	AB1
China	C1405C #ABA	8120-5393	AB2
Arabic/French	C1405B #AB6	8120-5394	AB6
Greek	C1405B #AB7	8120-5394	AB7
Turkish	C1405B #AB8	8120-5394	AB8
Portugal	C1405B #AB9	8120-5394	AB9
Russia	C1405B #ACB	8120-5394	ACB
Denmark	C1405B #ABY	8120-5394	ACE
Japan	C1405B #ABA	8120-5400	ACF
Norway	C1405B #ABN	8120-5394	ACK
Belgium	C1405B #ABW	8120-5394	ACO
Arabic/English	C1405B #ABV	8120-5394	ABV
South Africa	C1405B #ABA	8120-5394	ACQ
Sweden	C1405B #ABS	8120-5394	ACY
Czech	C1405B #AKB	8120-5394	AKB
Hungarian	C1405B #AKC	8120-5394	AKC

| Polish | C1405B #AKD | 8120-5394 | AKD |

System Board

Jumper Settings

ON

1
2
3

S6A1

1 - Clear CMOS
2 - Clear Password
3 - Reserved
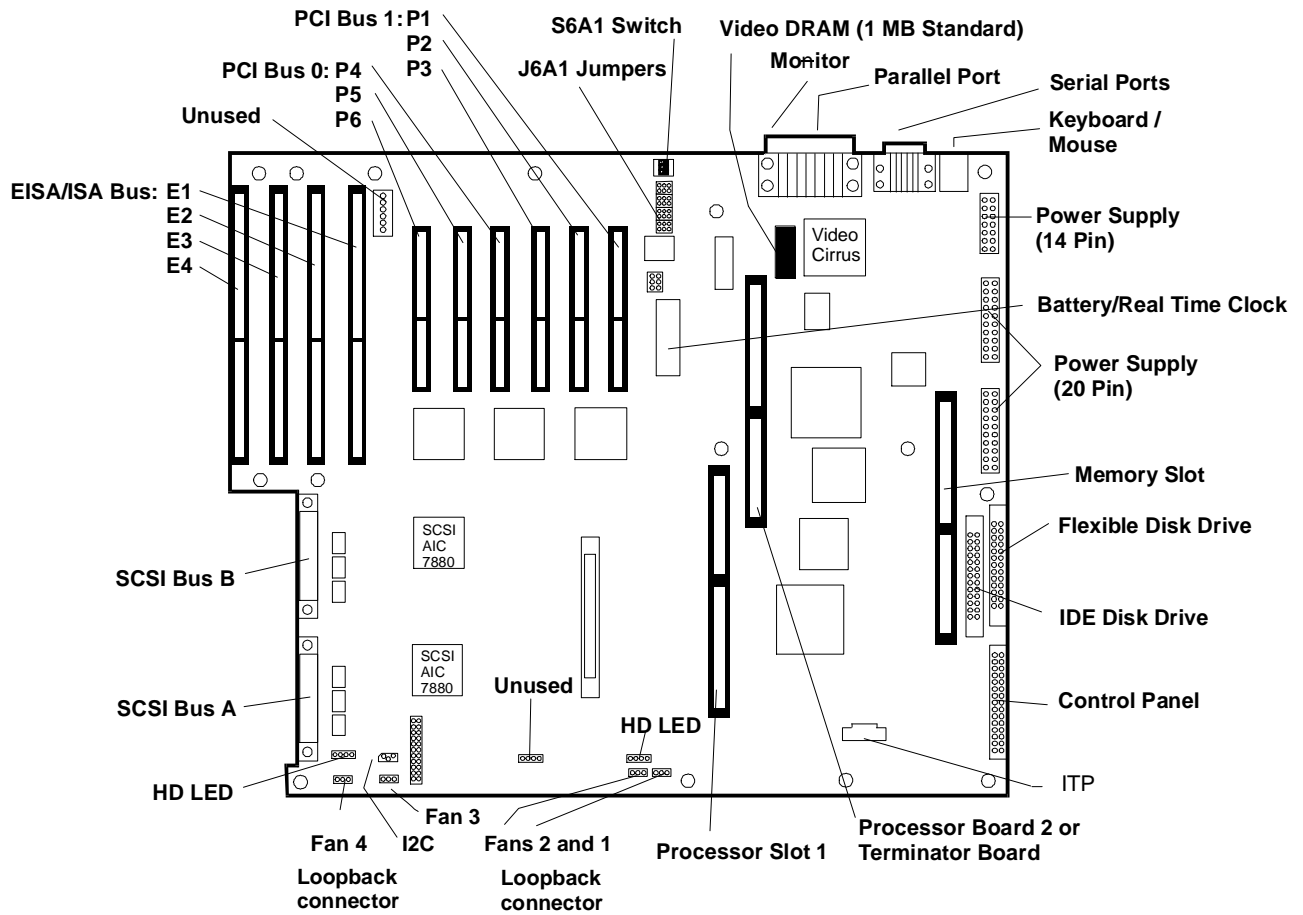
| J6A1 | | BIOS Recovery |
| | | BOOT Block Protect |

| J6A4 | | BIOS Write |
| | | Floppy 0 |

| J6A2 | | Floppy 1 |
| | | Video Sleep |

| J6A3 | | PWR CTRL |
| | | Reserved |
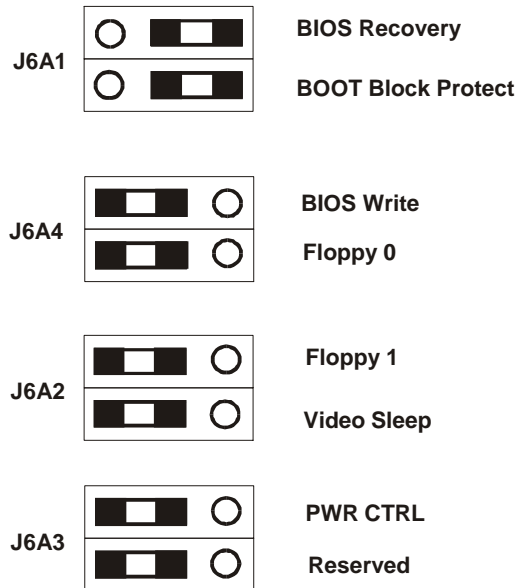
Specifications

Temperature

Operating	5° to 35° C
Non-operating	-40° to 70° C

Humidity (non-condensing)

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

Altitude

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

Maximum Air Conditioning Load

Less than 4200 BTU

Minimum Clearance

Front	1 m (39 inches)
Back	15 cm (6 inches)

Weight and Dimensions

	Height	Width	Depth
Dimension	29.6 cm (11.7 in)	62.8 cm (24.7	87.7 cm (34.5

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s		in)	in)
Weight	~36 kg (80 lb.)		

Power Supply Modules

AC Input	Auto-Ranging Power Supply 100 to 240 VAC 50/60 Hz, 7.0A maximum
DC Output	370W maximum, continuous

NOTE	The HP NetServer LXr Pro includes a total of three power supplies in an N+1 configuration (N=2). The system requires two functional supplies at all times; individual supplies can be hot-swapped. Each power supply is a 370-watt, off-line, four-output, power-factor-corrected, switching power supply. It has been tested to achieve all major safety agency approvals. (A system has one processor can run with only one functional power supply, but Hewlett Packard does not support this configuration.)

Power Supply System

AC Input	Auto-Ranging Power Supply 100 to 240 VAC 50/60 Hz, 12A maximum
DC Output	700W maximum, continuous

HP NetServer LXr Pro8

System Views
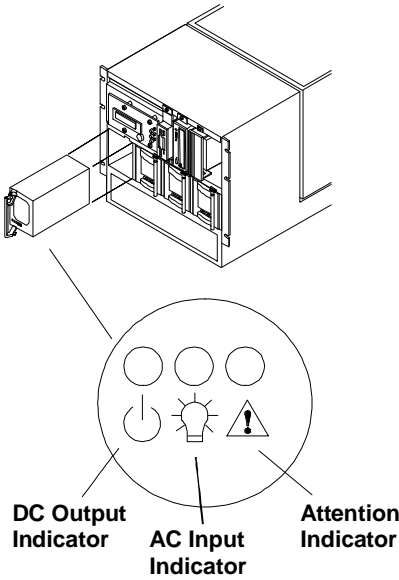
Front Panel Controls
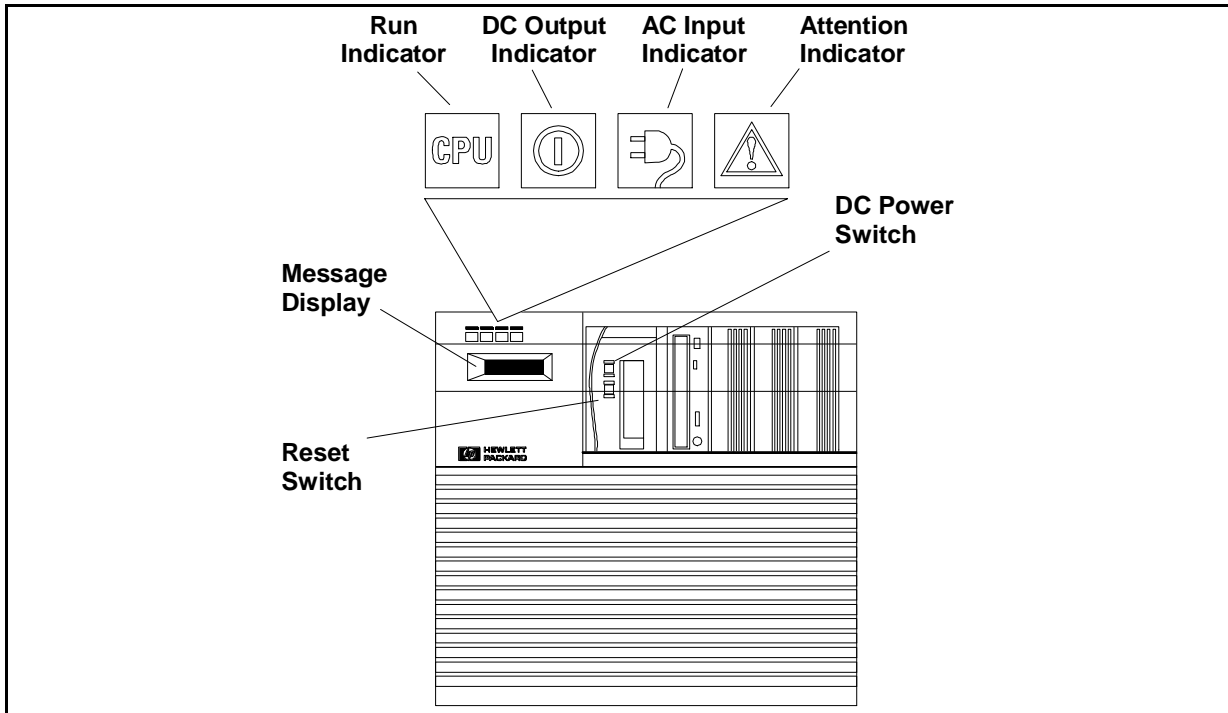
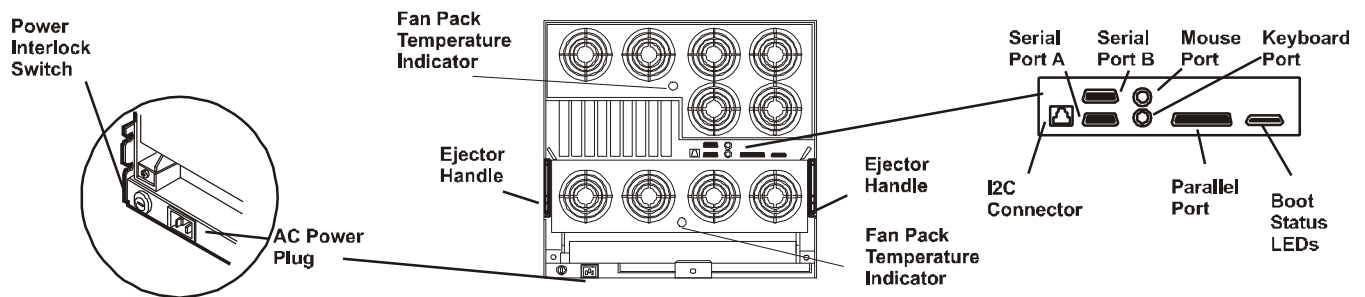| Control Panel Switch and Indicator Definitions	
Control	**Description**
DC Power Switch	Turns the system on, or returns it to standby..
Reset Switch	Press to perform a warm boot of the system.
Run Indicator	When lit green, indicates that the BIOS Power-On Self Test has passed, and that the system has started the boot process.
DC Output Indicator	When lit green, indicates that the DC voltages are on. It is connect to +5 volts.
AC Input Indicator	When lit green, indicates that the system is plugged into a live AC outlet.
Attention Indicator	Normally off. When lit yellow, indicates that a component within the system has failed or has lost its configuration. Also flashes yellow when you use the Hardware Identification and Labeling Utility to locate this particular server in a multi-server rack installation.
Message Display	Displays information about system status and error conditions, including POST error messages and codes. (POST messages and codes also display on the system console.) In the case of fatal errors, error message displays here for one minute before system shuts down automatically.

Power Supply Indicators

DC Output Indicator   AC Input Indicator   Attention Indicator

Power Supply LEDs	
Control	**Description**
DC Output Indicator	Lights green when DC power is online. During normal operation, this LED should always be green.
AC Input Indicator	Lights green when the power supply is receiving AC power. During normal operation, this LED is always green. If this LED is lit but Standby / DC Good is not, then AC power is present but is not reaching this power supply.
Attention Indicator	Lights amber when the power supply requires service.

Rear Panel Controls, Ports, and Indicators

Rear Panel Control and Indicator Definitions	
Control	**Description**
Power Interlock Switch	This switch is mounted on the base chassis. When you turn this switch to the right, you disables DC power and release the satellite chassis so you can pull it out for service. Unless you turn this switch, you cannot pull out the satellite chassis nor open the satellite's top cover.
Satellite Ejector Handles	These handles are mounted on the satellite chassis. Use them to pull the satellite out from the base chassis. After turning the power interlock switch, grasp the ejector handles and pull them down and towards you. The satellite

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	should then move toward you on its slides.
Boot Status LEDs	Displays Power-On Self-Test codes during startup.

Covers

When replacing plastic covers on control panel buttons, make sure that tabs on the covers point up and down, as shown
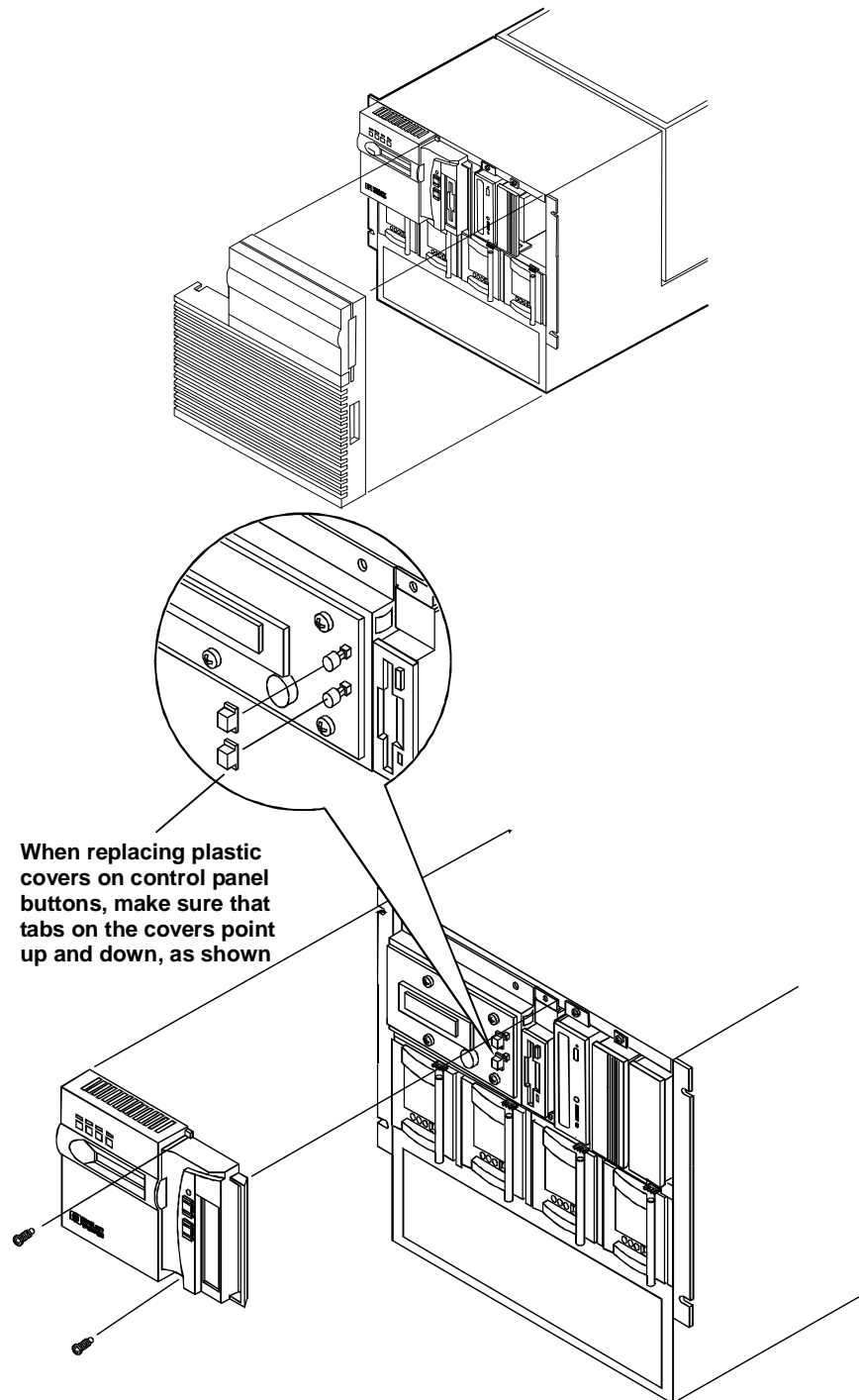
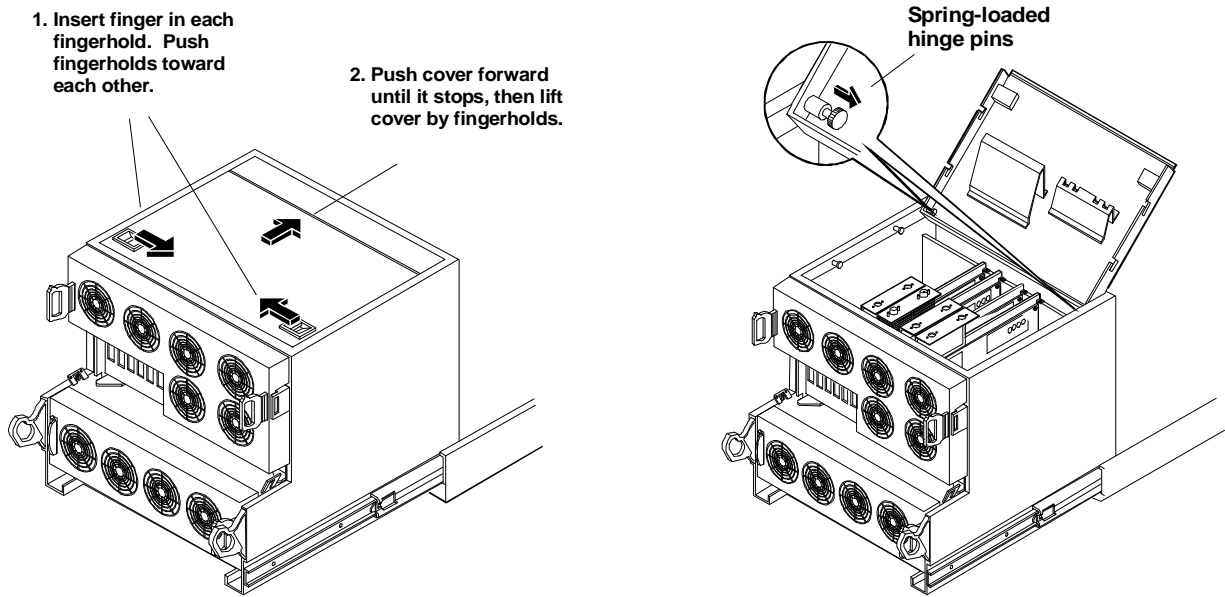| NOTE	If you fail to unlock the power interlock switch, the satellite chassis will not slide away from the base chassis.

CAUTION	You will need to replace the retention bracket when redocking the Satellite Chassis. The Bracket ensures correct mechanical connection.

Ejector Handles

Retention Bracket

Release Latch

Slide

Rail on side of satellite

Fit rail inside slide
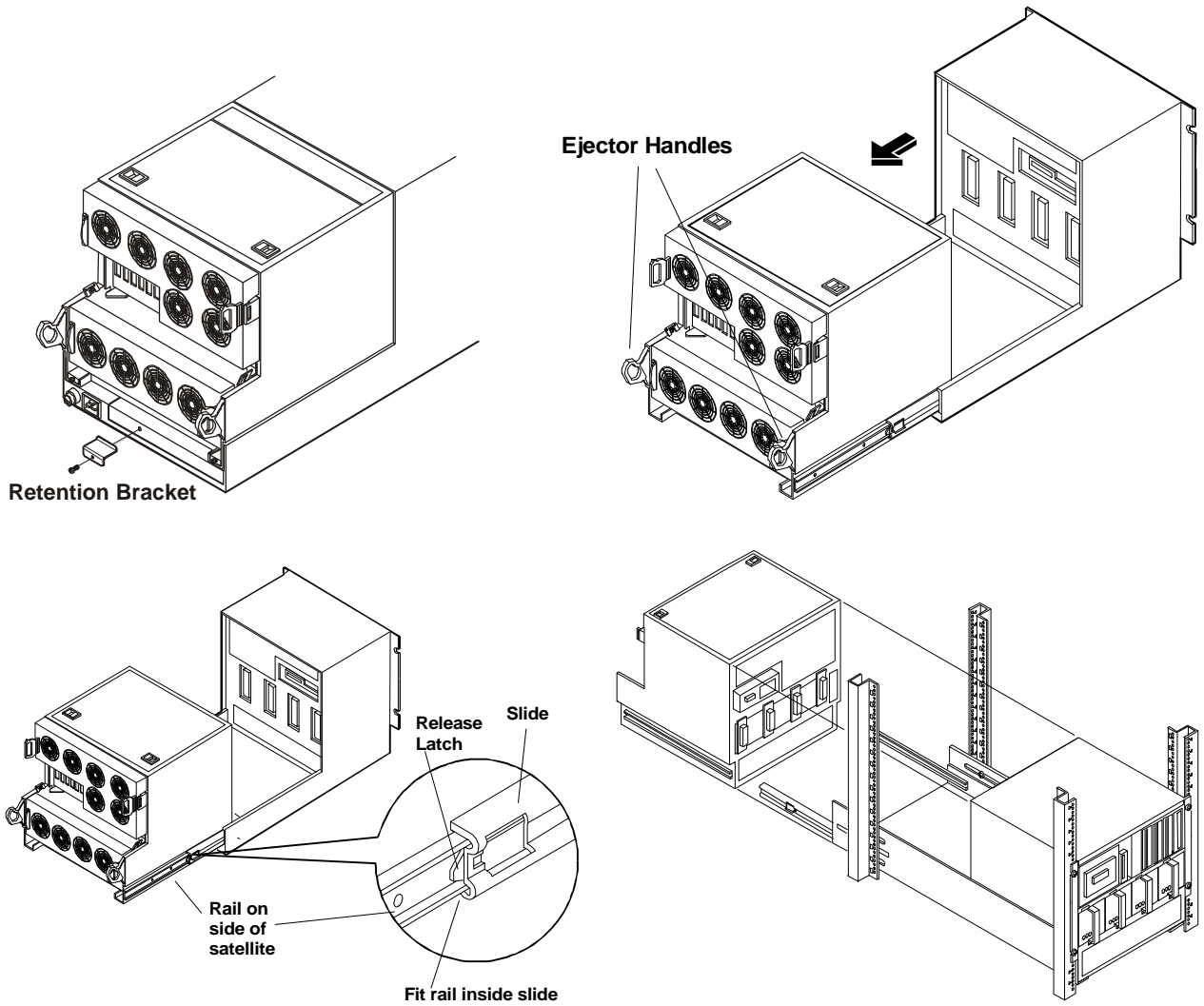
CAUTION	Do not attempt to detach or reattach the satellite chassis by yourself. The task requires two people. Failure to observe this warning could result in serious injury or damage to the HP NetServer

Satellite Chassis' Top Cover

1. Insert finger in each fingerhold. Push fingerholds toward each other.

2. Push cover forward until it stops, then lift cover by fingerholds.

Spring-loaded hinge pins

NOTE	As a safety measure, and to avoid cooling problems, you must always replace the cover before turning on the HP NetServer.

Lower Board Cage

The lower board cage holds the HP NetServer's memory boards, the system control board, and the optional SCSI extender.

Mounting Tab

Captive
Screws

Mounting Tab
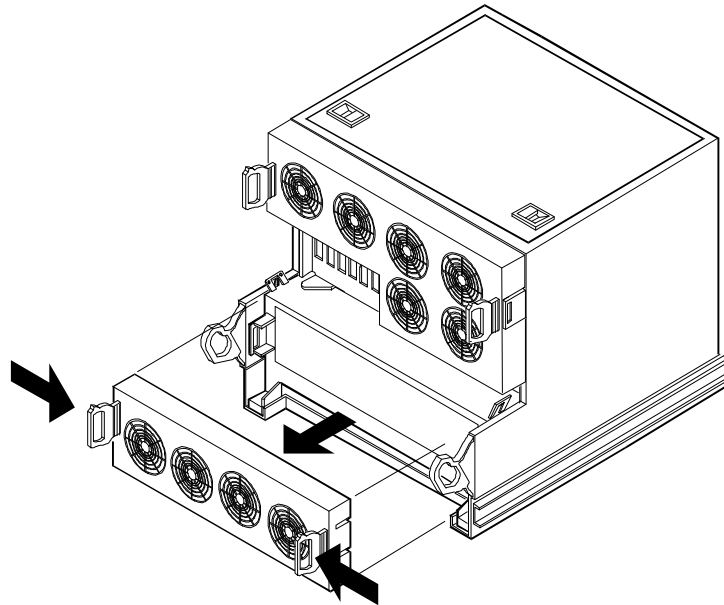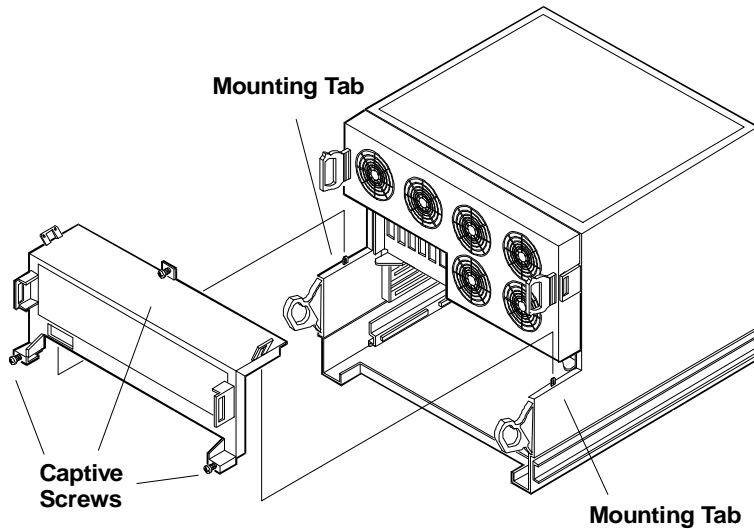
Memory

There are four DIMM sockets on the system board for memory expansion. You can use 64 MB, 128 MB, and 256 MB Memory Configuration Guidelines

The HP NetServer LXr Pro8 accepts up to two memory boards. Each board has 32 DIMM sockets and accepts only 128 MB SDRAM DIMMS, for a maximum capacity of 4096 MB per board. The minimum memory configuration is one memory board with two 128 MB SDRAM DIMMs. Use only 100 MHz HP 128 MB SDRAM DIMMs.

- The minimum memory configuration is one memory board with two 128 MB SDRAM DIMMs.

- The memory board DIMM slots are numbered from M0 to M31 as shown in Figure 1.

- The recommended memory configurations and the slot numbers where SDRAM DIMMs are installed are listed in Figure 5-2 and Figure 5-3. Add SDRAM DIMMs only in these quantities and in the specified slot numbers.

M0   M4   M8   M12   M16   M20   M24   M28
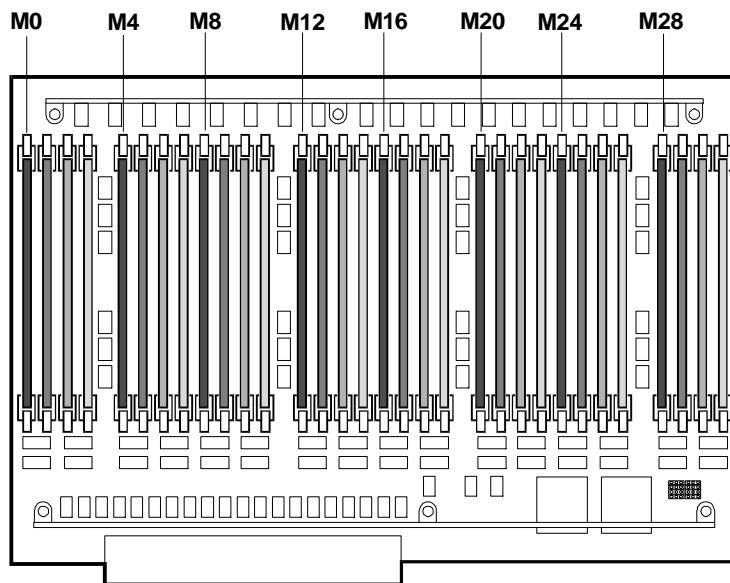
Memory Configurations for One 4 GB Memory Board

Memory		Upper Memory Board Slots M0 - M31							
Size	Quantity	0	4	8	12	16	20	24	28
256 MB	2	X				X			
512 MB	4	X		X		X		X	
1 GB	8	X	X	X	X	X	X	X	X
1.5 GB	12	XXX		XXX		XXX		XXX	
2 GB	16	XX	XX	XX	XX	XX	XX	XX	XX
3 GB	24	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
4 GB	32	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX

Memory Configurations for Two 4 GB Memory Boards

Memory		Upper Memory Board Slots M0 - M31							
Size	Quan-tity	0	4	8	12	16	20	24	28
5 GB	24	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
6 GB	24	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
7 GB	32	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX
8 GB	32	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX
Memory		**Upper Memory Board Slots M0 - M31**							
Size	Quan-tity	0	4	8	12	16	20	24	28
5 GB	16	XX	XX	XX	XX	XX	XX	XX	XX
6 GB	24	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
7 GB	24	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
8 GB	32	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX

Base Chassis

Satellite
Chassis

4 GB Memory Board

Retaining Clips

Retaining
Clip

Retaining
Clip
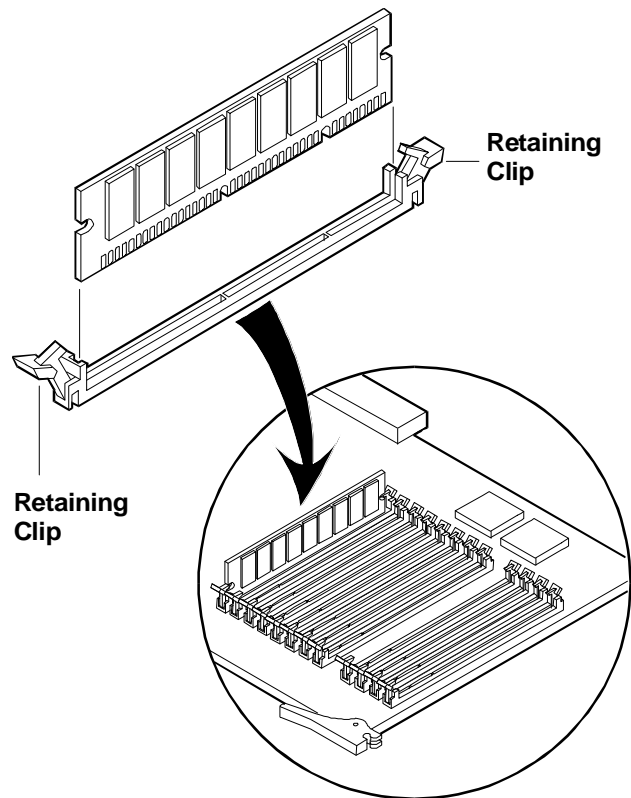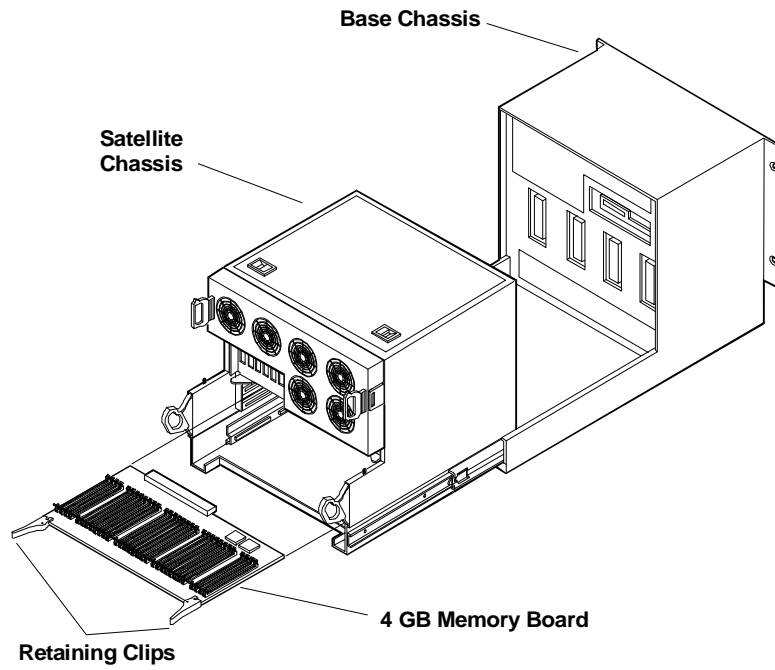
| CAUTION	Do not rock the SDRAM DIMM into place, but apply firm and even pressure.

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Boot Device Priority

By default, the HP NetServer searches for bootable devices in the order shown below. (This boot sequence is configurable.)

1. CD-ROM drive.

2. Flexible disk drive.

3. Hard disk drives on embedded SCSI controller 0. This controller controls the server's internal mass storage devices.

4. Embedded SCSI controllers 1 through 7. (These controllers are only accessible in servers equipped with the optional SCSI Extender Board accessory.)

5. PCI slots 1 through 8.

NOTE	If you plan to boot the system from a DAC card, you must reconfigure the hard drives on any SCSI controllers that are in the boot sequence, so that those drives are not scanned during start-up. Use the SCSI Controller Utility to do this, and also to remove selected SCSI controllers from the boot sequence. To change the boot order, use the Boot Menu or the SCSI configuration utility.
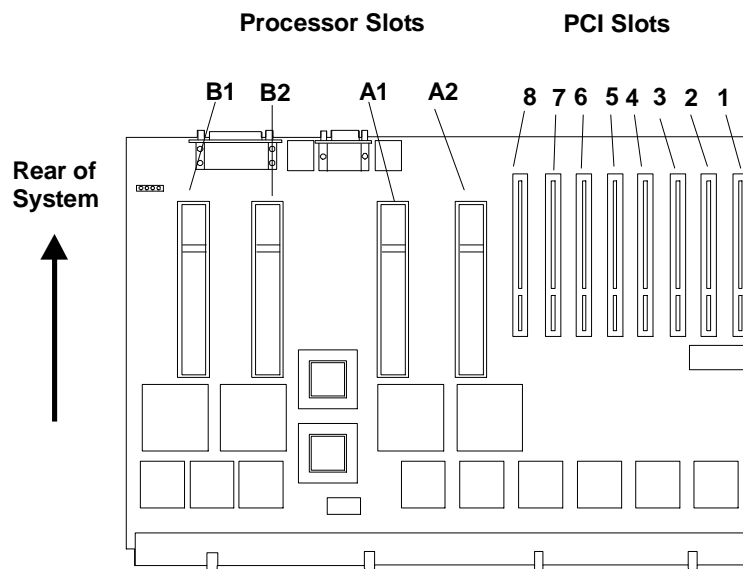
NOTE   The HP NetServer's video card can only be in PCI slots 1 through 4.

Processor Board Configurations

CPU Chips in System	Board in Slot A1	Board in Slot A2	Board in Slot B1	Board in Slot B2
2 CPUs	Processor board	Terminator board	Terminator board	Terminator board
4 CPUs	Processor board	Terminator board	Processor board	Terminator board
6 CPUs	Processor board	Processor board	Processor	Terminator

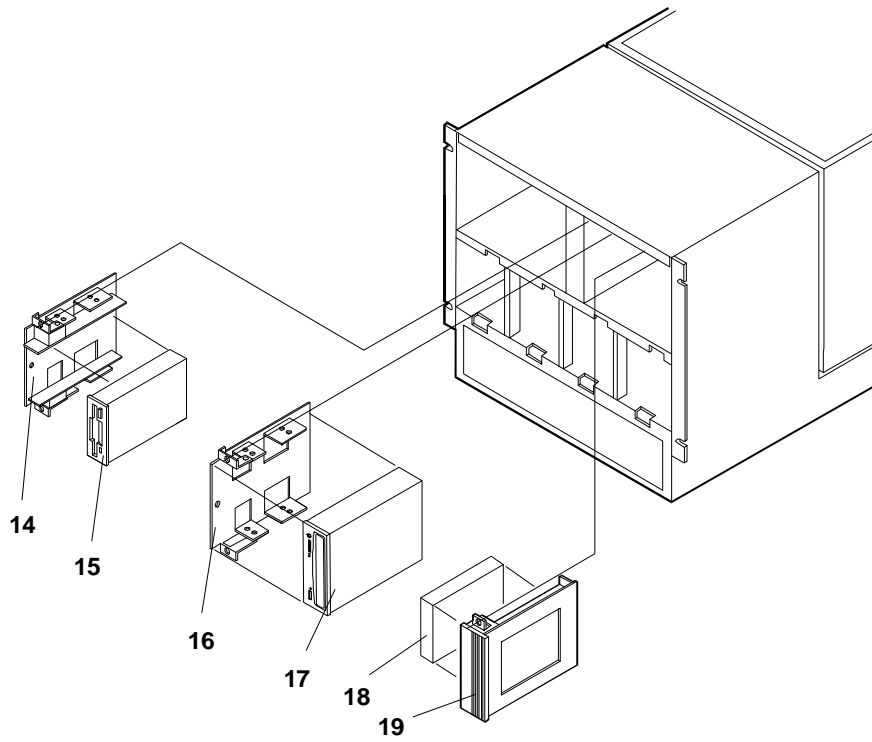|			board	board
8 CPUs	Processor board	Processor board	Processor board	Processor board

NOTE   You must have a terminator board on hand to put in place of the processor board.
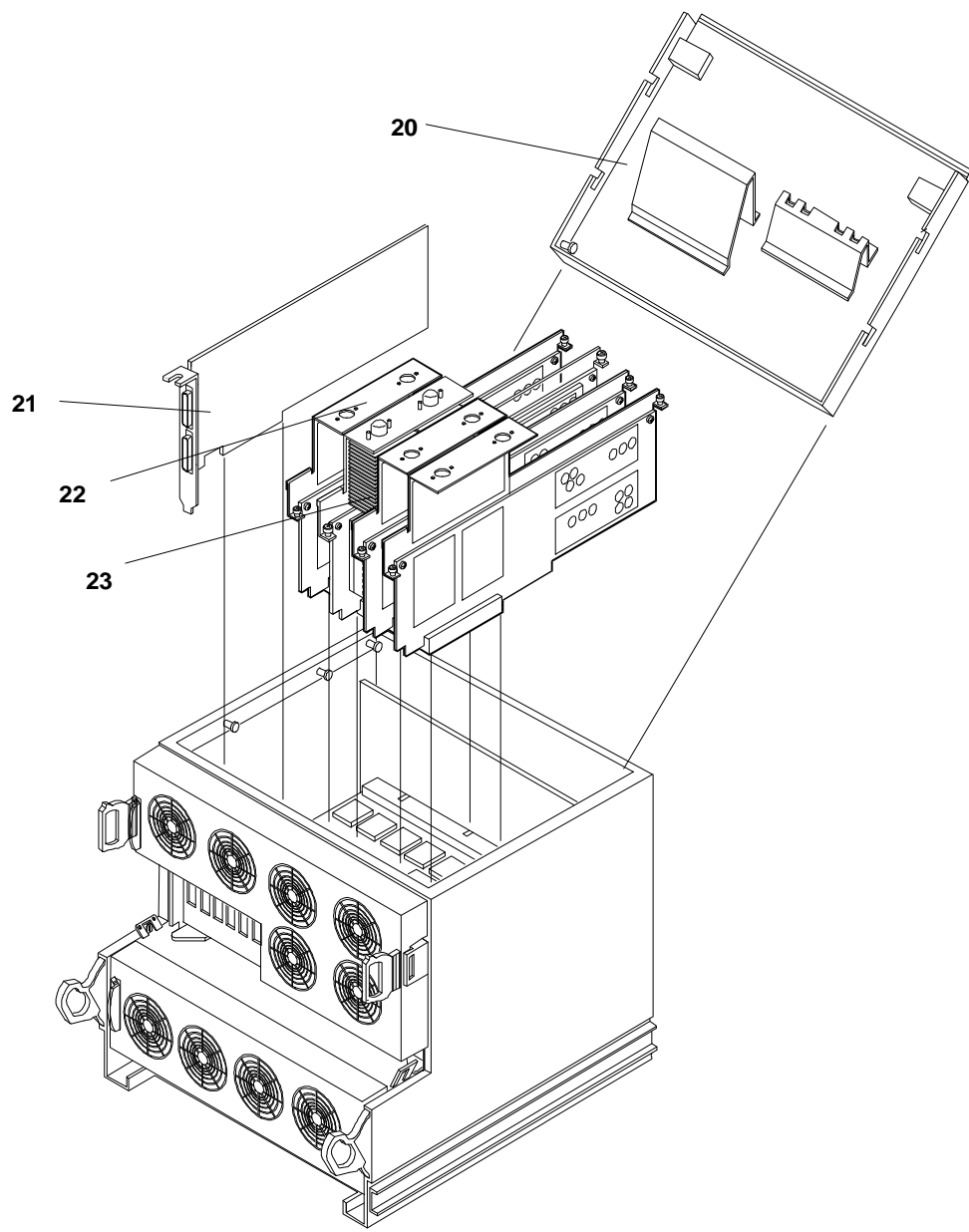
Exploded Views

20

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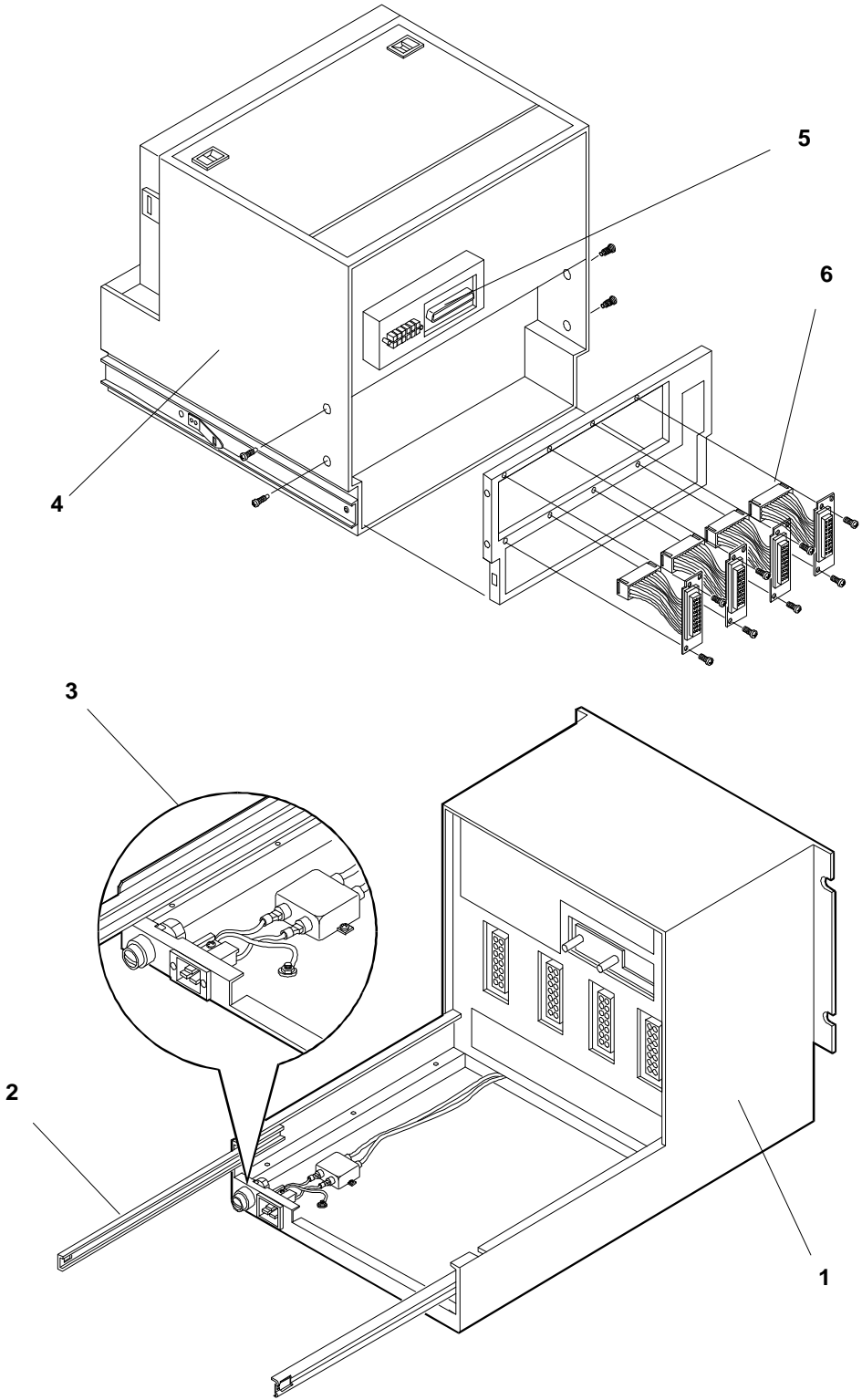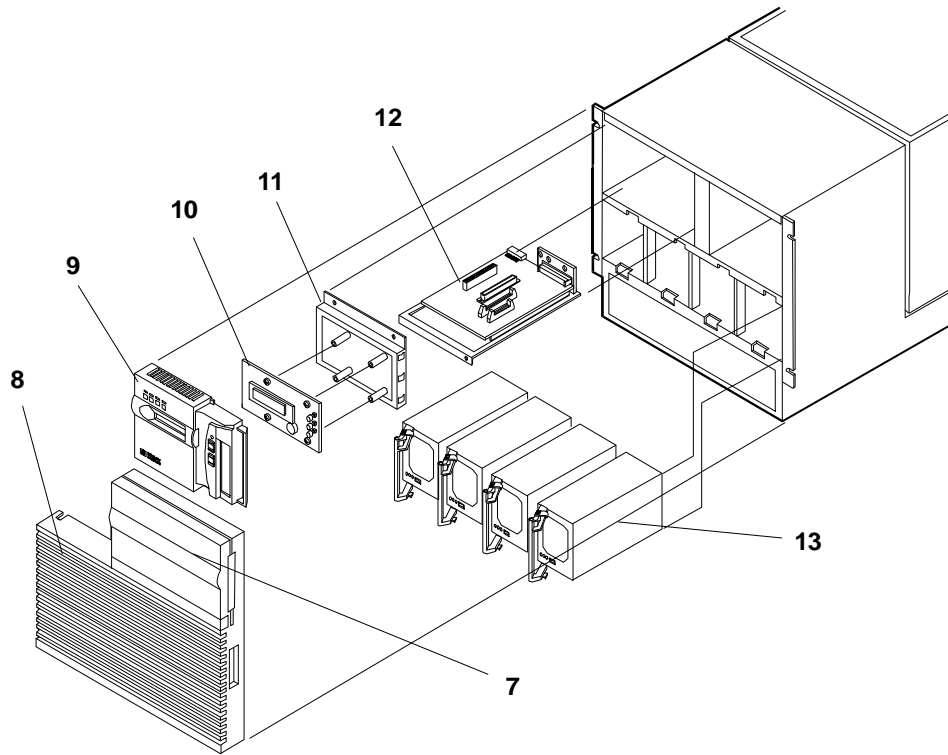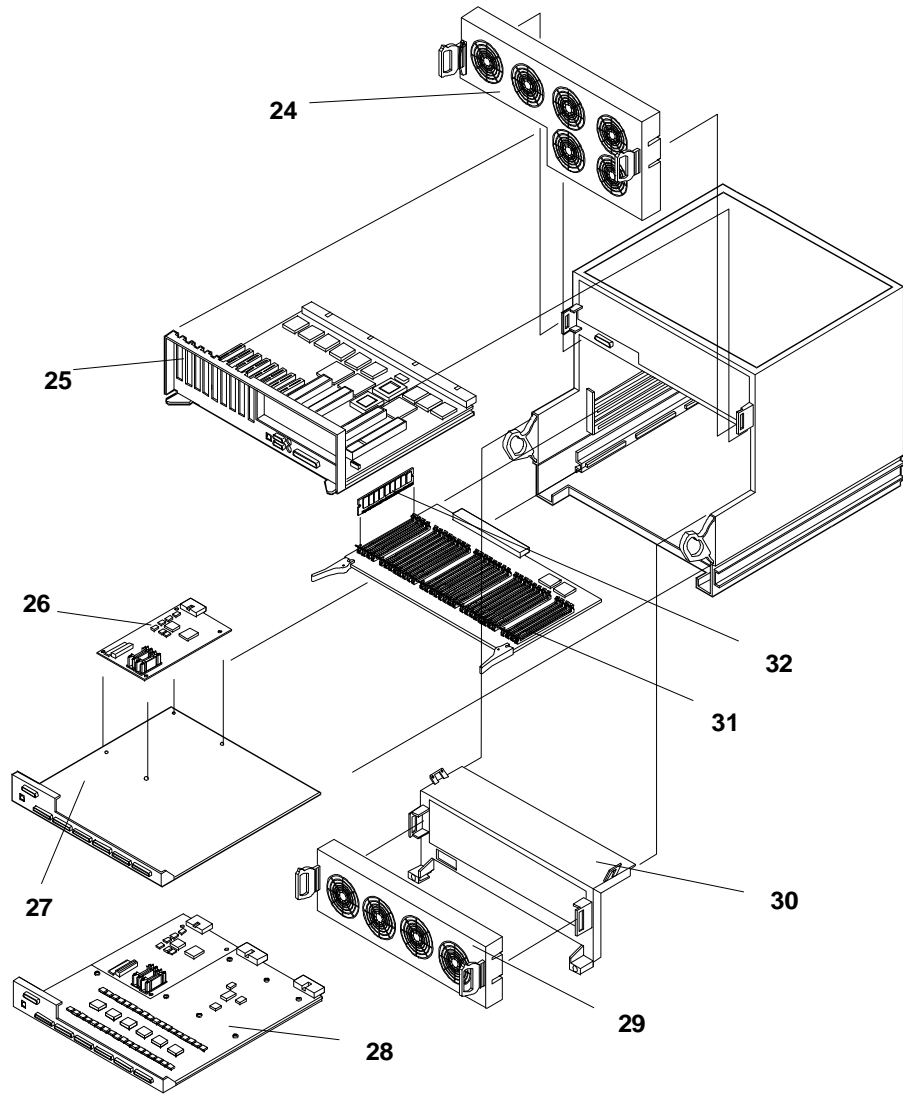
Parts List

* This part is not on an exploded view.

Fig	Description	Replacement	Exchange
1	Docking station chassis	not orderable	
2	Chassis slides	D5028-63027	
3	DC switch assembly (switch & pawl)	D5028-63015	
4	Satellite chassis - with midplane board	D5028-63017	D5028-69017
*	Midplane board (2)	D5028-63002	
5	PIN adapter board	D5028-63034	
6	Power Harness to Midplane	D5028-63020	
7	Drive bay door	D5028-63030	
8	Plastic front bezel including door	D5028-63029	
9	Control panel bezel (see number 8 above)	D5028-63029	
10	Control front panel board	D5028-63001	D5028-69001
11	Control panel mounting plate	not orderable	
12	Peripheral Interconnect (PIC) board	D5028-63003	
13	Power supply	D5028-63004	D5028-69004
14	3.5" rail mounts	not orderable	
15	Flexible disk drive	D2035-630132	
16	CDROM mounting tray	D2199A	
17	CDROM drive	5064-1919	
18a	4 GB Hard disk drive	D4910A	
18b	9 GB Hard disk drive	D4911A	
19	Hard disk drive mounting tray	D2198A	
20	Complete satellite top cover with labels	D5028-63028	
21	Video board, LXr Pro8	D5028-63033	
22	Terminator Board (1)	D5028-63009	
23	Dual P6 processor board (incl. heat pipes & chips)	D5028-63008	D5028-69008
24	Fan module, upper	D5028-63018	
25	System board mounted on tray	D5028-63007	D5028-69007
26	Power control board (8051)	D5028-63006	D5028-69006
27	Extender board base - no SCSI connectors	not orderable	
28	SCSI Extender Board Kit	D5028-63005	D5028-69005
29	Fan module, lower	D5028-63019	
30	Memory Board cover Plate	not orderable	
31	4 GB Memory board	D5028-63010	D5028-69010
*	Memory Board Accessory Kit	D5027A	
32	DIMMS (256K)	D5026-63001	D5026-69001
*	SCSI, 6-Pack DAC Accessory Kit	D5972A	
*	Navigator CD-ROM (3)	5064-4606	

*	Rack Installation Kit (4)	D4984A	
*	Rack Mounting Rails	TBD	
*	Power Cord (C20-C19)	8120-6884	
*	Common tray filler panels (3)	5063-8389	

(1) Terminator boards must be installed when there is not a processor board in a processor board slot.

(2) If you need to replace the midplane board, you must replace the entire satellite chassis.

(3), (4) This part number is constantly revised for each new release. When you order using this number you will be sent the current revision of the CD-ROM.

Cables

Cable	Part Number
Assy-Harness, Integrated Peripheral Power	D5028-63025
Assy-Harness, Integrated SCSI Signal	D5028-63026
Assy-Harness, Integrated Floppy Signal	D5028-63011
Assy-Harness, Front Panel Signal	D5028-63012
Assy Cable, Power On	D5028-63013
Kit, AC Harness	D5028-63014
Assy-Harness, DC Distribution	D5028-63020
Assy-Harness, Ribbon, PIC Signal	D5028-63021
Assy-Harness, PIC Power	D5028-63022
Lower Fan Harness	D5028-63031
Upper Fan Harness	D5028-63032
Internal SCSI cable (four 68-pin connectors)	TBD
68-pin to 50 -pin SCSI adapter (for CD-ROM)	5183-2427

Keyboards

Country	Keyboard	Country	Keyboard
US	C1405C #ABA	China	C1405C #ABA
Europe	C1405B #ABA	Arabic/French	C1405B #AB6
Canada/French	C1405B #ABC	Greek	C1405B #AB7
Germany	C1405C #ABD	Turkish	C1405B #AB8
Spain	C1405C #ABE	Portugal	C1405B #AB9
French	C1405C #ABF	Russia	C1405B #ACB
Australia	C1405B #ABA	Denmark	C1405B #ABY
Dutch	C1405B #ABH	Japan	C1405B #ABA
Japan	C3755A #ABJ	Norway	C1405B #ABN
Intercon	C1405B #ABA	Belgium	C1405B #ABW
Spanish	C1405C #ABE	Arabic/English	C1405B #ABV
Taiwan	C1405B #AB0	South Africa	C1405B #ABA
Sw/German	C1405B #ABP	Sweden	C1405B #ABS

Sw/French	C1405B #ABP	Czech	C1405B #AKB
UK	C1405C #ABA	Hungarian	C1405B #AKC
Italy	C1405C #ABZ	Polish	C1405B #AKD
Korea	C1405B #AB1		

System Board

CON5 CON3 CON1
CON6 CON4 CON2 CON0

JP8

JP9
JP10

1 2 3 4 5 6 7 8   A2   A1   B2   B1   **Unused**

Bus 0   **Bus 1**   **CPU Bus A**   **CPU Bus B**   **Port 80 LEDs**

PCI Slots   **P6 Processor Slots**
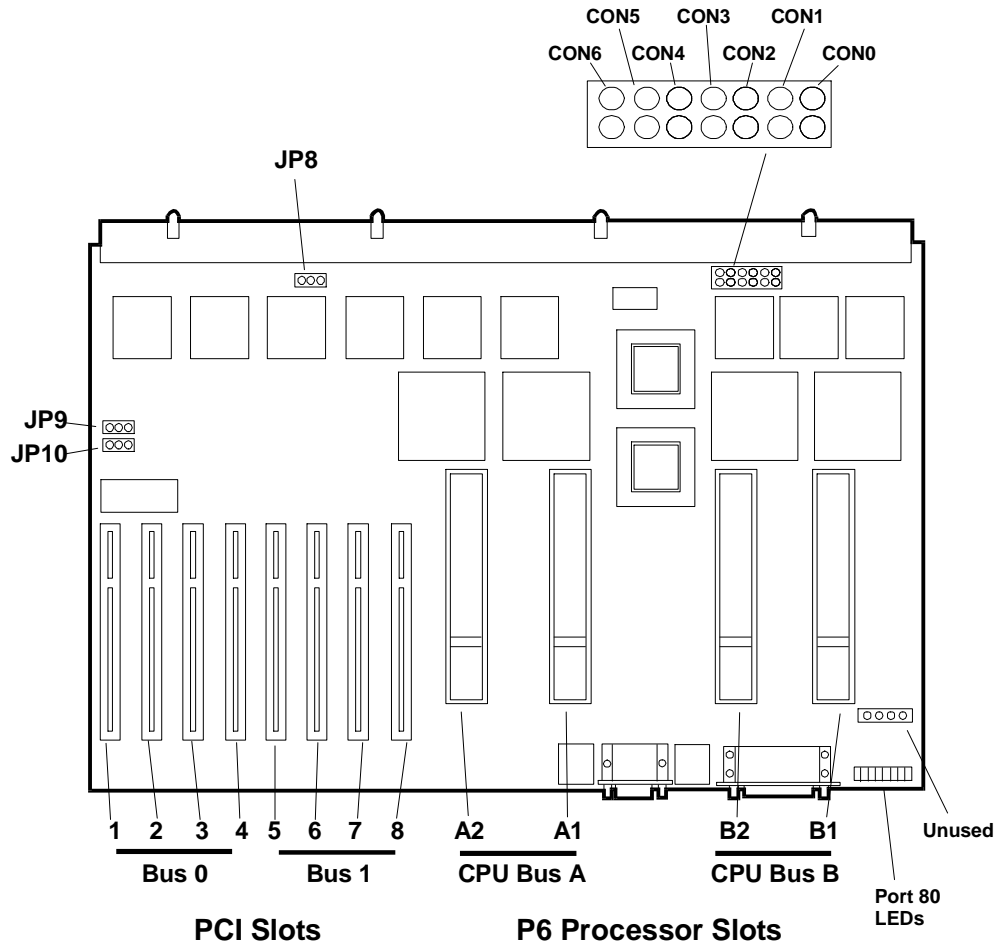
System Switches

CON0
Clear CMOS

Con 0

Clear CMOS Enable

Con 6 5 4 3 2 1 (Reserved)

Con 0

Clear CMOS Protect
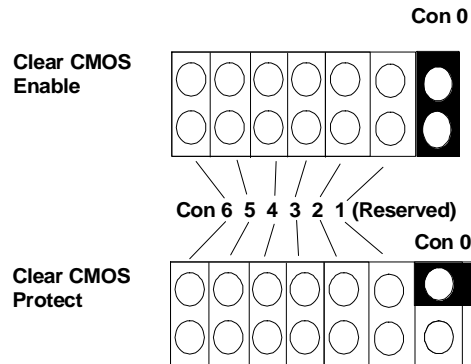
JP 8
Reserved

JP 9
Main BIOS Flashing

Protect   **Enable Flashing**

JP10
Boot Block BIOS Flashing

Enable Flashing   **Protect**

Specifications

NOTE	The HP NetServer LXr Pro8 includes a total of four power supplies. The system requires three functional supplies at all times; individual supplies can be hot-swapped.

Voltage and frequency	200-240 VAC; 47-63Hz.
Maximum continuous power input	1560W
Maximum inrush current	80A for 10 ms
Delayed action circuit breaker recommended	208/240 60hz: NEMA AB1 20A 220/230/240 50hz -- IEC type C (single server per rack) or type D (multiple servers per rack) for 16A circuits.
Power availability	200W continuous to PCI cards and internal drives
System dimensions	17.5 in. high x 19.0 in wide x 32.1 in deep

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	(44.5 cm high x 48.6 cm wide x 81.53 cm deep)
Rack space	10 EIA units
Rack Clearance	46 in. (117 cm) beyond rear of HP rack (door mounted) 30 in. (76 cm) beyond rear of HP rack (no door)
System weight	170 lb. (76 kg)
Maximum heat output	3300 BTU/hour
Operating temperature	41 to 95 degrees F (3 to 35 degrees C)
Operating humidity	20% to 80% RH

Notes

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