



## hp netserver lp 2000r

### technical specifications



updated with latest Pentium III technology

#### industry-leading density, expandability, high availability, and manageability in a 2U server

The HP Netserver LP 2000r, which replaces HP's popular LPr, is a rack-optimized server that provides corporate data centers and space-constrained service providers with significantly more computing power, expandability, and high availability, all in a low-profile 2U form factor.

The LP 2000r is ideal for fast-growing Internet service providers and corporate enterprise customers that must support traffic-intensive Web-hosting, messaging/collaboration, file serving, Internet/intranet, and other server-based computing applications.

- **density**—you will get 50% more computing power per rack than with competitive 3U solutions
- **expandability**—with dual Intel® Pentium® III processors, six internal HDDs, 4GB SDRAM capacity, three open PCI slots (64-bit), and dual integrated NICs, the LP 2000r can support demanding data center applications
- **high availability**—you can count on the LP 2000r to provide “always-on” computing power with hot-swap hard drives and hot-swap redundant power supplies, duplexing backplane and support for Microsoft Cluster Server, HP Netserver AA solutions, and Novell NetWare Cluster Services
- **manageability**—you will have unsurpassed operator control over the LP 2000r through the product's power cycle over LAN feature, HP Integrated Remote Assistant hardware, as well as optional HP Tootools Remote Control Card
- **serviceability and rackability**—the LP 2000r offers you tool-less installation into HP or non-HP racks, as well as a cable management system and tool-less access to all major server components

## features

### performance

<b>processor<sup>1</sup></b>	Up to two Intel Pentium III 1.13GHz, 1.26GHz or 1.4GHz processors with 133MHz front side bus (FSB)
<b>cache</b>	512KB ECC L2 on-die cache per processor
<b>ECC memory</b>	<ul style="list-style-type: none"><li>• 256MB 133MHz ECC SDRAM standard</li><li>• 4GB maximum capacity (4 DIMM slots)</li><li>• Supports 128MB, 256MB, 512MB, and 1GB DIMM</li></ul>
<b>I/O expansion slots</b>	3 full-length 64-bit, 33MHz PCI slots
<b>SCSI controller</b>	Integrated dual-channel Ultra3 SCSI controller with 160MB/sec data transfer rate
<b>mass storage system</b>	8 front-accessible shelves: <ul style="list-style-type: none"><li>• Six open hot-swappable mass storage bays (supporting six low-profile drives in trays common only to LP 2000r and LP 1000r)</li><li>• One 3.5-inch flexible disk drive</li><li>• One CD-ROM drive</li></ul>
<b>maximum internal storage</b>	218GB maximum (using six 36.4GB drives)
<b>video</b>	<ul style="list-style-type: none"><li>• Integrated; supports 1600 x 1200, 256 to 64K colors at 85Hz video</li><li>• 4MB SDRAM standard video memory</li></ul>
<b>CD-ROM drive</b>	48X max-speed IDE CD-ROM drive
<b>flexible disk drive</b>	3.5" 1.44MB flexible disk drive
<b>built-in I/O ports</b>	<ul style="list-style-type: none"><li>• One serial port</li><li>• One server management port (convertible to serial port)</li><li>• One 25-pin parallel port</li><li>• One SCSI port for external connection</li><li>• Two 10/100TX LAN ports</li><li>• Two USB ports</li><li>• Video port—SVGA</li><li>• PS/2 keyboard and mouse ports</li></ul>

<sup>1</sup> see upgrade matrix on pg 7

## features *(continued)*

### availability

<b>hot-swap disk drives</b>	<ul style="list-style-type: none"><li>• Supports 9.1GB, 18.2GB, 36.4GB, and 73GB Ultra3 SCSI disk drives (10,000rpm)</li><li>• Supports 18.2GB Ultra3 SCSI disk drives (15,000rpm)</li></ul>
<b>network interface</b>	<ul style="list-style-type: none"><li>• Dual integrated 10/100TX LAN adapters</li><li>• Supports fault tolerance, load balancing, and Cisco Fast EtherChannel</li></ul>
<b>clustering support</b>	<ul style="list-style-type: none"><li>• Microsoft Cluster Service</li><li>• Novell NetWare Cluster Services</li></ul>
<b>self-restart capability</b>	Automatic Server Restart (ASR) that reboots the server in the event of a NOS hang
<b>self-correcting memory</b>	Manageable error checking and correcting (ECC) system memory and ECC cache memory
<b>testing features</b>	Extensive built-in self-test
<b>hot-swap power supplies</b>	Optional hot-swap redundant power supply with separate power cords for each power supply
<b>disk array controller</b>	Optional HP NetRAID-1M, -2M, and -4M disk array controllers
<b>duplexing support</b>	<ul style="list-style-type: none"><li>• Hot-swap drive cages support duplexing to split the six-drive backplane into two segments that address three drives each</li></ul>

### intelligent management

<b>installation and configuration</b>	<ul style="list-style-type: none"><li>• Easy system setup and configuration with HP Netserver Navigator, which is included with every server<ul style="list-style-type: none"><li>– Automates the Netserver installation and configuration process</li><li>– Provides NOS tuning and system optimization tips</li></ul></li></ul>
<b>management software</b>	<ul style="list-style-type: none"><li>• HP Tootools provides proactive monitoring and alerting plus easy troubleshooting to keep Netserver up and running</li><li>• Instant Tootools for quick reactive troubleshooting of HP Netserver</li><li>• Industry-leading HP OpenView Managex Event Manager for NOS management</li><li>• Easy integration with other leading network and system management products</li></ul>
<b>remote administration</b>	<ul style="list-style-type: none"><li>• HP Integrated Remote Assistant provides emergency remote access over a modem with a single unified event log for faster troubleshooting and can also be accessed over the LAN using Terminal Concentrator</li><li>• Optional HP Tootools Remote Control Card for even more powerful remote management, including remote LAN access, advanced security, online diagnostics, and group actions</li><li>• Built-in remote power cycling over the LAN</li></ul>
<b>diagnostic software</b>	HP Diagtools 2.35
<b>standards supported</b>	<ul style="list-style-type: none"><li>• IPMI v 1.0 for system monitoring</li><li>• SNMP</li><li>• DMI</li></ul>

## features *(continued)*

### rack configuration

- rack-optimized design**
- 2U form factor (3.5-inch height)
  - Rackmount solution incorporates tool-less installation of slides and cable management arm for ease of use and service in HP or most third-party racks (all hardware included)
  - Brackets for mounting in 2-post and 4-post racks with threaded mounting holes
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### flexibility

- supported operating systems**
- Microsoft Windows® 2000, Server and Advanced Server
  - Microsoft Windows NT® 4.0 Enterprise Server Edition
  - Novell NetWare 5.1 and 6.0
  - Linux (Caldera 3.1, Red Hat 7.2 and 8.0, SuSE 7.2, and TurboLinux 6.5)
  - SCO Unixware 7.1.1/OpenServer 5.0.6
  - Citrix Metaframe for Microsoft Windows 2000
  - Citrix Metaframe for Microsoft Windows NT Server 4.0
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### security and safety

- system security**
- Startup password
  - Network server mode
  - Enable or disable serial port, flexible disk drives, and write operations to flexible disk drive, CD-ROM, and hard disk boot
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### service and support

**warranty** 3-year, next business day, onsite limited warranty from HP or authorized resellers (standard business hours) worldwide

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**hp instant support** Fast, Web-based support that automates and speeds resolution of most computing problems. Available at no charge, HP Instant Support is:

- Automated—Web-based problem identification, diagnosis, and resolution
- Personalized—Ability to select your preferred support experience
- Relevant—Seamless transmission of hardware information and case history to HP support specialists at any time
- Reliable—It's there when you need it, 24 hours a day

For more information, visit the HP Instant Support Web site at:  
<http://www.hp.com/go/instant-support>

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## features (continued)

### service and support (continued)

hp supportpack options	product no.
Support can be delivered either by your local service-authorized reseller or by Hewlett-Packard. For more information, visit our Web site at <a href="http://www.hp.com/go/netserver">http://www.hp.com/go/netserver</a>	
5-Year 24x7 6-Hour Onsite Hardware Call-to-Repair	H2824E/VV
5-Year 24x7 4-Hour Onsite Response	H2823E/VV
5-Year 4-Hour Onsite Response (regular business hours) <sup>1</sup>	H2822E/VV
5-Year Next Business Day Onsite Response	H2838E/VV
3-Year 24x7 6-Hour Onsite Hardware Call-to-Repair	H1820A/E/VV
3-Year 24x7 4-Hour Onsite Response	H5514A/E/VV
3-Year 4-Hour Onsite Response (regular business hours) <sup>1</sup>	H5519A/E/VV
HP Netserver Solution Installation and Configuration (L Series)	H5751A
Racking of HP Netserver Solution	H5756A
HP Netserver Cluster Solution Installation/Network Configuration	H5757A
Racking of HP Netserver Cluster Solution	H3368A
HP Personalized System Support for PC Servers:	
Proactive Management, 1 year	H2219AA/E
Standard Recovery, 1 year	H2217AA/E
Standard Recovery Applications Add on, 1 year	H2216AA/E
Proactive support, 1 year	H2218AA/E
HP Critical Systems Support for Windows Servers:	
NT Solution, 1 year	H1931E
Reactive Bundle, 1 year (second server)	H1932E
Priority Recovery NT, 1 year (cluster server)	H1933E
Priority Recovery NT, 1 year	H1934E
Priority Management NT, 1 year	H1941E
Operations Checkup NT, 1 engagement	H1950E
Critical Systems Support NT and SAP R/3	H3035E
Microsoft Cluster Server Migration, 1 cluster	H1945E
Change Management Planning for NT, 1 year	H1943E
Additional Patch Management Reviews	H1944E
Performance Optimization for NT, 1 year	H1946E
Expert Technical Advice for NT, 1 topic	H1947E
Account Support Engineer Services for NT, 1 day	H1948E

<sup>1</sup> Provides HP's best response time service during regular business hours, Monday through Friday, except HP holidays

## features *(continued)*

### service and support *(continued)*

<b>reseller support services</b>	<p>Comprehensive reseller support framework, to ensure successful support of HP Netservers, includes:</p> <ul style="list-style-type: none"><li>• Proactive Notification e-mail service</li><li>• Service and support Web site</li><li>• Server Management and Hardware Troubleshooting courses (STAR)</li><li>• Troubleshooting Toolkit</li><li>• 24 x 7 telephone support for authorized resellers</li><li>• Business Builders Reseller Support</li></ul>
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### regulatory compliance

<b>electromagnetic emissions</b>	<ul style="list-style-type: none"><li>• USA/Canada: FCC CFR 47, Part 15, Subpart B, Class B (Self-Declaration)</li><li>• EU Countries: EN 55022 Class B including EN 61000-3-2 (Harmonic Current Emissions) and EN 61000-3-3 (Voltage Fluctuation and Flicker)</li><li>• Korea: M of C Class A</li><li>• Japan: VCCI Class B</li><li>• Australia/New Zealand: CISPR 22 Class A</li><li>• Taiwan: BSMI CNS 13438 Class A</li></ul>
<b>electromagnetic immunity</b>	<ul style="list-style-type: none"><li>• EU Countries: EN 55024/CISPR 24, including—<ul style="list-style-type: none"><li>– EN/IEC 61000-4-2: Electrostatic Discharge (ESD)</li><li>– EN/IEC 61000-4-3: Radiated Immunity</li><li>– EN/IEC 61000-4-4: Electrical Fast Transient (EFT)</li><li>– EN/IEC 61000-4-5: Surge</li><li>– EN/IEC 61000-4-6: Conducted Immunity</li><li>– EN/IEC 61000-4-8: Power Frequency Magnetic Field Immunity</li><li>– EN/IEC 61000-4-11: Voltage Dips and Interruptions</li></ul></li></ul>
<b>safety</b>	<ul style="list-style-type: none"><li>• EN 60950/IEC 60950 Compliance (International)</li><li>• UL Listed (USA File E139742)</li><li>• Highly Specialized Equipment (Mexico)</li><li>• TÜV Certified (Germany)</li><li>• CE Marking (Europe)</li><li>• CUL Listed (File E139742)</li><li>• Gost Mark (Russia)</li><li>• B-Mark (Poland)</li></ul>
<b>Japan energy saving law</b>	<ul style="list-style-type: none"><li>• Category: J</li><li>• Energy Efficiency Ratio: 0.042</li><li>• Energy Efficiency Ratio is the quotient of consumed power that is measured according to the Energy Saving Law measurement method divided by the capacity specified in the Energy Saving Law.</li></ul>

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## accessories

	product accessory	product no.
<b>memory</b>	• 128MB 133MHz ECC SDRAM DIMM	D8265A
	• 256MB 133MHz ECC SDRAM DIMM	D8266A
	• 512MB 133MHz ECC SDRAM DIMM	D8267A
	• 1GB 133MHz ECC SDRAM DIMM	D8268A
<b>processor upgrades</b>	• Pentium III 1.13GHz, 512KB L2 on-die cache	P4640A
	• Pentium III 1.26GHz, 512KB L2 on-die cache	P4643A

### upgrade matrix

		upgrade path				
		866 MHz	933 MHz	1 GHz	1.13 GHz	1.26 GHz
existing config	866 MHz	yes (dual)	yes	yes	no	no
	933 MHz	-	yes (dual)	yes	no	no
	1 GHz	-	-	yes (dual)	no	no
	1.13 GHz	-	-	-	yes (dual)	yes
	1.26 GHz	-	-	-	-	yes (dual)

<b>internal storage devices</b>	• 9.1GB, low-profile, hot-swap Ultra3 SCSI disk drive (10,000rpm)	P2472A
	• 18.2GB, low-profile, hot-swap Ultra3 SCSI disk drive (10,000rpm)	P2473A
	• 36.4GB, low-profile, hot-swap Ultra3 SCSI disk drive (10,000rpm)	P2474A
	• 18.2GB, low-profile, hot-swap Ultra3 SCSI disk drive (15,000rpm)	P2507A
<b>disk tray</b>	• HP Netserver low-profile hot-swap disk tray	P2452A
<b>hp netRAID controllers and SCSI cables</b>	• HP NetRAID-1M controller (Ultra3 SCSI, 1 channel)	P3410A
	• HP NetRAID-2M controller (Ultra3 SCSI, 2 channels, 64MB cache)	P3411A
	• HP NetRAID-2M controller (Ultra3 SCSI, 2 channels, 128MB cache)	P3475A
	• HP NetRAID-4M controller (Ultra3 SCSI, 4 channels, 64MB cache)	D9161A
	• HP NetRAID-4M controller (Ultra3 SCSI, 4 channels, 128MB cache)	D9351A
	• HP Ultra3 SCSI PCI Controller	P3413A
	• 2.5m SCSI cable to connect from HP NetRAID Family Controller to External Storage <sup>1</sup>	D6020A
<b>network interface card</b>	• HP Netserver 10/100TX PCI LAN adapter	D5013B
	• HP 10/100 IPSec 3DES Security LAN adapter	P3492A
	• HP gigabit ethernet LAN adapter	P3482A
<b>remote management</b>	• HP Integrated Remote Assistant	Included
	• HP Tiptools Remote Control card with battery	P1218A
	• Optional AC adapter for HP Tiptools Remote Control card	D6138A
<b>keyboard and mouse</b>	• Keyboard	D8597A
	• Mouse	C3751B

<sup>1</sup> 2.5m SCSI cable 68-pin male ultra-high-density offset connector to 68-pin male high-density connector.

## accessories (continued)

	product accessory	product no.
<b>external storage solutions</b>	• HP Netserver Rack Storage/12 (Ultra3)	D5989C
	• HP Netserver Rack Storage/12 SCSI Card (Ultra3)	D6025C
	• HP Netserver Rack Storage/12FC	D5991A
	• HP FC Array Disk Array Controller	D5990A
	• HP Netserver Rack Storage/12FC HBA Card (cluster or standalone)	D8602B
	• HP 8-port Fibre Channel Loop Switch	P4459A
	• HP Surestore Disk System DS2100	A5676A
<b>external backup devices<sup>1</sup></b>	• HP Surestore DAT24e 24GB	C1556D
	• HP Surestore DAT40e 40GB	C5687A
	• HP Surestore DLT 40e 40GB	C1579A
	• HP Surestore DLT 80e 70GB	C5726A
	• HP Surestore Ultrium 230 100GB	C7461A
<b>rack-optimized backup devices<sup>1</sup></b>	• HP Surestore H/A Tape Array 5500	C1354A
	• HP Surestore Ultrium 230 Rack Mount	C7402A
	• HP Surestore DAT24k	C6525A
	• HP Surestore DAT40k	C6541A
	• HP Surestore DLT 40k	C6515A
	• HP Surestore DLT 40r hot-swap	C5697A
	• HP Surestore DLT 80k	C6529A
	• HP Surestore DLT 80r hot-swap	C5727A
<b>automated tape backup</b>	• HP Surestore DAT24x6e Ext Autoloader	C1559C
	• HP Surestore DAT40x6e Ext Autoloader	C5717A
	• HP Surestore DLT Autoloader 418 <sup>2</sup>	C6280F
	• HP Surestore DLT Autoloader 818 <sup>2</sup>	C6282RA/NB
	• HP Surestore Autoloader 1/9 LTO Rack <sup>2</sup>	C7748CB/AA
	• HP Surestore Autoloader DLT 1/9 Rack <sup>2</sup>	C7746RA/NB
	• HP Surestore Autoloader DLT1 1/9 Rack <sup>2</sup>	C9251CB
	• HP Surestore DLT Library 2/20, Rack <sup>2</sup>	C7202RA/NB
	• HP Surestore DLT Library 4/40, Rack <sup>2</sup>	C7214RA/NB
	• HP Surestore DLT Library 6/60, Rack <sup>2</sup>	C7230RA/NB
	• HP Surestore Ultrium Library 2/60, Rack <sup>2</sup>	C9540CB/AA
	• HP Surestore Ultrium Library 4/60, Rack <sup>2</sup>	C9544CB/AA
<b>redundant power supplies</b>	HP Netserver Redundant Power Supply	P2498A
<b>hp racks and rack accessories</b>	For a complete list of racks and rack accessories, refer to <a href="http://www.hp.com/racksolutions/menu_products.html">http://www.hp.com/racksolutions/menu_products.html</a>	
<b>2 post slide mount adapter</b>	Accommodates slide rackmount kit in industry-standard 2-post racks	J1480A
<b>rack cable management kit</b>	Kit combines brackets for routing/channeling cables and velcro ties for securing/bundling to facilitate organized cable management in HP and industry-standard third-party racks	J1481A
<b>hp rackmount console switch</b>	Control multiple Netserver with a single monitor, keyboard, and mouse. Choose either:	
	• 4 port console switch	J1473A
	• 8 port console switch	J1474A

<sup>1</sup> hp storage—<http://www.hp.com/storage>

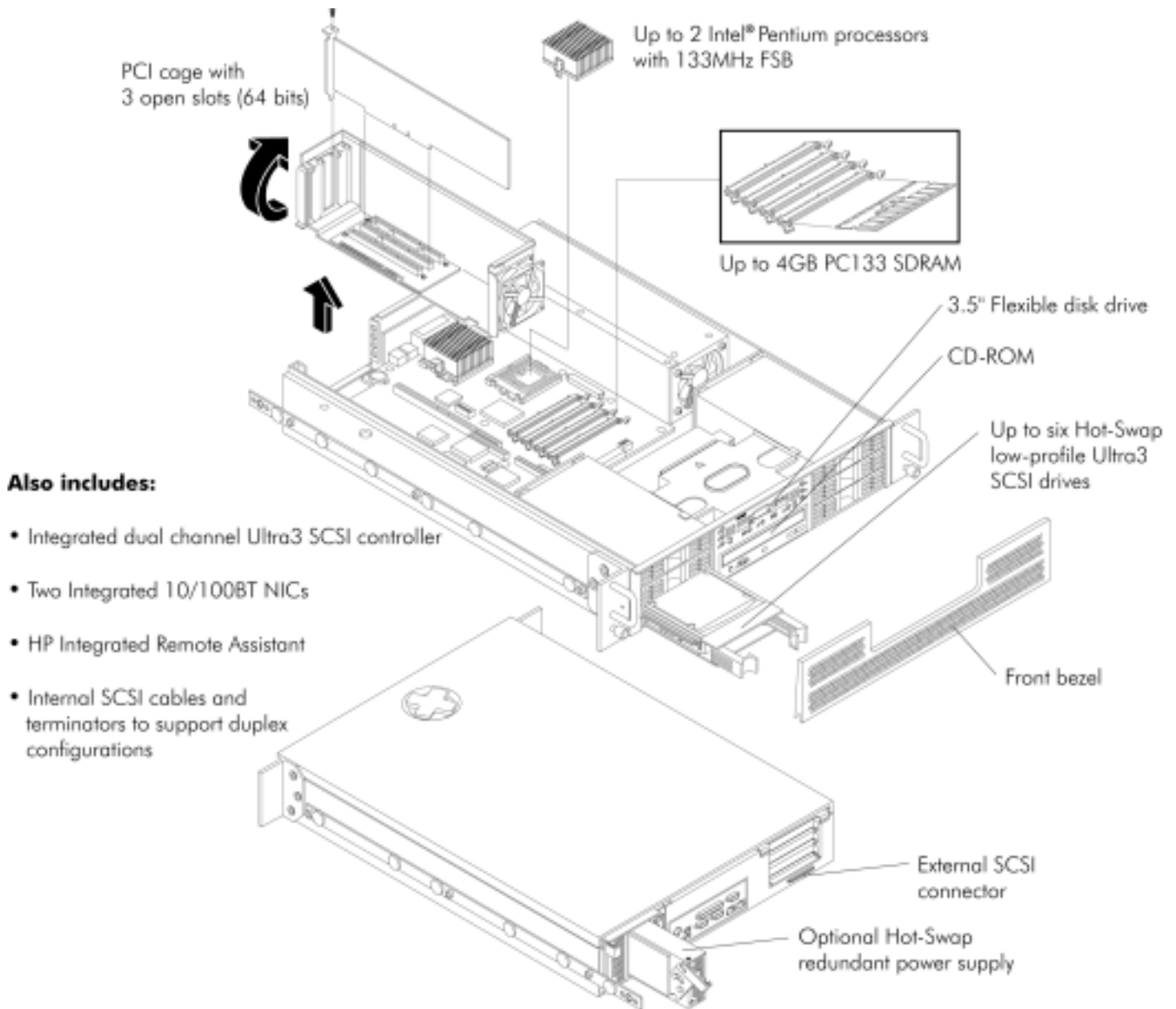
<sup>2</sup> Autoloaders—<http://www.products.storage.hp.com/eprise/main/storage/DisplayPages/automatedbackup.htm>



## accessories *(continued)*

	product accessory	product no.
<b>hp rackmount flat panel monitor/keyboard</b>	<ul style="list-style-type: none"><li>• Space-saving form factor utilizing only 2 EIA units</li><li>• 15" diagonal viewable screen</li><li>• Ergonomically shaped soft comfortable cushions for support of the wrist</li><li>• Cable management arm included</li><li>• Power supply and all necessary cables are included</li></ul>	J1470A
<b>APC uninterrupt power supply (UPS)</b>	<p>(APC) American Power Conversion UPS devices used to protect servers and storage against downtime and data loss due to power anomalies and are fully compatible with the HP environment. Available through Hewlett-Packard. Refer to <a href="http://www.hp.com/racksolutions/p_ups.html">http://www.hp.com/racksolutions/p_ups.html</a></p>	

# hp netserver Ip 2000r



## specifications

<b>operating temperature</b>	41 to 95 degrees F (5 to 35 degrees C) <sup>1</sup>
<b>operating humidity</b>	20% to 80% relative humidity, non-condensing
<b>acoustic emissions</b>	Sound pressure (LpA): < 55 dB(A), bystander position
<b>power supply</b>	<ul style="list-style-type: none"> <li>• 400W maximum continuous required power</li> <li>• Hot-swappable 1+1 redundant power supply option</li> <li>• Two power cords per system, with redundancy option</li> </ul>
<b>power availability</b>	265W continuous required power
<b>power consumption</b>	400W maximum with 110/240V supply
<b>system dimensions</b>	17in W x 24inD x 3.5inH (42.5cm W x 60cm D x 8.75cm H)
<b>system weight</b>	38lb (17kg) fully loaded with 6 HDDs, excluding monitor, keyboard, secondary power supply

## choose your hp netserver lp 2000r

product no.	processor	sdram	<b>all models include:</b> <ul style="list-style-type: none"> <li>• One Intel Pentium III CPU</li> <li>• 256MB SDRAM (on all "A" models)</li> <li>• Integrated dual-channel Ultra3 SCSI controller</li> <li>• Dual integrated 10/100TX LAN adapters</li> <li>• 48X CD-ROM drive</li> <li>• 3.5-inch 1.44MB flexible disk drive</li> <li>• Rack mounting hardware                             <ul style="list-style-type: none"> <li>– Slides</li> <li>– Cable management arm</li> <li>– Brackets for mounting in Telco style (2-post) rack</li> </ul> </li> </ul>
P4636A	1.13GHz	256MB	
P4637AV	1.13GHz		
P4638A	1.26GHz	256MB	
P4639AV	1.26GHz		
P5478A	1.4GHz	256MB	
P5479AV	1.4GHz		

**"AV" models are part of the *HP Select Express* program and do not include memory.**

<sup>1</sup> Subtract 2°F (1°C) from the maximum temperature for each 2000ft (600m) above sea level; subtract 5°F (3°C) from the maximum temperature if unit is installed in non-HP enclosed cabinet.

## support

Support can be delivered by your local reseller or by the Hewlett-Packard Customer Support Organization. Web-based troubleshooting available through HP Instant Support: [www.hp.com/go/instant-support](http://www.hp.com/go/instant-support)

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**Canada:** +1 905 206 4725

**Japan:** +81 3 3331 6111

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**Asia Pacific:** +8522 599 7777

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For more information, contact any of our worldwide sales offices or HP Channel Partners (in the U.S. call 1 800 637 7740).

HP's world-class services and support provide maximum uptime for HP Netervers. Standard warranty includes:

- Next-day onsite service
- Phone support
- Free exchange parts

For a complete list of enhanced Supportpacks, see:

[http://netserver.hp.com/netserver/products/highlights\\_lp2000r.asp](http://netserver.hp.com/netserver/products/highlights_lp2000r.asp)

***HP Select Express program:***

HP Netervers are also available through the *HP Select Express* program, which provides direct, coordinated delivery. This program offers custom integration of HP hardware offered at HP's lowest prices. For more information, visit our Web site at:

<http://netserver.hp.com/netserver/buy/select/sep>

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