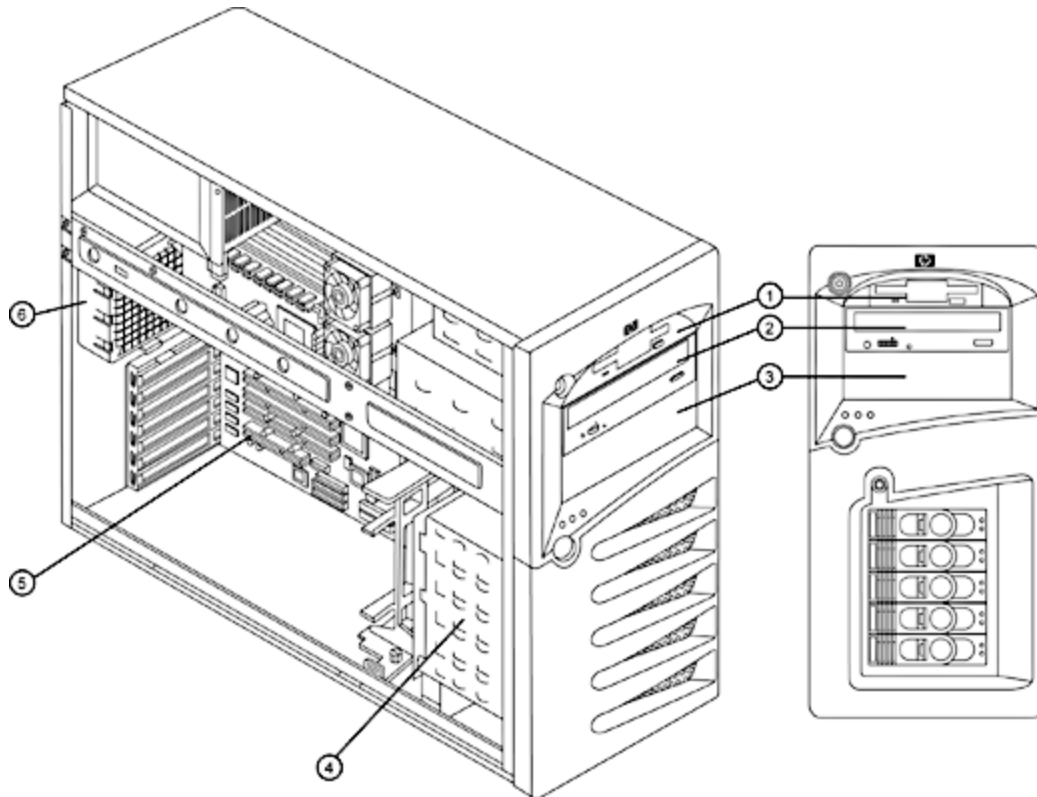


### Overview



1. 1.44 MB Diskette Drive

2. 48x CD-ROM drive

3. Reserved for 5.25" tape drive

4. Five 1" hot plug drive bays or fixed drive bays

5. Two 64-bit PCI-X 100/133 MHz PCI slots, two 64-bit PCI-X 66 MHz PCI slots, and one 32-bit 33 MHz PCI slot

6. System fan

### At A Glance

- Intel® Xeon 2.4GHz, 2.8GHz or 3.06GHz processors with 533MHz system bus
- 512 KB level 2 cache per processor
- Intel E7501 chipset
- 256 MB of PC2100 DDR SDRAM running at 266 MHz with registered and ECC capabilities standard, supports dual channel memory access and expandable to 12 GB
- Intel 82545EM PCI Gigabit NIC (embedded) 10/100/1000 WOL (Wake-on-LAN)
- Integrated Dual Channel Wide Ultra320 SCSI controller
- Integrated Dual Channel Ultra ATA/100 controller
- Support for up to five 1" Ultra320 HP/NHP SCSI hard drives
- Five PCI slots (two 64-bit 133/100 MHz PCI-X slots at 3.3 volt, two 64-bit/66 MHz PCI-X slots at 3.3 volt, and one 32-bit /33 MHz PCI slot at 5 volt)
- Integrated ATI Rage XL with 8 MB SDRAM video
- 450W Power Supply
- Two USB ports
- ROM Base Setup Utility (RBSU) and PXE support
- Protected by HP Services, Warranty: 3 years of parts, Service: 1 year of labour and on-site support (Next Business Day limited in-country on-site service - certain restrictions and exclusions apply).

### Standard Features

<b>Processor</b>	Intel® Xeon processor 2.4 GHz, 2.8 GHz or 3.06GHz 533 MHz Front Side Bus		
<b>Cache Memory</b>	Integrated 512 KB Level 2 cache		
<b>Memory</b>	Standard	256 MB PC2100 DDR SDRAM (ECC registered)	
	Maximum	12 GB (using 2GB DIMMs)/6 slots	
<b>Network Controller</b>	Intel 82545EM PCI Gigabit NIC (embedded) 10/100/1000 WOL (Wake-on-LAN)		
<b>Expansion Slots</b>	I/O (5 Total)		PCI Voltage:
	64-bit /133/100/66 MHz PCI-X	2	3.3 volts
	64-bit 66 MHz PCI-X	2	3.3 volts
	32-bit 33 MHz PCI	1	5 volts
<b>Storage Controller</b>	Integrated Dual Channel Ultra 320 SCSI controller <b>Note:</b> Optional RAID upgrade with zero channel RAID card (using green PCI slot)		
<b>Storage</b>	Diskette Drive	1.44 MB Diskette Drive	
	Optical Drive	48x IDE (ATAPI) CD-ROM Drive	
	Hard Drives	One of the following:	
		<ul style="list-style-type: none"> <li>● 36.4 GB Ultra320 SCSI 10,000 rpm 1" Non hot plug drive</li> <li>● 36.4 GB Ultra320 SCSI 10,000 rpm 1" hot plug drive</li> </ul>	
	Maximum Internal Storage	734 GB Internal drive cage maximum SCSI capacity (5 x 146.8 GB)	
<b>Interfaces</b>	Parallel	1	
	Serial	1	
	Pointing Device (Mouse)	1	
	Video	1	
	Keyboard	1	
	USB	2	
	Network RJ-45 (Ethernet)	1	
<b>Graphics</b>	Integrated ATI RAGE XL video controller with 8MB SDRAM video memory		
<b>Form Factor</b>	Tower (5U)		
<b>Industry Standard Compliance</b>	ACPI V1.0b compliant PCI 2.2 compliant PCI-X 1.0 compliant PXE support WOL support Microsoft® Logo certifications		

### Standard Features

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<b>Manageability</b>	Online ROM flash utility BIOS serial console ML150 System Monitor
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<b>Security</b>	Power-on password Setup password Diskette boot control
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<b>Server Power Cords</b>	One power cord, shipped standard
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<b>Power Supply</b>	450 Watts, PFC (Power Factor Correcting)
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<b>System Fans</b>	System fan, standard CPU heatsink fan, standard
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<b>OS Support</b>	Microsoft Windows 2000 Server Microsoft Small Business Server 2000 Microsoft Windows 2003 Server Microsoft Small Business Server 2003 Red Hat 9.0 Professional SCO OpenServer 5.0.7 SCO Unixware 7.1.3 SCO Open Unix 8 Red Flag Linux Professional server 4.0 Turbo Linux 8.0 United Linux 1.0 (Turbo version) United Linux 1.0 (SuSe version) United Linux 1.0 (SCO version)
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**NOTE:** For an up to date listing of the latest drivers available, please refer to: <http://www.hp.com>

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<b>Service and Support</b>	A full range of HP Care Pack packaged hardware and software services are available.
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- Installation and start up
- Extended coverage hours and enhanced response times
- System management and performance services
- Availability and recovery services

**NOTE:** For more information, customers/resellers can refer to <http://www.hp.com/services/carepack>

For more information on the warranty, please refer to

<http://h18004.www1hp.com/products/servers/platforms/warranty/index.html>

**NOTE:** Certain restrictions and exclusions apply.

### Models

<p><b>ML150 X2.4/533-512 KB, 256 MB, 36 GB, SCSI</b> 340542-xx1 (Hot Plug) 340543-xx1 (Non Hot Plug)</p> <p><i>(NOTE: the above models are not available in EMEA region)</i></p>	<p><b>Processor</b></p> <p><b>Cache Memory</b></p> <p><b>Memory</b></p> <p><b>Network Controller</b></p> <p><b>Storage Controller</b></p> <p><b>Hard Drive</b></p> <p><b>Internal Storage</b></p> <p><b>Optical Drive</b></p> <p><b>Form Factor</b></p>	<p>(1) Intel Xeon 2.4 GHz processor standard (up to 2 supported)</p> <p>Integrated 512 KB Level 2 cache</p> <p>256 MB (Standard) to 12 GB (Maximum) PC2100 DDR SDRAM DIMM</p> <p>Intel 82545EM PCI-X Gigabit NIC (embedded) 10/100/1000 WOL (Wake-on-LAN)</p> <p>Integrated Adaptec 7902W dual channel Ultra320 controller</p> <p>36.4 GB Ultra320 10,000 RPM</p> <p>734 GB maximum (with optional hard drives)</p> <p>48x IDE (ATAPI) CD-ROM drive</p> <p>Tower (5U)</p>
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<p><b>ML150 X2.8/533-512 KB 256 MB, 36 GB, SCSI</b> 340546-xx1 (Hot Plug) 340547-xx1 (Non Hot Plug)</p>	<p><b>Processor</b></p> <p><b>Cache Memory</b></p> <p><b>Memory</b></p> <p><b>Network Controller</b></p> <p><b>Storage Controller</b></p> <p><b>Hard Drive</b></p> <p><b>Internal Storage</b></p> <p><b>Optical Drive</b></p> <p><b>Form Factor</b></p>	<p>(1) Intel Xeon 2.8 GHz processor standard (up to 2 supported)</p> <p>Integrated 512 KB Level 2 cache</p> <p>256 MB (Standard) to 12 GB (Maximum) PC2100 DDR SDRAM DIMM</p> <p>Intel 82545EM PCI-X Gigabit NIC (embedded) 10/100/1000 WOL (Wake-on-LAN)</p> <p>Integrated Adaptec 7902W dual channel Ultra320 controller</p> <p>36.4 GB Ultra320 10,000 RPM</p> <p>734 GB maximum (with optional hard drives)</p> <p>48x IDE (ATAPI) CD-ROM drive</p> <p>Tower (5U)</p>
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<p><b>ML150 X3.06/533-512 KB 256 MB, 36 GB, SCSI</b> 344918-xx1 (Hot Plug) 341227-xx1 (Non Hot Plug)</p> <p><i>(NOTE: the above models are not available in EMEA region)</i></p>	<p><b>Processor</b></p> <p><b>Cache Memory</b></p> <p><b>Memory</b></p> <p><b>Network Controller</b></p> <p><b>Storage Controller</b></p> <p><b>Hard Drive</b></p> <p><b>Internal Storage</b></p> <p><b>Optical Drive</b></p> <p><b>Form Factor</b></p>	<p>(1) Intel Xeon 3.06 GHz processor standard (up to 2 supported)</p> <p>Integrated 512 KB Level 2 cache</p> <p>256 MB (Standard) to 12 GB (Maximum) PC2100 DDR SDRAM DIMM</p> <p>Intel 82545EM PCI-X Gigabit NIC (embedded) 10/100/1000 WOL (Wake-on-LAN)</p> <p>Integrated Adaptec 7902W dual channel Ultra320 controller</p> <p>36.4 GB Ultra320 10,000 RPM</p> <p>734 GB maximum (with optional hard drives)</p> <p>48x IDE (ATAPI) CD-ROM drive</p> <p>Tower (5U)</p>
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<b>Country Code Key</b>	<p>XX=01</p> <p>XX=37</p> <p>XX=42</p> <p>XX=AA</p> <p>XX=AB</p> <p>XX=AD</p>	<p>Australia</p> <p>AP</p> <p>EURO</p> <p>PRC</p> <p>Taiwan</p> <p>Korea</p>
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### Options

<b>Hot Swap Conversion Kit</b>	U320 SCSI backplane with 5 SCA2 connector, 5 HDD carriers, GEM 318 chipset imbedded, Fault LED support	344289-B21		
<b>Rack Mount Kit</b>	Supports HP 10000/9000 series racks and HP Rack System/E-racks	344709-B21		
<b>Processors</b>	Intel Xeon 2.4GHz-512KB Processor Option Kit <b>NOTE:</b> With heatsink, CPU Fan and Retention Module.	347924-B21		
	Intel Xeon 2.8GHz-512KB Processor Option Kit <b>NOTE:</b> With heatsink, CPU Fan and Retention Module.	347926-B21		
	Intel Xeon 3.06GHz-512KB Processor Option Kit <b>NOTE:</b> With heatsink, CPU Fan and Retention Module.	347927-B21		
<b>Memory (DIMMs)</b>	256MB ECC DDR SDRAM ML150 (1X256MB)	355520-B21		
	512MB ECC DDR SDRAM ML150 (1X512MB)	355521-B21		
<b>Hard Drives</b>	36.4-GB 10K rpm U320 SCSI Hot-Plug PL100	355522-B21		
	72.8-GB 10K rpm U320 SCSI Hot-Plug PL100	355523-B21		
	36.4-GB 10K rpm U320 SCSI Non Hot-Plug	271832-B21		
	72.8-GB 10K rpm U320 SCSI Non Hot-Plug	332751-B21		
<b>Tape Drives</b>	HP StorageWorks DAT 40	C5686B		
	HP StorageWorks DAT 72	Q1522A		
	HP StorageWorks Ultrium 215	Q1543A		
<b>Storage Controllers</b>	SCSI RAID 2010S ML150 <b>NOTE:</b> Zero Channel SCSI RAID controller, for installation into PCI slot 2, which has a green coloured connector.	355525-B21		
	HP U320 64bit 1channel SCSI HBA	365289-B21		
<b>Other</b>	Enhanced Keyboard (Carbon)	296435-xxx		
	Enhanced Keyboard (Carbon) <b>Country Key Code</b>			
	<b>Dash #</b>	<b>Description</b>	<b>Dash #</b>	<b>Description</b>
	-005	US	-175	Arabic
	-035	UK	-185	Belgium
	-045	Germany	-215	Hungary
	-055	France	-225	Czech
	-065	Italy	-235	Slovak
	-075	Spain	-245	Polish
	-085	Denmark	-255	Russian
	-085	Norway	-295	Japan
	-105	Sweden/Finland	-335	Dutch
	-125	French Canadian	-355	Finish
	-135	Portugal	-B35	Int'l
	-145	Turkey	-B45	BHCSY
	-155	Greece		

### Tested Product List

**NOTE:** The Tested Product List (TPL) is a list of HP and standard 3rd party devices (hardware or software) that have been tested by either HP or independent test houses for basic compatibility with the ML150. For installation and warranty issues pertaining to non HP products, you will need to obtain support from the 3rd party manufacturer.

HP 3rd party products have been tested only for compatibility with the specified HP server. This level of testing confirms proper device recognition by the HP server and basic compatibility with the identified HP server. HP disclaims all responsibility and liability for the manufacturing, distribution, marketing, licensing, installation, use, performance, maintenance, safety, regulatory certification and support of these 3rd party products.

Storage Controllers - SCSI Drives	<b>NOTE:</b> The following storage controllers are qualified for SCSI drives only. ATA drives are not supported.	
	Adaptec Ultra320 SCSI HBA, ASC29320-R (Single)	1978100
	Adaptec ZCR card, ASR2010S	2004000
	Adaptec Ultra320 SCSI RAID card, ASR 2120S (Single)	1961800
	Adaptec Ultra320 SCSI RAID card, ASR 2200R (Dual)	1961700
	LSI Ultra320 SCSI HBA, LSI20320 (single)	356-0003875G
	LSI Ultra320 SCSI RAID card, LSI MegaRAID 320-1(Single)	5201010264AD
	LSI Ultra320 SCSI RAID card, LSI MegaRAID 320-2 (Dual)	5182010264AA

Communications	Intel Pro/1000 MT Server LAN Card	PWLA8490MT
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Memory	<b>Tested memory modules from 3rd party manufacturers:</b>	
	256 MB of Advanced ECC PC2100 DDR SDRAM DIMM Memory Kit (1 x 256 MB)	Apacer 75.85380.790 Crucial MT9VDDT3272G-265C3 Transcend TS32MDR72V6F5 Nanya NT256D72S89B0GU-75B
	512 MB of Advanced ECC PC2100 DDR SDRAM DIMM Memory Kit (1 x 512 MB)	Apacer 75.95380.780 Crucial MT18VDDT6472G-265C3
	1024 MB of Advanced ECC PC2100 DDR SDRAM DIMM Memory Kit (1 x 1024 MB)	Apacer 75.07280.793 Crucial MT36VDDT12872G-265C2
	256 MB of Advanced ECC PC2700 DDR SDRAM DIMM Memory Kit (1 x 256 MB)	Apacer 75.85395.794*
	512 MB of Advanced ECC PC2700 DDR SDRAM DIMM Memory Kit (1 x 512 MB)	Apacer 75.95395.795*
	1024 MB of Advanced ECC PC2700 DDR SDRAM DIMM Memory Kit (1 x 1024 MB)	Apacer 75.06299.796*
	<b>*NOTE:</b> PC2700 memory is supported but they will be operating at PC2100 speed.	

### Tested Product List

<b>Storage</b>	36 GB 10k rpm Ultra320 80-pin hot plug HDD	Seagate ST336607LC p/n : 9V4006-522 Fujitsu: MAP3367MC p/n : CA06200-B10100DC
	36 GB 10k rpm Ultra320 68-pin non hot plug HDD	Seagate ST336607LW p/n : 9V4005-510 Fujitsu: MAP3367NP p/n : CA06200-B16100DC
	73 GB 10k rpm Ultra320 80-pin hot plug HDD	Seagate ST373307LC p/n : 9V3006-522 Fujitsu: MAP3735MC p/n : CA06200-B20100DC
	73 GB 10k rpm Ultra320 68-pin non hot plug	Seagate ST373307LW p/n : 9V3005-510 Fujitsu: MAP3735NP p/n : CA06200-B26100DC
	146 GB 10k rpm Ultra320 80-pin hot plug HDD	Seagate ST3146807LC p/n : 9V2006-002 Fujitsu: MAP3147MC p/n : CA06200-B40100DC
	146 GB 10k rpm Ultra320 68-pin non hot plug HDD	Seagate ST3146807LW p/n : 9V2005-002 Fujitsu: MAP3147NP p/n : CA06200-B460

### Memory

#### Standard Memory

256 MB of PC2100 ECC DDR SDRAM running at 266 MHz

#### Standard Memory Plus Optional Memory

Up to 12 GB memory is available with the optional installation of PC2100 Registered ECC DDR SDRAM DIMM memory kits. (All 6 slots populated with 2GB memory DIMMs)

#### Standard Memory Replaced with Optional Memory

Up to 12 GB of memory is available with the removal of the standard 256 MB of memory and the optional installation of PC2100 Registered ECC DDR SDRAM DIMM memory kits.

**NOTE:** The following table does not represent all possible memory configurations.

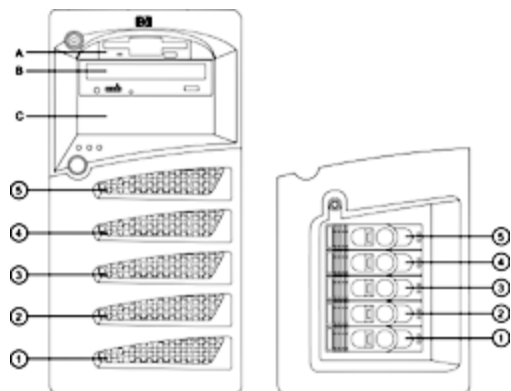
Memory		Slot					
		1	2	3	4	5	6
<b>Standard</b>	256 MB	256 MB	Empty	Empty	Empty	Empty	Empty
	512 MB	256 MB	256 MB	Empty	Empty	Empty	Empty
	1 GB	512 MB	512 MB	Empty	Empty	Empty	Empty
	1.5 GB	256 MB	256 MB	256 MB	256 MB	256 MB	256 MB
	2 GB	512 MB	512 MB	512 MB	512 MB	Empty	Empty
	3 GB	512 MB	512 MB	512 MB	512 MB	512 MB	512 MB
	6 GB	1 GB	1 GB	1 GB	1 GB	1 GB	1 GB
<b>Maximum</b>	12 GB	2 GB	2 GB	2 GB	2 GB	2 GB	2 GB

DIMM sizes may be mixed on the system board and may be loaded in any order (1 through 6). However, HP recommends starting at slot 1 and filling the slots in order with the largest size first: 1, 2, 3, 4, 5 and 6.

Supported DIMM configurations are a single DIMM, one pair (2 DIMMs), two pairs (4 DIMMs), or three pairs (6 DIMMs). Each pair of DIMMs must be the same type and size.



### Storage



- A 1.44MB Diskette Drive
- B 48x IDE (ATAPI) CD-ROM drive
- C Reserved for 5.25" tape drive
- 1, 2, 3, 4, 5 Five non Hot Plug/Hot Plug drive bays

### Drive Support

	Quantity Supported	Position Supported	Controller
<b>Removable Media</b>			
1.44-MB Diskette Drive	Up to 1	A	Integrated
IDE (ATAPI) CD-ROM Drive	Up to 2	B	Integrated IDE (ATAPI)
Drive Option Kit	Up to 2	C	Integrated IDE (ATAPI)

### Hard Drives

#### HP Ultra320 SCSI - Non Hot Plug/ Hot Plug

	Quantity Supported	Position Supported	Controller
<b>1-inch</b> 36.4-GB 10,000 rpm	Up to 5	1, 2, 3, 4, 5	Integrated Adaptec 7902W dual channel Ultra320 controller

#### Maximum Storage Capacity -

Internal	734 GB (5 x 146.8 GB non hot plug or hot plug hard drives (using optional 3rd party qualified drives))
External	734 GB

### Power Specifications

<b>Part Number</b>	339874-001
<b>Spare Kit</b>	344674-003
<b>Operational Input Voltage Range (V rms)</b>	100 to 127 or 200 to 240 Universal. Full Range
<b>Frequency Range (Nominal) (Hz)</b>	47 to 63 (50/60)

Nominal Input Voltage (Vrms)	100	115	208	220	230	240
Max Rated Output Wattage Rating	N/A	450	N/A	N/A	450	N/A
Nominal Input Current (A rms)	N/A	9.0	N/A	N/A	4.5	N/A
Max Rated Input Wattage Rating (Watts)	N/A	700 (460/0.65)	N/A	N/A	700 (460/0.65)	N/A
Max. Rated VA (Volt-Amp)	N/A	555	N/A	N/A	550	N/A
Efficiency (%)	N/A	>65%	N/A	N/A	>65%	N/A
Power Factor	Harmonic Reduction (PFC) > 0.95, IEC 61000					
Leakage Current (mA)	N/A	5mA	N/A	N/A	5mA	N/A
Maximum Inrush Current (A peak)	N/A	120	130	N/A	120	N/A
Maximum Inrush Current duration (mS)	N/A					

### System Specifications

	Power**
<b>Fully Configured</b>	(see**)
<b>Fully Loaded System Input Wattage (W)</b>	460W Max.
<b>Fully Loaded System Input Current (A rms)</b>	6.0A @ 115V, 3.0A @ 230V
<b>Fully Loaded System Thermal (BTU- Hr)</b>	N/A
<b>Fully Loaded System VA (Volt-Amp)</b>	N/A
<b>System Leakage with all power supplies loaded (mA)</b>	10mA
<b>System Inrush Current with all power supplies loaded (A)</b>	120
<b>Power cord requirements</b>	Nema 5-15P to IEC320-C13 IEC320-C13 to IEC320-C14
<b>**NOTE:</b> The power shown is for a fully configured system consisting of (1) CPU, (4) double-sided DIMMs, (3) HDDs, (1) CD-ROM, (1) DVD-ROM, (4) PCI cards, and (1) power supply.	
<b>Power Cords (13 Cord Sets)</b>	
<b>Country</b>	<b>Power Cord Part Number</b>
Australia	100661-007
Euro	100614-003
Japan	139867-006
PRC	346001-AA1
UK	100613-003

### Technical Specifications

<b>System Unit</b>	<b>Dimensions</b> (H x W x D)	44.5 x 21.5 x 62.2 cm		
	<b>Weight</b> (approximate)	23 kg		
	<b>Input Requirements</b> (per power supply)	Range Input Voltage	90 to 140 VAC/180 to 264 VAC	
		Normal Line Voltage	115 or 230 VAC	
	<b>Line Frequency</b>	50 to 60 Hz		
	<b>Rated Input Current</b>	load 4A at 115VAC, 2A at 230VAC		
	<b>BTU Rating</b>	1,108 BTU		
	<b>SCSI Connectors</b>	Two internal LVD/SE connectors for U320 devices		
	<b>Power Supply Output Power</b> (per power supply)	Rated Steady-State Power	450W	
		Maximum Peak Power	450W	
	<b>Temperature Range</b>	Operating	50° to 93° F (10° to 35° C)	
		Shipping	-40° to 150° F (-40° to 66° C)	
	<b>Relative Humidity</b> (non-condensing)	Operating	20% to 80%	
		Non-operating	5% to 90%	
	<b>Acoustic Noise</b>	Idle (Fixed Disk Drives Spinning)		
		L WAd (BELS)	5.5	
		Operating (Random Seeks to Fixed Disks)		
L WAd (BELS)		6.0		
	L pAm (dBA)	40		

<b>1.44-MB Diskette Drive</b>	<b>Diskette Size</b>	3.5 in (8.89 cm)		
	<b>LED Indicators</b> (front panel)	Green		
	<b>Read/Write Capacity per Diskette</b> (high/low density)	1.44 MB (720 KB)		
	<b>Drive Supported</b>	One		
	<b>Drive Height</b>	One-third		
	<b>Drive Rotation</b>	300 rpm		
	<b>Transfer Rate</b> (high/low)	500 K/250 K bits/s		
	<b>Bytes/Sector</b>	512		
	<b>Sectors/Track</b> (high/low)	18/9		
	<b>Tracks/Side</b> (high/low)	80/80		
	<b>Access Times</b>	Track-to-Track (high/low)	3/6 ms	
		Average (high/low)	169/94 ms	
		Settling Time	15 ms	
		Latency Average	100 ms	
	<b>Cylinders</b> (high/low)	80/80		
<b>Read/Write Heads</b>	Two			

### Technical Specifications

<b>Non Hot plug/ Hot plug Ultra320 SCSI Hard Drives</b>	<b>36.4 GB 10K</b>	<b>Capacity</b> <b>Height</b> <b>Width</b> <b>Interface</b> <b>Transfer Rate</b> <b>Synchronous</b> (Maximum) <b>Seek Time</b> (typical reads, including settling)	36,419.2 MB 1 in (2.54 cm) 4 in (10.16 cm) Wide Ultra320 SCSI 320 MB/s Single Track 0.7 ms Average 5.4 ms Full-Stroke 11 ms Rotational Speed 10,000 rpm
		<b>Physical Configuration</b>	Bytes/Sector 512 Logical Blocks 71,132,000
		<b>Operating Temperature</b>	50° to 95° F (10° to 35° C)

<b>48X Max IDE (ATAPI) CD-ROM Drive</b>	<b>Disk</b>	Applicable Disk	CD-ROM, CD-XA, CD-DA (Mode 1, Mode 2, Form 1 and 2) Photo CD (Single and Multi-session) Mixed Mode (Audio and Data combined) CD-R
	<b>Block Size</b>	Capacity Mode 1 Mode 2 CD-DA CD-XA	540 MB (Mode 1, 12 cm) 650 MB (Mode 2, 12 cm) 2,048 bytes 2,340 bytes, 2,336 bytes 2,352 bytes 2,328 bytes
	<b>Interface</b>	IDE (ATAPI)	
	<b>Access Times</b> (typical)	Random Full-Stroke	<100 ms <150 ms
	<b>Data Transfer Rate</b>	Sustained Burst Bus Rate	3000 to 7200 KB/s (20X to 48X) 150 KBps to 7,200 KBps 16.7 MBp
	<b>Cache Buffer</b>	128 KB	
	<b>Start-up Time</b> (typical)	< 7 seconds	
	<b>Stop Time</b>	< 4 seconds	
	<b>Laser Parameters</b>	Type Wave Length	Semiconductor Laser GaAlAs 780 ± 25 nm
	<b>Operating Conditions</b>	Temperature Humidity	41° to 113° F (5° to 45° C) 10% to 80%
	<b>Dimensions</b> (H x W x D, maximum)	1.7 x 5.85 x 8.11 in (42.9 x 150 x 208 cm)	
	<b>Weight</b>	2.09 lb (0.95 kg)	

### Technical Specifications

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<b>Dual Channel Ultra320 SCSI Drives Supported</b>	Up to 16 SCSI devices Wide
<b>Data Transfer Method</b>	64-bit 66-MHz PCI-X bus-master
<b>SCSI Channel Transfer Rate</b>	320 MB/s per channel
<b>Maximum Transfer Rate per PCI Bus (peak)</b>	267 MB/s per channel
<b>SCSI Protocols</b>	Wide Ultra3 SCSI, Wide Ultra2 SCSI, Wide Ultra SCSI-3, Fast-Wide SCSI-2, and Fast SCSI-2
<b>Electrical Protocol</b>	Low Voltage Differential (LVD)
<b>SCSI Termination</b>	Active Termination
<b>External SCSI Connectors</b>	None

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### Technical Specifications

<b>Giga Bit NIC Intel 82545 EM</b>	<b>PCI interface</b>	PCI-X 66 MHz
	<b>MAC Specific Features</b>	65 KB configurable RX and TX packet FIFO Low-latency transmit and receive queues IEEE 802.3x compliant flow control support with software controllable pause times and threshold values Caches up to 64 packet descriptors in a single burst Programmable host memory receive buffers (256 B to 16 KB) Programmable cache line size from 16 B to 256 B 128-bit internal data path architecture Ring descriptor buffer structure with cache that promotes long PCI bursts to fetch descriptors Internal Serializer-Deserializer (SERDES)
	<b>Gigabit PHY Specific Features</b>	Integrated PHY for 10/100/1000 Mb/s full and half duplex operation IEEE 802.3ab Auto-Negotiation Proven PHY technology compatible with IEEE 802.3ab State-of-the-art DSP architecture implements digital adaptive equalization, echo cancellation and cross talk cancellation baseline wander cancellation PHY detects polarity, MDI-X, 2 pair vs 4 pair cables, and cable length GMII and Ten Bit Interfact (TBI)
	<b>Host-Offloading Features</b>	Transmit TCP segmentation IP, TCP, and UDP checksum off-loading capabilities on RX and TX Advanced packet filtering IEE 802. 1Q VLAN support with VLAN tag insertion and stripping and packet filtering for up to 4096 VLAN tags Descriptor ring management hardware for TX and RX Jumbo frame support up to 16 KB
	<b>Interrupt Management Features</b>	Interrupt moderation controls - bring Intel's experience in Fast Ethernet adaptive technology to Gigabit Ethernet performance levels Small Packet Interrupt
	<b>Manageability Features</b>	On-chip SMBUS 2.0 port ASF 1.0 alerting Pre-boot eXecution Environment (PXE) 2.1 flash interface support (32-bit and 64-bit) Compliance with PCI Power Management v1.1/ACPI v2.0 SNMP and RMON statistic counters SDG3.0, WfM 2.0, PC2001 Compliance Wake-on-LAN (WOL) support Automatic link speed switching from 1000 Mb/s down to 10 or 100 Mb/s in standby Diagnostic capabilities including loop back, reporting cable length, cable polarity, number of symbol errors, and incorrectly punched down cable
	<b>Additional Device Features</b>	Four programmable LED outputs Four software definable pins Internal PLL for clock generation can use a 25 MHz crystal or 25 MHz oscillator JTAG (IEEE 1149.1) Test Access Port built in On-chip power regulator control circuitry

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