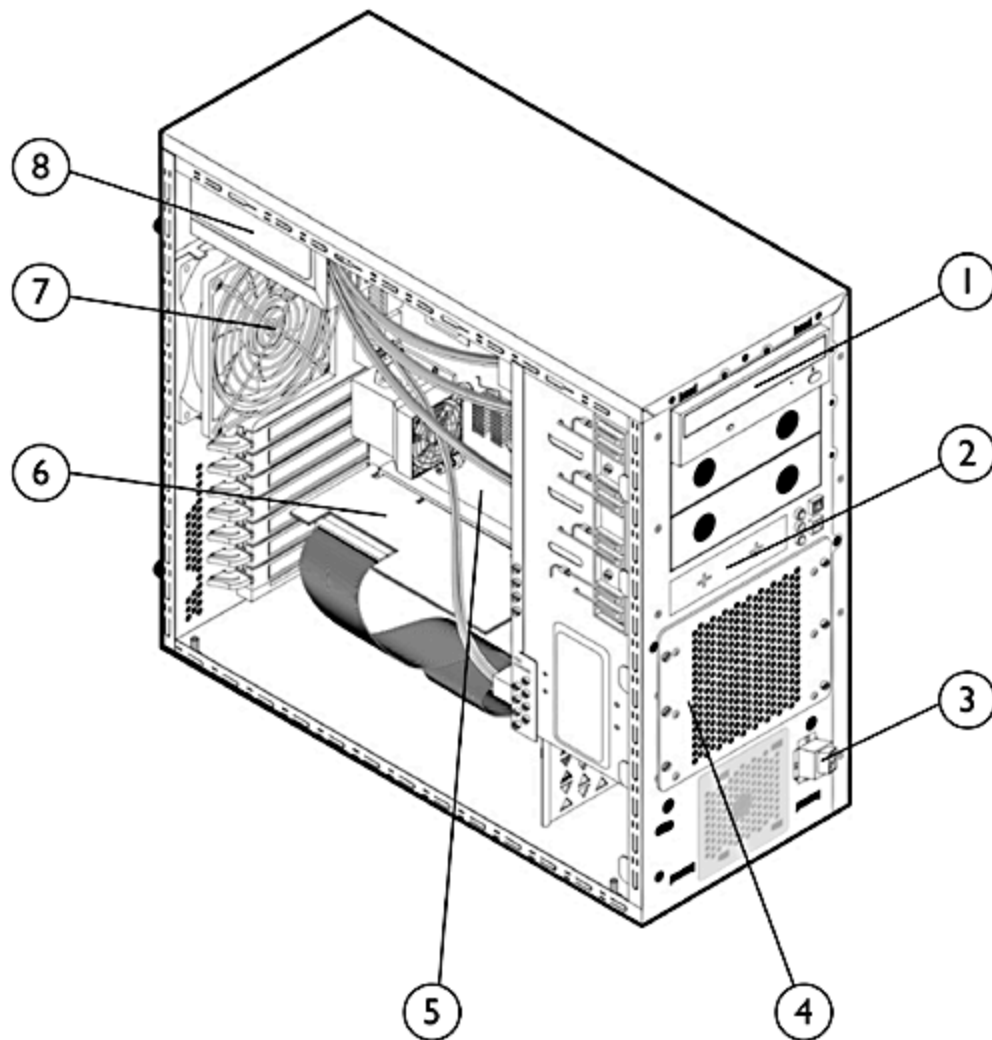


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Overview

HP ProLiant ML110 G2



1. 48x CD-ROM & Two Removable Media Bays
2. 1.44MB Diskette Drive (Optional)
3. Two Front USB Ports
4. Four 1" Non-Hot Plug Drive Bays

5. Main System Board
6. Optional SCSI Controller
7. System Fan
8. Power Supply

What's New

- Supports Intel Pentium 4 Processor. 3.20 GHz supporting HyperThreading technology with un-buffered ECC memory and 800MHz front-side-bus.
- Supports Intel Pentium 4 Processor. 3.40 GHz supporting HyperThreading technology with un-buffered ECC memory and 800MHz front-side-bus.
- Supports Intel Celeron Processor. 2.80 GHz supporting HyperThreading technology with un-buffered ECC memory and 533MHz front-side-bus.
- Supports Intel Pentium 4 Processor. 3.0 GHz supporting HyperThreading technology with un-buffered ECC memory and 800MHz front-side-bus.
- Front side USB port for easy access of storage options via USB.
- Lights-Out Management card for ease of remote management.

At A Glance

- Intel E7221 Chipset with 533MHz FSB (Celeron Models) and 800MHz FSB (Pentium 4)
- Memory: Supports 256 MB, 512 MB or 1 GB (Pentium 4 models) of PC3200 DDR SDRAM running at 400 MHz, with un-buffered standard ECC capabilities, expandable to 4 GB, optional interleaving.
- Intel 82541PI PCI Gigabit NIC (embedded) 10/100/1000 WOL (Wake on LAN)
- Integrated one Channel Ultra ATA for optical drive and 4 port Serial ATA (SATA) Host Controller or a Single Channel Ultra320 SCSI Adapter (SCSI Models)

- Support for up to four 1" Ultra320 non-hot plug SCSI hard drives or four 1" SATA NHP Drives or four 1" hot plug SATA HDD, (depending on Model & Accessories)
- Five total PCI slots (5 available on non-hot plug SATA models, 4 available on SCSI models, 4 available on hot plug SATA model): three 64-bit/100MHz PCI-X at 3.3 Volt and one 32-bit/33MHz PCI at 5 Volt and one x4 PCI-Express slot.
- Internal storage capacity of up to 584-GB (4 x 146-GB non-hot plug 1" SCSI HDD) (SCSI Models)
- Internal storage capacity of up to 1-TB (4 x 250-GB hot plug) and 320-GB (4 x 80-GB non-hot plug) 1" SATA HDD (SATA Model)
- Integrated ATI Rage XL with 8MB SDRAM video
- 350W Power Supply
- Five USB 2.0 ports (2 rear, 2 front, 1 internal for memory stick)
- ROM Based Setup Utility (RBSU) and PXE support
- Protected by HP Services and a worldwide network of resellers and service providers. One-year Next Business Day, on-site limited global warranty. Certain restrictions and exclusions apply. Pre-Failure Notification on processors, memory, and SCSI hard drives.

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Standard Features

Processor One of the following depending on Model	Intel Celeron processor 2.80 GHz, 533 MHz Front Side Bus Intel Pentium-4 processor 3.20 GHz supporting HyperThreading technology, 800MHz Front Side Bus Intel Pentium-4 processor 3.40 GHz supporting HyperThreading technology, 800MHz Front Side Bus
Cache Memory One of the following depending on Model	Integrated 256KB Level 2 ECC cache (Celeron models only) Integrated 1024KB Level 2 ECC cache (Pentium 4 models only)

Memory Protection	Un-buffered standard ECC capabilities					
Memory One of the following depending on Model	Type	PC3200 DDR SDRAM running at 400MHz				
	Standard	256 MB (on Pentium-4 or Celeron models)				
	Maximum	4 GB				
Network Controller	Intel 82541PI PCI Gigabit NIC (embedded) 10/100/1000 WOL (Wake on LAN)					
Expansion Slots	Slot#	Bus Speed	Hot Plug Y/N	Voltage Connector	Notes	
	3	64bit/100MHz PCI-X	No	3.3V	Full Length / Full Height	
	1	x4 PCI Express	No	3.3V	Full Length / Full Height	
	1	32bit/33MHz PCI	No	5V	Full Length / Full Height	
Storage Controller One of the following depending on Model	HP Single Channel Ultra320 SCSI Adapter (SCSI Models) Integrated 4 ports Serial ATA 6 port SATA RAID controller (hot plug SATA Model)					
Storage	CD-ROM Hard Drives	48x IDE (ATAPI) CD-ROM Drive One of the following: 36.4-GB Ultra320 SCSI 15,000 rpm 1" Drive (SCSI models) 80-GB SATA 7200 rpm 1" Drive (Hot Plug and Non-Hot plug SATA Models)				
Maximum Internal Storage	Type					
	SCSI	584-GB	(4 x 146-GB)			
	SATA (Hot plug)	1-TB	(4 x 250-GB - internal drive bays and removable media bays)			
	SATA (Non-hot plug)	320-GB	(4 x 80-GB)			
NOTE: For larger internal storage requirements, please contact your local HP representative call 1-800-888-9909.						
Interfaces	Parallel	1				
	Serial	1				
	Pointing Device (Mouse, PS2)	1				
	Graphics	1				
	Keyboard (PS2)	1				
	USB	5 (2 rear, 2 front panel, 1 internal for memory stick) NOTE: Please see the following URL for additional information regarding USB support: http://h18004.www1.hp.com/products/servers/platforms/usb-support.html				
	Network RJ-45 (Ethernet)	1				
Graphics	Integrated ATI RAGE XL Video Controller with 8MB SDRAM Video Memory					

Form Factor	Tower (5U)
Industry Standard Compliance	ACPI V2.0 Compliant PCI 2.3 Compliant
Manageability	Lights-Out 100 Remote Management Option; For details on the HP Lights-Out 100 Remote Management option see Lights-Out 100 Remote Management Card Offline Version - "floppy-based" method to flash the rom
Security	Power-on password Setup password Diskette boot control
Server Power Cords	One Lowline NEMA power cord and one Highline IEC Power cord ships standard
Power Supply	350 Watts
System Fans	1 - non-redundant system fan shipped standard 1 - non-redundant CPU heatsink fan shipped standard
OS Support	Microsoft Windows Server 2003: Standard and Web Editions Microsoft Windows Small Business Server 2003 : Standard & Premium Edition Novell NetWare 6.5 Novell SBS 6.5 SUSE Linux Enterprise Server 9 Red Hat Enterprise Linux 3 SCO Open Server 5.0.7 (SCSI models only) Tested but not certified nor supported by HP: Windows 2000 Server - Standard Edition Windows XP Professional Red Hat Linux Advanced Server 4.0 NOTE: For an up-to-date listing of the latest ML110 G2 OS support matrix, please see: http://www.hp.com/go/supportos NOTE: For an up-to-date listing of the latest drivers available for the HP server ML110 G2, please see: http://h18023.www1.hp.com/support/files/server/us/family/model/5769.html?lang=en&cc=us
Factory Express Portfolio for Servers and Storage	HP Factory Express offers configuration, customization, integration and deployment services for HP servers and/or storage products. Customers can choose how their factory solutions are built, tested, integrated, shipped and deployed. Factory Express offers service packages for simple configuration, racking, installation, complex configuration and design services as well as individual factory services, such as image loading, asset tagging and custom packaging HP products supported through Factory Express include a wide array of servers and storage: HP Integrity, HP ProLiant, HP ProLiant Server Blades, HP BladeSystem, HP 9000 servers, as well as, the MSA1000, VA7xxx, EVA, XP, rackable tape libraries and configurable network switches. For more information on Factory Express services for your specific server model please contact your sales representative or go to http://www.hp.com/go/factory-express.
Service and Support	This product is covered by a global limited warranty and supported by HP Services and a worldwide network of resellers and service providers. Hardware diagnostic support and repair is available for three years from date of purchase. Support for software and initial setup is available for 90 days from date of purchase. Additional support may be covered under the warranty or available for an additional fee. Enhancements to warranty services are available through HP Care Pack services or customized service agreements.

NOTE: Limited warranty includes 1 year parts, 1 year labor, 1-year on-site support

Care Pack services provide a range of life cycle support options that let you choose the service levels that meet your business requirements, from basic to mission-critical.

A full range of HP Care Pack hardware and software services are available including:

- Installation and start up
- Education courses
- Extended onsite hardware coverage hours from same business day 13 hours, 5 day to 24 hours, 7 days call window with options including 4-hour response or 6-hour Call To Repair
- Comprehensive range of software technical support for Microsoft, Linux, ProLiant Essentials and VMware-based IT solutions helping to deliver high level of application availability. Response times range from 30 mins for critical problems to 2 hours.
- System Management, Performance Services and Mission Critical Support Solution

HP Care Pack services include coverage for the HP branded hardware options qualified for the server, purchased at the same time or afterward, internal to the enclosure, as well as 22" and smaller external monitors and tower UPS options up to 3kVA; these items will be covered at the same service level and for the same coverage period as the server. Coverage of UPS Battery is not included, standard warranty terms & conditions apply. For servers or storage systems installed within a rack, service also covers all HP qualified rack options installed within the same rack.

NOTE: For more information on HP Care Pack services, contact any of our worldwide sales offices or resellers or visit our worldwide Web site on the internet at:

<http://www.hp.com/hps/carepack>

NOTE: For more complete information on HP Services offerings, customers and resellers, please visit us at: <http://www.hp.com/hps>

NOTE: Additional information regarding worldwide limited warranty and technical support is available at: <http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html>

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Models

ML110 G2 C2.8/533 256MB, 80GB, Non-Hot Plug SATA 366084-001	Processor	(1) Intel Celeron 2.8 GHz (standard)
	Cache Memory	Integrated 533KB Level 2 cache
	Memory	256 MB (Standard) to 4 GB (Maximum) PC3200 DDR SDRAM DIMM Memory running at 200MHz, with Standard ECC capabilities
	Network Controller	Intel 82541PI PCI Gigabit NIC (embedded) 10/100/1000 WOL (Wake on LAN)
	Storage Controller	4 ports SATA Controller
	Hard Drive	(1) 80-GB SATA up to 320-GB
	Optical Drive	48x IDE (ATAPI) CD-ROM Drive
	Form Factor	Tower (5U)

ML110 G2 P3.2/800, 1MB, 36GB, Non-Hot Plug SCSI 366087-001	Processor	(1) Intel Pentium 4 3.20 GHz supporting HyperThreading technology (standard)
	Cache Memory	Integrated 1024KB Level 2 cache
	Memory	256 MB (Standard) to 4 GB (Maximum) PC3200 DDR SDRAM DIMM Memory running at 400MHz, with Standard ECC capabilities
	Network Controller	Intel 82541PI PCI Gigabit NIC (embedded) 10/100/1000 WOL (Wake on LAN)
	Storage Controller	HP Single Channel Ultra320 SCSI Adapter
	Hard Drive	(1) 36-GB Ultra320 SCSI, 15,000 rpm, 1" Drive
	SCSI Cable	2 drop internal SCSI cable
	Internal Storage	584-GB maximum
ML110 G2 P3.4/800 1MB, 36GB Non-Hot Plug SCSI 366088-001	Optical Drive	48x IDE (ATAPI) CD-ROM Drive
	Form Factor	Tower (5U)
	Processor	(1) Intel Pentium 4 3.40 GHz supporting HyperThreading Technology
	Cache Memory	Integrated 1024KB Level 2 cache
	Memory	256 MB (Standard) to 4 GB (Maximum) PC3200 DDR SDRAM DIMM Memory running at 400MHz, with Advanced ECC Capabilities
	Network Controller	Intel 82541PI PCI Gigabit NIC (embedded) 10/100/1000 WOL (Wake on LAN)
	Storage Controller	HP Single Channel Ultra320 SCSI Adapter
	Hard Drive	(1) 36.4-GB Ultra320 SCSI 15,000 rpm, 1" Drive
ML110 G2 P3.2/800 1MB, Hot Plug SATA 366089-001	SCSI Cable	2 drop internal SCSI cable
	Internal Storage	584-GB Maximum (with optional drives)
	Optical Drive	48x IDE (ATAPI) CD-ROM Drive
	Form Factor	Tower (5U)
	Processor	(1) Intel Pentium 4 3.20 GHz supporting HyperThreading technology (standard)
	Cache Memory	Integrated 1024KB Level 2 cache
	Memory	256 MB (Standard) to 4 GB (Maximum) PC3200 DDR SDRAM DIMM Memory running at 400MHz, with Standard ECC capabilities
	Network Controller	Intel 82541PI PCI Gigabit NIC (embedded) 10/100/1000 WOL (Wake on LAN)
ML110 G2 P3.4/800 1MB Hot Plug SATA 366090-001	Storage Controller	HP 6-Port SATA RAID Controller (RAID levels 0, 1, 10, 5)
	Hard Drive	None ship standard
	SATA Cable	(1) 4 in 1" SATA cable
	Internal Storage	1-TB Maximum
	Optical Drive	48x IDE (ATAPI) CD-ROM Drive
	Form Factor	Tower (5U)
	Processor	(1) Intel Pentium 4 3.40 GHz supporting HyperThreading technology (standard)
	Cache Memory	Integrated 1024KB Level 2 cache
ML110 G2 P3.4/800 1MB Hot Plug SATA 366090-001	Memory	256 MB (Standard) to 4 GB (Maximum) PC3200 DDR SDRAM DIMM Memory running at 400MHz, with Standard ECC capabilities
	Network Controller	Intel 82541PI PCI Gigabit NIC (embedded) 10/100/1000 WOL (Wake on LAN)
	Storage Controller	HP 6-port SATA RAID Controller (RAID levels 0, 1, 10, 5)
	Hard Drive	None ship standard
	Internal Storage	1-TB maximum
	Optical Drive	48x IDE (ATAPI) CD-ROM Drive
	Processor	(1) Intel Pentium 4 3.40 GHz supporting HyperThreading technology (standard)
	Cache Memory	Integrated 1024KB Level 2 cache

	Form Factor	Tower (5U)
ML110 G2 P3.2/800 1MB, 80GB, Non-Hot Plug SATA 382050-001	Processor	(1) Intel Pentium 4 3.20 GHz supporting HyperThreading technology (standard)
	Cache Memory	Integrated 1024KB Level 2 cache
	Memory	256 MB (Standard) to 4 GB (Maximum) PC3200 DDR SDRAM DIMM Memory running at 400MHz, with Advanced ECC capabilities
	Network Controller	Intel 82541PI PCI Gigabit NIC (Embedded) 10/100/1000 WOL (Wake on LAN)
	Storage Controller	4 ports SATA Controller (embedded)
	Hard Drive	(1) 80-GB Serial ATA
	Internal Storage	320-GB maximum
ML110 G2 P3.4/800 1MB, 80GB, Non-Hot Plug SATA 382051-001	Optical Drive	48x IDE (ATAPI) CD-ROM Drive
	Form Factor	Tower (5U)
	Processor	(1) Intel Pentium 4 3.40 GHz supporting HyperThreading technology (standard)
	Cache Memory	Integrated 1024KB Level 2 cache
	Memory	256 MB (Standard) to 4 GB (Maximum) PC3200 DDR SDRAM DIMM Memory running at 400MHz, with Advanced ECC capabilities
	Network Controller	Intel 82541PI PCI Gigabit NIC (embedded) 10/100/1000 WOL (Wake on LAN)
	Storage Controller	4 ports SATA Controller (embedded)
	Hard Drive	(1) 80 GB Serial ATA
	Internal Storage	320-GB maximum
	Optical Drive	48x IDE (ATAPI) CD-ROM Drive
	Form Factor	Tower (5U)

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Configuration Information-Factory Integrated Models

NOTE: HP does not allow factory integration of options into standard models listed above.
Configure-to-order servers must start with a CTO Chassis.
NOTE: This product offering does not support HP Factory Express Server Configuration Level 1.

Step 1: Base Configuration

Models	HP ProLiant ML110 G2 Tower Chassis NHP SCSI	380184-405
	HP ProLiant ML110 G2 Tower Chassis NHP SATA	380185-405
	HP ProLiant ML110 G2 Tower Chassis HP SATA	380186-405
Factory Integrated Models ship with:		
Intel 82541PI PCI Gigabit NIC (embedded) 10/100/1000 WOL (Wake on LAN)		

Serial ATA Host controller, Data transfer rates up to 1.5Gb/s
Keyboard and Mouse
350 Watts, PFC (Power Factor Correcting)
Tower 5U Form Factor

Step 2: Choose Required Options (only one of the following from each list unless otherwise noted)

Processors	Celeron Processor 2.80 GHz/400MHz Front Side Bus, Factory Integration only	383872-L21
	Pentium Processor 3.20 GHz/ 800MHz Front Side Bus, Factory Integration only	383871-L21
	Pentium Processor 3.40 GHz/ 800MHz Front Side Bus, Factory Integration only	383869-L21
	Pentium Processor 3.0 GHz/ 800MHz Front Side Bus, Factory Integration only	390813-L21
Base Memory	256 MB of Advanced ECC PC3200 DDR SDRAM DIMM Memory Kit (1 x 256 MB)	354557-B21
	512 MB of Advanced ECC PC3200 DDR SDRAM DIMM Memory Kit (1 x 512 MB)	354560-B21
	1024 MB of Advanced ECC PC3200 DDR SDRAM DIMM Memory Kit (1 X 1024 MB)	354563-B21
Base Hard Drives	72-GB 10,000 rpm, U320 Non-Hot Plug Hard Drive (1")	332751-B21
	146-GB 10,000 rpm, U320 Non-Hot Plug Hard Drive (1")	356990-B21
	NOTE: Must also select the U320 SCSI HBA Base (358700-B21) if choosing SCSI drive.	
	80-GB NHP SATA 1.5Gb 7,200 rpm Hard Drive (1")	383410-B21
	80-GB SATA 1.5Gb 7,200 rpm Hard Drive (3.5")	349237-B21
	160-GB SATA 1.5Gb 7,200 rpm Hard Drive (3.5")	349238-B21
	250-GB SATA 1.5Gb 7,200 rpm Hard Drive (3.5")	349239-B21
	NOTE: Must also select one HP SATA Hard Drive Cable (P/N 385856-B21) for each SATA hard drives selected	
	HP SATA ML110G2 Cable FIO	385856-B21
Optical Drives	NOTE: Must also select one SATA Cable for each SATA Hard drive selected	
	CD-RW/DVD-ROM Combo Drive Option Kit	331346-B21
	DVD-ROM Drive Option Kit	217053-B21
	HP ProLiant 48X CD w/SCREWS	337863-B21

Step 3: Choose Additional Factory Integratable Options

Controller	HP ML110 G2 U320 SCSI FIO HBA ALL	358700-B21
	NOTE: Must select if SCSI hard drives are chosen in step 2.	

Step 4: Choose Additional Options for Factory Integration

NOTE: For additional options, please refer to the "Options" section below.

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Options

NOTE: Some options may not be factory integratable. Please contact your local sales representative for additional information.

Memory	1024 MB Advanced ECC PC3200 DDR SDRAM DIMM Memory Kit (1 x 1024 MB)	354563-B21
	512 MB Advanced ECC PC3200 DDR SDRAM DIMM Memory Kit (1 x 512 MB)	354560-B21
	256 MB Advanced ECC PC3200 DDR SDRAM DIMM Memory Kit (1 x 256 MB)	354557-B21
Optical Drives	CD-RW/DVD-ROM Combo Drive Option Kit	331346-B21
	48X CD-ROM Option, Carbon	337863-B21

Hard Drives	Ultra320 SCSI - Non-Hot Plug	
	36 .4-GB 15,000 rpm, U320 Non-Hot Plug Hard Drive (1")	357012-B21
	72 .8-GB 10,000 rpm, U320 Non-Hot Plug Hard Drive (1")	332751-B21
	146.8-GB 10,000 rpm, U320 Non-Hot Plug Hard Drive (1")	356990-B21
	Serial - ATA (SATA)- Non-Hot Plug	
	80-GB ATA/100 7,200 rpm Non-Hot Plug Drive (1")	383410-B21
	Serial-ATA (SATA) Hard Drive (Hot Plug SATA Models Only)	
	80-GB SATA 1.5Gb 7,200 RPM Hard Drive (3.5")	349237-B21
	160-GB SATA 1.5Gb 7,200 RPM Hard Drive (3.5")	349238-B21
	250-GB SATA 1.5Gb 7,200 RPM Hard Drive (1")	349239-B21
HP External 160GB HDD	HP 2 Port SATA RAID Cable All	379093-B21
	NOTE: Must select one SATA RAID Cable when choosing 1or 2 SATA Hard Drives. Must select two SATA RAID Cables when choosing 3 or more SATA Hard Drives.	
	HP External Backup Solution by Seagate	372914-001
	Internal Cable Options	
	HP Internal SAS/SATA Target Fan Cable	389653-B21
	HP Internal 2-Port SATA RAID Cable Kit	379093-B21
	NOTE: The SAS cable supports four drives without an expander. Two cables are required when more than four drives are installed. SAS Internal Cables are typically supplied with the server. Refer to server documentation for details.	
Storage Controllers - SCSI Drives	64-Bit/133-MHz Single Channel Ultra320 SCSI HBA G2	374654-B21
	NOTE: PCI-X Interface	
	HP PL100 SCSI RAID Controller	355671-B21
	NOTE: PCI-X Interface	
	HP 6-Port SATA RAID Controller	372953-B21
	NOTE: PCI-X Interface	
	HP 2-Port SATA RAID Cable	379093-B21
	64-Bit/133-MHz Single Channel Ultra320 SCSI HBA	365289-B21
	NOTE: SCSI Storage Controllers are qualified for SCSI drives only and do not support the SATA Drives. SATA Storage Controllers are qualified for SATA drives only and do not support the SCSI Drives.	
Communications	HP NC320T PCI Express Gigabit Server Adapter	367047-B21
	HP NC1020 PCI 1000T Gigabit Server Adapter	353377-B21
	HP NC150T PCI 4-port 1000T Gigabit Combo Switch Adapter	367132-B21
Tape Backup Drives	NOTE: For complete listing of tape drive offerings see: http://www.hp.com/products1/storage/compatibility/tapebackup/ISS/index.html	
	For recommended tape drive offerings for this ProLiant server see the following:	
	NOTE: For complete listing of tape drive offerings see: http://www.hp.com/products1/storage/compatibility/tapebackup/ISS/index.html	
	For recommended tape drive offerings for this ProLiant server see the following:	
	USB Tape Drives	
	HP StorageWorks DAT 40 USB Internal Tape Drive (Carbonite)	DW022A
	HP StorageWorks DAT 72 USB Internal Tape Drive (Carbonite)	DW026A
	DAT Tape Drives - Internal	
	HP StorageWorks DAT 24 SCSI Internal Tape Drive (Flint)	C1555D

HP StorageWorks DAT 40 SCSI Internal Tape Drive (Carbon)	C5686B
HP StorageWorks DAT 72 SCSI Internal Tape Drive (Carbon)	Q1522B
Ultrium Tape Drives - Internal/External	
HP StorageWorks Ultrium 232 Internal Tape Drive (Carbonite)	DW064A
HP StorageWorks Ultrium 232 External Tape Drive (Carbonite)	DW065A
NOTE: Installation of DAT40 or DAT72 Internal DAT Drives in a ML110 G2 SATA model requires SCSI controller kit (PN: 374654-B21).	
NOTE: Installation of DAT40 or DAT72 DAT Drives in a ML110 G2 SATA model requires SCSI controller kit (PN: 374654-B21).	

Rack Enabling Kit	ProLiant Rack Enabling Kit	238547-B22
Lights Out Management Card	Lights-Out Management Card Kit	383064-B21
Other	Internal SCSI Cable Option Kit, 4 drops NOTE: To be used when adding additional hard disk drives or a tape back-up drive.	166389-B21
	Internal SCSI Cable Option Kit, 2 drops NOTE: To be used when adding additional hard drives or a tape back-up drive.	273463-B21

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Service and Support, HP Care Pack, and Warranty Information

Service and Support Offerings (HP Care Pack Services)	Hardware Services 4-Hour On-site Service	
	13-Hour x 5-Day Coverage, 3 Years, Electronic	U4434E
	24-Hour x 7-Day Coverage, 3 Years, Electronic	U4435E
	Hardware Services Next Business Day On-Site Service	
	9-Hour x 5-Day Coverage, 3 Years, Electronic	U4433E
	Hardware Installation, Electronic	U4444E
	NOTE: For more information, customer/resellers can contact http://www.hp.com/services/carepack .	

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Memory

HP ProLiant ML110 G2 Celeron and Pentium 4 Models

Standard Memory

256 MB of PC3200 DDR SDRAM running at 400MHz, with Advanced ECC capabilities Memory installed (1 x 256 MB SDRAM DIMM).

Standard Memory Plus Optional Memory

Up to 3328 MB memory is available with the optional installation of PC3200 Registered un-buffered ECC DDR SDRAM DIMM Memory kits.

Standard Memory Replaced with Optional Memory

Up to 4096 MB of memory is available with the removal of the standard 256 MB of memory and the optional installation of PC3200 Registered un-buffered ECC DDR SDRAM DIMM Memory kits.

NOTE: Charts do not represent all possible memory configurations.

Memory		Slot			
		4	3	2	1
Standard	256 MB	Empty	Empty	Empty	256 MB
Optional	3328 MB	1024 MB	1024 MB	1024 MB	256 MB
Maximum	4096 MB	1024 MB	1024 MB	1024 MB	1024 MB

Following are memory options available from HP:

- 256 MB Advanced ECC PC3200 DDR SDRAM DIMM Memory Kit (1 x 256 MB) 354557 -B21
- 512 MB Advanced ECC PC3200 DDR SDRAM DIMM Memory Kit (1 x 512 MB) 354560 -B21
- 1024 MB Advanced ECC PC3200 DDR SDRAM DIMM Memory Kit (1 x 1024 MB) 354563 -B21

HP server ML110 G2 Pentium 4 SBS Models

Standard Memory

512 MB of PC3200 DDR SDRAM running at 400MHz, with Advanced ECC capabilities Memory installed (1 x 512 MB SDRAM DIMM).

Standard Memory Plus Optional Memory

Up to 3584 MB memory is available with the optional installation of PC3200 un-buffered ECC DDR SDRAM DIMM Memory kits.

Standard Memory Replaced with Optional Memory

Up to 4096 MB of memory is available with the removal of the standard 512 MB of memory and the optional installation of PC3200 un-buffered ECC DDR SDRAM DIMM Memory kits.

NOTE: Charts do not represent all possible memory configurations.

Memory		Slot			
		4	3	2	1
Standard	512 MB	Empty	Empty	Empty	512 MB
Optional	3584 MB	1024 MB	1024 MB	1024 MB	512 MB
Maximum	4096 MB	1024 MB	1024 MB	1024 MB	1024 MB

Following are memory options available from HP:

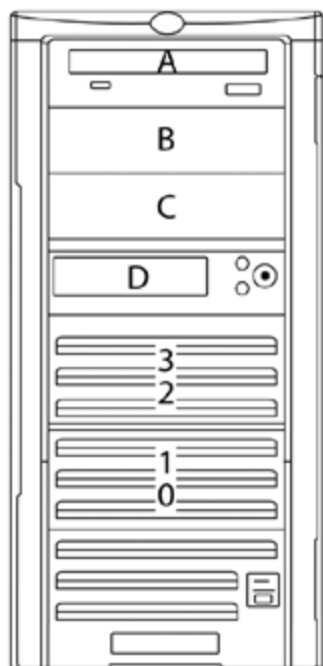
- 256 MB Advanced ECC PC3200 DDR SDRAM DIMM Memory Kit (1 x 256 MB) 354557-B21
- 512 MB Advanced ECC PC3200 DDR SDRAM DIMM Memory Kit (1 x 512 MB) 354560-B21
- 1024 MB Advanced ECC PC3200 DDR SDRAM DIMM Memory Kit (1 x 1024 MB) 354563-B21

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Storage



A	48x IDE (ATAPI) CD-ROM
B, C, D	Removable Media Bays (1.6" each)
D	1.44 MB Diskette Drive (Optional)
0, 1, 2, 3	Four 1" Non-Hot Plug Drive Bays, or Four Hot Plug Drive Bays (SATA model only)

Drive Support

	Quantity Supported	Position Supported	Controller
Removable Media			
1.44-MB Diskette Drive	1	D	Integrated
DVD-ROM Drive	Up to 2	A, B or C	Integrated IDE (ATAPI)

Hard Drives (SCSI Models only)

Ultra 320 SCSI - Non-Hot Plug

	Quantity Supported	Position Supported	Controller
1-inch 36.4-GB 72.8-GB 146.8-GB	Up to 4	0, 1, 2 or 3	Hot Plug Single Channel Ultra320 SCSI Adapter (SCSI Models)

Hard Drives (SATA Models only)

SATA 1.5Gb - Non-Hot Plug

	Quantity Supported	Position Supported	Controller
1-inch 80.0-GB	Up to 4	0, 1, 2 or 3	

Hard Drives (SATA Models only)

SATA - Hot Plug

	Quantity Supported	Position Supported	Controller
1-inch 80.0-GB 160.0-GB 250.0-GB	Up to 4	0, 1, 2 or 3	4 Port SATA RAID Controller (SATA Model)

Maximum Storage Capacity - SCSI Models

Internal 584-GB (4 x 146-GB non-hot-plug hard drives)

Total 584-GB

Maximum Storage Capacity - Non-Hot Plug SATA Models

Internal 320-GB (4 x 80-GB non-hot-plug hard drives)

Total 320-GB

Maximum Storage Capacity - Hot Plug SATA Models

Internal 1-TB (4 x 250-GB hot-plug hard drives)

Total 1-TB

Tape Drives

NOTE: A SCSI controller needs to be purchased to operate internal SCSI devices in the ATA Models.

NOTE: For an up-to-date listing of the latest O/S Support details for each of the Tape Drives listed below, please see the following:

http://h18000.www1.hp.com/products/quickspecs/North_America/10233.html

	Quantity Supported	Position Supported	Controller
HP DAT24	Up to 1	C	HP Single Channel Ultra320 SCSI HBA
HP DAT40	Up to 1	C	HP Single Channel Ultra320 SCSI HBA
HP DAT72	Up to 1	C	HP Single Channel Ultra320 SCSI HBA

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Power Specifications

Part Number 377580-001
Spare Kit 382097-001
Operational Input Voltage Range (V rms) 90 to 135 and 180 to 5 V auto ranging
Frequency Range (Nominal) (Hz) 47 to 63 Hz

Nominal Input Voltage (Vrms)	100	115	208	220	230	240
Max Rated Output Wattage Rating	N/A	350	N/A	N/A	350	N/A
Nominal Input Current (A rms)	N/A	8	N/A	N/A	4	N/A

Max Rated Input Wattage Rating (Watts)	N/A	N/A	N/A	N/A	N/A	N/A
Max. Rated VA (Volt-Amp)	N/A	N/A	N/A	N/A	N/A	N/A
Efficiency (%)	N/A	>65%	N/A	N/A	>65%	N/A
Power Factor	N/A	N/A	N/A	N/A	N/A	N/A
Leakage Current (mA)	0.25mA (at 60HZ)	N/A	N/A	N/A	N/A	N/A
Maximum Inrush Current (A peak)	N/A	No component was damaged and input fuse shall not blow	N/A	N/A	No component was damaged and input fuse shall not blow	N/A
Maximum Inrush Current duration (mS)	N/A	N/A	N/A	N/A	N/A	N/A

System Specifications

	Power **
HP ProLiant ML110 G2 Fully Configured	(see **)
Fully Loaded System output Wattage (W)	350W
Fully Loaded System Input Current (A rms)	4.87A @ 115V, 2.43A @ 230V
Fully Loaded System Thermal (BTU-Hr)	1907BTU
Fully Loaded System VA (Volt-Amp)	560
System Leakage with all power supplies loaded (mA)	0.75mA@240V 0.45mA@120V
System Inrush Current with all power supplies loaded (A)	80A
Power cord requirements	Nema 5-15P to IEC320-C13
	IEC320-C13 to IEC320-C14
	**Power shown is for a fully configured system consisting of (1) CPU, (4) double-sided DIMMs, (4) HDDs, (1) CD-ROM, (1) DVD-ROM, (4) PCI cards, and (1) power supply.
Power Cords (13 Cord Sets)	Power Cord Part Number
	121565-001

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Technical Specifications

System Unit	Dimensions (HxWxD) (with feet)	16.7 x 7.9 x 19.7 in (42.4 x 20.0 x 50.0 cm)	
	Weight(approximate)	32.61 lb (14.8 kg)	
	Input Requirements (per power supply)	Range Input Voltage	90 to 135 VAC/180 to 265 VAC
		Normal Line Voltage	115 or 230 VAC
	Line Frequency	50 to 60 Hz	
	Rated Input Current	load 8A at 115VAC, 4A at 230VAC	
	BTU Rating	1907 BTU	
SCSI Connectors (SCSI Models only)		One internal LVD/SE connector for U160 devices, plus two internal SE connectors for legacy devices.	

Power Supply Output Power (per power supply)	Rated Steady-State Power	320W
	Maximum Peak Power	350W
Temperature Range	Operating	50° to 95° F (10° to 35° C)
	Shipping	-4° to 140° F (-20° to 60° C)
Relative Humidity (non-condensing)	Operating	20% to 80%
	Non-operating	20% to 80%
Acoustic Noise	Idle (Fixed Disk Drives Spinning)	
	L WAd (BELS)	5.5
	L pAm (dBA)	36
	Operating (Random Seeks to Fixed Disks)	
	L WAd (BELS)	6.0
	L pAm (dBA)	38

Non-Hot Plug Ultra320 SCSI Hard Drives	364 GB	Capacity	36,419.2 MB	
	357021-B21	Height	1.0 in (2.5 cm)	
		Width	4.0 in (10.16 cm)	
		Interface	Ultra320 SCSI	
		Transfer rate synchronous (maximum)	320 MB/s	
		Seek time (typical reads, including settling)	Single track	0.7 ms
			Average	5.4 ms
			Full-stroke	11 ms
			Rotational Speed	10,000 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	71,132,000
		Operating Temperature	41° to 140° F (5° to 60° C)	

Non-Hot Plug SATA Hard Drives	80 GB 7.2K 383410-B21	Capacity	80,054 MB	
		Height	1.0 in. (2.5 cm)	
		Width	4.0 in. (10.16 cm)	
		Interface	SATA 150MB	
		Transfer rate synchronous (maximum)	150 MB/s	
		Seek time (typical reads, including settling)	Single track	0.8 ms
			Average	8.5 ms
			Full-stroke	17.8 ms
			Rotational speed	7,200 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	156,355,584
		Operating Temperature	41° to 131° F (5° to 55° C)	

Hot Plug SATA Hard Drives	80 GB 7.2K 349237-B21	Capacity	40,027 MB
		Height	1.0 in. (2.5 cm)
	160 GB 7.2K 349238-B21	Width	4.0 in (10.16 cm)
		Interface	SATA 150MB
	250 GB 7.2K 349239-B21	Transfer rate synchronous (maximum)	1.50Gb/s

Seek time (typical reads, including settling)	Single track	0.9 ms
	Average	9.0 ms
	Full-stroke	17.0 ms
	Rotational speed	7,200 rpm
Physical Configuration	Bytes/Sector	512
	Logical Blocks	156,301,488
Operating Temperature	41° to 131° F (5° to 55° C)	

48X Max IDE (ATAPI) CD-ROM Drive	Disk	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
		Capacity	540 MB (Mode 1, 12 cm) 650 MB (Mode 2, 12 cm)
		Block Size	Mode 1 2,048 bytes, 1024 bytes Mode 2 2,340 bytes, 2,336 bytes, 1024 bytes CD-DA 2,352 bytes CD-XA 2,328 bytes
	Interface	IDE (ATAPI)	
	Access Times (typical)	Random	<100 ms
		Full-Stroke	<150 ms
	Data Transfer Rate	Sustained	3000 to 7200 KB/s (20X to 48X)
		Burst	150 KBps to 7,200 KBps
		Bus Rate	16.7 MBps
	Cache Buffer	128 KB	
	Start-up Time (typical)	< 7seconds	
	Stop Time	< 4seconds	
	Laser Parameters	Type	Semiconductor Laser GaAlAs
		Wave Length	780 ± 25 nm
	Operating Conditions	Temperature	41° to 122° F (5° to 50° C)
		Humidity	10% to 90%
	Dimensions	(HxWxD, maximum)	1.63 x 5.75 x 7.87 in (41.3 x 146 x 200 cm)
		Weight	2.64 lb (1.2 kg)

HP Single Channel Ultra320 SCSI Adapter (SCSI Models only)	Drives Supported	Up to 4 SCSI devices Wide
	Data Transfer Method	64-bit/33-MHz PCI bus-master
	SCSI Channel Transfer Rate	320 MB/s per channel
	SCSI Protocols	Ultra 320, Ultra 3, Ultra 2 Fast SCSI-2
	Maximum Capacity	587GB (4x146.8GB, NHP U320 SCSI HDD)
	Electrical Protocol	Low Voltage Differential (LVD)
	SCSI Termination	Active Termination
	External SCSI Connectors	None

6 port SATA RAID controller (SATA Model Only)	SATA Protocol	SATA 1.5Gb/s
	SATA Ports	6 internal (4 drives supported maximum for ML110G2)
	Port transfer rate	1.5 Gb/s total

Drives Supported	Up to 4 SATA HDD
Data Transfer Method	32-bit/66-MHz PCI bus-master
Storage Capacity	up to 1TB (4x 250GB hot plug 1" SATA HDD)
PCI	3.3 volt CPI slot compatibility only (PCI-X interface)
Cache Memory	64MB of SDRAM Memory for RAID and read cache
RAID Levels Supported	RAID 5 (Distributed Data Guarding) RAID 1+0 (Striping & Mirroring) RAID 1 (Mirroring) RAID 0 (Striping)
Maximum Capacity	up to 1TB (4x 250GB hot plug 1" SATA HDD)
Logical RAID Volumes Supported	4
Operating Systems	Microsoft Windows® 2000 Server; Microsoft Windows® Server 2003; Linux: Red Hat 9.0, RHEL 3.

Intel 82541 PI NIC (embedded) 10/100/1000 WOL (Wake on LAN)	Network Interface	IEEE 802.3x-compliant flow-control support with software-controllable thresholds IEEE 802.3ab Auto-Negotiation
	Data Transfer Method	32-bit PCI
	Network Transfer Rate	10/100/1000 Mbps, Half- and full-duplex Auto-negotiated speeds of 10/100/1000 Mbps in both half and full duplex
	Connector	RJ-45 connector
	Cable Support	Category 5 or higher UTP wiring

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