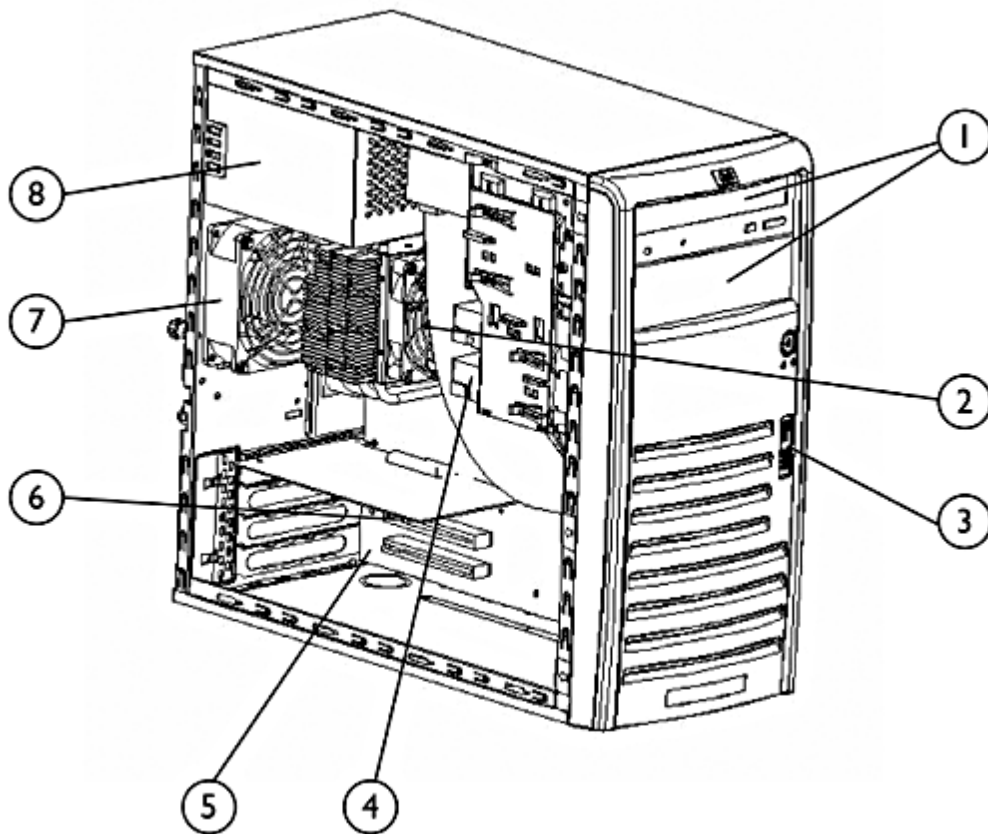


Overview



1. 48x CD-ROM & One Removable Media Bays
2. Intel® Celeron® D or Pentium® 4 Processor
3. Two Front USB Ports
4. Two 1" Non-Hot Plug Drive Bays

5. Main System Board
6. I/O slots (2 PCI and 2 PCI Express)
7. System Fan
8. Power Supply

What's New

- Intel Pentium D 920, 930, and 940 Processors (Dual-Core, 2.8 GHz, 3.0 GHz and 3.2 GHz, 2 x 2MB Level 2 cache, and 800MHz front-side-bus).

Overview

At A Glance

The HP ProLiant ML110 G3 is a remarkable value for workgroups or small-to-medium businesses. It provides dependable server performance with appropriate technology and features an affordable price.

- **Processors:**
 - Intel Dual-Core Pentium D processors and Single-core Pentium 4 and Celeron D processors
 - Intel E7230 Chipset with 800MHz FSB (Pentium 4) or 533MHz FSB (Celeron D)
- **Memory:**
 - 512 MB of ECC PC2 4200 DDR II SDRAM memory standard (8GB maximum)
- **Storage Controller:**
 - Integrated Single Channel Ultra ATA for optical drive
- **Internal Drive Support:**
 - Up to three Ultra320 non-hot plug SCSI hard disk drives or non-hot plug SATA hard disk drives.
 - Three drive deployments require the use of a conversion kit on all models and the 6-port SATA RAID Controller on the SATA Models
 - Internal storage capacity of up to 438GB (3 x 146GB non-hot plug SCSI HDD) (SCSI Models)
 - Internal storage capacity of up to 1.5TB (3 x 500GB non-hot plug) SATA HDD (FIO SATA Model)
- **Network Controller:**
 - Broadcom 5721 Gigabit NIC (embedded) 10/100/1000 WOL (Wake on LAN)
 - Embedded Serial ATA (SATA Models) or a Single Channel Ultra320 SCSI Adapter (SCSI Models)
- **Expansion Slots:**
 - Four total I/O slots: two 32-bit/33MHz PCI (3.3 Volt) slots and two PCI-Express slot (x4 and x8(x16connector)).
- **USB Ports:**
 - Six (USB 2.0 ports (2 rear, 2 front, 2 internal)
 - Two serial ports
- **Optical Drives:**
 - CD-ROM ships standard
- **Power Supply:**
 - 350W Power Supply
- **Form Factor:**
 - 4U chassis
- **Management:**
 - Lights-Out 100 Remote Management card (optional)
 - ROM Based Setup Utility (RBSU) and PXE support
 - Integrated ATI ES1000 16 MB video
- **Warranty:**
 - Protected by HP Services and a worldwide network of resellers and service providers. One-year Next Business Day, on-site limited global warranty (one year parts, one year labor, and one year on-site (1-1-1)). Certain restrictions and exclusions apply. Pre-Failure Notification on processors, memory, and SCSI hard drives. (Note: AP offers a 3-1-1 warranty on the ML110 G3)

Standard Features

Processor One of the following depending on Model	Intel Celeron D Processor 326 (256KB L2 cache, 2.53 GHz, 533MHz FSB)
	Intel Pentium 4 Processor 630 (2MB L2 cache, 3.0 GHz, 800MHz FSB)
	Intel Pentium 4 Processor 640 (2MB L2 cache, 3.2 GHz, 800MHz FSB)
	Intel Pentium D Processor 930 (2x2MB L2 cache, 3.0 GHz, 800MHz FSB)

Cache Memory One of the following depending on Model	256KB Level 2 ECC cache (Celeron D models)
	2048KB Level 2 ECC cache (Pentium 4 models)
	2x2048KB Level 2 ECC cache (Pentium D models)

Chipset	Intel E7230 Chipset with 800Mhz FSB (Pentium 4 and Pentium D)
	Intel E7230 Chipset with 533Mhz FSB (Celeron D)

Memory Protection	Un-buffered standard ECC capabilities
--------------------------	---------------------------------------

Memory One of the following depending on Model	Type	PC2-4200 unbuffered DDR2 SDRAM (533MHz)
	Standard	512 MB (on Pentium D, Pentium-4 and Celeron D models)
	Maximum	8 GB

Network Controller	Broadcom 5721 Gigabit NIC (embedded) 10/100/1000 WOL (Wake on LAN)
---------------------------	--

Expansion Slots	Slot Number	Bus Speed	Hot Plug Y/N	PCI Voltage	Notes
	1	x8 PCI Express	No	n/a	In a x16 slot Full Height
	1	x4 PCI Express	No	n/a	Full Height
	2	32bit/33MHz PCI	No	3.3V	Full Height

Storage Controller One of the following depending on Model	HP Single Channel Ultra320 SCSI Adapter (SCSI Models)
	Integrated 2 ports Serial ATA (SATA Models)

Storage	CD-ROM	48x IDE (ATAPI) CD-ROM Drive
	Hard Drives	One of the following: <ul style="list-style-type: none"> 36GB Ultra320 SCSI 15,000 rpm Hard Drive (Standard on SCSI models) 80GB SATA 7200 rpm Hard Drive (Standard on SATA Models)

Standard Features

Maximum Internal Storage	Type		
	SCSI (Non-hot plug)	438GB	(3 x 146GB)
	SATA (Non-hot plug)	1.5TB	(3 x 500GB)

*NOTE: Available via FIO only

NOTE: Maximum internal storage utilizes 2 internal drive bays and 1 removable media bay.

NOTE: For SCSI models, configuring the media bay to hold the 3rd hard disk drive requires the purchase of the bracket conversion option kit (P/N 396654-B21).

NOTE: For SATA models, both the bracket conversion option kit (P/N 396654-B21) and the HP 6-Port SATA RAID Controller Option Kit (P/N 372953-B21) are required for the installation of the 3rd HDD.

Interfaces	Parallel	1	
	Serial	2	
	Pointing Device (Mouse, PS2)	1	
	Graphics	1	
	Keyboard (PS2)	1	
	USB		<ul style="list-style-type: none"> • 6 (2 rear, 2 front panel, 2 internal) • Dedicated USB 1 internal (available for USB tape connectivity)
	Network RJ-45 (Ethernet)	1	

NOTE: Internal USB ports are optimal for the attachment of HP USB DAT Tape Drives

NOTE: Please see the following URL for additional information regarding USB support:

<http://h18004.www1.hp.com/products/servers/platforms/usb-support.html>

Graphics	Integrated ATI ES1000 Video Controller with 16 MB SDRAM Video Memory
----------	--

Form Factor	Tower (4U)
-------------	------------

Industry Standard Compliance	ACPI V2.0 Compliant
	PCI 2.3 Compliant
	PXE Support
	WOL Support
	IPMI 2.0 compliance

Manageability	HP Lights-Out 100 Remote Management Card Option (For details see Lights-Out 100 Remote Management Card)
	http://h18013.www1.hp.com/products/servers/management/remotemgmt/lightsout100/index.html Offline Version - "floppy-based" method to flash the ROM

Standard Features

Security	Power-on password Setup password
Server Power Cords	12', lowline NEMA power cord. NOTE: Rack models ship standard with a 12' IEC cable. Most redundant power supply options ship with a 6' power cord.
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 (32 and 64 bit) Microsoft Windows Small Business Server 2003: Standard & Premium Edition Windows 2000 Server - Standard Edition Novell NetWare 6.5 SBS Red Hat Enterprise Linux 4 ES (32 and 64 bit) NOTE: For an up-to-date listing of the latest ML110 G3 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 G3, please see: http://h18023.www1.hp.com/support/files/server/us/family/model/5769.html?lang=en&cc=us NOTE: Drivers may also found on the base media for some Linux OS's. When configuring your server, please consult your base media driver base, or visit HP.com at: http://h18023.www1.hp.com/support/files/server/us/index.html
Factory Express Portfolio for Servers and Storage	<p>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.</p> <p>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.</p> <p>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.</p>
HP Enterprise Configurator	The HP eCo-Enterprise Configurator now provides factory default racking for our HP hardware portfolio. This approach is aligned with our strategic direction to meet the needs and expectations of our valued customers. If you require "custom" rack configuration, please contact HP's Customer Business Center or an Authorized Partner for assistance.

Standard Features

HP ProLiant Smart Buys

The HP Smart Buy program offers mainstream business solutions at competitive prices with excellent availability and superior HP quality. It offers a wide range of industry-leading HP products at compelling prices, allowing you to receive richer configurations with additional options.

NOTE: For detailed specification information on ProLiant Smart Buys please click on the following link: <ftp://ftp.compaq.com/pub/products/servers/smartbuys.pdf>

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 one year 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 labour, 1-year on-site support (3-1-1 warranty offered in AP only). Additional information regarding worldwide limited warranty and technical support is available at: <http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html>

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.

HP services provide continuous care and support expertise with committed response designed to meet your IT and business needs.

To fully capitalizing on your HP ProLiant servers' capabilities requires a service partner who thoroughly understands your server technology and systems environment. HP Services, an industry leader in provision of multi vender support solutions provides a range of support services designed to meet the varying needs of business. Whether an SMB or large global corporation HP has a ProLiant server support offer to help you speedily deploy and maximize system uptime.

Enhanced Care - Minimum recommended service support offer designed to ensure customers have access to expert assistance, whenever they need it.

- *Next Business Day on site coverage, 3 Years*

Continuance Care - Recommended service, delivering cost-effective support options designed to extend HP Services committed response and guaranteed fix times, designed to speed problem identification and resolution.

- *4-Hour On-site Service, 5-Day x 13-Hour Coverage, 3 Years*

Total Care - Highest HP Support service level recommend to help increase IT performance and availability with comprehensive, integrated hardware and software services

- *4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years*

Deployment Services - HP Installation and Start Up services designed to take time, risk, and worry out of the deployment of ProLiant servers - and free customers IT support staff to focus on what they do best, their business.

- *Installation of a ProLiant server as per Data Sheet. To be delivered on a scheduled basis 8am-*

Standard Features

5pm, M-F, excl. HP holidays

For a complete listing of service offerings and information visit:

<http://www.hp.com/services/proliantservices>

<http://www.hp.com/go/proliant/carepack>

Models

NOTE: ProLiant Smart Buys are available in NA only. For detailed specification information on ProLiant Smart Buys please click on the following link: <ftp://ftp.compaq.com/pub/products/servers/smartbuys.pdf>.

Dual Core Models

ML110 G3 3.0 GHz/800- 2X2M NHP- 512MB 80 GB SATA 410066-201	Processor	Intel Pentium D Processor 930 3.0 GHz /800MHz
	Cache Memory	2x2MB L2 cache
	Memory	512 MB (Standard) to 8 GB (Maximum) ECC PC2-4200 DDR2 (533MHz)
	Network Controller	Broadcom 5721 Gigabit NIC (embedded) 10/100/1000 WOL (Wake on LAN)
	Storage Controller	Integrated 2 port embedded SATA RAID (RAID levels 0, 1)
	Hard Drive	(1) 80GB NHP SATA HDD
	Cable	1 SATA Cable installed (1 additional SATA cable provided in the box)
	Internal Storage	1.5 TB maximum
	Optical Drive	48x IDE (ATAPI) CD-ROM Drive
	Form Factor	Tower (4U)
<hr/>		
ML110 G3 3.0 GHz/800 2X2M 512MB 36GB NHP-SCSI 410067-201	Processor	Intel Pentium D Processor 930 3.0 GHz /800MHz
	Cache Memory	2x2 MB L2 cache
	Memory	512 MB (Standard) to 8 GB (Maximum) ECC PC2-4200 DDR2 (533MHz)
	Network Controller	Broadcom 5721 Gigabit NIC (embedded) 10/100/1000 WOL (Wake on LAN)
	Storage Controller	HP Single Channel Ultra320 SCSI Adapter
	Hard Drive	(1) 36GB NHP SCSI HDD
	Internal Storage	438GB maximum
	Cable	3 drop internal SCSI cable
	Optical Drive	48x IDE (ATAPI) CD-ROM Drive
	Form Factor	Tower (4U)

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.

NOTE: FIO indicates that this option is a Factory Installable Option.

Step 1: Base Configuration

Models	HP ProLiant ML110 G3 SATA Tower Chassis	393256-405
	Factory Integrated Models ship with: Broadcom 5721 Gigabit NIC (embedded) 10/100/1000 WOL (Wake on LAN) Keyboard and Mouse 350 Watts, PFC (Power Factor Correcting) Tower Form Factor (4U)	
	HP ProLiant ML110 G3 SCSI Tower Chassis	393257-405
	Factory Integrated Models ship with: Broadcom 5721 Gigabit NIC (embedded) 10/100/1000 WOL (Wake on LAN) SCSI Host controller Keyboard and Mouse 350 Watts, PFC (Power Factor Correcting) Tower 4U Form Factor	

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

Processors	Single-Core Intel Celeron D Processor 326 2.53 GHz/533MHz Factory Integrated	393286-L21
	Single-Core Intel Pentium 4 Processor 630 3.0 GHz/800MHz Factory Integrated	393287-L21
	Single-Core Intel Pentium 4 Processor 640 3.2 GHz/800MHz, Factory Integrated	393288-L21
	Dual-Core Intel Pentium D Processor 920 2.8 GHz/800MHz Factory Integrated	410357-L21
	Dual-Core Intel Pentium D Processor 930 3.0 GHz/800MHz Factory Integrated	410358-L21
	Dual-Core Intel Pentium D Processor 940 3.2 GHz/800MHz Factory Integrated	410359-L21
Base Memory	2048 MB Unbuffered Advanced ECC PC2-4200 DDR2 (1 x 2048 MB), Dual Rank	393354-B21
	1024 MB Unbuffered Advanced ECC PC2-4200 DDR2 (1 x 1024 MB), Dual Rank	390824-B21
	512 MB Unbuffered Advanced ECC PC2-4200 DDR2 DIMM (1 x 512 MB), Single Rank	390825-B21

Configuration Information-Factory Integrated Models

Base Hard Drives	Ultra320 SCSI - Non-hot Plug (SCSI Models Only)	
	HP 36GB U320 15K NHP HDD	357012-B21
	HP 72GB U320 10K NHP HDD	332751-B21
	HP 146GB U320 10K NHP HDD	356990-B21
	SATA - Non-hot Plug HDD (SATA Models Only)	
	HP 80GB 1.5G SATA 7.2K NHP 3.5" HDD	383410-B21
	HP 160GB 1.5G SATA 7.2K NHP 3.5" HDD	411275-B21
	HP 250GB 1.5G SATA 7.2K NHP 3.5" HDD	411276-B21
	HP 500GB 1.5G SATA 7.2K NHP 3.5" HDD, FIO*	404469-B21
	NOTE: * Factory Integrated Only	

NOTE: Must also select the bracket conversion kit (396654-B21) when purchasing 3rd SCSI or SATA Non-Hot Plug Hard Disk Drives.

NOTE: 500GB (P/N 404469-B21) SATA NHP HDD is FIO only. Use of 500GB HDD increases maximum ML110 G3 SATA storage to 1.5TB.

Optical Drives	CD-RW/DVD-ROM Combo Drive Option Kit	331346-B21
	HP DVD±R/RW 8X Slim	383974-B21
	HP ProLiant 48X CD w/SCREWS	398972-B21

Step 3: Choose Additional Factory Integratable Options

Storage Controllers	64-Bit/133-MHz Single Channel Ultra320 SCSI HBA G2	374654-B21
	NOTE: PCI-X Interface (PCI 32bit/33MHz compatible)	
	HP PL100 SCSI RAID Controller	355671-B21
	HP 6-Port SATA RAID Controller	372953-B21
	NOTE: PCI-X Interface (PCI 32bit/33MHz compatible)	
	NOTE: SCSI Storage Controllers are qualified for SCSI drives only and do not support the SATA Drives.	
	NOTE: SATA Storage Controllers are qualified for SATA drives only and do not support the SCSI Drives.	

Step 4: Choose Additional Options for Factory Integration

Operating Systems	Pre-install Microsoft Windows 2003 SBS Standard Edition	
	W2003 SBS STD PL1XX	379601-001
	W2003 SBS PRM PL1XX	379603-001
	NOTE: For additional options, please refer to the "Options" section below.	

Options

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

Memory	2048 MB Unbuffered Advanced ECC PC2-4200 DDR2 (1 x 2048 MB), Dual Rank	393354-B21
	1024 MB Unbuffered Advanced ECC PC2-4200 DDR2 (1 x 1024 MB), Dual Rank	390824-B21
	512 MB Unbuffered Advanced ECC PC2-4200 DDR2 (1 x 512 MB), Single Rank	390825-B21

Optical Drives	CD-RW/DVD-ROM Combo Drive Option Kit	331346-B21
	48X CD-ROM Option, Carbon	398972-B21
	1.44 MB USB Diskette Drive	DC361B
	HP DVD±R/RW 8X Slim	383974-B21

NOTE: For the installation of Windows and other OS's, a floppy drive may be required to complete driver installation. A USB drive key may not work to complete driver installation.

Hard Drives	Ultra320 SCSI - Non-Hot Plug (SCSI Models Only)	
	HP 36GB U320 15K NHP HDD	357012-B21
	HP 72GB U320 10K NHP HDD	332751-B21
	HP 146GB U320 10K NHP HDD	356990-B21
	Serial - ATA (SATA)- Non-Hot Plug (SATA Models Only)	
	HP 80GB 1.5G SATA 7.2K NHP 3.5" HDD	383410-B21
	HP 160GB 1.5G SATA 7.2K NHP 3.5" HDD	411275-B21
	HP 250GB 1.5G SATA 7.2K NHP 3.5" HDD	411276-B21

NOTE: When purchasing systems with the 500GB NHP SATA drives, please reference the Configuration Information Section of this QuickSpecs to order via Configuration to Order.

HP External 160GB HDD	HP External Backup Solution by Seagate	372914-001
-----------------------	--	------------

Storage Controllers - SCSI/SATA Drives	64-Bit/133-MHz Single Channel Ultra320 SCSI HBA G2	374654-B21
	NOTE: PCI-X Interface (PCI 32bit/33MHz compatible)	
	HP PL100 SCSI RAID Controller	355671-B21
	NOTE: PCI-X Interface (PCI 32bit/33MHz compatible)	
	HP 6-Port SATA RAID Controller	372953-B21

NOTE: SCSI Storage Controllers are qualified for SCSI drives only and do not support the SATA Drives.

NOTE: SATA Storage Controllers are qualified for SATA drives only and do not support the SCSI Drives.

Options

Communications	HP NC150T PCI 4-port Gigabit Combo Switch Adapter	367132-B21
	HP NC320T PCI Express Gigabit Server Adapter	367047-B21
	HP NC360T PCI Express Dual Port Gigabit Server Adapter	412648-B21
	HP NC1020 PCI Single Port Gigabit Server Adapter	353377-B21
	Modem adapter option kit localizations -	DC132D

Tape Backup Drives	NOTE: A separate SCSI Controller is required for connecting SCSI tape drives to this server	
	NOTE: For complete listing of tape drive offerings see: http://www.hp.com/products1/storage/compatibility/tapebackup/ISS/index.html	
	HP StorageWorks DAT 24 USB Internal Tape Drive (Carbonite)	DW069A
	HP StorageWorks DAT 40 USB Internal Tape Drive (Carbonite)	DW022A
	HP StorageWorks DAT 40 USB External Tape Drive (Carbonite)	DW023A
	HP StorageWorks DAT 72 USB Internal Tape Drive (Carbonite)	DW026A
	HP StorageWorks DAT 72 USB External Tape Drive (Carbonite)	DW027A
	HP StorageWorks DAT 40 SCSI Internal Tape Drive (Carbon)	C5686B
	HP StorageWorks DAT 72 SCSI Internal Tape Drive (Carbon)	Q1522B
	NOTE: Installation of SCSI internal tape drives in a ML110 G3 model requires SCSI controller kit (PN: 374654-B21).	

HP Data Protector Express Software	HP DP Express Backup Server Upgrade for ProLiant Software	BB117AP
	HP DP Express Package for Microsoft Small Business Server	BB118AA
	NOTE: Please see the HP Data Protector Express QuickSpecs for additional information regarding the purchase of HP Data Protector Express software: http://h18000.www1.hp.com/products/quickspecs/12337_ca/12337_ca.html NOTE: To obtain a free licensed copy of HP Data Protector Express for ProLiant edition software, please visit the "Protect Your Data" link accessible from your ProLiant server's System Management Homepage (SMH) software (SmartStart 7.5 or later).	

Installation of Server into Racks	100Kg/220Lbs Sliding shelf (Graphite)	234672-B21
	NOTE: When using the 100Kg/220Lbs Sliding shelf, install Stabilizer Kit for 5642 rack (PN 374493-B21).	
	Stabilizer Kit for 5642 rack (Graphite Carbon)	374493-B21

NOTE: The stabilizing kit is used to prevent rack from tipping over.
<http://www.racksolutions.com/hp>

Lights Out Management Card	Lights-Out Management Card Kit for ML110 G3	390225-B21
----------------------------	---	------------

Other	HP 2-port SATA Cable	379093-B21
	Hard Drive Bracket Conversion Option Kit	396654-B21

Options

UPS	HP T500 UPS 120 Volt	361475-001
	HP T750 UPS, Low Voltage	378439-D71

USB Options	HP USB 2-Button Optical Scroll Mouse (Carbonite/Silver)	DC172B
	USB 1.44-MB External Diskette Drive (Carbonite)	DC141B
	HP USB 04 Standard Keyboard	DT528A#xxx
	USB 2.0 4-port HUB	DG954A
	HP 1GB Drive Key II- USB 2.0 Flash Drive	AG382AA
	HP 512MB DriveKey II- USB Flash Drive	ED516AA
	USB Drive Key 256MB	PH657A

HP KVM Switch Options	HP 0x1x8 Server Console Switch	336044-B21
	HP 0x2x16 Server Console Switch	336045-B21
	PS/2 Interface adapter, 1-pack	262588-B21
	PS/2 Interface adapter, 8-pack	262587-B21
	USB Interface adapter, 1-pack	336047-B21
	Serial Interface Adapter, 1-pack with power supply	373035-B21
	NOTE: Cat5e cables are required to connect Interface Adapters to Console Switches. Cat5e cables can be found at the following URL: http://www.hp.com/go/kvm	
	HP 1x4 USB/PS2 KVM Switch, TT	371301-D71
	HP 1x4 USB/PS2 KVM Switch, RM	371302-B21
	HP PS2 KVM Cable with audio, 6' 2-pack	371730-B21
	HP USB KVM Cable with audio, 6' 2-pack	371729-B21

NOTE: For additional information regarding KVM Switches, Serial Console servers, rack mount monitors, keyboards and all related options please see the following URL: <http://www.hp.com/go/kvm>

HP Serial Console Server Options	HP 16-Port Serial Console Server	AF101A
	HP 48-Port Serial Console Server	AF102A
	Serial Adapter, RJ45-DB9 DCE Female, 1 Pack	AF103A
	Serial Adapter, RJ45-DB9 DCE Female, 8 Pack	AF110A

NOTE: For additional information regarding HP KVM Switches and options, please see the following URL: <http://www.hp.com/go/kvm>

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 additional information on HP Care Pack Services, please see http://www.hp.ca/hps/carepack/ .	

Memory

HP ProLiant ML110 G3 Celeron D and Pentium 4 Models

Standard Memory

512 MB of PC2-4200 DDR2 SDRAM running at 512 MB with Advanced ECC capabilities Memory installed (1 x 512 MB SDRAM DIMM).

Standard Memory Plus Optional Memory

Up to 5120 MB memory is available with the optional installation of PC2-4200 Registered un-buffered ECC DDR2 SDRAM DIMM Memory kits.

Standard Memory Replaced with Optional Memory

Up to 8192 MB of memory is available with the removal of the standard 512 MB of memory and the optional installation of PC2-4200 Registered un-buffered ECC DDR2 SDRAM DIMM Memory kits.

NOTE: The below chart does not represent all possible memory configurations.
NOTE: In memory configurations requiring 2 DIMM and 4 DIMM configurations, the memory must be paired for optimal performance. This means that DIMMs in slot 1 and 3 have to be identical, in slot 2 and 4 have to be identical. (For example, the Optional memory configuration shown below)

Memory		Slot			
		4	3	2	1
Standard	512 MB	Empty	Empty	Empty	512 MB
Optional	5120 MB	2048 MB	512 MB	2048 MB	512 MB
Maximum	8192 MB	2048 MB	2048 MB	2048 MB	2048 MB

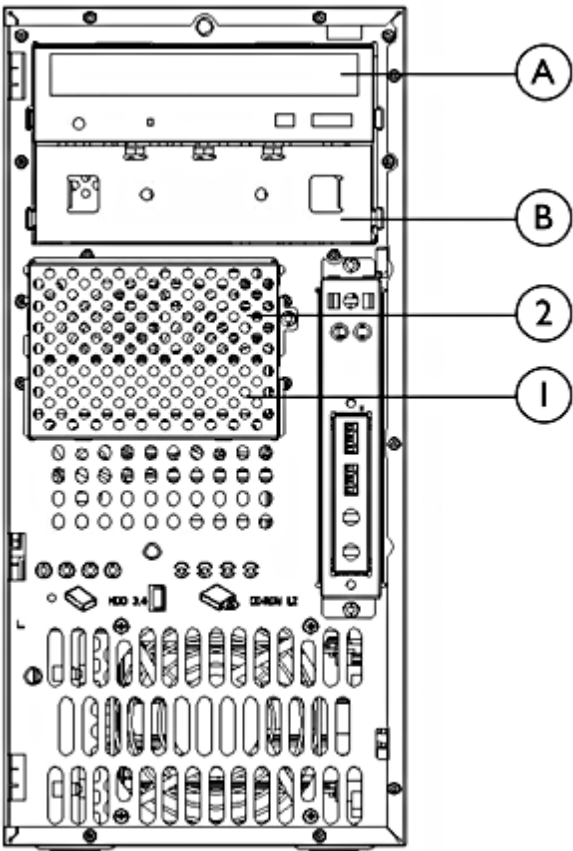
Following are memory options available from HP:

- 512 MB Unbuffered Advanced ECC PC2-4200 DDR2 (1 x 512 MB), Single Rank
 - 1024 MB Unbuffered Advanced ECC PC2-4200 DDR2 (1 x 1024 MB), Dual Rank
 - 2048 MB Unbuffered Advanced ECC PC2-4200 DDR2 (1 x 2048 MB), Dual Rank
- 390825-B21

390824-B21

393354-B21

Storage



- A 48x IDE (ATAPI) CD-ROM
- B Removable Media Bays (1.6" each)
- 1, 2 Two Non-Hot Plug Drive Bays

Drive Support

	Quantity Supported	Position Supported	Controller
Removable Media			
DVD + CDRW Drive	2	A or B	Integrated IDE (ATAPI)
DVD-RW Drive	2	A or B	Integrated IDE (ATAPI)

Storage

Hard Drives (SCSI Models only)

Ultra 320 SCSI - Non-Hot Plug

	Quantity Supported	Position Supported	Controller
<u>1-inch</u> 36GB 72GB 146GB	Up to 3	1, 2 or B	Hot Plug Single Channel Ultra320 SCSI Adapter (SCSI Models)

NOTE: Support for position "B" requires the purchase of bracket conversion kit (P/N 396654-B21).

Hard Drives (SATA Models only)

SATA 1.5Gb - Non-Hot Plug

	Quantity Supported	Position Supported	Controller
<u>3.5-inch</u> 80GB 160GB 250GB 500GB	Up to 3	1, 2 or B	HP 6-Port SATA RAID Controller

NOTE: Support for position "B" requires the purchase of bracket conversion kit (P/N 396654-B21).

NOTE: 1st and 2nd hard disk drive requires no additional controller. Addition of the 3rd hard disk drive requires the purchase of HP 6-Port SATA RAID Controller (P/N 396654-B21).

Maximum Storage Capacity - SCSI Models

Internal	438GB (3 x 146GB non-hot-plug hard drives)
Total	438GB

Maximum Storage Capacity - Non-Hot Plug SATA Models

Internal	750GB (3 x 250GB non-hot-plug hard drives)
Total	750GB (3 x 250GB non-hot-plug hard drives) 1.5TB (3 x 500GB via FIO or specials only)

NOTE: Maximum internal storage utilizes 2 internal drive bays and 1 removable media bays.

NOTE: The addition of the 3rd hard disk drive for SCSI maximum internal storage support requires the purchase of the bracket conversion option kit (P/N 396654-B21).

NOTE: The addition of the 3rd hard disk drive for SATA maximum internal storage support requires the purchase of the bracket conversion option kit (P/N 396654-B21) and SATA RAID Controller (P/N 372953-B21.)

Storage

Tape Drives

NOTE: A SCSI controller needs to be purchased to operate internal SCSI devices in the SATA 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/Canada/10233.html>

	Quantity Supported	Position Supported	Controller
Internal USB Tape Drives	1	B	Internal USB 2.0 port
HP DAT 24 USB			
HP DAT 40 USB			
HP DAT 72 USB			
Internal SCSI Tape Drives	1 per SCSI port	External	HP Single Channel Ultra320 SCSI HBA
HP DAT 40 SCSI			
HP DAT 72 SCSI			

Power Specifications

Part Number	391977-001
Spare Kit	392173-001
Operational Input Voltage Range (Vrms)	90 to 135 and 200 to 265 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 G3 Fully Configured	(see **)
Fully Loaded System output Wattage (W)	350W
Fully Loaded System Input Current (A rms)	6A @ 115V, 3A @ 230V
Fully Loaded System Thermal (BTU- Hr)	1907BTU
Fully Loaded System VA (Volt-Amp)	690
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

Technical Specifications

System Unit	Dimensions (HxWxD) (with feet)	14.46 X 6.88 X 16.76 in (36.7 X 17.5 X 42.6 cm)	
	Weight (approximate)	23.15 lb (10.5 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	350W
		Maximum Peak Power	350W
	Temperature Range	Operating	50° to 95° F (10° to 35° C)
		Shipping	-40° to 140° F (-40° to 60° C)
	Relative Humidity (non-condensing)	Operating	10% to 90%
		Non-operating	10% to 90%

Acoustic Noise

Idle (Fixed Disk Drives Spinning)	
L WAd (BELS)	5.5
Operating (Random Seeks to Fixed Disks)	
L WAd (BELS)	6.0

Non-Hot Plug Ultra320
SCSI Hard Drives

36.4-GB
357021-B21

Capacity	36,419.2MB	
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
Physical Configuration	Rotational Speed	10,000 rpm
	Bytes/Sector	512
	Logical Blocks	71,132,000
Operating Temperature	41° to 140° F (5° to 60° C)	

Technical Specifications

Non-Hot Plug SATA Hard Drives 80-GB 7.2K 383410-B21

Capacity	80,054MB	
Height	1.0 in. (2.5 cm)	
Width	4.0 in. (10.16 cm)	
Interface	SATA 150MB	
Transfer rate synchronous (maximum)	150MB/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)	

48X Max IDE (ATAPI) CD-ROM Drive 337863-B21

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	540MB (Mode 1, 12 cm)	
	650MB (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)

Technical Specifications

HP Single Channel Ultra320 SCSI Adapter (SCSI Models only) 391872-B21	Drives Supported	Up to 4 SCSI devices Wide (3 drives supported maximum for ML110 G3)	
	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	440.4GB (3x146.8GB, 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 requiring RAID 5 Only) 372953-B21	SATA Protocol	SATA 1.5Gb/s	
	SATA Ports	6 internal (3 drives supported maximum for ML110 G3)	
	Port transfer rate	1.5 Gb/s total	
	Drives Supported	Up to 3SATA HDD	
	Data Transfer Method	32-bit/66-MHz PCI bus-master	
	Storage Capacity	up to 320 GB (3x 80GB hot plug 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 320GB (3x 80GB hot plug SATA HDD)	
	Logical RAID Volumes Supported	4	
	Operating Systems	Microsoft Windows® 2000 Server; Microsoft Windows® Server 2003; Linux: RHEL 4.	
Broadcom 5721 (embedded) 10/100/1000 WOL (Wake on LAN)	Network Interface	Ethernet Standards: IEEE 802.3, 802.3u, 802.3ad, and 802.3ab, 802.1x, 802.1Q and 802.1P	
	Data Transfer Method	PCI Express	
	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	

Technical Specifications

© Copyright 2007 Hewlett-Packard Development Company, L.P.

The information contained herein is subject to change without notice.

Microsoft and Windows NT are US registered trademarks of Microsoft Corporation. Intel is a US registered trademark of Intel Corporation.

The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

For hard drives, 1 GB = 1 billion bytes. Actual formatted capacity is less.