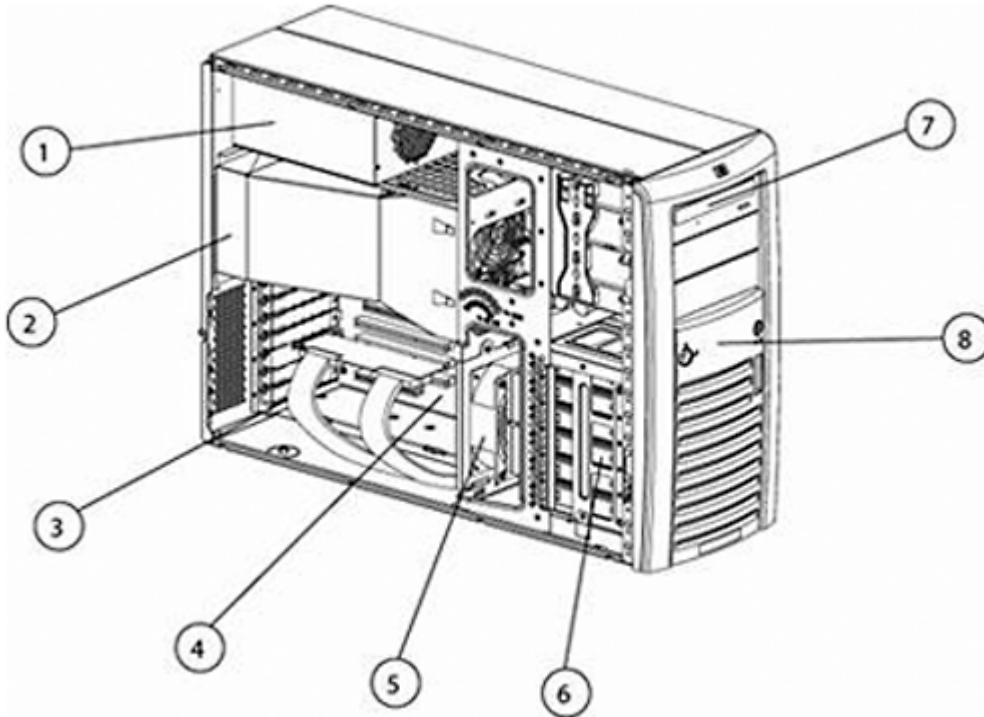


Overview



- | | |
|-------------------------------------|--|
| 1. Power Supply | 5. Front system fan |
| 2. Processor and processor air duct | 6. Six 3.5" SAS/SATA HDD bays |
| 3. Six PCI slots | 7. 48x CD-ROM (2 media bays available) |
| 4. Main System Board | 8. Locking front bezel |

At A Glance

- Processor:
 - Dual-Core Intel Xeon 5000 Sequence processors
 - Intel® 5000V chipset
 - 667 MHz, 1066 MHz or 1333Mhz Front Side Bus
- Memory:
 - PC2-5300 Fully Buffered DIMMs (DDR2-667)Memory running at 667 MHz
 - SAS/SATA - 4 sockets, 1 GB standard, 8 GB maximum
 - SATA - 4 sockets, 512 MB, 8 GB maximum
- Storage Controller:
 - HP Embedded SATA RAID Controller
- Internal Drive Support:
 - Internal SAS storage capacity of up to 880.8GB (6 x 146.8GB SAS drives)
 - Supports up to 6 SAS/SATA hard drives via HBA or RAID Controller
 - Internal SATA storage capacity of up to 3TB (6 x 500GB SATA drives)
- Network Controller:
 - Single PCI Gigabit NIC (embedded)
- Expansion Slots:

Overview

- Six expansion slots: Three (3) PCI-X (64-bit/100MHz), 2 PCI-Express (x4\x8), and 1 PCI (32-bit/33MHz). One slot designated for optional HP ProLiant Lights-Out 100 Remote Management card
- USB Ports:
 - Seven USB 2.0 ports:- 3 rear, 2 front, 2 Internal(1 standard and 1HP 5-pin)
- Redundancy:
 - One 650W Power Supply
- Form Factor:
 - 5U Tower Models. Rack models via optional rack mounting kit
- Management:
 - Optional HP ProLiant Lights-Out 100 Remote Management Card
- Deployment/Serviceability:
 - Easy chassis entry and component access
- Warranty:
 - 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.

Standard Features

Processor	Dual-Core Intel® Xeon® 5060 Processor (3.2 GHz, 1066 FSB)
One of the following depending on configuration	Dual-Core Intel® Xeon® 5140 Processor (2.33 GHz, 1333 FSB)
	Dual-Core Intel® Xeon® 5150 Processor (2.66 GHz, 1333 FSB)
	NOTE: Available via Configuration To Order only. Please see Configuration Information- Factory Integrated Models section of this QuickSpecs.
	Dual-Core Intel® Xeon® 5050 Processor (3.0 GHz, 667 FSB)
	Dual-Core Intel® Xeon® 5110 Processor (1.6 GHz, 1066 FSB)
	Dual-Core Intel® Xeon® 5120 Processor (1.86 GHz, 1066 FSB)
	Dual-Core Intel® Xeon® 5130 Processor (2.0 GHz, 1333 FSB)

Cache Memory	Integrated 2x2MB level 2 cache (5000 Sequence) Integrated 4MB level 2 cache (5100 Sequence)
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Upgradeability	Upgradeable to dual processor
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Chipset	Intel® 5000V Chipset
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Memory	Type	PC2-5300 Fully Buffered DIMMs (DDR2-667) running at 667 MHz
	Standard for SATA Models	512 MB
	Standard for SAS/SATA Model	1 GB
	Maximum	8 GB

Network Controller	Embedded HP NC7781 Gigabit Server Adapter 10/100/1000 WOL (Wake on LAN)
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Expansion Slots	I/O (6 Total, 6 Available)		PCI Voltage:
	PCI-X (64-bit/100MHz)	3	3.3 volts
	PCI-Express (x4\x8)	2	3.3 volts
	PCI (32-bit/33MHz)	1	3.3 volts

Storage Controller	HP Embedded SATA RAID Controller or HP 8 Internal Port SAS Host Bus Adapter with RAID
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Standard Features

Storage	Diskette Drive	None ship standard 1.44 MB USB Diskette Drive Option available
	Optical Drive	48x IDE (ATAPI) CD-ROM Drive
	Hard Drives	None ship standard SAS and SATA HDD options are available

Maximum Internal Storage	SATA	3TB (6 x 500GB) SATA (With standard SATA controller)
	SAS	880.8GB (6 x 146.8GB) SAS or 3TB (6 x 500GB) SATA (With optional SAS controllers)

NOTE: Support for a single logical drive limited to 2TB.

Interfaces	Parallel	0
	Serial	1
	Pointing Device (Mouse, PS2)	1
	Graphics	1
	Keyboard (PS2)	1
	USB 2.0 Ports	7 (3 Rear, 2 Front, and 2 Internal)
	Dedicated USB	1 (available for USB tape connectivity)
		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 (10/100/100 Gbits/s)
	Remote Management	1 (10/100 via optional Lights-Out 100 Remote Management Card)

Graphics	Integrated 2MB SRAM video
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Form Factor	Tower (5U). Rack mounting available via rack mount option kit (P/N 411862-B21 (rails) and (P/N 408697-B21 (bezel))
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RoHS Requirement	For Resellers in countries/regions with RoHS legislation (see NOTE) (e.g. EU, China, etc.) The use of the noted material in a solution and subsequent resale of that solution will result in the solution no longer meeting the requirements of RoHS legislation. NOTE: Directive 2002/95/EC restricts the use of lead, mercury, cadmium, hexavalent chromium, PBBs and PBDEs in electronic products. Countries/regions outside the EU, eg. China, are introducing similar legislation. References to 'RoHS legislation' means requirements of Directive 2002/95/EC or to similar substance restriction legislation enacted by any country/region outside the EU.
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Standard Features

Industry Standard Compliance ACPI V1.0b compliant
PCI 2.2 compliant
PXE Support
WOL Support
Microsoft® Logo certifications

Manageability Optional HP ProLiant Lights-Out 100 Remote Management Card
Embedded IPMI standard reporting

Security Power-on password
Setup password
Diskette boot control

Server Power Cords One Lowline NEMA power cord

Power Supply One 650 W Power, Non-hot plug, non-redundant

System Fans 2 - Non-hot plug, Non-redundant system fans

OS Support Microsoft Small Business Server 2003 (32 and 64 bit)
Microsoft Windows 2003 Server, Standard Edition (32 and 64 bit)
Microsoft Windows 2003 Server, Web Edition
Microsoft Windows 2003 Server, Enterprise Edition (32 and 64 bit)
Microsoft Windows 2000 Server
SCO OpenServer Legend 6.0
SCO Unixware 7.1.4
Red Hat Enterprise Linux 4 (32 and 64 bit)
SuSE Linux Enterprise Server 9 (32 and 64 bit)

NOTE: For an up-to-date listing of the latest ML150 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 ML150, please see:
<http://h18023.www1.hp.com/support/files/server/us/index.html>

NOTE: For more information on HP's Certified and Supported ProLiant Servers, please visit the VMware Server Support Matrix at:
<http://h18004.www1.hp.com/products/servers/software/vmware/hpvmwarecert.html>

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>

Standard Features

Factory Express Portfolio HP Factory Express offers configuration, customization, integration and deployment services for HP servers for Servers and Storage and 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 to meet customer needs. 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 on your specific server model please contact your sales representative or go <http://www.hp.com/go/factory-express>.

HP ProLiant Smart Buys (NA only) 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: 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>

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 (ROW)
Limited warranty included 3 years parts, 1 year labor, 1 year on-site support (AP Only)

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, 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

Standard Features

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>

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>.

SAS/SATA Models

HP ML150G3 5050 HP- SAS/SATA,1GB 399155-xx1	Processor(s) One of the following depending on Model	(1)Dual-Core Intel® Xeon® 5050 Processor (3.00 GHz, 667 FSB) (1)Dual-Core Intel® Xeon® 5130 Processor (2.0 GHz, 1333 FSB)
HP ML150G3 5130 HP- SAS/SATA,1GB 416773-xx1	Cache Memory One of the following depending on Model	Integrated 2x2MB L2 cache (5000 Series) Integrated 4MB L2 cache (5100 Series)
	Memory	1 GB PC2-5300 Fully Buffered DIMMs (DDR2-667)
	Network Controller	Embedded HP NC7781 Gigabit Server Adapter 10/100/1000 WOL
	Storage Controller	HP 8 Internal Port SAS Host Bus Adapter with RAID
	Hard Drive	None ship standard
	Internal Storage One of the following depending on Model	880.8GB (6 x 146.8GB) SAS 3TB (6 x 500GB) SATA (With standard/optional SAS controllers and 6 optional HDD)
	Optical Drive	48x CD-ROM
	Form Factor	Tower standard; 5U Rack via optional rack mounting kit

SATA Models

HP ML150G3 5050 NHP-SATA,512MB 399151-xx1	Processor(s) One of the following depending on Model	(1)Dual-Core Intel® Xeon® 5050 Processor (3.00 GHz, 667 FSB) (1)Dual-Core Intel® Xeon® 5110 Processor (1.6 GHz, 1066 FSB) (1)Dual-Core Intel® Xeon® 5120 Processor (1.86 GHz, 1066 FSB) (1)Dual-Core Intel® Xeon® 5130 Processor (2.0 GHz, 1333 FSB)
HP ML150G3 5050 HP- SATA,512MB 399154-xx1	Cache Memory	Integrated 2x2MB L2 cache (5000 Series) Integrated 4MB L2 cache (5100 Series)
HP ML150G3 5110 NHP-SATA,512MB 416769-xx1	Memory	512 MB PC2-5300 Fully Buffered DIMMs (DDR2-667)
	Network Controller	Embedded HP NC7781 Gigabit Server Adapter 10/100/1000 WOL
HP ML150G3 5110 HP- SATA,512MB 416768-xx1	Storage Controller	HP Embedded SATA RAID Controller
	Hard Drive	None ship standard
HP ML150G3 5120 HP- SATA,512MB 416770-xx1	Internal Storage	3TB (6 x 500GB) SATA (With standard SATA controller and 6 optional HDD)
	Optical Drive	48x CD-ROM
HP ML150G3 5130 HP- SATA,512MB 416772-xx1	Form Factor	Tower standard; 5U Rack via optional rack mounting kit

Models

Country Code Key	XX=00	NA
	XX=01	Australia
	XX=03	UK
	XX=04	Germany
	XX=05	France
	XX=20	Brazil
	XX=29	Japan
	XX=37	AP
	XX=42	Euro
	XX=AA	PRC
	XX=AB	Taiwan
	XX=AD	Korea

Configuration Information-Factory Integrated Models (North America only)

NOTE: For Configure to Order requirements within EMEA region, please consult local Sales Contact.

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 (Select only one model from the following selections)

Models	HP ProLiant ML150 G3 Non-hot Plug SATA CTO Chassis	403111-B21
	Factory Integrated Models ship with:	
	Embedded HP NC7781 Gigabit Server Adapter 10/100/1000 WOL	
	Single 650W Power Supply	
	Tower 5U Form Factor	
	HP ProLiant ML150 G3 Hot Plug SATA CTO Chassis	403112-B21
	Factory Integrated Models ship with:	
	Embedded HP NC7781 Gigabit Server Adapter 10/100/1000 WOL	
	Single 650W Power Supply	
	Tower 5U Form Factor	

Step 2: Choose Required Options (Select only one option from each category unless otherwise noted)

Processors	Dual-Core Intel® Xeon® 5050 Processor (3.00 GHz, 667 FSB), FIO	411776-L21
	NOTE: If 2 processors are desired, select one 411776-L21 and one 411776-B21	
	Dual-Core Intel® Xeon® 5060 Processor (3.2 GHz, 1066 FSB), FIO	411777-L21
	NOTE: If 2 processors are desired, select one 411777-L21 and one 411777-B21	
	Dual-Core Intel® Xeon® 5110 Processor (1.6 GHz, 1066 FSB), FIO	417555-L21
	NOTE: If 2 processors are desired, select one 417555-L21 and one 417555-B21	
	Dual-Core Intel® Xeon® 5120 Processor (1.86 GHz, 1066 FSB), FIO	417556-L21
	NOTE: If 2 processors are desired, select one 417556-L21 and one 417556-B21	
	Dual-Core Intel® Xeon® 5130 Processor (2.0 GHz, 1333 FSB), FIO	417557-L21
	NOTE: If 2 processors are desired, select one 417557-L21 and one 417557-B21	
	Dual-Core Intel® Xeon® 5140 Processor (2.33 GHz, 1333 FSB), FIO	417558-L21
	NOTE: If 2 processors are desired, select one 417558-L21 and one 417558-B21	
	Dual-Core Intel® Xeon® 5150 Processor (2.66 GHz, 1333 FSB), FIO	418226-L21
	NOTE: If 2 processors are desired, select one 418226-L21 and one 418226-B21	
Base Memory	512MB FBD PC2-5300 1x512MB Kit	413507-B21
	1GB FBD PC2-5300 2X512MB Kit	397409-B21
	2GB FBD PC2-5300 2X1GB Kit	397411-B21
	4GB FBD PC2-5300 2X2GB Kit	397413-B21
Optical Drives	48X CD-ROM Kit	377998-B21
	CD-RW/DVD-ROM Combo Drive Option Kit	331346-B21
	HP DVD+R/RW 16X Half Height	383974-B21
	16X DVD-ROM Drive Option Kit (Carbon)	217053-B21
	USB Floppy Drive, External	DC361B



Configuration Information-Factory Integrated Models (North America only)

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.

Base Hard Drives	SATA Hot Plug Drives	
(If selecting Non-Hot Plug Chassis in Step 1, at least one base hard drive is required; Base Hard Drives are not required if Hot-Plug Chassis is selected in Step 1)	HP 500GB 1.5G SATA 7.2K 3.5" HDD	395473-B21
	HP 250GB 1.5G SATA 7.2K 3.5" HDD	349239-B21
	HP 160GB 1.5G SATA 7.2K 3.5" HDD	349238-B21
	HP 80GB 1.5G SATA 7.2K 3.5" HDD	349237-B21
	SAS Hot Plug Drives	
	HP 146GB SAS 15K 3.5" HDD	375872-B21
	HP 72GB SAS 15K 3.5" HDD	375870-B21
	HP 36GB SAS 15K 3.5" HDD	375868-B21

Step 3: Choose Additional Factory Integratable Options

Storage Controllers	64-Bit/133-MHz Single Channel Ultra320 SCSI HBA G2	374654-B21
	HP 8 Internal Port SAS HBA with RAID	347786-B21

NOTE: Hot plug SATA servers come with a hot plug backplane, making them hot plug ready. For full hot plug capability on the hot plug SATA models, a hot plug controller (347786-B21) must to be purchased.

Step 4: Choose Additional Options for Factory Integration

Operating Systems	Pre-install Microsoft Windows 2003 Standard (English)	409167-B21
	Pre-install Microsoft Windows 2003 Small Business Server, Standard Edition (English)	379601-B21
	Pre-install Microsoft Windows 2003 Small Business Server, Premium Edition (English)	379603-B21

NOTE: For additional language part numbers, please visit: <http://www.hp.com/go/microsoft> and select 'HP & Windows OS'.

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.

Processors	Dual-Core Intel® Xeon® 5050 Processor (3.00 GHz, 667 FSB)	411776-B21
	Dual-Core Intel® Xeon® 5056 Processor (3.2 GHz, 1066 FSB)	411777-B21
	Dual-Core Intel® Xeon® 5110 Processor (1.6 GHz, 1066 FSB)	417555-B21
	Dual-Core Intel® Xeon® 5120 Processor (1.86 GHz, 1066 FSB)	417556-B21
	Dual-Core Intel® Xeon® 5130 Processor (2.0 GHz, 1333 FSB)	417557-B21
	Dual-Core Intel® Xeon® 5140 Processor (2.33 GHz, 1333 FSB)	417558-B21
	Dual-Core Intel® Xeon® 5150 Processor (2.66 GHz, 1333 FSB)	418226-B21

Memory	512MB FBD PC2-5300 1x512MB Kit	413507-B21
	1GB FBD PC2-5300 2X512MB Kit	397409-B21
	2GB FBD PC2-5300 2X1GB Kit	397411-B21
	4GB FBD PC2-5300 2X2GB Kit	397413-B21

Optical Drives	48X CD-ROM Kit	377998-B21
	CD-RW/DVD-ROM Combo Drive Option Kit	331346-B21
	HP DVD+R/RW 16X Half Height	383974-B21
	16X DVD-ROM Drive Option Kit (Carbon)	217053-B21
	USB Floppy Drive, External	DC361B

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	SATA Hot Plug Drives	
	HP 500GB 1.5G SATA 7.2K 3.5" HDD	395473-B21
	HP 250GB 1.5G SATA 7.2K 3.5" HDD	349239-B21
	HP 160GB 1.5G SATA 7.2K 3.5" HDD	349238-B21
	HP 80GB 1.5G SATA 7.2K 3.5" HDD	349237-B21
	SAS Hot Plug Drives	
	HP 146GB SAS 15K 3.5" HDD	375872-B21
	HP 72GB SAS 15K 3.5" HDD	375870-B21
	HP 36GB SAS 15K 3.5" HDD	375868-B21

Options

Storage Controllers	64-Bit/133-MHz Single Channel Ultra320 SCSI HBA G2	374654-B21
	HP 8 Internal Port SAS Host Bus Adapter with RAID	347786-B21
	HP ML150G3 1-PORT SATA RAID Cable	413748-B21
	HP Internal SAS 4 Line Host Fan Cable	413368-B21

NOTE: Hot plug SATA servers come with a hot plug backplane, making them hot plug ready. For full hot plug capability on the hot plug SATA models, a hot plug controller (347786-B21) must to be purchased

Communications	HP NC150T PCI 4-port Gigabit 1000T Combo Switch Adapter	367132-B21
	HP NC1020 PCI 1000T Gigabit Server Adapter 32 PCI	353377-B21
	HP NC320T PCI Express Gigabit Server Adapter	367047-B21

Remote Management	HP ProLiant ML150 G3 Lights-Out 100 Remote Management Card	403582-B21
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Tape Drives

NOTE: A separate SCSI Controller is required for connecting SCSI tape drives to this server.

NOTE: For the complete listing of Tape Drive offerings, please 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 24 USB Internal Tape Drive (Carbonite)	DW069A
HP StorageWorks DAT 40 USB Internal Tape Drive (Carbonite)	DW022A
HP StorageWorks DAT 72 USB Internal Tape Drive (Carbonite)	DW026A

DAT Tape Drives

HP StorageWorks DAT 40 SCSI Internal Tape Drive (Carbon)	C5686C
HP StorageWorks DAT 72 SCSI Internal Tape Drive (Carbon)	Q1522B

Ultrium Tape Drive

HP StorageWorks Ultrium 232 SCSI Internal Tape Drive	DW064A
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NOTE: For the complete listing of Tape Drive offerings for this server, please visit:
<http://www.hp.com/products1/storage/compatibility/tapebackup/ISS/index.html>

Options

HP Data Protector Express Software	HP SDP Express Backup Server Upgrade for ProLiant Software	BB117AP
	HP DP Express Package for Microsoft Small Business Server	BB118AA
<p>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).</p> <p>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_div/12337_div.html (Worldwide)</p>		

Uninterruptible Power Systems - Tower Supply	HP T750 UPS, Low Voltage (NA/JPN)	378439-D71
	HP T750 UPS, High Voltage (INTL)	378439-B31
	HP T1000 UPS	AF403A

Installation of Server into Racks	HP ProLiant ML150 G3 Tower to Rack Conversion Kit	408697-B21
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HP KVM Switch Options	HP Console Switch with Virtual Media (KVM/IP), 4x1x16	AF602A
	IP Console Switch with Virtual Media (KVM/IP), 2x1x16	AF601A
	Server Console Switch with Virtual Media (KVM), 0x2x16	AF600A
	PS2 Virtual Media Interface Adapter, 1 Pack	AF604A
<p>NOTE: The AF604A is only compatible with the Console Switches with Virtual Media</p>		
	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
<p>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.</p>		
	HP 1x 4 USB/PS2 KVM Switch, TT (NA/JPN)	371301-D71
	HP 1x 4 USB/PS2 KVM Switch, TT (AU/NZ)	371301-011
	HP 1x 4 USB/PS2 KVM Switch, TT (UK)	371301-031
	HP 1x 4 USB/PS2 KVM Switch, TT (EU)	371301-A21
	HP 1x 4 USB/PS2 KVM Switch, RM (ALL)	371302-B21
	HP PS2 KVM Cable with audio, 6', 2-pack	371730-B21
	HP USB KVM Cable with audio, 6', 2-pack	371729-B21
<p>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.</p>		

Options

Service and Support Offerings (HP Care Pack Services)

Extended Care - Minimum recommended service support offer designed to ensure customers have access to expert assistance, whenever they need it. Next Business Day On-Site Service, 9-Hour x 5-Day Coverage, 3 Years, Electronic

Committed Care - Cost-effective service options designed to extend HP committed response and guaranteed fix times, designed to speed problem resolution. 4-Hour On-Site Service - 13-Hour x 5-Day Coverage, 3 Years, Electronic

Committed Response - Highest HP Support service level recommend to help increase IT performance and availability with comprehensive, consistent hardware and software services. 4-Hour On-Site Service - 24-Hour x 7-Day Coverage, 3 Years, Electronic

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 people to focus on what they do best, their business. Hardware Installation, Electronic (install services)

NOTE: For more information, customer/resellers can contact <http://www.hp.com/services/carepack>.

Memory

HP ProLiant ML150 Generation 3 Server

Standard Memory

512 MB of PC2-5300 Fully Buffered DIMMs (DDR2-667) running at 667 MHz

Standard Memory Plus Optional Memory

Up to 5120 MB memory is available with the optional installation of PC2-5300 Fully Buffered DIMMs (DDR2-667) 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 PC2-5300 Fully Buffered DIMMs (DDR2-667) Memory kits.

NOTE: Charts do not represent all possible memory configurations. Memory must be populated in one of the following ways: Slot 1 only; slots 1 and 2 only (pairs must be of the same size); or slots 1, 2, 3, and 4 (pairs must be of the same size and in the example below with slots 1 and 2 the same and slots 3 and 4 the same)

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

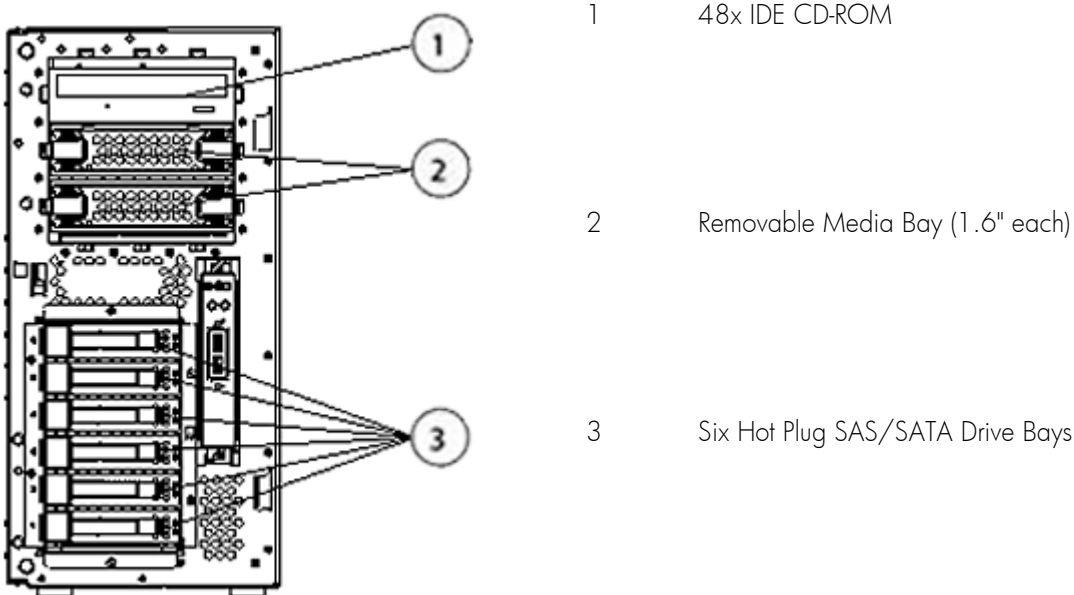
NOTE: Please make sure we have to plug the socket 1, otherwise the system can't boot, also please make sure the DIMM socket 1, 2 and 3, 4 should be the same size, otherwise the capacity will not correct.

Following are memory options available from HP:

512MB FBD PC2-5300 1x512MB Kit	413507-B21
1GB FBD PC2-5300 2X512MB Kit	397409-B21
2GB FBD PC2-5300 2X1GB Kit	397411-B21
4GB FBD PC2-5300 2X2GB Kit	397413-B21

Storage

Non-Hot Plug SATA, Hot Plug SATA, and Hot Plug SAS/SATA



Drive Support

	Quantity Supported	Position Supported	Controller
Removable Media			
IDE CD-ROM Drive	Up to 2	1 or 2	Integrated IDE

Hard Drives

	Quantity Supported	Position Supported	Controller
SAS			
36.4GB	Up to 6	3 (Drive slots 1-6)	HP 8 Internal Port SAS Host Bus Adapter with RAID Optional Smart Array E200
72.8GB			
146.8GB			

Hard Drives

	Quantity Supported	Position Supported	Controller
SATA			
80.0GB	Up to 6	3 (Drive slots 1-6)	Integrated 6 port SATA Adapter Optional HP 8 Internal Port SAS Host Bus Adapter with RAID
160.0GB			
250.0GB			
500.0GB			

Storage

NOTE: In order to realize Hot-Plug functionality in the HP SATA Models of the ML150 G3, the 8 Port Internal Port SAS Host Bus Adapter with RAID (P/N 347786-B21) must be purchased and installed.

Maximum Storage Capacity - SAS Models

Internal 880.8GB (6 x 146.8GB SAS hard drives)

Total 880.8GB (6 x 146.8GB SAS hard drives)

Maximum Storage Capacity - SATA Models

Internal 3TB (6 x 500GB SATA drives)

Total 3TB (6 x 500GB SATA drives)

Tape Drives

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/Division/10233.html> (Worldwide)

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

<http://h18000.www1.hp.com/products/quickspecs/Division/10809.html> (Worldwide)

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:

	Quantity Supported	Position Supported	Optional Controller
HP StorageWorks Tape Drives, USB Internal DAT 24 USB DAT 40 USB DAT 72 USB	1	2	Embedded USB 2.0 port (standard)
HP StorageWorks Tape Drives, USB External DAT 24 USB DAT 40 USB DAT 72 USB	1 per USB port	External	External USB 2.0 port (standard)
HP StorageWorks Tape Drives, Internal DAT 40 DAT 72 Ultrium 232	1	B2	64-Bit/133MHz Single Channel Ultra320 SCSI HBA ALL
HP StorageWorks Tape Drives, External DAT 40 DAT 72 Ultrium 232	1	External	64-Bit/133MHz Single Channel Ultra320 SCSI HBA ALL

Power Specifications

Part Number	402075-001
Spare Kit	407730-001
Operational Input Voltage Range (Vrms)	90 to 135 and 180 to 264 V ac full ranging
Frequency Range (Nominal) (Hz)	47 to 63 Hz

Nominal Input Voltage (Vrms)	100	115	208	220	230	240
Max Rated Output Wattage Rating	600	600	600	600	600	600
Nominal Input Current (A rms)	10	10	5	5	5	5
Max Rated Input Wattage Rating (Watts)	800	800	750	750	750	750
Max. Rated VA (Volt-Amp)	800	800	780	780	780	780
Efficiency (%)	75	77	79	80	80	80
Power Factor	0.95	0.95	0.9	0.9	0.9	0.9
Leakage Current (mA)	3.5mA	3.5mA	3.5mA	3.5mA	3.5mA	3.5mA
Maximum Inrush Current (A peak)	50	50	50	50	50	50
Maximum Inrush Current duration (mS)	3	3	3	3	3	3

System Specifications

	Power**
HP ProLiant ML150 G3 Fully Configured	(see**)
Fully Loaded System Input Wattage (W)	420W
Fully Loaded System Input Current (A rms)	5A @ 115V, 2.5A @ 230V
Fully Loaded System Thermal (BTU- Hr)r	1435 BTU
Fully Loaded System VA (Volt-Amp)	420
System Leakage with all power supplies loaded (mA)	3.5mA
System Inrush Current with all power supplies loaded (A)	50A
Power cord requirements	Nema 5-15P to IEC320-C13 IEC320-C13 to IEC320-C14
**Power shown is for a fully configured system consisting of	
(2) CPU (4) double-sided DIMMs (6) HDDs SAS/SATA (1) CD-ROM (0) DVD-ROM (3) PCI-X 64 100MHz (1) x4 PCI-E (1) x8 PCI-E (1) PCI 32 3.3V (1) Lights-Out Remote Management (1) 650 watts power supply	

Power Specifications

Country	Power Cord Part Number
APD	100614-009, 100613-008, 139867-004, 187487-004(India)
Brazil	285052-001
Italy	109197-008
Australia/New Zealand	100661-001
Euro	100614-009
France	100614-009
Germany	100614-009
Japan	139867-004
PRC	286496-001
UK/Singapore	100613-008
US, Taiwan	121565-001

Technical Specifications

System Unit	Dimensions (HxWxD)	17.83 in x 8.62 in x 25.59 in (45.3 x 21.9 x 65.0 cm)	
	Weight (approximate)	69 lb (31.3 kg)	
Input Requirements (per power supply)	Range Input Voltage	90 to 135 VAC/180 to 265 VAC	
	Normal Line Voltage	100 to 120/200 to 240 VAC	
	Line Frequency	50 to 60 Hz	
	Rated Input Current	load 11.6A at 115VAC, 5.5A at 220VAC	
	BTU Rating	2218 BTU	
Power Supply Output Power (per power supply)	Rated Steady-State Power	600W	
	Maximum Peak Power	660W	
Temperature Range*	Operating	50° to 93° 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 95%	
Acoustic Noise	Idle	38 dBA	
	(Fixed Disk Drives Spinning)	L WAd (BELS)	5.5
	Operating (Random Seeks to Fixed Disks)		43 dBA
		L WAd (BELS)	6.0

*NOTE: All temperature ratings shown are for sea level. An altitude derating of 1° C per 304.8 m (1.8°F per 1,000 ft) to 3048 m (10,000 ft) is applicable. No direct sunlight allowed. Upper operating limit is 3,048m (10,000 ft) or 70 Kpa/10.1 psia. Upper non-operating limit is 9,144 m (30,000 ft) or 30.3KPa/4.4 psia. System performance may be reduced if operating with a fan fault or above 30C.

**NOTE: Storage maximum humidity of 90% is based on a maximum temperature of 45° C (113° F). Altitude maximum for storage corresponds to a pressure minimum of 70 KPa.

Technical Specifications

48X Max IDE (ATAPI) CD-ROM Drive	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
	Mode 2	2,340 bytes, 2,336 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 MBp
Cache Buffer	128 KB	
Start-up Time (typical)	< 7 seconds	
Stop Time	< 4 seconds	
Laser Parameters	Type	Semiconductor Laser GaAlAs
	Wave Length	780 ± 25 nm
Operating Conditions	Temperature	41° to 113° F (5° to 45° C)
	Humidity	10% to 80%
Dimensions	(HxWxD, maximum)	1.7 x 5.85 x 8.11 in (42.9 x 150 x 208 cm)
	Weight	2.09 lb (0.95 kg)

Technical Specifications

HP 8 Internal Port SAS Host Bus Adapter with RAID (SAS Model only)	Dimensions (excluding bracket)	6.6 x 2.5 x 0.6 in (16.8 x 6.4 x 1.6 cm)
	Disk Drive and Enclosure Protocol Support	3 Gbps SAS (Serial Attached SCSI) 1.5 Gbps SATA (Serial Advanced Technology Attachment)
	Architecture	64-bit
	SAS Connectors	2 internal SFF8484 x4 Wide SAS Connectors 12 Gbps per x4 Wide SAS Port (4 x 3 Gbps)
	Data Transfer Method	64-bit wide, PCI-X 133 MHz (1 GB/s maximum bandwidth)
	PCI Bus Speed	PCI-X-133 and 3.3 volt PCI compatibility only
	PCI	PCI-X and 3.3 volt PCI compatibility only
	Simultaneous Drive Transfer Ports	2 x4 Wide SAS Connectors
	Port Transfer Rate	12 Gb/s per x4 Wide SAS Port (4 x 3 Gb/s)
	Software upgradeable Firmware	Yes
	Maximum Capacity	576GB (8 x 72GB)
	Memory Addressing	64-bit, supporting servers memory greater than 4 GB
	Logical Drives Supported	Up to 2 Logical Volumes Up to 10 drives total in all RAID volumes Up to 2 Drives per RAID 1 Up to 8 Drives per RAID 0
	RAID Support	RAID 1 (Mirroring) RAID 0 (Striping)
	Upgradeable Firmware	4-MB flashable ROM
	Disk Drive and Enclosure Protocol Support	3 Gbps SAS and 1.5 Gbps SATA

Embedded HP NC7781 Gigabit Server Adapter (embedded)	Network Interface	Ethernet Standards: IEEE 802.3, 802.3u, 802.3ad, and 802.3ab, 802.1x, 802.1Q and 802.1p
10/100/1000 WOL (Wake on LAN)	Data Transfer Method	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

Technical Specifications

HP Embedded SATA RAID Controller	Dimensions	N/A (embedded)
	Disk Drive and Enclosure Protocol Support	1.5 Gbps SATA
	Architecture	64-bit
	SAS Connectors	6 internal x1 SATA connectors
	Software Upgradeable Firmware	Yes
	Maximum Capacity	1TB
	Memory Addressing	6GB (maximum)
	Logical Drives Supported	2 (maximum)
	RAID Support	RAID 1 (Mirroring) RAID 0 (Striping)

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