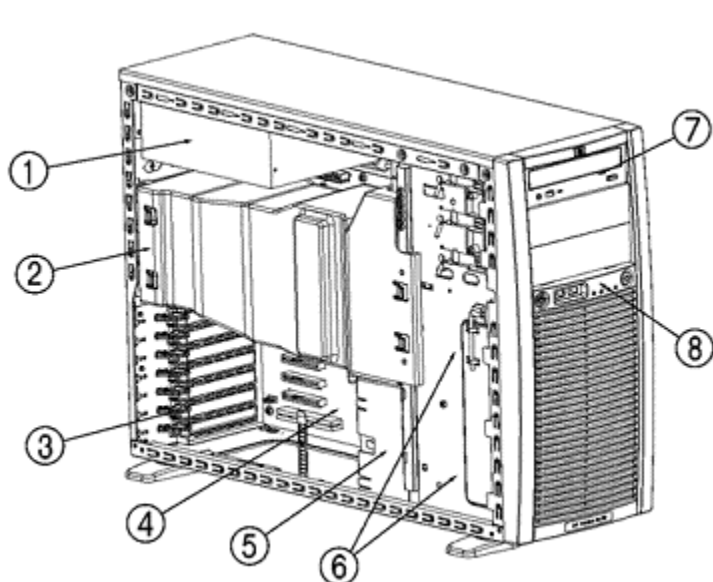
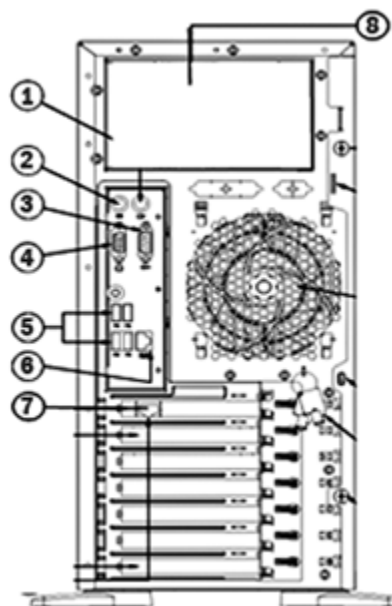


### Overview



#### Front View:

1. Power Supply
2. Processor Air Duct
3. Six Expansion Slots
4. Main System Board
5. Front System Fan
6. Hard Drive Bays (up to 8)
7. DVD-ROM Drive
8. Lockable Bezel



#### Rear View:

1. Mouse Port
2. Keyboard Port
3. Serial Port
4. Monitor Port
5. USB Port
6. Network Port
7. Dedicated LO100 LAN Management Port
8. Power Supply

### What's New

- Support for Non-Hot Plug SAS Hard Drives

### Overview

#### At A Glance

- **Processor:**
  - Quad-Core Intel® Xeon® processor E5400 sequence
  - Dual-Core Intel® Xeon® processor E5200 sequence
  - Intel® 5100 chipset
  - 1066 MHz or 1333MHz Front Side Bus
- **Memory:**
  - PC2-5300 Registered Buffered DIMMs (DDR2-667) Memory
  - 1 or 2 GB standard
  - 16 GB maximum
- **Storage Controller:**
  - HP Embedded SATA RAID Controller (RAID 0,1,10)
  - HP SAS SC40Ge PCI Express to 4-Port SATA/SAS HBA Controller (SAS Model)
  - HP Smart Array E200/128 BBWC SATA/SAS Controller (Performance Model)
- **Internal Drive Support:**
  - Internal SAS storage capacity of up to 2.4TB (8 x 300GB SAS drives)
  - Internal SATA storage capacity of up to 6.0TB (8 x 750GB SATA drives)
  - Supports up to Eight (8) SAS/SATA hard drives via HBA or RAID Controller
- **Network Controller:**
  - Embedded HP NC105i PCI Express Gigabit Server Adapter
- **Expansion Slots:**
  - Six expansion slots: Two (2) PCI-Express x8, Three (3) PCI-Express x4(x8 connector) and One (1) PCI (32-bit/33MHz). One slot designated for optional HP ProLiant 100 G5 Lights-Out 100c Remote Management Card
- **USB Ports:**
  - Eight (8) USB 2.0 ports:– 4 rear, 2 front, 2 Internal(1 standard and 1HP 5-pin)
- **Power Supply:**
  - One 650W Single Non-Redundant Power Supply
- **Form Factor:**
  - 5U Tower Models. Rack models optional HP Tower to Rack Conversion Tray, Universal Kit
- **Management:**
  - Optional HP ProLiant 100 G5 Lights-Out 100c Remote Management Card
- **Deployment/Serviceability:**
  - Easy chassis entry and component access
- **Warranty:**
  - Protected by HP Services and a worldwide network of HP Authorized Channel Partners, including a one-year, limited warranty, Next Business Day 1, year on-site limited Global warranty. Certain restrictions and exclusions apply. SATA hard drives have a one year warranty.
  - **NOTE:** Server Warranty includes 1 year Parts, 1 year Labor, 1-year on-site support with next business day response. Additional information regarding worldwide limited warranty and technical support is available at: <http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html>

### Standard Features

**NOTE:** For a brief, printer friendly data sheet that describes this product and informs you of the essential capabilities and specifications, please visit: <http://ccesalewspr02.cce.hp.com/docfiles/concentra/604671239/4AA1-7091ENW.pdf>

<b>Processor</b>	Dual-Core Intel® Xeon® processor E5205 (1.86 GHz, 1066FSB, 65W)
<b>One of the following depending on configuration</b>	Quad-Core Intel® Xeon® processor E5405 (2.0 GHz, 1333 FSB, 80W)
	Quad-Core Intel® Xeon® processor E5410 (2.33 GHz, 1333 FSB, 80W)
	Quad-Core Intel® Xeon® processor E5420 (2.50 GHz, 1333 FSB, 80W)
	Quad-Core Intel® Xeon® processor E5430 (2.66 GHz, 1333 FSB, 80W)
	Quad-Core Intel® Xeon® processor E5440 (2.83 GHz, 1333 FSB, 80W)

<b>Cache Memory</b>	Integrated 1x6MB level 2 cache (E5200 sequence)
	Integrated 2x6MB level 2 cache (E5400 sequence)

<b>Upgradeability</b>	Upgradeable to two processors (Dual or Quad-Core)
	<b>NOTE:</b> Please contact your regional sales support

<b>Chipset</b>	Intel® 5100 Chipset
----------------	---------------------

<b>Memory</b>	Type	PC2-5300 Registered Buffered DIMMs (DDR2-667)
	Standard for NHP SATA Models	1 GB
	Standard for HP SAS/SATA Model and Performance Model	2 GB
	Maximum	16 GB

<b>Network Controller</b>	Embedded HP NC105i PCI Express Gigabit Server Adapter 10/100/1000 WOL (Wake on LAN)
---------------------------	---

Expansion Slots #	Technology	Bus Width	Connector Width	Bus Number*	Form Factor	Notes
1	32-bit/33MHz PCI	N/A	N/A	0x0A	Full length, full height slot	Non Hot-plug
2	PCI-Express (Gen 1)	x4	X8	0x03	Full length, full height slot	Non Hot-plug
3	PCI-Express (Gen 1)	X4	X8	0x05	Full length, full height slot	Non Hot-plug
4	PCI-Express (Gen 1)	X4	X8	0x01	Full length, full height slot	Non Hot-plug
5	PC-Express (Gen 1)	X8	X8	0x02	Full length, full height slot	Non Hot-plug
6	PCI-Express (Gen 1)	X8	X8	0x09	Full length, full height slot	Non Hot-plug

### Standard Features

<b>Storage Controller</b>	SATA/SAS Model	HP Embedded SATA RAID Controller HP SAS SC40Ge PCI Express to 4-Port SATA/SAS HBA Controller
	Performance Model	HP Smart Array E200/128 BBWC SATA/SAS Controller

<b>Storage</b>	Diskette Drive	None ship standard 1.44 MB USB Diskette Drive Option available
	Optical Drive	HP Half-Height SATA DVD-ROM Optical Drive
	Hard Drives	None ship standard SAS and SATA hard drive options are available One 160GB Non-Hot Plug HDD for Non-Hot Plug BTO models

<b>Maximum Internal Storage</b>	SATA	6.0TB (8 x 750GB) SATA (With optional SAS controller)
	SAS	2.4TB (8 x 300GB) SAS (With optional SAS controllers)

**NOTE:** The Embedded SATA RAID controller support for a single logical drive is limited to 2TB.

<b>Interfaces</b>	Parallel	0
	Serial	1
	Pointing Device (Mouse, PS2)	1
	Graphics	1
	Keyboard (PS2)	1
	USB 2.0 Ports	8 (4 Rear, 2 Front, and 2 Internal)
	Dedicated USB	1 (available for USB tape connectivity)
		<b>NOTE:</b> Please see the following URL for additional information regarding USB support: <a href="http://h18004.www1.hp.com/products/servers/platforms/usb-support.html">http://h18004.www1.hp.com/products/servers/platforms/usb-support.html</a> .
	Network RJ-45 (Ethernet)	1 (10/100/1000 Gbits/s)
	Remote Management	1 (10/100 via optional HP ProLiant 100 G5 Lights-Out 100c Remote Management Card)

<b>Graphics</b>	32 MB shared supporting 1600x1200x16M resolution
-----------------	--

<b>Form Factor</b>	Tower (5U) <b>NOTE:</b> Rack mounting available via HP Tower to Rack Conversion Tray, Universal Kit. Please see the options section in this QuickSpecs.
--------------------	--

<b>Industry Standard Compliance</b>	ACPI V2.0 compliant
	PCI 2.3 compliant
	PXE Support
	WOL Support
	Microsoft® Logo certifications

### Standard Features

<b>Manageability</b>	Optional HP ProLiant 100 G5 Lights-Out 100c Remote Management Card Embedded IPMI standard reporting
<b>Security</b>	Power-on password Setup password Diskette boot control
<b>Server Power Cords</b>	One Lowline NEMA power cord
<b>Power Supply</b>	One 650W Non-Redundant Power Supply, Non-hot plug
<b>System Fans</b>	Two (2) – Non-hot plug, Non-redundant system fans
<b>Remote Management</b>	<p>Lights-Out 100c</p> <p>Lights Out LO100c is a Remote Management Card (RMC) for HP ProLiant 100 series servers that do not have embedded LO100i. The LO100c has all the features of the LO100i Advanced license and allows customers, or their service providers, to remotely manage HP ProLiant servers over a LAN or the Internet from anywhere, anytime regardless whether the server is located in the same building, across town, or around the globe.</p> <p>With LO100c, users can acquire complete remote control with Virtual KVM (graphical hardware-based, remote console). Users can also access the server's serial console, control system power, update system firmware and software, as well as monitor system environmental conditions. The LO100c remote management card can be accessed from a web browser or command line interface. This virtual "at-the-server" functionality means administrators stay in control of remote HP ProLiant 100 series servers.</p> <p>The HP Lights-Out100c consists of a management processor and firmware that provides cost-effective, entry-level lights-out functionality, basic system board management functions, and diagnostics.</p> <p><b>NOTE:</b> For more information, please refer to the QuickSpecs for the LO100c found at: <a href="http://h18004.www1.hp.com/products/servers/management/remotemgmt/lightsout100/index.html">http://h18004.www1.hp.com/products/servers/management/remotemgmt/lightsout100/index.html</a></p>

### Standard Features

<b>Unified Foundation Management</b>	HP Systems Insight Manager	HP Systems Insight Manager (HP SIM) provides a unified, secure and extensible standards-based environment to centrally manage servers, storage and other infrastructure devices, (both HP and non-HP) across multiple operating system platforms.
	Subscriber's Choice	Subscriber's Choice Driver and Support Alerts/Notifications is a web-based email subscription service that provides software and driver change notifications for ProLiant products. Sign up at: <a href="http://www.hp.com/go/subscriberschoice">http://www.hp.com/go/subscriberschoice</a> and customize your profile to receive various new alerts as they become available, on a weekly or monthly basis.
	ROMPaq, software and latest drivers	The latest software, drivers, and firmware fully optimized and tested for your HP ProLiant server and options, available through software and drivers download pages website at: <a href="http://www.hp.com/go/support">http://www.hp.com/go/support</a> .

**NOTE:** Flexible and volume quantity license kits are available for ProLiant Essentials Value Packs. Refer to: <http://www.hp.com/servers/proliantessentials> or the various ProLiant Essentials Value Pack product QuickSpecs for more information.

**NOTE:** For more information regarding ProLiant Essentials Software, please see the following URL: <http://www.hp.com/servers/proliantessentials>.

### OS Support

Windows 2003 R2 Web edition  
Windows 2003 R2 Small Business edition  
Windows 2003 R2 Standard Edition (x86 and x64)  
Windows 2003 R2 Enterprise Edition (x86 and x64)  
Windows 2008 Standard Edition (x86 and x64)  
Windows 2008 Enterprise Edition (x86 and x64)  
Red Hat EL 5/4 (x86 and x64)  
SLES 10/9 (x86 and x64)  
Netware 6.5  
SCO OpenServer Legend 6.0.1  
SCO Unixware 7.1.4

**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 this server, please see: <http://www.hp.com/support>.

**NOTE:** For more Linux OS support & certification information, please visit our the ProLiant & BladeSystem Server Linux matrix: <http://h18004.www1.hp.com/products/servers/linux/hpLinuxcert.html>

### Factory Express Portfolio for Servers and Storage

HP Factory Express offers configuration, customization, integration and deployment services for HP servers 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 to: <http://www.hp.com/go/factory-express>.

### Standard Features

#### 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.

#### Service and Support

This product is covered by a global limited warranty and supported by HP Services and a worldwide network of HP Authorized Channel Partners. 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.

HP Care Pack Services provide total care and support expertise with committed response designed to meet your IT and business needs.

HP Care Pack services include coverage for the HP branded hardware options qualified for the server that are purchased at the same time or afterward and internal to the enclosure. It also includes the 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 and 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.

To fully capitalize 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.

**Recommended Service** – Simplify ProLiant solution implementation, maintenance and management.

- **Support Service** – 3 Year, 9x5 Next Business Day coverage, excluding HP holidays only
- **Deployment Service** – Hardware Installation only

**Enhanced Service** – Optimize service level to increase IT performance and availability

- **Support Service** – 3 Year 13x5 Same Business Day, 4-Hour response coverage
- **Deployment Service** – Installation and Start-up only

Installation & Start-Up of a ProLiant server and Microsoft or Linux O/S per the Customer Description and/or Data Sheet. To be delivered on a scheduled basis 8am-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

#### SAS/SATA Hot Plug Models

<p><b>Performance Model</b></p> <p><b>HP ML150G5 E5410 HP SATA/SAS, 2GB, (1P)</b> 450164-xx1</p> <p><b>Base Model</b></p> <p><b>HP ML150G5 E5405 HP SATA/SAS, 2GB (1P)</b> 450163-xx1</p>	<p><b>Processor(s)</b> <a href="#">One of the following depending on Model</a></p> <p><b>Cache Memory</b> <a href="#">One of the following depending on Model</a></p> <p><b>Memory</b></p> <p><b>Network Controller</b></p> <p><b>Storage Controller</b></p> <p><b>Hard Drive</b></p> <p><b>Internal Storage</b> <a href="#">One of the following depending on Model</a></p> <p><b>Optical Drive</b></p> <p><b>Form Factor</b></p>	<p>(1) Quad-Core Intel® Xeon® processor E5410 (2.33 GHz, 1333 FSB, 80W)</p> <p>(1) Quad-Core Intel® Xeon® processor E5405 (2.00 GHz, 1333 FSB, 80W)</p> <p>Integrated 2x6MB L 2 cache (E5400 sequence)</p> <p>Integrated 1x6MB level 2 cache (E5200 sequence)</p> <p>2 GB PC2-5300 Registered DIMMs (DDR2-667)</p> <p>Embedded HP NC105i PCI Express Gigabit Server Adapter 10/100/1000 WOL</p> <p>SATA/SAS model: HP SC40Ge 4 Internal Port SATA/SAS Host Bus Adapter</p> <p>Performance model: HP E200 8 Internal Port Smart Array SAS/SATA Controller</p> <p>None ship standard</p> <p>2.4TB (8 x 300GB) SAS 6.0TB (8 x 750GB) SATA (With optional SAS controllers and 2nd HDD Cage)</p> <p>HP Half-Height SATA DVD-ROM Optical Drive</p> <p>Tower standard; 5U rack via optional rack mounting kit</p>
---	--	--

#### SATA Non-Hot Plug Models

<p><b>HP ML150G5 E5205 NHP 160GB SATA, 1GB, (1P)</b> 450161-xx1</p> <p><b>HP ML150G5 E5405 NHP 160GB SATA, 1GB, (1P)</b> 450162-xx1</p>	<p><b>Processor(s)</b> <a href="#">One of the following depending on Model</a></p> <p><b>Cache Memory</b></p> <p><b>Memory</b></p> <p><b>Network Controller</b></p> <p><b>Storage Controller</b></p> <p><b>Hard Drive</b></p> <p><b>Internal Storage</b></p> <p><b>Optical Drive</b></p> <p><b>Form Factor</b></p>	<p>(1) Dual-Core Intel® Xeon® processor E5205 (1.86 GHz, 1066FSB, 65W)</p> <p>(1) Quad-Core Intel® Xeon® processor E5405 (2.00 GHz, 1333 FSB, 80W)</p> <p>Integrated 1x6MB L 2 cache (E5200 sequence)</p> <p>1 GB PC2-5300 Registered DIMMs (DDR2-667)</p> <p>Embedded HP NC105i PCI Express Gigabit Server Adapter 10/100/1000 WOL</p> <p>HP Embedded SATA RAID Controller</p> <p>One 160GB Non-Hot Plug HDD</p> <p>2.0TB (4 x 500GB) SATA</p> <p><b>NOTE:</b> A Hot-plug hard drive cage can be installed into a Non-hot plug server by ordering a HBA (or Smart Array) plus one HP 2nd LFF Hot-plug hard drive cage kit.</p> <p>HP Half-Height SATA DVD-ROM Optical Drive</p> <p>Tower standard; 5U rack via optional rack mounting kit</p>
---	--	--

**NOTE:** This section lists some of the steps required to configure a Factory Integrated Model. To ensure only valid configurations are ordered, HP recommends the use of an HP approved configurator. Contact your local sales representative for additional information.

### Models

Country Code Key		
	XX=00	NA
	XX=01	Australia
	XX=03	UK
	XX=04	Germany
	XX=05	France
	XX=06	Italy
	XX=07	Spain
	XX=13	Portugal
	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

**NOTE:** This section lists some of the steps required to configure a Factory Integrated Model. To ensure only valid configurations are ordered, HP recommends the use of an HP approved configurator. Contact your local sales representative for information on CTO product offerings and requirements.

**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)

<b>Models</b>	HP ProLiant ML150 G5 Non-hot Plug SATA CTO Chassis	450290-B21
	<b>Factory Integrated Models ship with:</b>	
	Embedded HP NC105i PCI Express Gigabit Server Adapter 10/100/1000 WOL Tower 5U Form Factor	
	HP ProLiant ML150 G5 Hot Plug SAS/SATA CTO Chassis	450291-B21
	<b>Factory Integrated Models ship with:</b>	
	Embedded HP NC105i PCI Express Gigabit Server Adapter 10/100/1000 WOL Tower 5U Form Factor	

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

<b>Processors</b>	<b>Quad-Core Processor Option Kits</b>	
	Quad-Core Intel® Xeon® processor E5405 (2.00 GHz, 1333 FSB, 80W), FIO <b>NOTE:</b> If 2 processors are desired, select one 455420-L21 and one 455420-B21	455420-L21
	Quad-Core Intel® Xeon® processor E5410 (2.33 GHz, 1333 FSB, 80W), FIO <b>NOTE:</b> If 2 processors are desired, select one 455421-L21 and one 455421-B21	455421-L21
	Quad-Core Intel® Xeon® processor E5420 (2.50 GHz, 1333 FSB, 80W), FIO <b>NOTE:</b> If 2 processors are desired, select one 455422-L21 and one 455422-B21	455422-L21
	Quad-Core Intel® Xeon® processor E5430 (2.66 GHz, 1333 FSB, 80W), FIO <b>NOTE:</b> If 2 processors are desired, select one 455423-L21 and one 455423-B21	455423-L21
	Quad-Core Intel® Xeon® processor E5440 (2.50 GHz, 1333 FSB, 80W), FIO <b>NOTE:</b> If 2 processors are desired, select one 455424-L21 and one 455424-B21	455424-L21
	<b>Dual-Core Processor Option Kits</b>	
	Dual-Core Intel® Xeon® processor E5205 (1.86 GHz, 1066FSB, 65W) <b>NOTE:</b> If 2 processors are desired, select one 455419-L21 and one 455419-B21	455419-L21
<b>Memory</b>	1 GB PC2-5300 DDR2 (2 x 512 MB) Kit, single rank	408850-B21
	2 GB PC2-5300 DDR2 (2 x 1 GB) Kit, single rank	408851-B21
	4 GB PC2-5300 DDR2 (2 x 2 GB) Kit, single rank	461840-B21
	8 GB PC2-5300 DDR2 (2 x 4GB) Kit, dual rank	408854-B21
<b>Optical Drives</b>	HP Half-Height SATA DVD-ROM Optical Drive	447326-B21
	HP Half-Height SATA DVD RW Optical Drive	447328-B21
<b>Hard Drives</b>	<b>NOTE:</b> Required only if P/N 450290-B21 is selected in Step 1 above.	
	<b>Non Hot Plug SATA Drives</b>	
	HP 160GB 1.5G SATA 7.2K 3.5" NHP HDD	411275-B21
	HP 250GB 1.5G SATA 7.2K 3.5" NHP HDD	411276-B21

### Configuration Information-Factory Integrated Models

	HP 500GB 1.5G SATA 7.2K 3.5" NHP HDD, FIO	404469-B21
	<b>Non Hot Plug SAS Drives</b>	
	HP 72GB 3G SAS 15K 3.5" SP HDD	432095-B21
	HP 146GB 3G SAS 15K 3.5" SP HD	432093-B21
	HP 300GB 3G SAS 15K 3.5" SP HDD	431950-B21
	<b>NOTE:</b> If a Non-Hot Plug SAS hard drives is selected with the Non-Hot-Plug CTO Chassis; the HP Internal SAS/SATA 4-Port cable (P/N 457692-B21) and SAS HBA or Smart Array Controller is required. Please see the Storage Controller section of this QuickSpecs	
<b>Storage Controllers</b>	HP SC40Ge 4 Int. SAS RAID PCI-E HBA, FIO only	449176-B21
	HP SC44Ge SAS PCI-E Host Bus Adapter	416096-B21
	HP SC11Xe U320 PCI-E Host Bus Adapter	412911-B21
	HP Smart Array E200/128 BBWC Controller	411508-B21
	HP Internal SAS/SATA 4-Port cable	457692-B21
<b>Power supply</b>	ML150G5 650W Power Supply, FIO only	465462-B21

### Step 3: Choose Additional Options for Factory Integration

**NOTE:** For additional options, please refer to the "Options" section below. Some options may not be available for factory integration. Please contact an HP sales representative for additional information.

<b>Operating Systems</b>	Pre-install Microsoft Windows 2003 Standard (English)	409167-B21
	Pre-install Microsoft Windows 2003 Small Business Server, Premium Edition (English)	379603-B21
	<b>NOTE:</b> For additional language part numbers, please visit: <a href="http://www.hp.com/go/microsoft">http://www.hp.com/go/microsoft</a> and select 'HP & Windows OS'.	
	<b>NOTE:</b> For additional options, please refer to the "Options" section below.	
	<b>NOTE:</b> For the installation of Windows and other OS's, a floppy drive may be required to complete driver installation if you have a SAS add-on card configured in system. For configurations without floppy drive; please purchase a HP USB Floppy Key. See options section of this QuickSpecs.	

### Options

<b>Unique Options</b>	HP ML150G5 2nd LFF HP Drive Cage Kit	458312-B21
<hr/>		
<b>Processors</b>	<b>Quad-Core Processor Option Kits</b>	
	Quad-Core Intel® Xeon® processor E5405 (2.00 GHz, 1333 FSB, 80W)	455420-B21
	Quad-Core Intel® Xeon® processor E5410 (2.33 GHz, 1333 FSB, 80W)	455421-B21
	Quad-Core Intel® Xeon® processor E5420 (2.50 GHz, 1333 FSB, 80W)	455422-B21
	Quad-Core Intel® Xeon® processor E5430 (2.66 GHz, 1333 FSB, 80W)	455423-B21
	Quad-Core Intel® Xeon® processor E5440 (2.83 GHz, 1333 FSB, 80W)	455424-B21
	<b>Dual-Core Processor Option Kits</b>	
Dual-Core Intel® Xeon® processor E5205 (1.86 GHz, 1066FSB, 65W)	455419-B21	
<hr/>		
<b>Memory</b>	1 GB PC2-5300 DDR2 (2 x 512 MB) Kit, single rank	408850-B21
	2 GB PC2-5300 DDR2 (2 x 1 GB) Kit, single rank	408851-B21
	4 GB PC2-5300 DDR2 (2 x 2 GB) Kit, single rank	461840-B21
	8 GB PC2-5300 DDR2 (2 x 4GB) Kit, dual rank	408854-B21
<hr/>		
<b>Optical Drives</b>	HP Half-Height SATA DVD-ROM Optical Drive	447326-B21
	HP Half-Height SATA DVD RW Optical Drive	447328-B21
<hr/>		
<b>Hard Drives</b>	<b>Hot Plug SATA Drives</b>	
	HP 160GB 1.5G SATA 7.2K 3.5" HDD	349238-B21
	HP 250GB 1.5G SATA 7.2K 3.5" HDD	349239-B21
	HP 500GB 1.5G SATA 7.2K 3.5" HDD	395473-B21
	HP 750GB 1.5G SATA 7.2K 3.5" HDD	432341-B21
	<b>Non Hot Plug SATA Drives</b>	
	HP 160GB 1.5G SATA 7.2K 3.5" HDD	411275-B21
	HP 250GB 1.5G SATA 7.2K 3.5" HDD	411276-B21
	<b>Hot Plug SAS Drives</b>	
	HP 72GB 3G SAS 15K 3.5" SP HDD	375870-B21
	HP 72GB 3G SAS 15K 3.5" DP HDD	384852-B21
	HP 146GB 3G SAS 15K 3.5" SP HDD	375872-B21
	HP 146GB 3G SAS 15K 3.5" DP HDD	384854-B21
	HP 300GB 3G SAS 15K 3.5" SP HDD	431944-B21
	HP 300GB 3G SAS 15K 3.5" DP HDD	416127-B21
	<b>Non-Hot Plug SAS Drives</b>	
	HP 72GB 3GB SAS 15K 3.5" SP HDD	432095-B21
	HP 146GB 3G SAS 15K 3.5" SP HD	432093-B21
	HP 300GB 3G SAS 15K 3.5" SP HDD	431950-B21
<p><b>NOTE:</b> SAS hard drives require a SAS HBA or Smart Array Controller.</p> <p><b>NOTE:</b> SAS non-hot plug drives will also require the HP Internal SAS/SATA 4-Port cable (P/N 457692-B21)</p>		

### Options

<b>Storage Controllers</b>	HP SC44Ge SAS PCI-E Host Bus Adapter	416096-B21
	HP SC11Xe U320 PCI-E Host Bus Adapter	412911-B21
	HP Smart Array E200/128 BBWC Controller	411508-B21
	HP Internal SAS/SATA 4 in 1 to 4 in 1 Cable	438160-B21
	<b>NOTE:</b> This cable is required when adding either the HP SC44Ge or the HP Smart Array E200 on a hot-plug model	
	HP Internal SAS/SATA 4-Port Cable	457692-B21
	<b>NOTE:</b> This cable is required when adding either the HP SC44Ge or the HP Smart Array E200 on a non hot-plug SATA model	
<hr/>		
<b>Communications</b>	HP NC110T PCI Express Gigabit Server Adapter	434905-B21
	HP NC360T PCI Express Dual Port Gigabit Server Adapter	412648-B21
	HP NC364T PCI Express Quad Port Gigabit Server Adapter	435508-B21
	HP NC373F PCI Express Multifunction Gigabit Server Adapter	394793-B21
	v90 56K PCI Modem US (with specific modem cable) RoHS	EK694AA
<hr/>		
<b>Remote Management</b>	HP ProLiant 100 G5 Lights-Out 100c Remote Management Card	445513-B21
<hr/>		
<b>Tape Drives</b>	<b>NOTE:</b> Installation of SCSI internal tape drives in a ML150 model requires SCSI controller kit (PN 412911-B21).	
	<b>NOTE:</b> For complete listing of tape drive offerings see: <a href="http://www.hp.com/products1/storage/compatibility/tapebackup/ISS/index.html">http://www.hp.com/products1/storage/compatibility/tapebackup/ISS/index.html</a>	
	<b>DAT USB Tape Drives</b>	
	HP StorageWorks DAT 40 USB Internal Tape Drive (Carbonite)	DW022A
	HP StorageWorks DAT 72 USB Internal Tape Drive (Carbonite)	DW026A
	HP StorageWorks DAT 160 USB Internal Tape Drive	Q1580A
	<b>DAT SCSI Tape Drives</b>	
	HP StorageWorks DAT 40 SCSI Internal Tape Drive (Carbon)	C5686C
	HP StorageWorks DAT 72 SCSI Internal Tape Drive (Carbon)	Q1522B
	HP StorageWorks DAT 160 SCSI Internal Tape Drive	Q1573A
	<b>LTO Ultrium Tape Drives</b>	
	HP StorageWorks LTO-1 Ultrium 232 Internal Tape Drive (Carbonite)	DW064A
	HP StorageWorks LTO-2 Ultrium 448 SCSI Internal Tape Drive (Carbonite)	DW016A

### Options

<b>HP D2D Backup System</b>	HP StorageWorks D2D110 Backup System	EH880A
	<b>NOTE:</b> 1TB of Disk Storage.	
	HP StorageWorks D2D110 Backup System with Data Protector Express Software Kit	EH923A
	<b>NOTE:</b> 1TB of Disk Storage.	
	HP StorageWorks D2D120 Backup System	EH884A
	<b>NOTE:</b> 2TB of Disk Storage.	
	HP StorageWorks D2D120 Backup System with Data Protector Express Software Kit	EH924A
	<b>NOTE:</b> 2TB of Disk Storage.	
HP StorageWorks D2D130 Backup System	EH950A	
<b>NOTE:</b> 3TB of Disk Storage.		
HP StorageWorks D2D130 Backup System with Data Protector Express Software Kit	EH951A	
<b>NOTE:</b> 3TB of Disk Storage.		
HP StorageWorks D2D130 Backup System with LTO-3 Ultrium 920 SAS Tape Drive	EH952A	
<b>NOTE:</b> 3TB of Disk Storage.		
<b>NOTE:</b> Please see the HP D2D Backup Systems QuickSpecs for additional information: <a href="http://h18000.www1.hp.com/products/quickspecs/12651_div/12651_div.html">http://h18000.www1.hp.com/products/quickspecs/12651_div/12651_div.html</a> (Worldwide)		

---

<b>Uninterruptible Power Systems - Tower Supply</b>	HP T750 UPS, Low Voltage (NA/JPN)	378439-D71
	HP T750 UPS, High Voltage (INTL)	378439-B31
	HP T500 UPS, Low Voltage, NA/JPN	361475-001
	HP T1000, UPS, USB, INTL	AF405A
	HP T1000 UPS, JPN/TWN	AF404A
	HP T1000 UPS, NA	AF403A

---

<b>Installation of Server into Racks</b>	HP Tower to Rack Conversion Tray, Universal Kit	417705-B21
--	---	------------

---

### Options

<b>HP KVM Switch Options</b>	IP 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
	<b>NOTE:</b> The AF604A is only compatible with the Console Switches with Virtual Media	
	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
	<b>NOTE:</b> Cat5e cables are required to connect Interface Adapters to Console Switches. Cat5e cables can be found at the following URL: <a href="http://www.hp.com/go/kvm">http://www.hp.com/go/kvm</a> .	
	HP 1x4 Console Switch	AF611A
	HP PS2 Server Console Cable, 6 foot, 2-Pack	AF612A
	HP USB Server Console Cable, 6 foot, 2-Pack	AF613A
<b>NOTE:</b> required for supporting USB peripherals.		
<b>NOTE:</b> For additional information regarding KVM switches, Serial Console servers, rack mount monitors, keyboards and all related options please see the following URL: <a href="http://www.hp.com/go/kvm">http://www.hp.com/go/kvm</a> .		

<b>USB Options</b>	HP USB 2-Button Optical Scroll Mouse (Carbonite/Silver)	DC172B
	HP USB 04 Standard Keyboard	DT528A#xxx
	USB 2.0 4-port HUB	DG954A
	HP 1GB USB 2.0 Floppy Drive Key	442085-B21
	HP 256MB USB 2.0 Floppy Drive Key	442084-B21
	USB Floppy Drive, External	DC361B
<b>NOTE:</b> For the installation of Windows and other OS's, a floppy drive or the HP USB Floppy Drive Key may be required to complete driver installation. A standard USB drive key may not work to complete driver installation		

<b>Service and Support Offerings</b> (HP Care Pack Services)	<b>Support Service</b>	
	Next Business Day On-Site Service, 9-Hour x 5-Day Coverage, 3 Years, Electronic	U8184E
	Same Business Date On-Site Service 13-Hour x 5-Day Coverage, 3 Years, Electronic	U8192E
	<b>Deployment Services</b>	
	Hardware Installation, Electronic (install services)	U8195E
<b>NOTE:</b> For more information, customer/resellers can contact: <a href="http://www.hp.com/services/carepack">http://www.hp.com/services/carepack</a> .		

### Memory

#### HP ProLiant ML150 Generation 5 Server

DIMM Installation Guidelines:

**NOTE:** Charts do not represent all possible memory configurations. Memory must be populated in one of the following ways:

1. Slot 1 only; slots 1 and 2 only (pairs must be of the same size)
2. Slots 1, 2, 3, 4, 5, and 6 (pairs must be of the same size and in the example below with slots 1 and 2 the same and slots 2 and 3 the same, and slots 5 and 6 the same)
3. Dual rank DIMMs can only be supported in slots 1 and 2.

#### Standard Memory

All HP ML150 G5 models ship with PC2-5300 Registered DIMMs (DDR2-667)

Hot Plug SAS/SATA (performance and/or base) models include 2 x 1 GB DIMMs (2 GB total)

Non-Hot Plug SATA models include two 512 MB DIMMs (1 GB total)

Factory Integrated Models include the memory capacity of your choice.

#### Standard Memory Replaced with Optional Memory

Up to 16 GB of memory is available with the removal of the standard 1 GB of memory and the optional installation of PC2-5300 Registered DIMMs (DDR2-667) Memory kits.

#### SAS/SATA -Hot Plug Memory

Memory		Slot					
		1 (Dual Rank)	2 (Dual Rank)	3 (Single Rank)	4 (Single Rank)	5 (Single Rank)	6 (Single Rank)
Standard	2 GB	1 GB	1 GB	Empty	Empty	Empty	Empty
Optional	10 GB	1 GB	1 GB	2 GB	2 GB	2 GB	2 GB
Maximum	16 GB	4 GB	4 GB	2 GB	2 GB	2 GB	2 GB

#### SATA - Non-Hot Plug Memory

Memory		Slot					
		1 (Dual/Single Rank)	2 (Dual/Single Rank)	3 (Single Rank)	4 (Single Rank)	5 (Single Rank)	6 (Single Rank)
Standard	1 GB	512 MB	512 MB	Empty	Empty	Empty	Empty
Optional	9 GB	512 MB	512 MB	2 GB	2 GB	2 GB	2 GB
Maximum	16 GB	4 GB	4 GB	2 GB	2 GB	2 GB	2 GB

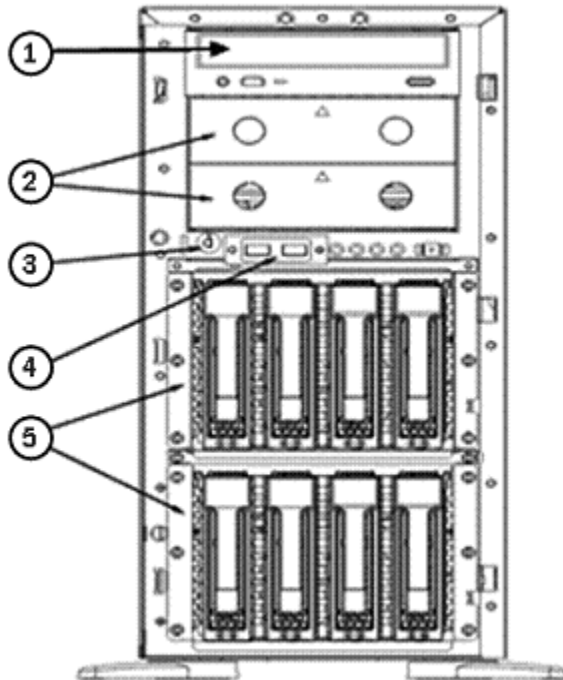
**NOTE:** Please ensure socket 1 is populated, otherwise the system will not boot. Install memory in balanced pairs (see memory options) for best performance.

#### Following are memory options available from HP:

1 GB PC2-5300 DDR2 (2 x 512 MB) Kit, single rank	408850-B21
2 GB PC2-5300 DDR2 (2 x 1 GB) Kit, single rank	408851-B21
4 GB PC2-5300 DDR2 (2 x 2 GB) Kit, single rank	461840-B21
8 GB PC2-5300 DDR2 (2 x 4GB) Kit, dual rank	408854-B21

### Storage

#### Non-Hot Plug SATA or Hot Plug SAS/SATA



- 1 16x SATA DVD-ROM
- 2 Removable Media Bay with EMI Shield
- 3 Thermal Sensor
- 4 USB Port
- 5 Four/Eight Hot Plug SAS/SATA or Four Non-Hot Plug SATA Drive Bays

#### Drive Support

	Quantity Supported	Position Supported	Controller
<b>Removable Media</b>			
SATA DVD-ROM Drive	Up to 1	1	SATA

#### Hard Drives

##### SAS (Hot Plug Drives)

	Quantity Supported	Position Supported	Controller
300 GB SAS 15K 146 GB SAS 15K 72 GB SAS 10K	Up to 8	5 (Drive slots 1-8)	LSI SATA/SAS SC40Ge PCI Express to 4-Port Controller Smart Array E200 SATA/SAS Controller Optional HP SC44Ge SATA/SAS PCI-E Host Bus Adapter

##### SAS (Non-Hot Plug Drives)

300 GB SAS 15K 146 GB SAS 15K 72 GB SAS 15K	Up to 8	5 (Drive slots 1-8)	LSI SATA/SAS SC40Ge PCI Express to 4-Port Controller Smart Array E200 SATA/SAS Controller Optional HP SC44Ge SATA/SAS PCI-E Host Bus Adapter
---	---------	---------------------	--

### Storage

#### Hard Drives

##### SATA

	Quantity Supported	Position Supported	Controller
750GB	Up to 8	5 (Drive slots 1-4)	Embedded 4 port SATA Controller (for HP SATA models) LSI SATA/SAS SC40Ge PCI Express to 4-Port Controller Smart Array E200 SATA/SAS Controller Optional HP SC44Ge SATA/SAS PCI-E Host Bus Adapter
500GB			
250GB			
160GB			

**NOTE:** To support 8 drives, the purchase of the optional HP HDD cage and possibly purchase a second SATA/SAS controller for 8 port support are required.

#### Maximum Storage Capacity – SAS Models

Internal 2.4TB (8 x 300GB SAS hard drives)

Total 2.4TB (8 x 300GB SAS hard drives)

#### Maximum Storage Capacity – SATA Models

Internal 6.0TB (8 x 750GB SATA drives)

Total 6.0TB (8 x 750GB SATA drives)

#### Tape Drives

**NOTE:** Installation of SCSI tape drives in a ML110 G5 model requires SCSI controller kit (PN: 412911-B21).

**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)

	Position Supported	Controller	Controller/HBA Option Kit Part Number
<b>Internal USB Tape Drives</b> DAT 40 USB DAT 72 USB DAT 160 USB	2	USB 2.0 port	N/A
<b>External USB Tape Drives</b> DAT 40 USB DAT 72 USB DAT 160 USB	External	USB 2.0 port	N/A
<b>Internal SCSI Tape Drives</b> DAT 40 DAT 72 DAT 160 LTO-1 Ultrium 232 LTO-2 Ultrium 448	2	HP SC11Xe Host Bus Adapter	412911-B21
<b>External SCSI Tape Drives</b> DAT 40 DAT 72	External	HP SC11Xe Host Bus Adapter	412911-B21

### Storage

DAT 160  
LTO-1 Ultrium 232  
LTO-1 Ultrium 448

<b>HP StorageWorks D2D Backup Systems</b>	External	Embedded Network Controller	N/A
---	----------	-----------------------------	-----

D2D110  
D2D120  
D2D130

### Power Specifications

<b>Part Number</b>	459558-001
<b>Spare Kit</b>	461512-001
<b>Operational Input Voltage Range (Vrms)</b>	90 to 135 and 180 to 264 V ac full ranging
<b>Frequency Range (Nominal) (Hz)</b>	47 to 66 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	780	760	750	750	750
Max. Rated VA (Volt-Amp)	842.10	821.05	844.44	833.33	833.33	833.33
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 G5 Fully Configured	(see**)
Fully Loaded System Input Wattage (W)	630W
Fully Loaded System Input Current (A rms)	6A @ 115V, 3A @ 230V
Fully Loaded System Thermal (BTU- Hr)r)	1794 BTU (526W)
Fully Loaded System VA (Volt-Amp)	630
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) DVD-ROM
- (3) x4 PCI-E
- (2) x8 PCI-E
- (1) PCI 32 3.3V
- (1) Lights-Out Remote Management
- (1) 650 watts power supply

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

<b>System Unit</b>	<b>Dimensions</b> (HxWxD)	7.87 x 16.7 x 24.28 in (20 x 42.4 x 61.68 cm)
	<b>Weight</b> (approximate)	<p>Maximum: 60.96 lb (27.65 kg) (All hard drives, power supplies and processors installed)</p> <p>Minimum: 40.9 lb (18.55 kg) (One hard drive, power supply and processor installed)</p>
	<b>Input Requirements</b> (per power supply)	<p>Range Input Voltage 90 to 135 VAC 180 to 265 VAC</p> <p>Normal Line Voltage 100 to 127 VAC 200 to 240 VAC</p> <p>Rated Input Current load 11.6A at 100 to 127 VAC 5.5A at 200 to 240 VAC</p> <p>Rated Input Frequency 47 to 66 Hz</p> <p>Rated Input Power 930 W (Max)</p>
	<b>BTU Rating</b>	Maximum 2218 BTU
	<b>Power Specifications</b>	To review typical power ratings use the Power Calculator which is available via the online tool located at URL: <a href="http://h30099.www3.hp.com/configurator/cal/Power%20Calculator%20Catalog.xls">http://h30099.www3.hp.com/configurator/cal/Power%20Calculator%20Catalog.xls</a>
	<b>Power Supply Output Power</b> (per power supply)	<p>Rated Steady-State Power 526 W (at 100 VAC) for system 526 W (at 200 VAC)</p> <p>Maximum Peak Power 526 W (at 100 VAC) 526 W (at 200 VAC)</p>
	<b>System Inlet Temperature</b>	Operating 50° to 93° F (10° to 35° C) at sea level with an altitude derating of 1.8°F per 1,000 ft (1.0° C per every 305 m) above seal level to a maximum of 10,000 ft (3050 m) no direct sustained sunlight . Maximum rate of change is 18°F/hr (10°C/hr). The upper limit may be limited by the type and number of options installed. System performance may be reduced if operating with a fan fault or above 86°F (30°C).
	<b>Relative Humidity</b> (non-condensing)	Non-Operating -40° to 140° F (-30° to 60° C)
		Operating 10% to 90% relative humidity (Rh), 101.7°F (38.7°C) maximum wet bulb temperature, non-condensing
	Non-operating** 10% to 95% relative humidity (Rh), 101.7°F (38.7°C) maximum wet bulb temperature, non-condensing.	
<b>Altitude</b>	Operating 10,000 ft (3000m). Maximum allowable altitude change rate is 1°C per 300m	
	Non-Operating 30,000 ft (9144m). Maximum allowable altitude change rate is 1°C per 300m	
<b>Acoustic Noise</b>	Listed are the declared A-Weighted sound power levels (LWad) and declared average bystander position A-Weighted sound pressure levels (LpAm) when the product is operating in a 23°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 9ECMA 109).	

### Technical Specifications

Idle (Fixed Disk Drives Spinning)	
L WAd (BELS)	5.27 B
L-pAm	36.5 dBA
Operating (Random Seeks to Fixed Disks)	
L WAd (BELS)	5.30 B
L WAd (BELS)	36.9 dBA

<b>HP Half-Height SATA DVD-ROM Optical Drive</b>	<b>Disk</b>	Applicable Disk	CD-ROM, CD-XA, CD-DA (Mode 1, Mode 2, Form 1 and 2) Photo CD (Single and Multi-session) Mixed Mode (Audio and Data combined) CD-R, CD-RW, DVD-ROM, DVD+R, DVD+RW
		Capacity	4.7 GB (DVD-5) 8.54 GB (DVD-9)
	<b>Block Size</b>	DVD Media	2,048 bytes
	<b>Interface</b>	SATA	1.56Gb/s
	<b>Access Times</b> (typical)	Random	<140 ms
		Full-Stroke	<250 ms
	<b>Data Transfer Rate</b>	Sustained	8100 to 21600 KB/s (6X to 16X)
	<b>Cache Buffer</b>	128 KB	
	<b>Start-up Time</b> (typical)	< 7 seconds	
	<b>Stop Time</b>	< 4 seconds	
	<b>Laser Parameters</b>	Type	Semiconductor Laser GaAlAs
		Wave Length	780 ± 25 nm
	<b>Operating Conditions</b>	Temperature	41° to 113° F (5° to 45° C)
		Humidity	10% to 90%
<b>Dimensions</b>	(HxWxD, maximum)	1.7 x 5.85 x 8.11 in (4.49 x 15.0 x 20.3 cm)	
	Weight	2.64 lb (1.2 kg)	

<b>HP 4 Internal Port SAS Host Bus Adapter</b>	(SAS/SATA HP Model) (SC40Ge SATA/SAS controller)	<b>Dimensions</b> (excluding bracket)	6.6 x 2.5 x 0.6 in (16.8 x 6.4 x 1.6 cm)
		<b>Disk Drive and Enclosure Protocol Support</b>	3 Gbps SAS (Serial Attached SCSI) 1.5 Gbps SATA (Serial Advanced Technology Attachment)
		<b>Architecture</b>	64-bit
		<b>SAS Connectors</b>	1 internal SFF8484 x4 Wide SAS Connectors 12 Gbps per x4 Wide SAS Port (4 x 3 Gbps)
		<b>Data Transfer Method</b>	PCI-Express x8 - 2 GB/s maximum bandwidth
		<b>PCI Bus Speed</b>	PCI-Express x8
		<b>Simultaneous Drive Transfer Ports</b>	1 x4 Wide SAS Connectors
		<b>Port Transfer Rate</b>	12 Gb/s per x4 Wide SAS Port (4 x 3 Gb/s)

### Technical Specifications

<b>Software upgradeable Firmware</b>	Yes
<b>Maximum Capacity</b>	1.2TB (4 x 300GB)
<b>Memory Addressing</b>	64-bit, supporting servers memory greater than 4 GB
<b>Logical Drives Supported</b>	Up to 2 Logical Volumes Up to 10 drives total in all RAID volumes Up to 2 Drives per RAID 1 Up to 4 Drives per RAID 0
<b>RAID Support</b>	RAID 1 (Mirroring) RAID 0 (Striping)
<b>Upgradeable Firmware</b>	4-MB flashable ROM
<b>Disk Drive and Enclosure Protocol Support</b>	3 Gbps SAS and 1.5 Gbps SATA

#### HP E200/128 BBWC (Performance Model) Smart Array Controller

<b>Dimensions (excluding bracket)</b>	6.6 x 2.5 x 0.6 in (16.8 x 6.4 x 1.6 cm)
<b>Disk Drive and Enclosure Protocol Support</b>	3 Gbps SAS (Serial Attached SCSI) 1.5 Gbps SATA (Serial Advanced Technology Attachment)
<b>Architecture</b>	64-bit
<b>SAS Connectors</b>	2 internal SFF8484 x4 Wide SAS Connectors 12 Gbps per x4 Wide SAS Port (4 x 3 Gbps)
<b>Data Transfer Method</b>	PCI-Express x8 - 2 GB/s maximum bandwidth
<b>PCI Bus Speed</b>	PCI-Express x8
<b>Simultaneous Drive Transfer Ports</b>	2 x4 Wide SAS Connectors
<b>Port Transfer Rate</b>	12 Gb/s per x4 Wide SAS Port (4 x 3 Gb/s)
<b>Software upgradeable Firmware</b>	Yes
<b>Maximum Capacity</b>	2.4TB (8 x 300GB)
<b>Memory Addressing</b>	64-bit, supporting servers memory greater than 4 GB
<b>Logical Drives Supported</b>	<FILL IN>
<b>RAID Support</b>	RAID 1 (Mirroring) RAID 0 (Striping) RAID 5
<b>Upgradeable Firmware</b>	4-MB flashable ROM
<b>Disk Drive and Enclosure Protocol Support</b>	3 Gbps SAS and 1.5 Gbps SATA

### Technical Specifications

<b>Embedded NC105i PCIe Gigabit Server Adapter</b> (Embedded)	<b>Network Interface</b>	Integrated 10/100/1000BASE-T Transceiver Combines a triple-speed IEEE 802.3TM - Compliant Media Access Controller (MAC) with a triple-speed Ethernet transceiver.	
	<b>Data Transfer Method</b>	Compliant to x1 PCIe Specification	
	<b>Network Transfer Rate</b>	10Base-T (Half-Duplex)	10 Mb/s
		10Base-T (Full-Duplex)	20 Mb/s
		100Base-TX (Half-Duplex)	100 Mb/s
		100Base-TX (Full-Duplex)	200 Mb/s
1000Base-TX (Half and Full-Duplex)		2000Mb/s	
<b>Connector</b>	RJ-45 connector		
<b>Cable Support</b>	Performs all the physical layer functions for 10BASE-T, 100BASE-T, and 1000BASE-T Ethernet on standard Category 5 UTP		

<b>HP Embedded SATA RAID Controller</b>	<b>Dimensions</b>	N/A (embedded)	
	<b>Disk Drive and Enclosure Protocol Support</b>	1.5 Gbps SATA	
	<b>Architecture</b>	64-bit	
	<b>SAS Connectors</b>	4 internal x1 SATA connectors	
	<b>Software Upgradeable Firmware</b>	Yes	
	<b>Maximum Capacity</b>	2TB	
	<b>Memory Addressing</b>	6GB (maximum)	
	<b>Logical Drives Supported</b>	2 (maximum)	
	<b>RAID Support</b>	RAID 1 (Mirroring)	
		RAID 0 (Striping)	
RAID 10			

<b>Environment-friendly Products and Approach</b>	<b>End-of-life Management and Recycling</b>	Hewlett-Packard offers end-of-life HP product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to <a href="http://www.hp.com/go/green">http://www.hp.com/go/green</a> . To recycle your product, please go to: <a href="http://www.hp.com/go/green">http://www.hp.com/go/green</a> or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.
		The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: <a href="http://www.hp.com/go/green">http://www.hp.com/go/green</a> . These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.

### *Technical Specifications*

© Copyright 2008 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, the Intel logo, Xeon and Xeon Inside are trademarks of Intel Corporation in the U.S. and other countries.

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.