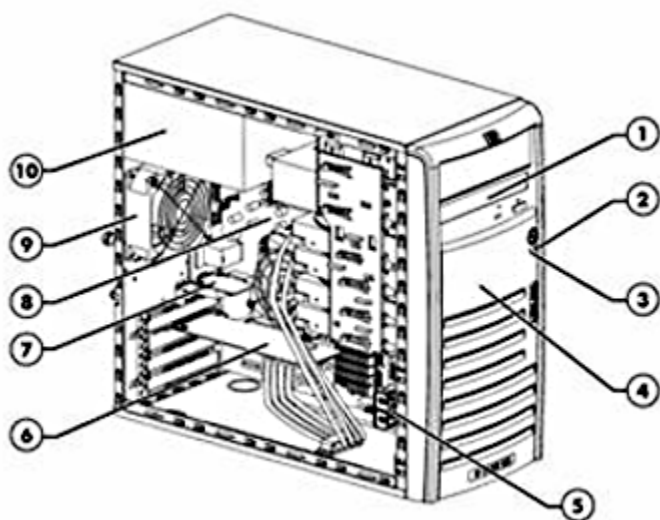
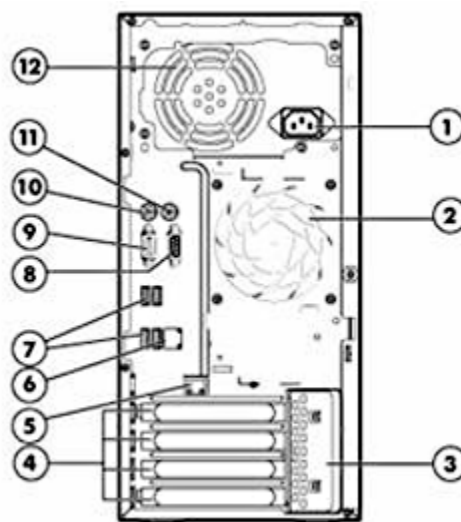


### Overview



#### Front View:

1. DVD-ROM Drive
2. Power LED
3. Drive Activity LED
4. Front Bezel
5. Full Length Card Retainer
6. HDD Controller Card (Optional)
7. HP ProLiant100 G5 Lights-Out 100c Remote Management Card port (Optional)
8. System Board
9. Rear System Fan
10. 365W Power Supply



#### Rear View:

1. Power Supply Outlet
2. Rear System Fan
3. PCI Slot Cover Lock
4. PCI Slot Covers
5. HP ProLiant100 G5 Lights-Out 100c Remote Management Card port (Optional)
6. LAN Port (RJ-45)
7. Rear USB 2.0 Ports
8. Serial Port
9. VGA Port
10. PS/2 Keyboard Port
11. PS/2 Mouse Port
12. Power Supply Unit (PSU) Fan

### What's New

- Support for AMD Opteron™ Quad-Core 1300 series processors
- Support for SATA Midline (MDL) and SAS Enterprise (ENT) Drives 3.5", Non-Hot Plug

### Overview

#### At A Glance

- **Processor:**
  - Quad-Core AMD Opteron™ processors Model 1300 series
  - Dual-Core AMD Opteron™ processors Model 1200 series
  - Dual-Core AMD Athlon™ processors Model 4450B series
  - Single-Core AMD Athlon™ processors Model 1640B series
  - Single-Core AMD Sempron™ processors Model LE1250 series
- **Memory:**
  - 512 MB Standard/8 GB Maximum of PC2-6400 DDR2 Unbuffered ECC
- **Storage Controller:**
  - SATA Models: 4 Port SATA controller with Embedded RAID on Motherboard (RAID 0,1,5)
- **Internal Drive Support:**
  - 4 HDD Support:
    - 3.0TB SATA max storage (4 x 750GB)
    - 1.8TB SAS max storage (4 x 450GB)
- **Network Controller:**
  - Embedded NC105i PCI Express Gigabit Ethernet Server Adapter
- **Expansion Slots:**
  - Slot 1: PCI 32-bit/33MHz PCI at 3.3V
  - Slot 2: PCI-Express x1 connector with x1 link
  - Slot 3: PCI-Express x8 connector with x8 link
  - Slot 4: PCI-Express x16 connector with x16 link
- **USB Ports:**
  - 8 Eight total USB ports
    - 2 Front
    - 4 Rear
    - 2 Internal (one for tape, one for standard USB device)
- **Management:**
  - Standard Lights Out 100 IPMI 2.0 reporting
  - Optional HP ProLiant 100 G5 Lights Out 100c Remote Management Card
  - Standard HP ProLiant ML115 G5 Easy Set-Up CD
- **Form Factor:**
  - Micro ATX Tower (4U)
- **Warranty:**
  - 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. Enhancements to warranty services are available through HP Care Pack services or customized service agreements. 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. (3-1-1 warranty offered in AP only, excluding Japan only). Warranty repairs may be accomplished through the use of Customer Self Repair (CSR) parts. These parts fall into two categories: 1) Mandatory CSR parts are designed for easy replacement. A travel and labor charge will result when customers decline to replace a Mandatory CSR part; 2) Optional CSR parts are also designed for easy replacement but may involve added complexity. Customers may choose to have HP replace Optional CSR parts at no charge. 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://h71028.www7.hp.com/ERC/downloads/4AA1-4557ENW.pdf>

#### Processor

One of the following depending on Model

#### Quad-Core Processors

Quad-Core AMD Opteron™ Processor Model1354 (2.2 GHz, 75W, 2MB)

**NOTE:** Offered through Configure-To-Order only. See Factory Integrated Models section for more details.

Quad-Core AMD Opteron™ Processor Model1352 (2.1 GHz, 75W, 2MB)

**NOTE:** Offered through Configure-To-Order only. See Factory Integrated Models section for more details.

#### Dual-Core Processors

Dual-Core AMD Opteron™ Processor Model 1222 (3.0 GHz, 95W, 2MB )

**NOTE:** Offered through Configure-To-Order only. See Factory Integrated Models section for more details.

Dual-Core AMD Opteron™ Processor Model 1218 (2.6 GHz, 95W, 2MB)

**NOTE:** Offered through Configure-To-Order only. See Factory Integrated Models section for more details.

Dual-Core AMD Opteron™ Processor Model 1214 (2.2 GHz, 95W, 2MB)

**NOTE:** Offered through Configure-To-Order only. See Factory Integrated Models section for more details.

Dual-Core AMD Opteron™ Processor Model 1210 (1.8 GHz, 95W, 2MB)

**NOTE:** Offered through Configure-To-Order only. See Factory Integrated Models section for more details.

Dual-Core AMD Athlon™ Processor Model 4450B (2.3 GHz, 45W, 1MB)

#### Single-Core Processors

Single-Core AMD Athlon™ Processor Model 1640B (2.7 GHz, 45W, 512KB)

**NOTE:** Offered through Configure-To-Order only. See Factory Integrated Models section for more details.

Single-Core AMD Sempron™ Processor Model LE1250 (2.2 GHz, 45W, 512KB)

**NOTE:** Offered through Configure-To-Order only. See Factory Integrated Models section for more details.

#### Cache Memory

One of the following depending on Model

2MB Level 2 cache (AMD Opteron™ 1352, 1354, 1222, 1218, 1214, and 1210 models)

1MB Level 2 cache (AMD Athlon™ 4450B models)

512KB Level 2 cache (AMD Athlon™ 1640B models)

512KB Level 2 cache (AMD Sempron™ LE 1250 models)

#### Chipset

nVidia NFP3400

#### Memory Protection

ECC

#### Memory

Type PC2-6400 unbuffered DDR2 ECC 800MHz

Standard 512 MB

Maximum 8 GB

#### Network Controller

Embedded NC105i PCI Express Gigabit Ethernet Server Adapter

### Standard Features

Expansion Slots #	Technology	Bus Width	Connector Width	Bus Number*	Device Number	Form Factor	NOTES
1	PCI	32-bit	N/A	1	8	Full height slot	133MHz/3.3V
2	PCI-e	X1	X1	4	0	Full height slot	
3	PCI-e	X8	X8	2	0	Full length, full height slot	
4	PCI-e	X16	X16	12	0	Full length, full height slot	

\*Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number.

\*\* Slots are enumerated differently based on OS. MS OS's enumerate from lowest to highest Device ID by bus (starting with the lowest bus).

\*\*\* Indicates the number of physical electrical lanes running to a PCI-e connector.

**NOTE:** PCI-X Interface (PCI 32bit/33MHz compatible)

### Storage Controller

Integrated 4 port SATA controller with embedded RAID (0,1,5)

**NOTE:** Embedded RAID setup instructions are located in the User Guide. CTO RAID set-up is not available.

HP ProLiant ML100 Series Server User Guide:

<http://h20000.www2.hp.com/bc/docs/support/SupportManual/c00260539/c00260539.pdf>

### Storage

Optical Drive

SATA DVD-ROM Drive

Hard Drives

160GB SATA 7200 rpm Drive

### Maximum Internal Storage

#### Type

**SAS**  
(Not-hot plug)

1.8TB

(4 x 450GB)

**SATA**  
(Non-hot plug)

3.0TB

(4 x 750GB)

### Standard Features

<b>Interfaces</b>	Parallel	0
	Serial	1
	Pointing Device (Mouse, PS2)	1
	Graphics	1
	Keyboard (PS2)	1
	USB 2.0 Ports	8 total (4 rear, 2 front panel, 2 internal (one for USB Tape connectivity)) <b>NOTE:</b> Internal USB ports are optimal for the attachment of HP USB DAT Tape Drives <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) Management	1 HP ProLiant G5 Lights-Out 100c Remote Management port (Optional)

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<b>Graphics</b>	32MB shared supporting 1600x1200x16M resolution
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<b>Form Factor</b>	Micro ATX Tower (4U)
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<b>Remote Management</b>	Lights-Out 100c	<p>Lights Out LO100c is a family of Remote Management Card (RMC) for 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 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>
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### Standard Features

<b>Core Infrastructure Management</b>	HP ProLiant ML115 G5 Easy Set-up CD	<p>The HP ProLiant Easy Set-up CDs optimize single-server setup, providing a simple way to deploy reliable and consistent server configurations. The HP ProLiant 100 Series Easy Set-up CD ship standard with the ML115 G5.</p> <p>This CD offers essential single-server deployment tools for HP ProLiant 100 series servers that simplify HP entry server setup, providing a repeatable way to deploy reliable and consistent single-server configurations. The HP ProLiant Easy Set-up CDs assist with the OS installation process by preparing the system for installing "off-the-shelf" versions of Windows operating system software and automatically integrating optimized HP ProLiant server software drivers and utilities. Users enjoy the following benefits:</p> <ul style="list-style-type: none"> <li>● An easy-to-use, intuitive graphical interface that prepares your system for the OS installation process.</li> <li>● Integration of key server software drivers with assisted installation.</li> <li>● Dependency and validity checks to ensure that all supported ProLiant software can be installed.</li> </ul> <p>For the latest information about other related software; please visit the HP Insight Control Management Software Portfolio at: <a href="http://h18004.www1.hp.com/products/servers/management/">http://h18004.www1.hp.com/products/servers/management/</a> and the HP ProLiant Easy Set-up CD Web site at <a href="http://www.hp.com/servers/easyssetup">www.hp.com/servers/easyssetup</a></p>
	Subscriber's Choice	<p>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.</p>
	ROMPaq software and latest drivers	<p>The latest software, drivers, and firmware fully optimized and tested for your ProLiant server and options, available through download from the software and drivers website pages at <a href="http://www.hp.com/go/support">http://www.hp.com/go/support</a>.</p>
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<b>Industry Standard Compliance</b>	ACPI V2.0 Compliant PCI 2.3 Compliant PXE Support WOL Support IPMI 2.0 compliance	
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<b>Manageability</b>	Standard Lights Out 100 1PMI 2.0 reporting Optional HP ProLiant G5 Lights-Out 100c Remote Management Card Standard HP ProLiant ML115 G5 Easy Set-Up CD	
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<b>Security</b>	Power-on password Setup password USB lock	
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<b>Server Power Cords</b>	6' country specific, lowline NEMA power cord.	

### Standard Features

**Power Supply** 365 Watts

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**System Fans** 1 - Non-redundant system fan shipped standard  
1 - Non-redundant CPU heatsink fan shipped standard

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**OS Support** Microsoft Windows Server 2003 Web Edition  
Microsoft Windows Server 2003 Standard Edition (x86 and x64)  
Microsoft Windows Server 2003 Enterprise Edition (x86 and x64)  
Microsoft Windows Small Business Server 2003

Microsoft Windows Server 2003 R2 Standard Edition (x86 and x64)  
Microsoft Windows Server 2003 R2 Enterprise Edition (x86 and x64)  
Microsoft Windows Small Business Server 2003 R2

Microsoft Windows Server 2008 Web Edition  
Microsoft Windows Server 2008 Standard Edition (x86 and x64)  
Microsoft Windows Server 2008 Enterprise Edition (x86 and x64)

Red Hat Enterprise Linux  
SUSE Linux Enterprise Server

**NOTE:** For more complete and up-to-date information of all supported OSes for ProLiant, certification information and how to buy server operating systems from HP please visit the OS product site at: <http://h18004.www1.hp.com/products/servers/software/OEM.html>.

**NOTE:** For an up-to-date listing of the latest software and drivers available for your server, please select your server: <http://h20000.www2.hp.com/bizsupport/TechSupport/Product.jsp?lang=en&cc=us&taskId=135&prodTypeId=15351&prodCatId=241435>.

**NOTE:** When installing a Windows OS Environment and configuring the embedded SATA RAID, AHCI, or SAS controllers, installation of a driver from a diskette device is required. HP's 256MB or 1GB USB 2.0 floppy drive key (P/N: 442084-B21 or 442085-B21) is required on the ML115 G5 to accomplish this operation. A USB drive key may not work to complete driver installation.

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**Factory Express Portfolio for Servers and Storage** HP Factory Express offers configuration, customization, integration and deployment services for HP servers and/or storage products. Customers can choose how their factory solutions are built, tested, integrated, shipped and deployed.

Factory Express offers service packages for simple configuration, racking, installation, complex configuration and design services as well as individual factory services, such as image loading, asset tagging and custom packaging HP products supported through Factory Express include a wide array of servers and storage: HP Integrity, HP ProLiant, HP ProLiant Server Blades, HP BladeSystem, HP 9000 servers, as well as, the MSAxxxx, VA7xxx, EVA, XP, rackable tape libraries and configurable network switches.

For more information on Factory Express services for your specific server model please contact your sales representative or go to <http://www.hp.com/go/factory-express>.

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**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.

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### Standard Features

**Service and Support** 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

**NOTE:** For the Standard Features shipped in the "Factory Integrated Models", please see the "Configuration Information - Factory Integrated Models" section.

### SATA Models

<b>ML115 G5 Opteron 1214, NHP-SATA (1P)</b> 490608-xx1	<b>Processor(s)</b>	(1) Dual-Core AMD Opteron™ 1214 (2.2 GHz, 95W, 2MB)
	Depending on model	(1) Dual-Core AMD Athlon™ 4450B (2.3 GHz, 45W, 1MB)
<b>ML115 G5 Athlon 4450B, NHP-SATA (1P)</b> 457772-xx1	<b>Cache Memory</b>	2MB Level 2 (Opteron™ 1214)
	Depending on model	1MB Level 2 (Athlon™ 4450B)
	<b>Memory</b>	512 MB PC2-6400 ECC (DDR2-800 MHz) (1 x 512 MB)
	<b>Storage Controller</b>	HP Embedded 4 Port SATA Controller with Embedded RAID (0,1,5)
	<b>Hard Drive</b>	160GB SATA HDD
	<b>Internal Storage</b>	Maximum 3.0TB (4 x 750GB) SATA
	<b>Optical Drive</b>	16x SATA DVD-ROM
	<b>Form Factor</b>	Micro ATX Tower (4U)

<b>Country Code Key</b>	xx=01	Australia
	xx=03	UK
	xx=04	Germany
	xx=05	France
	xx=20	Brazil
	xx=37	AP
	xx=42	Euro
	xx=AA	PRC
	xx=29	Japan
	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.

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

### Step 1: Base Configuration

<b>Models</b>	HP ProLiant ML115 G5 NHP CTO Chassis <span style="float: right;">457767-B21</span> <b>Factory Integrated Models ship with:</b> Embedded NC105i PCI Express Gigabit Ethernet Server Adapter Keyboard and Mouse 365 Watts, PFC (Power Factor Correcting) Micro ATX Tower (4U) <b>NOTE:</b> HP SATA Drive Models are limited to <3.0TB support. <b>NOTE:</b> On SATA models with embedded RAID, setup instructions are located in the User Guide. CTO RAID set-up is not available. HP ProLiant ML100 Series Server User Guide: <a href="http://h20000.www2.hp.com/bc/docs/support/SupportManual/c00260539/c00260539.pdf">http://h20000.www2.hp.com/bc/docs/support/SupportManual/c00260539/c00260539.pdf</a>
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### Step 2: Choose Required Options (only one of the following from each list unless otherwise noted)

<b>Processors</b>	<b>Quad-Core Processor</b> Quad-Core AMD Opteron™ Processor Model 1354 (2.2 GHz, 75W, 2MB) Option Kit, FIO <span style="float: right;">490606-L21</span> Quad-Core AMD Opteron™ Processor Model 1352 (2.1 GHz, 75W, 2MB) Option Kit, FIO <span style="float: right;">480294-L21</span> <b>Dual-Core Processor</b> Dual-Core AMD Opteron™ Processor Model 1222 (3.0 GHz, 95W, 2MB) Option Kit, FIO <span style="float: right;">480293-L21</span> Dual-Core AMD Opteron™ Processor Model 1218 (2.6 GHz, 95W, 2MB) Option Kit, FIO <span style="float: right;">480292-L21</span> Dual-Core AMD Opteron™ Processor Model 1214 (2.2 GHz, 95W, 2MB) Option Kit, FIO <span style="float: right;">480291-L21</span> Dual-Core AMD Opteron™ Processor Model 1210 (1.8 GHz, 95W, MB) Option Kit, FIO <span style="float: right;">480290-L21</span> Dual-Core AMD Athlon™ Processor Model 4450B (2.3 GHz, , 45W,1MB) Option Kit, FIO <span style="float: right;">480298-L21</span> <b>Single-Core Processors</b> Single-Core AMD Athlon™ Processor Model 1640B (2.7 GHz, 45W, 512KB) Option Kit, FIO <span style="float: right;">480297-L21</span> Single-Core AMD Sempron™ Processor Model LE1250 (2.2 GHz, 45W, 512KB) Option Kit, FIO <span style="float: right;">480296-L21</span>
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### Configuration Information-Factory Integrated Models

<b>Memory</b>	2 GB Unbuffered PC2-6400 ECC DIMM (1 x 2 GB)	450260-B21
	1 GB Unbuffered PC2-6400 ECC DIMM (1 x 1 GB)	450259-B21
	512 MB Unbuffered PC2-6400 ECC DIMM (1 x 512 MB)	450258-B21

<b>Hard Drives</b>	<b>SATA Non-Hot Plug Midline (MDL) Drives</b>	
	HP 750GB 3G SATA 7.2K NHP 3.5" MDL HDD	462595-B21
	HP 500GB 3G SATA 7.2K NHP 3.5" MDL HDD	458941-B21
	HP 250GB 3G SATA 7.2K NHP 3.5" MDL HDD	458939-B21
	<b>SATA Non-Hot Plug Entry (ETY) Drives</b>	
	HP 160GB 3G SATA 7.2K NHP 3.5" Entry (ETY) HDD	458947-B21
	<b>SAS Enterprise (ENT) Drives 3.5", Non-Hot Plug</b>	
	450GB 3G NHP 15K 3.5" DP SAS ENT HDD	454234-B21
	300GB 3G NHP 15K 3.5" DP SAS ENT HDD	417950-B21
	146GB 3G NHP 15K 3.5" DP SAS ENT HDD	417855-B21
	300GB SAS 3.5" 15K NHP	431950-B21
	146GB SAS 3.5" 15K NHP	432093-B21
	72GB SAS 3.5" 15K NHP	432095-B21

<b>Optical Drives</b>	HP Half-Height SATA DVD ROM Kit	447326-B21
	HP Half-Height SATA DVD-RW Optical Kit	447328-B21

### Step 3: Choose Additional Factory Integratable Options

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

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

<b>Storage Controller</b>	HP SC40Ge Host Bus Adapter, FIO	449176-B21
	<b>NOTE: Factory Integrated Only.</b>	
<b>Communications</b>	Agere 2006 PCI Hi-Speed 56K Modem, FIO	440519-B21
<b>Operating Systems</b>	<b>Pre-install Microsoft Windows 2003 SBS Standard Edition</b>	
	MS W2003 SBS R2 Std 1XX FIO Eng SW	432564-xx1
	MS W2003 SBS R2 Prm 1XX FIO Eng SW	432566-xx1

### Configuration Information-Factory Integrated Models

<b>Country Code Key</b>	xx=01	Australia
	xx=03	UK
	xx=04	Germany
	xx=05	France
	xx=06	Italy
	xx=07	Spanish
	xx=20	Brazil
	xx=21	Hungarian
	xx=22	Czech
	xx=24	Polish
	xx=33	Dutch
	xx=37	AP
	xx=42	Euro
	xx=AA	PRC
	xx=29	Japan
	xx=AB	Taiwan
	xx=AD	Korea

### Step 4: Choose Additional Options for Factory Integration

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

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

### Options

<b>Memory</b>	2 GB Unbuffered PC2-6400 ECC DIMM (1 x 2 GB)	450260-B21
	1 GB Unbuffered PC2-6400 ECC DIMM (1 x 1 GB)	450259-B21
	512 MB Unbuffered PC2-6400 ECC DIMM (1 x 512 MB)	450258-B21

<b>Optical Drives</b>	HP Half-Height SATA DVD ROM Kit	447326-B21
	HP Half-Height SATA DVD-RW Optical Kit	447328-B21

<b>Hard Drives</b>	<b>SATA Non-Hot Plug Drives</b>	
	HP 250GB 1.5G SATA 7.2K NHP 3.5" HDD	411276-B21
	HP 160GB 1.5G SATA 7.2K NHP 3.5" HDD	411275-B21

**NOTE:** SATA drives have a 1 year warranty. Please see the SATA Hard Drive QuickSpecs for Technical Specifications such as capacity, height, width, interface, transfer rate, seek time, physical configuration, and operating temperature:

[http://h18000.www1.hp.com/products/quickspecs/11940\\_div/11940\\_div.html](http://h18000.www1.hp.com/products/quickspecs/11940_div/11940_div.html)  
(Worldwide)

**SATA Non-Hot Plug Midline (MDL) Drives**

HP 750GB 3G SATA 7.2K NHP 3.5" MDL HDD	462595-B21
HP 500GB 3G SATA 7.2K NHP 3.5" MDL HDD	458941-B21
HP 250GB 3G SATA 7.2K NHP 3.5" MDL HDD	458939-B21

**SATA Non-Hot Plug Entry (ETY) Drives**

HP 160GB 3G SATA 7.2K NHP 3.5" Entry (ENT) HDD	458947-B21
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**NOTE:** SATA drives have a 1 year warranty. Please see the SATA Hard Drive QuickSpecs for Technical Specifications such as capacity, height, width, interface, transfer rate, seek time, physical configuration, and operating temperature:

[http://h18000.www1.hp.com/products/quickspecs/13021\\_div/13021\\_div.html](http://h18000.www1.hp.com/products/quickspecs/13021_div/13021_div.html)  
(Worldwide)

**SAS Enterprise (ENT) Drives 3.5", Non-Hot Plug**

450GB 3G NHP 15K 3.5" DP SAS ENT HDD	454234-B21
300GB 3G NHP 15K 3.5" DP SAS ENT HDD	417950-B21
146GB 3G NHP 15K 3.5" DP SAS ENT HDD	417855-B21
300GB SAS 3.5" 15K NHP	431950-B21
146GB SAS 3.5" 15K NHP	432093-B21
72GB SAS 3.5" 15K NHP	432095-B21

Please see the SAS Hard Drive QuickSpecs for Technical Specifications such as capacity, height, width, interface, transfer rate, seek time, physical configuration, and operating temperature:

[http://h18000.www1.hp.com/products/quickspecs/12244\\_div/12244\\_div.html](http://h18000.www1.hp.com/products/quickspecs/12244_div/12244_div.html)  
(Worldwide)

### Options

<b>Storage Controllers</b>	<b>SAS HBA</b>	
	HP SC44Ge Host Bus Adapter	416096-B21
	<b>NOTE:</b> Supports RAID 0,1. <b>NOTE:</b> Please see the following QuickSpecs for additional information: <a href="http://h18004.www1.hp.com/products/quickspecs/12617_div/12617_div.html">http://h18004.www1.hp.com/products/quickspecs/12617_div/12617_div.html</a> (SC44Ge HBA)	
	<b>SCSI HBA</b>	
	HP SC11Xe Host Bus Adapter	412911-B21
	<b>NOTE:</b> Supports Tape only, no RAID support. <b>NOTE:</b> Please see the following QuickSpecs for Technical Specifications and additional information: <a href="http://h18004.www1.hp.com/products/quickspecs/12566_div/12566_div.html">http://h18004.www1.hp.com/products/quickspecs/12566_div/12566_div.html</a> (SC11Xe HBA)	
	<b>Smart Array E200 Controller</b>	
	HP Smart Array E200/128 BBWC Controller	411508-B21
	<b>NOTE:</b> Supports RAID 0,1,1+0, 5/BBWC. <b>NOTE:</b> Please see the following QuickSpecs for Technical Specifications and additional information: <a href="http://h18000.www1.hp.com/products/quickspecs/12460_div/12460_div.html">http://h18000.www1.hp.com/products/quickspecs/12460_div/12460_div.html</a> (Smart Array E200 Controller)	
	<b>NOTE:</b> Please see the following QuickSpecs for Technical Specifications and additional information: <a href="http://h18000.www1.hp.com/products/quickspecs/12460_div/12460_div.html">http://h18000.www1.hp.com/products/quickspecs/12460_div/12460_div.html</a> (Smart Array E200 Controller)	
	HP SAS/SATA 4-Port Cable	430479-B21
	<b>NOTE:</b> The purchase of a SAS Storage Controller requires the purchase of HP SAS/SATA 4-Port Cable (P/N 430479-B21) <b>NOTE:</b> SAS Storage Controllers supports both SATA and SAS drives. <b>NOTE:</b> On SATA models with embedded RAID, setup instructions are located in the User Guide. CTO RAID set-up is not available. HP ProLiant ML100 Series Server User Guide: <a href="http://h20000.www2.hp.com/bc/docs/support/SupportManual/c00260539/c00260539.pdf">http://h20000.www2.hp.com/bc/docs/support/SupportManual/c00260539/c00260539.pdf</a>	
<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 NC373T PCI Express Multifunction Gigabit Server Adapter	394791-B21
	Agere 2006 PCI Hi-Speed 56K Modem	EK694AA
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### Options

<b>Tape Backup Drives</b>	<p><b>NOTE:</b> Installation of SCSI internal tape drives in a ML115 G5 model requires SCSI controller kit (PN: 412911-B21).</p> <p><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></p> <p><b>USB Tape Drives</b></p> <p>HP StorageWorks DAT 40 USB Internal Tape Drive (Carbonite) DW022A</p> <p>HP StorageWorks DAT 72 USB Internal Tape Drive (Carbonite) DW026A</p> <p>HP StorageWorks DAT 160 USB Internal Tape Drive Q1580A</p> <p><b>DAT SAS Tape Drives</b></p> <p>HP StorageWorks DAT 160 SAS Internal Tape Drive Q1587A</p> <p><b>DAT SCSI Tape Drives</b></p> <p>HP StorageWorks DAT 40 SCSI Internal Tape Drive (Carbon) C5686C</p> <p>HP StorageWorks DAT 72 SCSI Internal Tape Drive (Carbon) Q1522B</p> <p>HP StorageWorks DAT 160 SCSI Internal Tape Drive (Carbon) Q1573A</p> <p><b>LTO Ultrium SAS Tape Drives</b></p> <p>HP Storage Works LTO-2 Ultrium 448 SAS Internal Tape Drive DW085A</p> <p>HP Storage Works LTO-3 Ultrium 920 SAS Internal Tape Drive EH847A</p>
<b>HP D2D Backup System</b>	<p><b>RDX Removable Disk Backup</b></p> <p>HP StorageWorks RDX160 Internal Removable Disk Backup System AJ765A</p> <p><b>NOTE:</b> 160GB of Disk Storage</p> <p>HP StorageWorks RDX320 Internal Removable Disk Backup System AJ767A</p> <p><b>NOTE:</b> 320GB of Disk Storage</p> <p><b>NOTE:</b> Please see the HP RDX Removable Disk Backup System QuickSpecs for additional information:  <a href="http://h18000.www1.hp.com/products/quickspecs/13036_div/13036_div.html">http://h18000.www1.hp.com/products/quickspecs/13036_div/13036_div.html</a></p> <p><b>D2D Backup</b></p> <p>HP StorageWorks D2D120 Backup System EH884A</p> <p><b>NOTE:</b> 2TB of Disk Storage</p> <p>HP StorageWorks D2D120 Backup System with Data Protector Express Software Kit EH924A</p> <p><b>NOTE:</b> 2TB of Disk Storage</p> <p>HP StorageWorks D2D130 Backup System EH950A</p> <p><b>NOTE:</b> 3TB of Disk Storage.</p> <p>HP StorageWorks D2D130 Backup System with Data Protector Express Software Kit EH951A</p> <p><b>NOTE:</b> 3TB of Disk Storage.</p> <p>HP StorageWorks D2D130 Backup System with LTO-3 Ultrium 920 SAS Tape Drive EH952A</p> <p><b>NOTE:</b> 3TB of Disk Storage.</p> <p><b>NOTE:</b> Please see the HP D2D Backup Systems QuickSpecs for additional information: <a href="http://www.hp.com/go/d2d">http://www.hp.com/go/d2d</a></p>
<b>Installation of Server into Racks</b>	<p>Monitor/Utility Shelf 253449-B21</p> <p>HP ProLiant Rack Enabling Kit 417705-B21</p>

### Options

<b>Remote Management</b>	<p>HP ProLiant 100 G5 Lights-Out 100c Remote Management Card 445513-B21</p> <p><b>NOTE:</b> Supports HP ProLiant DL180 G5, ML110 G5, ML115 G5 and ML150 G5 servers,</p> <p><b>NOTE:</b> For additional information on Lights-Out 100c Remote Management Card, please see the QuickSpecs at:  <a href="http://h18000.www1.hp.com/products/quickspecs/12468_div/12468_div.html">http://h18000.www1.hp.com/products/quickspecs/12468_div/12468_div.html</a></p>	
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<b>UPS</b>	<p>HP T1000 UPS, JPN/TWN AF404A</p> <p>HP T1000 UPS, NA AF403A</p> <p>HP T1000 UPS, INTL AF405A</p> <p>HP T750 UPS, Low Voltage (NA/JPN) 378439-D71</p> <p>HP T750 UPS, High Voltage (INTL) 378439-B31</p> <p>HP 1.83m 10A C13 CH Power Cord AF565A</p> <p>HP 1.83m 10A C13 DK Power Cord AF566A</p> <p>HP 1.83m 10A C13 EU Power Cord AF568A</p> <p>HP 1.83m 10A C13 IL Power Cord AF564A</p> <p>HP 1.83m 10A C13 UK Power Cord AF570A</p> <p>HP 1.83m C13 IT/CL Power Cord AF571A</p> <p>HP 2m C13 JPN Power Cord AF572A</p> <p>HP Power Cord 2.5m 10A C13-Argentina AF558A</p> <p>HP Power Cord 1.83m 10A C13-Brazil AF559A</p> <p>HP Power Cord 1.83m 10A C13-China AF557A</p> <p>HP Power Cord 1.83m 10A C13-UL DOM AF556A</p>	
<hr/>		
<b>USB Options</b>	<p>HP 1GB USB 2.0 Floppy Drive Key 442085-B21</p> <p>HP 256MB USB 2.0 Floppy Drive Key 442084-B21</p> <p>1.44MB External USB Floppy Drive DC141B</p> <p>HP USB 2-Button Optical Scroll Mouse DC172B</p> <p>HP USB 04 Standard Keyboard DT528A#xxx</p> <p><b>NOTE:</b> When installing a Windows OS Environment and configuring the embedded SATA RAID, AHCI, or SAS controllers, installation of a driver from a diskette device is required. HP's 256MB or 1GB USB 2.0 floppy drive key (P/N: 442084-B21 or 442085-B21) is required on the ML115 G5 to accomplish this operation. A USB drive key may not work to complete driver installation.</p>	
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<b>HP KVM Switch Options</b>	<p>HP 1x4 Console Switch AF611A</p> <p>HP PS2 Server Console Cable, 6 foot, 2-Pack AF612A</p> <p>HP USB Server Console Cable, 6 foot, 2-Pack AF613A</p> <p><b>NOTE:</b> Required for supporting USB peripherals.</p> <p><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>.</p>	



### Service and Support, HP Care Pack, and Warranty Information

<b>Service and Support Offerings</b> (HP Care Pack Services)	<b>Extended Care - Minimum recommended service support level</b>	
	Next Business Day On-Site Service, 9-Hour x 5-Day Coverage, 3 Years, Electronic	U4433E
	<b>Committed Care - Cost-effective service options designed to extend HP Services committed response and guaranteed fix times, designed to speed problem resolution.</b>	
	4-Hour On-Site Service - 13-Hour x 5-Day Coverage, 3 Years, Electronic	U4434E
	<b>Committed Response - Optimum service level to increase IT Performance and availability</b>	
	4-Hour On-Site Service - 24-Hour x 7-Day Coverage, 3 Years, Electronic	U4435E
	<b>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.</b>	
	Hardware Installation, Electronic (install services)	U4444E
	<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 ML115 G5 Models

**NOTE:** Memory configurations listed do not apply to "Factory Integrated Models".

#### Standard Memory

512 MB of PC2-6400 DDR2 SDRAM running at 800MHz with ECC capabilities memory installed (1 x 512 MB SDRAM DIMM).

#### Standard Memory Plus Optional Memory

Up to 5 GB memory is available with the optional installation of PC2-6400 un-buffered ECC DDR2 SDRAM DIMM Memory kits.

#### Standard Memory Replaced with Optional Memory

Up to 8 GB of memory is available with the removal of the standard 512 MB of memory and the optional installation of 4 x 2 GB PC2-6400 un-buffered ECC DDR2 SDRAM DIMM Memory kits.

**NOTE:** The below chart does not represent all possible memory configurations.

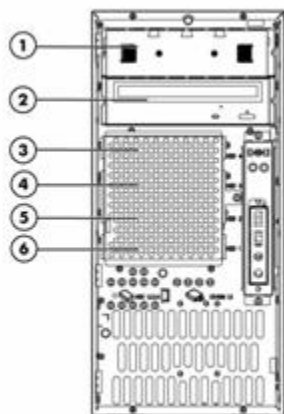
**NOTE:** For best performance, it is recommended that customers install memory in identical pairs. Slots 1A and 2A are interleaving pairs. Slots 3B and 4B are interleaving pairs.

Memory		Slot			
		1A	2A	3B	4B
Standard	512 MB	512 MB	Empty	Empty	512 MB
Optional	5 GB	512 MB	512 MB	2 GB	2 GB
Maximum	8 GB	2 GB	2 GB	2 GB	2 GB

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

2 GB Unbuffered PC2-6400 ECC DIMM (1 x 2 GB)	450260-B21
1 GB Unbuffered PC2-6400 ECC DIMM (1 x 1 GB)	450259-B21
512 MB Unbuffered PC2-6400 ECC DIMM (1 x 512 MB)	450258-B21

### Storage



- 1 Removable Media Bays (1.6" each)
- 2 DVD-ROM
- 3, 4, 5, 6 Four (4) Non-Hot Plug Drive Bays

### Drive Support

	Quantity Supported	Position Supported	Controller
<b>Removable Media</b>			
DVD Drive	2	1 or 2	Integrated SATA
DVD-RW Drive	2	1 or 2	Integrated SATA

#### Hard Drives (SATA Models only)

##### SATA Drives 3.5", Non-Hot Plug

	Quantity Supported	Quantity Supported	Controller
250GB 1.5G SATA 7.2K	Up to 4	3-6	4 Port SATA controller with Embedded RAID on Motherboard (0,1,5)
160GB 1.5G SATA 7.2K			

##### SATA Midline (MDL) Drives 3.5", Non-Hot Plug

	Quantity Supported	Quantity Supported	Controller
750GB 3G SATA 7.2K	Up to 4	3-6	4 Port SATA controller with Embedded RAID on Motherboard (0,1,5)
500GB 3G SATA 7.2K			
250GB 3G SATA 7.2K			

##### SATA Enterprise (ENT) Drives 3.5", Non-Hot Plug

	Quantity Supported	Quantity Supported	Controller
160GB 3G SATA 7.2K	Up to 4	3-6	4 Port SATA controller with Embedded RAID on Motherboard (0,1,5)

#### Hard Drives (SAS Models only)

##### SAS Enterprise (ENT) Drives 3.5", Non-Hot Plug

	Quantity Supported	Position Supported	Controller

### Storage

450GB 3G SAS 15K      Up to 4      3-6      HP 8 Internal Port SAS HBA with RAID (0,1)  
 300GB 3G SAS 15K  
 146GB 3G SAS 15K

#### Maximum Storage Capacity

<b>Internal</b>	<b>SATA</b>	3.0TB (4 x 750GB)
	<b>SAS</b>	1.8TB (4x 450GB)

#### Tape Drives and Disk-Based Backup

**NOTE:** Installation of SCSI tape drives in a ML115 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)

	<b>Position Supported</b>	<b>Controller</b>	<b>Controller/HBA Option Kit Part Number</b>
<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 SAS Tape Drives</b> DAT 160 SAS LTO-2 Ultrium 448 SAS LTO-3 Ultrium 920 SAS	2	HP SC44Ge Host Bus Adapter	416096-B21
<b>External SAS Tape Drives</b> DAT 160 SASLTO-2 Ultrium 448 SAS LTO-3 Ultrium 920 SAS	External	HP SC44Ge Host Bus Adapter	416096-B21
<b>Internal SCSI Tape Drives</b> DAT40 DAT 72 DAT 160	2	HP SC11Xe Host Bus Adapter	412911-B21
<b>External SCSI Tape Drives</b> DAT40 DAT 72 DAT 160	External	HP SC11Xe Host Bus Adapter	412911-B21
<b>HP StorageWorks RDX Removable Disk Backup System</b> RDX160 RDX320	2	USB 2.0 Port	N/A

## Storage

<b>HP StorageWorks D2D BackUp System</b> D2D120 D2D130	External	Embedded Network Controller	N/A
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### Power Specifications

<b>Part Number</b>	416121-001
<b>Spare Kit</b>	419029-001
<b>Operational Input Voltage Range (Vrms)</b>	100 to 127 and 200 to 240 V auto ranging
<b>Frequency Range (Nominal) (Hz)</b>	50 to 60 Hz

<b>Nominal Input Voltage (Vrms)</b>	<b>100</b>	<b>115</b>	<b>208</b>	<b>220</b>	<b>230</b>	<b>240</b>
Max Rated Output Wattage Rating	N/A	365	N/A	N/A	365	N/A
Nominal Input Current (A rms)	N/A	6	N/A	N/A	3	N/A
Max Rated Input Wattage Rating (Watts)	N/A	553	N/A	N/A	517	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)	0.5mA (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

	<b>Power**</b>
<b>HP ProLiant ML115 G5 Fully Configured</b>	(see**)
Fully Loaded System output Wattage (W)	365W
Fully Loaded System Input Current (A rms)	6A @ 115V, 3A @ 230V
Fully Loaded System Thermal (BTU-Hr)	1885 BTU
Fully Loaded System VA (Volt-Amp)	N/A
System Leakage with all power supplies loaded (mA)	N/A
System Inrush Current with all power supplies loaded (A)	N/A
Power cord requirements	Nema 5-15P to IEC320-C13 IEC320-C13 to IEC320-C14 <b>**Power shown is for a fully configured system consisting of (1) CPU, (4) double-sided DIMMs, (4) HDDs, (1) DVD-ROM, (4) PCI cards, and (1) power supply.</b>
<b>Power Cords (13 Cord Sets)</b>	<b>Power Cord Part Number</b>
<b>Country</b>	
APD	100614-009, 100613-008, 139867-004, 187487-004 (India)
Brazil	285052-001
Australia	100661-001
Euro	100614-009
France	100614-009
Germany	100614-009
Japan	139867-004
PRC	286496-001
UK	100613-008
US, Taiwan	121565-001

### Technical Specifications

<b>System Unit</b>	<b>Dimensions</b> (HxWxD) (with feet)	14.5 x 6.9 x 16.8 in (36.7x 17.5 x 42.6 cm)							
	<b>Weight</b> (approximate)	<table border="0"> <tr> <td>Maximum</td> <td>31.35 lb (14.22 kg)</td> </tr> <tr> <td colspan="2">(all hard drives, power supplies, and processors installed)</td> </tr> <tr> <td>Minimum</td> <td>25.75 lb (11.68 kg)</td> </tr> <tr> <td colspan="2">(one hard drive, power supply, and processor installed)</td> </tr> </table>	Maximum	31.35 lb (14.22 kg)	(all hard drives, power supplies, and processors installed)		Minimum	25.75 lb (11.68 kg)	(one hard drive, power supply, and processor installed)
Maximum	31.35 lb (14.22 kg)								
(all hard drives, power supplies, and processors installed)									
Minimum	25.75 lb (11.68 kg)								
(one hard drive, power supply, and processor installed)									
<b>Input Requirements</b> (per power supply)	Rated Line Voltage	90 — 132 VAC, 180 — 264 VAC							
	Rated Input Current	6 A (at 110 VAC), 3 A (at 200 VAC)							
	Rated Input Frequency	47 to 63 Hz							
	Rated Input Power	365 W (at 100 VAC), 365 W (at 200 VAC)							
<b>BTU Rating</b>	Maximum	1885 BTU/hr (at 100 VAC), U/hr (at 200 VAC)							
<b>Power Specifications</b>	To review typical system power ratings use the Power Calculator which is available via the online tool located at URL: <a href="http://h30099.www3.hp.com/configurator/calc/Power%20Calculator%20Catalog.xls">http://h30099.www3.hp.com/configurator/calc/Power%20Calculator%20Catalog.xls</a>								
<b>Power Supply Output</b> (per power supply)	Rated Steady-State Power	365 W (at 100 VAC), 365 W (at 200 VAC)							
	Maximum Peak Power	385 W (at 100 VAC), 385 W (at 200 VAC)							
<b>System Inlet Temperature</b>	Operating	10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 305 m (1.8°F per every 1000 ft) above sea level to a maximum of 3050 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 10°C/hr (18°F/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 30°C (86°F).							
	Non-operating	10 to 90% relative humidity (Rh), 28°C 5 to 95% relative humidity (Rh), 38.7°C							
<b>Altitude</b>	Operating	3050 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min).							
	Non-operating	9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min).							
<b>Acoustic Noise</b> (Fully Loaded)	Idle								
	L WAd	4.74 BELS							
	L pAm	30.0 dBA							
	Operating								
	L WAd	4.99 BELS							





### Technical Specifications

		L pAm	32.5 dBA
<b>HP 160GB 3.0G SATA 7.2K NHP 3.5" HDD</b> 458947-B21	<b>160GB 7,200 rpm</b>	<b>Capacity</b>	160,041 MB
		<b>Height</b>	1.0 in. (26.1 mm)
		<b>Maximum drive dimension</b>	
		<b>Width</b>	4.0 in. (101.6 mm)
		<b>Depth</b>	5.787 in (147.0 mm)
		<b>Maximum drive dimension</b>	
		<b>Interface</b>	Serial ATA
		<b>Transfer rate synchronous (maximum)</b>	3Gb/s
		<b>Native Command Queuing</b>	N/A
		<b>Seek time</b> (typical reads, including settling)	Single track 2.0 ms Average <11 ms Full-stroke 23.0 ms
			Rotational speed 7,200 rpm
		<b>Physical Configuration</b>	Bytes/Sector 512 Logical Blocks 312,581,808
		<b>Operating Temperature</b>	41° to 131° F (5° to 55° C)
<b>16X Max SATA DVD-ROM Drive</b> 447326-B21	<b>Disk</b>	<b>Applicable Disk</b>	CD-ROM, CD-XA, CD-DA (Mode 1, Mode 2, Form 1 and 2) Photo CD (Single and Multi-session) CD-R, CD-RW Mixed Mode (Audio and Data combined) DVD-ROM DVD-R/RW, DVD+R/RW CD-R
		<b>Capacity</b>	540MB (Mode 1, 12 cm) 650MB (Mode 2, 12 cm) 4.7 GB, 8.5 GB DVD
	<b>Block Size</b>	<b>Mode 1</b>	2,048 bytes (CD & DVD) 1024 bytes
		<b>Mode 2</b>	2,340 bytes, 2,336 bytes, 1024 bytes
		<b>CD-DA</b>	2,352 bytes
		<b>CD-XA</b>	2,328 bytes
	<b>Interface</b>	<b>SATA</b>	
	<b>Access Times</b> (typical)	<b>Random</b>	<100 ms
		<b>Full-Stroke</b>	<150 ms
	<b>Data Transfer Rate</b>	<b>Sustained</b>	3000 to 7200 KB/s (20X to 48X)
		<b>Burst</b>	150 KBps to 7,200 KBps
		<b>Bus Rate</b>	1.5Gbps
	<b>Cache Buffer</b>	<b>128 KB</b>	



### Technical Specifications

<b>Start-up Time (typical)</b>	< 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 122° F (5° to 50° C)
	Humidity	10% to 90%
<b>Dimensions</b>	(HxWxD, maximum)	1.63 x 5.75 x 7.87 in (41.3 x 146 x 195 mm)
	Weight	2.64 lb (1.2 kg)

<b>4 port Embedded SATA controller</b>	<b>SATA Protocol</b>	SATA 2, 3Gb/s	
	<b>SATA Ports</b>	4 internal	
	<b>Port transfer rate</b>	1.5 Gb/s total	
	<b>Maximum Capacity</b>	up to 3.0TB (4 x 750GB non-hot plug SATA HDD)	
	<b>RAID Levels Supported</b>	RAID 1+0 (Striping & Mirroring)	
		RAID 1 (Mirroring)	
RAID 0 (Striping)			
RAID 5 (Striping with parity)			
<b>Logical RAID Volumes Supported</b>	<b>NOTE:</b> On SATA models with embedded RAID, setup instructions are located in User Guide, CTO RAID is set-up is not available. HP ProLiant 100 Series Server User Guide: <a href="http://h20000.www2.hp.com/bc/docs/support/SupportManual/c00260539/c00260539.pdf">http://h20000.www2.hp.com/bc/docs/support/SupportManual/c00260539/c00260539.pdf</a>		

<b>Embedded NC105i PCIe Gigabit Server Adapter</b>	<b>Network Interface Compatibility</b>	10Base-T/100Base-TX/1000Base-TX	
	<b>Data Transfer Method</b>	IEEE 802.3 10Base-T	
		IEEE 802.3ab 1000Base-T	
		IEEE 802.3u 100Base-TX	
	<b>Network Transfer Rate</b>	Single lane (x1), 100MHz PCI Express Reference Clock	
		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>	10Base-T	Categories 3, 4 or 5 UTP; up to 328 ft (100 m)	
	10/100/1000Base-TX	Category 5 UTP; up to 328 ft (100 m)	

<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
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### Technical Specifications

on the Hewlett Packard web site at: <http://www.hp.com/go/green>. 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.

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