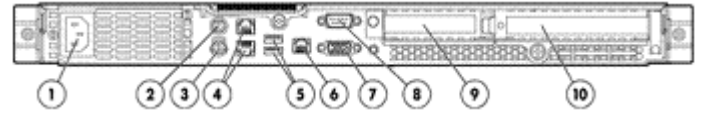
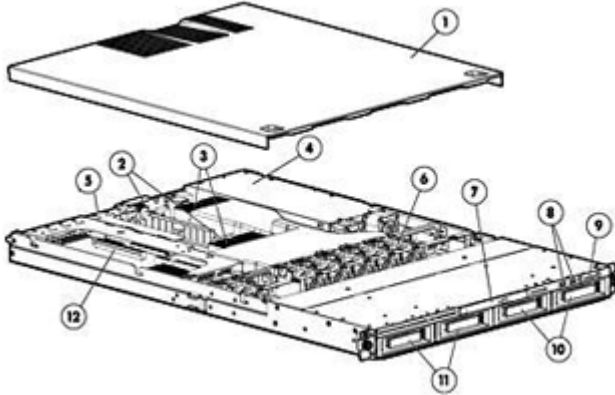


### Overview

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



#### Front View:

1. Access panel
2. Memory banks
3. Two (2) AMD Opteron 2400 series processors
4. Power supply
5. Low-profile PCI-Express or PCI-X slot
6. System fans
7. Optical drive bay
8. Front-panel USB 2.0 ports
9. Power switch/system status LEDs
10. Optional 3rd and 4th 3.5" hot-plug SAS/SATA or non-hot plug SATA hard drive bays
11. Standard 1st and 2nd 3.5" hot-plug SAS/SATA or non-hot plug SATA hard drive bays
12. Full height/full length PCI-Express or HTX slot

#### Rear View:

1. Power supply cable socket
2. PS/2 mouse port
3. PS/2 keyboard port
4. Two (2) RJ45 GbE LAN ports
5. Rear panel USB 2.0 ports
6. Lights-Out 100 10/100Mbps port
7. Video port
8. Serial port
9. Low-profile riser board assembly slot cover
10. Full-sized riser board assembly slot cover

### What's New

- Supports up to Support for SATA Hot Plug 3.5" Midline (MDL) Drives

### At A Glance

Introducing the HP ProLiant DL165G6, now available with the latest high performance Opteron Six-Core processors and a new high efficiency power supply.

- **Processors:**
  - Supports up to two AMD Opteron™ 2400 series Six-Core processors
  - Supports DirectConnect Architecture
  - Supports Power Now
- **Memory:**
  - 8 DIMM slots supporting up to 32GB REG PC2-6400 DDR2-800 MHz memory with Advanced ECC
  - 8 DIMM slots supporting up to 64GB REG PC2-5300 DDR2-667 MHz memory with Advanced ECC
- **Internal Drive Support:**
  - Internal storage capacity:



### Overview

- SATA Capacity: Support for up to 8.0TB (4 x 2TB) with Hot Plug Model. 8.0TB (4 x 2GB) with Non Hot Plug Model
- SAS Capacity: Support for up to 8.0 TB (4 x 2TB) with Hot Plug Model
- **NOTE:** Installation of the Hot Plug Backplane 1U 2S Kit (445985-B21) is required if ordering third or fourth Hard Drives for Hot Plug models only.
- **Network Controller:**
  - Embedded NC7782 dual-port gigabit server adapter
- **Storage Controllers:**
  - Non-Hot Plug SATA Models: HP Embedded SATA Controller
  - **NOTE:** Raid support requires optional slot based raid controller
  - Hot Plug SATA/SAS Models: HP P212 Smart Array Controller
- **Expansion Slots:**
  - Standard - PCI-Express assembly includes:
    - Slot 1: full-length/full height PCI-Express x16
    - Slot 2: half-length/low-profile PCI-Express x4 (x8 connector) (Reserved in the Hot Plug Model for Smart Array Controller)
  - Optional - PCI-X assembly includes:
    - Slot 2: half-length/low-profile PCI-X 133 (PCI-X slots are 64 bits; 133 MHz capable)
  - Optional - HTX assembly includes: Slot 1: full-length/full height HTX
- **Infrastructure Management:**
  - HP Lights-Out 100i with optional LO100i Advanced Licenses for Virtual KVM and Virtual Media.
  - HP Insight Control for Linux, a product option, delivers essential infrastructure management that can help save time and money by making it easy to deploy, migrate, monitor, control and optimize your IT infrastructure through a single, simple management console. Insight Control for Linux supports Linux-based central management servers.
- **USB Ports:**
  - Up to five USB ports (two front & two rear standard, 1 internal option)
- **Optical Drive:**
  - Support for one (optional): DVD-ROM, DVD/CD RW
- **Power Supply:**
  - 500W High Efficiency Power Supply (Non-Hot Plug, Autoswitching)
- **Form Factor:**
  - Rack (1U)
  - Fixed mounting rails included with all models
- **Deployment/Serviceability:**
  - HP ProLiant DL165 G6 models have fixed rails which provide support for racks with round mounting holes and tool-free support for racks with square mounting holes (including Compaq/HP 7000, 9000, 10000 and HP series), with an adjustment range of 26" - 36"
  - Tool-less access to all system components for easy in-rack serviceability
  - Customer Self Repair (CSR): HP products are designed with many CSR parts to minimize repair time and allow for greater flexibility in performing defective parts replacement
- **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. Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.
  - **NOTE:** Server Warranty includes 3 year Next Day Parts replacement, 0-Years Labor, 0-Years Onsite support. Warranty terms may vary by region. 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 the Standard Features shipped in the "Factory Integrated Models", please see the "Configuration Information - Factory Integrated Models" section.

**Processor**  
 One of the following depending on Model

AMD Opteron™ processor Model 2435 (2.6 GHz, 75W ACP)  
 AMD Opteron™ processor Model 2431 (2.4 GHz, 75W ACP)  
**NOTE:** Offered through Configure-To-Order only. See Factory Integrated Models section for more details.  
 AMD Opteron™ processor Model 2427 (2.2 GHz, 75W ACP)  
 AMD Opteron™ processor Model 2425HE (2.1 GHz, 55W ACP)  
 AMD Opteron™ processor Model 2423HE (2.0 GHz, 55W ACP)

**Upgradeability** Upgradeable to two processors

**Chipset** ServerWorks HT2100 and HT1000

**Cache Memory** Model Series 24xx  
 6MB shared L3

**Memory Protection** Advanced ECC

**Memory**  
 One of the following depending on Model

Type	REG PC2-6400 DIMMs (DDR2-800)
	REG PC2-5300 DIMMs (DDR2-667)
Standard	4 GB (2 x 2 GB)
Maximum	64 GB (8 x 8 GB)

**Network Controller** Embedded NC7782 dual-port gigabit server adapter

Expansion Slots #	Technology	Bus Width**	Connector Width	Bus Number*	Form Factor	Notes
1	PCI Express	x16	x16	3	Full Height/Full Length	
1	HTX	N/A	N/A	9	Full Height/Full Length	
2	PCI Express	x4	x8	6	Low-profile	
2	PCI-X	64-bit, 133MHz	N/A	2	Low-profile	

\* Default bus assignment. 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).

**NOTE:** Slot 2 is reserved for a storage controller with the Hot Plug Model chassis.



### Standard Features

Storage Controller	Non-Hot Plug SATA	HP Embedded SATA Controller <b>NOTE:</b> Raid support requires optional slot based raid controller.
	Hot Plug SATA/SAS	HP Smart Array P212 RAID Controller <b>NOTE:</b> Transfer rate: up to 3 Gb/s SATA, up to 3 Gb/s SAS.

**NOTE:** A diskette drive or virtual FDD using LO100 Advanced Pack is needed to install storage controller drivers during a Windows operating system installation from a CD.  
**NOTE:** RAID 6 functionality requires the addition of Smart Array Advanced Pack (P/N: 516471-B21).

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Storage	Diskette Drives	Via USB only
	Optical Drives	Optional 8x IDE (ATAPI) DVD-ROM drive, slim Optional 24x IDE (ATAPI) DVD-ROM/CDRW drive
	Hard Drives	Up to 4 Non-hot plug SATA 3.5" drives Up to 4 Hot plug SATA /SAS 3.5" drives

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Maximum Internal Storage	Non-Hot Plug SATA	8.0TB	4 x 2TB
	Hot Plug SATA	8.0TB	4 x 2TB
	Hot Plug SAS	8.0TB	4 x 2TB

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Interfaces	Parallel	None
	Network RJ-45(Ethernet)	Embedded NC7782 dual-port gigabit server adapter
	Serial	1
	Pointing Device (Mouse)	1
	Graphics	1
	Keyboard	1
	USB	Up to 5 (two front & two rear standard, 1 internal option).

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Graphics	32MB shared supporting 1600x1200x16M resolution
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Form Factor	Rack (1U), (1.75 in/4.45 cm)
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### Standard Features

#### Embedded Manageability HP LO100i Advanced

HP Lights-Out 100 with Optional LO100i Advanced Licenses for Virtual KVM and Virtual Media.

#### Standard Features:

- Embedded IPMI standard reporting
- System event log access
- Remote Serial console (serial redirection)
- Browser, Telnet access
- SMASH-CLP compliant
- IPMI 2.0 compliant

#### Licensed Features:

- Virtual media (Floppy, CD, USB 2.0)
- Virtual KVM
- Secure Socket Layer (SSL) Encryption
- Secure Shell (SSH) Encryption

**NOTE:** Flexible and volume quantity (AKA) license kits are available for the Lights-Out 100i Advanced Pack licenses as well as Electronic License To Use (E-LTU). AKA Tracking licenses require a 100 unit minimum forecast at initial contract signing. For these additional part numbers, please refer to each software products. QuickSpecs at this link for more information:

[www.hp.com/go/lo100](http://www.hp.com/go/lo100)

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#### HP Insight Control management software

HP Insight Control for Linux

HP Insight Control for Linux, as a product option, delivers essential infrastructure management that can help save time and money by making it easy to deploy, monitor, remote control, and optimize your IT infrastructure through a single, simple management console. The Insight Control for Linux installs and license software modules that are integrated into HP System Insight Manager.

The HP Insight Control for Linux (IC-Linux) serves environments requiring a Linux-based management consoles. See: [www.hp.com/go/ic-linux](http://www.hp.com/go/ic-linux)

HP Insight Control include one year of 24 x 7 HP Software Technical Support and Update Service ensuring rapid access to HP support staff and proactive delivery of software updates. For more information about this service, please visit: <http://www.hp.com/services/insight>.

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#### Industry Standard Compliance

ACPI V2.0 Compliant  
PCI 2.2 Compliant  
PXE Support  
WOL Support  
Microsoft® Logo certifications  
IPMI 2.0 Compliant



### Standard Features

Security	Power-on password Setup password SSH and SSL Encryption
UPS and PDU Power Cord Matrix	Please see the UPS and PDU cable matrix's on the HP Power Protection and Management page. Under Power Cords, click on the "HP Power Cord Matrix" link. That link will list cable descriptions, requirements, and specifications for UPS and PDU units. Please see the following link: <a href="http://www.hp.com/products/powercords">www.hp.com/products/powercords</a> .
Power Supply	500 Watts, auto-switching, high efficiency, PFC (Power Factor Correcting).
System Fans	6 system fans ship standard; non-hot plug, non-redundant
Operating Systems and Virtualization Software Support for ProLiant Servers	<a href="#">Microsoft Windows Server</a> <a href="#">Microsoft Windows Server 2008 Hyper V</a> <a href="#">Red Hat Enterprise Linux (RHEL)</a> <a href="#">SUSE Linux Enterprise Server (SLES)</a> <a href="#">Solaris 10 for x86/x64 based Systems</a> <b>NOTE:</b> For more information on HP's Certified and Supported ProLiant Servers for OS and Virtualization Software and latest listing of software drivers available for your server, please visit our Support Matrix at: <a href="http://www.hp.com/go/supportos">http://www.hp.com/go/supportos</a> and our driver download page <a href="http://www.hp.com/support/DL165G6">http://www.hp.com/support/DL165G6</a> .
Rack Airflow Requirements	<b>Rack 10000 G2 series Cabinets</b> The increasing power of new high-performance processor technology requires increased cooling efficiency for rack-mounted servers. The 10000 G2 Series Racks provide enhanced airflow for maximum cooling, allowing these racks to be fully loaded with servers using the latest processors. <b>CAUTION:</b> If a third-party rack is used, observe the following additional requirements to ensure adequate airflow and to prevent damage to the equipment:  Front and rear doors: If your 42U server rack includes closing front and rear doors, you must allow 5,350 sq cm (830 square inches) of hole evenly distributed from top to bottom to permit adequate airflow (equivalent to the required 64 percent open area for ventilation). Side: The clearance between the installed rack component and the side panels of the rack must be a minimum of 7 cm (2.75 inches)  <b>CAUTION:</b> Always use blanking panels to fill all remaining empty front panel U-spaces in the rack. This arrangement ensures proper airflow. Using a rack without blanking panels results in improper cooling that can lead to thermal damage.
Rack Support	The DL Fixed Rail System supports installation in racks with square or round mounting holes (including Compaq/HP 7000, 9000, 10000 and HP series), with an adjustment range of 24" - 36".



### Standard Features

#### Telco Rack Support

Installation into Telco 2 post, and 4 post, or threaded holes racks requires a 3rd party option kit. For additional information, please visit: [www.hp.com/go/rackandpower](http://www.hp.com/go/rackandpower)

#### HP Factory Express Capability

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. 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>.

#### HPC Interconnects

**NOTE:** High Performance Computing (HPC) interconnect technologies are available for this server under the Cluster Platform product portfolio. These high-speed interconnects are fully supported by HP when they are part of these configure to order clusters. Solutions can be defined with a lot of flexibility with the help of configuration tools. Please visit the following URL to configure HPC Clusters with InfiniBand, Gigabit Ethernet or Myrinet Interconnects:

<http://www.hp.com/techservers/clusters/ucp/index.html>

**InfiniBand**

PCI-Express Generation 2 adapters

#### HP Enterprise Configurator

The HP eConfigure 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. <http://www.hp.com/products/configurator>.

#### 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.



### Standard Features

- **Support Service** - 3-Year 24x7 4 hr Response service support coverage
- **Deployment Service** - Hardware Installation

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

- **Support Service** - 3Year 24x7 24 hr Call to repair service support coverage
- **Support Service** - 3-Year 24x7 6 hr Call to repair service support coverage
- **Support Plus** - 24x7 24 hr Call to repair service support including OS coverage Operating

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://h20219.www2.hp.com/services/us/en/warranty/carepack-servers-proliant.html>





Models

## Hot Plug Serial ATA (SATA)/Serial Attached SCSI (SAS) Models

<b>HP DL165G6 2427 2.2 GHz, 4GB, Hot Plug (1P) 538278-xx1</b>	<b>Processor(s)</b>	(1) AMD Opteron™ processor Model 2427 (2.2 GHz, 75W ACP)
	<b>Cache Memory</b>	(1) AMD Opteron™ processor Model 2435 (2.6 GHz, 75W ACP)
<b>HP DL165 G6 2435 2.6 GHz, 8 GB Hot Plug SAS/SATA (2P) 538274-xx1</b>	<b>Memory</b>	6MB shared Level 3 cache
	<b>Network Controller</b>	4 GB (2 x 2GB) Registered PC2-6400 DDR2 DIMMs (800MHz) with Advanced ECC capabilities
	<b>Storage Controller</b>	8GB (4 x 2GB) Registered PC2-6400 DDR2 DIMMs (800MHz) with Advanced ECC capabilities
	<b>Hard Drive</b>	Embedded NC7782 dual-port gigabit server adapter
	<b>Internal Storage</b>	HP Smart Array P212 (538278-xx1)
	<b>Optical Drive</b>	HP Smart Array P212/256MB/BBWC (538274-xx1)
	<b>Form Factor</b>	None Ship Standard (up to 4 Hot Plug SATA or SAS drives supported)
		SATA: 8.0TB Maximum
		SAS: 8.0TB Maximum
		None Ship Standard (1 DVD-ROM or DVD/CD RW supported)
		Rack (1U)

## Non-Hot Plug Serial ATA (SATA) Models

<b>HP DL165 G6 2423HE NHP SATA, 4GB, 1P 538279-xx1</b>	<b>Processor(s)</b>	(1) AMD Opteron™ processor Model 2423HE (2.0 GHz, 55W ACP)
	<b>Cache Memory</b>	6MB shared Level 3 cache
	<b>Memory</b>	4 GB (2 x 2GB) Registered PC2-6400 DDR2 DIMMs (800MHz) with Advanced ECC capabilities
	<b>Network Controller</b>	Embedded NC7782 dual-port gigabit server adapter
	<b>Storage Controller</b>	HP Embedded SATA Controller
	<b>Hard Drive</b>	(1) 160GB NHP SATA HDD
	<b>Internal Storage</b>	SATA: 6.16TB maximum
	<b>Optical Drive</b>	None Ship Standard (1 DVD-ROM or DVD/CD RW supported)
	<b>Form Factor</b>	1U

<b>Country Code Key</b>	xx = 00	U.S.
	xx = 20	Brazil
	xx = 29	Japan
	xx = 37	APD
	xx = 42	Euro
	xx = AA	PRC



### 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:** FIO indicates that this option is only available as a Factory Installable Option.

### Step 1: Base Configuration

#### HP Models

#### Non-Hot Plug SATA Model

HP ProLiant DL165 G6 Non-Hot Plug SATA Rack Chassis

572227-B21

#### Factory Integrated Model ships with:

Embedded NC7782 dual-port gigabit server adapter  
Two available PCI-Express slots, including one full-length/full height and one low-profile/half height slot  
HP embedded SATA controller  
One Highline IEC Power Cord  
6 Fixed, Non-Redundant Fans  
Rack (1U), (1.75 in / 4.45 cm)  
Tool-less Fixed Rails

#### Hot Plug SATA/SAS Model

HP ProLiant DL165 G6 Hot Plug SATA/SAS Rack Chassis

572228-B21

#### Factory Integrated Model ships with:

Embedded NC7782 dual-port gigabit server adapter  
One full-length/full height PCI-Express slot.  
Low-profile/half height slot houses the HP Smart Array P212 storage controller  
One Highline IEC Power Cord  
6 Fixed, Non-Redundant Fans  
Rack (1U), (1.75 in / 4.45 cm)  
Tool-less Fixed Rails

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

#### HP Processors

**NOTE:** If 2 processors are desired, select one xxxxx-L21 and one xxxxx-B21.

AMD Opteron™ processor Model 2435 (2.6 GHz, 75W ACP), Option Kit, FIO 572221-L21

AMD Opteron™ processor Model 2431 (2.4 GHz, 75W ACP), Option Kit, FIO 572219-L21

AMD Opteron™ processor Model 2427 (2.2 GHz, 75W ACP), Option Kit, FIO 572142-L21

AMD Opteron™ processor Model 2425HE (2.1GHz, 55W ACP), Option Kit, FIO 572140-L21

AMD Opteron™ processor Model 2423HE (2.0GHz, 55W ACP), Option Kit, FIO 572138-L21



### Configuration Information - Factory Integrated Models

HP Memory	HP 2GB (2x1GB) Single Rank PC2-6400 (DDR2-800) Registered Memory Kit	497763-B21
	HP 4GB (2x2GB) Single Rank PC2-6400 (DDR2-800) Registered Memory Kit	497765-B21
	HP 8GB (2x4GB) Dual Rank PC2-6400 (DDR2-800) Registered Memory Kit	497767-B21
	HP 8GB (2x4GB) Dual Rank x4 PC2-6400 (DDR2-800) Registered Low Power Memory Kit	504351-B21
	HP 16GB (2x8GB) Dual Rank PC2-5300 (DDR2-667) Registered Memory Kit	408855-B21
	HP 64GB (8x8GB) Dual Rank PC2-5300 (DDR2-667) Registered Memory Kit	495605-B21

### HP Hard Drives

**NOTE:** The components of a storage subsystem (e.g. the drive, the HBA/controller, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components.

**NOTE:** Required only if P/N 572227-B21 selected in Step 1.

**NOTE:** Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.

#### Serial-ATA (SATA) Non-Hot Plug Hard Drives (Non-Hot Plug Models Only)

##### SATA Non-Hot Plug LFF (3.5-inch) Entry (ETY) Drives

HP 250GB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Entry 1yr Warranty Hard Drive	571232-B21
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HP 160GB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Entry 1yr Warranty Hard Drive	458947-B21
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##### SATA Non-Hot Plug LFF (3.5-inch) Midline (MDL) Drives

HP 2TB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Midline 1yr Warranty Hard Drive	507774-B21
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HP 1TB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Midline 1yr Warranty Hard Drive	507772-B21
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HP 500GB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Midline 1yr Warranty Hard Drive	458941-B21
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HP 250GB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Midline 1yr Warranty Hard Drive	458939-B21
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### HP Storage Controllers

**NOTE:** A minimum of one Smart Array Controller is required when purchasing Hot Plug CTO Chassis Model (P/N 572228-B21).

**NOTE:** In order to upgrade to RAID 6, at least 256MB Cache and a Battery is required in addition to the Smart Array Advanced Pack license (516471-B21).

HP P212/256MB FIO Smart Array BBWC	491191-B21
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HP P212/256MB Smart Array Controller	462834-B21
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HP P212/Zero Memory Smart Array Controller	462828-B21
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HP P410/Zero Memory FIO Smart Array Controller	462860-B21
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HP P410/256MB Smart Array Controller	462862-B21
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HP Smart Array P410/256MB w/ Battery FIO	491195-B21
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HP P410/512MB BBWC Smart Array Controller	462864-B21
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### Configuration Information - Factory Integrated Models

#### HP Power Supplies

Many HP ProLiant Servers now offer new power options, including Common Slot Power Supplies. These power supplies come in multiple power ratings and higher efficiency levels to offer the Right Size solution to fit your configuration. This provides improved power delivery and the advantage of reclaiming lost power. Prior to making a power supply selection it is "highly recommended" that the "HP Power Advisor" is run to determine the right size power supply for your server configuration. The HP Power Advisor is located at: [www.hp.com/go/hppoweradvisor](http://www.hp.com/go/hppoweradvisor)

HP High Efficiency 500W Multi-output Power Supply Kit

536928-B21

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

**NOTE:** For additional "Core Options" and "Additional Options", please refer to the "Options" sections below.



### Core Options

**NOTE:** Some options may not be available for factory integration. Please contact an HP sales representative for additional information.

<b>HP Processors</b>	AMD Opteron™ processor Model 2435 (2.6 GHz, 75W ACP)	572221-B21
	AMD Opteron™ processor Model 2431 (2.4 GHz, 75W ACP)	572219-B21
	AMD Opteron™ processor Model 2427 (2.2 GHz, 75W ACP)	572142-B21
	AMD Opteron™ processor Model 2425HE (2.1GHz, 55W ACP)	572140-B21
	AMD Opteron™ processor Model 2423HE (2.0GHz, 55W ACP)	572138-B21

<b>HP Memory</b>	HP 2GB (2x1GB) Single Rank PC2-6400 (DDR2-800) Registered Memory Kit	497763-B21
	HP 4GB (2x2GB) Single Rank PC2-6400 (DDR2-800) Registered Memory Kit	497765-B21
	HP 8GB (2x4GB) Dual Rank PC2-6400 (DDR2-800) Registered Memory Kit	497767-B21
	HP 8GB (2x4GB) Dual Rank x4 PC2-6400 (DDR2-800) Registered Low Power Memory Kit	504351-B21
	HP 16GB (2x8GB) Dual Rank PC2-5300 (DDR2-667) Registered Memory Kit	408855-B21
	HP 64GB (8x8GB) Dual Rank PC2-5300 (DDR2-667) Registered Memory Kit	495605-B21

<b>HP Optical Drives</b>	DVD-ROM Drive	447889-B21
	DVD/CD RW Drive	447891-B21

### HP Hard Drives

**NOTE:** The components of a storage subsystem (e.g. the drive, the HBA/controller, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components.

**NOTE:** Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.

#### SATA Hot Plug LFF (3.5-inch) Midline (MDL) Drives

HP 2TB 3G SATA 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive	507632-B21
HP 1TB 3G SATA 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive	454146-B21
HP 500GB 3G SATA 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive	458928-B21

#### SATA Non-Hot Plug LFF (3.5-inch) Midline (MDL) Drives

HP 2TB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Midline 1yr Warranty Hard Drive	507774-B21
HP 1TB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Midline 1yr Warranty Hard Drive	507772-B21
HP 500GB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Midline 1yr Warranty Hard Drive	458941-B21
HP 250GB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Midline 1yr Warranty Hard Drive	458939-B21

#### SATA Hot Plug LFF (3.5-inch) Entry (ETY) Drives

HP 250GB 3G SATA 7.2K rpm LFF (3.5-inch) Entry 1yr Warranty Hard Drive	571230-B21
HP 160GB 3G SATA 7.2K rpm LFF (3.5-inch) Entry 1yr Warranty Hard Drive	458945-B21

#### SATA Non-Hot Plug LFF (3.5-inch) Entry (ETY) Drives



### Core Options

HP 250GB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Entry 1yr Warranty Hard Drive 571232-B21

HP 160GB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Entry 1yr Warranty Hard Drive 458947-B21

**NOTE:** Please see the QuickSpecs for Technical Specifications and additional information:

[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)

#### SATA Hot Plug 3.5" Midline (MDL) Solid State Drives

HP 120GB 3G SATA LFF (3.5-inch) Midline 1yr Warranty Solid State Drive 570763-B21

HP 60GB 3G SATA LFF (3.5-inch) Midline 1yr Warranty Solid State Drive 570761-B21

**NOTE:** Please see the QuickSpecs for Technical Specifications and additional information:

[http://h18000.www1.hp.com/products/quickspecs/13415\\_div/13415\\_div.html](http://h18000.www1.hp.com/products/quickspecs/13415_div/13415_div.html)  
(Worldwide)

#### SAS Hot Plug LFF (3.5-inch) Enterprise (ENT) Drives

HP 600GB 6G SAS 15K rpm LFF (3.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive 516828-B21

HP 450GB 6G SAS 15K rpm LFF (3.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive 516816-B21

HP 450GB 3G SAS 15K LFF (3.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive 454232-B21

HP 300GB 6G SAS 15K rpm LFF (3.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive 516814-B21

HP 300GB 3G SAS 15K LFF (3.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive 416127-B21

HP 146GB 3G SAS 15K LFF (3.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive 384854-B21

#### SAS Hot Plug LFF (3.5-inch) Midline (MDL) Drives

HP 2TB 6G SAS 7.2K rpm LFF (3.5-inch) Dual Port Midline 1yr Warranty Hard Drive 507616-B21

HP 1TB 6G SAS 7.2K rpm LFF (3.5-inch) Dual Port Midline 1yr Warranty Hard Drive 507614-B21

HP 1TB 3G SAS 7.2K rpm LFF(3.5-inch) Dual Port Midline 1yr Warranty Hard Drive 461137-B21

HP 750GB 3G SAS 7.2K rpm LFF(3.5-inch) Dual Port Midline 1yr Warranty Hard Drive 461135-B21

**NOTE:** The purchase of SAS HBA or array controller is required.

**NOTE:** Please see the QuickSpecs for Technical Specifications and additional information:

[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)



### Core Options

#### HP Networking

##### Gigabit Ethernet Adapters

HP NC112T PCIe Gigabit Server Adapter	503746-B21
HP NC360T PCI Express Dual Port Gigabit Server Adapter	412648-B21
HP NC375T PCI Express Quad Port Gigabit Server Adapter	538696-B21
HP NC364T PCI Express Quad Port Gigabit Server Adapter	435508-B21
HP NC373F PCI Express Multifunction Gigabit Server Adapter	394793-B21
HP NC373T PCI Express Multifunction Gigabit Server Adapter	394791-B21
HP NC382T PCI Express Dual Port Multifunction Gigabit Server Adapter	458492-B21

##### 10 Gigabit Ethernet Adapters

**NOTE:** No more than two 10GbE I/O devices are supported in a single ProLiant server.

**NOTE:** A minimum of two Gigabytes (2 GB) of server memory is required per each adapter.

**NOTE:** Direct Attach Cable (DAC) for copper environments or fiber transceivers and cables for fiber-optic environments must be purchased separately.

HP NC522SFP Dual Port 10GbE Server Adapter	468332-B21
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**NOTE:** Please see the QuickSpecs for Technical Specifications and additional information: [www.hp.com/go/ProLiantNICs](http://www.hp.com/go/ProLiantNICs)

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#### HP I/O Expansion Options

HP HTX Riser Board Kit	445987-B21
HP PCI-X L/P Riser Kit	452698-B21

**NOTE:** Replaces the standard Half Height (LP) PCI Express slot with a Half Height (LowProfile) PCI-X slot.



### Additional Options

<b>HP Entry-Level Server Management</b>	HP LO100i Advanced Pack, No Media 1-Server License including 1 year of 24x7 Technical Support and Updates <b>NOTE:</b> For additional License Kits please see the Lights-Out 100i QuickSpecs at: <a href="http://www.hp.com/go/lo100">www.hp.com/go/lo100</a> .	530521-B21
<b>HP Insight Software</b>	<b>HP Insight Control for Linux</b> HP Insight Control for Linux, 1-server license, including one year of 24x7 Technical Support and Updates, Electronic <span style="float: right;">TC213AAE</span> HP Insight Control for Linux, No Media, 1-Server license, including one year of 24x7 Technical Support and Updates <span style="float: right;">TC209A</span> HP Insight Control for Linux, Media pack (DVD) - No licenses included <span style="float: right;">TC208A</span> <b>NOTE:</b> Licenses ship without media. The Media Kit for Insight Control for Linux can be ordered separately, or can be downloaded at: <a href="http://www.hp.com/go/ic-linux">http://www.hp.com/go/ic-linux</a> (click on Download button). <b>NOTE:</b> Electronic licenses can be used to purchase multiple licenses with a single activation key, and are available in all countries except China and Japan. Customers in China and Japan should order the physical equivalent. <b>NOTE:</b> Customer will receive a license entitlement certificate, which must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support Service. <b>NOTE:</b> For additional License Kits, including electronic licensing options, please see the QuickSpecs at: <a href="http://h18000.www1.hp.com/products/quickspecs/13019_div/13019_div.html">http://h18000.www1.hp.com/products/quickspecs/13019_div/13019_div.html</a>	
	<b>HP Insight Control server deployment</b> HP Insight Control server deployment Electronic License including 1 year 24x7 Technical Support and Updates <span style="float: right;">T9082AAE</span> HP Insight Control server deployment 1-Server License including 1 year 24x7 Technical Support and Updates <span style="float: right;">452151-B21</span> <b>NOTE:</b> Licenses ship without media. The Insight Control Media Kit can be ordered separately, or can be downloaded at: <a href="http://www.hp.com/go/insightupdates">http://www.hp.com/go/insightupdates</a> . <b>NOTE:</b> Electronic licenses can be used to purchase multiple licenses with a single activation key, and is available in all countries except China and Japan. Customers in China and Japan should order the physical equivalent. <b>NOTE:</b> Customer will receive a license entitlement certificate, which must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support Service. <b>NOTE:</b> For additional license kits please see the Insight Control QuickSpecs at: <a href="http://h18004.www1.hp.com/products/quickspecs/12631_div/12631_div.html">http://h18004.www1.hp.com/products/quickspecs/12631_div/12631_div.html</a>	
<b>HP Graphic Options</b>	HP Graphic Card Power Adapter Kit	533955-B21
<b>HP Drive Cage Options</b>	Hot Plug HDD Backplane 1U 2S Kit <b>NOTE:</b> Installation of the Hot Plug Backplane 1U 2S Kit (445985-B21) is required if ordering third or fourth Hard Drives for Hot Plug models only.	445985-B21





### Additional Options

#### HP Storage Controllers

**NOTE:** The addition of storage controllers for internal hard drive use is intended for use ONLY with the Hot Plug SATA/SAS Model Chassis (572228-B21).

#### SAS Controllers

##### Smart Array P212 Controller

HP Smart Array P212/Zero Memory Controller 462828-B21

HP Smart Array P212/256MB Controller 462834-B21

##### Smart Array P410 Controller

HP Smart Array P410/256MB Controller 462862-B21

HP Smart Array P410/512MB with BBWC Controller 462864-B21

HP Smart Array P410/512MB with FBWC 578230-B21

HP Smart Array P410/1G with FBWC 572532-B21

##### Smart Array P411 Controller

**NOTE:** Controllers for use with external storage only.

HP Smart Array P411/256MB Controller 462830-B21

HP Smart Array P411/512MB BBWC 462832-B21

HP Smart Array P411/512MB Flash Backed Write Cache 578229-B21

HP Smart Array P411/1G Flash Backed Write Cache 572531-B21

**NOTE:** Please see the following QuickSpecs for Technical Specifications and additional information:

[http://h18000.www1.hp.com/products/quickspecs/13203\\_div/13203\\_div.html](http://h18000.www1.hp.com/products/quickspecs/13203_div/13203_div.html)  
(Smart Array P212 Controller)

[http://h18000.www1.hp.com/products/quickspecs/13201\\_div/13201\\_div.html](http://h18000.www1.hp.com/products/quickspecs/13201_div/13201_div.html)  
(Smart Array P410 Controller)

[http://h18000.www1.hp.com/products/quickspecs/13202\\_div/13202\\_div.html](http://h18000.www1.hp.com/products/quickspecs/13202_div/13202_div.html)  
(Smart Array P411 Controller)

#### Optional upgrades

1G Flash Backed Write Cache 534562-B21

512MB Flash Backed Write Cache 534916-B21

HP Smart Array Advanced Pack No Media 1-Server license including 1yr 24x7 Technical Support 516471-B21

**NOTE:** This part number can be used to purchase a single license or to order multiple licenses with a single activation key. Customers will receive a license entitlement certificate via e-mail. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Include one year of 24x7 HP Software Technical Support Services.

#### SAS HBA

HP SC08Ge Host Bus Adapter 488765-B21

HP SC08e 6Gb 2-ports Ext PCIe SAS HBA 614988-B21

**NOTE:** This is a 2 x4 External Port HBA.

**NOTE:** Please see the QuickSpecs for Technical Specifications and additional information:

[http://h18004.www1.hp.com/products/quickspecs/13082\\_div/13082\\_div.html](http://h18004.www1.hp.com/products/quickspecs/13082_div/13082_div.html)  
(SC08Ge HBA)



### Additional Options

HP InfiniBand Options	HP IB 4X DDR PCI-e Dual Port HCA	448397-B21
	HP IB 4X DDR PCI-e Dual Port 0 Memory HCA	483513-B21
	HP 10 GbE PCI-e G2 Dual Port Adapter	516937-B21

**NOTE:** Please see the QuickSpecs for additional information:

[http://h18000.www1.hp.com/products/quickspecs/13078\\_div/13078\\_div.html](http://h18000.www1.hp.com/products/quickspecs/13078_div/13078_div.html)

### HP Backup & Recovery Software

#### Data Protector Express

HP Data Protector Express 4.0 SP1 Backup Server	BB117BA
HP Data Protector Express 4.0 SP1 for Microsoft Small Business Server	BB118BA
HP Data Protector Express Backup Server 4.0 SP1 Upgrade from Data Protector Express Single Server Edition	BB117BT

**NOTE:** Only one of these Data Protector Express base products is required. To see available options: <http://www.hp.com/go/dataprotectorexpress>

### HP Tape Backup

**NOTE:** For the complete range of StorageWorks tape drives, autoloaders, libraries and media see: <http://www.hp.com/go/tape>. For hardware and software compatibility of HP StorageWorks tape backup products see: <http://www.hp.com/go/connect>.

HP StorageWorks DAT 320 USB Internal Tape Drive	AJ825A
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HP StorageWorks DAT 320 SAS Internal Tape Drive	AJ830A
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**NOTE:** Connection using HP P212 Smart Array Controller SAS (462828-B21) recommended.

HP StorageWorks LTO-2 Ultrium 448 SAS Internal Tape Drive	DW085A
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**NOTE:** Connection using HP P212 Smart Array Controller SAS (462828-B21) recommended.

HP StorageWorks LTO-3 Ultrium 920 SAS Internal Tape Drive	EH847A
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**NOTE:** Connection using HP P212 Smart Array Controller SAS (462828-B21) recommended.

HP StorageWorks 1/8 G2 LTO-3 Ultrium 920 SAS Tape Autoloader	AH558A
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**NOTE:** Requires HP 1U Tape Autoloader Rack-Mount Kit (AH166A) for rack installation. Connection using HP P212 Smart Array Controller SAS (462828-B21) recommended.

HP StorageWorks MSL2024 Tape Library with one LTO-3 Ultrium 920 SAS Drive	AH559A
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**NOTE:** Connection using HP P212 Smart Array Controller SAS (462828-B21) recommended.

HP StorageWorks MSL2024 Tape Library with one LTO-5 Ultrium 3000 SAS Drive	BL537A
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**NOTE:** Connection using HP P212 Smart Array Controller SAS (462828-B21) recommended.



### Additional Options

#### Disk Backup

**NOTE:** For the complete range of StorageWorks D2D Backup Systems see: <http://www.hp.com/go/d2d>. For the complete range of StorageWorks RDX drives and media see: <http://www.hp.com/go/rdx>. For hardware and software compatibility of HP StorageWorks disk backup products see: <http://www.hp.com/go/connect>.

#### HP StorageWorks D2D Backup Systems with Backup Data Deduplication

**NOTE:** These are network connected appliances with connectivity using the iSCSI protocol. If the server requires a hardware iSCSI initiator, the QLogic QLA4050 Host Bus Adapter is recommended.

HP StorageWorks D2D2502i Backup System

EJ001B

**NOTE:** 1.5TB of usable network disk backup capacity. Network connected appliance with connectivity using the iSCSI protocol. If the server requires a hardware iSCSI initiator, the QLogic QLA4050 Host Bus Adapter is recommended.

HP StorageWorks D2D2504i Backup System

EJ002B

**NOTE:** 3.0TB of usable network disk backup capacity. Network connected appliance with connectivity using the iSCSI protocol. If the server requires a hardware iSCSI initiator, the QLogic QLA4050 Host Bus Adapter is recommended.

#### USB Removable Media RDX Disk Backup Systems

HP StorageWorks RDX320 Internal Removable Disk Backup System

AJ767A

**NOTE:** 320GB of disk capacity per data cartridge.

HP StorageWorks RDX500 Internal Removable Disk Backup System

AJ934A

**NOTE:** 500GB of disk capacity per data cartridge.

HP StorageWorks RDX750 Internal Removable Disk Backup System

AW577A

**NOTE:** 750GB of disk capacity per data cartridge.

#### HP StorageWorks Options

#### StorageWorks Fibre Channel HBA

**NOTE:** The following is a list of all Fibre Channel Host Bus Adapters for Windows and Linux. For detailed compatibility information please see:

<http://h18006.www1.hp.com/storage/saninfrastructure/hba.html>

#### Brocade Fibre Channel HBAs

HP 81B PCIe 8Gb FC Single Port HBA

AP769A

HP 82B PCIe 8Gb FC Dual Port HBA

AP770A

HP 41B PCIe 4Gb FC Single Port HBA

AP767A

HP 42B PCIe 4Gb FC Dual Port HBA

AP768A

#### Emulex Fibre Channel HBAs

HP StorageWorks 81E 8Gb SP PCI-e FC HBA

AJ762A

HP StorageWorks 82E 8Gb Dual-port PCI-e FC HBA

AJ763A

#### QLogic Fibre Channel HBAs

HP StorageWorks 81Q 8Gb PCI-e FC HBA

AK344A

HP StorageWorks 82Q 8Gb Dual Port PCI-e FC HBA

AJ764A

#### StorageWorks SCSI HBA

HP U320e SCSI Host Bus Adapter

AH627A

**NOTE:** Recommended for MSL SCSI Tape Library connect.

**NOTE:** Recommended Dual Channel Ultra320 SCSI Controller for connecting multi-drive MSL tape libraries to ProLiant servers.



### Additional Options

**StorageWorks Converged Network Adapter**  
HP CN1000E 2P Converged Network Adapter AW520A

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**HP Disk Storage Systems** **MSA SAN Storage Arrays**

HP StorageWorks 50 Modular Smart Array 364430-291  
**NOTE:** Please see the QuickSpecs for additional options and configuration information at:  
[http://h18000.www1.hp.com/products/quickspecs/12245\\_div/12245\\_div.html](http://h18000.www1.hp.com/products/quickspecs/12245_div/12245_div.html)  
(Worldwide)

HP StorageWorks MSA60 Array 418408-B21  
**NOTE:** Please see the QuickSpecs for additional options and configuration information at:  
[http://h18000.www1.hp.com/products/quickspecs/12627\\_div/12627\\_div.html](http://h18000.www1.hp.com/products/quickspecs/12627_div/12627_div.html)

HP StorageWorks MSA70 Array 418800-B21  
**NOTE:** Please see the QuickSpecs for additional options and configuration information at:  
[http://h18000.www1.hp.com/products/quickspecs/12652\\_div/12652\\_div.html](http://h18000.www1.hp.com/products/quickspecs/12652_div/12652_div.html)

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**HP Uninterruptible Power Systems** **HP Rack-mountable UPS**

**HP R1500 G2 UPS**

HP, R1.5kVA UPS, 1U, NA AF419A  
HP, R1.5kVA UPS, 1U, INTL AF418A  
HP, R1.5kVA UPS, 1U, JPN/TW AF421A  
**NOTE:** Please see QuickSpecs for Technical Specifications and additional information:  
[http://h18000.www1.hp.com/products/quickspecs/12507\\_div/12507\\_div.html](http://h18000.www1.hp.com/products/quickspecs/12507_div/12507_div.html)  
(Worldwide)

**HP R/T3000 Uninterruptible Power System (UPS)**

HP R/T3000 UPS, High voltage, NA/JPN AF453A  
HP R/T3000 UPS, High voltage, detachable inlet cord INTL AF454A  
**NOTE:** Please see the QuickSpecs for additional information:  
[http://h18000.www1.hp.com/products/quickspecs/13417\\_div/13417\\_div.html](http://h18000.www1.hp.com/products/quickspecs/13417_div/13417_div.html)  
(Worldwide)

**HP Rack-Mountable R5500 UPS**

HP R5500 VA UPS, INTL AF416A  
HP R5500 VA UPS, NA/JPN AF426A  
**NOTE:** Please see the QuickSpecs for additional information:  
[http://h18000.www1.hp.com/products/quickspecs/11871\\_div/11871\\_div.html](http://h18000.www1.hp.com/products/quickspecs/11871_div/11871_div.html)  
(Worldwide)  
**NOTE:** For additional information on HP Uninterruptible Power Systems please go to:  
[www.hp.com/servers/rackups](http://www.hp.com/servers/rackups).  
**NOTE:** For additional information on sizing your server, please reference:  
<http://www.upssizer.com>

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### Additional Options

HP Power Distribution Units	<b>Monitored PDUs</b>	
	<b>HP Monitored Power Distribution Unit: Full Rack Version</b>	
	HP 8.6 kVA S1324 Monitored PDU- single input, 3Ø, 24A (NA/JPN)	AF504A
	HP 8.3 S1140 Monitored PDU- single input, 1Ø, 40A (NA/JPN)	AF506A
	HP 11 kVA S1316 Monitored PDU- single input, 3Ø, 16A (INTL)	AF508A
	HP 7.3 kVA S1132 Monitored PDU- single input, 1Ø, 32A (INTL)	AF510A
	<b>HP Monitored Power Distribution Unit: Half Rack Version</b>	
	HP 4.9 kVA S124 Monitored PDU- single input, 1Ø, 24A (NA/JPN)	AF914A
	HP 7.3 kVA S132 Monitored PDU- single input, 1Ø, 32A (INTL)	AF915A
	<b>Modular Power Distribution Units 1U/0U (Up to 32 outlets)</b>	
4.9 kVA Modular PDU, 24A	252663-D72	
7.3kVA Model - mPDU, 32A, High (INT'L)	252663-B31	
8.3 kVA Modular PDU, 40A, NA/JPN	252663-D73	

HP Rack Series (Carbon/Graphite Metallic)	<b>HP Rack 10000 G2 Series</b> (Graphite Metallic)	
	10642 G2 (42U) Rack Cabinet - Pallet	AF001A
	10642 G2 (42U) Rack Cabinet - Shock Pallet	AF002A
	<b>NOTE:</b> It is mandatory to use a shock pallet when shipping racks with equipment installed.	
	<b>NOTE:</b> xxxxx-B22 (shock pallet) used to ship racks with equipment installed (by custom systems, VARs and Channels).	
	<b>NOTE:</b> Please see the QuickSpecs for Technical Specifications and additional information: <a href="http://h18000.www1.hp.com/products/quickspecs/12402_div/12402_div.html">http://h18000.www1.hp.com/products/quickspecs/12402_div/12402_div.html</a> (Worldwide)	
<b>NOTE:</b> For additional information regarding Rack Cabinets, please see the following URL: <a href="http://www.hp.com/go/rackandpower">http://www.hp.com/go/rackandpower</a> .		

HP Rack Options	<b>HP KVM Switch Options</b>	
	Server console switch 0x2x8	AF616A
	Server console switch 0x2x16	AF617A
	0x2x16 KVM Server Console G2 Switch with Virtual Media and CAC	AF618A
	0x2x32 KVM Server Console G2 Switch with Virtual Media and CAC	AF619A
	1x1Ex8 KVM IP Console Switch G2 with Virtual Media and CAC	AF620A
	2x1Ex16 KVM IP Console Switch G2 with Virtual Media and CAC	AF621A
	4x1Ex32 KVM IP Console Switch G2 with Virtual Media and CAC	AF622A
	<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> .	



### Additional Options

HP USB and SD Options	HP USB Internal Cable Kit	451363-B21
	USB P/S2 Optical Mouse	DC369A
	HP USB 04 Standard Keyboard	DT528A#ABA

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HP Care Pack Services	<b>Hardware Services 4-Hour On-site Service</b>	
	13-Hour x 5-Day Coverage, 3 Years, Electronic	U9509E
	24-Hour x 7-Day Coverage, 3 Years, Electronic	U9510E
	<b>Hardware Services Next Business Day On-Site Service</b>	
	9-Hour x 5-Day Coverage, 3 Years, Electronic	U9508E
	<b>Hardware Services 6-Hour Call to Repair On-Site Service</b>	
	6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	U9511E
Hardware Installation, Electronic	U9520E	
	<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

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

HP ProLiant DL165 G6 (all models)

### Standard Memory

4 GB (2 x 2 GB) PC2-6400 DIMM memory, with Advanced ECC Capabilities memory installed.

### Maximum Memory

Up to 64GB memory is available with the optional installation of PC2-5300 Registered DIMM memory kits. Memory should be installed in pairs and matched for optimum performance.

**NOTE:** Chart does not represent all possible memory configurations.

**NOTE:** Each processor support 4 DIMM sockets. Both processors sockets must be populated in order to use all 8 DIMM sockets.

Memory	Slot							
	1	2	3	4	5	6	7	8
Standard (4 GB)	2 GB	2 GB	Empty	Empty	Empty	Empty	Empty	Empty
Maximum (64 GB)	8 GB	8 GB	8 GB	8 GB	8 GB	8 GB	8 GB	8 GB

### HP Memory

Following are memory options available from HP:

HP 2GB (2x1GB) Single Rank PC2-6400 (DDR2-800) Registered Memory Kit	497763-B21
HP 4GB (2x2GB) Single Rank PC2-6400 (DDR2-800) Registered Memory Kit	497765-B21
HP 8GB (2x4GB) Dual Rank PC2-6400 (DDR2-800) Registered Memory Kit	497767-B21
HP 8GB (2x4GB) Dual Rank x4 PC2-6400 (DDR2-800) Registered Low Power Memory Kit	504351-B21
HP 16GB (2x8GB) Dual Rank PC2-5300 (DDR2-667) Registered Memory Kit	408855-B21
HP 64GB (8x8GB) Dual Rank PC2-5300 (DDR2-667) Registered Memory Kit	495605-B21



## Storage



- 1-4 Non-hot plug 3.5" SATA or Hot-plug SAS/SATA hard drive bays
- A Optional DVD-ROM, or DVD/CD RW

## Drive Support

### Removable Media

	Quantity Supported	Position Supported	Controller
DVD-ROM	Up to 1	A	Integrated IDE (ATAPI) (optional)
DVD/CD RW	Up to 1	A	Integrated IDE (ATAPI) (optional)

### Hard Drives

**NOTE:** The components of a storage subsystem (e.g. the drive, the HBA/controller, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components.

**NOTE:** Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.

#### SATA Non-Hot Plug LFF (3.5-inch) Entry (ETY) Drives

	Quantity Supported	Position Supported	Controller
250GB 3G SATA 7.2K 160GB 3G SATA 7.2K	Up to 4	1-4	HP Embedded SATA Controller

#### SATA Non-Hot Plug LFF (3.5-inch) Midline (MDL) Drives

	Quantity Supported	Position Supported	Controller
2TB 3G SATA 7.2K 1TB 3G SATA 7.2K 500GB 3G SATA 7.2K 250GB 3G SATA 7.2K	Up to 4	1-4	HP Embedded SATA Controller

#### SATA Hot Plug LFF (3.5-inch) Entry (ETY) Drives

**NOTE:** Installation of the Hot Plug Backplane 1U 2S Kit (445985-B21) is required if ordering third or fourth Hard Drives for Hot Plug models only.

	Quantity Supported	Position Supported	Controller
250GB 3G SATA 7.2K 160GB 3G SATA 7.2K	Up to 4	1-4	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/256 MB Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller

#### SATA Hot Plug LFF (3.5-inch) Midline (MDL) Drives

	Quantity Supported	Position Supported	Controller
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### Storage

2TB 3G SATA 7.2K	Up to 4	1-4	HP Smart Array P212/Zero Memory Controller
1TB 3G SATA 7.2K			HP Smart Array P212/256 MB Controller
500GB 3G SATA 7.2K			HP Smart Array P410/256 MB Controller
			HP Smart Array P410/512 MB BBWC Controller

### SATA Hot Plug 3.5" Midline (MDL) Solid State Drives

	Quantity Supported	Position Supported	Controller
120GB 3G SATA	Up to 4	1-4	HP SC40Ge 4-Port Internal SAS HBA with RAID 0, 1
60GB 3G SATA			<b>NOTE:</b> When using the SC40Ge with SATA Hard Drives, 1.5G SATA Hard Drives are required. Transfer rate: 1.5 Gb/s SATA, 3 Gb/s SAS
			HP Smart Array P400 Controller
			HP Smart Array P800 Controller

### SAS Hot Plug LFF (3.5-inch) Enterprise (ENT) Drives

	Quantity Supported	Position Supported	Controller
600GB 6G SAS 15K	Up to 4	1-4	HP Smart Array P212/Zero Memory Controller
450GB 6G SAS 15K			HP Smart Array P212/256 MB Controller
450GB 3G SAS 15K			HP Smart Array P410/256 MB Controller
300GB 6G SAS 15K			HP Smart Array P410/512 MB BBWC Controller
146GB 3G SAS 15K			

### SAS Hot Plug LFF (3.5-inch) Midline (MDL) Drives

	Quantity Supported	Position Supported	Controller
2TB 6G SAS 7.2K	Up to 4	1-4	HP Smart Array P212/Zero Memory Controller
1TB 6G SAS 7.2K			HP Smart Array P212/256 MB Controller
1 TB 3G SAS 7.2K			HP Smart Array P410/256 MB Controller
750GB 3G SAS 7.2K			HP Smart Array P410/512 MB BBWC Controller

### External Storage

	Quantity Supported	Position Supported	Controller
50 Modular Smart Array	Up to 4	External	HP Smart Array E500/256 MB Controller
			HP Smart Array P800/512 BBWC Controller
60 Modular Smart Array	Up to 4	External	HP Smart Array E500/256MB Controller
			HP Smart Array P212/Zero Memory Controller
			HP Smart Array P212/256 MB Controller
	Up to 8	External	HP Smart Array P800/512 BBWC Controller
			HP Smart Array P411/256 MB Controller
			HP Smart Array P411/512 MB BBWC Controller
70 Modular Smart Array	Up to 2	External	HP Smart Array P212/Zero Memory Controller
			HP Smart Array P212/ 256 MB Controller
	Up to 4	External	HP Smart Array E500/256MB Controller
			HP Smart Array P800/512 BBWC Controller
			HP Smart Array P411/256 MB Controller
			HP Smart Array P411/512 MB BBWC Controller



### Storage

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#### Tape and Disk-Based Backup

**NOTE:** For the complete range of StorageWorks tape drives, autoloaders, libraries and media, including the internal fitting models, see: <http://www.hp.com/go/tape>. For the complete range of StorageWorks D2D Backup Systems see: <http://www.hp.com/go/d2d>. For the complete range of StorageWorks RDX drives and media see: <http://www.hp.com/go/rdx>. For hardware and software compatibility of HP StorageWorks disk and tape backup products see: <http://www.hp.com/go/connect>.

	Position	Recommended Controller	Part Number
<b>HP StorageWorks SCSI Tape Drives</b>	External	HP SC11Xe Host Bus Adapter	412911-B21
LTO-1 Ultrium 232		Please check the full compatibility information at:	
LTO-2 Ultrium 448		<a href="http://www.hp.com/go/connect">http://www.hp.com/go/connect</a>	
LTO-3 Ultrium 920			
LTO-3 Ultrium 960			
LTO4 Ultrium 1760			
LTO-4 Ultrium 1840			
DAT 40			
DAT 72			
DAT 160			
1U Rack-Mount Kit			
3U Rack-Mount Kit			
<b>HP StorageWorks SCSI Rack Mount Kits</b>	External	HP SC11Xe Host Bus Adapter	412911-B21
1U Rack-Mount Kit		Please check the full compatibility information at:	
3U Rack-Mount Kit		<a href="http://www.hp.com/go/connect">http://www.hp.com/go/connect</a>	
<b>HP StorageWorks USB Tape Drives</b>	Internal or External	USB 2.0 Port	N/A
DAT 40			
DAT 72			
DAT 160			
DAT 320			
<b>HP StorageWorks USB Rack Mount Kits</b>	External	USB 2.0 Port	N/A
1U USB Rack-Mount Kit			
<b>HP StorageWorks SAS Tape Drives</b>	Internal or External	HP Smart Array P212 SAS controller	462828-B21
DAT 160		Please check the full compatibility information at:	
DAT 320		<a href="http://www.hp.com/go/connect">http://www.hp.com/go/connect</a>	
LTO-2 Ultrium 448			
LTO-3 Ultrium 920			
LTO-4 Ultrium 1760			
LTO-4 Ultrium 1840			
LTO-5 Ultrium 3000			
LTO-5 Ultrium 3280			



### Storage

<b>HP StorageWorks SAS Rack Mount Kits</b> 1U Rack-Mount Kit 3U Rack-Mount Kit	External	HP Smart Array P212 SAS controller  Please check the full compatibility information at: <a href="http://www.hp.com/go/connect">http://www.hp.com/go/connect</a>	462828-B21
<b>HP StorageWorks SCSI Tape Autoloaders</b> DAT 72x10 Autoloader 1/8 G2 Autoloader	External	HP SC11Xe Host Bus Adapter  Please check the full compatibility information at: <a href="http://www.hp.com/go/connect">http://www.hp.com/go/connect</a>	412911-B21
<b>HP StorageWorks SCSI Tape Libraries</b> MSL2024 MSL4048 MSL8096 MSL6000	External	HP U320e SCSI Dual Channel Controller  Please check the full compatibility information at: <a href="http://www.hp.com/go/connect">http://www.hp.com/go/connect</a>	AH627A
<b>HP StorageWorks SAS Tape Autoloaders and Libraries</b> 1/8 G2 Autoloader MSL2024 MSL4048 MSL8096	External	HP Smart Array P212 SAS controller  Please check the full compatibility information at: <a href="http://www.hp.com/go/connect">http://www.hp.com/go/connect</a>	462828-B21
<b>HP StorageWorks Fibre Channel Tape Libraries</b> MSL2024 MSL4048 MSL8096 MSL6000	External	Please consult the EBS connectivity matrix at: <a href="http://www.hp.com/go/ebs">http://www.hp.com/go/ebs</a> for connectivity information and the supported Fibre Channel HBAs shown in this QuickSpecs.	
<b>HP StorageWorks USB RDX Removable Disk Backup System</b> RDX160 RDX320 RDX500 RDX750	Internal or External	USB 2.0 port	N/A
<b>HP StorageWorks D2D Backup Systems, iSCSI</b> D2D2500i D2D4000i	External	Embedded Network Controller. If the server requires a hardware iSCSI initiator, the QLogic QLA4050 Host Bus Adapter is recommended.	



## Storage

HP StorageWorks D2D  
Backup Systems, Fibre  
Channel  
D2D4000fc

External

Direct server attach is not supported, requires connection via SAN fabric. See: <http://www.hp.com/go/connect>



### Power Specifications

HP 500W Power Supply						
Part Number - AC 500W PSU	515915-B21 Option Kit					
Input Voltage Range (Vrms)	100 to 240					
Frequency Range (Nominal) (Hz)	47/63					
Nominal Input Voltage (Vrms)	100	120	200	220	230	240
Maximum Rated Output Wattage	500	500	500	500	500	500
Nominal Input Current (A rms)	5.74	4.99	2.86	2.58	2.46	2.36
Max Rated Input Wattage Rating (Watts)	568	568	562	556	556	556
Max. Rated VA (Volt-Amp)	574	574	573	567	567	567
Efficiency (%) at Max. Rated Output Wattage	88	88	89	90	90	90
Power Factor	0.99	0.99	0.98	0.98	0.98	0.98
Leakage Current (mA)	0.42	0.50	0.81	0.91	0.95	1.00
Max. Inrush Current (A peak)	30	30	30	30	30	30
Max. Inrush Current duration (mS)	20	20	20	20	20	20
Maximum British Thermal Unit Rating (BTU-Hr)						

**NOTE:**

To review typical system power ratings use the Active Answers Power Advisor which is available via the online tool located at URL: [www.hp.com/go/proliant-energy-efficient](http://www.hp.com/go/proliant-energy-efficient) or [www.hp.com/go/hppoweradvisor](http://www.hp.com/go/hppoweradvisor)



### System Specifications

#### Power

ProLiant DL165 G6 Fully Configured	115V/60Hz	220V/50Hz
Fully Loaded System Input Wattage (W)	568	556
Fully Loaded System Input Current (A rms)	4.99	2.58
Fully Loaded System Thermal (BTU- Hr)	1939.15	1898.18
Fully Loaded System VA (Volt-Amp)	574	567
System Inrush Current with all power supplies loaded (A)	30	30
Power cord requirements	Nema 5-15P to IEC320-C13	IEC320-C13 to IEC320-C14

**NOTE:** Power shown is for a fully configured system consisting of (2) CPU, (8) double-sided DIMMs, (2) HDDs, (1) CD-ROM, and (2) PCI cards.

**Power Cord** AF556A

#### Server Power Cords

One 6' Highline (IEC-IEC) power cord ships standard

**NOTE:** HP ProLiant DL servers no longer ship standard with NEMA power cords (163719-002) that allow connection to 110V US wall outlets in a home or office. ProLiant DL servers are primarily connected to PDU's in data center racks so they now ship standard with only a PDU power cord (416151-B21). If a user wishes to power a ProLiant DL server using a 110V receptacle (NEMA-15), the NEMA power cord (227099-001) must be ordered separately.

If customers require a local power cord, they can check the power cord matrix for the appropriate cord. Please see the following power cord matrix: <http://www.hp.com/go/powercordmatrix>.



### Technical Specifications

<b>System Unit</b>	<b>Dimensions</b> (H x W x D) (with bezel)	1.70 x 17.64 x 26.85 in (4.32 x 44.80 x 68.20 cm)		
	<b>Weight</b> (approximate)	Maximum	37.00 lb (16.78 kg)	
		(all hard drives, power supplies, and processors installed)		
		Minimum	30.00 lb (13.69 kg)	
		(one hard drive, power supply, and processor installed)		
	<b>Input Requirements</b> (per 500W power supply)	Rated Line Voltage	100 to 127 VAC 200 to 240 VAC	
		Rated Input Current	4.99A (at 115 VAC), 2.46A (at 230 VAC)	
		Rated Input Frequency	47 to 63 Hz	
		Rated Input Power	574W (at 100 VAC) 573W (at 200 VAC)	
	<b>BTU Rating</b>	Maximum	500W	1700 BTU / hr (at 100 VAC) 1700 BTU/hr (at 200 VAC)
	<b>Power Specifications</b>	To review typical system power ratings use the Power Advisor which is available via the online tool located at URL: <a href="http://www.hp.com/go/hppoweradvisor">www.hp.com/go/hppoweradvisor</a>		
		- Click on the system of interest. Example: DL165 G6 - Follow the instructions of the next screens.		
	<b>Power Supply Output</b> (per power supply)	Rated Steady-State Power	500 Watts (at 100 VAC), 500 Watts (at 200 VAC)	
		Maximum Peak Power	500 Watts (at 100 VAC), 500 Watts (at 200 VAC)	
	<b>Optional High Efficiency Power Supply Specifications</b>			
	<b>Input Requirements</b> (per power supply)	Rated Line Voltage	90-132 VAC, 200-240 VAC	
		Rated Input Current	9.4 A (at 115 VAC), 7.8 A (at 230 VAC)	
		Rated Input Frequency	47 to 63 Hz	
		Rated Input Power	1075 W (at 100 VAC), 1375W (at 200 VAC)	
	<b>BTU Rating</b>	Maximum	3070.93 BTU/hr (at 100 VAC), 4094.57 BTU/hr (at 200 VAC)	



### Technical Specifications

<b>Power Specifications</b>	To review typical system power ratings use the Power Advisor which is available via the online tool located at URL: <a href="http://www.hp.com/go/proliant-energy-efficient">www.hp.com/go/proliant-energy-efficient</a>	
	<ul style="list-style-type: none"> <li>- Click on the system of interest. Example: DL165 G6</li> <li>- Follow the instructions of the next screens.</li> </ul>	
<b>Power Supply Output</b> (per power supply)	Rated Steady-State Power	900 W (at 100 VAC), 1200 W (at 200 VAC)
	Maximum Peak Power	900 W (at 100 VAC), 1200 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	-30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).
<b>Relative Humidity</b> (non-condensing)	Operating	10 to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing.
	Non-operating	5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.
<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>	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 (ECMA 109).	
	<b>Idle</b>	
	LWAd	6.82 B
	LpAm	51.93 dBA
	<b>Operating</b>	
	LWAd	6.84 B
	LpAm	51.93 dBA
<b>Emissions Classification</b>	FCC Rating	Class A





### Technical Specifications

(EMC)

#### Normative Standards

CISPR 22; EN55022; EN55024; FCC CFR 47, Pt 15; ICES-003; CNS13438; GB9254; K22;K24; EN 61000-3-2; EN 61000-3-3; EN 60950-1; IEC 60950-1

**NOTE:** Product conformance to cited product specifications is based on sample (type) testing, evaluation, or assessment. This product or family of products is eligible to bear the appropriate compliance logos and statements.

HP 160GB 3G SATA  
7.2K rpm LFF (3.5-inch)  
Non-hot Plug Entry 1yr  
Warranty Hard Drive

458947-B21

<b>Capacity</b>	160,041 MB
<b>Height</b>	1.028 in (2.61 cm)
<b>Width</b>	4.0 in (10.16 cm)
<b>Depth</b>	5.787 in (147.0 mm)
<b>Interface</b>	Serial ATA
<b>Transfer Rate Synchronous (Maximum)</b>	1.5Gb/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)

Embedded SATA  
Controller

<b>Drives Supported</b>	Up to 4 SATA devices
<b>Channels</b>	4 1.5Gb SATA
<b>Storage Capacity</b>	3.0TB internal storage
<b>Data Transfer Method</b>	32-bit/33-MHz PCI bus-master
<b>Maximum SATA Channel Transfer Rate</b>	1.5Gb/s per channel
<b>Maximum Transfer Rate per PCI Bus (peak)</b>	266 MB/s per channel
<b>Protocols</b>	SATA PIO Mode[0-4]
<b>Cable</b>	SATA
<b>Internal ATA Connectors</b>	Four SATA connectors

**NOTE:** Raid support requires optional slot based raid controller.



### Technical Specifications

HP 4 Internal Port SAS HBA with RAID	Drives Supported	Up to 4 SATA/SAS drives	
	Channels	4	
	Storage Capacity	1.8TB SAS, 3.0TB SATA	
	Data Transfer Method	PCI-Express	
	Maximum SAS Channel Transfer Rate	3Gb/s per channel	
	Maximum SAS transfer rate	300Mb/sec per port	
	Protocols Supported	SSP, STP, SMP	
	Internal Connectors	1 SAS	
<hr/>			
Embedded NC7782 dual-port gigabit server adapter	Network Interface	10Base-T/ 100Base-TX/ 1000Base-TX	
	Compatibility	IEEE 802.3 10Base-T IEEE 802.3 1000Base-T IEEE 802.3 100Base-TX	
	Data Transfer Method	PCI-X	
	Controller	BCM5704c	
	Network Transfer Rate	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)	2000 Mb/s
	Connector	RJ-45	
Cable Support	10Base-T	Categories 3, 4 or 5 UTP; up to 328 ft (100 m)	
	10/100/1000Base-TX	Category 5 UTP (2 Pair); up to 328 ft (100 m)	
<hr/>			
Environment-friendly Products and Approach	End-of-life Management and Recycling	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*

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

