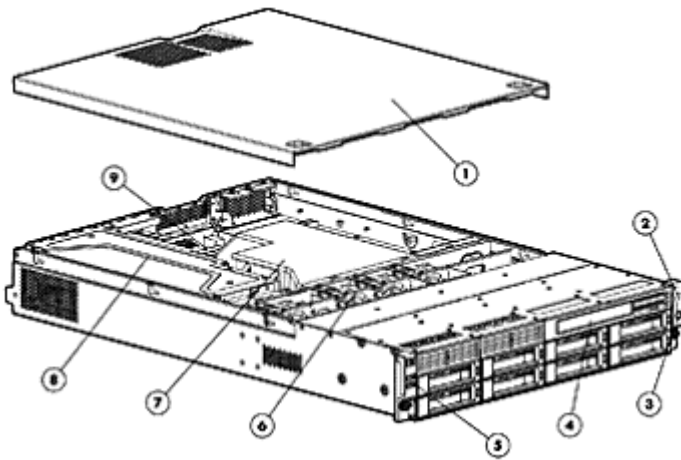
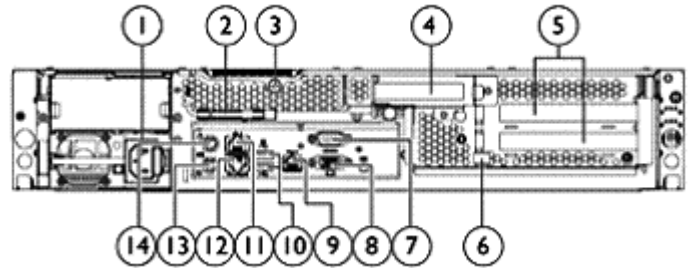


### Overview



#### Front View:

1. Access panel
2. Front LED Indicators
3. Power on/off
4. Optional DVD-RW or DVD-ROM drive
5. Front USB Ports (2)
6. Non-Hot Plug Non redundant fans (4 fans)
7. Air Baffle
8. PCI Cage
9. System Board



#### Rear View:

1. Power Supply Cable Socket
2. T10/T15 Wrench
3. Thumbscrew For Top Cover
4. Low Profile Card Slot
5. PCI Expansion Card Slot (top is slot 2, bottom is slot 1)
6. Thumbscrew For PCI Cage
7. Serial Port
8. VGA Port
9. Management LAN Port
10. Two USB 2.0 Ports
11. GbE LAN Port For NIC2
12. GbE LAN Port For NIC1
13. PS/2 Keyboard Port (purple)
14. PS/2 Mouse Port (green)

### What's New

- Support for SATA Hot Plug 3.5" Midline (MDL) Hard Drives
- Support for Smart Array Controller with BBWC

### At A Glance

The new HP ProLiant DL185 G5 is a 2U, dual processor server designed for quality, performance, and flexible deployments to meet the needs of the emerging markets, SMB market, and Corporate scale out.

- **Processors:**
  - Supports up to two Quad-Core AMD Opteron™ 2300 sequence processors
- **Memory:**
  - Supports up to 32 GB PC2-6400 DIMMs (DDR2-800) with Advanced ECC

### Overview

- Supports up to 64 GB PC2-5300 DIMMs (DDR2-667) with Advanced ECC
- **Internal Drive Support:**
  - Internal storage capacity (up to 14 hard drives via CTO or up to 12 hard drives via BTO)
    - 8 hard drive models:
      - SAS/SATA Capacity: Supports up to 16.0TB (8 x 2TB)
    - 12 hard drive models:
      - SAS/SATA Capacity: Supports up to 24.0TB (12 x 2TB)
    - Optional 14 drive support available with Rear 2 Hard Drive Kit  
**NOTE:** Available via CTO only
      - SAS/SATA Capacity: 24.0TB (14 x 2TB)
- **Network Controller:**
  - Embedded NC7782 Dual Port PCI-X 10/100/1000T Gigabit network adapter
- **Storage Controllers:**
  - 8 hard drive models
    - HP Smart Array E200/128 BBWC Controller
  - 12 hard drive models
    - HP Smart Array P400/256MB Controller
- **Expansion Slots:**
  - Standard Riser: (1) x4 PCI-E (LP), (2) x8 PCI-E (FL/FH)
    - Option 1: (1) x4 PCI-E (LP), (2) 100MHz PCI-X 64-bit
    - Option 2: Rear DVD optional riser, (2) x8 PCI-e FL/FH slots (12HDD model only, replaces LP PCI-e slot)
    - Option 3: (1)x4 PCI-E (LP), Rear dual HDDs (12HDD model only, replaces all FL/FH PCI-e slots)
- **Infrastructure Management:**
  - HP ProLiant Lights Out 100i Remote Management support (IPMI 2.0 and SMASH support)
  - Virtual Media plus Virtual KVM support with LO100i Advanced license
  - 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:**
  - Five USB ports (2) up front, (2) rear, (1) internal (optional)
- **Optical Drive:**
  - Support for one (optional): Multi-bay DVD
    - **NOTE:** For 12 hard drive models, optical drive support is available via rear DVD cage kit (P/N 513168-B21). DVD Drive not included.
  - Optional Floppy (USB only, USB key)
- **Power Supply:**
  - 750W Power Supply (Hot Plug, Autoswitching) ships standard
  - High Efficiency 1200W Power Supply (Redundant Hot Plug, Autoswitching) (Optional) CSCI 2007/2008
    - **NOTE:** Climate Savers Computing Initiative, 2007-2008 Listed Compliant)
- **Form Factor:**
  - Rack (2U), (3.5 in/8.89 cm)
- **Deployment/Serviceability:**
  - Tooled 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 1 year Parts, 1 year Labor, 1-year on-site support (3-1-1-in AP and Brazil) with next

### Overview

business day response. 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 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 Quad-Core Model 2389 (2.9 GHz, 75W ACP)
- AMD Opteron™ processor Quad-Core Model 2384 (2.7 GHz, 75W ACP)
- AMD Opteron™ processor Quad-Core Model 2380 (2.5 GHz, 75W ACP)
- AMD Opteron™ processor Quad-Core Model 2379 (2.4 GHz, 55W ACP)
- AMD Opteron™ processor Quad-Core Model 2376 (2.3 GHz, 75W ACP)
- AMD Opteron™ processor Quad-Core Model 2374HE (2.2 GHz, 55W ACP)
- AMD Opteron™ processor Quad-Core Model 2356 (2.3 GHz, 75W ACP)
- AMD Opteron™ processor Quad-Core Model 2354 (2.2 GHz, 75W ACP)
- AMD Opteron™ processor Quad-Core Model 2352 (2.1 GHz, 75W ACP)
- AMD Opteron™ processor Quad-Core Model 2346HE (1.8 GHz, 55W ACP)
- AMD Opteron™ processor Quad-Core Model 2344HE (1.7 GHz, 55W ACP)

**NOTE:** Processor wattage references reflect Average CPU Power (ACP). For more information on ACP visit: <http://www.amd.com/powernow>.

---

**Upgradeability** Upgradeable to two processors

---

**Chipset** ServerWorks HT2100 and HT1000

---

**Cache Memory** 4 x 512 KB Level 2 cache and 6 MB shared Level 3 cache (2300 sequence)  
One of the following depending on Model 4 x 512 KB Level 2 cache and 2 MB shared Level 3 cache (2300 sequence)  
2 x 1 MB Level 2 cache (2200 sequence)

---

**Memory Protection** Advanced ECC capabilities

---

## Standard Features

### Memory

One of the following depending on Model

Type	REG PC2-5300 DIMMs (DDR2-667)	
	<b>NOTE:</b> DIMM banks are active only when the corresponding processor socket is populated.	
Standard - 2200 series (8 Hard Drive Model)	1 GB	(2 x 512 MB)
Standard - 2300 series (8 Hard Drive Model)	2 GB	(2 x 1 GB)
Standard (12 Hard Drive Model)	4 GB	(2 x 2 GB)
Maximum	64 GB	(8 x 8 GB)
Type	REG PC2-6400 DIMMs (DDR2-800)	
Standard - 2300 series (8 Hard Drive Model)	2 GB	(2 x 1 GB)
	4 GB	(2 x 2 GB)
Standard (12 Hard Drive Model)	4 GB	(2 x 2 GB)
Maximum	32 GB	(8 x 4 GB)

### Network Controller

Embedded NC7782 Dual Port PCI-X 10/100/1000T Gigabit network adapter

Expansion Slots #	Technology	Bus Width	Connector Width*	Bus Number**	Form Factor	Notes
1	PCI-Express	x8	x8	4	Full Length/ Full Height	
2	PCI-Express	x8	x8	3	Full Length/ Full Height	
3	PCI-Express	x4	x8	5	Low Profile	
1*	PCI-X	64-bit	N/A	Dynamic	Low Profile	Device Number 1
2*	PCI-X	1333	N/A	Dynamic	Low-Profile	Device Number 2

\* Optional - With PCI-X riser installed, replacing Full Length/Full Height PCI-e slots.

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

### Storage Controller

8 Hard Drive Models HP Smart Array E200/128 BBWC Controller  
 12 Hard Drive Models HP Smart Array P400/256 MB Controller

**NOTE:** A diskette drive is needed to install storage controller drivers during a Windows operating system installation from CD.

### Standard Features

Storage	Diskette Drive	Via USB only	
	Optical Drives	None standard Optional 8x DVD-RW drive, slim <b>NOTE:</b> For 12 hard drive models, optical drive support is available via rear DVD cage kit (P/N 513168-B21).	
	Hard Drives	None Standard <b>NOTE:</b> Up to 14 Hot Plug SAS/SATA 3.5" hard drives supported via installation of the Rear 2 Hard Drive Option Kit (P/N 449736-B21). Supports 12 hard drive server models only. Hard Drives not included.	

Maximum Internal Storage	Hot Plug SATA	24.0TB	14 x 2TB
	Hot Plug SAS	14.0TB	14 x 1TB

**NOTE:** Fourteen (14) hard drives are available via CTO only with the Rear 2 Hard Drive Kit. For additional information; please see the Configuration to Order section in this QuickSpecs.

Interfaces	Network RJ-45 (Ethernet)	2	10/100/1000 NIC ports (plus 1 dedicated for the HP ProLiant Lights Out 100i Remote Management)
	Serial	1	
	Pointing Device (Mouse)	1	
	Graphics	1	
	Keyboard	1	
	USB	5 total ports: (2) USB up front, (2) port rear, (1) port internal (optional) <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> .	

Graphics	32 MB shared supporting 1600x1200x16M resolution
----------	--

Form Factor	Rack (2U), (3.5 in/8.89 cm)
-------------	-----------------------------

Embedded Manageability	Lights-Out 100i	HP Lights-Out 100i Remote Management delivers affordable, entry level remote management capabilities for HP ProLiant 100 Series servers with embedded LO100i. It allows customers or their service providers to remotely manage ProLiant 100 Series servers remotely over a LAN or the Internet and consists of the following: <ul style="list-style-type: none"><li>● <b>LO100i Standard</b> is embedded remote management and provides basic remote control via telnet, browser, and IPMI 2.0 and SMASH</li><li>● <b>LO100i Advanced Pack License</b> are upgrades for all the features of LO100i Select plus Virtual KVM (graphical hardware-based, remote console)</li></ul>
------------------------	-----------------	--

**NOTE:** Flexible and volume quantity (AKA) license kits are available for

### Standard Features

Lights-Out 100 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:

<http://h18004.www1.hp.com/products/servers/management/remotemgmt.html>

#### 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 suite installs and license software modules that are integrated into HP System Insight Manager.

The HP Insight Control suite 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 suites 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>.

Insight Control server deployment

HP Insight Control server deployment is a deployment solution for HP ProLiant and Integrity servers hosted on a Windows CMS. It automates the process of deploying and provisioning server software, enabling companies to quickly and easily adapt to changing business demands. Insight Control server deployment includes software optimizations for HP servers, including the HP scripting toolkits, configuration jobs for leading industry-standard operating systems, sample unattended files, and HP server support packs that include software drivers, management agents, and important documentation. Deploying servers can be accomplished either through imaging or through scripting.

Insight Control server deployment is hosted on a Windows server and is intended for heterogeneous environments deploying Windows, Linux, VMware ESX and Microsoft Hyper-V systems.

Insight Control server deployment includes 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>.

#### Industry Standard Compliance

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

### Standard Features

Manageability	Embedded HP ProLiant Lights Out 100i Remote Management with upgrades to LO100i Advanced
Security	Power-on password Setup password
Server Power Cords	<p>One Highline IEC Power cord ships standard (for connection to a Power Distribution Unit)</p> <p><b>NOTE:</b> HP ProLiant DL servers no longer ship standard with NEMA power cords that allow connection to 110V US wall outlets in a home or office. HP ProLiant DL servers are primarily connected to PDU's in data center racks so they now ship standard with only a PDU power cord. If a user wishes to power a ProLiant DL server using a 110V receptacle (NEMA-15), the NEMA power cord (AF556A) must be ordered separately.</p> <p>If a local power cord is required, please reference the following power cord matrix: <a href="http://www.hp.com/go/powercordmatrix">http://www.hp.com/go/powercordmatrix</a>.</p> <p><b>NOTE:</b> Localized cables included with geographic specific models in other world regions.</p>
UPS and PDU Power Cord Matrix	<p>Please see the UPS and PDU cable matrix that lists cable descriptions, requirements, and specifications for UPS and PDU units: <a href="http://h18004.www1.hp.com/products/servers/proliantstorage/power-protection/index.html">http://h18004.www1.hp.com/products/servers/proliantstorage/power-protection/index.html</a>.</p>
Power Supply	<p>750 Watts - (Hot Plug, Autoswitching) Ships Standard</p> <p>1200 Watts - High Efficiency 12V Hot Plug AC Power Supply (Autoswitching)</p> <p>750 Watts - Power Supply (Redundant Hot Plug, Autoswitching) (Optional)</p> <p>1200 Watts - High Efficiency Power Supply (Redundant Hot Plug, Autoswitching), CSCI 2007/2008 (Optional)</p> <p><b>NOTE:</b> Climate Savers Computing Initiative, 2007-2008 Compliant.</p> <p><b>NOTE:</b> Redundant Power Supply configuration for 1200W power supply requires both power supplies to be 1200W. The 1200W and 750W power supplies cannot be mixed.</p> <p><b>NOTE:</b> For additional information please see the Options section of this QuickSpecs.</p>
System Fans	4 system fans ship standard; Non-hot plug, Non-redundant
Operating Systems and Virtualization Software	<p><a href="#">Microsoft Windows Server</a></p> <p><a href="#">Red Hat Enterprise Linux (RHEL)</a></p> <p><a href="#">SUSE Linux Enterprise Server (SLES)</a></p> <p><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/DL185G5">http://www.hp.com/support/DL185G5</a></p>



### Standard Features

#### Rack Airflow Requirements

##### Rack 10000 G2 series Cabinets

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.

**CAUTION:** 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 830 square inches (5,350 sq cm) 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 2.75 inches (7 cm).

**CAUTION:** 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 Kit

HP ProLiant DL185 G5 servers have fixed rails which provide support for round or square mounting holes, including Compaq/HP 7000, 9000, 10000 and HP series), with an adjustment range of 26" - 36".

---

#### Telco and Threaded Hole Rack Support

Support for all 2-post Telco racks and threaded hole racks requires an additional option kit from Rack Solutions. The Rack Solutions brackets can be purchased at: [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 MSAxxx, 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>.

---

#### 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>.

### 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 24x7 4 hr Response service support coverage
- **Deployment Service** – Hardware Installation only

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

- **Support Service** - 3-Year 24x7 24 hr Call to repair service support coverage
- **Support** - 3-Year 24x7 6 hr Call to repair service support coverage
- **Support Plus** - 24x7 4 hr Response service support including OS coverage

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

<p><b>8 Hard Drive Models</b></p> <p><b>HP DL185G5 2374HE</b> 2GB, (1P), 8LFF 507339-xx1</p> <p><b>HP DL185 G5 2380,</b> 4GB, (1P), 8LFF 507404-xx1</p> <p><b>HP DL185 G5 2376,</b> 2GB (1P), 8LFF 504445-xx1</p>	<p><b>Processor(s)</b> <a href="#">One of the following depending on model</a></p> <p><b>Cache Memory</b> <a href="#">One of the following depending on model</a></p> <p><b>Memory</b> <a href="#">One of the following depending on model</a></p> <p><b>Network Controller</b></p> <p><b>Storage Controller</b></p> <p><b>Hard Drive</b></p> <p><b>Internal Storage</b></p> <p><b>Optical Drive</b></p> <p><b>Power Supply</b></p> <p><b>Fans</b></p> <p><b>Form Factor</b></p>	<p>(1) Quad-Core AMD Opteron™ processor Model 2380 (2.5 GHz, 75W) (1) Quad-Core AMD Opteron™ processor Model 2376 (2.3 GHz, 75W) (1) Quad-Core AMD Opteron™ processor Model 2374HE (2.2 GHz, 55W)</p> <p>4 x 512 KB Level 2 cache and 6 MB shared Level 3 cache (2300 sequence) 4 x 512 KB Level 2 cache and 2 MB shared Level 3 cache (2300 sequence)</p> <p>2 GB (2 x 1 GB) Registered PC2-6400 DDR2 DIMMs (800MHz) with Advanced ECC capabilities (2376 model) 4 GB (2 x 2 GB) Registered PC2-6400 DDR2 DIMMs (800MHz) with Advanced ECC capabilities (2376 and 2380 models)</p> <p>Embedded NC7782 Dual Port PCI-X 10/100/1000T Gigabit network adapter</p> <p>HP Smart Array E200 Controller</p> <p>None ship standard</p> <p>8TB maximum</p> <p>Optional</p> <p>750Watts - Hot-plug (Ships standard)</p> <p>4 system fans ship standard; Non-hot plug, Non-redundant</p> <p>Rack (2U), (3.5 in/8.89 cm)</p>
---	--	---

<p><b>12 Hard Drive Models</b></p> <p><b>HP DL185 G5 2376,</b> 4GB (1P), 12LFF 507403-xx1</p>	<p><b>Processor(s)</b></p> <p><b>Cache Memory</b></p> <p><b>Memory</b></p> <p><b>Network Controller</b></p> <p><b>Storage Controller</b></p> <p><b>Hard Drive</b></p> <p><b>Internal Storage</b></p> <p><b>Optical Drive</b></p> <p><b>Power Supply</b></p> <p><b>Fans</b></p> <p><b>Form Factor</b></p>	<p>(1) Quad-Core AMD Opteron™ processor Model 2376 (2.3 GHz, W75)</p> <p>(4 x 512 KB) Level 2 cache and 2 MB shared Level 3 cache (2300 sequence)</p> <p>4 GB (2 x 2 GB) Registered PC2-5300 DDR2 DIMMs (667MHz) with Advanced ECC capabilities</p> <p>Embedded NC7782 Dual Port PCI-X 10/100/1000T Gigabit network adapter</p> <p>HP Smart Array P400/256 MB Controller</p> <p>None ship standard</p> <p>12TB maximum</p> <p>Optional</p> <p>750Watts - Hot plug (Ships standard)</p> <p>4 system fans ship standard; Non-hot plug, Non-redundant</p> <p>Rack (2U), (3.5 in/8.89 cm)</p>
---	--	---

<b>Country Code Key</b>	xx = 00	U.S.
	xx = 20	Brazil
	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 a Factory Installable Option.

**NOTE:** Eight drive models cannot be field upgraded to twelve drive model. Fourteen drive servers available via CTO only - customer must begin with the selection of the 12 drive CTO chassis cage.

**NOTE:** Customers requiring a DVD with a 12 hard drive model must order a rear DVD option kit. The DVD drive must be ordered separately.

### Step 1: Base Configuration

HP ProLiant DL185 G5 CTO Chassis	444764-B21
<b>Factory Integrated Model ships with:</b>	
Embedded NC7782 Dual Port PCI-X 10/100/1000T Gigabit network adapter	
Standard Riser: (1) x4 PCI-E (LP), (2) x8 PCI-E (FL/FH)	
<b>NOTE:</b> Optional PCI-X option kit includes: Slot 1 and 2: full-length/full-height PCI-X 100. PCI-X slots are 64 bits; 133 MHz capable if only one PCI-X card is installed in the server.	
750W Power Supply (Hot Plug, Autoswitching) (Standard)	
One Highline IEC Power Cord	
Four (4) Non-Hot Plug Fans	
Rack Mount (2U), (3.5 in/8.89 cm)	

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

HP Processors	AMD Opteron™ processor Quad-Core Model 2389 (2.9 GHz, 75W ACP), FIO	504777-L21
	AMD Opteron™ processor Quad-Core Model 2384 DL185G5 (2.7 GHz, 75W ACP), FIO	506841-L21
	AMD Opteron™ processor Quad-Core Model 2380 (2.5 GHz, 75W ACP), FIO	500813-L21
	AMD Opteron™ processor Quad-Core Model 2379 (2.4 GHz, 55W ACP), FIO	500809-L21
	AMD Opteron™ processor Quad-Core Model 2376 ( 2.3GHz, 75W ACP), FIO	504775-L21
	AMD Opteron™ processor Quad-Core Model 2374HE (2.2 GHz, 55W ACP), FIO	507340-L21
	AMD Opteron™ processor Quad-Core Model 2344HE (1.7 GHz, 55W ACP), FIO	490833-L21
<b>NOTE:</b> Processor wattage references reflect Average CPU Power (ACP). For more information on ACP visit: <a href="http://www.amd.com/powernow">http://www.amd.com/powernow</a> .		

### HP Memory

**NOTE:** DIMM banks are active only when the corresponding processor socket is populated.

1 GB REG PC2-5300 2 x 512 MB Single Rank Kit	408850-B21
2 GB REG PC2-6400 2 x 1 GB Kit	497763-B21
2 GB REG PC2-5300 2 x 1 GB Low Power Single Rank Kit	483399-B21
2 GB REG PC2-5300 2 x 1 GB Single Rank Kit	408851-B21



### Configuration Information - Factory Integrated Models

4 GB REG PC2-6400 2 x 2 GB Kit	497765-B21
4 GB REG PC2-5300 2 x 2 GB Low Power Single Rank Kit	483401-B21
4 GB REG PC2-5300 2 x 2 GB Dual Rank Kit	408853-B21
8 GB REG PC2-6400 2 x 4 GB Low Power Kit	504351-B21
8 GB REG PC2-5300 2 x 4 GB Low Power Dual Rank Kit	483403-B21
8 GB REG PC2-6400 2 x 4 GB Kit	497767-B21
8 GB REG PC2-5300 2 x 4 GB Dual Rank Kit	408854-B21
16 GB REG PC2-5300 2 x 8 GB Kit	408855-B21
64 GB REG PC2-5300 8 x 8 GB Kit	495605-B21

<b>HP Drive Cage Options</b>	HP 8 Hard Drive Cage, FIO	451368-B21
	HP 12 Hard Drive Cage, FIO	451369-B21
<b>NOTE:</b> The installation of a 12HDD Cage requires the addition of a Smart Array PX00 Controller or 4-port SAS controller that supports expanders.		

<b>HP Storage Controller</b>	HP Smart Array E200/128 BBWC Controller	411508-B21
	HP Smart Array P400/256 MB Controller	405132-B21
	HP Smart Array P400/512 Controller	411064-B21
	<b>NOTE:</b> When ordering a Smart Array P400 Controller with BBWC the addition of the HP SA-P400 and SA-E500 24 In Battery Cable Kit (417836-B21) is required.	
	HP SA-P400 and SA-E500 24 In Battery Cable Kit	417836-B21
	<b>NOTE:</b> This option kit contains a 24" battery cable and adhesive material for installing a battery into the server if a Smart Array P400 is integrated outside of the factory. For all solutions, please refer to the server QuickSpecs and User's Manual for detailed installation instructions.	
	HP P410/ZM FIO Smart Array Controller	462860-B21
	HP P410/256 FIO SA Cntrlr w/Battery	491195-B21
	HP P212/256 FIO SA Cntrlr w/Battery	491191-B21
HP Smart Array P800 Controller	381513-B21	

## Configuration Information - Factory Integrated Models

### Step 3: Choose Additional Factory Integratable Options

HP Unique Options	HP ProLiant DL185 PCI-X Riser Kit <b>NOTE:</b> This option kit replaces the two full length/full height slots listed in step 1 base configuration. <b>NOTE:</b> Optional PCI-X option kit includes: Slot 1: full-length/full-height PCI-X 100; Slot 2: Full length/Full-height PCI-X 100. PCI-X slots are 64 bits; 133 MHz capable if only one PCI-X card is installed in the server.	451286-B21
HP Rear Hard Drive Kit	HP DL185 Rear 2 Hard Drive Option Kit, FIO <b>NOTE:</b> Supports 12 hard drive server models only. Hard Drives not included. <b>NOTE:</b> This option replaces the 2 Full Length, Full Height x8 PCIe slots.	449736-B21
HP Optical Drives	DVD-RW Drive (optional) DVD-ROM Drive (optional)	395498-B22 361040-B22

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

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

### Core Options

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

HP Unique Option	HP DL185 Rear DVD Cage Kit	513168-B21
------------------	----------------------------	------------

**NOTE:** Used for 12 drive models. DVD Drive not included.

HP Processor	AMD Opteron™ processor Quad-Core Model 2389 (2.9 GHz, 75W ACP)	504777-B21
	AMD Opteron™ processor Quad-Core Model 2384 (2.7 GHz, 75W ACP)	506841-B21
	AMD Opteron™ processor Quad-Core Model 2380 (2.5 GHz, 75W ACP)	500813-B21
	AMD Opteron™ processor Quad-Core Model 2379 (2.4 GHz, 55W ACP)	500809-B21
	AMD Opteron™ processor Quad-Core Model 2376 (2.3 GHz, 75W ACP)	504775-B21
	AMD Opteron™ processor Quad-Core Model 2374HE (2.2 GHz, 55W ACP)	507340-B21
	AMD Opteron™ processor Model 2354 (2.2 GHz, 75W ACP)	468547-B21
	AMD Opteron™ processor Model 2344HE (1.7 GHz, 55W ACP)	490833-B21

**NOTE:** Processor wattage references reflect Average CPU Power (ACP). For more information on ACP visit: <http://www.amd.com/powernow>.

HP Memory	<b>NOTE:</b> DIMM banks are active only when the corresponding processor socket is populated.	
	1 GB REG PC2-5300 2 x 512 MB Single Rank Kit	408850-B21
	2 GB REG PC2-6400 2 x 1 GB Kit	497763-B21
	2 GB REG PC2-5300 2 x 1 GB Low Power Single Rank Kit	483399-B21
	2 GB REG PC2-5300 2 x 1 GB Single Rank Kit	408851-B21
	4 GB REG PC2-6400 2 x 2 GB Kit	497765-B21
	4 GB REG PC2-5300 2 x 2 GB Low Power Single Rank Kit	483401-B21
	4 GB REG PC2-5300 2 x 2 GB Dual Rank Kit	408853-B21
	8 GB REG PC2-6400 2 x 4 GB Low Power Kit	504351-B21
	8 GB REG PC2-5300 2 x 4 GB Low Power Dual Rank Kit	483403-B21
	8 GB REG PC2-6400 2 x 4 GB Kit	497767-B21
	8 GB REG PC2-5300 2 x 4 GB Dual Rank Kit	408854-B21
	16 GB REG PC2-5300 2 x 8 GB Kit	408855-B21
	64 GB REG PC2-5300 8 x 8 GB Kit	495605-B21

HP Optical Drives	DVD-RW Drive	395498-B22
	DVD-ROM Drive	361040-B22

HP Hard Drives	<b>NOTE:</b> The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, 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.	
	<b>NOTE:</b> Hard drives have either a one year or three year warranty; refer to the specific	



### Core Options

[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 750GB 3G SATA 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive	458930-B21
HP 500GB 3G SATA 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive	458928-B21
HP 250GB 3G SATA 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive	458926-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

**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)

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

HP 750GB 1.5G SATA 7.2K rpm LFF (3.5-inch) 1yr Warranty Hard Drive	432341-B21
HP 500GB 1.5G SATA 7.2K rpm LFF (3.5-inch) 1yr Warranty Hard Drive	395473-B21
HP 250GB 1.5G SATA 7.2K rpm LFF (3.5-inch) 1yr Warranty Hard Drive	349239-B21
HP 160GB 1.5G SATA 7.2K rpm LFF (3.5-inch) 1yr Warranty Hard Drive	349238-B21

**NOTE:** Please see the [QuickSpecs for Technical Specifications and additional information](#):

[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 Hot Plug 3.5" Midline (MDL) Solid State Drives

HP 60GB 3G SATA 3.5in MDL 1y Wty SSD	570761-B21
HP 120GB 3G SATA 3.5in MDL 1y Wty SSD	570763-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)

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

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

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

HP 600GB 6G SAS 15K LFF (3.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	516828-B21
HP 450GB 6G SAS 15K 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 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

**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 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

HP NC522SFP Dual Port 10GbE Server Adapter	468332-B21
--	------------

**NOTE:** A minimum of two Gigabytes (2 GB) of server memory is required per each NC522SFP adapter.

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

**NOTE:** Please see the QuickSpecs for Technical Specifications and additional information: [www.hp.com/go/ProLiantNICs](http://www.hp.com/go/ProLiantNICs)

### Additional Options

HP Entry-Level Server Management	HP LO100i Advanced, No Media 1-Server License including 1 year of 24x7 Technical Support and Updates <b>NOTE:</b> For additional information, please see the Lights-Out 100i QuickSpecs at: <a href="http://www.hp.com/go/lo100">www.hp.com/go/lo100</a> .	530521-B21
HP Insight Software	<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 <b>NOTE:</b> This part number can be purchased as a single license or as multiple licenses with a single activation key. Customer 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). Includes one year of 24 x 7 HP Software Technical Support and Update Service. <b>NOTE:</b> Electronic LTUs are only available through limited points of sales; if not available, order a printed license entitlement certificate instead. HP Insight Control for Linux, No Media, 1-Server license, including one year of 24x7 Technical Support and Updates HP Insight Control for Linux, Media pack (DVD) - No licenses included <b>NOTE:</b> This optional Media pack DVD contains the ISO image for HP Insight Control for Linux, HP Systems Insight Manager, HP Insight Control power management, HP Insight Control virtual machine management, and an integrated installer. Servers must be acquired separately. <b>NOTE:</b> This Media pack is optional because the latest ISO image and latest updates may be downloaded at no cost from: <a href="http://www.hp.com/go/ic-linux">http://www.hp.com/go/ic-linux</a> (click on Download button). <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>	TC213AAE TC209A TC208A
	<b>Insight Control server deployment</b>	
	HP Insight Control server deployment Electronic License including 1 year 24x7 Technical Support and Updates	T9082AAE
	HP Insight Control server deployment 1-Server License including 1 year 24x7 Technical Support and Updates	452151-B21
	<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.	

## Additional Options

**NOTE:** 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.

**NOTE:** For additional license kits please see the Insight Control QuickSpecs at: [http://h18004.www1.hp.com/products/quickspecs/12631\\_div/12631\\_div.html](http://h18004.www1.hp.com/products/quickspecs/12631_div/12631_div.html)

HP Storage Controllers	<p><b>SAS Controllers</b></p> <p><b>Smart Array E200 Controller</b>            HP Smart Array E200/128 BBWC Controller 411508-B21</p> <p><b>Smart Array E500 Controller</b>            HP Smart Array E500/256 MB Controller 435129-B21  <b>NOTE:</b> For external use only. The E500 only has external connectors.  <b>NOTE:</b> When ordering a Smart Array E500 Controller with BBWC the addition of the HP SA-P400 and SA-E500 24 In Battery Cable Kit (P/N 417836-B21) is required.</p> <p><b>HP Smart Array P212 Controller</b>            HP P212/256 Smart Array Controller 462834-B21            HP P212/ZM Smart Array Controller 462828-B21</p> <p><b>Smart Array P400 Controller</b>            HP Smart Array P400/256MB Controller 405132-B21            HP Smart Array P400/512MB Controller with BBWC 411064-B21</p> <p><b>HP Smart Array P410 Controller</b>            HP P410/256 Smart Array Controller 462862-B21            HP P410/512 BBWC Smart Array Controller 462864-B21            HP Smart Array P410/1G with FBWC 572532-B21            HP Smart Array P410/512MB with FBWC 578230-B21</p> <p><b>Smart Array P411 Controller</b>            HP Smart Array P411/1G Flash Backed Write Cache 572531-B21            HP Smart Array P411/512MB Flash Backed Write Cache 578229-B21</p> <p><b>Smart Array P800 Controller</b>            HP Smart Array P800/512 BBWC Controller 381513-B21</p> <p><b>Smart Array P812 Controller</b>            HP Smart Array P812/1G Flash Backed Cache Controller 487204-B21</p> <p><b>Optional Upgrades</b>            1G Flash Backed Write Cache 534562-B21            512MB Battery-backed write cache upgrade 405148-B21  <b>NOTE:</b> For Smart Array P400 Controller and Smart Array P400i Controller only.            512MB Flash Backed Write Cache 534916-B21            HP Smart Array P411/512MB Flash Backed Write Cache 578229-B21            Battery-backed write cache upgrade 383280-B21  <b>NOTE:</b> For Smart Array P400 Controller and Smart Array P400i Controller only.  <b>NOTE:</b> When ordering a Smart Array P400 Controller with BBWC the addition of the HP SA-P400 and SA-E500 24 In Battery Cable Kit (P/N 417836-B21) is required.</p>
------------------------	--

### Additional Options

HP SA-P400 and SA-E500 24 In Battery Cable Kit	417836-B21
<b>NOTE:</b> This option kit contains a 24" battery cable and adhesive material for installing a battery into the server if a Smart Array P400 or Smart Array E500 Controller is integrated outside of the factory. For all solutions, please refer to the server QuickSpecs and User's Manual for detailed installation instructions.	
512MB Battery-backed write cache	462967-B21
<b>NOTE:</b> Supported on HP Smart Array P410 Controller and HP Smart Array P411 Controller only.	
Battery Kit upgrade (for BBWC)	462969-B21
<b>NOTE:</b> To enable BBWC on the 256MB cache.	
<b>NOTE:</b> Supported on HP Smart Array P212 Controller, HP Smart Array P410 Controller, and HP Smart Array P411 Controller only.	
HP 256MB P-Series Cache Module	462968-B21
<b>NOTE:</b> Supported on HP Smart Array P212 Controller.	
<b>SCSI HBA</b>	
HP SC11Xe Host Bus Adapter	412911-B21
<b>NOTE:</b> Recommended HBA for SCSI tape drive connect.	
<b>NOTE:</b> Please see the QuickSpecs for Technical Specifications and additional information:	
<a href="http://h18000.www1.hp.com/products/quickspecs/12566_div/12566_div.html">http://h18000.www1.hp.com/products/quickspecs/12566_div/12566_div.html</a> (SC11Xe HBA)	
<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)	
<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 Controller QuickSpecs for Technical Specifications and additional information:	
<a href="http://h18000.www1.hp.com/products/quickspecs/12700_div/12700_div.html">http://h18000.www1.hp.com/products/quickspecs/12700_div/12700_div.html</a> (Smart Array E500 Controller)	
<a href="http://h18000.www1.hp.com/products/quickspecs/12400_div/12400_div.html">http://h18000.www1.hp.com/products/quickspecs/12400_div/12400_div.html</a> (Smart Array P400 Controller)	
<a href="http://h18000.www1.hp.com/products/quickspecs/13201_div/13201_div.html">http://h18000.www1.hp.com/products/quickspecs/13201_div/13201_div.html</a> (Smart Array P410 Controller)	
<a href="http://h18000.www1.hp.com/products/quickspecs/13203_div/13203_div.html">http://h18000.www1.hp.com/products/quickspecs/13203_div/13203_div.html</a> (Smart Array P212 Controller)	
<a href="http://h18000.www1.hp.com/products/quickspecs/12616_div/12616_div.html">http://h18000.www1.hp.com/products/quickspecs/12616_div/12616_div.html</a> (Smart Array P800 Controller)	
<a href="http://h18000.www1.hp.com/products/quickspecs/13558_div/13558_div.html">http://h18000.www1.hp.com/products/quickspecs/13558_div/13558_div.html</a> (Smart Array P812 Controller)	

---

HP Power Supplies	750W 12V Hot Plug AC Power Supply	451366-B21
	High Efficiency 1200W 12V Hot Plug AC Power Supply	437572-B21

---

### Additional Options

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

**NOTE:** For HPC interconnect adapters please see the HPC Interconnect section of this QuickSpecs.

### HP Tape Backup

**NOTE:** For the complete listing of Tape Drive offerings, please see: <http://www.hp.com/products1/storage/compatibility/tapebackup/ISS/index.html>

#### Tape Drives

##### USB Rack-Mount Tape Solutions

DAT 320 USB External Tape Drive AJ823A

HP StorageWorks 1U USB Rack-Mount Kit with one DAT 160 USB Tape Drive AG703A

**NOTE:** Pre-configured with one DAT 160 USB tape drive.

**NOTE:** HP recommends purchasing the HP SC44Ge HBA (416096-B21) for a dedicated SAS HBA for tape.

##### SAS Rack-Mount Tape Solutions

HP StorageWorks 1U SAS Rack-Mount Kit with one LTO-4 Ultrium 1760 Tape Drive EH946A

**NOTE:** Pre-configured with one LTO-4 Ultrium 1760 SAS tape drive.

HP StorageWorks 1U SAS Rack-Mount Kit AE459A

**NOTE:** Supports up to (2) half-height SAS tape drives.

HP StorageWorks DAT 160 SAS Internal Tape Drive Q1587A

**NOTE:** Mounts inside the 1U SAS Rack-Mount Kit (AE459A).

HP StorageWorks LTO-2 Ultrium 448 SAS Internal Tape Drive DW085A

**NOTE:** Mounts inside the 1U SAS Rack-Mount Kit (AE459A).

HP StorageWorks LTO-3 Ultrium 920 SAS Internal Tape Drive EH847A

**NOTE:** Mounts inside the 1U SAS Rack-Mount Kit (AE459A).

DAT 320 WW SAS External Tape Drive AJ828A

##### SCSI Rack-Mount Tape Solutions

**NOTE:** SCSI Controller required. HP recommends purchasing the HP SC11Xe HBA (412911-B21) for a dedicated SCSI HBA for tape.

HP StorageWorks 1U SCSI Rack-mount kit with one LTO-2 Ultrium 448 SCSI Tape Drive (Carbonite) DW028B

**NOTE:** Pre-configured with one LTO-2 Ultrium 448 SCSI tape drive.

HP StorageWorks 1U SCSI Rack-mount kit with one LTO-3 Ultrium 920 EH903A

**NOTE:** Pre-configured with one LTO-3 Ultrium 920 SCSI tape drive.

HP StorageWorks 3U SCSI Rack-Mount with 1 LTO-4 Ultrium 1840 Tape Drive EH926A

**NOTE:** Pre-configured with one LTO-4 Ultrium 1840 SCSI tape drive.

For an up-to-date listing of the latest O/S and software support details for HP Ultrium tape drives, please visit: <http://www.hp.com/go/connect>.

**NOTE:** For the complete listing of Tape Drive offerings, please see: <http://www.hp.com/products1/storage/compatibility/tapebackup/ISS/index.html>

#### Tape Autoloaders

##### HP StorageWorks DAT Autoloader

HP StorageWorks DAT 72x10 tape autoloader AE313B

### Additional Options

#### HP StorageWorks 1/8 G2 Tape Autoloader

HP StorageWorks 1/8 G2 LTO-4 Ultrium 1760 SAS Tape Autoloader AK377A

HP StorageWorks 1/8 G2 LTO-3 Ultrium 920 SAS Autoloader AH558A

HP StorageWorks 1/8 G2 LTO-2 Ultrium 448 Tape Autoloader AH164A

HP StorageWorks 1/8 G2 Tape Autoloader Rack Kit AH166A

**NOTE:** Required to install the 1/8 G2 Autoloaders in a standard 19-inch rack; includes rails and rackmount instructions.

**NOTE:** Please see the QuickSpecs for Technical Specifications:

<http://www.hp.com/go/automation> and for additional information needed to create a complete solution; reference current compatibility information at:

<http://www.hp.com/go/ebs>.

#### Tape Libraries

##### HP StorageWorks MSL2024 Tape Library

HP StorageWorks MSL2024 1 LTO-4 Ultrium 1840 SCSI Drive Library AJ033A

HP StorageWorks MSL2024 1 LTO-4 Ultrium 1760 SAS Drive Library AK378A

HP StorageWorks MSL2024 1 LTO-3 Ultrium 960 SCSI Drive Library AG115A

HP StorageWorks MSL2024 1 LTO-3 Ultrium 920 SAS Drive Library AH559A

HP StorageWorks MSL2024 1 LTO-2 Ultrium 448 SCSI Drive Library AG116A

##### HP StorageWorks MSL4048 Tape Library

HP StorageWorks MSL4048 1 LTO-4 Ultrium 1840 SCSI Drive Library AJ035A

HP StorageWorks MSL4048 2 LTO-4 Ultrium 1760 SAS Drive Library AK380A

HP StorageWorks MSL4048 1 Ultrium 960 SCSI Drive Library AG322A

HP StorageWorks MSL4048 1 Ultrium 920 SAS Drive Library AH560A

**NOTE:** Please reference the QuickSpecs for Technical Specifications:

<http://www.hp.com/go/automation> and additional information needed to create a complete solution; reference current compatibility information at:

<http://www.hp.com/go/ebs>.

---

### HP Disk Backup

#### RDX Removable Disk Backup

HP StorageWorks RDX160 External Removable Disk Backup System AJ766A

**NOTE:** 160GB of Disk Storage.

HP StorageWorks RDX320 External Removable Disk Backup System AJ768A

**NOTE:** 320GB of Disk Storage.

HP StorageWorks RDX500 External Removable Disk Backup System AJ935A

**NOTE:** 500GB of Disk Storage.

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

[http://h18000.www1.hp.com/products/quickspecs/13036\\_div/13036\\_div.html](http://h18000.www1.hp.com/products/quickspecs/13036_div/13036_div.html)

#### D2D Backup

HP StorageWorks D2D2504i Backup System EJ002A

HP StorageWorks D2D120 Backup System with Data Protector Express Software Kit EH924A

**NOTE:** 2TB of Disk Storage.

HP StorageWorks D2D130 Backup System with LTO-3 Ultrium 920 SAS Tape Drive EH952A

**NOTE:** 3TB of Disk Storage.

### Additional Options

HP StorageWorks D2D2503i Backup System <b>NOTE:</b> 3TB of Disk Storage.	EH945A
HP StorageWorks D2D4004i Backup System <b>NOTE:</b> 4.5TB of Disk Storage. <b>NOTE:</b> Please see the QuickSpecs for Technical Specifications and additional information: <a href="http://www.hp.com/go/d2d">http://www.hp.com/go/d2d</a> (Worldwide)	EH938A

### HP StorageWorks Options

#### HP StorageWorks Fibre Channel HBAs

**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 82E 8Gb Dual-port PCI-e FC HBA	AJ763A
HP StorageWorks FC2142SR 4Gb PCI-e HBA	A8002A

#### QLogic Fibre Channel HBAs

HP StorageWorks 81Q PCI-e FC HBA	AK344A
HP 82Q 8Gb Dual Port PCI-e FC HBA	AJ764A
HP StorageWorks FC1142SR 4Gb PCI-e HBA	AE311A
HP StorageWorks FC1242SR Dual Channel 4 Gb PCI-e HBA	AE312A

#### StorageWorks SCSI HBA

HP U320e SCSI Host Bus Adapter <b>NOTE:</b> Recommended HBA for MSL SCSI Tape Library connect.	AH627A
---	--------

#### StorageWorks Converged Network Adapter

HP CN1000E 2P Converged Network Adapter	AW520A
---	--------

### Additional Options

HP Modular Smart Array	<b>HP MSA SAN Storage Arrays</b>	
	HP StorageWorks 20 Modular Smart Array	335921-B21
	<b>NOTE:</b> Rack-mountable 12 (SATA) drive enclosure with U320 Host connectivity, redundant power supplies.	
	<b>NOTE:</b> The Modular Smart Array Enclosure 20 Family supports the SATA 1.5Gb/s 1" Hot Plug Hard Drives.	
	<b>NOTE:</b> Please see the QuickSpecs for Technical Specifications and additional information:	
	<a href="http://h18000.www1.hp.com/products/quickspecs/11942_div/11942_div.html">http://h18000.www1.hp.com/products/quickspecs/11942_div/11942_div.html</a> (Worldwide)	
	HP StorageWorks 50 Modular Smart Array Enclosure	364430-B21
	<b>NOTE:</b> Rack-mountable 10 SFF drive enclosure with single I/O module, redundant hot plug power supplies and hot plug fans.	
	<b>NOTE:</b> Please see the QuickSpecs for Technical Specifications and additional information:	
	<a href="http://h18000.www1.hp.com/products/quickspecs/12245_div/12245_div.html">http://h18000.www1.hp.com/products/quickspecs/12245_div/12245_div.html</a> (Worldwide)	
	HP StorageWorks 60 Modular Smart Array	418408-B21
	<b>NOTE:</b> Rack-mountable 12-drive (3.5" 3G SAS/1.5G SATA) 2U enclosure with 3Gb/s SAS host connectivity and redundant power supplies.	
	<b>NOTE:</b> Please see the QuickSpecs for Technical Specifications and additional information:	
	<a href="http://h18000.www1.hp.com/products/quickspecs/12627_div/12627_div.html">http://h18000.www1.hp.com/products/quickspecs/12627_div/12627_div.html</a> (Worldwide)	
	HP StorageWorks 70 Modular Smart Array	418800-B21
	<b>NOTE:</b> Rack-mountable 25-drive (2.5" 3G SAS/1.5G SATA) 2U enclosure with 3Gb/s SAS host connectivity and redundant power supplies.	
	<b>NOTE:</b> Please see the QuickSpecs for Technical Specifications and additional information:	
	<a href="http://h18000.www1.hp.com/products/quickspecs/12652_div/12652_div.html">http://h18000.www1.hp.com/products/quickspecs/12652_div/12652_div.html</a> (Worldwide)	



### Additional Options

HP Uninterruptible Power Systems	<b>HP Rack-mountable UPS</b>	
	<b>HP R1500 G2 UPS</b>	
	HP, R1.5kVA UPS, 1U, NA	AF419A
	HP, R1.5kVA UPS, 1U, INTL	AF418A
	HP, R1.5kVA UPS, 1U, JPN/TW	AF421A
	<b>NOTE:</b> Please see QuickSpecs for Technical Specifications and additional information: <a href="http://h18000.www1.hp.com/products/quickspecs/12507_div/12507_div.html">http://h18000.www1.hp.com/products/quickspecs/12507_div/12507_div.html</a> (Worldwide)	
	<b>HP R3000 XR UPS Uninterruptible Power System</b>	
	HP R3000 VA UPS, 2U, DTC, INTL	AF414A
	HP R3000 VA UPS, 2U, L6-20, NA	AF423A
	HP R3000 VA UPS, 2U, L6-20, JPN	AF424A
	HP R3000 VA UPS, 2U, L5-30, JPN	AF425A
	<b>NOTE:</b> Please see QuickSpecs Technical Specifications and additional information: <a href="http://h18000.www1.hp.com/products/quickspecs/13130_div/13130_div.html">http://h18000.www1.hp.com/products/quickspecs/13130_div/13130_div.html</a> (Worldwide)	
	<b>NOTE:</b> For additional information on sizing your server, please reference: <a href="http://www.upsizer.com">http://www.upsizer.com</a>	
	<b>NOTE:</b> For additional information on HP Uninterruptible Power Systems please go to: <a href="http://www.hp.com/servers/rackups">www.hp.com/servers/rackups</a> .	

---

HP Rack Series	<b>HP Rack 10000 G2 Series</b> (Carbon/Graphite Metallic)	
	10642 G2 (42U) Rack Cabinet 1200mm Deep - Shock Pallet	AF034A
	10642 G2 (42U) Rack Cabinet 1200mm Deep - Pallet	AF038A
	10647 G2 (47U) Rack Cabinet 1200mm Deep - Shock Pallet	AF044A
	10647 G2 (47U) Rack Cabinet 1200mm Deep - Pallet	AF045A
	<b>NOTE:</b> Cat5e cables are required to connect Interface Adapters to Console Switches. Cat5e cables can be found at the following URL: <a href="http://www.hp.com/go/kvm">http://www.hp.com/go/kvm</a> .	
	<b>NOTE:</b> It is mandatory to use a shock pallet when shipping racks with equipment installed.	
	<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> .	

---

### Additional Options

#### HP Rack Options

#### Keyboards and Monitors

TAA TFT7600 Rackmount Keyboard and Monitor US AG067A

#### HP KVM Switch Options

2x1x16 IP Console Switch with Virtual Media AF601A

4x1x16 IP Console Switch with Virtual Media AF602A

2x1 6 Server Console Switch with Virtual Media AF600A

PS/2 Virtual Media Interface Adapter, 1 pack AF604A

**NOTE:** Requires PS/2 and one USB port on server.

HP Server Console Switch (KVM), 0 x 2 x 8 port AF616A

HP Server Console Switch (KVM), 0 x 2 x 16 port AF617A

PS/2 Interface Adapter, 1 pack 262588-B21

PS/2 Interface Adapter, 8 pack 262587-B21

HP 1x4 Console Switch AF611A

HP PS2 Server Console Cable, 6 foot, 2-Pack AF612A

HP USB Server Console Cable, 6 foot, 2-Pack AF613A

**NOTE:** Required for supporting USB peripherals.

**NOTE:** Cat5e cables are required to connect Interface Adapters to Console Switches.

Cat5e cables can be found at the following URL: <http://www.hp.com/go/kvm>.

#### HP Serial Console Server Options

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

HP 16 Port Serial Console Server (worldwide) AF101A

HP 48 Port Serial Console Server (worldwide) AF102A

Serial Adapter, RJ45-D89 DCE Female, 1-pack AF103A

Serial Adapter, RJ45-D89 DCE Female, 8-pack AF110A

**NOTE:** For additional information regarding KVM switches, Serial Console servers,

rack mount monitors, keyboards and all related options please see the following URL:

<http://www.hp.com/go/kvm>.

#### Rack Kits

HP Rack Cable Management Velcro Clips 379820-B21

#### HP USB and SD Options

USB 1.44-MB External Diskette Drive DC141B

HP USB 2-Button Optical Scroll Mouse (Carbonite/Silver) DC172B

HP Keyboard (USB) standard 2004 DT528A#ABA

HP USB Internal Cable Kit 451363-B21

## Additional Options

HP Care Pack Services	<b>Hardware Services 4-Hour On-site Service</b>	
	13-Hour x 5-Day Coverage, 3 Years, Electronic	UH271E
	24-Hour x 7-Day Coverage, 3 Years, Electronic	UH272E
	<b>Hardware Services Next Business Day On-Site Service</b>	
	9-Hour x 5-Day Coverage, 3 Years, Electronic	UH270E
	<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	UH273E
	Hardware Installation, Electronic	UH301E
	<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 DL185 G5 (all models)

### Standard Memory

1 GB (2 x 512 MB) PC2-5300 DIMM memory, with Advanced ECC Capabilities memory installed. (8 Hard Drive Model) (2200 sequence)

2 GB (2 x 1 GB) PC2-5300 DIMM memory, with Advanced ECC Capabilities memory installed. (8 Hard Drive Model, 2300 sequence)

2 GB (2 x 1 GB) PC2-6400 DIMM memory, with Advanced ECC Capabilities memory installed. (8 Hard Drive Model, 2300 sequence)

4 GB (2 x 2 GB) PC2-5300 DIMM memory, with Advanced ECC Capabilities memory installed. (12 Hard Drive Model)

4 GB (2 x 2 GB) PC2-6400 DIMM memory, with Advanced ECC Capabilities memory installed. (8 Hard Drive Model, 12 Hard Drive Model)

### Maximum Memory

Up to 64 GB memory is available with the optional installation of PC2-5300 Registered DIMM memory kits.

Up to 32 GB memory is available with the optional installation of PC2-6400 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:** DIMM banks are active only when the corresponding processor socket is populated.

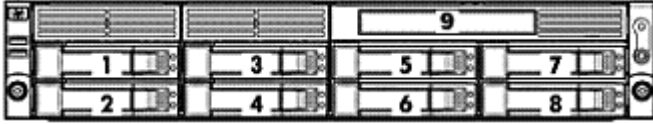
Memory	Slot							
	1	2	3	4	5	6	7	8
Standard (1 GB)	512 MB	512 MB	Empty	Empty	Empty	Empty	Empty	Empty
Standard (2 GB)	1 GB	1 GB	Empty	Empty	Empty	Empty	Empty	Empty
Standard (4 GB)	2 GB	2 GB	Empty	Empty	Empty	Empty	Empty	Empty
Standard (8 GB)	2 GB	2 GB	2 GB	2 GB	Empty	Empty	Empty	Empty
Maximum (64 GB)	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:

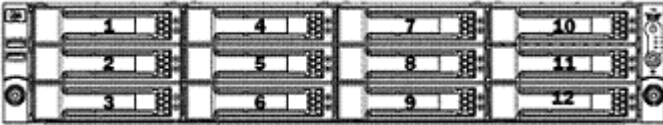
1 GB REG PC2-5300 2 x 512 MB Single Rank Kit	408850-B21
2 GB REG PC2-6400 2 x 1 GB Kit	497763-B21
2 GB REG PC2-5300 2 x 1 GB Low Power Single Rank Kit	483399-B21
2 GB REG PC2-5300 2 x 1 GB Single Rank Kit	408851-B21
4 GB REG PC2-6400 2 x 2 GB Kit	497765-B21
4 GB REG PC2-5300 2 x 2 GB Low Power Single Rank Kit	483401-B21
4 GB REG PC2-5300 2 x 2 GB Dual Rank Kit	408853-B21
8 GB REG PC2-6400 2 x 4 GB Low Power Kit	504351-B21
8 GB REG PC2-5300 2 x 4 GB Low Power Dual Rank Kit	483403-B21
8 GB REG PC2-6400 2 x 4 GB Kit	497767-B21
8 GB REG PC2-5300 2 x 4 GB Dual Rank Kit	408854-B21
16 GB REG PC2-5300 2 x 8 GB Kit	408855-B21
64 GB REG PC2-5300 8 x 8 GB Kit	495605-B21

## Storage



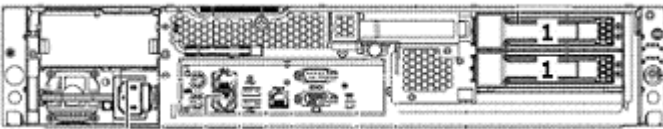
1-8 Eight (8) 3.5" Hot Plug SAS/SATA Drive Bays

9 DVD-ROM, DVD RW



1-12 Twelve 3.5" Hot Plug SAS/SATA Drive Bays

**NOTE:** As shown here, the rear hard drive cage replaces the two full-length PCIe slots.



1 Two 3.5" Hot Plug SAS/SATA Drive Bays, (Optional)

## Drive Support

### Removable Media

	Quantity Supported	Position Supported	Controller
DVD-ROM	Up to 1	9	Integrated IDE (ATAPI) (optional) - 8 HDD or 12 HDD w/ optional rear DVD FIO kit
DVD/CD RW	Up to 1	9	Integrated IDE (ATAPI) (optional) - 8 HDD or 12 HDD w/ optional rear DVD FIO kit

### Hard Drives

**NOTE:** The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, 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.

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

	Quantity Supported	Position Supported	Controller
2TB 3G SATA 7.2K	Up to 8	1-8	HP Smart Array E200/128 BBWC Controller
1TB 3G SATA 7.2K			HP Smart Array P400/256 MB Controller
750GB 3G SATA 7.2K			HP Smart Array P410 Controller
500GB 3G SATA 7.2K			HP Smart Array P212 Controller
250GB 3G SATA 7.2K			HP Smart Array E500/256 MB Controller
			HP Smart Array P800/512 BBWC Controller
			HP SC11Xe Host Bus Adapter

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

	Quantity Supported	Position Supported	Controller
--	--------------------	--------------------	------------

## Storage

60GB 3G SATA	Up to 8	1-8	HP Smart Array P410 Controller
120GB 3G SATA 250GB			HP Smart Array P212 Controller
3G SATA 7.2K			HP SC11Xe Host Bus Adapter

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

	Quantity Supported	Position Supported	Controller
250GB 3G SATA 7.2K	Up to 8	1-8	HP Smart Array E200/128 BBWC Controller
160GB 3G SATA 7.2K			HP Smart Array P400/256 MB Controller
			HP Smart Array P410 Controller
			HP Smart Array P212 Controller
			HP Smart Array E500/256 MB Controller
			HP Smart Array P800/512 BBWC Controller
			HP SC11Xe Host Bus Adapter

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

	Quantity Supported	Position Supported	Controller
750GB 1.5G SATA 7.2K	Up to 8	1- 8	HP Smart Array E200/128 BBWC Controller
500GB 1.5G SATA 7.2K			HP Smart Array P400/256 MB Controller
250GB 1.5G SATA 7.2K			HP Smart Array P410 Controller
160GB 1.5G SATA 7.2K			HP Smart Array P212 Controller
			HP Smart Array E500/256 MB Controller
			HP Smart Array P800/512 BBWC Controller
			HP SC44Ge Host Bus Adapter
			<b>NOTE:</b> When using the SC44Ge with SATA Hard Drives, 1.5G SATA Hard Drives are required.
			HP SC11Xe Host Bus Adapter

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

	Quantity Supported	Position Supported	Controller
600GB 6G SAS 15K	Up to 8	1- 8	HP Smart Array E200/128 BBWC Controller
450GB 6G SAS 15K	Up to 12	1-12	HP Smart Array P400/256MB Controller
450GB 3G SAS 15K			HP Smart Array P410 Controller
300GB 6G SAS 15K			HP Smart Array P212 Controller
300GB 3G SAS 15K			HP Smart Array E500/256MB Controller
146GB 3G SAS 15K			HP Smart Array P800/512 BBWC Controller
			HP SC44Ge Host Bus Adapter
			HP SC11Xe Host Bus Adapter

## Storage

### External Storage

	Quantity Supported	Position Supported	Controller
20 Modular Smart Array Family	Up to 2 per SA-6402 Up to 4 per SA-6404	External	Smart Array 6402/128 Controller Smart Array 6404/256 Controller Smart Array 642 Controller
50 Modular Smart Array	Up to 2	External	Smart Array 6402/128 Controller Smart Array 6404/256 Controller Smart Array 642 Controller
60 HP StorageWorks Modular Smart Array	Up to 8	External	HP Smart Array P800/512 BBWC Controller
70 HP StorageWorks Modular Smart Array	Up to 8	External	HP Smart Array P800/512 BBWC Controller

### Tape and Disk-Based Backup

**NOTE:** For complete listing of tape drive offerings see: [www.hp.com/go/connect](http://www.hp.com/go/connect)

	Position Supported	Controller	Controller Part Number
<b>HP StorageWorks SCSI Tape Drives, External</b> LTO-1 Ultrium 232 LTO-2 Ultrium 448 LTO-3 Ultrium 920 LTO-3 Ultrium 960 LTO-4 Ultrium 1760 LTO-4 Ultrium 1840 DAT 40 DAT 72 DAT 160 1U Rack-Mount Kit 3U Rack-Mount Kit	External	HP SC11Xe Host Bus Adapter	412911-B21
<b>HP StorageWorks USB Tape Drives, External</b> DAT 40 USB DAT 72 USB DAT 160 USB 1U USB Rack-Mount Kit	External	USB 2.0 Port	N/A
<b>HP StorageWorks SAS Tape Drives, External</b> DAT 160 SAS LTO-2 Ultrium 448 SAS LTO-3 Ultrium 920 SAS LTO-4 Ultrium 1760 SAS LTO-4 Ultrium 1840 SAS	External	HP SC44Ge Host Bus Adapter	416096-B21



### Storage

1U Rack-Mount Kit  
3U Rack-Mount Kit

<b>HP StorageWorks SCSI Tape Automation, External</b> DAT 72x10 Autoloader 1/8 G2 Tape Autoloader MSL2024 MSL4048	External	HP SC11Xe Host Bus Adapter	412911-B21
		HP U320e SCSI Host Bus Adapter <b>NOTE: Recommended for MSL tape libraries.</b>	AH627A
<b>HP StorageWorks SAS Tape Automation, External</b> 1/8 G2 Autoloader MSL2024 MSL4048	External	HP SC44Ge Host Bus Adapter	416096-B21
<b>HP StorageWorks Fibre Tape Automation, External</b> MSL2024 MSL4048	External	Please consult the EBS connectivity matrix at: <a href="http://www.hp.com/go/ebs">http://www.hp.com/go/ebs</a> for detailed connectivity information.	N/A
<b>HP StorageWorks RDX Removable Disk Backup System</b> RDX160 RDX320 RDX500	External	USB 2.0 Port	N/A
<b>HP StorageWorks D2D Backup Systems</b> D2D120 D2D130 D2D2503i D2D2504i D2D4004i	External	Embedded Network Controller	N/A



## Power Specifications

750W Power Supply Spare Kit 451366-291, -AA1, -B21  
 Operational Input Voltage Range (Vrms) 90Vac to 264Vac full range  
 Frequency Range (Nominal) (Hz) 47 Hz to 63 Hz

Nominal Input Voltage (Vrms)	100	115	200	220	230	240
Max Rated Output Wattage Rating	750	750	750	750	750	750
Nominal Input Current (Arms)	9.1	7.9	4.3	4.0	3.8	3.7
Max Rated Input Wattage Rating (Watts)	893	888	872	862	862	862
Max. Rated VA (Volt-Amp)	911	906	890	880	880	880
Efficiency (%)	84	84.5	86	87	87	87
Power Factor	0.98	0.98	0.98	0.98	0.98	0.98
Leakage Current (mA)	<0.43	<0.50	<.0.90	<0.96	<1.00	<1.04
Maximum Inrush Current (A peak)	30A	30A	30A	30A	30A	30A
Maximum Inrush Current Duration (mS)	5mS	5mS	5mS	5mS	5mS	5mS

### Technical Specifications

System Unit	<b>Dimensions</b> (H x W x D) (with bezel)	3.44 x 17.64 x 27.50 in (8.75 x 44.80 x 69.88 cm)	
	<b>Weight</b> (approximate)	<b>Maximum</b> (all hard drives, power supplies and processors installed)	51.5 lb (19.22 kg)
		<b>Minimum</b> (one hard drive, power supply and processor installed)	35.0 lb (13.06 kg)
Input Requirements (per power supply)	<b>Input Requirements</b> (per power supply)	<b>Rated Line Voltage</b>	100 - 240 VAC
		<b>Rated Input Current</b>	9.10 A (at 100 VAC), 4.5 A (at 200 VAC)
		<b>Rated Input Frequency</b>	50 to 60 Hz
		<b>Rated Input Power</b>	910 W (at 100 VAC), 900 W (at 200 VAC)
<b>BTU Rating</b>	<b>Maximum</b>	3107.82 BTU/hr (at 100 VAC), 3073.67 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/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: DL185 G5</li><li>• Follow the instructions of the next screens.</li></ul>		
Power Supply Output (per power supply)	<b>Power Supply Output</b> (per power supply)	<b>Rated Steady-State Power</b>	750 W (at 100 VAC), 750 W (at 200 VAC)
		<b>Maximum Peak Power</b>	750 W (at 100 VAC), 750W (at 200 VAC)
System Inlet Temperature	<b>System Inlet Temperature</b>	<b>Operating</b>	50° to 95°F (10° to 35°C) at sea level with an altitude derating of 1.8°F per every 1000 ft (1.0°C per every 305 m) above sea level to a maximum of 10,000 ft (3050 m), no direct sustained sunlight. Maximum rate of change is 18°F/hr (10°C/hr). The upper limit may be limited by the type and number of options installed. System performance may be reduced if operating with a fan fault or above 86°F (30°C).
		<b>Non-operating</b>	-22° to 140° F (-30° to 60° C). Maximum rate of change is 36° F/hr (20° C/hr).
Relative Humidity (non-condensing)	<b>Relative Humidity</b> (non-condensing)	<b>Operating</b>	10 to 90% relative humidity (Rh), 82.4° F (28° C) maximum wet bulb temperature, non-condensing.
		<b>Non-operating</b>	5 to 95% relative humidity (Rh), 101.7° F (38.7° C) maximum wet bulb temperature, non-condensing.
<b>Altitude</b>	<b>Altitude</b>	<b>Operating</b>	10,000 ft (3050 m). This value may be limited by

### Technical Specifications

		the type and number of options installed. Maximum allowable altitude change rate is 1500 ft/min (457 m/min).
	<b>Non-operating</b>	30,000 ft (9144 m). Maximum allowable altitude change rate is 1500 ft/min (457 m/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>	
	<i>LWAd</i>	6.7 B
	<i>LpAm</i>	51 dBA
	<b>Operating</b>	
	<i>LWAd</i>	6.7 B
	<i>LpAm</i>	51 dBA
<b>Emissions Classification (EMC)</b>	<b>FCC Rating</b>	Class A
	<b>Normative Standards</b>	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.

---

<b>Smart Array E200 Controller</b>	<b>Disk Drive and Enclosure Interface</b>	3 G SAS (Serial Attached SCSI) 1.5 G SATA (Serial Advanced Technology Attachment)
	<b>SAS Connectors</b>	2 internal (SFF8484) x4 wide port connectors
	<b>Cache Memory Speed</b>	DDR1-266 MHz provides up to 4.2 GB/s maximum bandwidth.
	<b>Server Interface</b>	x8 2.5 G PCIe provides 2 GB/s maximum bandwidth.
	<b>SAS Speed</b>	x8 3 G SAS provides 2.4 GB/s maximum bandwidth.
	<b>Cache Memory</b>	40-bit 64MB cache or a 128MB battery backed cache: ECC protection, battery-backed, and transportable
	<b>Logical Volumes Supported</b>	Up to 32 logical volumes
	<b>Maximum Volume Capacity</b>	3TB (6 x 500 GB)
	<b>Host Memory Addressing</b>	64-bit, supporting greater than 4GB server memory space
	<b>RAID Support</b>	RAID 5 (Distributed Data Guarding) RAID 1+0 (Striping & Mirroring) RAID 0 (Striping)

---

## Technical Specifications

Smart Array P400 Controller	Disk Drive and Enclosure Interface	3 G SAS (Serial Attached SCSI) 1.5 G SATA (Serial Advanced Technology Attachment)
	SAS Connectors	2 internal (SFF8484) x4 wide port connectors
	Cache Memory Speed	DDR2-533MHz with 40 or 72-bit wide bus provides up to 4.2 GB/s maximum bandwidth.
	Server Interface	x8 2.5 G PCIe provides 2 GB/s maximum bandwidth.
	SAS Speed	x8 3 G SAS provides 2.4 GB/s maximum bandwidth.
	Cache Memory	40-bit 256 MB cache (72-bit 512MB module upgrades available); ECC protection, battery-backed, and transportable
	Logical Drives Supported	Up to 32 logical drives
	Maximum Logical Drive Capacity	3TB (6 x 500 GB)
	Host Memory Addressing	64-bit, supporting greater than 4GB server memory space
	RAID Support	RAID 6 with ADG (Advanced Data Guarding) requires Battery Backed Write Cache Upgrade RAID 5 (Distributed Data Guarding) RAID 1+0 (Striping & Mirroring) RAID 0 (Striping)

Embedded NC7782 Dual Port PCI-X 10/100/1000T Gigabit network adapter	Network Interface	10Base-T/100Base-TX/1000Base-TX		
	Compatibility	IEEE 802.3 10Base-T		
		IEEE 802.3ab 1000Base-T		
		IEEE 802.3u 100Base-TX		
	Data Transfer Method	64-bit, 133MHz PCI(X)1.0		
	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)		

### Technical Specifications

#### 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: <http://www.hp.com/go/green>. To recycle your product, please go to: <http://www.hp.com/go/green> 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: <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.

---

© Copyright 2010 Hewlett-Packard Development Company, L.P.

The information contained herein is subject to change without notice.

Microsoft and Windows NT are US registered trademarks of Microsoft Corporation. AMD, the AMD Arrow logo, AMD Opteron™, and combinations thereof, are trademarks of Advanced Micro Devices, Inc.

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

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