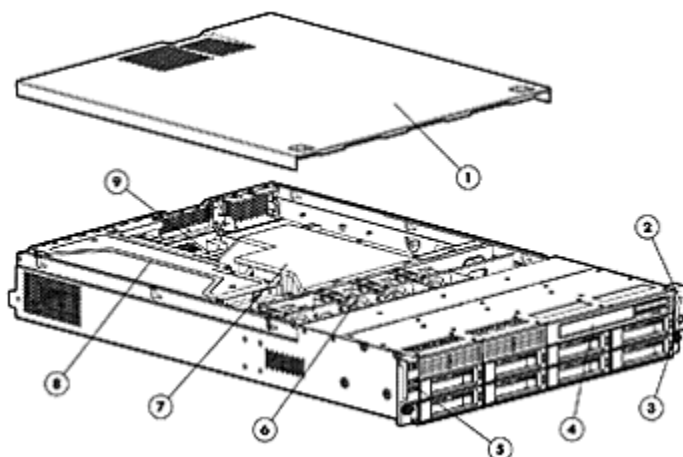
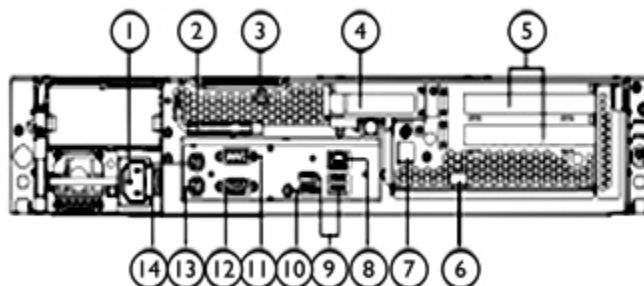


Overview



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. T-15/T-10 Screwdriver
3. Thumbscrew For Top Cover
4. Low Profile Card Slot
5. PCI Expansion Card Slot
6. Thumbscrew For PCI Cage
7. HP LO100c Management Card Port (Optional)
8. LAN Port
9. 4 USB 2.0 Ports
10. UID LED Button
11. Serial Port
12. VGA Port
13. PS/2 Mouse Port (green)
14. PS/2 Keyboard Port (purple)

What's New

- Support for 2 GB REG PC2-5300 2 x 1 GB Low Power Kit, single rank memory kit

At A Glance

The HP ProLiant DL180 G5 is a low cost high capacity storage optimized 2-way server, that delivers on a history of design excellence and 2U density for a variety of rack deployments and applications.

- **Processors:**
 - Supports up to two Quad-Core Intel® Xeon® processors: 5400 sequence
 - Quad-Core Intel® Xeon® processors 5400 sequence with 12MB Level 2 cache
 - Intel® 5100 Chipset
- **Memory:**
 - Up to 16 GB of memory supported by six (6) PC2-5300 (667 MHz) DDR2 memory slots
- **Internal Drive Support:**
 - Supports up to twelve via CTO with controller or up to eight via BTO:
 - Hot Plug Serial ATA (SATA) 3.5"hard drives; or
 - Hot Plug Serial Attached SCSI (SAS) 3.5"hard drives

NOTE: Hot Plug and SAS functionality requires the addition of Smart Array or HBA controller. 12 hard drive support requires a 4-port SAS controller that supports expanders.
 - Internal storage capacity of up to 9TB (12 x 750GB Hot Plug 3.5" SATA hard drives), 3.6TB (12 x 300GB Hot Plug 3.5" SAS hard drives)
- **Network Controller:**

Overview

- One integrated NC105i PCI-e Gigabit NIC (embedded) (Wake on LAN and PXE capable)
- **Storage Controllers:**
 - HP Embedded SATA RAID Controller (up to 4 hard drive support on base Models)
 - HP Smart Array E200 Controller (optional)
 - HP Smart Array P400 Controller (optional)
 - HP Smart Array P800 Controller (optional)
 - HP SC11Xe Host Bus Adapter (optional)
 - HP SC44Ge Host Bus Adapter (optional)
- **Expansion Slots:**
 - One available Low Profile x8 PCI-Express slot using a Low profile Riser.
 - Two Full Height/ Full Length Riser options
 - Option1: 2 full-length/full-height PCI-Express x8 connector slots (x4 electrical - Standard)
 - Option2: full-length/full-height riser with 2 PCI-X Slots(Optional)
- **Management:**
 - Optional HP Lights Out 100c Remote Management card with Virtual KVM and Virtual Media support (includes IPMI2.0 and SMASH support)
- **USB Ports:**
 - Seven USB ports (2) front, (4) rear, (1) internal
- **Optical Drive:**
 - Support for one (optional):Multi-bay DVD
 - Optional Floppy (USB only, USB key)
- **Power Supply:**
 - 750W Power Supply (Optional Redundancy Non-Hot Plug, Autoswitching) CSCI 2007/8
 - 1200W High Efficiency Power Supply (Optional Redundancy Non-Hot Plug, Autoswitching) (Optional) CSCI 2007/8
 - **NOTE:** Climate Savers Computing Initiative, 2007-2008 Compliant
- **Form Factor:**
 - 2U rack models
- **Deployment/Serviceability:**
 - Tooled access to all system components for easy in rack serviceability
- **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 (3-1-1 warranty in AP and Brazil). Support for software and initial setup is available for 90 days from date of purchase. Additional support may be covered under the warranty or available for an additional fee. Enhancements to warranty services are available through HP Care Pack services or customized service agreements.
 - **NOTE:** Server Warranty includes 1-Year Parts, 1-Year Labor, 1-Year Onsite support (3-1-1-in AP and Brazil) with next business day response. Additional information regarding worldwide limited warranty and technical support is available at: <http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html>

Standard Features

NOTE: For a brief, printer friendly data sheet that describes this product and informs you of the essential capabilities and specifications, please visit: <http://h71028.www7.hp.com/ERC/downloads/4AA1-2747EEW.pdf>

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

Quad-Core Intel® Xeon® processor E5440 (2.83 GHz, 80 W, 1333 MHz FSB)
NOTE: Available through Configure To Order only. See Factory Integration Models section for more details.

Quad-Core Intel® Xeon® processor E5430 (2.66 GHz, 80 W, 1333 MHz FSB)
NOTE: Available through Configure To Order only. See Factory Integration Models section for more details.

Quad-Core Intel® Xeon® processor E5420 (2.50 GHz, 80 W, 1333 MHz FSB)

Quad-Core Intel® Xeon® processor E5405 (2.00 GHz, 80 W, 1333 MHz FSB)

Dual-Core Intel® Xeon® processor E5205 (1.86 GHz, 65 W, 1066 MHz FSB)
NOTE: Available through Configure To Order only. See Factory Integration Models section for more details.

Upgradeability Upgradeable to two processors

Chipset Intel® 5100 Chipset

Cache Memory 12MB (2 x 6MB) Level 2 cache (5400 sequence)

Memory Protection Registered Advanced ECC memory

Memory	Type	PC2-5300 DIMMs (DDR2-667)	
	Standard	1 GB	(1 x 1 GB)
	Maximum	16 GB	(2 x 4 GB) + (4 X 2 GB) Two 4 GB DIMMs should be populated in sockets 1 and 2 first (the right most sockets when looking from the front of the chassis) - sockets 4 through 6 should be populated with 2 GB DIMMs. (Refer to hood label for more information)

Network Controller One NC105i PCI-E Gigabit NIC (embedded) (Wake on LAN and PXE capable)

Standard Features

Expansion Slots	Slot Number	Bus Speed	Bus Number*	Device Number**	Hot Plug (Y/N)	PCI Voltage	Notes
	3	x8 PCI-Express	3	1	N	3.3 volts	Low Profile
	1	x4 PCI-Express	5	0	N	3.3 volts	Full Length Full Height
	2	x4 PCI-Express	6	0	N	3.3 volts	Full length Full Height
	1	PCI-X***	Dynamic	1	N	3.3 volts	Full Length Full Height
	2	PCI-X***	Dynamic	2	N	3.3 volts	Full Length Full Height

NOTE: All slots can accept universal keyed PCI cards

* 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).

*** PCI-X bus speed will be 133MHz when only one PCI-X card is installed. It will be 100MHz when both slots have PCI-X cards installed.

Storage Controller	4HDD Models	HP Embedded SATA RAID Controller (integrated into the south-bridge) supporting SW RAID 0,1
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NOTE: A diskette drive is needed to install storage controller drivers during a Windows operating system installation from a CD.

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

Storage

Optical Drives:

DVD-ROM 8x IDE (ATAPI) DVD-ROM drive, slim (optional)

DVD RW 8x IDE (ATAPI) DVD-RW drive, slim (optional)

Diskette Drives Via USB only

Drive Bays:

Hot Plug SAS/SATA Up to 12 Hot Plug SAS/SATA 3.5" drives (4 drive bays standard)

NOTE: 4 Drive Models are Non-Hot Pluggable. Smart Array Controller must be added for Hot Plug drive capability. 4 Drive Models can be upgraded with the addition of a Smart Array Controller and a SAS/SATA Multi-lane cable (464830-B21). 12 Drive Model available via CTO factory integration ONLY.

NOTE: The addition of a Smart Array Controller requires the addition of a SAS/SATA Multi-lane cable (464830-B21)

Maximum Internal Storage	SATA Maximum Internal	9TB	12 x 750GB
	SAS Maximum Internal	3.6TB	12 x 300GB

Standard Features

Interfaces	Parallel	None
	Network RJ-45 (Ethernet)	1 10/100/1000 NIC port (plus 1 optional for the HP ProLiant Lights Out 100c Remote Management Card)
	Serial	1
	Pointing Device (Mouse)	1
	Graphics	1
	Keyboard	1
	USB	7 total ports: (2) front, (4) rear, (1) internal NOTE: Please see the following URL for additional information regarding USB support: http://h18004.www1.hp.com/products/servers/platforms/usb-support.html .

Graphics	32MB shared supporting 1600 x 1200 x 16M resolution.
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Form Factor	Rack (2U), (3.5 in/8.89 cm)
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Remote Management	Lights-Out 100c	<p>Lights Out LO100c is a Remote Management Card (RMC) for HP ProLiant 100 series servers that do not have embedded LO100i. The LO100c has all the features of the LO100i Advanced license and allows customers, or their service providers, to remotely manage ProLiant servers over a LAN or the Internet from anywhere, anytime regardless whether the server is located in the same building, across town, or around the globe.</p> <p>With LO100c, users can acquire complete remote control with Virtual KVM (graphical hardware-based, remote console). Users can also access the server's serial console, control system power, update system firmware and software, as well as monitor system environmental conditions. The LO100c remote management card can be accessed from a web browser or command line interface. This virtual "at-the-server" functionality means administrators stay in control of remote HP ProLiant 100 series servers.</p> <p>The HP Lights-Out100c consists of a management processor and firmware that provides cost-effective, entry-level lights-out functionality, basic system board management functions, and diagnostics.</p> <p>NOTE: For more information, please refer to the QuickSpecs for the LO100c found at: http://h18004.www1.hp.com/products/servers/management/remotemgmt/lightsout100/index.html</p>
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Standard Features

Server Management Stand Alone Software Product – ProLiant Essentials	HP Systems Insight Manager	HP Systems Insight Manager (HP SIM) provides a unified, secure and extensible standards-based environment to centrally manage servers, storage and other infrastructure devices, (both HP and non-HP) across multiple operating system platforms.
	ProLiant Essentials Rapid Deployment Pack	Rapid Deployment Pack (RDP) is an automated deployment and provisioning solution for all ProLiant servers. RDP supports image capture and deployment on 100 series servers. Every RDP disc includes 10-node trial licenses for evaluation purposes. RDP requires a license for each server deployed and is available for purchase with HP servers. For more information, visit: http://www.hp.com/servers/rdp . NOTE: Flexible and volume quantity license kits are available for ProLiant Essentials Value Packs. Refer to: http://www.hp.com/servers/proliantessentials or the various ProLiant Essentials Value Pack product QuickSpecs for more information. NOTE: For more information regarding ProLiant Essentials Software, please see the following URL: http://www.hp.com/servers/proliantessentials .

Core Infrastructure Management	Subscriber's Choice	Subscriber's Choice Driver and Support Alerts/Notifications is a web-based email subscription service that provides software and driver change notifications for ProLiant products. Sign up at: http://www.hp.com/go/subscriberschoice and customize your profile to receive various new alerts as they become available, on a weekly or monthly basis.
	ROMPaq, software and latest drivers	The latest software, drivers, and firmware fully optimized and tested for your ProLiant server and options, available through ProLiant Support Packs the ProLiant Essentials Rapid Deployment Pack, SmartStart or downloaded from Software and Drivers download pages website at: http://www.hp.com/go/support .

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

Manageability The optional HP PL100 G5 Lights-Out 100c Kit ALL provides the following OS-independent remote control capabilities with a riser card:

- Virtual power
- System event log access
- System health
- Remote Serial console (serial redirection)
- Browser, Telnet access
- SMASH-CLP compliant
- IPMI 2.0 compliant
- Virtual media (Floppy, CD, USB 2.0 (with release 3.0))
- Secure Socket Layer Encryption
- Secure Shell Encryption
- Virtual KVM

Standard Features

Security

Power-on password
Setup password

Server Power Cords

One Highline IEC Power cord ships standard (for connection to a Power Distribution Unit)

NOTE: 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.

If a local power cord is required, please reference the following power cord matrix:
<http://www.hp.com/powercordmatrix>.

NOTE: Rack models ship standard with an IEC cable.
Localized cables included with geographic specific models in other world regions.

UPS and PDU Power Cord Matrix

Please see the UPS and PDU cable matrix that lists cable descriptions, requirements, and specifications for UPS and PDU units:
<http://h18004.www1.hp.com/products/servers/proliantstorage/power-protection/index.html>.

Power Supply

750Watts - (Non-Hot Plug, Autoswitching) Ships Standard
1200Watts - High Efficiency 12V Non-Hot Plug AC Power Supply (Autoswitching) (Optional)
750Watts - Power Supply (Redundant Non-Hot Plug, Autoswitching) (Optional)
1200Watts - High Efficiency Power Supply (Redundant Non-Hot Plug, Autoswitching), CSCI 2007/2008 (Optional)

NOTE: Climate Savers Computing Initiative, 2007-2008 Compliant

NOTE: For additional information please see the Options section of this QuickSpecs.

System Fans

4 system fans ship standard; Non-hot plug, Non-redundant

OS Support

Microsoft Windows 2003 and Microsoft Windows 2003/R2 Standard Edition (32-bit)
Microsoft Windows 2003 and Microsoft Windows 2003/R2 Enterprise Edition (32-bit)
Microsoft Windows 2003 and Microsoft Windows 2003/R2 Web Edition (32-bit)
Microsoft Windows 2003 and Microsoft Windows 2003/R2 for Extended Systems Standard Edition (64-bit)
Microsoft Windows 2003 and Microsoft Windows 2003/R2 for Extended Systems Enterprise Edition (64-bit)
Microsoft Windows Server 2008
Red Hat Enterprise Linux
SUSE Linux Enterprise Server

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

NOTE: For more complete and up-to-date information on how to buy server operating systems from HP please visit the OS product site at:
<http://h18004.www1.hp.com/products/servers/software/OEM.html>.

Standard Features

Rack Airflow Requirements

Rack 10000 series Cabinets

The increasing power of new high-performance processor technology requires increased cooling efficiency for rack-mounted servers. The 10000 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 DL180 rack models 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: <http://www.racksolutions.com/hp>.

Factory Express Portfolio for Servers and Storage

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

Factory Express offers service packages for simple configuration, racking, installation, complex configuration and design services as well as individual factory services, such as image loading, asset tagging, and custom packaging. 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>.

HP Enterprise Configurator

The HP eCo-Enterprise Configurator now provides factory default racking for our HP hardware portfolio. This approach is aligned with our strategic direction to meet the needs and expectations of our valued customers. If you require "custom" rack configuration, please contact HP's Customer Business Center or an Authorized Partner for assistance.

Standard Features

Service and Support HP 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, purchased at the same time or afterward, internal to the enclosure, as well as 22" and smaller external monitors and tower UPS options up to 3kVA; these items will be covered at the same service level and for the same coverage period as the server. Coverage of UPS Battery is not included, standard warranty terms & conditions apply. For servers or storage systems installed within a rack, service also covers all HP qualified rack options installed within the same rack.

To fully capitalize on your HP ProLiant servers' capabilities requires a service partner who thoroughly understands your server technology and systems environment. HP Services, an industry leader in provision of multi vender support solutions provides a range of support services designed to meet the varying needs of business. Whether an SMB or large global corporation HP has a ProLiant server support offer to help you speedily deploy and maximize system uptime.

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

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

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

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

Installation & Start-Up of a ProLiant server and Microsoft or Linux O/S per the Customer Description and/or Data Sheet. To be delivered on a scheduled basis 8am-5pm, M-F, excl. HP holidays.

For a complete listing of service offerings and information visit:

<http://www.hp.com/services/proliantservices>

<http://www.hp.com/go/proliant/carepack>

Models

Four Drive Serial ATA (SATA) Models

NOTE: To upgrade from 4 Non-Hot Plug SATA hard drives to 4 Hot Plug SATA/SAS hard drives the addition of a storage controller and one Internal SATA/SAS cable (464830-B21) are required. To upgrade to 8 Hot Plug SATA/SAS hard drives, the addition of a storage controller and two Internal SATA/SAS cables (464830-B21) are required.

NOTE: To upgrade to server models supporting 12 hard drives; you must start with HP ProLiant DL180 CTO Chassis (P/N 457649-B21). Please see the Configuration To Order section below.

<p>HP DL180 G5, E5420 2.50GHz,(QC) 1GB (1P) 456830-xx1</p>	<p>Processor One of the following depending on model</p>	<p>Quad-Core Intel® Xeon® processor E5420 (2.50 GHz, 80 W, 1333 MHz FSB) Quad-Core Intel® Xeon® processor E5405 (2.00 GHz, 80 W, 1333 MHz FSB)</p>
<p>HP DL180 G5, E5405 2.00 GHz,(QC) 1GB (1P) 456831-xx1</p>	<p>Cache Memory One of the following depending on model</p> <p>Memory One of the following depending on model</p> <p>Network Controller</p> <p>Storage Controller</p> <p>Hard Drive</p> <p>Internal Storage</p> <p>Optical Drive</p> <p>Form Factor</p>	<p>12MB (2 x 6MB) Level 2 cache (5400 sequence)</p> <p>1GB (1 x 1GB) PC2-5300 DIMMs (DDR2-667)with Advanced ECC capabilities</p> <p>One HP NC105i PCI-E (embedded)</p> <p>Embedded SATA Raid Standard</p> <p>None ship standard (up to 8 Hot Plug SATA or SAS drives supported standard with the addition of a controller and cable. 12 drive models supported via CTO only.)</p> <p>BTO internal storage capacity of up to 6TB (8 x 750GB Hot Plug 3.5" SATA hard drives), 2.4TB (8 x 300GB Hot Plug 3.5" SAS hard drives)</p> <p>DVD-ROM, DVD RW (Optional)</p> <p>Rack (2U)</p> <p>NOTE: Server models supporting 4 hard drives are Non-Hot Pluggable. Smart Array Controller must be added for Hot Plug drive capability. NOTE: SAS (Serial Attach SCSI) capability requires the addition of a Smart Array or HBA Controller card.</p>

Country Code Key	xx = 00 xx = 20 xx = 29 xx = 37 xx = 42 xx = AA	U.S. Brazil Japan APD Europe PRC
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Configuration Information - Factory Integrated Models

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

NOTE: HP does not allow factory integration of options into standard models listed above. Configure-to-order servers must start with a CTO Chassis.

NOTE: This product offering does not support HP Factory Express Server Configuration Level 1.

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

Step 1: Base Configuration (choose one of the following configurable models)

Hot Plug Models

HP ProLiant DL180 G5 Hot Plug SAS/SATA Rack CTO Chassis 457649-B21

Factory Integrated Model ships with:

One embedded NC105i PCI-E Gigabit Server Adapters (WOL & PXE-capable)

Three available PCI-Express slots:

Slot 1: x8 low-profile/half-height slot

Slot 2 & 3: x4 Full-Height/Full Length

NOTE: 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.

One HP SATA Embedded Cable Kit

750 Watt Power Supply

One Highline IEC Power Cord

4 Non-Hot Plug Fans

Rack (2U), (3.5 in/8.89 cm)

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

Processors	Quad-Core Intel® Xeon® processor E5440 (2.83 GHz, 80 W, 1333 MHz FSB) Kit, FIO NOTE: If 2 processors are desired, select one 466106-L21 and one 466106-B21.	466106-L21
	Quad-Core Intel® Xeon® processor E5430 (2.66 GHz, 80 W, 1333 MHz FSB) Kit, FIO NOTE: If 2 processors are desired, select one 458784-L21 and one 458784-B21.	458784-L21
	Quad-Core Intel® Xeon® processor E5420 (2.50 GHz, 80 W, 1333 MHz FSB) Kit, FIO NOTE: If 2 processors are desired, select one 458785-L21 and one 458785-B21.	458785-L21
	Quad-Core Intel® Xeon® processor E5405 (2.00 GHz, 80 W, 1333 MHz FSB) Kit, FIO NOTE: If 2 processors are desired, select one 458786-L21 and one 458786-B21.	458786-L21
	Dual-Core Intel® Xeon® processor E5205 (1.86 GHz, 65W, 1066MHz FSB) Kit, FIO NOTE: If 2 processors are desired, select one 458787-L21 and one 458787-B21.	458787-L21

Memory	1 GB PC2-5300 2 x 512 MB Single Rank Kit	408850-B21
	1GB REG PC2-5300 1 x 1GB Kit	462483-B21



Configuration Information - Factory Integrated Models

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 PC2-5300 2 x 2 GB Single Rank Kit	461840-B21
4 GB REG PC2-5300 2 x 2 GB Dual Rank Kit	408853-B21
8 GB REG PC2-5300 2 x 4 GB Dual Rank Kit	408854-B21

Hard Drive Cage

HP DL180 8HDD Cage FIO Kit	451368-B21
HP DL180 12HDD Cage FIO Kit	451369-B21

NOTE: The installation of a 12HDD Cage requires the addition of a 4-port SAS controller that supports expanders. A Smart Array Controller, P400 or better, is recommended.

NOTE: The addition of a Smart Array Controller (or 4-port SAS controller that supports expanders) requires the addition a SAS/SATA Multi-lane cable (464830-B21).

Step 3: Choose Additional Options for Factory Integration

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

Options

Unique Options	<p>HP ProLiant DL180 PCI/X Riser Kit 451285-B21</p> <p>NOTE: This option kit replaces the three internal expansion slots listed in step 1 base configuration.</p> <p>NOTE: 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.</p>
Power Supplies	<p>750W Redundant Power Supply Kit 451366-B21</p> <p>High Efficiency HP 1200W 12V Non Hot Plug AC Power Supply 437572-B21</p> <p>NOTE: 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>
Remote Management	<p>Lights-Out 100c Remote Management Card</p> <p>HP Lights Out 100c Remote Management Card 100c Kit 445513-B21</p> <p>NOTE: For more information regarding Lights Out 100c Remote Management Card, please see the following URL: http://www.hp.com/servers/proliantessentials.</p>
Server Management Stand Alone Software Product – ProLiant Essentials	<p>NOTE: Electronic licensing options are available for Insight Control suites and select ProLiant Essentials software products. Please see the appropriate Insight Control and ProLiant Essentials QuickSpecs for additional information.</p> <p>Deploy Rapid Deployment Pack</p> <p>ProLiant Essentials Rapid Deployment Pack No Media 1-Server License 452151-B21 including 1 year of 24x7 Technical Support and Updates</p> <p>NOTE: This license allows 1 server to be deployed and managed via RDP. Customer will receive a printed license entitlement certificate via physical shipment. 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.</p> <p>NOTE: For additional ProLiant Essentials Rapid Deployment Pack License Kits please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11053_div/11053_div.html</p> <p>NOTE: Flexible and volume quantity license kits are available for ProLiant Essentials Value Packs. Refer to: http://www.hp.com/servers/proliantessentials or the various ProLiant Essentials Value Pack product QuickSpecs for more information.</p> <p>NOTE: For more information regarding ProLiant Essentials Software, please see the following URL: http://www.hp.com/servers/proliantessentials.</p>

Options

Processor	Quad-Core Intel® Xeon® processor E5440 (2.83 GHz, 80 W, 1333 MHz FSB) Option Kit	466106-B21
	Quad-Core Intel® Xeon® processor E5430 (2.66 GHz, 80 W, 1333 MHz FSB) Option Kit	458784-B21
	Quad-Core Intel® Xeon® processor E5420 (2.50 GHz, 80 W, 1333 MHz FSB) Option Kit	458785-B21
	Quad-Core Intel® Xeon® processor E5405 (2.00 GHz, 80W, 1333 MHz FSB) Option Kit	458786-B21
	Dual-Core Intel® Xeon® processor E5205 (1.86 GHz, 65W, 1066 MHz FSB) Option Kit	458787-B21

Memory	1 GB REG PC2-5300 2 x 512 MB Single Rank Kit	408850-B21
	1 GB REG PC2-5300 1 x 1 GB Kit	462483-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 PC2-5300 2 x 2 GB Dual Rank Kit	408853-B21
	4 GB REG PC2-5300 2 x 2 GB LP Single Rank Kit	461840-B21
	8 GB REG PC2-5300 2 x 4 GB Dual Rank Kit	408854-B21

Hard Drives	Serial-ATA (SATA) Hot Plug Hard Drives	
	HP 80GB SATA 7.2K Hot Plug 3.5" HDD	349237-B21
	HP 160GB SATA 7.2K Hot Plug 3.5" HDD	349238-B21
	HP 250GB SATA 7.2K Hot Plug 3.5" HDD	349239-B21
	HP 500GB SATA 7.2K Hot Plug 3.5" HDD	395473-B21
	HP 750GB SATA 7.2K Hot Plug 3.5" HDD	432341-B21

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

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

Hard Drives	Serial-Attached SCSI (SAS) Hot Plug Hard Drives	
	HP 72GB 3G SAS 15K 3.5" DP HDD	384852-B21
	HP 72GB SAS 15K Hot Plug 3.5" SP HDD	375870-B21
	HP 146GB 3G SAS 15K 3.5" DP HDD	384854-B21
	HP 146GB SAS 15K Hot Plug 3.5" SP HDD	375872-B21
	HP 300GB 3G SAS 15K 3.5" DP HDD	416127-B21
	HP 300GB SAS 15K Hot Plug 3.5 SP HDD	431944-B21

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

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

NOTE: If selecting more than 4 hard drives or if using SAS hard drives a Smart Array controller and two SAS/SATA cables (P/N 464830-B21) are required.

Optical Drives	DVD-ROM Drive	449991-B21
	DVD-RW Drive	449998-B21

Options

Storage Controllers	<p>SAS Controllers</p> <p>HP SC44Ge Host Bus Adapter 416096-B21</p> <p>NOTE: Please see the HBA QuickSpecs for additional information: http://h18004.www1.hp.com/products/quickspecs/12617_div/12617_div.html (SC44Ge HBA)</p> <p>SCSI HBA</p> <p>HP SC11Xe Host Bus Adapter 412911-B21</p> <p>NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/12566_div/12566_div.html (SCSI HBA)</p> <p>Internal SAS/SATA Cable 464830-B21</p> <p>NOTE: If selecting more than 4 hard drives or if using SAS hard drives a Smart Array controller is required and two SAS/SATA cables. NOTE: The addition of a Smart Array Controller requires the addition of a SAS/SATA Multi-lane cable.</p> <p>HP Smart Array E200 Controller</p> <p>HP Smart Array E200/128 BBWC Controller 411508-B21</p> <p>HP Smart Array E500 Controller</p> <p>HP Smart Array E500 Controller 435129-B21</p> <p>HP Smart Array P400 Controller</p> <p>HP Smart Array P400/256MB Controller 405132-B21</p> <p>HP Smart Array P400/512MB Controller with BBWC 411064-B21</p> <p>NOTE: When ordering a Smart Array P400 Controller with BBWC the addition of the 24" Battery Extension Cable (417836-B21) is required.</p> <p>HP Smart Array P800 Controller</p> <p>HP Smart Array P800/512 BBWC Controller 381513-B21</p> <p>512 MB Battery-backed write cache upgrade 405148-B21</p> <p>Battery-backed write cache upgrade 383280-B21</p> <p>NOTE: When ordering a Smart Array P800 Controller with BBWC the addition of the 24" Battery Extension Cable (417836-B21) is required.</p> <p>HP Smart Array 24" Battery Cable Kit 417836-B21</p> <p>NOTE: Please see the following Controller QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12460_div/12460_div.html (Smart Array E200 Controller) http://h18000.www1.hp.com/products/quickspecs/12700_div/12700_div.html (Smart Array E500 Controller) http://h18000.www1.hp.com/products/quickspecs/12400_div/12400_div.html (Smart Array P400 Controller) http://h18000.www1.hp.com/products/quickspecs/12616_div/12616_div.html (Smart Array P800 Controller)</p>
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Options

Communications	HP NC110T PCI Express Gigabit Server Adapter	434905-B21
	NOTE: Does not support Windows 2000.	
	HP NC360T PCI Express Dual Port Gigabit Server Adapter	412648-B21
	HP NC364T PCI Express Quad Port Gigabit Server Adapter	435508-B21
	NOTE: Does not support Windows 2000.	
	HP NC373F PCI Express Multifunction Gigabit Server Adapter	394793-B21
	HP NC373T PCI Express Multifunction Gigabit Server Adapter	394791-B21
	HP NC380T PCI Express Dual Port Multifunction Gigabit Server Adapter	394795-B21
NOTE: Supported on a Full Length-Full Height slot only.		
HP NC510C PCIe 10 Gigabit Server Adapter	414129-B21	
NOTE: A minimum of 1 gigabyte (1 GB) of server memory is required per each NC510C adapter.		
HP NC510F PCIe 10 Gigabit Server Adapter	414126-B21	
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HPC Specific Options	HP IB 4X DDR PCI-e Dual-port 0 memory HCA	483513-B21
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Rack Kits	HP Rack Cable Management Velcro Clips	379820-B21
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HP StorageWorks Modular Smart Array 20	HP StorageWorks Modular Smart Array 20	335921-B21
	NOTE: Rack-mountable 12 (SATA) drive enclosure with U320 Host connectivity, redundant power supplies.	
	NOTE: Please see the Modular Smart Array 20 QuickSpecs for additional information including configuration steps and additional options needed for a complete solution at:	
	http://h18000.www1.hp.com/products/quickspecs/11942_div/11942_div.html (Worldwide)	
<hr/>		
HP StorageWorks Modular Smart Array 30	HP StorageWorks Modular Smart Array 30 SB	302969-B21
	NOTE: Rack-mountable 14 drive enclosure with single bus, redundant power supplies.	
	NOTE: Please see the Modular Smart Array 30 QuickSpecs for additional information including configuration steps and additional options needed for a complete solution at:	
	http://h18000.www1.hp.com/products/quickspecs/11738_div/11738_div.html (Worldwide)	
<hr/>		
HP StorageWorks Modular Smart Array 50	HP StorageWorks Modular Smart Array 50 Enclosure	364430-B21
	NOTE: Rack-mountable 10 SFF drive enclosure with single I/O module, redundant hot plug power supplies and hot plug fans.	
	NOTE: Please see the Modular Smart Array 50 QuickSpecs for additional information including configuration steps and additional options needed for a complete solution at:	
	http://h18000.www1.hp.com/products/quickspecs/12245_div/12245_div.html (Worldwide)	

Options

HP StorageWorks Modular Smart Array 60	<p>HP StorageWorks 60 Modular Smart Array</p> <p>NOTE: Rack-mountable 12-drive (3.5" 3G SAS/1.5G SATA) 2U enclosure with 3Gb/s SAS host connectivity and redundant power supplies.</p> <p>NOTE: Please see the Modular Smart Array 60 QuickSpecs for additional information including configuration steps and additional options needed for a complete solution at:</p> <p>http://h18000.www1.hp.com/products/quickspecs/12627_div/12627_div.html (Worldwide)</p>	364430-B21
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HP StorageWorks Modular Smart Array 70	<p>HP StorageWorks 70 Modular Smart Array</p> <p>NOTE: Rack-mountable 25-drive (2.5" 3G SAS/1.5G SATA) 2U enclosure with 3Gb/s SAS host connectivity and redundant power supplies.</p> <p>NOTE: Please see the Modular Smart Array 70 QuickSpecs for additional information including configuration steps and additional options needed for a complete solution at:</p> <p>http://h18000.www1.hp.com/products/quickspecs/12652_div/12652_div.html (Worldwide)</p>	418800-B21
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HP StorageWorks Modular Smart Array 500	<p>HP StorageWorks 500 Modular Smart Array</p> <p>NOTE: Please see the Modular Smart Array 500 QuickSpecs for additional information including configuration steps and additional options needed for a complete solution at:</p> <p>http://h18000.www1.hp.com/products/quickspecs/11956_div/11956_div.html (Worldwide)</p>	335880-B21
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Tape Drives

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

USB Tape Drives

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

SAS Tape Drives

NOTE: For the DL180 G5, HP recommends purchasing the HP SC44Ge HBA (416096-B21) for a dedicated SAS HBA for tape.

HP StorageWorks DAT 160 SAS Internal Tape Drive Q1587A

NOTE: HP recommends combining this tape drive with the 1U SAS Rack-Mount kit (AE459A) for a complete rack-mount solution.

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

NOTE: HP recommends combining this tape drive with the 1U SAS Rack-Mount kit (AE459A) for a complete rack-mount solution.

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

NOTE: HP recommends combining this tape drive with the 1U SAS Rack-Mount kit (AE459A) for a complete rack-mount solution.

HP StorageWorks LTO-4 Ultrium 1760 SAS Internal Tape Drive EH919A

HP StorageWorks 1U SAS Rack-mount kit with one LTO-4 Ultrium 1760 EH946A

HP StorageWorks LTO-4 Ultrium 1840 SAS Internal Tape Drive EH860A

NOTE: HP recommends combining this tape drive with the 3U SAS Rack-Mount kit (AG576A) for a complete rack-mount solution.

NOTE: Please refer to the "Tape Drives, Tape Autoloaders & Tape Libraries" table in the Storage section of this document for a list of SAS controllers with tape support.

Ultrium Tape Drives

Options

HP StorageWorks LTO-1 Ultrium 232 Internal Tape Drive (Carbonite)	DW064A
NOTE: HP recommends combining this tape drive with the 1U SCSI Rack-Mount kit (A7445B) for a complete rack-mount solution.	
HP StorageWorks 1U SCSI Rack-mount kit with one LTO-2 Ultrium 448 SCSI Tape Drive (Carbonite)	DW028B
HP StorageWorks 1U SCSI Rack-mount kit with one LTO-3 Ultrium 920	EH903A
HP StorageWorks 3U SCSI Rack-mount kit with one LTO-3 Ultrium 960 (Carbonite)	Q1595B
HP StorageWorks 3U SCSI Rack-Mount with 1 LTO-4 Ultrium 1840 Tape Drive	EH926A
NOTE: Please see the HP StorageWorks LTO Ultrium Tape Drive QuickSpecs for additional options such as controllers, media, and other related items: http://h18006.www1.hp.com/products/quickspecs/11739_div/11739_div.html (Worldwide) http://h18006.www1.hp.com/products/quickspecs/12128_div/12128_div.html (Worldwide)	
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 .	
Rack-Mount Tape Drive Enclosures	
HP StorageWorks 1U SCSI Rack-Mount kit	A7445B
NOTE: The 1U Rack-Mount Kit can support up to (2) half-height tape drives and is compatible with multiple Single-Ended and LVD SCSI tape drives including the DAT 40, DAT 72, DAT 160, DLT VS160, LTO-1 Ultrium 232, LTO-2 Ultrium 448 and LTO-3 Ultrium 920 tape drives.	
HP StorageWorks 1U USB Rack-Mount Kit	A8007A
NOTE: The 1U USB Rack-Mount Kit can support up to (2) half-height tape drives and is compatible with the DAT 40 USB, DAT 72 USB and DAT 160 tape drives.	
HP StorageWorks 1U SAS Rack-Mount Kit	AE459A
NOTE: The 1U SAS Rack-Mount Kit can support up to (2) half-height tape drives and is compatible with the LTO-2 Ultrium 448 SAS and LTO-3 Ultrium 920 SAS tape drives.	
HP StorageWorks 3U SCSI Rack-mount kit	274338-B22
NOTE: The 3U SCSI Rack-mount Kit can support up to (2) full-height or (4) half-height tape drives and is compatible with multiple LVD SCSI tape drives including DAT 40, DAT 72, DLT VS160, SDLT 600, LTO-1 Ultrium 232, LTO-2 Ultrium 460, LTO-2 Ultrium 448, LTO-3 Ultrium 920, LTO-3 Ultrium 960 and LTO-4 Ultrium 1840 tape drives.	
HP StorageWorks 3U SAS Rack-mount Kit	AG576A
NOTE: The 3U Rack-mount Kit can support up to (2) full-height or (4) half-height tape drives and compatible with multiple SAS tape drives including DAT 160 SAS, LTO-2 Ultrium 448 SAS, LTO-3 Ultrium 920 SAS, and LTO-4 Ultrium 1840 SAS tape drives.	
NOTE: Please see the Rack-Mount Tape Drive Kits QuickSpecs for additional information regarding these kits: http://h18000.www1.hp.com/products/quickspecs/10854_div/10854_div.html (Worldwide)	

Options

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

Tape Autoloaders

HP StorageWorks DAT Autoloader	HP StorageWorks DAT 72x10 tape autoloader	AE313B
	HP StorageWorks 1/8 Tape Autoloader	
	HP StorageWorks 1/8 G2 LTO-4 Ultrium 1760 SAS Tape Autoloader	AK377A
	HP StorageWorks 1/8 LTO-3 Ultrium 920 G2 Tape Autoloader	AH165A
	HP StorageWorks 1/8 G2 LTO-3 Ultrium 920 SAS Autoloader	AH558A
	HP StorageWorks 1/8 LTO-2 Ultrium 448 G2 Tape Autoloader	AH164A
	HP StorageWorks 1/8 LTO-1 Ultrium 232 G2 Tape Autoloader	AH163A
	HP StorageWorks 1/8 G2 Tape Autoloader Rack Kit NOTE: Required to install the 1/8 G2 Autoloaders in a standard 19-inch rack; includes rails and rackmount instructions	AH166A
	NOTE: Please reference the Tape Autoloader QuickSpecs at: http://www.hp.com/go/automation for additional information needed to create a complete solution; reference current compatibility information at: http://www.hp.com/go/ebs .	

Options

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 1840 4GB FC Library	AJ034A
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 960 4GB FC Library	AG326B
HP StorageWorks MSL2024 1 LTO-3 Ultrium 920 SAS Drive Library	AH559A
HP StorageWorks MSL2024 1 LTO-3 Ultrium 920 SCSI Drive Library	AH169A
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 1 LTO-4 Ultrium 1840 4GB FC Library	AJ036A
HP StorageWorks MSL4048 2 LTO-4 Ultrium 1760 SAS Drive Library	AK380A
HP StorageWorks MSL4048 1 LTO-3 Ultrium 960 SCSI Drive Library	AG322A
HP StorageWorks MSL4048 1 LTO-3 Ultrium 960 4GB FC Library	AG324B
HP StorageWorks MSL4048 1 LTO-3 Ultrium 920 SAS Drive Library	AH560A
HP StorageWorks MSL4048 1 LTO-3 Ultrium 920 SCSI Drive Library	AH171A
HP StorageWorks MSL4048 1 LTO-2 Ultrium 448 SCSI Drive Library	AG320A

HP StorageWorks MSL8096 Tape Library

HP StorageWorks MSL8096 2 LTO-4 Ultrium 1840 SCSI Drive Library	AJ039A
HP StorageWorks MSL8096 2 LTO-4 Ultrium 1840 4GB FC Library	AJ040A
HP StorageWorks MSL8096 2 LTO-4 Ultrium 1760 SAS Drive Library	AK382A
HP StorageWorks MSL8096 2 LTO-3 Ultrium 920 SAS Drive Library	AH561A
HP StorageWorks MSL8096 2 LTO-3 Ultrium 960 4GB FC Library	AH218A
HP StorageWorks MSL8096 2 LTO-3 Ultrium 960 Drive Library	AH219A

HP StorageWorks MSL6000 Tape Library

LTO-4 Ultrium 1840 technology

HP StorageWorks MSL6030 1 LTO-4 Ultrium 1840 SCSI Drive Library	AJ029A
HP StorageWorks MSL6030 1 LTO-4 Ultrium 1840 4GB FC Library	AJ030A
HP StorageWorks MSL6060 2 LTO-4 Ultrium 1840 SCSI Drive Library	AJ031A
HP StorageWorks MSL6060 2 LTO-4 Ultrium 1840 4GB FC Library	AJ032A

LTO-3 Ultrium 960 technology

HP StorageWorks MSL6030 1 Ultrium 960 Dr LVDS Library	AD606B
HP StorageWorks MSL6030 1 Ultrium 960 Dr FC Library	AD608B
HP StorageWorks MSL6030 2 Ultrium 960 Dr LVDS Library	AD607B
HP StorageWorks MSL6030 2 Ultrium 960 Dr FC Library	AD609B

NOTE: Please reference the MSL2024, MSL4048, MSL8096 and MSL6000 Tape Library QuickSpecs at: <http://www.hp.com/go/automation> for additional information needed to create a complete solution; reference current compatibility information at: <http://www.hp.com/go/ebs>.

Options

StorageWorks Options **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>.

HP StorageWorks 4 Gb PCI-X 2.0-to-Fibre Channel HBA	AB429A
HP StorageWorks 4 Gb PCI-X 2.0 DC-to-Fibre Channel HBA	AE369A
HP StorageWorks FC2142SR 4Gb PCI-E HBA	A8002A
HP StorageWorks FC2242SR Dual Channel 4 Gb PCI-E HBA	A8003A
HP StorageWorks FC1142SR 4Gb PCI-E HBA	AE311A
HP StorageWorks FC1242SR Dual Channel 4 Gb PCI-E HBA	AE312A
HP StorageWorks FC2143 4Gb PCI-X 2.0 HBA	AD167A
HP StorageWorks FC2243 4Gb PCI-X 2.0 DC HBA	AD168A

USB 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 1GB USB 2.0 Floppy Drive Key	442085-B21
HP 256MB USB 2.0 Floppy Drive Key	442084-B21
HP USB Internal Cable Kit	451363-B21

HP KVM Switch Options

2x1x16 IP Console Switch with Virtual Media	AF601A
4x1x16 IP Console Switch with Virtual Media	AF602A
2x16 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 1 x 8 port	336044-B21
HP Server Console Switch (KVM), 0 x 2 x 16 port	336045-B21
PS/2 Interface Adapter, 1 pack	262588-B21
PS/2 Interface Adapter, 8 pack	262587-B21
USB Interface Adapter, 1 pack	336047-B21
Serial Interface Adapter - 1 pack with power supply	373035-B21
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

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 .	

Options

Service and Support Offerings (HP Care Pack Services)

Hardware Services 4-Hour On-site Service

13-Hour x 5-Day Coverage, 3 Years, Electronic	UH271E
24-Hour x 7-Day Coverage, 3 Years, Electronic	UH272E
13-Hour x 5-Day Coverage, 1 Years, Electronic	UH267E
24-Hour x 7-Day Coverage, 1 Years, Electronic	UH268E
13-Hour x 5-Day Coverage, 4 Years, Electronic	UH275E
24-Hour x 7-Day Coverage, 4 Years, Electronic	UH276E
13-Hour x 5-Day Coverage, 5 Years, Electronic	UH278E
24-Hour x 7-Day Coverage, 5 Years, Electronic	UH279E

Hardware Services Next Business Day On-Site Service

9-Hour x 5-Day Coverage, 3 Years, Electronic	UH270E
9-Hour x 5-Day Coverage, 4 Years, Electronic	UH274E
9-Hour x 5-Day Coverage, 5 Years, Electronic	UH277E

Hardware Services 6-Hour Call to Repair On-Site Service

6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	UH273E
6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 1 Years, Electronic	UH269E
Hardware Installation, Electronic	UH301E

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

Memory

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

HP ProLiant DL180 G5 (all models)

Standard Memory

1 GB (1 x 1GB) PC2-5300 Registered DIMM memory, with Advanced ECC Capabilities Memory installed.

Maximum Memory

Up to 16GB memory is available with the optional installation of PC2-5300 Registered DIMM memory kits.

NOTE: Memory should be installed in pairs and matched for optimum performance.

NOTE: Chart does not represent all possible memory configurations.

NOTE: Only 1 dual rank 8GB kit can be populated.

Memory	Slot					
	1*	2*	3	4	5	6
Standard (1 GB)	1 GB	Empty	Empty	Empty	Empty	Empty
Maximum (16 GB)	4 GB	4 GB	2 GB	2 GB	2 GB	2 GB

* Indicates the right most DIMM slots when looking from the front.

Following are memory options available from HP:

1 GB REG PC2-5300 2 x 512 MB Single Rank Kit	408850-B21
1 GB REG PC2-5300 1 x 1 GB Kit	462483-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 PC2-5300 2 x 2 GB Dual Rank Kit	408853-B21
4 GB REG PC2-5300 2 x2 GB Kit, Low Power, Single Rank Kit	461840-B21
8 GB REG PC2-5300 2 x 4 GB Dual Rank Kit	408854-B21

Storage



1.-8. Eight 3.5" Hot Plug SAS/SATA Hard Drive Bays

9. DVD-ROM, DVD RW

Drive Support

Removable Media

	Quantity Supported	Position Supported	Controller
DVD-ROM	Up to 1	9	Integrated IDE (ATAPI) (optional)
DVD RW	Up to 1	9	Integrated IDE (ATAPI) (optional)

Hard Drives

SAS/SATA Hot Plug

	Quantity Supported	Position Supported	Controller
3.5-inch	Up to 8	1-8	HP Smart Array E200/128 BBWC Controller
80GB SATA 7,200 rpm			HP Smart Array P400/256MB Controller
160GB SATA 7,200 rpm			HP Smart Array E500/256MB Controller
250GB SATA 7,200 rpm			HP Smart Array P800/512 BBWC Controller
500GB SATA 7,200 rpm			HP SC44Ge Host Bus Adapter
750GB SATA 7,200 rpm			HP SC11Xe Host Bus Adapter
72GB SAS 15,000 rpm			
146GB SAS 15,000 rpm			
300GB SAS 15,000 rpm			

External Storage

	Quantity Supported	Position Supported	Controller
HP Storageworks MSA20 Enclosure	Up to 2 per SA 6402	External	Smart Array 6402 Controller Smart Array 6404 Controller
	Up to 4 per SA 6404		
HP Storageworks MSA30 D-B Enclosure	Up to 2 per SA 6402	External	Smart Array 6402 Controller Smart Array 6404 Controller
	Up to 4 per SA 6404		
HP Storageworks MSA50 Enclosure	Up to 2	External	HP Smart Array E500/256MB controller
HP Storageworks MSA60 Enclosure	Up to 8 per SA P800	External	HP Smart Array E500/256MB controller
HP Storageworks MSA70 Enclosure	Up to 8 per SA P800	External	HP Smart Array E500/256MB controller

Storage

Tape Drives, Tape Autoloaders, Tape Libraries & D2D Backup Systems

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

<http://h18000.www1.hp.com/products/quickspecs/division/10233.html> (Worldwide)

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

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

NOTE: For complete listing of tape drive offerings see:

<http://www.hp.com/products1/storage/compatibility/tapebackup/ISS/index.html>

NOTE:SAS Tape Drives: Connecting hard drive cage and SAS tape to the same SAS Controller using split cable (supplied with tape drive) deactivates 1 of the hard drive bays. Actual hard drive bay deactivated depends on where split cable plugs into SAS drive connector. Example: 3x SAS cable connector plugged into SAS drive connector (5-8) on the back of the hard drive cage would mean drive bay 8 is deactivated.

	Position Supported	Controller	Controller Part Number
HP StorageWorks SCSI Tape Drives, External	External	HP SC11Xe Host Bus Adapter	412911-B21
LTO-1 Ultrium 232			
LTO-2 Ultrium 448			
LTO-2 Ultrium 460			
LTO-3 Ultrium 920			
LTO-3 Ultrium 960			
LTO-4 Ultrium 1840			
DAT 40			
DAT 72			
DAT 160			
DLT VS160			
SDLT 600			
1U Rack-Mount Kit			
3U Rack-Mount Kit			
HP StorageWorks USB Tape Drives, External	External	USB 2.0 Port	N/A
DAT 40 USB			
DAT 72 USB			
DAT 160 USB			
1U USB Rack-Mount Kit			
HP StorageWorks SAS Tape Drives, External	External	HP SC44Ge Host Bus Adapter *	416096-B21
DAT 160 SAS		HP Smart Array E500 Controller	435129-B21
LTO-2 Ultrium 448 SAS		HP Smart Array P800/512 BBWC Controller	381513-B21
LTO-3 Ultrium 920 SAS		NOTE: The following SAS Smart Array controllers require ROM Flash version 2.04 or higher for SAS tape support:	
LTO-4 Ultrium 1760 SAS		HP Smart Array P400/256MB Controller	405132-B21
LTO-4 Ultrium 1840 SAS		HP Smart Array P400/512MB Controller	411064-B21
1U Rack-Mount Kit		* Recommended	
HP StorageWorks SCSI Tape Automation, External	External	HP SC11Xe Host Bus Adapter	412911-B21
DAT 72x10 Autoloader			

Storage

1/8 Tape Autoloader
MSL2024
MSL4048
MSL8096
MSL6000

HP U320e SCSI Host Bus Adapter
NOTE: Only valid for MSL tape libraries.

AH627A

HP StorageWorks SAS Tape Automation, External

1/8 G2 Autoloader
MSL2024
MSL4048
MSL8096

External

HP SC44Ge Host Bus Adapter

416096-B21

NOTE: Please visit <http://www.hp.com/go/connect> for details about minimum SAS controller firmware version and SAS cabling requirements.

HP StorageWorks Fibre Tape Automation, External

MSL2024
MSL4048
MSL6000

External

Please consult the EBS connectivity matrix at:
<http://www.hp.com/go/ebs> for detailed connectivity information.

N/A

HP StorageWorks D2D Backup Systems

D2D110
D2D120
D2D130

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 (A rms)	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	Dimensions (H x W x D) 3.44x 17.64 x 27.50 in (8.75 x 44.80 x 69.88cm) (with bezel)							
	Weight (approximate)							
	<table border="0"> <tr> <td style="padding-right: 20px;">Maximum</td> <td>51.5 lb (19.22 kg)</td> </tr> <tr> <td colspan="2">(all hard drives, power supplies and processors installed)</td> </tr> <tr> <td>Minimum</td> <td>35.0 lb (13.06 kg)</td> </tr> <tr> <td colspan="2">(one hard drive, power supply and processor installed)</td> </tr> </table>	Maximum	51.5 lb (19.22 kg)	(all hard drives, power supplies and processors installed)		Minimum	35.0 lb (13.06 kg)	(one hard drive, power supply and processor installed)
Maximum	51.5 lb (19.22 kg)							
(all hard drives, power supplies and processors installed)								
Minimum	35.0 lb (13.06 kg)							
(one hard drive, power supply and processor installed)								
	Input Requirements (per power supply)							
	Rated Line Voltage	100 - 240 VAC						
	Rated Input Current	9.10 A (at 100 VAC), 4.5 A (at 200 VAC)						
	Rated Input Frequency	50 to 60 Hz						
	Rated Input Power	910 W (at 100 VAC), 900 W (at 200 VAC)						
	BTU Rating	Maximum 3107.82 BTU/hr (at 100 VAC), 3073.67 BTU/hr (at 200 VAC)						
Power Specifications	To review typical system power ratings use the Power Calculator which is available via the online tool located at URL: http://h30099.www3.hp.com/configurator/calculator/Power%20Calculator%20Catalog.xls <ul style="list-style-type: none"> • Click on the system of interest. Example: DL180 G5 • Follow the instructions of the next screens. 							
	Power Supply Output (per power supply)							
	Rated Steady-State Power	750 W (at 100 VAC), 750 W (at 200 VAC)						
	Maximum Peak Power	750 W (at 100 VAC), 750W (at 200 VAC)						
	System Inlet Temperature							
	Operating	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).						
	Non-operating	-22° to 140° F (-30° to 60° C). Maximum rate of change is 36° F/hr (20° C/hr).						
	Relative Humidity (non-condensing)							
	Operating	10 to 90% relative humidity (Rh), 82.4° F (28° C) maximum wet bulb temperature, non-condensing.						
	Non-operating	5 to 95% relative humidity (Rh), 101.7° F (38.7° C) maximum wet bulb temperature, non-condensing.						
Altitude	Operating	10,000 ft (3050 m). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 1500 ft/min (457 m/min).						

Technical Specifications

	Non-operating	30,000 ft (9144 m). Maximum allowable altitude change rate is 1500 ft/min (457 m/min).
Acoustic Noise	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).	
	Idle	
	<i>LWAd</i>	6.7 B
	<i>LpAm</i>	51 dBA
	Operating	
	<i>LWAd</i>	6.7 B
	<i>LpAm</i>	51 dBA

Embedded NC105i PCIe Network Interface Gigabit Server Adapter Compatibility (Embedded)	Integrated 10/100/1000BASE-T Transceiver Combines a triple-speed IEEE 802.3TM - Compliant Media Access Controller (MAC) with a triple-speed Ethernet transceiver.	
Data Transfer Method	Compliant to x1 PCIe Specification	
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	Performs all the physical layer functions for 10BASE-T, 100BASE-T, and 1000BASE-T Ethernet on standard Category 5 UT	

Environment-friendly Products and Approach	End-of-life Management and Recycling	<p>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.</p> <p>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.</p>
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Technical Specifications

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

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