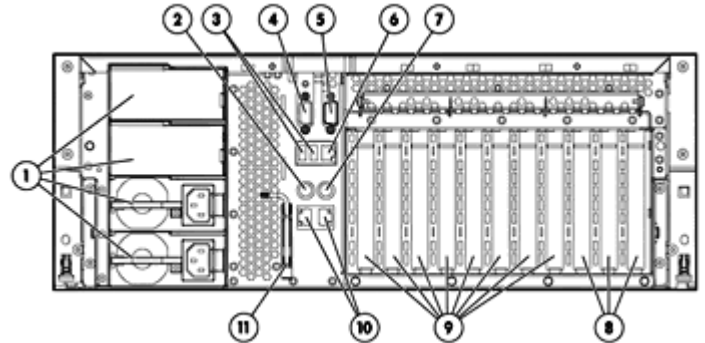
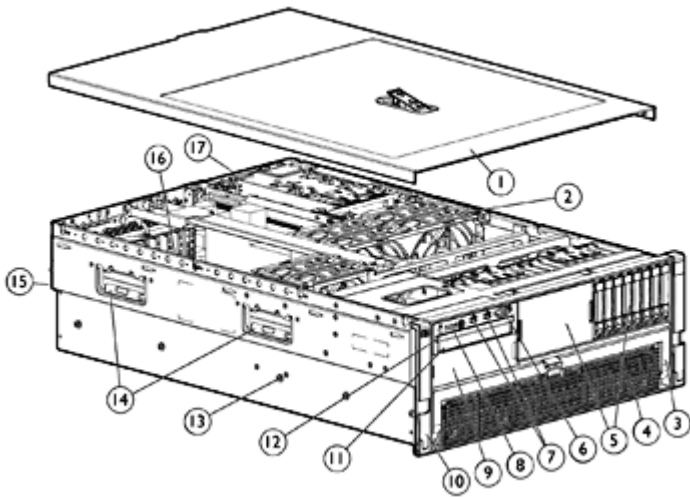


### Overview



#### Front View:

1. Quick Removal Access Panel
2. Six Hot Plug Redundant Fans Standard on all models
3. Front accessible Processor and memory drawer
4. Support for up to four Quad-Core Intel® Xeon® Processors
5. Support for up to 16 Small Form-Factor (SFF) SAS or Serial ATA (SATA) drives
6. One front video port
7. Two front accessible USB 2.0 ports
8. Front Panel LED Display and Power Button
9. Half-height tape bay
10. Quick release levers for fast server access
11. Slimline Drive (DVD Drive standard)
12. Slide-out Systems Insight Display
13. Universal Tool-less "Snap In" Sliding Rail Solution
14. Server Lifting Handles
15. 4U (7" Height) Rack Form Factor
16. Up to eleven Available PCI Express/PCI-X Internal Expansion Slots. Eight Standard: (4) full length PCI-E x8, (1) full length PCI-E x4 and (3) half length PCI-Ex4 slots. Optional Expansion for up to (3) PCI-X or (3) PCI-E x8
17. Hot Plug Redundant Power Supplies (two standard with 2P Models, requires four for redundancy)

#### Rear View:

1. Power supplies (2 ship standard in 2P Models; 4 ship standard in 4P Models)
2. Keyboard port
3. Two USB ports
4. Video port
5. Serial port
6. Integrated Lights-Out 2 port
7. Mouse port
8. PCI-Express or PCI-X option (slots 1-3)
9. PCI-Express slots (slots 4-11)
10. Two Multifunction Gigabit NICs
11. Service tool

### Overview

### What's New

- Optional -48V DC power supply
- New 300GB SFF SAS drives supported

### At A Glance

The HP ProLiant DL580 G5 is the best in class platform for virtualization, combining Intel's newest Xeon® processor technology, maximum scalability and high availability features. This 4-socket server offers unsurpassed flexibility and serviceability in a versatile, 4U rack-optimized form factor. Based on the latest industry standard technologies, the DL580 G5 provides the highest levels of performance demanded by today's compute intensive applications.

- **Processors:**
  - 6-Core Intel® Xeon® 7400 or 7300 series processors
  - Supports up to four Intel® Xeon® 7400-, 7300-sequence or Intel® Dual-Core Xeon® processor E7220
  - Intel Core™ Microarchitecture with Intel Virtualization Technology FlexMigration
  - Industry Standard Intel® 7300 Chipset with four high-speed interconnects at 1066 MT/s
- **Memory:**
  - PC2-5300 Fully Buffered DIMMs (DDR2-667)
  - Can be configured in Mirrored, Online Spare, or Advanced ECC modes
- **Storage Controller:**
  - 2P Base Models: HP Smart Array P400i/256MB Controller (optional 512MB BBWC upgrade)
  - 4P Base Models: HP Smart Array P400i/512MB BBWC Controller
- **Internal Drive Support:**
  - Support for up to 16 hot plug SFF SAS drives
  - Slimline DVD Drive standard, Half-height Tape Drive optional on all models
- **Network Controller:**
  - Two embedded NC373i Multifunction Gigabit Network Adapters with TCP/IP Offload Engine, including support for Accelerated iSCSI through an optional Licensing Kit
- **Expansion Slots:**
  - More PCI-Express slots with up to eleven available with option card
  - Eight slots standard: (4) full length PCI-E x8, (1) full length PCI-E x4 and (3) half length PCI-E x4 slots; Optional card adds (3) PCI-X or (3) PCI-E x8
- **USB 2.0 Ports:**
  - 5 Total: (2) front, (2) rear, (1) internal
- **Redundancy:**
  - Rear accessible Hot Plug Power Supplies with option for Redundancy (Redundant power supplies are standard on some models)
  - Hot Plug Fans with full redundancy
- **Infrastructure Management:**
  - Convenient slide-out Systems Insight Display for quick and easy front view server diagnostics, along with status LEDs, Automatic Server Recovery (ASR), ROM Based Setup Utility (RBSU)
  - HP ProLiant Onboard Administrator (powered by the HP Integrated Lights-Out 2 management processor) for simplified server setup, health monitoring and recovery, power and thermal control, and lights-out remote administration.
  - HP Insight Control 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 supports both Windows and Linux-based central management servers.
  - HP Insight Dynamics for ProLiant, a product option, is an integrated command center that enables IT Staff personnel to continuously analyze and optimize a converged infrastructure, while automating and reducing the cost of common data center tasks by as much as 40 percent. This ultimately enables them to dynamically keep pace with the organization's changing business requirements.
- **Form Factor:**

### Overview

- Dense form factor - 4U rack models
- **Operating Systems:**
  - Supports Windows, RHEL, SLES, OEL, Solaris, NetWare VMware, and HP Citrix Essentials for XenServer
- **Deployment/Serviceability:**
  - Front and rear video ports
  - Front accessible Processor, Processor Power Modules and Memory allow server to stay safely secured in the rack during servicing
  - Quick Deploy Rail System includes sliding universal rails, an ambidextrous cable management arm and quick release levers for fast and easy serviceability and in-rack tool-less access to major components
  - Tool-less access to all system components for easy in rack serviceability
  - Customer Self Repair (CSR): HP products are designed with many CSR parts to minimize repair time and allow for greater flexibility in performing defective parts replacement
- **Warranty:**
  - This product is covered by a global limited warranty and supported by HP Services and a worldwide network of HP Authorized Channel Partners resellers. Hardware diagnostic support and repair is available for three years from date of purchase. Support for software and initial setup is available for 90 days from date of purchase. Enhancements to warranty services are available through HP Care Pack services or customized service agreements. Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.  
**NOTE:** Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next 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 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/4AA1-3911ENW.pdf>

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

#### Processor

One or more of the following depending on model

#### 6-Core Processors

6-Core Intel® Xeon® X7460 Processor (2.67 GHz, 16MB cache, 130Watts)

6-Core Intel® Xeon® L7455 Processor (2.13 GHz, 12MB cache, 65Watts)

6-Core Intel® Xeon® E7450 Processor (2.40 GHz, 12MB cache, 90 Watts)

#### Quad-Core Processors

Quad-Core Intel® Xeon® E7440 Processor (2.40 GHz, 16MB cache, 90 Watts)

Quad-Core Intel® Xeon® E7430 Processor (2.13 GHz, 12MB cache, 90 Watts)

Quad-Core Intel® Xeon® E7420 Processor (2.13 GHz, 8MB cache, 90 Watts)

Quad-Core Intel® Xeon® X7350 Processor (2.93 GHz, 2x4M cache, 130 Watts)

Quad-Core Intel® Xeon® E7340 Processor (2.40 GHz, 2x4M cache, 80 Watts)

Quad-Core Intel® Xeon® E7330 Processor (2.40 GHz, 2x3M cache, 80 Watts)

Quad-Core Intel® Xeon® E7320 Processor (2.13 GHz, 2x2M cache, 80 Watts)

Quad-Core Intel® Xeon® E7310 Processor (1.60 GHz, 2x2M cache, 80 Watts)

Quad-Core Intel® Xeon® L7345 Processor (1.86 GHz, 2x4M cache, 50 Watts)

#### Dual-Core Processors

Dual-Core Intel® Xeon® E7220 Processor (2.93 GHz, 2x4M cache, 80 Watts)

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#### Chipset

Industry Standard Intel® 7300 Chipset

**NOTE:** For more information regarding Intel chipsets, please see the following URL: <http://www.intel.com/products/server/chipsets/>

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#### Memory Protection

Advanced ECC

Mirrored Memory

Online Spare Memory

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#### Memory

One of the following depending on Model

Type PC2-5300 Fully Buffered DIMMs (DDR2-667)

Standard (2P Base Models) 4 GB (4 x 1 GB)

Standard (4P Base Models) 8 GB (4 x 2 GB)

Standard (4P High Performance Models) 16 GB (8 x 2 GB)

Maximum 256 GB

**NOTE:** 256 GB achieved with use of four memory cartridges and (32) 8 GB Memory Modules.

### Standard Features

**Network Controller** Two embedded NC373i Multifunction Gigabit Network Adapters with TCP/IP Offload Engine, including support for Accelerated iSCSI through an optional ProLiant Essentials Licensing Kit

Expansion Slots							
Expansion Slots with No Option Card	Expansion Slot #	Technology	Width	Connector Width*	Bus Number**	Form Factor	Notes
	1	N/A	N/A	N/A	N/A	N/A	N/A
	2	N/A	N/A	N/A	N/A	N/A	N/A
	3	N/A	N/A	N/A	N/A	N/A	N/A
	4	PCI Express	x8	x16	12h	FH/FL	
	5	PCI Express	x8	x16	12h	FH/FL	
	6	PCI Express	x8	x16	12h	FH/FL	
	7	PCI Express	x8	x16	24h	FH/FL	
	8	PCI Express	x4	x8	24h	FH/FL	
	9	PCI Express	x4	x8	24h	LP	
	10	PCI Express	x4	x8	24h	LP	
	11	PCI Express	x4	x8	24h	LP	

\* 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).

FL = Full length; FH = Full height; LP = low-profile.

Expansion Slots							
Expansion Slots with PCI-X Option Card	Expansion Slot #	Technology	Width	Connector Width*	Bus Number**	Form Factor	Notes
	1	PCI-X	64-bit	N/A	41h	FH/FL	100MHz
	2	PCI-X	64-bit	N/A	41h	FH/FL	100MHz
	3	PCI-X	64-bit	N/A	41h	FH/FL	100MHz
	4	PCI Express	x8	x16	12h	FH/FL	
	5	PCI Express	x8	x16	12h	FH/FL	
	6	PCI Express	x8	x16	12h	FH/FL	
	7	PCI Express	x8	x16	24h	FH/FL	
	8	PCI Express	x4	x8	24h	FH/FL	
	9	PCI Express	x4	x8	24h	FH/FL	
	10	PCI Express	x4	x8	24h	LP	
	11	PCI Express	x4	x8	24h	LP	

## Standard Features

\* 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).  
 FL= Full length; FH = Full height; LP = low-profile.

Expansion Slots							
Expansion Slots with PCI Express x8 Card	Expansion Slot #	Technology	Width	Connector Width*	Bus Number**	Form Factor	Notes
	1	PCI Express	x8	x16	42h	FH/FL	
	2	PCI Express	x8	x16	42h	FH/FL	
	3	PCI Express	x8	x16	42h	FH/FL	
	4	PCI Express	x8	x16	12h	FH/FL	
	5	PCI Express	x8	x16	12h	FH/FL	
	6	PCI Express	x8	x16	12h	FH/FL	
	7	PCI Express	x8	x16	24h	FH/FL	
	8	PCI Express	x4	x8	24h	FH/FL	
	9	PCI Express	x4	x8	24h	LP	
	10	PCI Express	x4	x8	24h	LP	
	11	PCI Express	x4	x8	24h	LP	

\* 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).  
 FL= Full length; FH = Full height; LP = low-profile.

<b>Storage Controller</b> One of the following depending on Model	2P Base Models	HP Smart Array P400i/256 MB Controller
	4P Base Models	HP Smart Array P400i/512 MB BBWC Controller

**Storage Data Protection** The Battery-Backed Write Cache (BBWC) Enabler for the Smart Array P400i Controller protects up to 512-MB write cache memory from hard boot, power, controller, or system board failures.

- Standard on 4P Base Models, optional with others
- Battery charge/life: Up to 72 hours/3 years
- Transportable data protection
- Increases overall controller performance

<b>Storage</b>	Optical Drive	Slimline DVD Drive standard
	Hard Drives	None ship standard
	Hard Disk Drive Backplane	Internal SAS backplane supports up to eight SFF hard disk drives. Optional second SAS backplane supports additional eight SFF hard drives.



### Standard Features

Maximum Internal Storage Type	Hot Plug SFF SAS	8.0TB	16 x 500GB
	Hot Plug SFF SATA	8.0TB	16 x 500GB

Interfaces	Serial	1
	Pointing Device (Mouse)	1
	Video	1 front; 1 rear
	Keyboard	1
	USB 2.0 Ports	5 total: 2 front; 2 rear; 1 internal
		<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>
	iLO2 Remote Management	1
Network RJ-45	2	

Graphics	Integrated ATI ES1000 with 32MB embedded video SDRAM Max Resolution 1280 x 1024 x 16M color
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Form Factor	Rack (4U = 7 inches), ships with Quick Deploy Sliding Rail System, an ambidextrous cable management arm and quick release levers for fast and easy serviceability and in-rack tool-less access to major components. Space saving form factor (4U) provides space efficiencies while providing maximum deployment flexibility.
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HP Insight management software	HP Insight Foundation	Managing the growing number of servers can be complex and expensive for your organization. IT managers need to address changing business needs with tools that meet the challenges of managing today's complex Datacenters.  HP provides management solutions that are designed to simplify a server's installation, configuration and maintenance throughout the entire server lifecycle. This provides the customer with higher levels of operational efficiency and highly reliable systems: <a href="http://www.hp.com/go/foundation">www.hp.com/go/foundation</a> .  The foundation pack includes: <ul style="list-style-type: none"><li>● HP SmartStart</li><li>● HP Management</li><li>● HP ProLiant Firmware Maintenance</li></ul> SmartStart version supported (minimum): SmartStart 7.91. <a href="http://www.hp.com/servers/smartstart">http://www.hp.com/servers/smartstart</a>
	ProLiant Onboard Administrator	HP ProLiant Onboard Administrator (powered by the HP Integrated Lights-Out 2 management processor) simplifies server setup, health monitoring, power and thermal control, and lights-out remote administration of ProLiant ML, DL, and BL servers. HP ProLiant Onboard Administrator functions

### Standard Features

	<p>without additional software, and can be accessed from any location via a web browser. It works hand-in-hand with HP Systems Insight Manager, Insight Control suites, and the Insight Dynamics for ProLiant helping customers unlock the value of the ProLiant platform and deliver the highest possible quality of IT service to the business. See <a href="http://www.hp.com/go/ProLiantOA">www.hp.com/go/ProLiantOA</a></p>
HP Insight Control	<p>HP Insight Control, a product option, delivers essential infrastructure management that can help save time and money by making it easy to deploy, migrate, monitor, remote control, and optimize your IT infrastructure through a single, simple management console.</p> <p>Two versions of Insight Control are available, to serve environments requiring either a Linux-based or a Windows-based central management server: HP Insight Control for Linux, and HP Insight Control. See <a href="http://www.hp.com/go/insightcontrol">www.hp.com/go/insightcontrol</a></p>
HP Insight Dynamics for ProLiant	<p>HP Insight Control 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: <a href="http://www.hp.com/services/insight">http://www.hp.com/services/insight</a>.</p> <p>HP Insight Dynamics for ProLiant, a product option, is an integrated command center that enables IT Staff personnel to continuously analyze and optimize a converged infrastructure, while automating and reducing the cost of common data center tasks by as much as 40 percent. As a powerfully integrated by design toolkit to accelerate complex technology projects and simplify daily operations that ultimately enable IT Staff personnel to dynamically keep pace with the organizations changing business requirements. It enables them to plan capacity and power continuously, balance across physical and virtual resources, and ensure cost-effective high availability. It also enables IT organizations to provision infrastructure consistently and automatically from pools of shared resources using a self-service portal. Resources provisioned can range from a single virtual machine to complex multi-tier environments and their associated physical and virtual resource requirements. In addition to the previous functional benefits, it also provides a cost-effective disaster recovery for physical and virtual environments that works with HP StorageWorks Continuous Access software for both the Enterprise Virtual Array and the XP storage array allowing application environments to be reactivated in minutes with the touch of a button to a remote location.</p> <p><b>NOTE:</b> For more information, visit: <a href="http://www.hp.com/go/insightdynamics">http://www.hp.com/go/insightdynamics</a></p>



### Standard Features

Industry Standard Compliance	ACPI 2.0. Compliant
	PCIe 1.0a Compliant
	PXE Support
	WOL Support
	Physical Address Extension (PAE) Support
	Microsoft® Logo certifications
	USB 2.0 Support

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Intelligent Manageability	HP Systems Insight Manager
	SmartStart
	Redundant ROM
	Remote Flash ROM
	Management Agents
	Integrated Management Log (IML)
	Automatic Server Recovery-2 (ASR-2)
	ROM-Based Setup Utility (RBSU)
	Dynamic Sector Repairing (with Smart Array Controllers)
	Drive Parameter Tracking (with Smart Array Controllers)
	Pre-Failure Warranty (covers processors, SAS hard drives and memory)
	Redundant/adaptive load balancing NIC Support
	Hot Spare Boot
<b>NOTE:</b> Upon the event of a failed processor or Processor Power Module (PPM) in a multi-processing environment, the system will automatically reboot and use the remaining good processor(s).	

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### Availability

**HP Advanced Memory Protection Technology** - delivers unsurpassed memory protection and server availability with the following supported modes of operation:

- **Advanced ECC**

Advanced ECC Memory is the default memory protection mode for the HP ProLiant DL580 G5. In Advanced ECC, the server is protected against correctable memory errors. The server will provide notification if the level of correctable errors exceeds a predefined threshold rate. The server does not fail because of correctable memory errors.

Advanced ECC provides additional protection over Standard ECC in that it is possible to correct certain memory errors that would otherwise be uncorrectable and result in server failure. Whereas Standard ECC can correct single-bit memory errors, Advanced ECC can correct single-bit and multi-bit memory errors if all failed bits are on the same DRAM device on the DIMM.
- **Online Spare Memory**

Offers a higher level of memory protection than Advanced ECC alone. If the number of single-bit correctable errors on a bank exceeds the pre-defined error threshold, that bank will fail over to the online spare bank without intervention or server interruption. The failed memory can then be replaced at the user's convenience during a scheduled maintenance window.

Online Spare Memory is achieved by protecting active memory with online spare memory on the same memory board. No operating system support is required.
- **Mirrored Memory**

Mirrored Memory provides a higher level of availability than Advanced ECC and Online Spare Memory. With Mirrored Memory, the server is protected against uncorrectable memory errors that would otherwise result in server failure. Mirrored Memory allows the server to keep two copies of all memory data. If an uncorrectable error is encountered, the proper data is retrieved from the

### Standard Features

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copy of memory that did not fail.

- Smart Array P400i Controller with optional Battery Backed Write Cache (BBWC) Enabler provides transportable data protection and increases overall controller performance. Up to 512MB Battery Backed Write Cache protection optional on HP ProLiant DL580 G5 (512MB BBWC ships standard with 4P Base Models).
  - Hot Plug Redundant Fans - Six Hot Plug Redundant Fans ship standard with all models.
  - Front Accessible Chassis - Redesigned chassis allows access to memory, processors and hard drives from the front of the server while it remains safely engaged in the rack. This provides easier serviceability and lowers the chance of interfering with neighboring servers' cables and components.
  - Hot Plug Universal Drives - Up to sixteen Hot Plug Universal SFF SAS drives are supported.
  - Hot Plug Redundant Power Supplies - Four Hot Plug Redundant Power Supplies ship standard with all 4P Base Models (Hot Plug Redundant Power Supplies are optional with 2P Base models).
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### Serviceability

- Front and Rear accessibility provides unsurpassed serviceability by allowing the server to remain safely secured in the rack while maintaining Hot Plug Universal Hard Drives, Hot Plug Redundant Power Supplies, Memory, as well as Processors and Processor Power Modules.
  - Innovative Diagnostic Lighting
  - Systems Insight Display - precisely depicts all major subsystems of the server (Processors, Memory, CPU, Fans, Processor Power Modules (PPMs), circuit board Interlock, over-temperature status) and gives instant visual indication of fault status.
  - Tool-less interior design
    - Tool-less access to interior of server
    - Rear Access to Hot Plug Redundant Power Supplies
    - PCI Card Guides locks full length PCI cards in place
    - Six individually removable fans connect without cables to the system board
    - Processor Retention Cage securely locks Processors into their sockets
    - Tool-less removal of system board
  - Quick Deploy Rails
    - Tool-less design "snap in" rail and ambidextrous cable management arm
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### Security

Power-on password  
Keyboard password  
External USB port enable/disable  
Network Server Mode  
Serial interface control  
Administrator's password  
Removable CD-ROM or DVD drive

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### Server Power Cords

**NOTE:** Please see the following power cord matrix for details: <http://www.hp.com/go/powercordmatrix>

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### Standard Features

#### Power Supply

800/1200W AC Power Supply

**NOTE:** Two Hot Plug Power Supplies ships standard with 2P Base Models (optional Redundant Hot Plug Power Supply Option Kit). Four Hot Plug Power Supplies ship standard with 4P Base Models. Configurations with 3 or 4 processors that will use lowline (110V) input power require four Hot Plug Power Supplies.

Power Supply Requirement Override

**NOTE:** Customers unable to support four power supply configurations may be power redundant with two power supplies. HP has implemented a selection in ROM set up (RBSU) that lets the customer that has verified their two supply configuration is redundant with the Active Answers Power Calculator the option to override the four power supply redundancy enforced rules. The Active Answers Power Calculator is available via the online tool located at URL:

<http://h30099.www3.hp.com/configurator/calc/Power%20Calculator%20Catalog.xls>

#### UPS and PDU Power Cord Matrix

Please see the UPS and PDU cable matrix's on the HP Power Protection and Management page. Under Power Cords, click on the "HP Power Cord Matrix" link. That link will list cable descriptions, requirements, and specifications for UPS and PDU units. Please see the following link:

[www.hp.com/products/powercords](http://www.hp.com/products/powercords).

#### System Fans

6 Hot plug, redundant fans (individually removable) ship standard

#### Required Cabling

For required cabling information, refer to the HP Web site at: [www.hp.com/servers/dl580](http://www.hp.com/servers/dl580).

#### Operating Systems and Virtualization Software Support for ProLiant Servers

[Microsoft Windows Server](#)

[Microsoft Windows Server Hyper V](#)

[Red Hat Enterprise Linux \(RHEL\)](#)

[SUSE Linux Enterprise Server \(SLES\)](#)

[Oracle Enterprise Linux \(OEL\)](#)

[NetWare](#)

[VMware](#)

[Citrix Essentials for XenServer](#)

**NOTE:** 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: <http://www.hp.com/go/ossupport> and our driver download page [www.hp.com/support/DL580G5](http://www.hp.com/support/DL580G5).

### 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 holes 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.

**NOTE:** For additional information, refer to the Setup and Installation Guide or the Documentation CD provided with the server, or to the server documentation located in the Support section at the following URL: <http://www.hp.com/servers/dl580>.

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#### Rack Kit

Quick deploy rail system provides tool-free support for racks with square or round mounting holes (including Compaq/HP 7000, 9000, 10000 G2 and HP series), with an adjustment range of 24" - 36". The ambidextrous cable management arm can be mounted on either the left or right side for improved cable management.

**NOTE:** Cable management arm must be removed to access Hot Plug Power Supplies when the cable management arm is mounted on the right.

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#### Telco Rack Support

Support for all 2-post Telco racks requires the use of the standard rack kit and an additional option kit from Rack Solutions at: <http://www.hp.com/go/rackandpower>.

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#### Factory Express Portfolio for Servers and Storage

HP Factory Express offers configuration, customization, integration and deployment services for HP servers and 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>.

### Standard Features

#### HP Enterprise Configurator

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

#### Service and Support

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

HP Care Pack services include coverage for the HP branded hardware options qualified for the server and purchased at the same time or afterward that are internal to the enclosure. This 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 capitalizing 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 your 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: 3-Year 4-Hour response 24x7 Same Business Day Coverage only
- Deployment Service: Installation and Start up only

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

- Support: 3-Year Support Plus 24 only

Refer to the information on "Installation & Start-Up" for service on 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, excluding HP holidays.

**NOTE:** For a complete listing of service offerings and information visit:

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

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

### Solutions

#### Solutions

The ProLiant DL580 G5 server is an enterprise class, 4 socket server designed for maximum scalability and high availability. Its innovative chassis offers unsurpassed flexibility and serviceability in a versatile form factor. Based upon the latest industry standard processing, memory, I/O and networking technologies, the ProLiant DL580 G5 provides the highest levels of performance demanded by today's compute intensive applications. Unparalleled high availability features, including hot-plug and redundant components, guarantee maximum uptime. Integrated Lights-Out 2 (iLO2) technology allows remote administration from a standard web browser without ever having to visit the server. Within the 4U dense form factor, it's highly expandable architecture provides maximum application deployment flexibility with the ability to add PCI-Express, PCI-X or battery-backed write cache options. Innovative features, such as the ability to access processors, memory, hard drives, and power supplies while the unit remains secured in the rack, enable rapid response to service events, radically decreasing overall IT costs and server downtime.

#### Typical Usage:

##### Space-constrained corporate data centers and service providers

- With up to 4 TB of internal storage, 32 DIMM sockets and PCI-Express or PCI-X options; the HP ProLiant DL580 G5 packs the storage, memory, and I/O you need in a versatile, 4U chassis
- Ambidextrous cable management and a quick deploy rail solution make racking a snap
- Availability features including hot plug redundant power, hot plug redundant fans, and hot plug RAID hard drives keep environments up and running and users productive

##### Database, Messaging and Business Applications

- The latest Intel® Xeon® processors with FBDIMMs and large internal storage capacity provide scalability for everything from web apps to mail servers to databases
- Eight standard PCI-Express slots and the ability to add either three additional x8 PCI Express or three PCI-X slots, provide powerful and flexible I/O alternatives
- Two integrated multi-function gigabit NICs give you the connectivity and bandwidth needed in today's database or business applications environments
- Easily attach to SAN or NAS and manage from one location

##### Server Consolidation

- Scalability, availability and built-in serviceability make the HP ProLiant DL580 G5 the perfect platform for server consolidation solutions
- The ProLiant HP DL580 G5 and ProLiant Essentials make it easy to deploy, manage, and migrate virtualized servers with VMware or Microsoft Virtual Server
- Integrated Lights-Out 2 enables administrators to manage the HP ProLiant DL580 G5 from remote locations

For more solutions visit: <http://www.hp.com/solutions/proliantdl580>.

### Models

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

<p><b>HP DL580 G5 High Performance Models</b></p> <p><b>HP DL580 G5 X7460 16GB 4P</b> 487362-001</p> <p><b>HP DL580 G5 E7450 8GB 4P</b> 487363-001</p> <p><b>HP DL580 G5 E7440 8GB 4P</b> 487364-001</p> <p><b>HP DL580 G5 X7350 8GB 4P</b> 451993-001</p> <p><b>HP DL580 G5 E7340 8GB 4P</b> 438084-001</p>	<p><b>Processor(s)</b> Four of the following depending on model</p> <p>(4) 6-Core Intel® Xeon® X7460 Processor (2.67GHz, 16MB L3 cache, 130 Watts) (4) 6-Core Intel® Xeon® E7450 Processor (2.40GHz, 12MB L3 cache, 90 Watts) (4) 4-Core Intel® Xeon® E7440 Processor (2.40GHz, 16MB L3 cache, 90 Watts) (4) Quad-Core Intel® Xeon® X7350 Processor (2.93GHz, 2x4M cache, 130Watts) (4) Quad-Core Intel® Xeon® E7340 Processor (2.40GHz, 2x4M cache, 80 Watts)</p> <p><b>Memory</b> X7460 models: 16 GB PC2-5300 Fully Buffered DIMMs (DDR2-667) All others: 8 GB PC2-5300 Fully Buffered DIMMs (DDR2-667) <b>NOTE:</b> Memory expansion boards option required to configure up to 256 GB using 8 GB DIMMs</p> <p><b>Network Controller</b> Two embedded NC373i Multifunction Gigabit Server Adapters</p> <p><b>Storage Controller</b> HP Smart Array P400i/512 MB BBWC Controller</p> <p><b>Manageability</b> HP ProLiant Onboard Administrator (powered by the Integrated Lights-Out 2 management processor: Integrated on system board)</p> <p><b>Hard Drives</b> None ship standard</p> <p><b>Internal Storage</b> 8TB max (with optional 500GB SFF SATA hot-plug hard drives)</p> <p><b>Power Supplies</b> Four Power Supplies standard (third and fourth power supplies for redundancy)</p> <p><b>Optical Drive</b> Slimline DVD</p> <p><b>Form Factor</b> Rack 4U</p>
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<p><b>HP DL580 G5 Base Models</b></p> <p><b>HP DL580 G5 E7430 4GB 2P</b> 487365-001</p> <p><b>HP DL580 G5 E7420 4GB 2P</b> 487366-001</p> <p><b>HP DL580 G5 E7330 4GB 2P</b> 438087-001</p> <p><b>HP DL580 G5 E7320 4GB 2P</b> 438088-001</p> <p><b>HP DL580 G5 E7310 4GB 2P</b> 438089-001</p>	<p><b>Processor(s)</b> Two of the following depending on model Up to 4 supported</p> <p>(2) 4-Core Intel® Xeon® E7430 Processor (2.13GHz, 12MB L3 cache, 90 Watts) (2) 4-Core Intel® Xeon® E7420 Processor (2.13GHz, 8MB L3 cache, 90 Watts) (2) Quad-Core Intel® Xeon® E7330 Processor (2.4 GHz, 2x3M cache, 80 Watts) (2) Quad-Core Intel® Xeon® E7320 Processor (2.13 GHz, 2x2M cache, 80 Watts) (2) Quad-Core Intel® Xeon® E7310 Processor (1.6 GHz, 2x2M cache, 80 Watts)</p> <p><b>Memory</b> 4 GB PC2-5300 Fully Buffered DIMMs (DDR2-667) (Standard) to 256 GB (Maximum) <b>NOTE:</b> Memory expansion boards option would be required to configure up to 256 GB using 8 GB DIMMs</p> <p><b>Network Controller</b> Two embedded NC373i Multifunction Gigabit Server Adapters</p> <p><b>Storage Controller</b> HP Smart Array P400i/256 MB Controller</p> <p><b>Manageability</b> HP ProLiant Onboard Administrator (powered by the Integrated Lights-Out 2 management processor: Integrated on system board)</p> <p><b>Hard Drives</b> None ship standard</p>
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### Models

<b>Internal Storage</b>	Up to sixteen (16) small form factor SAS/SATA hot-plug hard drive bays
<b>Power Supplies</b>	Two power supplies standard (third and fourth power supplies optional for redundancy)
<b>Optical Drive</b>	Slimline DVD
<b>Form Factor</b>	Rack 4U



### 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 only available as a Factory Installable Option.

### Step 1: Base Configuration

Models	HP ProLiant DL580 G5 highly serviceable rack chassis <b>NOTE:</b> 487381-B21 is for use when configuring the DL580 with 7400 series processors.	487381-B21
	HP ProLiant DL580 G5 highly serviceable rack chassis <b>NOTE:</b> 452291-B21 is for use when configuring the DL580 with 7300 or 7200 series processors.	452291-B21
	HP ProLiant DL580 G5 highly serviceable tower chassis <b>NOTE:</b> 456521-B21 may be configured with any supported processor.	456521-B21
	<b>Factory Integrated Model ships with:</b> Two embedded NC373i Multifunction Gigabit Server Adapters Eight standard PCI-express slots HP Smart Array P400i Controller Two hot-plug power supplies with two high-line IEC power cords Six (6) redundant hot-plug fans SFF SAS/SATA drive cage HP ProLiant Onboard Administrator (powered by the Integrated Lights-Out 2 management processor: integrated on system board) tower or rack (4U), 7-inch	

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

Processors	HP DL580G5 X7460 6-core 2.67GHz 16MB kit, FIO	487373-L21
	HP DL580G5 L7455 6-core 2.13GHz 12MB kit, FIO	506157-L21
	HP DL580G5 E7450 6-core 2.40GHz 12MB kit, FIO	487375-L21
	HP DL580G5 E7440 4-core 2.40GHz 16MB kit, FIO	487377-L21
	HP DL580G5 E7430 4-core 2.13GHz 12MB kit, FIO	487378-L21
	HP DL580G5 E7420 4-core 2.13GHz 8MB kit, FIO	487380-L21
	HP DL580G5 2.93 2x4M QC X7350 kit, FIO	451999-L21
	HP DL580G5 2.4 2x4M QC E7340 kit, FIO	438090-L21
	HP DL580G5 2.4 2x3M QC E7330 kit, FIO	438091-L21
	HP DL580G5 2.13 2x2M QC E7320 kit, FIO	438092-L21
	HP DL580G5 1.6 2x2M QC E7310 kit, FIO	438093-L21
	HP DL580G5 1.86 2x4M QC 50W L7345 kit, FIO	438100-L21
	Dual-Core HP DL580G5 2.93 2x4M 80W E7220 kit, FIO	438101-L21
Base Memory	2 GB FBD PC2-5300 2 x 1 GB dual rank kit	397411-B21



### Configuration Information - Factory Integrated Models

2 GB FBD PC2-5300 2 x 1 GB low power single rank kit	461826-B21
4 GB FBD PC2-5300 2 x 2 GB dual rank kit	397413-B21
4 GB FBD PC2-5300 2 x 2 GB low power dual rank kit	461828-B21
8 GB FBD PC2-5300 2 x 4 GB dual rank kit	397415-B21
8 GB FBD PC2-5300 2 x 4 GB low power dual rank kit	466440-B21
16 GB FBD PC2-5300 2 x 8 GB dual rank kit	413015-B21
64 GB FBD PC2-5300 8 x 8 GB dual rank kit	495604-B21

**NOTE:** Memory Option Kits include Low Power DIMMs. For more information on ProLiant Energy Efficient Features, please visit: <http://h18004.www1.hp.com/products/servers/platforms/energyefficient/>.

Storage Controllers	512MB Battery-backed write cache upgrade	405148-B21
	HP Smart Array P400 256MB FIO cache	405139-B21
	<b>NOTE:</b> Supports Smart Array P400 Controller and Smart Array P400i Controller only.	

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

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

### Core Options

**NOTE:** Some options may not be integrated at the factory. Contact your local sales representative for additional information.

Unique Options	DL580 G5 tower kit	453744-B21
	DL580 G5 SAS SFF 8-bay drive cage option	452180-B21
	<b>NOTE:</b> This option provides an additional 8 SFF drives for the DL580G5. This option requires an additional storage controller.	
	PCI Express x8 3-slot option card	452181-B21
	<b>NOTE:</b> Adds three PCI Express (X8) I/O slots.	
	PCI-X 3-slot option card	452182-B21
	<b>NOTE:</b> Adds three PCI-X I/O slots (2 64bit 100MHz slots, and 1 64bit 133MHz slot)	
	DL580 G5 Memory expansion boards option	452179-B21
	<b>NOTE:</b> This option consists of 4 memory expansion boards with 4 DIMM sockets each for a total of 16 additional DIMM sockets. This brings the DL580G5 to a total of 32 DIMM sockets.	

### Processors

#### 6-Core Processors

Intel® Xeon® X7460 processor (6-core, 2.67GHz, 16MB L3 cache, 130 watts)	487373-B21
Intel® Xeon® L7455 processor (6-core, 2.13GHz, 12MB L3 cache, 65 watts)	506157-B21
Intel® Xeon® E7450 processor (6-core, 2.40GHz, 12MB L3 cache, 90 watts)	487375-B21

#### Quad-Core Processors

Intel® Xeon® E7440 processor (4-core, 2.40GHz, 16MB L3 cache, 90 watts)	487377-B21
Intel® Xeon® E7430 processor (4-core, 2.13GHz, 12MB L3 cache, 90 watts)	487378-B21
Intel® Xeon® E7420 processor (4-core, 2.13GHz, 8MB L3 cache, 90 watts)	487380-B21
Quad-Core Intel® Xeon® X7350 processor (2.93 GHz, 2x4M cache, 130 watts)	451999-B21
Quad-Core Intel® Xeon® E7340 processor (2.40 GHz, 2x4M cache, 80 watts)	438090-B21
Quad-Core Intel® Xeon® E7330 processor (2.40 GHz, 2x3M cache, 80 watts)	438091-B21
Quad-Core Intel® Xeon® E7320 processor (2.13 GHz, 2x2M cache, 80 watts)	438092-B21
Quad-Core Intel® Xeon® E7310 processor (1.60 GHz, 2x2M cache, 80 watts)	438093-B21
Quad-Core Intel® Xeon® L7345 processor (1.86 GHz, 2x4M cache, 50 watts)	438100-B21

#### Dual-Core Processors

Dual-Core Intel® Xeon® E7220 processor (2.93 GHz, 2x4M cache, 80 watts)	438101-B21
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### Core Options

Memory	2 GB FBD PC2-5300 2 x 1 GB dual rank kit	397411-B21
	2 GB FBD PC2-5300 2 x 1 GB low power single rank kit	461826-B21
	4 GB FBD PC2-5300 2 x 2 GB dual rank kit	397413-B21
	4 GB FBD PC2-5300 2 x 2 GB low power dual rank kit	461828-B21
	8 GB FBD PC2-5300 2 x 4 GB dual rank kit	397415-B21
	8 GB FBD PC2-5300 2 x 4 GB low power dual rank kit	466440-B21
	16 GB FBD PC2-5300 2 x 8 GB dual rank kit	413015-B21
	64 GB FBD PC2-5300 8 x 8 GB dual rank kit	495604-B21
	DL580 G5 memory expansion boards option	452179-B21
	<p><b>NOTE:</b> This option consists of 4 memory expansion boards with 4 DIMM sockets each for a total of 16 additional DIMM sockets. This brings the DL580G5 to a total of 32 DIMM sockets.</p> <p><b>NOTE:</b> Memory Option Kits include Low Power DIMMs. For more information on ProLiant Energy Efficient Features, please visit: <a href="http://h18004.www1.hp.com/products/servers/platforms/energyefficient/">http://h18004.www1.hp.com/products/servers/platforms/energyefficient/</a>.</p>	

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Optical Drives	Slimline DVD-ROM Drive (8X/24X) Option Kit (Servers)	264007-B21
	<b>NOTE:</b> For models equipped with 7200 and 7300-series CPUs.	
	HP DVD±R/RW 8X Slim	383975-B21
	<b>NOTE:</b> For models equipped with 7200 and 7300-series CPUs.	
	HP Slim SATA DVD-ROM Optical Drive	481041-B21
	<b>NOTE:</b> For models equipped with 7400-series CPUs.	
	HP Slim SATA DVD RW Optical Drive	481043-B21
	<b>NOTE:</b> For models equipped with 7400-series CPUs.	

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Hard Drives	<p><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.</p> <p><b>NOTE:</b> Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.</p>	
	<b>SAS Hot Plug SFF Enterprise (ENT) Drives</b>	
	HP 300GB 6G SAS 10K SFF DP ENT HDD	507127-B21
	HP 300GB 3G SAS 10K SFF DP ENT HDD	492620-B21
	HP 146GB 6G SAS 15K SFF DP ENT HDD	512547-B21
	HP 146GB 6G SAS 10K SFF DP ENT HDD	507125-B21
	HP 146GB 3G SAS 15K SFF DP ENT HDD	504062-B21
	HP 146GB 3G SAS 10K SFF DP ENT HDD	418367-B21
	HP 72GB 6G SAS 15K SFF DP ENT HDD	512545-B21
	HP 72GB 3G SAS 15K SFF DP ENT HDD	418371-B21
	HP 72GB 3G SAS 10K SFF DP ENT HDD	384842-B21
	<b>SAS Hot Plug SFF Midline (MDL) Drives</b>	
	HP 500GB 6G SAS 7.2K SFF DP MDL HDD	507610-B21

### Core Options

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

[http://h18004.www1.hp.com/products/quickspecs/12244\\_na/12244\\_na.html](http://h18004.www1.hp.com/products/quickspecs/12244_na/12244_na.html)

#### SATA Hot Plug SFF Midline (MDL) Drives

HP 500GB 3G SATA 7.2K 2.5in MDL HDD 507750-B21

HP 160GB 3G SATA 7.2K 2.5in MDL HDD 530888-B21

#### SATA Hot Plug SFF Entry (ETY) Drives

HP 250GB 3G SATA 5.4K SFF ETY HDD 460355-B21

HP 120GB 1.5G SATA 5.4K SFF ETY HDD 458924-B21

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

HP 60GB 3G SATA 2.5in MDL 1y Wty SSD 572071-B21

HP 120GB 3G SATA 2.5in MDL 1y Wty SSD 572073-B21

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

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

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### Communications

#### 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

**NOTE:** There is a maximum of five NC364T PCI Express Quad Port Gigabit Server Adapter NICs allowed in this server.

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 gigabyte (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)

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### Power Supplies

800/1200W AC Power Supply 437572-B21

HP 1200W-48V DC Common Slot Power Supply 437573-B21

**NOTE:** DC power supplies contain a -48V DC power cord designed for in rack DC power rectifiers.

**NOTE:** Two Hot Plug Power Supplies needed for standard operation. Four Hot Plug Power Supplies needed to add redundancy. Configurations with 3 or 4 processors that will use lowline (110V) input power require four Hot Plug Power Supplies.

### Additional Options

#### HP Insight Software

##### HP Insight Control server deployment

HP Insight Control server deployment, Electronic License including 1 year of 24x7 Technical Support and Updates

T9082AAE

**NOTE:** Electronic and Flexible-Quantity licenses can be used to purchase multiple licenses with a single activation key.

**NOTE:** Electronic software is available in all countries except China and Japan. Customers in China and Japan should order the physical equivalent.

**NOTE:** Customer will receive a license entitlement certificate. 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.

**NOTE:** Licenses ship without media. The HP Insight Control Media Kit can be ordered separately, or can be downloaded at: <http://www.hp.com/go/insightupdates>.

**NOTE:** For additional license options please see the Insight Control QuickSpecs at: [http://h18000.www1.hp.com/products/quickspecs/12631\\_na/12631\\_na.html](http://h18000.www1.hp.com/products/quickspecs/12631_na/12631_na.html)

##### HP Insight Control for Linux

HP Insight Control for Linux, 1-server license, including one year of 24x7 Technical Support and Updates, Electronic

T9084BAE

HP Insight Control for Linux, No Media, 1-Server license, including one year of 24x7 Technical Support and Updates

464423-B22

HP Insight Control for Linux, Media pack (DVD) - No licenses included

464422-B22

**NOTE:** 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.

**NOTE:** Licenses ship without media. The HP Insight Control Media Kit can be ordered separately, or can be downloaded at: <http://www.hp.com/go/insightupdates>.

**NOTE:** Electronic software is available in all countries except China and Japan. Customers in China and Japan should order the physical equivalent.

**NOTE:** Electronic and Flexible-Quantity licenses can be used to purchase multiple licenses with a single set of activation keys.

**NOTE:** For additional License Kits, including electronic licensing options, please see the QuickSpecs at:

[http://h18000.www1.hp.com/products/quickspecs/13019\\_na/13019\\_na.html](http://h18000.www1.hp.com/products/quickspecs/13019_na/13019_na.html)

##### HP Integrated Lights-Out Advanced

HP Integrated Lights-Out Advanced, No Media, 1-Server License, including 1 year of 24x7 Technical Support and Updates

512485-B21

**NOTE:** This license allows 1 server to be deployed and managed via HP iLO Advanced. 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 Service

**NOTE:** For additional license kits, including electronic delivery options, please see the QuickSpecs at:

[http://h18000.www1.hp.com/products/quickspecs/12362\\_na/12362\\_na.html](http://h18000.www1.hp.com/products/quickspecs/12362_na/12362_na.html)

##### HP Insight Rapid Deployment software

HP Insight Rapid Deployment software No Media 1-Server License, including 1 year of 24x7 Technical Support and Updates

452151-B21

### Additional Options

**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 Service

**NOTE:** For additional license kits, including electronic delivery options, please see the QuickSpecs at:  
[http://h18000.www1.hp.com/products/quickspecs/11053\\_na/11053\\_na.html](http://h18000.www1.hp.com/products/quickspecs/11053_na/11053_na.html)

#### Storage Controllers

##### SAS Controllers

###### Smart Array E200 Controller

HP Smart Array E200/128 BBWC Controller 411508-B21

###### Smart Array E500 Controller

HP Smart Array E500/256MB Controller 435129-B21

###### Smart Array P400 Controller

HP Smart Array P400/256MB Controller 405132-B21

HP Smart Array P400/512MB BBWC Controller 411064-B21

###### Smart Array P600 Controller

HP Smart Array P600/256 BBWC Controller 337972-B21

###### Smart Array P800 Controller

HP Smart Array P800/512 BBWC Controller 381513-B21

###### Smart Array P212 Controller

HP Smart Array P212/Zero Memory Controller 462828-B21

HP Smart Array P212/256 MB Controller 462834-B21

###### Smart Array P410 Controller

HP Smart Array P410/256 MB Controller 462862-B21

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

###### Smart Array P411 Controller

HP Smart Array P411/256 MB Controller 462830-B21

HP Smart Array P411/512 MB with BBWC Controller 462832-B21

##### Optional Upgrades

128MB Battery-Backed Write Cache 351580-B21

**NOTE:** Supports the Smart Array E200 Controller and Smart Array 642 Controller.

HP SA-P400 and SA-E500 24 In Battery Cable Kit 417836-B21

**NOTE:** 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 or if the BBWC is not pre-installed from the factory. For all solutions, please refer to the server QuickSpecs and User's Manual for detailed installation instructions.

512MB Battery-backed write cache upgrade 405148-B21

**NOTE:** For Smart Array P400 Controller only.

Battery-backed write cache upgrade 383280-B21

**NOTE:** For Smart Array P400 Controller only.

256 MB Cache Module 462968-B21

**NOTE:** Supported on HP Smart Array P212 Controller only.

### Additional Options

512MB BBWC	462967-B21
<b>NOTE:</b> Supported on HP Smart Array P410 Controller and HP Smart Array P411 Controller only.	
HP Smart Array Advanced Pack No Media 1-Server license including 1yr 24x7 Technical Support	516471-B21
<b>NOTE:</b> This part number can be used to purchase a single license or to order multiple licenses with a single activation key. Customers will receive a license entitlement certificate via e-mail. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Include one year of 24x7 HP Software Technical Support Services.	
<b>NOTE:</b> Please see the QuickSpecs for Technical Specifications and additional information:	
<a href="http://h18000.www1.hp.com/products/quickspecs/12460_na/12460_na.html">http://h18000.www1.hp.com/products/quickspecs/12460_na/12460_na.html</a> (Smart Array E200 Controller)	
<a href="http://h18000.www1.hp.com/products/quickspecs/12700_na/12700_na.html">http://h18000.www1.hp.com/products/quickspecs/12700_na/12700_na.html</a> (Smart Array E500 Controller)	
<a href="http://h18000.www1.hp.com/products/quickspecs/12400_na/12400_na.html">http://h18000.www1.hp.com/products/quickspecs/12400_na/12400_na.html</a> (Smart Array P400 Controller)	
<a href="http://h18000.www1.hp.com/products/quickspecs/12247_na/12247_na.html">http://h18000.www1.hp.com/products/quickspecs/12247_na/12247_na.html</a> (Smart Array P600 Controller)	
<a href="http://h18000.www1.hp.com/products/quickspecs/12616_na/12616_na.html">http://h18000.www1.hp.com/products/quickspecs/12616_na/12616_na.html</a> (Smart Array P800 Controller)	
<a href="http://h18000.www1.hp.com/products/quickspecs/13203_na/13203_na.html">http://h18000.www1.hp.com/products/quickspecs/13203_na/13203_na.html</a> (Smart Array P212 Controller)	
<a href="http://h18000.www1.hp.com/products/quickspecs/13201_na/13201_na.html">http://h18000.www1.hp.com/products/quickspecs/13201_na/13201_na.html</a> (Smart Array P410 Controller)	
<a href="http://h18000.www1.hp.com/products/quickspecs/13202_na/13202_na.html">http://h18000.www1.hp.com/products/quickspecs/13202_na/13202_na.html</a> (Smart Array P411 Controller)	
<a href="http://h18000.www1.hp.com/products/quickspecs/13200_na/13200_na.html">http://h18000.www1.hp.com/products/quickspecs/13200_na/13200_na.html</a> (Smart Array Advanced Pack)	
<b>SAS Controller Options</b>	
HP SAS Expander Card	468406-B21
<b>NOTE:</b> Please see the QuickSpecs for Technical Specifications and additional information:	
<a href="http://h18004.www1.hp.com/products/quickspecs/13232_na/13232_na.html">http://h18004.www1.hp.com/products/quickspecs/13232_na/13232_na.html</a> (SAS Expander Card)	
<b>SAS HBA</b>	
HP SC08Ge Host Bus Adapter	488765-B21
HP SC44Ge Host Bus Adapter	416096-B21
<b>NOTE:</b> When using the SC44Ge with SATA hard drives, 1.5G SATA models are required.	
HP 8 Internal Port SAS HBA with RAID	347786-B21
<b>NOTE:</b> When using the 8 Internal Port SAS HBA with SATA hard drives, 1.5G SATA models are required.	
<b>NOTE:</b> Please see the QuickSpecs for Technical Specifications and additional information: <a href="http://www.hp.com/products/hba">www.hp.com/products/hba</a>	
<b>SCSI Controllers for External Drive/Storage Support</b>	
Smart Array 6404/256 Controller	273914-B21



### Additional Options

128-MB BBWC (Battery-Backed Write Cache) Enabler	351580-B21
<b>NOTE:</b> Supports the Smart Array 641, and Smart Array 642 Controller.	
64-Bit/133-MHz Single Channel Ultra320 SCSI HBA G2	374654-B21
<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://www.hp.com/products/smartarray">www.hp.com/products/smartarray</a>	

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Power Cords	HP DL585G5 C19-C14 PWRCRD 10FT Kit	313228-B21
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HPC Specific Options	HP IB 4X DDR Conn-X PCI-e Dual Port HCA	448397-B21
	HP IB 4X DDR PCI-e DUAL PORT 0 mem HCA	483513-B21
<b>NOTE:</b> Please see the QuickSpecs for additional information: <a href="http://h18000.www1.hp.com/products/quickspecs/13078_na/13078_na.html">http://h18000.www1.hp.com/products/quickspecs/13078_na/13078_na.html</a>		

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### Tape Storage

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

#### Tape Drives

DAT 320 USB External Tape Drive	AJ823A
HP DAT 320 USB Internal Tape Drive	AJ825A

#### SAS Tape Drives

**NOTE:** For the DL580 G5, HP recommends purchasing the HP SC44Ge HBA (416096-B21) for a dedicated SAS HBA for tape.

DAT 320 WW SAS External Tape Drive	AJ828A
HP DAT 320 SAS Internal Tape Drive	AJ830A
HP StorageWorks LTO-2 Ultrium 448 SAS Internal Tape Drive	DW085A
HP StorageWorks LTO-3 Ultrium 920 SAS Internal Tape Drive	EH847A
HP StorageWorks LTO-4 Ultrium 1760 SAS Internal Tape Drive	EH919A

**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.

**NOTE:** 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>.

#### 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 Tape Autoloader	AH558A
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 reference the Tape Autoloader QuickSpecs at:  
<http://www.hp.com/go/automation> for additional information needed to create a complete solution.

#### HP StorageWorks MSL2024 Tape Library

### Additional Options

HP StorageWorks MSL2024 1 LTO-4 Ultrium 1760 SAS Drive Library	AK378A
HP StorageWorks MSL2024 1 LTO-3 Ultrium 920 SAS Drive Library	AH559A
<b>HP StorageWorks MSL4048 Tape Library</b>	
HP StorageWorks MSL4048 2 LTO-4 Ultrium 1760 SAS Drive Library	AK380A
HP StorageWorks MSL4048 1 LTO-3 Ultrium 920 SAS Drive Library	AH560A
<b>NOTE:</b> Please reference the MSL Tape Library QuickSpecs at: <a href="http://www.hp.com/go/automation">http://www.hp.com/go/automation</a> for additional information needed to create a complete solution; reference current compatibility information at: <a href="http://www.hp.com/go/ebs">http://www.hp.com/go/ebs</a> .	

### Disk-Based Backup

#### RDX Removable Disk Backup

HP StorageWorks RDX500 Internal Removable Disk Backup System	AJ934A
<b>NOTE:</b> 500GB of Disk Storage.	
<b>NOTE:</b> Please see the HP RDX Removable Disk Backup System QuickSpecs for additional information: <a href="http://h18000.www1.hp.com/products/quickspecs/13036_na/13036_na.html">http://h18000.www1.hp.com/products/quickspecs/13036_na/13036_na.html</a>	

#### D2D Backup

HP StorageWorks D2D2502i Backup System	EJ001A
<b>NOTE:</b> 2 TB raw capacity/1.5 TB useable capacity.	
HP StorageWorks D2D2504i Backup System	EJ002A
<b>NOTE:</b> 4 TB raw capacity/3 TB useable capacity.	
<b>NOTE:</b> Please see the HP D2D Backup Systems QuickSpecs for additional information: <a href="http://www.hp.com/go/d2d">http://www.hp.com/go/d2d</a>	

### StorageWorks Options

#### StorageWorks Fibre Channel HBA

**NOTE:** The following is a list of all Fibre Channel Host Bus Adapters for Windows and Linux. For detailed compatibility information please see:  
<http://h18006.www1.hp.com/storage/saninfrastructure/hba.html>

#### Brocade Fibre Channel HBAs

HP StorageWorks 81B PCI-e FC HBA Single Port	AP769A
HP StorageWorks 82B PCI-e FC HBA Dual Port	AP770A
HP StorageWorks 41B 4Gb PCI-e FC HBA	AP767A
HP StorageWorks 42B 4Gb Dual-Port PCI-e FC HBA	AP768A

#### Emulex Fibre Channel HBAs

HP StorageWorks 81E PCI-e FC HBA Single Port	AJ762A
HP StorageWorks 82E PCI-e FC HBA Dual Port	AJ763A
HP StorageWorks FC2142 4Gb PCI-e HBA	A8002A
HP StorageWorks FC2242 Dual Channel 4Gb PCI-e HBA	A8003A

#### QLogic Fibre Channel HBAs

HP StorageWorks 81Q PCI-e FC HBA Single Port	AK344A
HP StorageWorks 82Q PCI-e FC HBA Dual Port	AJ764A
HP StorageWorks FC1142 4Gb PCI-e HBA	AE311A
HP StorageWorks FC1242 Dual Channel 4Gb PCI-e HBA	AE312A

### Additional Options

#### StorageWorks SCSI HBA

HP U320e SCSI Host Bus Adapter

AH627A

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

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#### HP StorageWorks Modular Smart Array

#### MSA SAN Storage Arrays

HP StorageWorks 20 Modular Smart Array

335921-B21

**NOTE:** Rack-mountable 12 (SATA) drive enclosure with U320 Host connectivity, redundant power supplies.

**NOTE:** Please see the QuickSpecs for additional options and configuration information at:

[http://h18000.www1.hp.com/products/quickspecs/11942\\_na/11942\\_na.html](http://h18000.www1.hp.com/products/quickspecs/11942_na/11942_na.html)

HP StorageWorks 50 Modular Smart Array

364430-B21

**NOTE:** Please see the QuickSpecs for additional options and configuration information at:

[http://h18000.www1.hp.com/products/quickspecs/12245\\_na/12245\\_na.html](http://h18000.www1.hp.com/products/quickspecs/12245_na/12245_na.html)

HP StorageWorks 60 Modular Smart Array

418408-B21

**NOTE:** Please see the QuickSpecs for additional options and configuration information at:

[http://h18000.www1.hp.com/products/quickspecs/12627\\_na/12627\\_na.html](http://h18000.www1.hp.com/products/quickspecs/12627_na/12627_na.html)

HP StorageWorks 70 Modular Smart Array

418800-B21

**NOTE:** Please see the QuickSpecs for additional options and configuration information at:

[http://h18000.www1.hp.com/products/quickspecs/12652\\_na/12652\\_na.html](http://h18000.www1.hp.com/products/quickspecs/12652_na/12652_na.html)

HP 2012sa Single Controller Modular Smart Array

AJ752A

HP 2012sa Dual Controller Modular Smart Array

AJ753A

**NOTE:** Please see the QuickSpecs for additional options and configuration information at:

[http://h18000.www1.hp.com/products/quickspecs/13045\\_na/13045\\_na.html](http://h18000.www1.hp.com/products/quickspecs/13045_na/13045_na.html)

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#### Uninterruptible Power Systems

#### HP Rack-mountable UPS

#### HP R3000 UPS

HP R3000 VA UPS, 2U, Low voltage L5-30

AF422A

HP R3000 VA UPS, 2U, High voltage L6-20

AF423A

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

[http://h18000.www1.hp.com/products/quickspecs/10671\\_na/10671\\_na.html](http://h18000.www1.hp.com/products/quickspecs/10671_na/10671_na.html)

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

HP R/T3000 UPS, Low voltage

AF452A

HP R/T3000 UPS, High voltage

AF453A

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

[http://h18000.www1.hp.com/products/quickspecs/13417\\_na/13417\\_na.html](http://h18000.www1.hp.com/products/quickspecs/13417_na/13417_na.html)

#### HP Rack-Mountable R5500 UPS

HP R5500 VA UPS

AF426A

### Additional Options

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

[http://h18000.www1.hp.com/products/quickspecs/11871\\_na/11871\\_na.html](http://h18000.www1.hp.com/products/quickspecs/11871_na/11871_na.html)

**NOTE:** For additional information on HP Uninterruptible Power Systems please go to:

[www.hp.com/servers/rackups](http://www.hp.com/servers/rackups).

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<b>Power Distribution Unit</b>	<b>Monitored PDUs</b>	
	<b>HP Monitored Power Distribution Unit: Half Rack Version</b>	
	HP 17.3 kVA S348 Monitored PDU- single input, 3Ø, 48A	AF916A
	<b>NOTE:</b> Please see the QuickSpecs for Technical Specifications and additional information:	
	<a href="http://h18000.www1.hp.com/products/quickspecs/12118_na/12118_na.html">http://h18000.www1.hp.com/products/quickspecs/12118_na/12118_na.html</a>	
	<b>Power Distribution Units 1U/0U (Up to 32 outlets)</b>	
	<b>NOTE:</b> 1U/0U mounting brackets shipped with the unit (optimized for 10000 G2 and 9000 series racks).	
	3.6kVA Model - mPDU, 16A, High	252663-B24
	2.8 kVA Model - mPDU, 24A, Low	252663-D71
	4.9kVA Model - mPDU, 24A, High	252663-D72
	8.3kVA Model - mPDU, 40A, High	252663-B21
	8.3kVA Model - mPDU, 40A, High (power cord attached)	252663-D73
	<b>NOTE:</b> Please see the following Modular Power Distribution Unit (Zero-U/1U Modular PDUs) QuickSpecs for additional options including cables:	
	<a href="http://h18000.www1.hp.com/products/quickspecs/11041_na/11041_na.html">http://h18000.www1.hp.com/products/quickspecs/11041_na/11041_na.html</a>	

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<b>HP Rack Series</b>	<b>HP Rack 10000 G2 Series (Carbon/Graphite Metallic)</b>	
	HP S10614 (14U) Rack Cabinet - Shock Pallet	292302-B22
	10642 G2 (42U) Rack Cabinet - Pallet	AF001A
	10642 G2 (42U) Rack Cabinet - Shock Pallet	AF002A
	10642 G2 (42U) Rack Cabinet - Crated	AF003A
	10642 G2 (42U) Rack Cabinet, with Extension - Shock Pallet	AF004A
	10636 G2 (36U) Rack Cabinet - Pallet	AF011A
	10636 G2 (36U) Rack Cabinet - Shock Pallet	AF012A
	10636 G2 (36U) Rack Cabinet - Crated	AF013A
	10636 G2 (36U) Rack Cabinet, with Extension - Shock Pallet	AF014A
	10622 G2 (22U) Rack Cabinet - Pallet	AF021A
	10622 G2 (22U) Rack Cabinet - Shock Pallet	AF022A
	10642 G2 (42U) Rack Cabinet 1200mm Deep - Shock Pallet	AF034A
	10642 G2 (42U) Rack Cabinet 1200mm Deep - Pallet	AF038A
	10842 G2 (42U) 800mm Wide Rack Cabinet - Pallet	AF041A
	10842 G2 (42U) 800mm Wide Rack Cabinet - Shock Pallet	AF042A
	10647 G2 (47U) Rack Cabinet - Pallet	AF031A

### Additional Options

10647 G2 (47U) Rack Cabinet 1200mm Deep - Shock Pallet	AF044A
<b>NOTE:</b> Due to handling and shipping requirements, AF044A is only orderable through HP Factory Express. It is not for direct sales. Customer site surveys are required before an order is approved. CTO orders may require additional lead time.	
10647 G2 (47U) Rack Cabinet 1200mm Deep - Pallet	AF045A
<b>NOTE:</b> It is mandatory to use a shock pallet when shipping racks with equipment installed.	
<b>NOTE:</b> xxxxx-B22 (shock pallet) used to ship racks with equipment installed (by custom systems, VARs and Channels).	
<b>NOTE:</b> Please see the QuickSpecs for Technical Specifications and additional information: <a href="http://h18000.www1.hp.com/products/quickspecs/12402_na/12402_na.html">http://h18000.www1.hp.com/products/quickspecs/12402_na/12402_na.html</a>	
<b>NOTE:</b> For additional information regarding Rack Cabinets, please see the following URL: <a href="http://www.hp.com/go/rackandpower">http://www.hp.com/go/rackandpower</a> .	

### HP Rack Options

#### Keyboards and Monitors

TFT7600 Rackmount Keyboard Monitor	AG052A
1U Rackmount Keyboard with USB	AG072A
<b>NOTE:</b> For additional information regarding Rack Options, please see the following URL: <a href="http://www.hp.com/go/rackandpower">http://www.hp.com/go/rackandpower</a> .	

#### 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
<b>NOTE:</b> Requires PS/2 and one USB port on server.	
Server console switch 0x2x8	AF616A
Server console switch 0x2x16	AF617A
PS/2 Interface Adapter, 1 pack	262588-B21
PS/2 Interface Adapter, 8 pack	262587-B21
<b>NOTE:</b> Cat5e cables are required to connect Interface Adapters to Console Switches. Cat5e cables can be found at the following URL: <a href="http://www.hp.com/go/kvm">http://www.hp.com/go/kvm</a> .	
HP 1x4 Console Switch	AF611A
PS2 Server Console Cable, 6 ft, 2 pack	AF612A
USB Server Console Cable, 6 ft, 2 pack	AF613A
<b>NOTE:</b> For additional information regarding KVM switches, Serial Console servers, rack mount monitors, keyboards and all related options please see the following URL: <a href="http://www.hp.com/go/kvm">http://www.hp.com/go/kvm</a> .	

### Additional Options

USB and SD Options	USB 2-Button Optical Scroll Mouse (Carbonite/Silver)	DC172B
	1.44MB External USB Floppy Drive	DC141B
	HP USB 04 Standard Keyboard	DT528A#ABA
	HP 1GB USB 2.0 Floppy Drive Key	442085-B21

### Service and Support Offerings

(HP Care Pack Services)

#### Hardware Services On-site Service

4-Hour On-site Service, 5-Day x 13-Hour Coverage, 3 Years, Electronic U4607E

4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic U4608E

#### 6-Hour Call to Repair, On-site Service 7-Day x 24-Hour Coverage, 3 Years (U.S. Part Number)

6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic U4609E

#### Installation & Start-up Services

Hardware Installation, Electronic U4617E

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, Electronic U4618E

Installation and Startup for Essentials Rapid Deployment Pack, Electronic U5683E

#### Support Plus

Onsite HW support, 8am-9pm, M-F, 4hr response and Microsoft O/S SW Tech support offsite, onsite at HP's discretion, 8am-9pm, M-F 2hr response time excl. HP holidays, Electronic U4619E

#### Support Plus 24

Onsite HW support 24x7, 4hr response and Microsoft O/S SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays, Electronic U4620E

Onsite HW support 24x7, 4hr response and RedHat AS O/S SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays, Electronic U9239E

Onsite HW support 24x7, 4hr response and SuSE O/S SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays, Electronic U6316E

**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".

**NOTE:** For additional memory information and configuration rules, please see the memory section of the DL580 G5 User Guide at: [http://www.hp.com/support/DL580G5\\_UG\\_en](http://www.hp.com/support/DL580G5_UG_en).

#### HP ProLiant DL580 G5 - Base memory configuration for 16 DIMM sockets in the 4 GB configuration

##### Standard Memory

4 GB PC2-5300 Fully Buffered DIMMs (DDR2-667) (4 x 1 GB)

All HP ProLiant DL580 G5 systems come standard with 4 banks of memory sockets spanning 4 memory channels for a total of 16 DIMM sockets on board memory. Memory slots xA and xB already populated with memory (2P models with 4x 1GB FBDIMM memory modules and 4P models with 4x 2GB FB DIMM memory modules) to help achieve maximum performance.

##### Upgrading Memory and Memory Interleaving

To achieve maximum memory performance and flexibility, the HP ProLiant DL580 G5 requires memory to be upgraded in groups of four identical FBDIMMs populated across the four memory channels. In simple terms, the two FBDIMM locations at xC and the two xD locations must be populated with four identical part numbered FBDIMMs. Memory population continues by populating locations xE and xF, then xG and xH. FBDIMM architecture does not allow any gaps in this sequence such that if locations xE and xF were populated and xC and xD were not, the memory at xE and xF would not be recognized by the system.

##### Standard Memory Plus Optional Memory

Up to 128 GB memory is available with the removal of the standard memory and the installation of 1 GB, 2 GB, 4 GB, and/or 8 GB PC2-5300 Fully Buffered DIMMs. Up to 256 GB memory is available with the removal of the standard memory, the installation of the DL580 G5 Memory Expansion Boards Option, and the installation of 8 GB PC2-5300 Fully Buffered DIMMs.

##### Standard Memory Replaced with Optional Memory and Utilizing the Optional Memory Expansion Boards

Up to 128 GB memory is available with the removal of the standard memory and the optional installation of PC2-5300 Fully Buffered DIMMs (DDR2-667) memory kits. When utilizing the Optional Memory Expansion boards the FBDIMM population rules apply. Four identical FBDIMMs must be populated across the four memory channels. The FBDIMM locations on the Expansion boards are labeled so that four FBDIMMs should be populated in the A locations on each board, followed by populating the four B locations continuing this sequence through locations D. eq.

Memory		Embedded DIMM Sockets							
		1	2	3	4	5	6	7	8
		1A	2C	3E	4G	5A	6C	7E	8G
Standard	4 GB	1 GB	Empty	Empty	Empty	1 GB	Empty	Empty	Empty
Standard + Optional	Maximum: 100 GB Shown: 28 GB	1 GB	2 GB	2 GB	2 GB	1 GB	2 GB	2 GB	2 GB
Maximum (Without Memory Expansion Boards Option)	128 GB	8 GB	8 GB	8 GB	8 GB	8 GB	8 GB	8 GB	8 GB

Memory		Embedded DIMM Sockets							
		9	10	11	12	13	14	15	16
		9B	10D	11F	12H	13B	14D	15F	16H
Standard	4 GB	1 GB	Empty	Empty	Empty	1 GB	Empty	Empty	Empty

## Memory

Standard + Optional	Maximum: 100 GB Shown: 28 GB	1 GB	2 GB	2 GB	2 GB	1 GB	2 GB	2 GB	2 GB
Maximum (Without Memory Expansion Boards Option)	128 GB	8 GB	8 GB	8 GB	8 GB	8 GB	8 GB	8 GB	8 GB

**NOTE:**

- Memory channel 1 includes slots 1-4
- Memory channel 2 includes slots 5-8
- Memory channel 3 includes slots 9-12
- Memory channel 4 includes slots 13-16

**HP ProLiant DL580 G5 - Base memory configuration for 16 DIMM sockets in the 8 GB configuration**

**Standard Memory**

8 GB PC2-5300 Fully Buffered DIMMs (DDR2-667) (4 x 2 GB)

All HP ProLiant DL580 G5 systems come standard with 4 banks of memory sockets spanning 4 memory channels for a total of 16 DIMM sockets on board memory . Memory slots xA and xB already populated with memory (2P models with 4x 1GB FBDIMM memory modules and 4P models with 4x 2GB FB DIMM memory modules) to help achieve maximum performance.

**Upgrading Memory and Memory Interleaving**

To achieve maximum memory performance and flexibility, the HP ProLiant DL580 G5 requires memory to be upgraded in groups of four identical FBDIMMs populated across the four memory channels. In simple terms, the two FBDIMM locations at xC and the two xD locations must be populated with four identical part numbered FBDIMMs. Memory population continues by populating locations xE and xF, then xG and xH. FBDIMM architecture does not allow any gaps in this sequence such that if locations xE and xF were populated and xC and xD were not, the memory at xE and xF would not be recognized by the system.

**Standard Memory Plus Optional Memory**

Up to 104 GB memory is available with the standard memory and the optional installation of 1 GB, 2 GB, 4 GB, and/or 8 GB PC2-5300 Fully Buffered DIMMs. One possible configuration is shown below, in which 48 GB is added to the standard 8 GB for a total of 56 GB.

**Standard Memory Replaced with Optional Memory and Utilizing the Optional Memory Expansion Boards**

Up to 128 GB memory is available with the removal of the standard memory and the optional installation of 1 GB, 2 GB, 4 GB, and/or 8 GB PC2-5300 Fully Buffered DIMMs. Up to 256 GB memory is available with the removal of the standard memory, the installation of the DL580 G5 Memory Expansion Boards Option, and the installation of 8 GB PC2-5300 Fully Buffered DIMMs.



## Memory

Memory		Embedded Slots							
		1	2	3	4	5	6	7	8
		1A	2C	3E	4G	5A	6C	7E	8G
Standard	8 GB	2 GB	Empty	Empty	Empty	2 GB	Empty	Empty	Empty
Standard + Optional	Maximum: 104 GB Shown: 56 GB	2 GB	4 GB	4 GB	4 GB	2 GB	4 GB	4 GB	4 GB
Maximum (Without Memory Expansion Boards Option)	128 GB	8 GB	8 GB	8 GB	8 GB	8 GB	8 GB	8 GB	8 GB

Memory		Embedded Slots							
		9	10	11	12	13	14	15	16
		9B	10D	11F	12H	13B	14D	15F	16H
Standard	8 GB	2 GB	Empty	Empty	Empty	2 GB	Empty	Empty	Empty
Standard + Optional	Maximum: 104 GB Shown: 56 GB	2 GB	4 GB	4 GB	4 GB	2 GB	4 GB	4 GB	4 GB
Maximum (Without Memory Expansion Boards Option)	128 GB	8 GB	8 GB	8 GB	8 GB	8 GB	8 GB	8 GB	8 GB

**NOTE:**

- Memory channel 1 includes slots 1-4
- Memory channel 2 includes slots 5-8
- Memory channel 3 includes slots 9-12
- Memory channel 4 includes slots 13-16

### Memory

HP ProLiant DL580 G5 - For 32 DIMM configurations with the standard shipping 4 GB of memory

#### Standard Memory

4 GB PC2-5300 Fully Buffered DIMMs (DDR2-667) (4 x 1 GB)

All HP ProLiant DL580 G5 systems come standard with 4 banks of memory sockets spanning 4 memory channels for a total of 16 DIMM sockets on board memory. The optional DL580 G5 Memory Expansion Boards Option adds an additional 16 DIMM sockets, which brings the DL580 G5 to a total of 32 DIMM sockets.

#### Upgrading Memory and Memory Interleaving

To achieve maximum memory performance and flexibility, the HP ProLiant DL580 G5 requires memory to be upgraded in groups of four identical FBDIMMs populated across the four memory channels. In simple terms, the two FBDIMM locations at xC and the two xD locations must be populated with four identical part numbered FBDIMMs. Memory population continues by populating locations xE and xF, then xG and xH. FBDIMM architecture does not allow any gaps in this sequence such that if locations xE and xF were populated and xC and xD were not, the memory at xE and xF would not be recognized by the system.

#### Standard Memory Plus Optional Memory

Up to 228 GB memory is available with the standard memory of 4 GB and the optional installation of 1 GB, 2 GB, 4 GB, and/or 8 GB PC2-5300 Fully Buffered DIMMs (DDR2-667) in all embedded DIMM sockets as well as the memory expansion boards slots. One possible configuration is shown below, in which 56 GB is added to the standard 4 GB for a total of 60 GB.

#### Standard Memory Replaced with Optional Memory

Up to 256 GB of memory is available with the removal of the standard 4 GB of memory and the optional installation of PC2-5300 Fully Buffered DIMMs in all the embedded slots as well as the memory expansion boards slots.

Memory		Embedded Slots							
		1	2	3	4	5	6	7	8
		1A	2C	3E	4G	5A	6C	7E	8G
Standard	4 GB	1 GB	Empty	Empty	Empty	1 GB	Empty	Empty	Empty
Standard + Optional	Maximum: 228GB Shown: 60 GB	1 GB	2 GB	2 GB	2 GB	1 GB	2 GB	2 GB	2 GB
Maximum	256 GB	8 GB	8 GB	8 GB	8 GB	8 GB	8 GB	8 GB	8 GB

Memory		Embedded Slots							
		9	10	11	12	13	14	15	16
		9B	10D	11F	12H	13B	14D	15F	16H
Standard	4 GB	1 GB	Empty	Empty	Empty	1 GB	Empty	Empty	Empty
Standard + Optional	Maximum: 228 GB Shown: 60 GB	1 GB	2 GB	2 GB	2 GB	1 GB	2 GB	2 GB	2 GB
Maximum	256 GB	8 GB	8 GB	8 GB	8 GB	8 GB	8 GB	8 GB	8 GB

Expansion Board Memory		Optional DL580 G5 Memory Expansion Boards Option Slots							
		17	18	19	20	21	22	23	24
		1A	2B	3C	4D	1A	2B	3C	4D
Standard	4 GB	Empty	Empty	Empty	Empty	Empty	Empty	Empty	Empty

## Memory

Standard + Optional	Maximum: 228 GB Shown: 60 GB	2 GB	2 GB	2 GB	2 GB	2 GB	2 GB	2 GB	2 GB
Maximum	256 GB	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB
Expansion Board Memory		Optional DL580 G5 Memory Expansion Boards Option Slots							
		25	26	27	28	29	30	31	32
		1A	2B	3C	4D	1A	2B	3C	4D
Standard	4 GB	Empty	Empty	Empty	Empty	Empty	Empty	Empty	Empty
Standard + Optional	Maximum: 228 GB Shown: 60 GB	2 GB	2 GB	2 GB	2 GB	2 GB	2 GB	2 GB	2 GB
Maximum	256 GB	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB

**NOTE:**

- Memory channel 1 includes slots 1-4 (on board) and 17-21 (expansion board #1)
- Memory channel 2 includes slots 5-8 (on board) and 21-24 (expansion board #2)
- Memory channel 3 includes slots 9-12 (on board) and 25-28 (expansion board #3)
- Memory channel 4 includes slots 13-16 (on board) and 29-32 (expansion board #4)

**HP ProLiant DL580 G5 - For 32 DIMM configurations with the standard shipping 8 GB of memory**

**Standard Memory**

8 GB PC2-5300 Fully Buffered DIMMs (DDR2-667) (4 x 2 GB)

All HP ProLiant DL580 G5 systems come standard with 4 banks of memory sockets spanning 4 memory channels for a total of 16 DIMM sockets on board memory. The optional DL580 G5 Memory Expansion Boards Option adds an additional 16 DIMM sockets, which brings the DL580 G5 to a total of 32 DIMM sockets.

**Upgrading Memory and Memory Interleaving**

To achieve maximum memory performance and flexibility, the HP ProLiant DL580 G5 requires memory to be upgraded in groups of four identical FBDIMMs populated across the four memory channels. In simple terms, the two FBDIMM locations at xC and the two xD locations must be populated with four identical part numbered FBDIMMs. Memory population continues by populating locations xE and xF, then xG and xH. FBDIMM architecture does not allow any gaps in this sequence such that if locations xE and xF were populated and xC and xD were not, the memory at xE and xF would not be recognized by the system.

**Standard Memory Plus Optional Memory**

Up to 232 GB memory is available with the standard memory of 8 GB and the optional installation of 1 GB, 2 GB, 4 GB, and/or 8 GB PC2-5300 Fully Buffered DIMMs in all embedded DIMM sockets as well as the memory expansion boards slots. . One possible configuration is shown below, in which 56 GB is added to the standard 8 GB for a total of 64 GB.

**Standard Memory Replaced with Optional Memory**

Up to 256 GB of memory is available with the removal of the standard 8 GB of memory and the optional installation of PC2-5300 Fully Buffered DIMMs in all the embedded slots as well as the memory expansion boards slots.



## Memory

Memory		Embedded Slots							
		1	2	3	4	5	6	7	8
		1A	2C	3E	4G	5A	6C	7E	8G
Standard	8 GB	2 GB	Empty	Empty	Empty	2GB	Empty	Empty	Empty
Standard + Optional	Maximum: 232GB Shown: 64 GB	2 GB	2 GB	2 GB	2 GB	2 GB	2 GB	2 GB	2 GB
Maximum	256 GB	8 GB	8 GB	8 GB	8 GB	8 GB	8 GB	8 GB	8 GB

Memory		Embedded Slots							
		9	10	11	12	13	14	15	16
		9B	10D	11F	12H	13B	14D	15F	16H
Standard	8 GB	2 GB	Empty	Empty	Empty	2 GB	Empty	Empty	Empty
Standard + Optional	Maximum: 232 GB Shown: 64 GB	2 GB	2 GB	2 GB	2 GB	2 GB	2 GB	2 GB	2 GB
Maximum	256 GB	8 GB	8 GB	8 GB	8 GB	8 GB	8 GB	8 GB	8 GB

Expansion Board Memory		Optional DL580 G5 Memory Expansion Boards Option Slots							
		17	18	19	20	21	22	23	24
		1A	2B	3C	4D	1A	2B	3C	4D
Standard	8 GB	Empty	Empty	Empty	Empty	Empty	Empty	Empty	Empty
Standard + Optional	Maximum: 232 GB Shown: 64 GB	2 GB	2 GB	2 GB	2 GB	2 GB	2 GB	2 GB	2 GB
Maximum	256 GB	8 GB	8 GB	8 GB	8 GB	8 GB	8 GB	8 GB	8 GB

Expansion Board Memory		Optional DL580 G5 Memory Expansion Boards Option Slots							
		25	26	27	28	29	30	31	32
		1A	2B	3C	4D	1A	2B	3C	4D
Standard	8 GB	Empty	Empty	Empty	Empty	Empty	Empty	Empty	Empty
Standard + Optional	Maximum: 232 GB Shown: 64 GB	2 GB	2 GB	2 GB	2 GB	2 GB	2 GB	2 GB	2 GB
Maximum	256 GB	8 GB	8 GB	8 GB	8 GB	8 GB	8 GB	8 GB	8 GB

**NOTE:**

- Memory channel 1 includes slots 1-4 (on board) and 17-21 (expansion board #1)
- Memory channel 2 includes slots 5-8 (on board) and 21-24 (expansion board #2)
- Memory channel 3 includes slots 9-12 (on board) and 25-28 (expansion board #3)
- Memory channel 4 includes slots 13-16 (on board) and 29-32 (expansion board #4)

### Memory

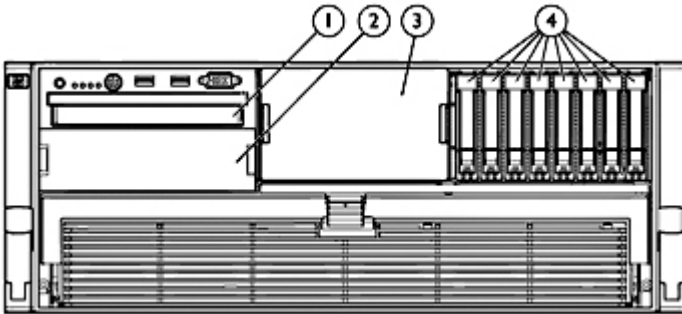
The following memory options are available from HP:

2 GB FBD PC2-5300 2 x 1 GB Dual Rank Kit	397411-B21
2 GB FBD PC2-5300 2 x 1 GB Low Power Single Rank Kit	461826-B21
4 GB FBD PC2-5300 2 x 2 GB Dual Rank Kit	397413-B21
4 GB FBD PC2-5300 2 x 2 GB Low Power Dual Rank Kit	461828-B21
8 GB FBD PC2-5300 2 x 4 GB Dual Rank Kit	397415-B21
8 GB FBD PC2-5300 2 x 4 GB Low Power Dual Rank Kit	466440-B21
16 GB FBD PC2-5300 2 x 8 GB Dual Rank Kit	413015-B21
64 GB FBD PC2-5300 8 x 8 GB Dual Rank Kit	495604-B21
DL580 G5 Memory Expansion Boards Option	452179-B21

**NOTE:** This option consists of 4 memory expansion boards with 4 DIMM sockets each for a total of 16 additional DIMM sockets. This brings the DL580 G5 to a total of 32 DIMM sockets.

**NOTE:** Memory Option Kits include Low Power DIMMs. For more information on ProLiant Energy Efficient Features, please visit: <http://h18004.www1.hp.com/products/servers/platforms/energyefficient/>.

## Storage



- 1 Slimline media bay
- 2 Half-height bay
- 3 Second SAS drive bay (supports up to 8 additional SFF SAS/SATA drives)
- 4 8 SFF hot-plug SAS/SATA drives

## Drive Support

	Quantity Supported	Position Supported	Controller
<b>Slimline Drives</b>			
Slimline DVD-ROM Drive (8X/24X) Option Kit	1	1	Integrated IDE
Slimline DVD-ROM drive	1	1	Integrated SATA
HP Slim SATA DVD RW Optical Drive	1	1	Integrated SATA

### 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.

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

### SAS Hot Plug SFF Enterprise (ENT) Drives

	Quantity Supported	Position Supported	Controller
300GB 6G SAS 10K DP	Up to 16	3,4	HP Smart Array E200/128 BBWC Controller
300GB 3G SAS 10K DP			HP Smart Array E500/256 MB Controller
146GB 6G SAS 15K DP			HP Smart Array P400i/256 MB Controller
146GB 6G SAS 10K DP			HP Smart Array P400i/512 MB BBWC Controller
146GB 3G SAS 15K DP			HP Smart Array P600/256 BBWC Controller
146GB 3G SAS 10K DP			HP Smart Array P800/512 BBWC Controller
72GB 6G SAS 15K DP			HP Smart Array P212/Zero Memory Controller
72GB 3G SAS 15K DP			HP Smart Array P212/ 256 MB Controller
72GB 3G SAS 10K DP			HP Smart Array P410/256 MB Controller
			HP Smart Array P410/512 MB BBWC Controller
	HP Smart Array P411/256 MB Controller		
	HP Smart Array P411/512 MB BBWC Controller		

### SAS Hot Plug SFF Midline (MDL) Drives

Quantity Supported	Position Supported	Controller
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## Storage

500GB 6G SAS 7.2K DP	Up to 16	3,4	<ul style="list-style-type: none"> <li>HP Smart Array E200/128 BBWC Controller</li> <li>HP Smart Array E500/256 MB Controller</li> <li>HP Smart Array P400i/256 MB Controller</li> <li>HP Smart Array P400i/512 MB BBWC Controller</li> <li>HP Smart Array P600/256 BBWC Controller</li> <li>HP Smart Array P800/512 BBWC Controller</li> <li>HP Smart Array P212/Zero Memory Controller</li> <li>HP Smart Array P212/ 256 MB Controller</li> <li>HP Smart Array P410/256 MB Controller</li> <li>HP Smart Array P410/512 MB BBWC Controller</li> <li>HP Smart Array P411/256 MB Controller</li> <li>HP Smart Array P411/512 MB BBWC Controller</li> </ul>
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### SATA Hot Plug SFF Midline (MDL) Drives

	Quantity Supported	Position Supported	Controller
500GB 3G SATA 7.2K 160GB 3G SATA 7.2K	Up to 16	3,4	<ul style="list-style-type: none"> <li>HP Smart Array E200/128 BBWC Controller</li> <li>HP Smart Array E500/256 MB Controller</li> <li>HP Smart Array P400i/256 MB Controller</li> <li>HP Smart Array P400i/512 MB BBWC Controller</li> <li>HP Smart Array P600/256 BBWC Controller</li> <li>HP Smart Array P800/512 BBWC Controller</li> <li>HP Smart Array P212/Zero Memory Controller</li> <li>HP Smart Array P212/ 256 MB Controller</li> <li>HP Smart Array P410/256 MB Controller</li> <li>HP Smart Array P410/512 MB BBWC Controller</li> <li>HP Smart Array P411/256 MB Controller</li> <li>HP Smart Array P411/512 MB BBWC Controller</li> </ul>

### SATA Hot Plug SFF Entry (ETY) Drives

	Quantity Supported	Position Supported	Controller
250GB 3G SATA 5.4K 120GB 1.5G SATA 5.4K	Up to 16	3,4	<ul style="list-style-type: none"> <li>HP Smart Array E200/128 BBWC Controller</li> <li>HP Smart Array E500/256 MB Controller</li> <li>HP Smart Array P400i/256 MB Controller</li> <li>HP Smart Array P400i/512 MB BBWC Controller</li> <li>HP Smart Array P600/256 BBWC Controller</li> <li>HP Smart Array P800/512 BBWC Controller</li> <li>HP Smart Array P212/Zero Memory Controller</li> <li>HP Smart Array P212/ 256 MB Controller</li> <li>HP Smart Array P410/256 MB Controller</li> <li>HP Smart Array P410/512 MB BBWC Controller</li> <li>HP Smart Array P411/256 MB Controller</li> <li>HP Smart Array P411/512 MB BBWC Controller</li> </ul>

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

Quantity Supported	Position Supported	Controller
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### Storage

60GB 3.0G SATA SSD	Up to 16	3,4	HP Smart Array E200/128 BBWC Controller
120GB 3.0G SATA SSD			HP Smart Array E500/256 MB Controller
			HP Smart Array P400i/256 MB Controller
			HP Smart Array P400i/512 MB BBWC Controller
			HP Smart Array P600/256 BBWC Controller
			HP Smart Array P800/512 BBWC Controller
			HP Smart Array P212/Zero Memory Controller
			HP Smart Array P212/ 256 MB Controller
			HP Smart Array P410/256 MB Controller
			HP Smart Array P410/512 MB BBWC Controller
			HP Smart Array P411/256 MB Controller
			HP Smart Array P411/512 MB BBWC Controller

### External Storage

	Quantity Supported	Position Supported	Host Controller or Adapter
20 Modular Smart Array	1 per SCSI VHDCL connector	External	Smart Array 6404/256 Controller
50 Modular Smart Array	Up to 26	External	HP Smart Array P600/256 BBWC Controller HP Smart Array P800/512 BBWC Controller
60 Modular Smart Array	Up to 4	External	HP Smart Array P600/256 BBWC Controller
	Up to 8	External	HP Smart Array E500/256MB Controller HP Smart Array P212/Zero Memory Controller HP Smart Array P212/ 256 MB Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller
70 Modular Smart Array	Up to 2	External	HP Smart Array P600/256 BBWC Controller
	Up to 4	External	HP Smart Array E500/256MB Controller HP Smart Array P800/512 BBWC Controller HP Smart Array P212/Zero Memory Controller HP Smart Array P212/ 256 MB Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller
HP 2000sa Modular Smart Array Controller	Up to 4	External	HP SC08Ge Host Bus Adapter

### Maximum Storage Capacity - (External SAS Enclosure Attached)

Internal	8.0TB (16 x 500GB SFF SAS Drives)
External	960TB (80 MSA60 enclosures x 12 drive bays each x 1TB SATA Drives)

### Tape and Disk-Based Backup

**NOTE:** For a complete listing of compatible tape and disk-based backup offerings, please visit [www.hp.com/go/connect](http://www.hp.com/go/connect)

Position Supported	Controller	Controller Part Number
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### Storage

<b>HP StorageWorks SCSI Tape Drives, Internal</b> LTO-1 Ultrium 232 LTO-2 Ultrium 448 LTO-3 Ultrium 920 LTO-4 Ultrium 1760 DAT 40 DAT 72 DAT 160	2	HP SC11Xe Host Bus Adapter	412911-B21
<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, Internal</b> DAT 40 USB DAT 72 USB DAT 160 USB	2	USB 2.0 Port	N/A
<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, Internal</b> DAT 160 SAS LTO-2 Ultrium 448 SAS LTO-3 Ultrium 920 SAS LTO-4 Ultrium 1760 SAS	2	HP SC44Ge Host Bus Adapter	416096-B21
<b>HP StorageWorks SAS Tape Drives, External</b> DAT 160 SAS LTO-2 Ultrium 448 SAS LTO-3 Ultrium 920 SAS	External	HP SC44Ge Host Bus Adapter	416096-B21

## Storage

LTO-4 Ultrium 1760 SAS  
 LTO-4 Ultrium 1840 SAS  
 1U Rack-Mount Kit  
 3U Rack-Mount Kit

<p><b>HP StorageWorks SCSI Tape Automation, External</b>                  DAT 72x10 Autoloader                  1/8 G2 Autoloader                  MSL2024                  MSL4048                  MSL8096                  MSL6000</p>	<p>External</p>	<p>HP SC11Xe Host Bus Adapter                   HP U320e SCSI Host Bus Adapter  <b>NOTE:</b> Recommended for MSL tape libraries.</p>	<p>412911-B21                       AH627A</p>
<p><b>HP StorageWorks SAS Tape Automation, External</b>                  1/8 G2 Autoloader                  MSL2024                  MSL4048                  MSL8096</p>	<p>External</p>	<p>HP SC44Ge Host Bus Adapter   <b>NOTE:</b> Please visit: <a href="http://www.hp.com/go/connect">http://www.hp.com/go/connect</a> for details about minimum SAS controller firmware version and SAS cabling requirements.</p>	<p>416096-B21</p>
<p><b>HP StorageWorks Fibre Tape Automation, External</b>                  MSL2024                  MSL4048                  MSL8096                  MSL6000</p>	<p>External</p>	<p><b>NOTE:</b> 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.</p>	<p>N/A</p>
<p><b>HP StorageWorks RDX Removable Disk Backup System, Internal</b>                  RDX160                  RDX320                  RDX500</p>	<p>2</p>	<p>USB 2.0 Port</p>	<p>N/A</p>
<p><b>HP StorageWorks RDX Removable Disk Backup System, External</b>                  RDX160                  RDX320                  RDX500</p>	<p>External</p>	<p>USB 2.0 Port</p>	<p>N/A</p>

## Storage

HP StorageWorks D2D Backup Systems	External	Embedded Network Controller	N/A
D2D120			
D2D130			
D2D2500i			
D2D4000i			

### Power Specifications

Part Number	437508-B21
Operational AC Input Voltage Range (Vrms)	90 - 264
Frequency Range (Nominal) (Hz)	47 to 63 (50/60)

Nominal Input Voltage (Vrms)	100	120	208	220	230	240
Max Rated Output Wattage Rating	800	900	1200	1200	1200	1200
Nominal Input Current (A rms)	9.50	8.80	6.70	6.30	6.05	5.80
Max Rated Input Wattage Rating (Watts)	964	1071	1412	1412	1412	1412
Max. Rated VA (Volt-Amp)	984	1093	1441	1441	1441	1441
Nominal Efficiency (%)	86	87	88	88	88	88
Power Factor	0.98	0.98	0.98	0.98	0.98	0.98
Leakage Current (mA)	.42	.50	0.86	0.92	0.96	1.00
Maximum Inrush Current (A peak)	30	30	100	100	100	100
Maximum Inrush Current duration (msec)	5	5	5	5	5	5

#### NOTES:

**NOTE:** To review typical system power ratings use the HP Power Advisor which is available online located at url: [www.hp.com/go/proliant-energy-efficient](http://www.hp.com/go/proliant-energy-efficient) or [www.hp.com/go/hppoweradvisor](http://www.hp.com/go/hppoweradvisor)

To drill down to calculators:

- Click on: "ProLiant Servers"
- Click on the Server of interest. Example: DL580 G5
- Click on: "Power Calculator" link. (You may need to scroll down to see it)
- There are certain Dual-Core, lowline, max configurations that are not supported. All highline configurations are supported. Consult the Power Calculator to determine if your lowline configuration is supported.

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

### Power Specifications

Table 1 outlines the default DL580 G5 system power redundancy behavior.

Default - Power Supply Override Disabled (2+2 Redundancy)						
Number of Power Supplies	Hi-Line (208VAC and higher)		Low-Line (115VAC and lower)			
	1 to 4 Processors		1 to 2 Processors		3 to 4 Processors	
	Supported at POST	Redundant	Supported at POST	Redundant	Supported at POST	Redundant
1	No	No	No	No	No	No
2	Yes	No	Yes	No	Halt/F9 <sup>1</sup>	No
3	Yes	DC output <sup>2</sup>	Yes	DC output <sup>2</sup>	Yes	DC output <sup>2</sup>
4	Yes	Yes	Yes	Yes	Yes	See note <sup>3</sup>

Table 1

#### NOTES:

- The server will halt with a "power not sufficient" message when it has three or more processors and only two power supplies. This is a caution to customers who wish to run in this configuration that it is possible to exceed the power output of two supplies when the system is heavily loaded and connected to low-line AC. See note 3 below.
- DC output - in this configuration if one supply fails the DC output power of the two remaining supplies will be sufficient to keep the server running. If one of the AC input feeds fail (in a two AC power feed per rack environment) this configuration can not guarantee redundancy if the feed supplying two of the three power supplies fails.
- In a fully optioned server with four power supplies and four 130 Watt processors it is possible to exceed the rated output power of two supplies when powered by low-line AC (110 VAC). In this scenario the system is non-redundant. If one of the two AC power feeds fail and brings down two power supplies the remaining two supplies may not supply enough power to keep the system running. Customers who are running low line with configurations approaching fully optioned servers should check their power redundancy using the Active Answers Power Calculator.

Table 2 outlines the power redundancy behavior of the DL580 G5 when this option is set in RBSU. Customers interested in this option need to first consult the Active Answers Power Calculator to confirm their power is redundant with their system configuration.

Power Supply Override Enabled <sup>1</sup> (1+ Redundancy)						
Customers must consult the power calculator with their system configuration to verify if the server configuration is redundant before enabling this option.						
Number of Power Supplies	Hi-Line (208VAC and higher)		Low-Line (115VAC and lower)			
	1 to 4 Processors		1 to 2 Processors		3 to 4 Processors	
	Supported at POST	Redundant	Supported at POST	Redundant	Supported at POST	Redundant
1	Yes <sup>2</sup>	No	Yes <sup>2</sup>	No	Yes <sup>2</sup>	No
2	Yes	Consult Power Calculator	Yes	Consult Power Calculator	Yes	Consult Power Calculator
3	Yes		Yes		Yes	
4	Yes		Yes		Yes	

Table 2

#### NOTES:

- When this selection has been set in RBSU, a "Power Supply Requirements Override has been enabled" message will be displayed during POST.
- In a one supply configuration, the external health LED will flash to warn that system is not redundant.

### Technical Specifications

System Unit Rack	<b>Dimensions</b> (H x W x D) (with bezel)	6.94 x 19.0 x 26.5 in (17.6 x 48.3 x 67.3 cm)		
	<b>Weight</b> (approximate)	Maximum	100.0 lb (45.4 kg) (all hard drives, power supplies, and processors installed)	
		Minimum	71.0 lb (32.2 kg) (one hard drive, power supply, and processor installed)	
	<b>Input Requirements</b> (per power supply)	Rated Line Voltage	90 - 132 VAC, 180 - 264 VAC	
		Rated Input Current	10 A (at 100 VAC), 7.8 A (at 200 VAC)	
		Rated Input Frequency	47 to 63 Hz	
		Rated Input Power	964 W (at 100 VAC), 1412 W (at 240 VAC)	
	<b>BTU Rating</b>	Maximum	3355 BTU/hr (at 100 VAC), 4914 BTU/hr (at 200 VAC)	
	<b>Power Specifications</b>	<b>NOTE:</b> To review typical system power ratings use the <a href="http://www.hp.com/go/proliant-energy-efficient">HP Power Advisor</a> which is available online located at url: <a href="http://www.hp.com/go/proliant-energy-efficient">www.hp.com/go/proliant-energy-efficient</a> or <a href="http://www.hp.com/go/hppoweradvisor">www.hp.com/go/hppoweradvisor</a>  - Click on the system of interest. Example: DL580 G5 - Follow the instructions of the next screens.		
	<b>Power Supply Output</b> (per power supply)	Rated Steady-State Power	800 W (at 100 VAC), 1200 W (at 200 VAC)	
Maximum Peak Power		800 W (at 100 VAC), 1200 W (at 200 VAC)		
<b>System Inlet Temperature</b>	Operating	10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 305 m (1.8°F per every 1000 ft) above sea level to a maximum of 3050 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 10°C/hr (18°F/hr). The upper limit may be limited by the type and number of options installed. System performance may be reduced if operating with a fan fault or above 30°C (86°F).		
	Non-operating	-30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).		
<b>Relative Humidity</b> (non-condensing)	Operating	10 to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing.		
	Non-operating	5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.		

# QuickSpecs

### Technical Specifications

Altitude	Operating	3050 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
	Non-operating	9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
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	
	L WAd	6.9 B
	L pAm	52 dBA
	Operating	
	L WAd	6.9 B
	L pAm	52 dBA
Emissions Classification (EMC)	FCC Rating	Class A
	Normative Standards	CISPR 22; EN55022; EN55024; FCC CFR 47, Pt 15; ICES-003; CNS13438; GB9254; K22;K24; EN 61000-3-2; EN 61000-3-3; EN 60950-1; IEC 60950-1

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

Slimline CD-RW/DVD-ROM 24X Combo Drive (Multibay)	Shipping Dimensions	13.88 x 11.38 x 9.25 in (35.26 x 28.91 x 23.50 cm)
	Shipping Weight	5 lb (2.27 kg)
Disk	Applicable Disk	DVD-ROM DVD-R (Read Only) 2.6 GB/side DVD-RAM (Read Only) 5.2 GB/side DVD-RAM (Read Only) CD-ROM Mode-1 data disc CD-ROM Mode-2 data disc CD Audio disc CD-Extra CD-RW CD-R CD Text PhotoCD CD-I (mode 2) CD-I Ready CD-Bridge



# QuickSpecs

## HP ProLiant DL580 Generation 5 (G5)

### Technical Specifications

	<b>Capacity</b>	DVD-ROM	DVD-SL	4.7 GB/side
			DVD-DL	8.5 GB/side
			Double Sided	9.40 GB/side
		DVD-R		3.95 GB/side
		DVD-RAM		2.6 GB/side and 5.2 GB/
		CD-ROM	Mode-1	650 MB (550 MB)
			Mode-2	742 MB (640 MB)
	<b>Block Size</b>	DVD		2,048 bytes
		CD		2,352 (Mode-0)
				2352, 2340, 2336, 2048 bytes (Mode-1)
				2352, 2340, 2336, 2048 bytes (Mode-2)
	<b>Diameter</b>	120 mm (4.7 in), 80 mm (3.1 in)(with adapter at vertical mounting mode)		
<b>Loading Mechanism</b>	Tray type			
<b>Interface</b>	EIDE (ATAPI)			
<b>Access Times (typical)</b>	Random	DVD-ROM < 120 ms, CD-ROM < 110 ms		
	Full-Stroke	DVD-ROM < 240 ms, CD-ROM < 160 ms		
<b>Audio Output Level (typical)</b>	Line-out	CD 0.7 Vrms at 47 Kohms Load		
<b>Data Transfer Rate (sustained)</b>	DVD-ROM	Single Layer	10.8 MB/sec. Max.	
	DVD-RAM	2.77 MB/sec. Max		
	CD-ROM	7.2 MB/sec. Max.		
<b>Cache Buffer</b>	2 MB			
<b>Spin-up Time (typical)</b>	less than 10 seconds			
<b>MTBF</b>	120,000 Power On Hours (POH)			
<b>Ambient Temperature</b>	Operating	-22° to 140° F (-30° to 60° C)		
<b>Relative Humidity</b>	Operating	10% to 80%		
	Storage/Transportation	5% to 95%		
<b>Dimensions</b>	(HxWxD, maximum)	0.5 x 5.04 x 5.1 in (12.7 x 128 x 129.4 mm)		
<b>Option Kit Contents</b>	DVD-ROM drive with installation guide, warranty card, registration card			





### Technical Specifications

<b>Integrated Lights-Out 2 Standard (integrated on system board)</b>	<b>Architecture</b>	32-bit PCI-based health and remote management ASIC (Application Specific Integrated Circuit)
	<b>Processor</b>	32-bit RISC processor core running at 66 MHz
	<b>Upgradability</b>	Option firmware upgradable via flash ROM.
	<b>Video Support</b>	Utilizes the host server's embedded video chip. Supports VGA/SVGA, 640 x 480 (256 to 16.7M colors), 800 x 600 (256 to 16.7M colors), 1024 x 768 (256 to 65K colors), 1280 x 1024 (256 colors)
	<b>Interfaces</b>	One Ethernet network connection (10/100 Mb/s)
	<b>Memory</b>	2-MB Flash ROM 8-MB SDRAM
	<b>Operating System Support</b>	Microsoft Windows 2000 Server and Advanced Server Microsoft Windows Server 2003 and Windows Server 2003 R2, and Windows Server 2003 for Extended Systems Standard Edition, Enterprise Edition Red Hat Enterprise Linux 3 (x86), (AMD64/EM64T) Red Hat Enterprise Linux 4.0 SUSE LINUX Enterprise Server 9 SUSE LINUX Enterprise Server 10 Novell NetWare 6.5
	<b>Client Browser Support</b>	Microsoft Internet Explorer 6.0 SP1 or later. Mozilla Firefox 2.0 or later (on supported Windows and Linux client systems) Mozilla Firefox 1.75 or later (for supported Linux client systems)
	<b>iLO 2 Standard Features</b>	Virtual Text Remote Console Virtual KVM Virtual Power Button Control Virtual UID Control Dedicated LAN Connectivity Secure access using web browser Secure access using Secure Shell (SSH) client Serial connectivity Automatic IP Configuration via DHCP/DNS/WINS Industry Standard 128-bit Secure Sockets Layer (SSL) Security IML and iLO2 Event Logging Support for up to 12 user accounts with customizable access privileges
	<b>iLO 2 Advanced Features (optional)</b>	Virtual Graphical Remote Console Virtual Floppy/USB Key drive Virtual CD-ROM drive Directory Services Integration Processor States Reporting Terminal Services Integration

### Technical Specifications

Smart Array P400i Controller	Disk Drive and Enclosure Interface	3G SAS (Serial Attached SCSI) 1.5G 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 2.5G PCIe provides 2GB/s maximum bandwidth.		
	SAS Speed	x8 3G SAS provides 2.4GB/s maximum bandwidth.		
	Cache Memory	40-bit 256MB 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	2TB		
	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, 1+0 (Striping & Mirroring) RAID 0 (Striping)		
Two embedded NC373i Multifunction Gigabit Server Adapters	Network Interface Compatibility	10Base-T/100Base-TX/1000Base-TX IEEE 802.3 10Base-T IEEE 802.3ab 1000Base-T IEEE 802.3u 100Base-TX		
	Data Transfer Method	PCI-Express x4		
	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)	
		100Base-TX	Category 5 or higher UTP; up to 328 ft (100 m)	
1000Base-TX		Category 5 or higher UTP; 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.

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