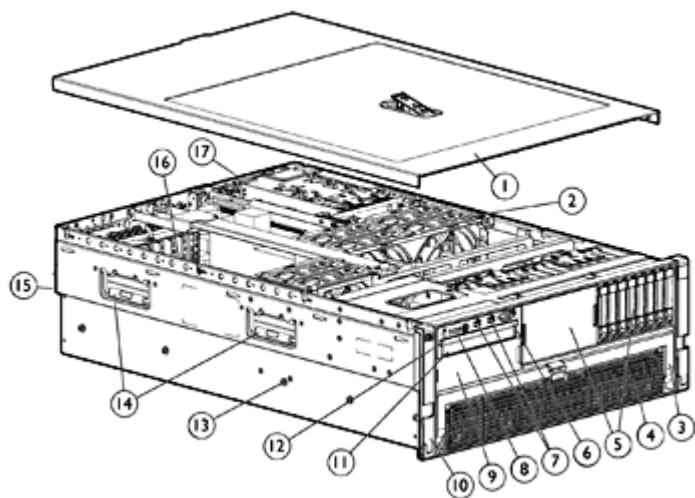
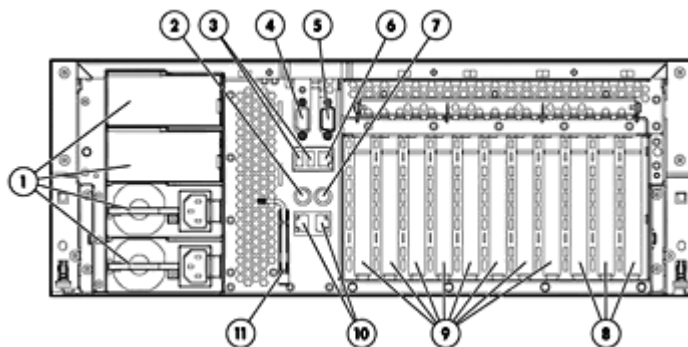


### Overview



#### 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

### At A Glance

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, rack-optimized form factor. Based upon the latest

### Overview

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 or PCI-X adapters. 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.

- **Processors:**
  - Supports up to four Quad-Core Intel® Xeon® Processors
  - Intel® Quad-Core Xeon® processor 7300 sequence or Intel® Dual-Core Xeon® processor 7220
  - 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 High Performance 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
- **Integrated Hypervisors:**
  - VMware 3i virtualization technology
  - Citrix XenServer virtualization technology
- **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
- **Management:**
  - Integrated Lights-Out 2 featuring Integrated Remote Console with KVM over IP performance over shared network access
  - Automatic Server Recovery (ASR), ROM Based Setup Utility (RBSU), HP Systems Insight Manager, Status LED's including system health and UID, and SmartStart
- **Form Factor:**
  - Dense form factor - 4U rack models
- **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

### Overview

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.

**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

#### Quad-Core Processors

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)

#### 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/>

#### Memory Protection

Advanced ECC

Mirrored Memory

Online Spare Memory

#### Memory

One of the following depending on Model

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

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

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

Maximum 256 GB

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

#### 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

### Standard Features

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	

\* 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.

### Standard Features

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.

### Manageability

Integrated Lights-Out (iLO 2) Management 2 (integrated on motherboard)

- Virtual Text Remote Console (pre-OS only)
- Remote Serial Console
- Virtual Power Button Control
- Virtual Unit ID control
- Integrated Remote Console (ActiveX Control client)
- Dedicated & full function shared network connectivity with VLAN
- Embedded system health
- Browser, command line and scripted access
- Automatic IP Configuration via DHCP/DNS/WINS
- Industry Standard 128-bit Secure Sockets Layer (SSL) and Secure Shell security (SSH)
- Advanced Encryption Standard (AES)/Triple Data Encryption Standard (3DES)
- OS independent hardware health status
- IML and iLO Event Logging
- Support for 12 user accounts with customizable access privilege

**Storage Controller**  
 One of the following depending on Model

2P Base Models  
 4P High Performance Models

HP Smart Array P400i/256 MB Controller  
 HP Smart Array P400i/512 MB BBWC Controller

### Standard Features

**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 High Performance Models, optional with others
- Battery charge/life: Up to 72 hours/3 years
- Transportable data protection
- Increases overall controller performance

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

Maximum Internal Storage Type	Hot Plug SAS	2.336TB	16 x 146GB SFF SAS drives (internal hot plug)
	Hot Plug SATA	1.92TB	16 x 120GB SFF SATA

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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### Standard Features

#### HP Insight Control Environment Management Suite

HP Insight Control Environment delivers foundation management, including remote monitoring, hardware resource deployment, health monitoring, software version control, performance monitoring, vulnerability scanning and patch management, and power management. HP Insight Control Environment installs and licenses the following components by default using a wizard-based integrated installer:

- HP Systems Insight Manager
- HP iLO Advanced Pack
- HP Insight Power Manager
- HP Rapid Deployment Pack
- HP Performance Management Pack
- HP Vulnerability and Patch Management Pack
- HP Virtual Machine Management Pack

Additional ProLiant Essentials software and management tools included on the Insight Control Management kit can be installed manually

- HP Server Migration Pack - Universal Edition  
**NOTE:** HP Server Migration Pack - Universal Edition is licensed separately from the Insight Control Environment Suite.
- HP Open Service Event Manager
- HP Service Essentials Remote Support Pack

**NOTE:** Server Migration Pack - Universal Edition can be installed from the SMP Universal CD included in the Insight Control Management media kit.

**NOTE:** For additional product and licensing information about HP Insight Control Environment, visit: <http://www.hp.com/go/ice>.

HP Insight Control Environment for Linux (ICE-Linux) provides comprehensive discovery, imaging & deployment, monitoring, and management for Linux-based ProLiant server platforms. Built on the industry-leading HP Systems Insight Manager framework, this solution integrates open source technology with experience leveraged from HP's Linux products in HP ICLE and HP XC Clusters, while providing paths to the future with developing management technologies.

HP Insight Control management suites and most HP ProLiant Essentials include a one year of 24 x 7 HP Software Technical Support and Update Service ensuring rapid access to HP support staff and proactive delivery of software updates. For more information about this service, please visit:

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



### Standard Features

#### Server Management Stand Alone Software Product - ProLiant Essentials

HP Systems Insight  
Manager

HP Systems Insight Manager (HP SIM) provides a unified, secure and extensible standards-based environment to centrally manage servers, storage and other infrastructure devices, (both HP and non-HP) across multiple operating system platforms.

HP ProLiant Essentials  
Rapid Deployment Pack

Rapid Deployment Pack (RDP) extends HP Systems Insight Manager with a complete deployment solution for HP ProLiant servers. RDP provides a central location to configure server hardware, deploy Windows, Linux and VMware ESX operating environments and install HP ProLiant Support Pack drivers using images and scripted profiles. For more information, visit: <http://www.hp.com/go/rdp>.

HP ProLiant Essentials  
Server Migration Pack -  
Universal Edition

Upgrading, replacing, or virtualizing your existing server? Effortlessly transition to new virtual or physical HP ProLiant servers or BladeSystem with automated, accurate and affordable migration of OS, application and data. SMP Universal automates the manual processes required for migrating servers between physical or virtual platforms, whether migrating to VMware or Microsoft virtual machines. SMP Universal allows all of the following migrations:

- physical to ProLiant
- physical to virtual
- virtual to virtual
- virtual to ProLiant

**NOTE:** For more information, visit: <http://www.hp.com/go/migrate>.

HP ProLiant Essentials  
Performance Management  
Pack

Performance Management Pack (offered exclusively through the Insight Control suites) - a performance management solution that identifies and explains hardware performance bottlenecks on ProLiant servers and attached options enabling users to better utilize their valuable resources

HP ProLiant Essentials  
Integrated Lights-Out (iLO  
2) Advanced Pack

Upgrades the iLO 2 processor with comprehensive remote control including Virtual KVM remote graphical console, enhanced console sharing and replay, virtual media (floppy, CD/DVD, USB key), virtual folders, and enterprise security (directory services and two-factor authentication).

HP ProLiant Essentials  
Accelerated iSCSI Pack

Enables the embedded Multifunction network controller to serve as both a NIC and an iSCSI HBA providing access to SAN storage over the same connection used for networking. Processing of the protocol stack is offloaded to the NIC reducing CPU utilization and greatly improving the speed with which the requests are processed and sent to the network.

**NOTE:** Flexible and volume quantity license kits are available for ProLiant Essentials Value Packs. Refer to: <http://www.hp.com/servers/proliantessentials> or the various ProLiant Essentials Value Pack product QuickSpecs for more information.

### Standard Features

#### Core Infrastructure Management

##### SmartStart

SmartStart is a tool that simplifies server setup, providing a rapid way to deploy reliable and consistent server configurations. For more information, please visit the SmartStart Web site at:

<http://www.hp.com/servers/smartstart>.

SmartStart version supported (minimum): SmartStart 7.51.

##### Insight Management Agents

The Insight Management Agents should be installed on all HP servers to present system instrumentation, health and configuration information into HP Systems Insight Manager and the HP System Management Homepage. The HP System Management Homepage aggregates systems data from Insight Management Agents and other HP management tools, providing a consolidated browser-based interface for managing individual servers.

Insight Management Agents and The HP System Management Homepage are included on ProLiant Support Packs, and can also be installed using the server profiles provided with the ProLiant Essentials Rapid Deployment Pack.

For additional information about the Management Agents and the HP System Management Homepage please visit the management Web site at:

<http://www.hp.com/servers/manage>.

##### Subscriber's Choice

Subscriber's Choice Driver and Support Alerts/Notifications is a web-based email subscription service that provides software and driver change notifications for ProLiant products. Sign up at:

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

and customize your profile to receive various new alerts as they become available, on a weekly or monthly basis.

##### ProLiant Support Packs and ROMPaq, software

The latest software, drivers, and firmware fully optimized and tested for your ProLiant server and options, available through ProLiant Support Packs the ProLiant Essentials Rapid Deployment Pack, SmartStart or downloaded from software and drivers download pages website at:

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

#### HP Serviceguard for Linux (SGLX)

HP Serviceguard for Linux is a high availability clustering solution designed to protect applications and services from a wide variety of software and hardware failures, monitoring the health of each server (node) and quickly responding to failures such as those that affect system processes, system memory, LAN media and adapters, and application processes.

The following is a quick summary of HP Serviceguard for Linux features and support. For the most recent list of Linux distributions & kernels, servers and storage supported with Serviceguard for Linux, see the Serviceguard for Linux Datasheet, available at: <http://www.hp.com/go/sglx/info>.

- Supported Linux Distributions:
  - Red Hat EL 4
  - Red Hat EL 5
  - SUSE SLES10
- Supported Server Platforms
  - HP Integrity BladeSystem to Superdome
  - HP ProLiant BladeSystem p-Class & c-Class
  - HP ProLiant DL
  - HP ProLiant ML
  - IBM System x

### Standard Features

- Dell PowerEdge
  - Sun x64
  - Fujitsu Siemens PRIMERGY
- Hypervisors
  - HP Integrity Virtual Machines
  - VMware ESX
- Application Integration Toolkits
  - HP Serviceguard for Linux Oracle Database Toolkit
  - HP Serviceguard Extension for SAP on Linux (SGeSAP/LX)
  - Free Application Integration Toolkits:
    - Apache
    - MySQL
    - NFS
    - PostgreSQL
    - Samba
    - Tomcat
    - Sendmail
- Disaster Tolerant Solutions
  - HP Serviceguard for Linux Extended Distance Cluster (XDC) extends cluster distances up to 100 km, utilizes software RAID mirroring for data replication and is storage array independent
  - HP StorageWorks XP/EVA Cluster Extension Software for Linux (CLX) works seamlessly with HP Serviceguard for Linux, HP StorageWorks Continuous Access, and HP Disk Arrays to automate failover and failback between sites
- Software updates are distributed by HP Services to customers with support contracts

**NOTE:** For additional information on HP Serviceguard for Linux, visit: <http://www.hp.com/go/sglx> or see the HP Serviceguard for Linux QuickSpecs.

**NOTE:** HP Serviceguard for Linux products for HP ProLiant and select 3rd party x86 class servers include one year of 24 x 7 HP Software Technical Support and Update Service ensuring rapid access to HP support staff and proactive delivery of software updates. For more information about this service, please visit: <http://www.hp.com/services/swsupport>.

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#### 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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### Standard Features

**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

**NOTE:** 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).

### 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 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 High Performance 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.

### Standard Features

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- Hot Plug Redundant Power Supplies - Four Hot Plug Redundant Power Supplies ship standard with all 4P High Performance 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:** 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>

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### 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 High Performance Models. Configurations with 3 or 4 processors that will use lowline (110V) input power require four Hot Plug Power Supplies.

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### UPS and PDU Power Cord Matrix

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

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### Standard Features

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

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

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**OS Support** Microsoft Windows Server 2003  
Microsoft Windows Server 2008  
Red Hat Enterprise Linux  
SuSE Linux Enterprise Server  
Novell NetWare  
Sun Solaris Intel Platform Edition  
VMware Virtualization Software

**NOTE:** For a more complete and up-to-date listing of supported OSs and versions, please visit our OS Support Matrix at: <http://www.hp.com/go/supportos>.

**NOTE:** For more Linux OS support & certification information, please visit our the ProLiant & BladeSystem Server Linux matrix at:  
<http://h18004.www1.hp.com/products/servers/linux/hpLinuxcert.html>

**NOTE:** For an up-to-date listing of the latest software and drivers available for your server, please select your server: [www.hp.com/servers/dl580](http://www.hp.com/servers/dl580)

**NOTE:** For more information on HP's Certified and Supported ProLiant Servers, please visit the VMware Server Support Matrix at:  
<http://h18004.www1.hp.com/products/servers/software/vmware/hpvmwarecert.html>.

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### Rack Airflow Requirements

**Rack 10000 series Cabinets** The increasing power of new high-performance processor technology requires increased cooling efficiency for rack-mounted servers. The 10000 Series Racks provide enhanced airflow for maximum cooling, allowing these racks to be fully loaded with servers using the latest processors.

**CAUTION:** If a third-party rack is used, observe the following additional requirements to ensure adequate airflow and to prevent damage to the equipment:

- Front and rear doors: If your 42U server rack includes closing front and rear doors, you must allow 5,350 sq cm (830 square inches) of hole evenly distributed from top to bottom to permit adequate airflow (equivalent to the required 64 percent open area for ventilation).
- Side: The clearance between the installed rack component and the side panels of the rack must be a minimum of 7 cm (2.75 inches).

**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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### Standard Features

#### Rack Mounting Requirements

HP ProLiant DL580 G5 rack models provide tool-free support for racks with square or round mounting holes (including Compaq/HP 7000, 9000, 10000, HP/E series and H9 series) with an adjustment range from 24" - 36" in depth. 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.

#### HP ProLiant DL580 G5 in Telco Racks

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

#### Factory Express Portfolio for Servers and Storage

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

Factory Express offers service packages for simple configuration, racking, installation, complex configuration and design services as well as individual factory services, such as image loading, asset tagging, and custom packaging. HP products supported through Factory Express include a wide array of servers and storage: HP Integrity, HP ProLiant, HP ProLiant Server Blades, HP BladeSystem, HP 9000 servers as well as the MSAxxx, VA7xx, EVA, XP, rackable tape libraries and configurable network switches.

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

#### HP Enterprise Configurator

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

<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.

### Standard Features

- 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 2.336 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.

<b>HP DL580 G5 High Performance Models</b>  <b>HP DL580 G5 X7350</b> <b>8GB 4P</b> 451993-xx1 <b>HP DL580 G5 E7340</b> <b>8GB 4P</b> 438084-xx1	<b>Processor(s)</b> Four of the following depending on Model.	(4) Quad-Core Intel® Xeon® X7350 Processor (2.93 GHz, 2x4M cache, 130Watts) (4) Quad-Core Intel® Xeon® E7340 Processor (2.40 GHz, 2x4M cache, 80 Watts)
	<b>Memory</b>  <b>Network Controller</b> <b>Storage Controller</b> <b>Manageability</b> <b>Hard Drives</b> <b>Internal Storage</b> <b>Power Supplies</b>  <b>Optical Drive</b> <b>Form Factor</b>	8 GB PC2-5300 Fully Buffered DIMMs (DDR2-667) (Standard) to 256 GB (Maximum) <b>NOTE:</b> Memory expansion boards option required to configure up to 256 GB using 8 GB DIMMs  Two embedded NC373i Multifunction Gigabit Server Adapters HP Smart Array P400i embedded/512MB BBWC Integrated Lights-Out 2 (iLO 2) Standard Management None ship standard 2.336TB max (with optional 146GB SFF SAS Hot Plug hard drives) Four Power Supplies standard (third and fourth power supplies for redundancy)  Slimline DVD Rack 4U

<b>HP DL580 G5 Base Models</b>  <b>HP DL580 G5 E7330</b> <b>4GB 2P</b> 438087-xx1  <b>HP DL580 G5 E7320</b> <b>4GB 2P</b> 438088-xx1  <b>HP DL580 G5 E7310</b> <b>4GB 2P</b> 438089-xx1	<b>Processor(s)</b> Two of the following depending on Model. Up to 4 supported.	(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)
	<b>Memory</b>  <b>Network Controller</b> <b>Storage Controller</b> <b>Manageability</b> <b>Hard Drives</b> <b>Internal Storage</b> <b>Power Supplies</b>  <b>Optical Drive</b> <b>Form Factor</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  Two embedded NC373i Multifunction Gigabit Server Adapters HP Smart Array P400i embedded/256MB Cache Integrated Lights-Out 2 (iLO 2) Standard Management None ship standard 2.336TB max (with optional 146GB SFF SAS Hot Plug hard drives) Two Power Supplies standard (third and fourth power supplies optional for redundancy)  Slimline DVD Rack 4U

Models

Country Code Key	XX=00	US
	XX=20	Brazil
	XX=42	Int'l, Europe
	XX=29	Japan
	XX=37	APD
	XX=AA	PRC

### Configuration Information - Factory Integrated Models

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

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

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

**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	452291-B21
	HP ProLiant DL580 G5 Highly Serviceable Tower Chassis	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 Drive Cage		
Integrated Lights-Out 2 (iLO2) Standard Management		
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 2.93 2x4M QC X7350 Kit, FIO	451999-L21
	<b>NOTE:</b> If more than one processor is desired, additional processor selections would be 451999-B21.	
	HP DL580G5 2.4 2x4M QC E7340 Kit, FIO	438090-L21
	<b>NOTE:</b> If more than one processor is desired, additional processor selections would be 438090-B21.	
	HP DL580G5 2.4 2x3M QC E7330 Kit, FIO	438091-L21
	<b>NOTE:</b> If more than one processor is desired, additional processor selections would be 438091-B21.	
	HP DL580G5 2.13 2x2M QC E7320 Kit, FIO	438092-L21
	<b>NOTE:</b> If more than one processor is desired, additional processor selections would be 438092-B21.	
	HP DL580G5 1.6 2x2M QC E7310 Kit, FIO	438093-L21
	<b>NOTE:</b> If more than one processor is desired, additional processor selections would be 438093-B21.	
	HP DL580G5 1.86 2x4M QC 50W L7345 Kit, FIO	438100-L21
	<b>NOTE:</b> If more than one processor is desired, additional processor selections would be 438100-B21.	
	Dual-Core HP DL580G5 2.93 2x4M 80W E7220 Kit, FIO	438101-L21
	<b>NOTE:</b> If more than one processor is desired, additional processor selections would be 438101-B21.	
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 Factory Integratable Options

Integrated hypervisor (iHV)	VMware ESX Server 3i integrated hypervisor	
	integrated VMware ESX Server 3i 4P FIO	480100-B21
	integrated VMware ESX Server 3i Enterprise 4P FIO	464670-B21
	<b>NOTE:</b> For additional information and option kits, please see the QuickSpecs at: <a href="http://h18000.www1.hp.com/products/quickspecs/12307_div/12307_div.html">http://h18000.www1.hp.com/products/quickspecs/12307_div/12307_div.html</a> (Worldwide)	
	Citrix XenServer integrated hypervisor	
	integrated XenServer HP Select Edition 2P/4P	464673-B21
	integrated XenServer HP Enterprise Edition 2P/4P	464674-B21
	<b>NOTE:</b> For additional information and option kits, please see the QuickSpecs at: <a href="http://h18000.www1.hp.com/products/quickspecs/13018_div/13018_div.html">http://h18000.www1.hp.com/products/quickspecs/13018_div/13018_div.html</a> (Worldwide)	

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

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

### Options

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

ProLiant DL580 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.	

Processor	Quad-Core Intel® Xeon® X7350 Processor (2.93 GHz, 2x4M cache, 130Watts)	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 Intel® Xeon® E7220 Processor (2.93 GHz, 2x4M cache, 80 Watts)	438101-B21

Memory (DIMMs)	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
<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.		
<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> .		

### Options

#### HP Insight Control Environment Management Suite

**NOTE:** Electronic licensing options are available for Insight Control suites software products. Please see the appropriate Insight Control QuickSpecs for additional information.

##### HP Insight Control Environment

HP Insight Control Environment, No Media 1-Server License including 1 year of 24x7 Technical Support and Updates 452148-B22

**NOTE:** This part number can be purchased as a single license or as multiple licenses with a single activation key. Customer will receive a license entitlement certificate via e-mail. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support and Update Service. Only available directly from HP and select resellers in the Americas region.

HP Insight Control Management Software Media Kit 436222-B21

**NOTE:** Insight Control Management DVD media without licenses. Contains Insight Manager and Essentials software products and components licensed by Insight Control Management suites. Uses an integrated installer to perform quick and accurate software installation and updates.

**NOTE:** For additional License Kits, please see the QuickSpecs at:  
[http://h18000.www1.hp.com/products/quickspecs/12631\\_div/12631\\_div.html](http://h18000.www1.hp.com/products/quickspecs/12631_div/12631_div.html)

##### HP Insight Control Linux Edition

HP Insight Control Environment for Linux v2.0, Media pack (CD) - No licenses included 464422-B21

**NOTE:** This optional Media pack CD contains the ISO image for HP Insight Control Environment for Linux, HP System Insight Manager, and an integrated installer. Servers must be acquired separately. This Media pack is optional because the latest ISO image and latest updates may be downloaded at no cost from:

<http://www.hp.com/go/ice-linux> (click on Download button).

HP Insight Control Environment for Linux v2.0, No Media, 1-Server license, including One year of 24x7 Technical Support and Updates 464423-B21

**NOTE:** This part number can be used to purchase one (1) license with a single activation key. Customer will receive a printed license entitlement certificate via physical shipment. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support and Update Service. One certificate is shipped for each license.

**NOTE:** For additional License Kits, please see the QuickSpecs at:  
[http://h18000.www1.hp.com/products/quickspecs/13019\\_div/13019\\_div.html](http://h18000.www1.hp.com/products/quickspecs/13019_div/13019_div.html)

#### Server Management Stand Alone Software Product - ProLiant Essentials

**NOTE:** Electronic licensing options are available for select ProLiant Essentials software products. Please see the appropriate ProLiant Essentials QuickSpecs for additional information.

##### Deploy

##### ProLiant Essentials Rapid Deployment Pack

ProLiant Essentials Rapid Deployment Pack No Media 1-Server License including 1 year of 24x7 Technical Support and Updates 452151-B21

**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

### Options

license activation key(s). Includes one year of 24 x 7 HP Software Technical Support Service

**NOTE:** For additional License Kits, please see the QuickSpecs at:

[http://h18000.www1.hp.com/products/quickspecs/11053\\_div/11053\\_div.html](http://h18000.www1.hp.com/products/quickspecs/11053_div/11053_div.html)

#### HP Server Migration Pack - Universal Edition

HP Server Migration Pack - Universal Edition, No Media, Physical / Virtual to ProLiant Single Migration License, including 1 year of 24x7 Technical Support and Updates 460750-B21

**NOTE:** This license allows 1 physical to ProLiant or virtual to ProLiant migration.

Customer will receive a printed license entitlement certificate and documentation via physical shipment. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support and Update Service.

HP Server Migration Pack - Universal Edition, No Media, Physical / Virtual to Virtual Single Migration License, including 1 year of 24x7 Technical Support and Updates 460753-B21

**NOTE:** This license allows 1 physical to virtual or virtual to virtual migration.

Customer will receive a printed license entitlement certificate and documentation via physical shipment. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support and Update Service.

HP Server Migration Pack - Universal Edition, No Media, 1-Year Unlimited Migration License, including 1 year of 24x7 Technical Support 460756-B21

**NOTE:** This license allows unlimited migrations (physical to ProLiant, physical to virtual, virtual to virtual, and virtual to ProLiant) for one year. Customer will receive a printed license entitlement certificate and documentation 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, please see the QuickSpecs at:

[http://h18000.www1.hp.com/products/quickspecs/12855\\_div/12855\\_div.html](http://h18000.www1.hp.com/products/quickspecs/12855_div/12855_div.html)

#### Monitor

##### HP Insight Dynamics-VSE

HP Insight Dynamics-VSE with Insight Control Environment, 1-server license including 1 year of 24x7 Technical Support and Updates 483527-B21

**NOTE:** This license supports HP ProLiant ML/DL servers. Customer will receive a printed license entitlement certificate via physical shipment.

HP Insight Dynamics-VSE without Insight Control Environment, 1-server license including 1 year of 24x7 Technical Support and Updates 483531-B21

**NOTE:** This license supports HP ProLiant ML/DL and c-Class Blade servers. Customer will receive via email a receipt and link to a license entitlement certificate.

**NOTE:** For additional License Kits, please see the QuickSpecs at:

[http://h18000.www1.hp.com/products/quickspecs/13050\\_div/13050\\_div.html](http://h18000.www1.hp.com/products/quickspecs/13050_div/13050_div.html)

#### Control

##### Integrated Lights-Out Select Pack

ProLiant Essentials Integrated Lights-Out Select Pack, No Media, 1-Server License 452158-B21

**NOTE:** For additional License Kits, please see the QuickSpecs at:

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

##### Integrated Lights-Out Advanced Pack



### Options

Integrated Lights-Out Advanced Pack, No Media ,1 Server License 452141-B21

**NOTE:** For additional License Kits, please see the QuickSpecs at:

[http://h18000.www1.hp.com/products/quickspecs/10861\\_div/10861\\_div.html](http://h18000.www1.hp.com/products/quickspecs/10861_div/10861_div.html)

#### Optimize

##### Accelerated iSCSI Pack

ProLiant Essentials Accelerated iSCSI Pack, No Media, Single License 452679-B21

**NOTE:** For use with a single NIC port. Contains one license with a unique license activation key and documentation.

**NOTE:** For additional License Kits, please see the QuickSpecs at:

[http://h18000.www1.hp.com/products/quickspecs/12466\\_div/12466\\_div.html](http://h18000.www1.hp.com/products/quickspecs/12466_div/12466_div.html)

**NOTE:** Flexible and volume quantity license kits are available for ProLiant Essentials Value Packs. Refer to: <http://www.hp.com/servers/proliantessentials> or the various ProLiant Essentials QuickSpecs for more information.

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Optical Drives	Slimline DVD-ROM Drive (8X/24X) Option Kit	264007-B21
	HP DVD±R/RW 8X Slim	383975-B21

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Hard Drives	Hot Plug SFF SAS 2.5" Drives	
	HP 146GB 3G SAS 10K SFF DP HDD	418367-B21
	HP 146GB 3G SAS 10K SFF SP HDD	431958-B21
	HP 72GB 3G SAS 15K SFF DP HDD	418371-B21
	HP 72GB 3G SAS 15K SFF SP HDD	431935-B21
	HP 72GB 3G SAS 10K SFF DP HDD	384842-B21
	HP 72GB 3G SAS 10K SFF SP HDD	375861-B21
	HP 36GB 3G SAS 15K SFF DP HDD	418369-B21
	HP 36GB 3G SAS 15K SFF SP HDD	431933-B21

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

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

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

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

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

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

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Storage Controllers	SAS Controllers	
	Smart Array E200 Controller	
	HP Smart Array E200/128 BBWC Controller	411508-B21
	128-MB BBWC (Battery-Backed Write Cache) Enabler	351580-B21

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

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### Options

#### Smart Array E500 Controller

HP Smart Array E500/256MB Controller 435129-B21

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 E500 is integrated outside of the factory. For all solutions, please refer to the server QuickSpecs and User's Manual for detailed installation instructions.

#### Smart Array P400 Controller

HP Smart Array P400/256MB Controller 405132-B21

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

512MB DDR BBWC Upgrade 405148-B21

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

Battery-backed write cache upgrade 383280-B21

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

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. For all solutions, please refer to the server QuickSpecs and User's Manual for detailed installation instructions.

#### 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

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

[http://h18000.www1.hp.com/products/quickspecs/12460\\_div/12460\\_div.html](http://h18000.www1.hp.com/products/quickspecs/12460_div/12460_div.html)  
(Smart Array E200 Controller)

[http://h18000.www1.hp.com/products/quickspecs/12700\\_div/12700\\_div.html](http://h18000.www1.hp.com/products/quickspecs/12700_div/12700_div.html)  
(Smart Array E500 Controller)

[http://h18000.www1.hp.com/products/quickspecs/12400\\_div/12400\\_div.html](http://h18000.www1.hp.com/products/quickspecs/12400_div/12400_div.html)  
(Smart Array P400 Controller)

[http://h18000.www1.hp.com/products/quickspecs/12247\\_div/12247\\_div.html](http://h18000.www1.hp.com/products/quickspecs/12247_div/12247_div.html)  
(Smart Array P600 Controller)

[http://h18000.www1.hp.com/products/quickspecs/12616\\_div/12616\\_div.html](http://h18000.www1.hp.com/products/quickspecs/12616_div/12616_div.html)  
(Smart Array P800 Controller)

#### SAS HBA

HP SC08Ge Host Bus Adapter 488765-B21

HP SC44Ge Host Bus Adapter 416096-B21

HP 8 Internal Port SAS HBA with RAID 347786-B21

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

[http://h18004.www1.hp.com/products/quickspecs/13082\\_div/13082\\_div.html](http://h18004.www1.hp.com/products/quickspecs/13082_div/13082_div.html)  
(SC80Ge HBA)

[http://h18004.www1.hp.com/products/quickspecs/12617\\_div/12617\\_div.html](http://h18004.www1.hp.com/products/quickspecs/12617_div/12617_div.html)  
(SC44Ge HBA)

[http://h18004.www1.hp.com/products/quickspecs/12332\\_div/12332\\_div.html](http://h18004.www1.hp.com/products/quickspecs/12332_div/12332_div.html)  
(8 Internal Port SAS HBA)

#### SCSI Controllers for External Drive/Storage Support

### Options

Smart Array 6404/256 Controller	273914-B21
128-MB BBWC (Battery-Backed Write Cache) Enabler	273914-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>NOTE:</b> Please see the following QuickSpecs for Technical Specifications and additional information:	
<a href="http://h18000.www1.hp.com/products/quickspecs/11587_div/11587_div.html">http://h18000.www1.hp.com/products/quickspecs/11587_div/11587_div.html</a> (Smart Array 6400)	
<a href="http://h18000.www1.hp.com/products/quickspecs/12069_div/12069_div.html">http://h18000.www1.hp.com/products/quickspecs/12069_div/12069_div.html</a> (Smart Array 642)	
<a href="http://h18000.www1.hp.com/products/quickspecs/11943_div/11943_div.html">http://h18000.www1.hp.com/products/quickspecs/11943_div/11943_div.html</a> (U320 G2 Adapter)	

Communications	HP NC110T PCI Express Gigabit Server Adapter	434905-B21
	HP NC360T PCI Express Dual Port Gigabit Server Adapter	412648-B21
	HP NC364T PCI Express Quad Port Gigabit Server Adapter	435508-B21
	HP NC364T PCI Express Quad Port Gigabit Server Adapter	435508-B21
	HP NC373F PCI Express Multifunction Gigabit Server Adapter	394793-B21
	HP NC373T PCI Express Multifunction Gigabit Server Adapter	394791-B21
	HP NC380T PCI Express Dual Port Multifunction Gigabit Server Adapter	394795-B21
	<b>NOTE:</b> Supported on a full length-full height slot only.	
	HP NC510F PCIe 10 Gigabit Server Adapter	414126-B21
	<b>NOTE:</b> A minimum of 1 gigabyte (1 GB) of server memory is required per each NC510F adapter.	
	HP NC510C PCIe 10 Gigabit Server Adapter	414129-B21
	<b>NOTE:</b> A minimum of 1 gigabyte (1 GB) of server memory is required per each NC510C adapter.	

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

Redundant Options	800/1200W AC Power Supply	437572-B21
	<b>NOTE:</b> 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.	

Tape Drives	<b>NOTE:</b> For the complete listing of Tape Drive offerings, please see:	
	<a href="http://www.hp.com/products1/storage/compatibility/tapebackup/ISS/index.html">http://www.hp.com/products1/storage/compatibility/tapebackup/ISS/index.html</a>	
	For recommended tape drive offerings for this ProLiant server see the following:	
	<b>USB Tape Drives</b>	
	HP DAT 160 USB Internal Tape Drive for ProLiant	EH976A

### Options

#### SAS Tape Drives

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

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

HP LTO-3 Ultrium 920 SAS Internal Tape Drive for ProLiant EH978A

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.

#### SCSI Tape Drives

**NOTE:** For the DL580 G5, HP recommends purchasing the HP SC11Xe HBA (412911-B21) for a dedicated SCSI HBA for tape.

HP StorageWorks LTO-2 Ultrium 448 SCSI Internal Tape Drive (Carbonite) DW016A

HP LTO-3 Ultrium 920 SCSI Internal Tape Drive for ProLiant EH977A

HP StorageWorks LTO-4 Ultrium 1760 SCSI Internal Tape Drive EH921A

**NOTE:** Please see the HP StorageWorks Ultrium Tape Drive QuickSpecs for additional options such as controllers, media, and other related items:

[http://h18006.www1.hp.com/products/quickspecs/11739\\_div/11739\\_div.html](http://h18006.www1.hp.com/products/quickspecs/11739_div/11739_div.html)  
(Worldwide)

[http://h18006.www1.hp.com/products/quickspecs/12128\\_div/12128\\_div.html](http://h18006.www1.hp.com/products/quickspecs/12128_div/12128_div.html)  
(Worldwide)

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

#### Rack-Mount Tape Drive Enclosures

HP StorageWorks 1U SCSI Rack-Mount kit A7445B

**NOTE:** The 1U Rack-Mount Kit can support up to (2) half-height tape drives and is compatible with multiple Single-Ended and LVD SCSI tape drives including the DAT 40, DAT 72, DAT 160, DLT VS160, LTO-1 Ultrium 232, LTO-2 Ultrium 448, LTO-3 Ultrium 920 and LTO-4 Ultrium 1760 tape drives.

HP StorageWorks 1U USB Rack-Mount Kit A8007A

**NOTE:** The 1U USB Rack-Mount Kit can support up to (2) half-height tape drives and is compatible with the DAT 40 USB, DAT 72 USB and DAT 160 USB tape drives.

HP StorageWorks 1U SAS Rack-Mount Kit AE459A

**NOTE:** The 1U SAS Rack-Mount Kit can support up to (2) half-height tape drives and is compatible with the LTO-2 Ultrium 448 SAS, LTO-3 Ultrium 920 SAS and LTO-4 Ultrium 1760 SAS tape drives.

HP StorageWorks 3U SCSI Rack-mount Kit 274338-B22

**NOTE:** The 3U SCSI Rack-mount Kit can support up to (2) full-height or (4) half-height tape drives and is compatible with multiple LVD SCSI tape drives including DAT 40, DAT 72, DAT 160, DLT VS160, SDLT 600, LTO-1 Ultrium 232, LTO-2 Ultrium 448, LTO-3 Ultrium 920, LTO-3 Ultrium 960, LTO-4 Ultrium 1760 and LTO-4 Ultrium 1840 tape drives.

HP StorageWorks 3U SAS Rack-mount Kit AG576A

**NOTE:** The 3U Rack-mount Kit can support up to (2) full-height or (4) half-height tape drives and compatible with multiple SAS tape drives including DAT 160 SAS, LTO-2 Ultrium 448 SAS, LTO-3 Ultrium 920 SAS, LTO-4 Ultrium 1760 SAS and LTO-4 Ultrium 1840 SAS tape drives.

### Options

**NOTE:** Please see the Rack-Mount Tape Drive Kits QuickSpecs for additional information regarding these kits:  
[http://h18000.www1.hp.com/products/quickspecs/10854\\_div/10854\\_div.html](http://h18000.www1.hp.com/products/quickspecs/10854_div/10854_div.html)  
(Worldwide)

#### Disk-Based Backup

##### RDX Removable Disk Backup

HP StorageWorks RDX160 Internal Removable Disk Backup System AJ765A

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

HP StorageWorks RDX320 Internal Removable Disk Backup System AJ767A

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

**NOTE:** Please see the HP RDX Removable Disk Backup System QuickSpecs for additional information:

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

##### D2D Backup

HP StorageWorks D2D120 Backup System EH884A

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

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

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

HP StorageWorks D2D130 Backup System EH950A

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

HP StorageWorks D2D130 Backup System with Data Protector Express Software Kit EH951A

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

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

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

HP StorageWorks D2D2503i Backup System EH945A

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

HP StorageWorks D2D4004i Backup System EH938A

**NOTE:** 4.5TB of Disk Storage.

**NOTE:** Please see the HP D2D Backup Systems QuickSpecs for additional information: <http://www.hp.com/go/d2d>

### Options

#### Tape Autoloaders

##### HP StorageWorks DAT Autoloader

HP StorageWorks DAT 72x10 tape autoloader AE313B

##### 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-4 Ultrium 1760 SCSI Tape Autoloader AJ816A

HP StorageWorks 1/8 G2 LTO-3 Ultrium 920 Tape Autoloader AH165A

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

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

HP StorageWorks 1/8 G2 Tape Autoloader Rack Kit AH166A

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

**NOTE:** Please reference the Tape Autoloader QuickSpecs at:

<http://www.hp.com/go/automation> for additional information needed to create a complete solution.

#### Tape Libraries

##### HP StorageWorks MSL2024 Tape Library

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

HP StorageWorks MSL2024 1 LTO-4 Ultrium 1840 4GB FC Library AJ034A

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

HP StorageWorks MSL2024 1 LTO-4 Ultrium 1760 SCSI Drive Library AJ817A

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

HP StorageWorks MSL2024 1 LTO-3 Ultrium 960 4GB FC Library AG326B

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

HP StorageWorks MSL2024 1 LTO-3 Ultrium 920 SCSI Drive Library AH169A

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

##### HP StorageWorks MSL4048 Tape Library

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

HP StorageWorks MSL4048 1 LTO-4 Ultrium 1840 4GB FC Library AJ036A

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

HP StorageWorks MSL4048 2 LTO-4 Ultrium 1760 SCSI Drive Library AJ818A

HP StorageWorks MSL4048 1 LTO-3 Ultrium 960 SCSI Drive Library AG322A

HP StorageWorks MSL4048 1 LTO-3 Ultrium 960 4GB FC Library AG324B

HP StorageWorks MSL4048 1 LTO-3 Ultrium 920 SAS Drive Library AH560A

HP StorageWorks MSL4048 1 LTO-3 Ultrium 920 SCSI Drive Library AH171A

HP StorageWorks MSL4048 1 LTO-2 Ultrium 448 SCSI Drive Library AG320A

**NOTE:** Please reference the MSL Tape Library QuickSpecs at:

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

### Options

High Availability Cluster Options	HP Serviceguard for Linux	
	HP Serviceguard Linux for HP ProLiant/x86 Servers	463831-B21
	Licensed per physical server	
	Includes media and One Year 24x7 Software Support & Updates	
	HP Serviceguard Linux Oracle Database Toolkit for HP ProLiant/x86 Servers	463833-B21
	Licensed per cluster	
	Includes media and One Year 24x7 Software Support & Updates	
	HP Serviceguard Extension for SAP on Linux for HP ProLiant/x86 Servers	463834-B21
	Licensed per physical server	
	Includes media and One Year 24x7 Software Support & Updates	
	HP Serviceguard Linux Extended Distance Cluster (XDC) for HP ProLiant/x86 Servers	463835-B21
	Licensed per physical server	
	Includes media and One Year 24x7 Software Support & Updates	
	<b>NOTE:</b> For a detailed list of supported configuration/certification options for HP Serviceguard for Linux please refer to the HP Serviceguard for Linux Certification Matrix at: <a href="http://www.hp.com/go/sglx/info">http://www.hp.com/go/sglx/info</a> .	
	<b>NOTE:</b> HP Serviceguard for Linux products running on x86 platforms now include one year of 24 x 7 Software Technical Support and Updates. Please see the Support Information section of the HP Serviceguard for Linux QuickSpecs for details.	
	<b>NOTE:</b> For additional information including a complete list of Product Numbers for HP Serviceguard for Linux, please see the following QuickSpecs at: <a href="http://h18000.www1.hp.com/products/quickspecs/11518_div/11518_div.html">http://h18000.www1.hp.com/products/quickspecs/11518_div/11518_div.html</a> (Worldwide).	

### StorageWorks Options

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

HP StorageWorks FC2142SR 4Gb PCI-e HBA	A8002A
HP StorageWorks FC2242SR Dual Channel 4 Gb PCI-e HBA	A8003A
HP StorageWorks FC1142SR 4Gb PCI-e HBA	AE311A
HP StorageWorks FC1242SR Dual Channel 4 Gb PCI-e HBA	AE312A
HP StorageWorks FC2143 4Gb PCI-X 2.0 -to-Fibre Channel HBA	AD167A
HP StorageWorks FC2243 Dual Channel 4Gb PCI-X 2.0 HBA	AD168A
HP StorageWorks FC1143 4Gb PCI-X 2.0 HBA	AB429A
HP StorageWorks FC1243 Dual Channel 4Gb PCI-X 2.0 HBA	AE369A
HP StorageWorks 81Q PCI-e FC HBA	AK344A
HP StorageWorks 8Gb Simple SAN Connection Kit	AK241A
HP StorageWorks 8/20q Fibre Channel Switch	AK242A
HP StorageWorks 81E 8Gb SP PCI-e FC HBA	AJ762A
HP 82E 8Gb Dual-port PCI-e FC HBA	AJ763A
HP 82Q 8Gb Dual Port PCI-e FC HBA	AJ764A

### StorageWorks SCSI HBA

HP U320e SCSI Host Bus Adapter	AH627A
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**NOTE:** Recommended Dual Channel Ultra320 SCSI Controller for connecting multi-drive MSL tape libraries to ProLiant servers.

### Options

HP StorageWorks Modular Smart Array 20	HP StorageWorks Modular Smart Array 20	335921-B21
	<p><b>NOTE:</b> Rack-mountable 12 (SATA) drive enclosure with U320 Host connectivity, redundant power supplies.</p> <p><b>NOTE:</b> Please see the Modular Smart Array 20 QuickSpecs for additional information including configuration steps and additional options needed for a complete solution at: <a href="http://h18000.www1.hp.com/products/quickspecs/11942_div/11942_div.html">http://h18000.www1.hp.com/products/quickspecs/11942_div/11942_div.html</a> (Worldwide)</p>	
HP StorageWorks Modular Smart Array 30	HP StorageWorks Modular Smart Array 30 SB	302969-B21
	<p><b>NOTE:</b> Rack-mountable 14 drive enclosure with single bus, redundant power supplies.</p>	
	HP StorageWorks Modular Smart Array 30 DB	302970-B21
	<p><b>NOTE:</b> Rack-mountable 14 drive enclosure with dual bus, redundant power supplies.</p> <p><b>NOTE:</b> Please see the Modular Smart Array 30 QuickSpecs for additional information including configuration steps and additional options needed for a complete solution at: <a href="http://h18000.www1.hp.com/products/quickspecs/11738_div/11738_div.html">http://h18000.www1.hp.com/products/quickspecs/11738_div/11738_div.html</a> (Worldwide)</p>	
HP StorageWorks Modular Smart Array 50	HP StorageWorks Modular Smart Array 50 Enclosure	364430-B21
	<p><b>NOTE:</b> Please see the Modular Smart Array 50 QuickSpecs for additional options and configuration information at: <a href="http://h18000.www1.hp.com/products/quickspecs/12245_div/12245_div.html">http://h18000.www1.hp.com/products/quickspecs/12245_div/12245_div.html</a> (Worldwide)</p>	
HP StorageWorks 2000sa Modular Smart Array	HP 2012sa Single Controller Modular Smart Array	AJ752A
	HP 2012sa Dual Controller Modular Smart Array	AJ753A
	<p><b>NOTE:</b> Please see the Modular Smart Array 2000sa QuickSpecs for additional options and configuration information at: <a href="http://h18000.www1.hp.com/products/quickspecs/13045_div/13045_div.html">http://h18000.www1.hp.com/products/quickspecs/13045_div/13045_div.html</a> (Worldwide)</p>	
Uninterruptible Power Systems - Rack	HP R3000 VA UPS, 2U, DTC, INTL	AF414A
	HP R3000 VA UPS, 2U, L5-30, NA	AF422A
	HP R3000 VA UPS, 2U, L6-20, NA	AF423A
	HP R3000 VA UPS, 2U, L6-20, JPN	AF424A
	HP R3000 VA UPS, 2U, L5-30, JPN	AF425A
	HP R5500 VA UPS, INTL	AF416A
	HP R5500 VA UPS, NA/JPN	AF426A



### Options

HP Monitored Power Distribution Unit (PDU)	HP Monitored Power Distribution Unit: Half Rack Version HP 17.3 kVA S348 Monitored PDU- single input, 3Ø, 48A (NA/JPN)	AF916A
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Modular Power Distribution Units 1U/0U (Up to 32 outlets) <b>NOTE:</b> 1U/0U mounting brackets shipped with the unit (optimized for 10000 and 9000 series racks).	3.6kVA Model - mPDU, 16A, High (WW)	252663-B24
	2.8 kVA Model - mPDU, 24A, Low (NA/JPN)	252663-D71
	4.9kVA Model - mPDU, 24A, High (NA/JPN)	252663-D72
	7.3kVA Model - mPDU, 32A, High (INT'L)	252663-B31
	8.3kVA Model - mPDU, 40A, High (WW)	252663-B21
	8.3kVA Model - mPDU, 40A, High (power cord attached) (NA/JPN)	252663-D73
	9.2kVA Model - mPDU, 40A, High (power cord attached) (INTL)	252663-B32
	<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_div/11041_div.html">http://h18000.www1.hp.com/products/quickspecs/11041_div/11041_div.html</a> (Worldwide)	

USB 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
	HP 256MB USB 2.0 Floppy Drive Key	442084-B21

HP Rack 10000 G2 Series (Carbon/Graphite Metallic)	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
	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
	<b>NOTE:</b> It is mandatory to use a shock pallet when shipping racks with equipment installed.	
	<b>NOTE:</b> Please see the Rack 10000 G2 QuickSpecs for Technical Specifications such as height, width, depth, weight, and color: <a href="http://h18000.www1.hp.com/products/quickspecs/12402_div/12402_div.html">http://h18000.www1.hp.com/products/quickspecs/12402_div/12402_div.html</a> (Worldwide)	

**NOTE:** For additional information regarding Rack Cabinets, please see the following URL: <http://www.hp.com/go/rackandpower>.

### Options

HP Rack 10000 Series (Graphite Metallic)	HP Rack S10614 (14U) Rack Cabinet – Shock Pallet	292302-B22
	<p><b>NOTE:</b> xxxxx-B22 (shock pallet) used to ship racks with equipment installed (by custom systems, VARs and Channels).</p> <p><b>NOTE:</b> Please see the Rack 10000 QuickSpecs for Technical Specifications such as height, width, depth, weight, and color:  <a href="http://h18000.www1.hp.com/products/quickspecs/10995_div/10995_div.html">http://h18000.www1.hp.com/products/quickspecs/10995_div/10995_div.html</a>  (Worldwide)</p> <p><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>.</p>	
Keyboards and Monitors	TFT7600 Rackmount Keyboard Monitor US	AG052A
	TFT7600 Rackmount Keyboard Monitor GR	AG053A
	TFT7600 Rackmount Keyboard Monitor FR	AG054A
	TFT7600 Rackmount Keyboard Monitor IT	AG055A
	TFT7600 Rackmount Keyboard Monitor SP	AG056A
	TFT7600 Rackmount Keyboard Monitor DEN	AG057A
	TFT7600 Rackmount Keyboard Monitor NOR	AG058A
	TFT7600 Rackmount Keyboard Monitor SE/FI	AG059A
	TFT7600 Rackmount Keyboard Monitor SWI	AG060A
	TFT7600 Rackmount Keyboard Monitor PORT	AG061A
	TFT7600 Rackmount Keyboard Monitor BEL	AG062A
	TFT7600 Rackmount Keyboard Monitor JPN2	AG063A
	TFT7600 Rackmount Keyboard Monitor RUS	AG064A
	TFT7600 Rackmount Keyboard Monitor INTL	AG065A
	TFT7600 Rackmount Keyboard Monitor UK	AG066A
	1U Rackmount Keyboard with USB, US	AG072A
	1U Rackmount Keyboard with USB, UK	AG073A
	1U Rackmount Keyboard with USB, GR	AG074A
	1U Rackmount Keyboard with USB, FR	AG075A
	<p><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>.</p>	

### Options

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 (KVM), 0 x 1 x 8 port	336044-B21
	Server Console Switch (KVM), 0 x 2 x 16 port	336045-B21
	PS/2 Interface Adapter, 1 pack	262588-B21
	PS/2 Interface Adapter, 8 pack	262587-B21
	<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> .	

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

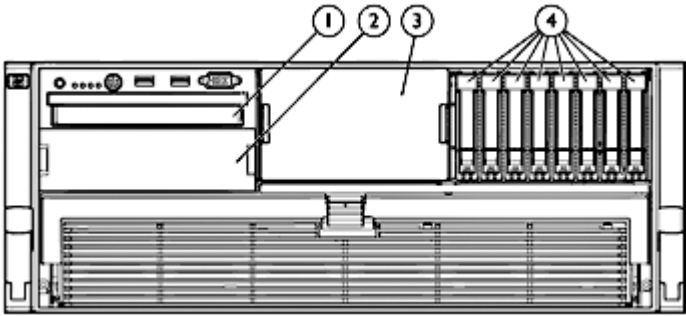
The following memory options are available from HP:

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 DL580G5 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>			
IDE slimline CD-ROM Drive	1	1	Integrated IDE
Slimline DVD-ROM Drive (8X/24X) Option Kit	1	1	Integrated IDE

Hard Drives

SAS SFF Hot Pluggable Drives

	Quantity Supported	Position Supported	Controller
146GB 3G SAS 10K SP	Up to 8	4	HP Smart Array E200/128 BBWC Controller
146GB 3G SAS 10K DP			HP Smart Array E500/256 MB Controller
72GB 3G SAS 10K SP			HP Smart Array P400i/256 MB Controller
72GB 3G SAS 10K DP			HP Smart Array P400i/512 MB BBWC Controller
72GB 3G SAS 15K SP			HP Smart Array P600/256 BBWC Controller
72GB 3G SAS 15K DP			HP Smart Array P800/512 BBWC Controller
36GB 3G SAS 15K SP			
36GB 3G SAS 15K DP			

SFF SATA Hot Plug Entry (ETY) Drives

	Quantity Supported	Position Supported	Controller
120GB 1.5G SATA 5.4K	Up to 8	4	HP Smart Array E200/128 BBWC Controller
			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

### Storage

#### External Storage

	Quantity Supported	Position Supported	Host Controller or Adapter
Modular Smart Array 20 Enclosure	1 per SCSI VHDCI connector	External	Smart Array 6404/256 Controller
Modular Smart Array 30 Family	Up to 28	External	Smart Array 6404/256 Controller
Modular Smart Array 50 Enclosure	Up to 26	External	HP Smart Array P600/256 BBWC Controller HP Smart Array P800/512 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	2.336TB (16 x 146GB SFF SAS Drives)
External	720TB (80 MSA60 enclosures x 12 drive bays each x 750 GB SATA Drives)

#### Tape and Disk-Based Backup

**NOTE:** For an up-to-date listing of the latest O/S Support details for each of the Tape Drives listed below, please see the following:  
<http://h18000.www1.hp.com/products/quickspecs/division/10233.html> (Worldwide)

**NOTE:** For an up-to-date listing of the latest O/S Support details for each of the Tape Autoloaders and Tape Libraries listed below, please see the following:  
<http://h18000.www1.hp.com/products/quickspecs/division/10809.html> (Worldwide)

**NOTE:** For complete listing of tape drive offerings see  
<http://www.hp.com/products1/storage/compatibility/tapebackup/ISS/index.html>

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

	Position Supported	Controller	Controller Part Number
HP StorageWorks SCSI Tape Drives, Internal 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
HP StorageWorks SCSI Tape Drives, External LTO-1 Ultrium 232	External	HP SC11Xe Host Bus Adapter	412911-B21

## Storage

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

<b>HP StorageWorks USB Tape Drives, Internal</b>	2	USB 2.0 Port	N/A
DAT 40 USB			
DAT 72 USB			
DAT 160 USB			

<b>HP StorageWorks USB Tape Drives, External</b>	External	USB 2.0 Port	N/A
DAT 40 USB			
DAT 72 USB			
DAT 160 USB			
1U USB Rack-Mount Kit			

<b>HP StorageWorks SAS Tape Drives, Internal</b>	2	HP SC44Ge Host Bus Adapter	416096-B21
DAT 160 SAS			
LTO-2 Ultrium 448 SAS			
LTO-3 Ultrium 920 SAS			
LTO-4 Ultrium 1760 SAS			

<b>HP StorageWorks SAS Tape Drives, External</b>	External	HP SC44Ge Host Bus Adapter <b>NOTE: Recommended.</b>	416096-B21
DAT 160 SAS			
LTO-2 Ultrium 448 SAS			
LTO-3 Ultrium 920 SAS			
LTO-4 Ultrium 1760 SAS			
LTO-4 Ultrium 1840 SAS			
1U Rack-Mount Kit			
3U Rack-Mount Kit			

<b>HP StorageWorks SCSI Tape Automation, External</b>	External	HP SC11Xe Host Bus Adapter	412911-B21
DAT 72x10 Autoloader			

### Storage

1/8 G2 Autoloader  
MSL2024  
MSL4048  
MSL8096  
MSL6000

HP U320e SCSI Host Bus Adapter  
**NOTE:** Recommended for MSL tape libraries.

AH627A

**HP StorageWorks SAS  
Tape Automation,  
External**

External

HP SC44Ge Host Bus Adapter

416096-B21

1/8 G2 Autoloader  
MSL2024  
MSL4048  
MSL8096

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

**HP StorageWorks Fibre  
Tape Automation,  
External**

External

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

N/A

MSL2024  
MSL4048  
MSL8096  
MSL6000

**HP StorageWorks RDX  
Removable Disk Backup  
System, Internal**  
RDX160  
RDX320

2

USB 2.0 Port

N/A

**HP StorageWorks RDX  
Removable Disk Backup  
System, External**  
RDX160  
RDX320

External

USB 2.0 Port

N/A

**HP StorageWorks D2D  
Backup Systems**  
D2D120  
D2D130  
D2D2503i  
D2D4004i

External

Embedded Network Controller

N/A

### 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:

To review typical system power ratings use the Active Answers Power Calculator which is available via the online tool located at URL: <http://h30099.www3.hp.com/configurator/calc/Power%20Calculator%20Catalog.xls>.

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>

### 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>	<p>To review typical system power ratings use the Power Calculator which is available via the online tool located at URL:  <a href="http://h30099.www3.hp.com/configurator/calc/Power%20Calculator%20Catalog.xls">http://h30099.www3.hp.com/configurator/calc/Power%20Calculator%20Catalog.xls</a></p> <ul style="list-style-type: none"> <li>- Click on the system of interest. Example: DL580 G5</li> <li>- Follow the instructions of the next screens.</li> </ul>	
	<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.



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		

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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	
			Capacity	DVD-ROM
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/			

Technical Specifications

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

### Technical Specifications

Integrated Lights-Out 2 Standard (integrated on system board)	Architecture	32-bit PCI-based health and remote management ASIC (Application Specific Integrated Circuit)
	Processor	32-bit RISC processor core running at 66 MHz
	Upgradability	Option firmware upgradable via flash ROM.
	Video Support	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)
	Interfaces	One Ethernet network connection (10/100 Mb/s)
	Memory	2-MB Flash ROM 8-MB SDRAM
	Operating System Support	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
iLO 2 Standard Features		SUSE LINUX Enterprise Server 10
	Client Browser Support	Novell NetWare 6.5
		Microsoft Internet Explorer 6.0 SP1 or later.
		Mozilla Firefox 2.0 or later (on supported Windows and Linux client systems)
		Mozilla Firefox 1.7.5 or later (for supported Linux client systems)
		Virtual Text Remote Console
		Virtual KVM
		Virtual Power Button Control
		Virtual UID Control
		Dedicated LAN Connectivity
		Secure access using web browser
iLO 2 Advanced Features (optional)		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
		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	10Base-T/100Base-TX/1000Base-TX
	Compatibility	IEEE 802.3 10Base-T
		IEEE 802.3ab 1000Base-T
		IEEE 802.3u 100Base-TX
	Data Transfer Method	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.