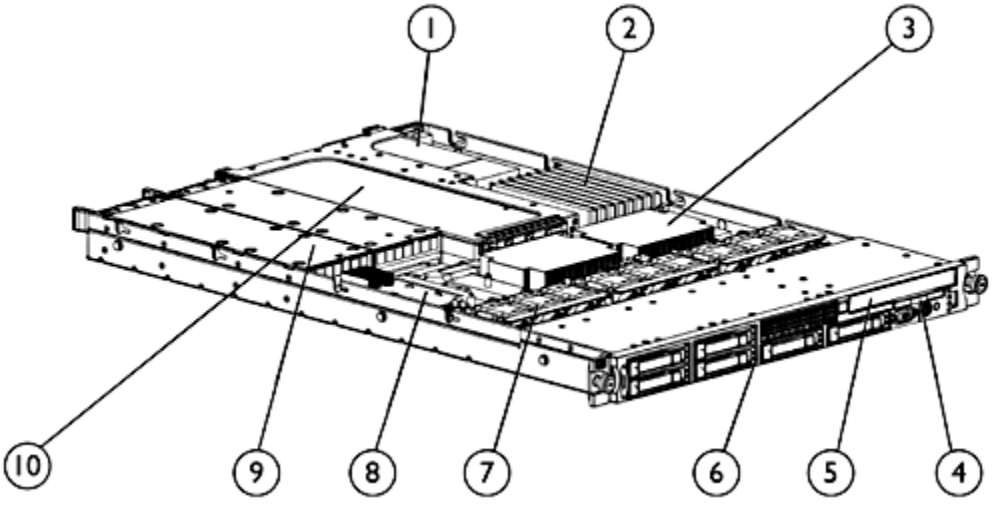
Overview



1. Low-profile x8 PCI-Express slot
2. Eight PC2-5300 FB-DIMMs (DDR2 667) slots
3. Up to two Intel Quad-Core or Dual-Core Xeon™ processors
4. Slide-out System Insight Display
5. Slimline removable media bay
6. Up to six SAS/SATA hot plug drive bays
7. Removable fans for easy serviceability
8. Choice of Smart Array P400i Controller or Smart Array E200i Controller
9. Redundant Hot Plug Power Supplies (upgradeable option)
10. Full length/height x8 PCI-Express Slot (optional PCI-X)

What's New

- New Quad-Core Intel Xeon 5300 sequence processor models are now available (E5320, E5310 both with 8M (2x4MB) L2 Cache, and 1066 FSB

At A Glance

Combining concentrated 1U compute power, integrated Lights-Out management, and essential fault tolerance, the DL360 is optimized for space constrained installations. Dual-core Xeon processors, DDR2 Fully Buffered DIMMs, Serial Attached SCSI (SAS) and PCI Express technology provide a high performance system ideal for the full range of scale out applications. What's more, the HP ProLiant DL360 G5 steps up the fault tolerant in an ultra dense platform with redundant power, redundant fans, mirrored memory or online spare memory, embedded RAID capability, and full-featured remote Lights-Out management.

- **Processors:**
  - Up to (2) Quad-Core or Dual-Core Intel® Xeon® processor 5000 sequence
  - Intel 5000P chipset supporting up to a 1333MHz front-side bus
- **Memory:**
  - Up to 32 GB of memory, supported by (8) slots of PC2-5300 Fully Buffered DIMMs (DDR2-667); 4:1 interleaving; memory mirroring; online spare
- **Storage Controller:**
  - Performance Models: HP Smart Array P400i/256MB BBWC Controller (RAID 0/1/1+0/5/6) (512MB BBWC optional)
  - Base Models: HP Smart Array P400i/256MB Controller (RAID 0/1/1+0/5) (512MB BBWC optional)
  - Entry Models: HP Smart Array E200i/64MB Controller (RAID 0/1/1+0) (128MB BBWC optional)
- **Internal Drive Support:**
  - Up to (6) small form factor (SFF) hot-plug drive bays
  - Slimline media bay supporting DVD, CD or Floppy drive
- **Network Controller:**

Overview

- Embedded NC373i Multifunction Gigabit Server Adapters with TCP/IP Offload Engine, including support for Accelerated iSCSI and RDMA through optional ProLiant Essentials Licensing Kits

- **Expansion Slots:**
  - Two PCI-Express expansion slots: (1) full-length, full-height slot; (1) low-profile slot
  - Front or rear accessible video port
- **USB 2.0 Ports:**
  - 4 Total: (1) front, (1) internal and (2) rear accessible ports
- **Redundancy:**
  - Multiple layers of fault tolerance through critical component redundancy (power supply and fan redundancy), mirrored memory, embedded RAID capability, and full-featured remote Lights-Out management
- **Management:**
  - New Integrated Lights-Out 2 featuring Integrated Remote Console with KVM over IP performance over shared network access
  - HP Power Meter and Power Regulator for ProLiant, delivering integrated power monitoring and server level, policy based power management with industry leading energy efficiency and savings on system power and cooling costs
  - Convenient slide-out Systems Insight Display for quick and easy front view server diagnostics
  - ProLiant Essential Foundation Pack standard, including HP Systems Insight Manager, SmartStart, SmartStart Scripting Toolkit, Subscriber's Choice and ROM Based Setup Utility (RBSU)
  - Automatic Server Recovery (ASR), ROM Based Setup Utility (RBSU), HP System Insight Manager, Status LEDs including system health, UID, and SmartStart
- **Form Factor:**
  - 1U Rack form factor (1.75"), less than 28 inches (70.5 cm) deep
- **Deployment/Serviceability:**
  - Sliding rails for in rack servicing ship standard; optional ambidextrous cable management arm
- **Warranty:**
  - Protected by HP Services and a worldwide network of resellers and service providers. Three-year next business day, on-site limited global warranty. Certain restrictions and exclusions apply. Pre-failure notification on processors, memory, and SAS hard drives. SATA hard drives have a one-year warranty.

Standard Features

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

Processor One of the following depending on Model	Quad-Core Intel Xeon Processor E5320 (1.86 GHz 80 Watts, 1066 Front Side Bus (FSB)) Quad-Core Intel Xeon Processor E5310 (1.60 GHz 80 Watts, 1066 FSB) Dual-Core Intel Xeon Processor 5160 (3.0 GHz, 80 Watts, 1333 FSB) Dual-Core Intel Xeon Processor 5150 (2.67 GHz, 65 Watts, 1333 FSB) Dual-Core Intel Xeon Processor 5148 (2.33 GHz, 40 Watts, 1333 FSB, Low Voltage) Dual-Core Intel Xeon Processor 5140 (2.33 GHz, 65 Watts, 1333 FSB) Dual-Core Intel Xeon Processor 5130 (2.0 GHz, 65 Watts, 1333 FSB) Dual-Core Intel Xeon Processor 5120 (1.86 GHz, 65 Watts, 1066 FSB) Dual-Core Intel Xeon Processor 5110 (1.6 GHz, 65 Watts, 1066 FSB) Dual-Core Intel Xeon Processor 5080 (3.73GHz, 130 Watts, 1066 FSB) Dual-Core Intel Xeon Processor 5060 (3.2GHz, 130 Watts, 1066 FSB) **NOTE:** Up to 2 processors supported. Performance configurations include two processors. **NOTE:** Intel 5300 sequence processors are 64-bit, Quad-Core, and supports Intel VT technology. Intel 5100/5000 sequence processors are 64-bit, Dual-Core, and supports Intel VT technology.
Cache Memory One of the following depending on Model	8MB (2 x 4MB) Level 2 cache (5300 sequence) 4MB (1 x 4MB) Level 2 cache (5100 sequence) 4MB (2 x 2MB) Level 2 cache (5000 sequence)
Upgradeability	Upgradeable to quad or dual processing Future upgradeable to Xeon Series 5300 Quad-Core, or 5100 Dual-Core processors
Chipset	Intel 5000P chipset **NOTE:** For more information regarding Intel chipsets, please see the following URL: http://www.intel.com/products/server/chipsets/.
Memory Protection & Functionality	Advanced ECC (multi-bit error protection), Online Spare, Mirroring 4-way interleaving
Memory	Type: PC2-5300 Fully Buffered DIMMs (DDR2-667) Standard (Entry or Base Models): 1 GB (2 x 512 MB) Standard (Performance Models): 2 GB (2 x 1 GB) Maximum: 32 GB (8 x 4 GB) **NOTE:** Memory DIMMs in systems with the Front Side Bus (FSB) running at 1333 MHz will run at 667 MHz and in systems with a FSB running at 1066 MHz or 667 MHz the memory DIMMs will run at 533 MHz.
Network Controller	Embedded NC373i Multifunction Gigabit Server Adapters with TCP/IP Offload Engine, including support for Accelerated iSCSI and RDMA through optional ProLiant Essentials Licensing Kits

Standard Features

Expansion Slots

Slot Number	Bus Speed	Bus Number*	Device Number**	Hot Plug	PCI Voltage
1	x8 PCI Express	11	0	no	N/A
2	x8 PCI Express	19	0	no	N/A
2	64-bit/133MHz PCI-X (option)	16	1	no	3.3 Volt

***NOTE:** Default bus assignment. Inserting cards with PCI bridges may alter the actual bus assignment number.

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

Manageability

Integrated Lights Out 2 (iLO 2) Standard Management:

- Virtual Text Remote Console
- Virtual Power Button Control
- Integrated Remote Console
- Dedicated & full function shared network connectivity
- 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)
- 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

Performance Models:	HP Smart Array P400i/256MB BBWC Controller (RAID 0/1/1+0/5/6) **Available upgrades**: 512MB memory battery-backed write cache (BBWC) module for RAID 0/1/1+0/5/6.
Base Models:	HP Smart Array P400i/256MB Controller (RAID 0/1/1+0/5) **Available upgrades**: 512MB memory battery for battery-backed write cache (BBWC) module for RAID 0/1/1+0/5/6, or battery-backed write cache for RAID 0/1/1+0/5/6.
Entry Models:	HP Smart Array E200i/64MB Controller (RAID 0/1/1+0) **Available upgrades**: 128MB memory battery for battery-backed write cache (BBWC) module for RAID 0/1/1+0/5.

Storage

Optical Drives (Slimline Drive bay)	Optional DVD-ROM, DVD/CD-RW Combo (standard in performance models), DVD-RW, or Slimline floppy drive
Drive Bays	Up to 6 Small Form Factor bays total **NOTE:** 4 bays active in most models. Smart Array P400i controller and Mini-SAS storage cable (P/N 399546-B21) required for activation of 5th and 6th drive bays.

Maximum Internal Storage Type

Hot Plug Serial Attached SCSI (SAS)	876GB SAS	6 x 146GB SAS
Hot Plug Serial ATA (SATA)	360GB SATA	6 x 60GB SATA

Standard Features

Interfaces	Keyboard	1
	Mouse	1
	Serial	1
	Video	1
	USB 2.0 Ports	4 total: 2 rear, 1 front, 1 internal **NOTE:** Please see the following URL for additional information regarding USB support: http://h18004.www1.hp.com/products/servers/platforms/usb-support.html.
	Network RJ-45	2
	iLO 2 remote management port	1
Graphics	Integrated ATI ES1000 1280 x 1024 x 16M color (32MB video standard)	
Form Factor	Rack (1U), (1.75 in/4.45 cm); 27.75 inch depth (70.5cm)	
ProLiant Essentials Foundation Pack Software	HP Systems Insight Manager	HP Systems Insight Manager (HP SIM) provides a unified, secure and extensible environment to centrally manage servers, storage and other infrastructure devices across multiple operating system platforms. Through a single management view, HP SIM provides core management services that include device discovery and identification, event views, health monitoring, inventory data collection, software version control and reporting. HP SIM is built on industry standards and is extensible with value-added ProLiant Essentials, Integrity Essentials and Storage Essentials software to meet individual management needs. For more details on HP SIM visit http://www.hp.com/go/hpsim. HP SIM provides organizations with the following benefits: • Simplifies and consolidates infrastructure lifecycle management using task and query based functionality • Provides the foundation for infrastructure automation and virtualization • Enables IT management based on business processes not hardware platforms • Lowers infrastructure maintenance cost and frees resources for innovation • Maximizes resource utilization with virtualization technologies • Provides a central point of integration between infrastructure and Enterprise management tools such as HP OpenView
	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	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 automatic delivery of software and driver change notifications for ProLiant products. Sign up at http://www.hp.com/go/subscriberschoice and customize your profile to receive various new alerts as they become available, on a weekly or monthly basis.
ROMPaq, support software, and configuration utilities	The latest software, drivers, and firmware fully optimized and tested for your ProLiant server and options available in SmartStart or downloadable from Software and Drivers download pages: http://www.hp.com/go/support
Insight Diagnostics	The most advanced configuration analysis, reporting and troubleshooting utilities used by HP and at your fingertips, available in SmartStart.
Optional ProLiant Essentials Value Packs	Optional software offerings that selectively extend the functionality of an Adaptive Infrastructure to address specific business problems and needs: • Rapid Deployment Pack (RDP) is an automated deployment and provisioning solution for all ProLiant servers. RDP includes the ProLiant Integration Module featuring ProLiant server pre-configured events for OS installation, and optimized software drivers, firmware and management agents. Every RDP disc includes 7-day, 10-node trial licenses for evaluation purposes. RDP requires a license for each server deployed and is available for purchase with HP servers. For more information, visit: http://www.hp.com/servers/rdp. • Workload Management Pack – provides easier management of complex environments, improving overall server utilization and enabling Windows® 2000 customers for the first time to confidently deploy multiple applications on a single multiprocessor ProLiant Server. • Performance Management Pack – 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. • Intelligent Networking Pack – detects and analyzes network bottlenecks or broken network linkages and steers traffic to the optimum route based on network conditions, plus it provides an extra layer of protection. The virus throttle feature of the solution slows the propagation of fast spreading virus • Vulnerability and Patch Management Pack – identifies and remediates software security vulnerabilities due to missing patches as well operating system configurations that can be exploited by viruses, worms, and other blended threats • Virtual Machine Management Pack – provides central management and control of virtual machines from Microsoft and VMware. Integrated approach provides the ability to manage both physical and virtual resources from a single management

console.

- Server Migration Pack – The Server Migration Pack automates the manual processes required for migrating servers between physical or virtual platforms (P2V, V2P, and V2V).
- Server Migration Pack – P2P Edition: Upgrading or replacing your existing server? Effortlessly transition to new servers with automated, accurate and affordable migration of OS, application and data.
- 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.
- Remote Directory Memory Access (RDMA) Pack for Embedded Multifunction Gigabit Server Adapters – provides direct and faster communication between application buffers in separate servers for tasks that involves moving large amounts of data, such as network backups, database read/write, and high performance computing.

Optional Remote Management Packs

- Integrated Lights-Out Advanced Pack - upgrades the iLO 2 processor with comprehensive remote control including Virtual KVM graphical console, virtual media, power management and enterprise security.

NOTE: Flexible and volume quantity license kits are available for ProLiant Essentials Value Packs. Refer to http://www.hp.com/servers/proliantessentials or the various ProLiant Essentials Value Pack product QuickSpecs for more information.
NOTE: For more information regarding ProLiant Essentials Software, please see the following URL: http://www.hp.com/servers/proliantessential.

Industry Standard Compliance

ACPI 1.0b Compliant
PCI 2.2 Compliant
WOL Support
Microsoft® Logo certifications
PXE Support
USB 1.1 and 2.0 Compliant

Remote Management

Integrated Lights Out 2 (iLO2) Standard Management:

- Virtual Text Remote Console
- Virtual Power Button Control
- Integrated Remote Console
- Dedicated & full function shared network connectivity
- 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)
- OS independent hardware health status
- IML and iLO Event Logging
- Support for 12 user accounts with customizable access privilege

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Standard Features

Intelligent Manageability	HP Systems Insight Manager SmartStart ROM-Based Setup Utility (RBSU) Remote-Flash Redundant ROM Integrated Management Log (IML) Server Health logging Automatic Server Recovery-2 (ASR-2) System Insight Display (SID) Dynamic sector repairing and drive parameter tracking (with Smart Array controllers) Hot Spare Boot **NOTE:** Upon the event of a failed processor or VRM in a multi-processing environment, the system will automatically reboot and use the remaining good processor(s). Power Down Utility Pre-Failure Warranty (covers processors, as well as SAS hard drives and memory)
Security	Power-on password Keyboard password Diskette drive control Diskette boot control QuickLock, Network Server Mode Removable CD and Diskette Drive Assembly Serial interface control Administrator's password Disk configuration lock Integrated Lights-Out has 12 customizable user accounts and SSL encryption Integrated Lights-Out can be disabled via a Global Setting iLO Advance Pack supports directory services integration and two-factor authentication
Server Power Cords	High voltage power cord ships standard with all part numbers.
UPS Power Cord Matrix	Please see the UPS Power Cord Matrix for cable descriptions, requirements, and specifications for UPS units: ftp://ftp.compaq.com/pub/products/servers/proliantstorage/power-protection/powercordmatrix.pdf.
Power Supply	700W, Optional (1+ 1 redundant) power supply **NOTE:** PN 399542-B21 contains the optional power supply and an IEC power cable only; purchase if connecting to PDU/UPS that supports IEC cables.
System Fans	9 fans ship standard; N+1 fan redundancy standard
Required Cabling	For required cabling information, refer to the Web site at http://h18000.www1.hp.com/products/servers/proliantdl360/.

Standard Features

OS Support

Microsoft Windows 2000 Server
Microsoft Windows Server 2003
Novell NetWare
Linux (Red Hat, SuSE)
Solaris 10 32/64-bit
VMware Virtualization Software

NOTE: SAS and SATA models may have different OS support. Please see OS Support Matrix.
NOTE: For a more complete and up-to-date listing of supported OSs and versions, please visit our OS Support Matrix page at: http://www.hp.com/go/supportos.
NOTE: For more complete and up-to-date information on how to buy server operating systems from HP please visit the OS product site at: http://h18004.www1.hp.com/products/servers/software/OEM.html
NOTE: For a listing of the latest drivers available for the HP ProLiant DL360, please see: http://h18023.www1.hp.com/support/files/server/us/index.html.
NOTE: For a more complete and up-to-date information on Linux support, please visit HP Linux Web site at http://h18000.www1.hp.com/products/servers/linux/hpLinuxcert.html.
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.

Rack Airflow Requirements

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

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

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

CAUTION: Always use blanking panels to fill all remaining empty front panel U-spaces in the rack. This arrangement ensures proper airflow. Using a rack without blanking panels results in improper cooling that can lead to thermal damage.

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://h18000.www1.hp.com/products/servers/proliantdl360/index.html.

Telco Rack Support

HP ProLiant DL360 G5 Telco Rack Kit:
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/)

Standard Features

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 MSA1000, VA7xxx, EVA, XP, rackable tape libraries and configurable network switches.

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

HP Enterprise Configurator

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

HP ProLiant Smart Buys

The HP Smart Buy program offers mainstream business solutions at competitive prices with excellent availability and superior HP quality. It offers a wide range of industry-leading HP products at compelling prices, allowing you to receive richer configurations with additional options.

NOTE: For detailed specification information on ProLiant Smart Buys please click on the following link: ftp://ftp.compaq.com/pub/products/servers/smartbuys.pdf

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Service and Support

This product is covered by a global limited warranty and supported by HP Services and a worldwide network of resellers and service providers. 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. Additional support may be covered under the warranty or available for an additional fee. Enhancements to warranty services are available through HP Care Pack services or customized service agreements.

NOTE: Server Warranty includes 3 year Parts, 3 year Labor, 3-year on-site support. Additional information regarding worldwide limited warranty and technical support is available at: http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html

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

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

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 business. Whether an SMB or large global corporation HP has a ProLiant server support offer to help you speedily deploy and maximize system uptime.

Enhanced Care – Minimum recommended service support offer designed to ensure customers

have access to expert assistance, whenever they need it.

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

Continuance Care – Recommended service delivering cost-effective support options designed to extend HP Services committed response and guaranteed fix times, designed to speed problem identification and resolution.

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

Total Care – Highest HP Support service level recommend to help increase IT performance and availability with comprehensive, integrated hardware and software services

- *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*

Deployment Services – HP Installation and Start Up services designed to take time, risk, and worry out of the deployment of ProLiant servers – and free customers IT support staff to focus on what they do best, their business.

- *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*

NOTE: For a complete listing of service offerings and information visit:
http://www.hp.com/services/proliantservices
http://www.hp.com/go/proliant/carepack

Models

NOTE: For detailed specification information on ProLiant Smart Buys please click on the following link: ftp://ftp.compaq.com/pub/products/servers/smartbuys.pdf.

Models

HP DL360 G5 Performance Models **Dual-Core Models** **DL360R05 5160 2GB** 416566-001 **DL360R05 5150 2GB** 416564-001	**Processor(s)** Two of the following depending on Model	(2) Dual-Core Intel Xeon 5160 Processor (3.00 GHz, 80 Watts, 1333 FSB) (2) Dual-Core Intel Xeon 5150 Processor (2.66 GHz, 65 Watts, 1333 FSB)
	Cache Memory	4MB (1 x 4MB) Level 2 cache - Intel Xeon Processor 5100 Sequence
	Memory	2 GB (2 x 1 GB) Standard; PC2-5300 Fully Buffered DIMMs (DDR2-667)
	Network Controller	Embedded NC373i Multifunction Gigabit Server Adapters
	Storage Controller	HP Smart Array P400i/256MB BBWC Controller (RAID 0/1/1+0/5/6) 512MB BBWC optional upgrade
	Hard Drive	No drives included; (6) drive bays active
	Internal Storage	876GB SAS; 360GB SATA
	Optical Drive	Slimline DVD/CD-RW Combo drive
	PCI-Express Slots	1 full-length x8 PCI-Express slot 1 low-profile x8 PCI-Express slot
	Power Supplies	(2) 700W power supplies, redundant
	Fans	9 total, redundancy standard
	Form Factor	Rack (1U), (1.75 in/4.45 cm); 27.75 inch depth (70.5cm)

HP DL360 G5 Base Models **Quad-Core Models** **DL360R05 E5320 1GB** 438313-001 **Dual-Core Models** **DL360R05 5160 1GB** 416565-001 **DL360R05 5150 1GB** 416563-001 **DL360R05 5140 1GB** 416562-001 **DL360R05 5060 1GB** 399519-001	**Processor(s)** One of the following depending on Model	(1) Quad-Core Intel Xeon E5320 Processor (1.86 GHz, 80 Watts, 1066 FSB) (1) Dual-Core Intel Xeon 5160 Processor (3.00 GHz, 80 Watts, 1333 FSB) (1) Dual-Core Intel Xeon 5150 Processor (2.66 GHz, 65 Watts, 1333 FSB) (1) Dual-Core Intel Xeon 5140 Processor (2.33 GHz, 65 Watts, 1333 FSB) (1) Dual-Core Intel Xeon 5060 Processor (3.20 GHz, 130 Watts, 1066 FSB)
	Cache Memory One of the following depending on Model	8MB (2 x 4MB) Level 2 cache - Intel Xeon Processor 5300 Sequence 4MB (1 x 4MB) Level 2 cache - Intel Xeon Processor 5100 Sequence 4MB (2 x 2MB) Level 2 cache - Intel Xeon Processor 5000 Sequence
	Memory	1 GB (2 x 512 MB) Standard; PC2-5300 Fully Buffered DIMMs (DDR2-667)
	Network Controller	Embedded NC373i Multifunction Gigabit Server Adapters
	Storage Controller	HP Smart Array P400i/256MB Controller (RAID 0/1/1+0/5) 512MB BBWC or BBWC optional upgrades
	Hard Drive	No drives included; (4) drive bays active. (6) bays supported with optional storage cable (PN 399546-B21)
	Internal Storage	876GB SAS; 360GB SATA
	Optical Drive	Optional DVD, DVD/CD-RW, or Floppy
	PCI-Express Slots	1 full-length x8 PCI-Express slot 1 low-profile x8 PCI-Express slot
	Power Supply	(1) 700W power supply, redundant optional

Models

	Fans	9 total, redundancy standard
	Form Factor	Rack (1U), (1.75 in/4.45 cm); 27.75 inch depth (70.5cm)

HP DL360 G5 Entry Models **Quad-Core Models** **DL360R05 E5310 1GB** 438312-001 **DL360R05 5130 1GB** 416561-001 **DL360R05 5120 1GB** 416560-001 **DL360R05 5110 1GB** 416559-001	**Processor(s)** One of the following depending on Model	(1) Quad-Core Intel Xeon Processor E5310 (1.60 GHz 80 Watts, 1066 FSB) (1) Dual-Core Intel Xeon 5130 Processor (2.00 GHz, 65 Watts, 1333 FSB) (1) Dual-Core Intel Xeon 5120 Processor (1.86 GHz, 65 Watts, 1066 FSB) (1) Dual-Core Intel Xeon 5110 Processor (1.6 GHz, 65 Watts, 1066 FSB)
	Cache Memory	8MB (2x4MB) Level 2 cache- Intel Xeon Processor 5300 Sequence 4MB (1 x 4MB) Level 2 cache - Intel Xeon Processor 5100 Sequence
	Memory	1 GB (2 x 512 MB) Standard; PC2-5300 Fully Buffered DIMMs (DDR2-667)
	Network Controller	Embedded NC373i Multifunction Gigabit Server Adapters
	Storage Controller	HP Smart Array E200i/64MB Controller (RAID 0/1/1+0), 256MB BBWC optional upgrade
	Hard Drives	No drives included; (4) drive bays active
	Internal Storage	876GB SAS; 360GB SATA
	Optical Drive	Optional DVD, DVD/CD-RW, or Floppy
	PCI-Express Slots	1 full-length x8 PCI-Express slot 1 low-profile x8 PCI-Express slot
	Power Supply	(1) 700W power supply, redundant optional
	Fans	9 total, N+1 redundancy standard
	Form Factor	Rack (1U), (1.75 in/4.45 cm); 27.75 inch depth (70.5cm)

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 (choose one of the following configurable models)

Models	HP ProLiant DL360 G5 Rack CTO Chassis	399524-B21
	Factory Integrated Model ships with:	
	Embedded NC373i Multifunction Gigabit Server Adapter Integrated Lights-Out 2 (iLO 2) embedded 1 full-length and 1 low-profile x8 PCI-Express slots 9 fans; N+1 fan redundancy (1) 700W power supply, redundant optional Rack (1U), (1.75 in/4.45 cm)	

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

Processors	Quad-Core Intel Xeon Processor E5320 – 1.86GHz, 80 Watts, 1066 FSB	435950-L21
	Quad-Core Intel Xeon Processor E5310 – 1.60GHz, 80 Watts, 1066 FSB	438314-L21
	Dual-Core Intel Xeon Processor 5160 – 3.00 GHz, 80 Watts, 1333 FSB	416579-L21
	Dual-Core Intel Xeon Processor 5150 – 2.66 GHz, 65 Watts, 1333 FSB	416577-L21
	Dual-Core Intel Xeon Processor 5148 – 2.4 GHz, 40 Watts, 1333 FSB	416575-L21
	Dual-Core Intel Xeon Processor 5140 – 2.33 GHz, 65 Watts, 1333 FSB	416573-L21
	Dual-Core Intel Xeon Processor 5130 – 2.00 GHz, 65 Watts, 1333 FSB	416571-L21
	Dual-Core Intel Xeon Processor 5120 – 1.86 GHz, 65 Watts, 1066 FSB	416569-L21
	Dual-Core Intel Xeon Processor 5110 – 1.60 GHz, 65 Watts, 1066 FSB	416567-L21
	Dual-Core Intel Xeon Processor 5080 – 3.73 GHz, 130 Watts, 1066 FSB	399540-L21
	Dual-Core Intel Xeon Processor 5060 – 3.20 GHz, 130 Watts, 1066 FSB	399536-L21
	Dual-Core Intel Xeon Processor 5050 – 3.00 GHz, 95 Watts, 667 FSB	399532-L21
Base Memory	1 GB FBD PC2-5300 2 x 512 MB Kit	397409-B21
	2 GB FBD PC2-5300 2 x 1 GB Kit	397411-B21
	4 GB FBD PC2-5300 2 x 2 GB Kit	397413-B21
	8 GB FBD PC2-5300 2 x 4 GB Kit	397415-B21
Storage Controllers	Smart Array E200i controller for DL360 G5 **NOTE:** If selected, must choose one of the two cache modules below.	399548-B21
	HP Smart Array E200 64MB FIO Cache **NOTE:** Supports Smart Array E200 Controller only.	405102-B21
	128MB Battery Backed Write Cache Enabler Option Kit **NOTE:** Supports Smart Array E200i Controller.	346914-B21
	Smart Array P400i controller for DL360 G5 **NOTE:** If selected, must choose one of the two cache modules below.	413741-B21
	HP Smart Array P400 256MB Cache FIO **NOTE:** Supports Smart Array P400 Controller and Smart Array P400i Controller only.	405139-B21
	512MB Battery-backed cache upgrade **NOTE:** Supports Smart Array P400 Controller and Smart Array P400i Controller only.	405148-B21
	Battery-backed write cache upgrade (battery only) **NOTE:** For Smart Array P400 Controller and Smart Array P400i Controller only.	383280-B21

	HP Smart Array P600/256 BBWC Controller **NOTE:** Requires PCI-X Riser option (PN 405154-B21). **NOTE:** Requires HP SAS 4i to Mini SAS 4i 31 inch/.79 meter cable (PN 411100-B21).	337972-B21

Step 3: Choose Additional Factory Integratable Options

Performance Packs

The HP ProLiant DL360 G5 performance packs are necessary to configure a HP ProLiant DL360 G5 Performance Model. HP ProLiant DL360 G5 Performance model includes the latest performance technologies and enterprise class availability features pre-installed for convenience and value. The performance pack includes a 2nd processor, redundant power supplies, Smart Array P400i Controller with 256MB of BBWC, and storage cable to enable the all 6 disk drive bays.

NOTE: 331903-B21 Slimline CD-RW/DVD-ROM Combo Drive Option Kit should also be selected along with the Performance Pack skus below to achieve parity to the HP ProLiant DL360 G5 Performance Models.

HP DL360G5 X5160 HPM FIO Perf Pack	430107-B21
HP DL360G5 X5150 HPM FIO Perf Pack	431883-B21

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 factory integratable. Contact your local sales representative for additional information.

HP ProLiant DL360 G5 Unique Options	Quad-Core Intel Xeon Processor E5320 (1.86 GHz, 80 Watts, 1066 FSB)	435950-B21
	Quad-Core Intel Xeon Processor E5310 (1.60 GHz, 80 Watts, 1066 FSB)	438314-B21
	Dual-Core Intel Xeon Processor 5160 (3.00 GHz, 80 Watts, 1333 FSB)	416579-B21
	Dual-Core Intel Xeon Processor 5150 (2.66 GHz, 65 Watts, 1333 FSB)	416577-B21
	Dual-Core Intel Xeon Processor 5148 (2.4 GHz, 40 Watts, 1333 FSB)	416575-B21
	Dual-Core Intel Xeon Processor 5140 (2.33 GHz, 65 Watts, 1333 FSB)	416573-B21
	Dual-Core Intel Xeon Processor 5130 (2.00 GHz, 65 Watts, 1333 FSB)	416571-B21
	Dual-Core Intel Xeon Processor 5120 (1.86 GHz, 65 Watts, 1066 FSB)	416569-B21
	Dual-Core Intel Xeon Processor 5110 (1.60 GHz, 65 Watts, 1066 FSB)	416567-B21
	Dual-Core Intel Xeon Processor 5080 (3.73 GHz, 130 Watts, 1066 FSB)	399540-B21
	Dual-Core Intel Xeon Processor 5060 (3.2 GHz, 130 Watts, 1066 FSB)	399536-B21
	Dual-Core Intel Xeon Processor 5050 (3.0 GHz, 95 Watts, 667 FSB)	399532-B21
	PCI-X Riser option **NOTE:** To convert full-length PCI-Express slot to PCI-X slot.	405154-B21
	Ambidextrous cable management arm **NOTE:** Package contains two cable management arms	365403-B21
	Fixed Cord Extension Bars for 1U servers (2 PDU sticks per kit)	351655-B21
	700W HP redundant power supply with IEC cord only	399542-B21

ProLiant Essentials Value Pack Software	**ProLiant Essentials Accelerated iSCSI Pack**	
	ProLiant Essentials Accelerated iSCSI Pack, Single License **NOTE:** For additional Accelerated iSCSI Pack License Kits, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12466_na/12466_na.HTML	407484-B22
	ProLiant Essentials Intelligent Networking Pack	
	ProLiant Essentials Intelligent Networking Pack – Windows Edition, Single Server License **NOTE:** For use with a single server. Contains one license with a unique license activation key and documentation. **NOTE:** For additional ProLiant Intelligent Networking Pack License Kits please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12062_na/12062_na.HTML	436225-B21
	ProLiant Essentials Intelligent Networking Pack – Linux Edition, Single Server License **NOTE:** For additional ProLiant Intelligent Networking Pack – Linux License Kits please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12327_na/12327_na.HTML	436229-B21
	ProLiant Essentials Performance Management Pack	
	ProLiant Essentials Performance Management Pack, Single-Server License **NOTE:** For use with a single server. Contains one license with a unique license activation key, HP Management CD and documentation. **NOTE:** The most recent version of the software can always be downloaded at http://www.hp.com/products/pmp. **NOTE:** For additional ProLiant Performance Management Pack License Kits please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11925_na/11925_na.HTML	306696-B21
	HP ProLiant Essentials Remote Directory Memory Access (RDMA) Pack	

Options

HP ProLiant Essentials RDMA Pack for Embedded Multifunction Gigabit Server Adapters, 1 License	407478-B22
HP ProLiant Essentials RDMA Pack for Standup Multifunction Gigabit Server Adapters, 1 License	407481-B22
NOTE: For additional ProLiant Essentials RDM Pack License Kits please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12573_na/12573_na.HTML	
ProLiant Essentials Rapid Deployment Pack	
Rapid Deployment Pack, Single-Server License **NOTE:** This license allows 1 server to be deployed and managed via RDP.	267196-B21
NOTE: For additional ProLiant Essentials Rapid Deployment Pack License Kits please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11053_na/11053_na.HTML	
ProLiant Essentials Workload Management Pack	
ProLiant Essentials Workload Management Pack, Single Server License	303284-B21
NOTE: For additional ProLiant Workload Management Pack License Kits please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11452_na/11452_na.HTML	
ProLiant Essentials Virtualization Management Software	
ProLiant Essentials Virtual Machine Management Pack, Single-Server License **NOTE:** For use with a single server. Contains one license with a unique license activation key and documentation.	435661-B21
ProLiant Essentials Server Migration Pack, Single-Migration License **NOTE:** Contains one license, enabling 1 server migration, with a unique license activation key and documentation.	435663-B21
NOTE: For additional ProLiant Essentials Virtualization Management Software License Kits please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12328_na/12328_na.HTML	
NOTE: This license allows 1 server to be migrated from a physical server to a virtual machine. Or this license can be used to migrate a virtual machine from one virtualization layer i.e. VMware GSX to a different virtualization layer such as VMware ESX or Microsoft Virtual Server 2005.	
ProLiant Essentials Physical to ProLiant Edition	
ProLiant Essentials Server Migration Pack - Physical to ProLiant Edition, Single-Migration License	412978-B21
NOTE: For additional ProLiant Essentials Server Migration License Kits please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12467_na/12467_na.HTML	
ProLiant Essentials Vulnerability and Patch Management Pack	
ProLiant Essentials Vulnerability and Patch Management Pack, Single-Server License **NOTE:** For use with a single server. Contains one license with a unique license activation key and documentation.	371645-B21
NOTE: For additional ProLiant Vulnerability and Patch Management Pack License Kits, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12111_na/12111_na.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 Value Pack product QuickSpecs for more information. **NOTE:** For more information regarding ProLiant Essentials Software, please see the following URL: http://www.hp.com/servers/proliantessentials.	

Options

Remote Management	**Integrated Lights-Out Advanced Pack**	
	ProLiant Essentials Integrated Lights-Out Advanced Pack, 1 server **Featuring:** Sophisticated virtual administration features for ultimate control of servers in the data centers and remote sites. **NOTE:** For additional Integrated Light-Out Advanced Pack License Kits please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11052_na/11052_na.HTML	263825-B21
ProLiant Software Maintenance Subscription	ProLiant Software Maintenance Subscription	355060-B21
	ProLiant Software Maintenance Single Release	356573-B21
	ProLiant Foundation Pack Single Release	356604-B21
	NOTE: Please see the SmartStart QuickSpecs for additional information regarding the subscription purchase: http://h18000.www1.hp.com/products/quickspecs/North America/11073.html	
Processor	Quad-Core Intel Xeon Processor E5320 (1.86 GHz, 80 Watts, 1066 FSB)	435950-B21
	Quad-Core Intel Xeon Processor E5310 (1.60 GHz, 80 Watts, 1066 FSB)	438314-B21
	Dual-Core Intel Xeon Processor 5160 (3.00 GHz, 80 Watts, 1333 FSB)	416579-B21
	Dual-Core Intel Xeon Processor 5150 (2.66 GHz, 65 Watts, 1333 FSB)	416577-B21
	Dual-Core Intel Xeon Processor 5148 (2.4 GHz, 40 Watts, 1333 FSB)	416575-B21
	Dual-Core Intel Xeon Processor 5140 (2.33 GHz, 65 Watts, 1333 FSB)	416573-B21
	Dual-Core Intel Xeon Processor 5130 (2.00 GHz, 65 Watts, 1333 FSB)	416571-B21
	Dual-Core Intel Xeon Processor 5120 (1.86 GHz, 65 Watts, 1066 FSB)	416569-B21
	Dual-Core Intel Xeon Processor 5110 (1.60 GHz, 65 Watts, 1066 FSB)	416567-B21
	Dual-Core Intel Xeon Processor 5080 (3.73 GHz, 130 Watts, 1066 FSB)	399540-B21
	Dual-Core Intel Xeon Processor 5060 (3.2 GHz, 130 Watts, 1066 FSB)	399536-B21
	Dual-Core Intel Xeon Processor 5050 (3.0 GHz, 95 Watts, 667 FSB)	399532-B21
Memory (DIMMs)	1 GB FBD PC2-5300 2 x 512 MB Kit	397409-B21
	2 GB FBD PC2-5300 2 x 1 GB Kit	397411-B21
	4 GB FBD PC2-5300 2 x 2 GB Kit	397413-B21
	8 GB FBD PC2-5300 2 x 4 GB Kit	397415-B21
Optical Drives	Slimline CD-RW/DVD-ROM Combo Option Kit	331903-B21
	Slimline DVD-ROM Drive (8X/24X) Option Kit	264007-B21
	HP DVD±R/RW 8X Slim	383975-B21
	Slimline CD-ROM Drive 24X	356963-B21
Diskette Drive	Slimline Ejectable Floppy drive	390164-B21

Options

Hard Drives	**Serial Attached SCSI (SAS) SFF Hot Plug**	
	HP 36GB 3G SAS 10K SFF SP HDD	375859-B21
	HP 72GB 3G SAS 10K SFF SP HDD	375861-B21
	HP 146GB 3G SAS 10K SFF SP HDD	431958-B21
	NOTE: Please see the SAS Hard Drive QuickSpecs for Technical Specifications such as capacity, height, width, interface, transfer rate, seek time, physical configuration, and operating temperature: http://h18000.www1.hp.com/products/quickspecs/12244_na/12244_na.HTML	
	SFF SATA Hot Plug	
	HP 60GB 1.5G SATA 5.4K SFF HDD	379306-B21
	NOTE: SATA drives have a 1 year warranty. Please see the SATA Hard Drive 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/12091_na/12091_na.HTML	
Storage Controllers	**SAS Controllers**	
	Smart Array E200i Controller	
	128-MB Battery-Backed Write Cache (BBWC)	346914-B21
	NOTE: Supports Smart Array E200i Controller only.	
	Smart Array P400i Controller	
	HP Smart Array P400i/256MB Controller	399550-B21
	Battery-backed write cache upgrade	383280-B21
	NOTE: For Smart Array P400 Controller and Smart Array P400i Controller only.	
	512MB Battery-backed cache upgrade	405148-B21
	NOTE: For Smart Array P400 Controller and Smart Array P400i Controller only.	
	Smart Array P600 Controller	
	HP Smart Array P600/256 BBWC Controller	337972-B21
	NOTE: Requires DL360 G5 PCI-X conversion kit (PN 405154-B21).	
	512 MB Battery-Backed Cache Upgrade	372538-B21
	NOTE: This 512-MB Battery-Backed Cache Module upgrade kit supports the Smart Array P600 Controller and the Smart Array 6400 series Controller.	
	Smart Array P800 Controller	
	HP Smart Array P800/512 BBWC Controller	381513-B21
	NOTE: Please see the following Controller QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/12460_na/12460_na.HTML (Smart Array E200 Controller) http://h18000.www1.hp.com/products/quickspecs/12400_na/12400_na.HTML (Smart Array P400 Controller) http://h18000.www1.hp.com/products/quickspecs/12247_na/12247_na.HTML (Smart Array P600 Controller) http://h18000.www1.hp.com/products/quickspecs/12616_na/12616_na.HTML (Smart Array P800 Controller)	
	SAS HBA	
	HP 8 Internal Port SAS HBA with RAID	347786-B21
	NOTE: Supports SAS and SATA disk drive. RAID 0,1 supported.	
	NOTE: Please see the HBA QuickSpecs for additional information: http://h18004.www1.hp.com/products/quickspecs/12332_na/12332_na.html (8 Internal Port SAS HBA)	
	SAS Cables	

Options

	HP Mini SAS 4i 13.4 inch/0.35 m cable **NOTE:** Used to connect Smart Array P400i to DL360 G5 5th and 6th drive bays.	399546-B21
	HP SAS 4i to Mini SAS 4i 31 inch/.79 meter cable **NOTE:** Used to connect SA-P600, SA-P400, SA-E200 Controllers to the HP ProLiant DL360 G5 drive backplane. This kit supports all six drive bays.	411100-B21
	SCSI Controllers for External Drive/Storage Support	
	Smart Array 6402/128 Controller **NOTE:** For support of external drives only.	273915-B21
	Smart Array 6404/256 Controller **NOTE:** For support of external drives only.	273914-B21
	Smart Array 642 Controller **NOTE:** For support of external drives only.	291967-B21
	128MB Battery-Backed Cache Enabler **NOTE:** This 128MB BBWC supports the Smart Array 642 Controller.	351580-B21
	512 MB Battery-Backed Cache Upgrade **NOTE:** This 512-MB Battery-Backed Cache Module upgrade kit supports the Smart Array P600 Controller and the Smart Array 6400 series Controller.	372538-B21
	64-Bit/133-MHz Single Channel Ultra320 SCSI HBA G2	374654-B21
	SCSI HBA	
	HP SC11Xe Host Bus Adapter	412911-B21
	NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/10429_na/10429_na.HTML (SCSI Adapter) http://h18000.www1.hp.com/products/quickspecs/11555_na/11555_na.HTML (U320 Adapter) http://h18000.www.1.hp.com/products/quickspecs/11943_na/11943_na.HTML (U320 SCSI HBA) http://h18000.www1.hp.com/products/quickspecs/12566_na/12566_na.HTML (SC11XE HBA)	
Communications	HP NC150T PCI 4-port Gigabit 1000T Combo Switch Adapter	367132-B21
	HP NC310F PCI-X 1000SX Gigabit Server Adapter	368169-B21
	HP NC320T PCI Express 1000T Gigabit Server Adapter	367047-B21
	HP NC340T PCI-X 4-port 1000T Gigabit Server Adapter	391661-B21
	HP NC360T PCI Express Dual Port Gigabit Server Adapter	412648-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
	HP NC510F PCIe 10 Gigabit Server Adapter **NOTE:** A minimum of 1 gigabyte (1 GB) of server memory is required per each NC510F adapter.	414126-B21
	HP NC510C PCIe 10 Gigabit Server Adapter **NOTE:** A minimum of 1 gigabyte (1 GB) of server memory is required per each NC510C adapter.	414129-B21
	HP NC1020 PCI 1000T Gigabit Server Adapter	353377-B21
	NOTE: Any NIC (except the NC1020) on the option list can be used for redundancy with the embedded Dual NC373i Multifunction Gigabit NICs. When teaming with other NICs or with the embedded NIC, the lack of Jumbo Frames and LSO features on the NC1020 will cause high end NICs to have those features disabled.	
	HP IB 4X SDR PCI-e single PORT HCA	431038-B21

Options

	HP IB 4X DDR PCI-e Single PORT HCA	431039-B21
High Performance Solutions	HPCC Myrinet Fiber NIC	257894-006
Tape Drives	**NOTE:** For the complete listing of Tape Drive offerings, please see: http://www.hp.com/products1/storage/compatibility/tapebackup/ISS/index.html	
	For recommended tape drive offerings for this ProLiant server see the following:	
	USB Tape Drives	
	HP StorageWorks DAT 40 USB Internal Tape Drive (Carbonite)	DW022A
	NOTE: HP recommends combining this tape drive with the 1U USB Rack-Mount kit (A8007A) for a complete rack-mount solution.	
	HP StorageWorks 1U USB Rack-Mount Kit with one DAT 72 USB Tape Drive	AG594A
	SAS Tape Drives	
	NOTE: 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.	
	HP StorageWorks Ultrium 448 SAS Internal Tape Drive	DW085A
	NOTE: HP recommends combining this tape drive with the 1U SAS Rack-Mount kit (AE459A) for a complete rack-mount solution.	
	HP StorageWorks Ultrium 920 SAS Internal Tape Drive	EH847A
	NOTE: HP recommends combining this tape drive with the 1U SAS Rack-Mount kit (AE459A) for a complete rack-mount solution.	
	NOTE: Please refer to the "Tape Drives, Tape Autoloaders & Tape Libraries" table in the Storage section of this document for a list of SAS controllers with tape support.	
	Ultrium Tape Drives	
	HP StorageWorks Ultrium 232 Internal Tape Drive (Carbonite)	DW064A
	NOTE: HP recommends combining this tape drive with the 1U SCSI Rack-Mount kit (A7445B) for a complete rack-mount solution.	
	HP StorageWorks 1U Rack-mount kit with one Ultrium 448 (Carbonite)	DW028B
	HP StorageWorks 1U SCSI Rack-mount kit with one Ultrium 920	EH903A
	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_na/11739_na.html http://h18006.www1.hp.com/products/quickspecs/12128_na/12128_na.html 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	
	DAT Drives	
	HP StorageWorks DAT 72 SCSI Internal Tape Drive (Carbon)	Q1523B
	NOTE: HP recommends combining this tape drive with the 1U SCSI Rack-Mount kit (A7445B) for a complete rack-mount solution.	
	NOTE: Please see the DAT Tape Drive QuickSpecs for controllers, media, and other options: http://h18000.www1.hp.com/products/quickspecs/11883_na/11883_na.HTML For an up-to-date listing of the latest O/S and software support details for HP DAT drives, please visit: http://www.hp.com/go/connect	
	Rack-Mount Tape Drive Enclosures	

Options

	HP StorageWorks 1U SCSI Rack-Mount kit **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 24, DAT 40, DAT 72, DLT VS80, DLT VS160, Ultrium 215, Ultrium 232, Ultrium 448 and Ultrium 920 tape drives.	A7445B
	HP StorageWorks 1U USB Rack-Mount Kit **NOTE:** The 1U USB Rack-Mount Kit can support up to (2) half-height tape drives and is compatible with the DAT 24 USB, DAT 40 USB and DAT 72 USB tape drives.	A8007A
	HP StorageWorks 1U SAS Rack-Mount Kit **NOTE:** The 1U SAS Rack-Mount Kit can support up to (2) half-height tape drives and is compatible with the Ultrium 448 SAS tape drive. **NOTE:** 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. **NOTE:** Please see the Rack-Mount Tape Drive Kits QuickSpecs for additional information regarding these kits: http://h18000.www1.hp.com/products/quickspecs/10854_na/10854_na.HTML	AE459A
Tape Autoloaders	**HP StorageWorks DAT Autoloader**	
	HP StorageWorks DAT 72x10 tape autoloader	AE313A
	HP StorageWorks 1/8 Tape Autoloader	
	HP StorageWorks 1/8 Ultrium 960 Tape Autoloader	AF204A
	HP StorageWorks 1/8 Ultrium 920 G2 Tape Autoloader	AH165A
	HP StorageWorks 1/8 Ultrium 448 G2 Tape Autoloader	AH164A
	HP StorageWorks 1/8 Ultrium 232 G2 Tape Autoloader	AH163A
	HP StorageWorks 1/8 G2 Tape Autoloader Rack Kit **NOTE:** Required to install the 1/8 G2 Autoloaders in a standard 19-inch rack; includes rails and rackmount instructions	AH166A
	1/8 Tape Autoloader Rackmount Kit **NOTE:** Required to install the 1/8 tape autoloader in a standard 19-inch rack. **NOTE:** Please reference the Autoloader QuickSpecs at http://www.hp.com/go/automation for additional information needed to create a complete solution; reference current compatibility information at http://www.hp.com/go/ebs.	C9268R

Options

Tape Libraries	**HP StorageWorks MSL2024 Tape Library**	
	HP StorageWorks MSL2024 1 Ultrium 960 Drive Library	AG115A
	HP StorageWorks MSL2024 1 Ultrium 960 4GB FC Library	AG326B
	HP StorageWorks MSL2024 1 Ultrium 920 Drive Library	AH169A
	HP StorageWorks MSL2024 2 Ultrium 920 Drive Library	AH170A
	HP StorageWorks MSL2024 1 Ultrium 448 Drive Library	AG116A
	HP StorageWorks MSL2024 2 Ultrium 448 Drive Library	AG117A
	HP StorageWorks MSL4048 Tape Library	
	HP StorageWorks MSL4048 1 Ultrium 448 Drive Library	AG320A
	HP StorageWorks MSL4048 2 Ultrium 448 Drive Library	AG321A
	HP StorageWorks MSL4048 1 Ultrium 920 Drive Library	AH171A
	HP StorageWorks MSL4048 2 Ultrium 920 Drive Library	AH172A
	HP StorageWorks MSL4048 1 Ultrium 960 Drive Library	AG322A
	HP StorageWorks MSL4048 1 Ultrium 960 4GB FC Library	AG324B
	HP StorageWorks MSL4048 2 Ultrium 960 Drive Library	AG323A
	HP StorageWorks MSL4048 2 Ultrium 960 4GB FC Library	AG325B
	HP StorageWorks MSL6000 Tape Library	
	Ultrium 960 technology	
	HP StorageWorks MSL6030 1 Ultrium 960 Dr LVDS Library	AD606B
	HP StorageWorks MSL6030 1 Ultrium 960 Dr FC Library	AD608B
	HP StorageWorks MSL6030 2 Ultrium 960 Dr LVDS Library	AD607B
	HP StorageWorks MSL6030 2 Ultrium 960 Dr FC Library	AD609B
	Ultrium 460 technology	
	HP StorageWorks MSL6030 1 Ultrium 460 Dr LVDS Library	AD598B
	HP StorageWorks MSL6030 1 Ultrium 460 Dr FC Library	AD600B
	HP StorageWorks MSL6030 2 Ultrium 460 Dr LVDS Library	AD599B
	HP StorageWorks MSL6030 2 Ultrium 460 Dr FC Library	AD601B
	NOTE: Please reference the MSL2024, MSL4048 and MSL6000 Tape Library QuickSpecs at http://www.hp.com/go/automation for additional information needed to create a complete solution; reference current compatibility information at http://www.hp.com/go/ebs.	
HP Data Protector Express Software	HP DP Express Backup Server Upgrade for ProLiant Software	BB117AP
	HP DP Express Package for Microsoft Small Business Server	BB118AA
	NOTE: To obtain a free licensed copy of HP Data Protector Express for ProLiant edition software, please visit the "Protect Your Data" link accessible from your ProLiant server's System Management Homepage (SMH) software (SmartStart 7.5 or later).	
	NOTE: Please see the HP Data Protector Express QuickSpecs for additional information regarding the purchase of HP Data Protector Express software: http://h18000.www1.hp.com/products/quickspecs/12337_na/12337_na.html	

Options

HP StorageWorks Modular Smart Array 20	HP StorageWorks Modular Smart Array 20 **NOTE:** Rack-mountable 12 (SATA) drive enclosure with U320 Host connectivity, redundant power supplies.	335921-B21
	HP StorageWorks Modular Smart Array 20 Starter Kit **NOTE:** Rack-mountable 12 (SATA) drive enclosure with U320 Host connectivity, redundant power supplies. Includes Smart Array 6402/128 Controller. **NOTE:** The Modular Smart Array Enclosure 20 Family supports the SATA 1.5Gb/s 3.5" Hot Plug Hard Drives.	366172-B21
HP StorageWorks Modular Smart Array 30	HP StorageWorks Modular Smart Array 30 SB **NOTE:** Rack-mountable 14 drive enclosure with single bus, redundant power supplies	302969-B21
	HP StorageWorks Modular Smart Array 30 DB **NOTE:** Rack-mountable 14 drive enclosure with dual bus, redundant power supplies **NOTE:** The Modular Smart Array Enclosure 30 Family supports the Wide Ultra3, Ultra320 Hot Plug Hard Drives.	302970-B21
HP StorageWorks Modular Smart Array 50	HP StorageWorks Modular Smart Array 50 Enclosure **NOTE:** Please see the Modular Smart Array 50 QuickSpecs for additional information including configuration steps and additional options needed for a complete solution at: http://h18000.www1.hp.com/products/quickspecs/12245_na/12245_na.HTML	364430-B21
HP StorageWorks Modular Smart Array 500	HP StorageWorks Modular Smart Array 500 Generation 2 **NOTE:** Please see the Modular Smart Array 500 Generation 2 QuickSpecs for additional information including configuration steps and additional options needed for a complete solution at: http://h18000.www1.hp.com/products/quickspecs/11956_na/11956_na.HTML	335880-B21
HP StorageWorks Modular Smart Array 1000	HP StorageWorks Modular Smart Array 1000 **NOTE:** Please see the Modular Smart Array 1000 QuickSpecs for additional options and configuration information at: http://h18000.www1.hp.com/products/quickspecs/11033_na/11033_na.HTML	201723-B22
HP StorageWorks Modular Smart Array 1500 cs	Modular Smart Array 1500 Controller Shelf **NOTE:** Please see the StorageWorks Modular SAN Array 1500 cs QuickSpecs for additional options and configuration information at: http://www.hp.com/go/MSA1500cs	AA986A

Options

Cluster Options	ProLiant Cluster Starter Kit	364023-B22
	NOTE: For additional information regarding the ProLiant Cluster Starter Kit please see the following QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11935_na/11935_na.html	
	HP HA/F200 for Entry SAN Cluster	364026-B22
	NOTE: For additional information regarding the ProLiant Cluster for Entry Level SAN please see the following QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11932_na/11932_na.html	
	NOTE: For configuration/certification options for the HP Parallel Database Cluster for Oracle RAC please go to: http://www.hp.com/solutions/highavailability/oracle	
	HP Serviceguard for Linux ProLiant Cluster A.11.16 for SUSE SLES 9 & 10 and Red Hat EL 3 & 4 (2 node license cluster kit)	305199-B26
	HP Serviceguard for Linux A.11.16 for SUSE SLES 9 & 10 and Red Hat EL 3 & 4 (single license version)	307754-B26
	HP Serviceguard for Linux and Red Hat Global File System - 1 year subscription	T2798AA#001
	HP Serviceguard for Linux and Red Hat Global File System - 3 years subscription	T2798AA#003
	NOTE: For additional information regarding HP Serviceguard for Linux, please see the following QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11518_na/11518_na.html **NOTE:** For configuration/certification options for HP Serviceguard for Linux please go to: http://www.hp.com/info/sglx	
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
Uninterruptible Power Systems – Rack Mountable	HP, R1.5kVA UPS, 1U	AF419A
	HP R3000 VA UPS, 2U, L5-30	AF422A
	HP R3000 VA UPS, 2U, L6-20	AF423A
	HP R5500 VA UPS	AF426A
Power Cords	**NOTE:** The HP ProLiant DL360 G5 ships with an IEC-IEC power cord used for rack mounting with Power Distribution Units (PDUs).	
	Nema 5-15P to IEC320-C13	AF556A

Options

HP Monitored Power Distribution Unit (PDU)	**HP Monitored Power Distribution Unit: Full Rack Version**	
	17.3 kVA Monitored PDU Model S2324	AF503A
	8.6 kVA Monitored PDU Model S1324	AF504A
	16.6 kVA Monitored PDU Model S2140	AF505A
	8.3 kVA Monitored PDU Model S1140	AF506A
	22 kVA Monitored PDU Model S2316	AF507A
	11 kVA Monitored PDU Model S1316	AF508A
	14.7 kVA Monitored PDU Model S2132	AF509A
	7.3 kVA Monitored PDU Model S1132	AF510A
	4.9kVA Monitored PDU model S124	AF914A
	7.3kVA Monitored PDU model S132	AF915A
Modular PDUs 1U/0U (Up to 32 outlets) **NOTE:** 1U/0U mounting brackets shipped with the unit (optimized for 10000 and 9000 series racks).	Fixed Cord Extension Bars **NOTE:** Two extension bar sticks; each with (7) C13 plugs.	351655-B21
	Fixed Cord PDU **NOTE:** Four Fixed Cord Extension Bars, and one 24A, HV mPDU L6-30P core.	351655-D72
	HP Modular Power Distribution Units (mPDU), Low Volt Model, 24A (100-127 VAC) **NOTE:** This mPDU (252663-D71) may also be used to connect the low volt model of the UPS R3000 XR.	252663-D71
	HP Modular Power Distribution Units (mPDU), High Volt Model, 24A (200-240 VAC)	252663-D72
	HP Modular Power Distribution Units (mPDU), High Volt Model, 40A (200-240 VAC) **NOTE:** This mPDU (252663-B21), 40A model has a hardwired input.	252663-B21
	HP Modular Power Distribution Unit(mPDU), High Volt Model, 16A (200-240 VAC)	252663-B24
	HP Modular Power Distribution Unit (mPDU), High Volt Model, 40A, Attached Cord **NOTE:** This PDU has a detachable input power cord. This model may also be used with the high volt UPSs R3000 XR and R6000, need to order cable PN 340653-001. **NOTE:** Please see the following Modular Power Distribution Unit (Zero-U/1U Modular PDUs) QuickSpecs for additional options including shorter jumper cables: http://h18000.www1.hp.com/products/quickspecs/11041_na/11041_na.HTML	252663-D73
USB Options	HP USB 2-Button Optical Scroll Mouse (Carbonite/Silver)	DC172B
	USB 1.44-MB External Diskette Drive (Carbonite)	DC141B
	HP USB 04 Standard Keyboard	DT528A#xxx
	USB 2.0 4-port HUB	DG954A
	HP 1GB Drive Key II – USB 2.0 Flash Drive	AG382AA
	HP 512MB DriveKey II – USB Flash Drive	ED516AA
HP ProLiant DL360 G5 Deployment Options	700W HP redundant power supply with IEC cord only	399542-B21

Options

HP Rack 5000 Series (Graphite Metallic)	HP 5642 Rack Unassembled	358254-B21
	NOTE: Please see the HP Rack 5642 QuickSpecs for additional part numbers and Technical Specifications such as height, width, depth, weight, and color: http://h18000.www1.hp.com/products/quickspecs/12074_na/12074_na.HTML	
	NOTE: For additional information regarding Rack Cabinets, please see the following URL: http://www.hp.com/go/rackandpower.	
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
	NOTE: It is mandatory to use a shock pallet when shipping racks with equipment installed.	
	NOTE: Please see the Rack 10000 G2 QuickSpecs for Technical Specifications such as height, width, depth, weight, and color: http://h18000.www1.hp.com/products/quickspecs/12402_na/12402_na.HTML	
	NOTE: For additional information regarding Rack Cabinets, please see the following URL: http://www.hp.com/go/rackandpower.	
HP Rack 10000 Series (Graphite Metallic)	10642 (42U) Infrastructure Rack (Low Voltage)	379006-001
	10642 (42U) Infrastructure Rack (High Voltage)	379005-001
	HP Rack S10614 (14U) Rack Cabinet – Shock Pallet	292302-B22
	HP Rack 10842 (42U, 800mm wide) – Pallet	257415-B21
	HP Rack 10842 (42U, 800mm wide) – Shock Pallet	257415-B22
	HP Rack 10647 (47U) – Pallet	245160-B21
	HP Rack 10647 (47U) – Crated	245160-B23
	HP Rack 10622 (22U) – Pallet	245163-B21
	HP Rack 10622 (22U) – Shock Pallet	245163-B22
	HP Rack 10622 (22U) – Crated	245163-B23
	NOTE: xxxxxx-B21 (pallet) used to ship empty racks shipped on a truck. xxxxxx-B22 (shock pallet) used to ship racks with equipment installed (by custom systems, VARs and Channels). xxxxxx-B23 (crated) used for air shipments of empty racks.	
	NOTE: It is mandatory to use a shock pallet in order to ship racks with equipment installed. Not all HP equipment is qualified to be shipped in the Rack 10000 series	
	NOTE: Please see the Rack 10000 QuickSpecs for Technical Specifications such as height, width, depth, weight, and color: http://h18000.www1.hp.com/products/quickspecs/10995_na/10995_na.HTML	
	NOTE: For additional information regarding Rack Cabinets, please see the following URL: http://www.hp.com/go/rackandpower	

Options

Keyboards and Monitors	TFT7210R Rack Mounted 17" Monitor	348373-B21
	NOTE: For a complete list of Monitors please view the following URL: http://www.hp.com/go/kvm.	
	TFT7600 Rackmount Keyboard Monitor	AG052A
	1U Rackmount Keyboard with USB	AG072A
	NOTE: For additional information regarding Rack Cabinets, please see the following URL: http://www.hp.com/go/rackandpower.	
HP KVM Switch Options	2x1x16 IP Console Switch with Virtual Media	AF601A
	4x1x16 IP Console Switch with Virtual Media	AF602A
	2x16 Server Console Switch with Virtual Media	AF600A
	PS/2 Virtual Media Interface Adapter, 1 pack	AF604A
	NOTE: Requires PS/2 and one USB port on server.	
	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
	USB Interface Adapter, 1 pack	336047-B21
	Serial Interface adapter - 1 Pack with power supply	373035-B21
	NOTE: Cat5e cables are required to connect Interface Adapters to Console Switches. Cat5e cables can be found at the following URL: http://www.hp.com/go/kvm.	
	HP 1x 4 USB/PS2 KVM Switch, TT	371301-D71
	HP 1x 4 USB/PS2 KVM Switch, RM	371302-B21
	HP PS2 KVM Cable with audio, 6', 2-pack	371730-B21
	HP USB KVM Cable with audio, 6', 2-pack	371729-B21
	NOTE: For additional information regarding KVM switches, Serial Console servers, rack mount monitors, keyboards and all related options please see the following URL: http://www.hp.com/go/kvm.	
HP Serial Console Server Options	HP 16 Port Serial Console Server	AF101A
	HP 48 Port Serial Console Server	AF102A
	Serial Adapter, RJ45-DB9 DCE Female, 1 Pack	AF103A
	Serial Adapter, RJ45-DB9 DCE Female, 8 Pack	AF110A
	NOTE: Cat5e cables are required to connect Serial Adapters to Serial Console Servers. Additional Serial Adapters and Cat5e cables can be found at the following URL: http://www.hp.com/go/kvm.	
	NOTE: For additional information regarding KVM switches, Serial Console servers, rack mount monitors, keyboards and all related options please see the following URL: http://www.hp.com/go/kvm.	

Options

Service and Support Offerings (HP Care Pack Services)	***Hardware Services 4-Hour On-site Service***	
	4-Hour On-site Service, 5-Day x 13-Hour Coverage, 3 Years, Electronic	U4496E
	4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	U4497E
	Hardware Services 6-Hour Call to Repair On-site Service	
	6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	U4498E
	Hardware Services Next Business Day On-Site Service	
	Hardware Installation, Electronic	U4506E
	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	U4507E
	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	U4508E
	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	U4509E
	Onsite HW support 24x7, 4hr response and SuSE Linux SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays, Electronic	U6310E
	Onsite HW support 24x7, 4hr response and Red Hat ES Linux SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays, Electronic	U8332E
	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: Memory DIMMs in systems with the Front Side Bus (FSB) running at 1333 MHz will run at 667 MHz and in systems with a FSB running at 1066 MHz or 667 MHz the memory DIMMs will run at 533 MHz.

HP ProLiant DL360 G5 Entry and Base Models

Standard Memory
1 GB PC2-5300 Fully Buffered DIMMs (DDR2-667) installed (2 x 512 MB)

Upgrading Memory and Memory Interleaving
When upgrading memory, DIMMs 1A and 2A must match. DIMMs 3B and 4B, DIMMs 5C and 6C, and DIMMs 7D and 8D must match and must be installed as a pair. When DIMMs 1A and 2A are populated the system is automatically configured for 2:1 interleaving. When all 4 banks are populated the system is automatically configured for 4:1 interleaving. When four, six, or eight DIMMs are populated with identical DIMMs the system is automatically configured for bank interleaving.

Standard Memory Plus Optional Memory
Up to 25 GB memory is available with the standard memory of 1 GB and the optional installation of PC2-5300 Fully Buffered DIMMs (DDR2-667) memory kits.

Standard Memory Replaced with Optional Memory
Up to 32 GB of memory is available with the removal of the standard 512 MB of memory and the optional installation of PC2-5300 Fully Buffered DIMMs (DDR2-667) memory kits.
NOTE: 4 GB Fully Buffered DIMMs kits will be available shortly following server availability to allow a maximum of 32 GB. Today's maximum is 16 GB utilizing 2 GB DIMMs.

NOTE: Chart does not represent all possible configurations.

Memory		Slot							
		1	2	3	4	5	6	7	8
Standard	1 GB	512 MB	512 MB	Empty	Empty	Empty	Empty	Empty	Empty
Optional	25 GB	512 MB	512 MB	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB
Maximum	32 GB	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB

NOTE: In the online spare configuration, the ROM automatically configures the last populated bank as the spare memory. If only banks A and B are populated, bank B is the spare bank. If banks A, B, and C are populated, bank C is the spare bank, If banks A, B, C and D are populated, bank D is the spare bank, Online spare memory is configured through RBSU.
NOTE: Mirrored Memory uses mirrored banks to provide a high level of memory redundancy. Customer chooses to implement or not: User selectable via BIOS and default is off.

Following are memory options available from HP:

1 GB FBD PC2-5300 2 x 512 MB Kit	397409-B21
2 GB FBD PC2-5300 2 x 1 GB Kit	397411-B21
4 GB FBD PC2-5300 2 x 2 GB Kit	397413-B21
8 GB FBD PC2-5300 2 x 4 GB Kit	397415-B21

Memory

HP ProLiant DL360 G5 Performance Models

Standard Memory

2 GB PC2-5300 Fully Buffered DIMMs (DDR2-667) (2 x 1 GB)

Upgrading Memory and Memory Interleaving

When upgrading memory, DIMMs 1A and 2A must match. DIMMs 3B and 4B, DIMMs 5C and 6C, and DIMMs 7D and 8D must match and must be installed as a pair. When DIMMs 1A and 2A are populated the system is automatically configured for 2:1 interleaving. When all 4 banks are populated the system is automatically configured for 4:1 interleaving. When four, six, or eight DIMMs are populated with identical DIMMs the system is automatically configured for bank interleaving.

S**tandard Memory Plus Optional Memory**

Up to 14 GB memory is available with the standard memory of 2 GB and the optional installation PC2-5300 Fully Buffered DIMMs (DDR2-667) memory kits.

Standard Memory Replaced with Optional Memory

Up to 32 GB of memory is available with the removal of the standard 1 GB of memory and the optional installation of PC2-5300 Fully Buffered DIMMs (DDR2-667) memory kits.

NOTE: Chart does not represent all possible configurations.

Memory		Slot							
		1	2	3	4	5	6	7	8
Standard	2 GB	1 GB	1 GB	Empty	Empty	Empty	Empty	Empty	Empty
Optional	14 GB	1 GB	1 GB	2 GB	2 GB	2 GB	2 GB	2 GB	2 GB
Maximum	32 GB	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB

NOTE: In the online spare configuration, the ROM automatically configures the last populated bank as the spare memory. If only banks A and B are populated, bank B is the spare bank. If banks A, B, and C are populated, bank C is the spare bank, Online spare memory is configured through RBSU.

NOTE: Mirrored Memory uses mirrored banks to provide a high level of memory redundancy. Customer chooses to implement or not: User selectable via BIOS and default is off.

Following are memory options available from HP:

1 GB FBD PC2-5300 2 x 512 MB Kit	397409-B21
2 GB FBD PC2-5300 2 x 1 GB Kit	397411-B21
4 GB FBD PC2-5300 2 x 2 GB Kit	397413-B21
8 GB FBD PC2-5300 2 x 4 GB Kit	397415-B21

Online spare FBDIMM configuration requirements (in addition to general configuration requirements):

- When only bank A is being used, it must be fully populated with dual-rank FBDIMMs.
- If banks A and C are being used, they must be fully populated.
- If installed, bank A and bank C must contain FBDIMMs with identical part numbers.
- If installed, bank B and bank D must also contain FBDIMMs with identical part numbers.

In online spare mode, FBDIMMs must be populated as specified in the following table:

Configuration	Branch 0 Bank A 1A and 3A	Branch 0 Bank C 2C and 4C	Branch 1 Bank B 5B and 7B	Branch 1 Bank D 6D and 8D
1*	X	-	-	-
2	X	X	-	-
3	X	X	X	X

***NOTE:** Configuration 1 is only supported if using bank A, populated with dual-rank FBDIMMs.

Memory

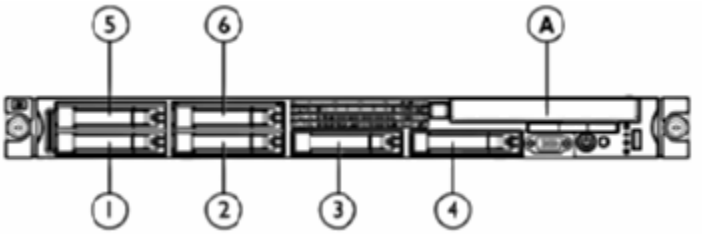
Mirrored memory FBDIMMs configuration requirements (in addition to general configuration requirements):

- Banks A and B must be fully populated.
- Bank A and bank B must contain FBDIMMs with identical part numbers. If installed, bank C and bank D must also contain FBDIMMs with identical part numbers.

When using mirrored memory mode, FBDIMMs must be populated as specified in the following table:

Configuration	Bank A 1A and 3A	Bank B 5B and 7B	Bank C 2C and 4C	Bank D 6D and 8D
1	X	X	-	-
2	X	X	X	X

Storage



1-6	6 x SFF SAS Hot Pluggable Hard Drive Bays
A	Slimline Bay: Optional optical or floppy drive

Drive Support

	Quantity Supported	Position Supported	Controller
Removable Media			
Slimline 1.44-MB Diskette Drive	Up to 1	A	Integrated
Slimline 24x IDE CD-ROM Drive	Up to 1	A	Integrated IDE
Slimline DVD-ROM Drive (8x/24x) Option Kit (Servers)	Up to 1	A	Integrated IDE
Slimline DVD/CD-RW Combo Option Kit	Up to 1	A	Integrated IDE
Slimline DVD-RW Drive (8X) Option Kit	Up to 1	A	Integrated IDE

Hard Drives

SAS Hard Drive

	Quantity Supported	Position Supported	Controller
146GB 3G SAS 10K SP 72GB 3G SAS 10K SP 36GB 3G SAS 10K SP	6	1-6	HP Smart Array E200i/64MB Controller HP Smart Array P400i/512MB BBWC Controller HP Smart Array P400i/256MB Controller HP Smart Array P600/256 BBWC Controller HP Smart Array P800/512 BBWC Controller Please see **NOTES** below regarding hard drive quantity supported by Smart Array Controller.

NOTE: The Smart Array E200i Controller can support a maximum of 4 hard drives.
NOTE: The Smart Array P400i Controller can support a maximum of 6 hard drives. To support drives 5 and 6, the optional HP Mini SAS 4i 13.4 inch/0.35 m cable is required (PN 399546-B21).
NOTE: The Smart Array P600 Controller requires HP SAS 4i to Mini SAS 4i 31 inch/.79 meter cable (PN 411100-B21).

Storage

Serial-ATA (SATA) Hard Drive

	Quantity Supported	Position Supported	Controller
60GB 1.5G SATA 5.4K	6	1-6	HP Smart Array E200i/64MB Controller HP Smart Array P400i/512MB BBWC Controller HP Smart Array P400i/256MB Controller HP Smart Array P600/256 BBWC Controller HP Smart Array P800/512 BBWC Controller Please see **NOTES** below regarding hard drive quantity supported by Smart Array Controller.

NOTE: The Smart Array E200i Controller can support a maximum of 4 hard drives.
NOTE: The Smart Array P400i Controller can support a maximum of 6 hard drives. To support drives 5 and 6, the optional HP Mini SAS 4i 13.4 inch/0.35 m cable is required (PN 399546-B21).
NOTE: The Smart Array P600 Controller requires HP SAS 4i to Mini SAS 4i 31 inch/.79 meter cable (PN 411100-B21).

External Storage

	Quantity Supported	Position Supported	Host Controller or Adapter
Modular Smart Array 20 Family	Please see the Modular Smart Array 20 QuickSpecs to determine configuration requirements	External	Smart Array 6402/128 Controller Smart Array 6404/256 Controller Smart Array 642 Controller
Modular Smart Array 30 Family	Please see the Modular Smart Array 30 QuickSpecs to determine configuration requirements.	External	Smart Array 6402/128 Controller Smart Array 6404/256 Controller Smart Array 642 Controller
Modular Smart Array 50 Enclosure	2	External	HP Smart Array P600/256 BBWC Controller
Modular Smart Array 500 G2 System	1	External	Smart Array 642 Controller (used as Host Bus Adapter) Please see the Modular Smart Array 500 G2 QuickSpecs for the latest list of supported HBAs: http://www.hp.com/go/msa50(
Modular Smart Array 1500 cs	Please see the Modular Smart Array 1500 cs QuickSpecs below to determine configuration requirements	External	Please see the Modular Smart Array 1500 cs QuickSpecs (URL below) for the latest list of supported HBAs
Modular Smart Array 1000	Please see the Modular Smart Array 1000 QuickSpecs below to determine configuration requirements	External	Please see the Modular Smart Array 1000 QuickSpecs (URL below) for the latest list of supported HBAs

Storage

Modular Smart Array 1000:
http://h18000.www1.hp.com/products/quickspecs/11033_na/11033_na.HTML
Modular Smart Array 1500 cs: http://www.hp.com/go/MSA1500cs

Tape Drives, Tape Autoloaders, & Tape Libraries

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/North_America/10233.html

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/North_America/10809.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.

NOTE: For complete listing of tape drive offerings see
http://www.hp.com/products1/storage/compatibility/tapebackup/ISS/index.html
For recommended tape drive offerings for this ProLiant server see the following:

	Position Supported	Controller	Controller Part Number
HP StorageWorks Tape Drives, External Ultrium 232 Ultrium 448 Ultrium 460 Ultrium 960 Ultrium 920 DAT 40 DAT 72 DLT VS160 SDLT 320 SDLT 600	External	HP SC11Xe Host Bus Adapter	412911-B21
HP StorageWorks Tape Drives, External DAT 24 USB DAT 40 USB DAT 72 USB	External	USB 2.0 Port	N/A
HP StorageWorks Tape Drives, SAS External Ultrium 448 SAS Ultrium 920 SAS	External	HP 8 Internal Port SAS HBA with RAID 0/1 **NOTE:** Please visit http://www.hp.com/go/connect for details about minimum SAS controller firmware version and SAS cabling requirements.	347786-B21
HP StorageWorks Autoloaders, External DAT 72x10 Autoloader 1/8 Tape Autoloader	External	HP SC11Xe Host Bus Adapter	412911-B21

Storage

HP StorageWorks SCSI Rack-Mount Tape Drive Enclosures 1U Rack-Mount Kit 3U Rack-Mount Kit	External	HP SC11Xe Host Bus Adapter	412911-B21
HP StorageWorks USB Rack-Mount Tape Drive Enclosures 1U Rack-Mount Kit	External	USB 2.0 Port	N/A
HP StorageWorks SAS Rack-Mount Tape Drive Enclosures 1U Rack-Mount Kit	External	HP 8 Internal Port SAS HBA with RAID 0/1 **NOTE:** Please visit http://www.hp.com/go/connect for details about minimum SAS controller firmware version and SAS cabling requirements.	347786-B21
HP StorageWorks Tape Libraries, External MSL2024 (Ultrium 448, Ultrium 920 and 960-based) MSL4048 (Ultrium 448, Ultrium 920 and 960-based) MSL6000 (Ultrium 960 and 460-based) MSL6000 (SDLT 600-based)	External	Please consult the EBS connectivity matrix at http://www.hp.com/go/ebs for detailed connectivity information.	N/A

Power Specifications

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: DL360 G5
- Click on: "Power Calculator" link. (You may need to scroll down to see it)

System Unit	**Dimensions** (H x W x D) 1.70 x 16.78 x 27.75 in (4.32 x 42.62 x 70.49 cm)		
	Weight	Maximum (six hard drives installed, two power supply, two processor)	37 lb (16.78 kg)
		No hard drives installed, one power supply, one processor	27.5 lb (12.47 kg)
	Input Requirements	Rated Input Voltage	100 to 240 VAC
		Rated Input Current	7.1 Amps (at 120VAC) to 3.5 Amps (240 at VAC)
		Rated Input Frequency	50 to 60 Hz
		Rated Input Power	852 W
	BTU Rating	2910 BTU/HR (at 120 VAC); 2870 (at 240 VAC) **NOTE:** The BTU rating listed is for the Rated Input Power of 852 W.	
	Power Specifications	To review typical system power ratings use the Power Calculator which is available via the online tool located at URL: http://h30099.www3.hp.com/configurator/calc/Power%20Calculator%20Catalog.xls To drill down to calculators: - Click on: "ProLiant Servers" - Click on the Server of interest. Example: DL360 G5 - Click on: "Power Calculator" link. (You may need to scroll down to see it)	
	Power Supply Output Power (per power supply)	Rated Steady-State Power	700 W
	Temperature Range	Operating	50° to 95°F (10° to 35°C) at sea level with an altitude derating of 1.0°C per every 1000 ft (300 m) above sea level to a maximum of 10,000 ft (3000 m), no direct sustained sunlight. Maximum rate of change is 10°C/Hr.
		Storage	-40° to 158°F (-40° to 70°C) – Maximum rate of change is 20°C/Hr.
	Relative Humidity (non-condensing)	Operating	10 to 90% relative humidity (Rh), 82.4°F (28°C) maximum wet bulb temperature
		Storage	5 to 95% relative humidity (Rh), based upon a maximum temperature of 113° F (45° C). Altitude maximum for storage corresponds to a pressure minimum of 70 KPa.
	Maximum Wet Bulb Temperature	82.4°F (28°C)	
	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 73.4°F (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} (BELS)	6.6

L_{pAm} (dBA)	50
Operating:	
L_{WAd} (BELS)	6.9 BELS
L_{pAm} (dBA)	53 dBA

Smart Array E200i 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	DDR-1/266 MHz provides up to 4.2 GB/s maximum bandwidth.
	Server Interface	x4 2.5G PCIe provides 2GB/s maximum bandwidth.
	SAS Speed	x8 3G SAS provides 2.4GB/s maximum bandwidth.
	Cache Memory	40-bit 64MB or 128MB cache: ECC protection, battery-backed, and transportable
	Logical Volumes Supported	Up to 32 logical volumes
	Maximum Volume Capacity	3TB (6 x 500GB)
	Host Memory Addressing	64-bit, supporting greater than 4GB server memory space
	RAID Support	RAID 5 (Distributed Data Guarding) requires 128MB BBWC option RAID 1, 1+0 (Striping & Mirroring) RAID 0 (Striping)
	Upgradeable Firmware	Upgradeable Firmware

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	3 TB (6 x 500GB)
	Host Memory Addressing	64-bit, supporting greater than 4GB server memory space
	RAID Support	RAID 6 with ADG (Advanced Data Guarding) requires Battery Backed Write Cache Upgrade RAID 5 (Distributed Data Guarding) RAID 1+0 (Striping & Mirroring) RAID 0 (Striping)
	Upgradeable Firmware	Upgradeable Firmware with recovery ROM feature

Technical Specifications

Embedded NC373i Multifunction Gigabit Server Adapters	**Network Interface**	10/100/1000-T	
	Compatibility	EEE 802.3 10Base-T IEEE 802.3ab 1000Base-T IEEE 802.3u 100Base-TX	
	Data Transfer Method	PCI Express, four lanes (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)
		10/100/1000 Base-TX	Category 5 UTP up to 328 ft (100 m)

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