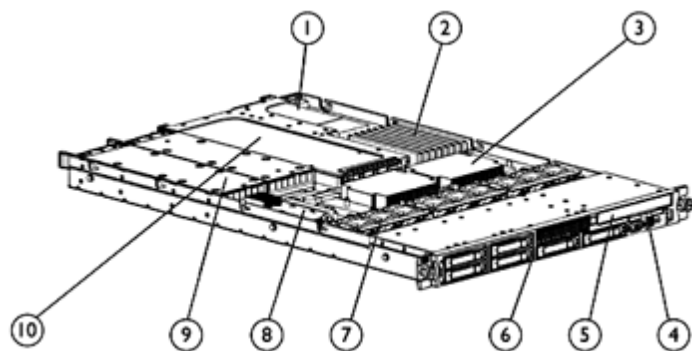
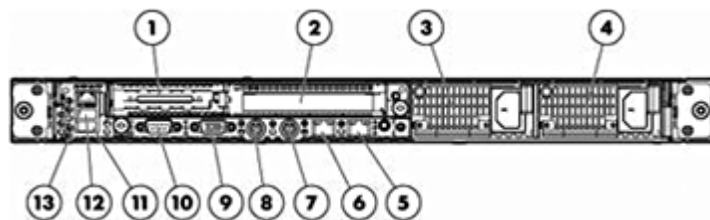


Overview



Front View:

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)



Rear View:

1. PCI Express expansion slot 1, low-profile, half-length
2. PCI Express expansion slot 2
3. Power supply bay 2
4. Power supply bay 1
5. NIC 2 connector
6. NIC 1 connector
7. Keyboard connector
8. Mouse connector
9. Video connector
10. Serial connector
11. USB connector
12. USB connector
13. iLO 2 NIC connector

What's New

- The HP ProLiant DL360 G5 is now available with the latest Intel processor refresh (Quad-Core X5470 3.33GHz, 120W & L5430 2.66GHz, 50W)

At A Glance

Combining concentrated 1U compute power, integrated Lights-Out management, and essential fault tolerance, the HP ProLiant 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 5100 sequence
- Up to 2 Quad-Core Intel® Xeon® processor 5400/5300 sequence
- Up to 2 Dual-Core Intel® Xeon® processor 5200 sequence.
- Intel® 5000P chipset supporting up to a 1333MHz Front Side Bus (FSB)

Memory:

- Up to 64 GB of memory, supported by 8 slots of PC2-5300 Fully Buffered DIMMs (DDR2-667); 4:1 interleaving; memory mirroring; online spare

Overview

- **Storage Controller:**
 - Performance Models: HP Smart Array P400i/256MB BBWC Controller (RAID 0/1/1+0/5/6) (512MB BBWC optional)
 - High Efficiency and 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:**
 - Two embedded NC373i Multifunction Gigabit Network Adapters with TCP/IP Offload Engine, including support for Accelerated iSCSI through an optional Licensing Kit
- **Expansion Slots:**
 - Two PCI-Express expansion slots: (1) full-length, full-height slot; (1) low-profile slot
- **USB 2.0 Ports:**
 - 4 Total: (1) front, (1) internal and (2) rear accessible ports
- **Integrated Hypervisors (Optional):**
 - VMware 3i virtualization technology
 - Citrix XenServer virtualization technology
- **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:**
 - HP Insight Control Environment server management software
 - HP Integrated Lights-Out 2 (iLO 2) Standard, with the option to upgrade to the iLO Advanced Pack, providing a graphical remote console. iLO Advanced Pack is a no installation upgrade offering a number of features including automatic video footage of last boot and fault sequence, on-demand video, team collaboration, and much more. Learn more at: www.hp.com/go/iLO.
 - 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 1U Cable Management Arm
 - Customer Self Repair (CSR): HP products are designed with many CSR parts to minimize repair time and allow for greater flexibility in performing defective parts replacement
- **Warranty:**
 - This product is covered by a global limited warranty and supported by HP Services and a worldwide network of HP Authorized Channel Partners resellers. Hardware diagnostic support and repair is available for three years from date of purchase. Support for software and initial setup is available for 90 days from date of purchase. Enhancements to warranty services are available through HP Care Pack services or customized service agreements. SATA hard drives have a one-year warranty. SAS Enterprise drives have a three-year warranty.
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/4AA1-5214ENW.pdf>

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

Processor

One of the following depending on Model

Quad-Core Processors

Quad-Core Intel® Xeon® Processor X5470 (3.33 GHz, 120 Watts, 1333 FSB)
Quad-Core Intel® Xeon® Processor X5460 (3.16 GHz, 120 Watts, 1333 FSB)
Quad-Core Intel® Xeon® Processor X5450 (3.00 GHz, 120 Watts, 1333 FSB)
Quad-Core Intel® Xeon® Processor E5450 (3.00 GHz, 80 Watts, 1333 FSB)
Quad-Core Intel® Xeon® Processor E5440 (2.83 GHz, 80 Watts, 1333 FSB)
Quad-Core Intel® Xeon® Processor E5430 (2.66 GHz, 80 Watts, 1333 FSB)
Quad-Core Intel® Xeon® Processor E5420 (2.50 GHz, 80 Watts, 1333 FSB)
Quad-Core Intel® Xeon® Processor L5430 (2.66 GHz, 50 Watts, 1333 FSB)
Quad-Core Intel® Xeon® Processor L5420 (2.50 GHz, 50 Watts, 1333 FSB)
Quad-Core Intel® Xeon® Processor E5410 (2.33 GHz, 80 Watts, 1333 FSB)
Quad-Core Intel® Xeon® Processor E5405 (2.00 GHz, 80 Watts, 1333 FSB)
Quad-Core Intel® Xeon® Processor L5410 (2.33 GHz, 50 Watts, 1333 FSB)
Quad-Core Intel® Xeon® Processor E5345 (2.33 GHz, 80 Watts, 1333 FSB)
Quad-Core Intel® Xeon® Processor E5320 (1.86 GHz 80 Watts, 1066 FSB)
Quad-Core Intel® Xeon® Processor L5320 (1.86 GHz 50 Watts, 1066 FSB)
Quad-Core Intel® Xeon® Processor E5310 (1.60 GHz 80 Watts, 1066 FSB)

Dual-Core Processors

Dual-Core Intel® Xeon® Processor X5260 (3.33 GHz, 80 Watts, 1333 FSB)
Dual-Core Intel® Xeon® Processor L5240 (3.00 GHz, 40 Watts, 1333 FSB)
Dual-Core Intel® Xeon® Processor E5205 (1.86 GHz, 65 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)

NOTE: Up to 2 processors supported. Performance configurations include two processors.

NOTE: Intel® 5400/5300 sequence processors are 64-bit, Quad-Core, and supports Intel VT technology. Intel® 5200/5100 sequence processors are 64-bit, Dual-Core, and supports Intel VT technology.

Cache Memory

One of the following depending on Model

12MB (2 x 6MB) Level 2 cache (5400 sequence)
8MB (2 x 4MB) Level 2 cache (5300 sequence)
6MB (1x 6MB) Level 2 cache (5200 sequence)
4MB (1 x 4MB) Level 2 cache (5100 sequence)
4MB (2 x 2MB) Level 2 cache (5000 sequence)

Standard Features

Upgradeability Upgradeable to quad or dual processing
NOTE: Future upgradeable to Xeon® Series 5400/5300 Quad-Core processors (Please contact your regional sales support to determine quad core upgradeability. Some of the earlier shipping models may not support this upgrade). 5100 Dual-Core models are not upgradeable to the 5200 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)
Standard (Performance Model)	4 GB (4 x 1 GB)
Maximum	64 GB (8 x 8 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 Two embedded NC373i Multifunction Gigabit Network Adapters with TCP/IP Offload Engine, including support for Accelerated iSCSI through an optional Licensing Kit

Expansion Slots	Expansion Slots #	Technology	Bus Width**	Connector Width	Bus Number*	Form Factor	Notes
	1	PCI-e	x8	x8	11	Low profile slot	
	2	PCI-e	x8	x8	19	Full length, full height slot	
	2	PCI-X (133 MHz, 3.3 Voltage)	64-bit	x8	16		

* Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number

** Indicates the number of physical electrical lanes running to the connector.

Standard Features

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.
	High Efficiency and 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)	1.50TB SATA	6 x 250GB SATA

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, 32MB video standard
	<ul style="list-style-type: none"> 16 bit color: maximum resolution of 1600 x 1200 32 bit color: maximum resolution of 1280 x 1024 NOTE: Maximum resolution available via iLO 2 remote console is 1280x1024.

Form Factor	Rack (1U), (1.75 in/4.45 cm); 27.75 inch depth (70.5cm)
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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 Essential	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: <ul style="list-style-type: none">• 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 iLO Power Management Pack	Energy-efficient management software that delivers centralized control, reliable security, and energy savings for your BladeSystem infrastructure. iPMP combines the total control of iLO 2 Advanced in the area of remote management with the energy monitoring and control of the Insight Power Manager to deliver a robust solution capable of full remote control and power management of ProLiant servers through a unified interface within HP Systems Insight Manager.
	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.
	HP Insight Power Manager (IPM)	Upgrades the single-server remote management capabilities of iLO Select/Advanced to include centralized reporting and policy-based management of power consumption and thermal output provided by the Insight Power Manager. IPM unifies all of this functionality within a single user interface – HP Systems Insight Manager.

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 7.60.
	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
 - Dell PowerEdge
 - Sun x64
 - Fujitsu Siemens PRIMERGY
- Supported Virtual Machines

Standard Features

- SG/LX in HP Integrity Virtual Machines guests
- SG/LX in VMware ESX guests
- SG/LX in Red Hat and SUSE Xen hosts (DOM0) - supported Summer 2008
- 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>.

Industry Standard Compliance

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

Standard Features

Remote Management

Integrated Lights-Out (iLO 2) Management 2

- 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
- Present power consumption
- 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

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

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

Standard Features

Server Power Cords

High voltage power cord ships standard with all part numbers. Localized cables included with geographic specific models in other world regions.

NOTE: ProLiant DL servers no longer ship standard with NEMA power cords (187335-001) that allow connection to 110V US wall outlets in a home or office. ProLiant DL servers are primarily connected to PDU's in data center racks so they now ship standard with only a PDU power cord (416151-B21). If a user wishes to power a ProLiant DL server using a 110V receptacle (NEMA-15), the above NEMA power cord must be ordered separately.

UPS Power Cord Matrix

Please see the UPS and PDU cable matrix that lists cable descriptions, requirements, and specifications for UPS and PDU units:

<http://h18004.www1.hp.com/products/servers/proliantstorage/power-protection/index.html>

Power Supply

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. PN 399542-291 includes IEC power cable and a Japan power cable.

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/>.

OS Support

Microsoft Windows 2000 Server
Microsoft Windows Server 2003 R2
Microsoft Windows Small Business Server 2003 R2
Microsoft Windows Server 2008
Microsoft Windows Server 2008 Hyper-V
Red Hat Enterprise Linux
SUSE Linux Enterprise Server
Sun Solaris for x64/x86-based Systems
VMware
Citrix XenServer

NOTE: For more information on HP's Certified and Supported ProLiant Servers for OS and Virtualization Software and latest listing of software drivers available for your server, please visit our Support Matrix at: <http://www.hp.com/go/supportos>.

Standard Features

Rack Airflow Requirements

Rack 10000 series Cabinets

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

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

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

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

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: www.hp.com/servers/dl360.

Rack Kit

The HP ProLiant DL360 quick deploy rail system provides tool-free support for racks with square or round mounting holes (including Compaq/HP 7000*, 9000, 10000 and HP series) with an adjustment range to fit a rack depth of 21.25" to 37.75".

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/>)

Factory Express Portfolio for Servers and Storage

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

Factory Express offers service packages for simple configuration, racking, installation, complex configuration and design services as well as individual factory services, such as image loading, asset tagging, and custom packaging. HP products supported through Factory Express include a wide array of servers and storage: HP Integrity, HP ProLiant, HP ProLiant Server Blades, HP BladeSystem, HP 9000 servers as well as the MSAxxx, VA7xxx, EVA, XP, rackable tape libraries and configurable network switches.

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

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>

Standard Features

Service and Support

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

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

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

Recommended Service - simplify ProLiant solution implementation, maintenance, and management.

- **Support** - 3-Year 4-Hour response 24x7 Same Business Day Coverage only
- **Deployment Service** - Installation and Start up only

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

- **Support** - 3-Year Support Plus 24 only

Refer to the information on "Installation & Start-Up" for service on ProLiant server and Microsoft or Linux O/S per the Customer Description and/or Data Sheet; to be delivered on a scheduled basis 8am-5pm, M-F, excluding HP holidays.

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

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

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

Models

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

Models

<p>HP DL360 G5 Performance Models</p> <p>Quad-Core Models DL360R05 X5450 4GB 457922-xx1 DL360R05 E5450 4GB 490666-xx1 DL360R05 E5345 4GB 435944-xx1</p>	<p>Processor(s) Two of the following depending on Model</p> <p>Cache Memory One of the following depending on Model</p> <p>Memory One of the following depending on Model</p> <p>Network Controller</p> <p>Storage Controller</p> <p>Hard Drive</p> <p>Internal Storage</p> <p>Optical Drive</p> <p>PCI-Express Slots</p> <p>Power Supplies</p> <p>Fans</p> <p>Form Factor</p>	<p>(2) Quad-Core Intel® Xeon® Processors X5450 (3.00GHz, 120 Watts, 1333 FSB) (2) Quad-Core Intel® Xeon® Processors E5450 (3.00 GHz, 80 Watts, 1333 FSB) (2) Quad-Core Intel® Xeon® Processors E5345 (2.33 GHz, 80 Watts, 1333 FSB)</p> <p>Quad-Core: 12MB (2 x 6MB) Level 2 cache; Intel Xeon Processor 5400 Sequence 8MB (2 x 4MB) Level 2 cache; Intel Xeon Processor 5300 Sequence</p> <p>2 GB (2 x 1 GB) Standard; PC2-5300 Fully Buffered DIMMs (DDR2-667) 5100 Series 4 GB (4 x 1 GB) Standard; PC2-5300 Fully Buffered DIMMs (DDR2-667) 5300/5400 Series</p> <p>Two embedded NC373i Multifunction Gigabit Server Adapters</p> <p>HP Smart Array P400i/256MB BBWC Controller (RAID 0/1/1+0/5/6)</p> <p>No drives included; (6) drive bays active</p> <p>876GB SAS; 1.50TB SATA</p> <p>Slimline DVD/CD-RW Combo drive</p> <p>1 full-length x8 PCI-Express slot 1 low-profile x8 PCI-Express slot</p> <p>(2) 700W power supplies, redundant</p> <p>9 total, redundancy standard</p> <p>Rack (1U), (1.75 in/4.45 cm); 27.75 inch depth (70.5cm)</p>
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<p>HP DL360 G5 Base Models</p> <p>Quad-Core Models DL360R05 E5440 2GB 457923-xx1 DL360R05 E5430 2GB 457924-xx1 DL360R05 E5420 2GB 457925-xx1 DL360R05 E5335 2GB 435943-xx1 DL360R05 E5320 1GB 438313-xx1</p> <p>Dual-Core Models DL360R05 X5260 2 GB 457928-xx1</p>	<p>Processor(s) One of the following depending on Model</p> <p>Cache Memory One of the following depending on Model</p> <p>Memory One of the following depending on Model</p>	<p>(1) Quad-Core Intel® Xeon® Processor E5440 (2.83 GHz, 80 Watts, 1333 FSB) (1) Quad-Core Intel® Xeon® Processor E5430 (2.66GHz, 80 Watts, 1333 FSB) (1) Quad-Core Intel® Xeon® Processor E5420 (2.50GHz, 80 Watts, 1333 FSB) (1) Quad-Core Intel® Xeon® Processor E5335 (2.00 GHz, 80 Watts, 1333 FSB) (1) Quad-Core Intel® Xeon® Processor E5320 (1.86 GHz, 80 Watts, 1066 FSB) (1) Dual-Core Intel® Xeon® Processor X5260 (3.33 GHz, 80 Watts, 1333 FSB)</p> <p>Quad-Core: 12MB (2 x 6MB) Level 2 cache; Intel Xeon Processor 5400 Sequence 8MB (2 x 4MB) Level 2 cache; Intel Xeon Processor 5300 Sequence</p> <p>Dual-Core: 6MB (1 x 6MB) Level 2 cache; Intel Xeon Processor 5200 Sequence</p> <p>2 GB (2 x 1 GB) Standard on E5335/E5440/E5430/E5420/X5260 Model; PC2-5300 Fully Buffered DIMMs (DDR2-667) 1 GB (2 x 512 MB) Standard on E5320, 5140-5160, 5060 Models; PC2-5300 Fully Buffered DIMMs (DDR2-667)</p>
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Models

Network Controller	Embedded NC373i Multifunction Gigabit Server Adapters
Storage Controller	HP Smart Array P400i/256MB Controller (RAID 0/1/1+0/5)
Hard Drive	No drives included; (4) drive bays active. (6) bays supported with optional storage cable (PN 399546-B21)
Internal Storage	876GB SAS; 1.50TB 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, 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 E5405 1GB

457926-xx1

DL360R05 E5310 1GB

438312-xx1

Processor(s) One of the following depending on Model	(1) Quad-Core Intel® Xeon® Processor E5405 (2.00GHz 80 Watts, 1333 FSB) (1) Quad-Core Intel® Xeon® Processor E5310 (1.60 GHz 80 Watts, 1066 FSB)
Cache Memory One of the following depending on Model	Quad-Core: 12MB (2 x 6MB) Level 2 cache; Intel Xeon Processor 5400 Sequence 8MB (2 x 4MB) Level 2 cache; Intel Xeon Processor 5300 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)
Hard Drives	No drives included; (4) drive bays active
Internal Storage	876GB SAS; 1.50TB 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)

Models

HP DL360 G5 High Efficiency	Processor	(1) Quad-Core Intel® Xeon® Processor L5420 (2.50GHz 50 Watts, 1333 FSB)
Quad-Core Models DL360R05 L5420 2GB 457927-xx1	Cache Memory	Quad-Core: 12MB (2 x 6MB) Level 2 cache; Intel Xeon Processor 5400 Sequence
	Memory	2 GB (1 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 Controller (RAID 0/1/1+0/5)
	Hard Drives	No drives included; (4) drive bays active
	Internal Storage	876GB SAS; 1.50TB SATA
	Optical Drive	Optional DVD 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)	

Country Code Key

XX=00
XX=20
XX=29
XX=37
XX=42
XX=AA

Rack Code Key

US
Brazil
Japan
APD
EURO
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 (choose one of the following configurable models)

Models	HP ProLiant DL360 G5 Rack CTO Chassis	399524-B21
	Factory Integrated Model ships with:	
	Two embedded NC373i Multifunction Gigabit Server Adapters	
	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 Processors	
	Quad-Core Intel® Xeon® Processor X5470 - 3.33GHz, 120 Watts, 1333, FSB, FIO	487511-L21
	Quad-Core Intel® Xeon® Processor X5460 - 3.16GHz, 120 Watts, 1333 FSB, FIO	457929-L21
	Quad-Core Intel® Xeon® Processor X5450 - 3.00GHz, 120 Watts, 1333 FSB, FIO	462858-L21
	Quad-Core Intel® Xeon® Processor E5450 - 3.00GHz, 80 Watts, 1333 FSB, FIO	457931-L21
	Quad-Core Intel® Xeon® Processor E5440 - 2.83GHz, 80 Watts, 1333 FSB, FIO	457933-L21
	Quad-Core Intel® Xeon® Processor E5430 - 2.66GHz, 80 Watts, 1333 FSB, FIO	457935-L21
	Quad-Core Intel® Xeon® Processor L5430 - 2.66GHz, 50 Watts, 1333 FSB, FIO	487513-L21
	Quad-Core Intel® Xeon® Processor E5420 - 2.50GHz, 80 Watts, 1333 FSB, FIO	457937-L21
	Quad-Core Intel® Xeon® Processor L5420 - 2.50GHz, 50 Watts, 1333 FSB, FIO	457943-L21
	Quad-Core Intel® Xeon® Processor E5410 - 2.33GHz, 80 Watts, 1333 FSB, FIO	457939-L21
	Quad-Core Intel® Xeon® Processor L5410 - 2.33GHz, 50 Watts, 1333 FSB, FIO	457945-L21
	Quad-Core Intel® Xeon® Processor E5405 - 2.00GHz, 80 Watts, 1333 FSB, FIO	457941-L21
	Quad-Core Intel® Xeon® Processor X5355 - 2.66GHz, 120 Watts, 1333 FSB, FIO	435956-L21
	Quad-Core Intel® Xeon® Processor E5345 - 2.33GHz, 80 Watts, 1333 FSB, FIO	435954-L21
	Quad-Core Intel® Xeon® Processor E5335 - 2.00GHz, 80 Watts, 1333 FSB, FIO	435952-L21
	Quad-Core Intel® Xeon® Processor E5320 - 1.86GHz, 80 Watts, 1066 FSB, FIO	435950-L21
	Quad-Core Intel® Xeon® Processor L5320 - 1.86GHz, 50 Watts, 1066 FSB, FIO	435958-L21
	Quad-Core Intel® Xeon® Processor E5310 - 1.60GHz, 80 Watts, 1066 FSB, FIO	438314-L21
	Dual-Core Processors	
	Dual-Core Intel® Xeon® Processor X5260 - 3.33 GHz, 80 Watts, 1333 FSB, FIO	457949-L21
	Dual-Core Intel® Xeon® Processor L5240 - 3.00 GHz, 40 Watts, 1333 FSB, FIO	457947-L21
	Dual-Core Intel® Xeon® Processor E5205 - 1.86 GHz, 50 Watts, 1066 FSB, FIO	460497-L21

NOTE: If High Performance Model features are desired, 2nd processor is included in the Performance Pack part numbers in Step 3 below.

Configuration Information - Factory Integrated Models

Base Memory	1 GB FBD PC2-5300 2 x 512 MB Single Rank Kit	397409-B21
	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
	NOTE: Memory Option Kits described as LP 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	NOTE: If High Performance Model features are desired, Storage Controller is included in the Performance Pack part numbers in Step 3 below.	
	HP E200i Controller FIO	399548-B21
	NOTE: If selected, must choose one of the two cache modules below.	
	HP Smart Array E200 64MB FIO Cache	405102-B21
	NOTE: Supports Smart Array E200 Controller only.	
	128MB Battery-Backed Write Cache with Battery Housing	346914-B21
	NOTE: Supports Smart Array E200i Controller.	
	Smart Array P400i controller for DL360 G5	413741-B21
	NOTE: If selected, must choose one of the two cache modules below.	
	HP Smart Array P400 256MB Cache FIO	405139-B21
	NOTE: Supports Smart Array P400 Controller and Smart Array P400i Controller only.	
512MB Battery-backed cache upgrade	405148-B21	
NOTE: Supports Smart Array P400 Controller and Smart Array P400i Controller only.		
HP Smart Array P600/256 BBWC Controller	337972-B21	
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).		
HP Smart Array 6402/512 FIO Controller	441508-B21	
HP Smart Array 6404/512 FIO CNTRLR	452240-B21	

Configuration Information - Factory Integrated Models

Step 3: Choose Additional Factory Integratable Options

Integrated hypervisor (iHV)	VMware ESX Server 3i integrated hypervisor	
	integrated VMware ESX Server 3i 2P FIO	464668-B21
	integrated VMware ESX Server 3i Enterprise 2P FIO	464669-B21
	NOTE: For additional information and option kits, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12307_div/12307_div.html (Worldwide)	
	Citrix XenServer integrated hypervisor	
	integrated XenServer HP Select Edition 2P/4P	464673-B21
	integrated XenServer HP Enterprise Edition 2P/4P	464674-B21
	NOTE: For additional information and option kits, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/13018_div/13018_div.html (Worldwide)	
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
	HP DL360G5 E5345 HPM FIO Perf Pack	435960-B21
	HP DL360G5 X5450 HPM FIO Perf Pack	457951-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 Processors

Quad-Core Intel® Xeon® Processor X5470 (3.33GHz, 120 Watts, 1333 FSB)	487511-B21
Quad-Core Intel® Xeon® Processor X5460 (3.16GHz, 120 Watts, 1333 FSB)	457929-B21
Quad-Core Intel® Xeon® Processor X5450 (3.00GHz, 120 Watts, 1333 FSB)	462858-B21
Quad-Core Intel® Xeon® Processor E5450 (3.00GHz, 80 Watts, 1333 FSB)	457931-B21
Quad-Core Intel® Xeon® Processor E5440 (2.83GHz, 80 Watts, 1333 FSB)	457933-B21
Quad-Core Intel® Xeon® Processor E5430 (2.66GHz, 80 Watts, 1333 FSB)	457935-B21
Quad-Core Intel® Xeon® Processor L5430 (2.66GHz, 50 Watts, 1333 FSB)	487513-B21
Quad-Core Intel® Xeon® Processor E5420 (2.50GHz, 80 Watts, 1333 FSB)	457937-B21
Quad-Core Intel® Xeon® Processor L5420 (2.50GHz, 50 Watts, 1333 FSB)	457943-B21
Quad-Core Intel® Xeon® Processor E5410 (2.33GHz, 80 Watts, 1333 FSB)	457939-B21
Quad-Core Intel® Xeon® Processor L5410 (2.33GHz, 50 Watts, 1333 FSB)	457945-B21
Quad-Core Intel® Xeon® Processor E5405 (2.00GHz, 80 Watts, 1333 FSB)	457941-B21
Quad-Core Intel® Xeon® Processor X5355 (2.66 GHz, 120 Watts, 1333 FSB)	435956-B21
Quad-Core Intel® Xeon® Processor E5345 (2.33 GHz, 80 Watts, 1333 FSB)	435954-B21
Quad-Core Intel® Xeon® Processor E5335 (2.00 GHz, 80 Watts, 1333 FSB)	435952-B21
Quad-Core Intel® Xeon® Processor E5320 (1.86 GHz, 80 Watts, 1066 FSB)	435950-B21
Quad-Core Intel® Xeon® Processor L5320 (1.86 GHz, 50 Watts, 1066 FSB)	435958-B21
Quad-Core Intel® Xeon® Processor E5310 (1.60 GHz, 80 Watts, 1066 FSB)	438314-B21

Dual-Core Processors

Dual-Core Intel® Xeon® Processor X5260 (3.33 GHz, 80 Watts, 1333 FSB)	457949-B21
Dual-Core Intel® Xeon® Processor L5240 (3.00 GHz, 40 Watts, 1333 FSB)	457947-B21
Dual-Core Intel® Xeon® Processor E5205 (1.86 GHz, 50 Watts, 1066 FSB)	460497-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 (2.33 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
PCI-X Riser option	405154-B21

NOTE: To convert full-length PCI-Express slot to PCI-X slot.

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

HP Insight Control Environment for Linux

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

Integrated Lights-Out Power Management Pack

HP iLO Power Management Pack, No Media, 1-Server License, including 1 year of 24x7 Technical Support and Updates 452145-B21

NOTE: This option kit includes 1 license for iLO Advanced and Insight Power Manager.

NOTE: For additional License Kits, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12632_div/12632_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



Options

<p>ProLiant Essentials Rapid Deployment Pack No Media 1-Server License including 1 year of 24x7 Technical Support and Updates NOTE: This license allows 1 server to be deployed and managed via RDP. Customer will receive a printed license entitlement certificate via physical shipment. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support Service NOTE: For additional License Kits, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11053_div/11053_div.html</p> <p>HP Server Migration Pack - Universal Edition</p> <p>HP Server Migration Pack - Universal Edition, No Media, Physical / Virtual to ProLiant Single Migration License, including 1 year of 24x7 Technical Support and Updates 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.</p> <p>HP Server Migration Pack - Universal Edition, No Media, Physical / Virtual to Virtual Single Migration License, including 1 year of 24x7 Technical Support and Updates 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.</p> <p>HP Server Migration Pack - Universal Edition, No Media, 1-Year Unlimited Migration License, including 1 year of 24x7 Technical Support 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</p> <p>Monitor</p> <p>HP Insight Dynamics-VSE</p> <p>HP Insight Dynamics-VSE with Insight Control Environment, 1-server license including 1 year of 24x7 Technical Support and Updates NOTE: This license supports HP ProLiant ML/DL servers. Customer will receive a printed license entitlement certificate via physical shipment.</p> <p>HP Insight Dynamics-VSE without Insight Control Environment, 1-server license including 1 year of 24x7 Technical Support and Updates 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</p> <p>Control</p> <p>Integrated Lights-Out Select Pack</p> <p>ProLiant Essentials Integrated Lights-Out Select Pack, No Media, 1-Server License NOTE: For additional License Kits, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12362_div/12362_div.html</p>	<p>452151-B21</p> <p>460750-B21</p> <p>460753-B21</p> <p>460756-B21</p> <p>483527-B21</p> <p>483531-B21</p> <p>452158-B21</p>
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Options

Integrated Lights-Out Advanced Pack

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

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

HP Insight Power Manager (IPM)

HP Insight Power Manager, No Media, 1-Server License, including 1 year of 24x7 Technical Support and Updates

452677-B21

NOTE: Customers purchasing this upgrade must already have an iLO Advanced or Select license on each managed server. 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.

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

http://h18000.www1.hp.com/products/quickspecs/12623_div/12623_div.html

ProLiant Essentials Virtual Machine Management Pack

ProLiant Essentials Virtual Machine Management Pack, No Media, 1-Server License, including 1 year of 24x7 Technical Support and Updates

452153-B21

NOTE: 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.

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

http://h18000.www1.hp.com/products/quickspecs/12328_div/12328_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.

Options

Processor

Quad-Core Processors

Quad-Core Intel® Xeon® Processor X5470 (3.33GHz, 120 Watts, 1333 FSB)	487511-B21
Quad-Core Intel® Xeon® Processor X5460 (3.16GHz, 120 Watts, 1333 FSB)	457929-B21
Quad-Core Intel® Xeon® Processor X5450 (3.00GHz, 120 Watts, 1333 FSB)	462858-B21
Quad-Core Intel® Xeon® Processor E5450 (3.00GHz, 80 Watts, 1333 FSB)	457931-B21
Quad-Core Intel® Xeon® Processor E5440 (2.83GHz, 80 Watts, 1333 FSB)	457933-B21
Quad-Core Intel® Xeon® Processor E5430 (2.66GHz, 80 Watts, 1333 FSB)	457935-B21
Quad-Core Intel® Xeon® Processor L5430 (2.66GHz, 50 Watts, 1333 FSB)	487513-B21
Quad-Core Intel® Xeon® Processor E5420 (2.50GHz, 80 Watts, 1333 FSB)	457937-B21
Quad-Core Intel® Xeon® Processor L5420 (2.50GHz, 50 Watts, 1333 FSB)	457943-B21
Quad-Core Intel® Xeon® Processor E5410 (2.33GHz, 80 Watts, 1333 FSB)	457939-B21
Quad-Core Intel® Xeon® Processor L5410 (2.33GHz, 50 Watts, 1333 FSB)	457945-B21
Quad-Core Intel® Xeon® Processor E5405 (2.00GHz, 80 Watts, 1333 FSB)	457941-B21
Quad-Core Intel® Xeon® Processor X5355 (2.66 GHz, 120 Watts, 1333 FSB)	435956-B21
Quad-Core Intel® Xeon® Processor E5345 (2.33 GHz, 80 Watts, 1333 FSB)	435954-B21
Quad-Core Intel® Xeon® Processor E5335 (2.00 GHz, 80 Watts, 1333 FSB)	435952-B21
Quad-Core Intel® Xeon® Processor E5320 (1.86 GHz, 80 Watts, 1066 FSB)	435950-B21
Quad-Core Intel® Xeon® Processor L5320 (1.86 GHz, 50 Watts, 1066 FSB)	435958-B21
Quad-Core Intel® Xeon® Processor E5310 (1.60 GHz, 80 Watts, 1066 FSB)	438314-B21

Dual-Core Processors

Dual-Core Intel® Xeon® Processor X5260 (3.33 GHz, 80 Watts, 1333 FSB)	457949-B21
Dual-Core Intel® Xeon® Processor L5240 (3.00 GHz, 40 Watts, 1333 FSB)	457947-B21
Dual-Core Intel® Xeon® Processor E5205 (1.86 GHz, 50 Watts, 1066 FSB)	460497-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 (2.33 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

Options

Memory (DIMMs)	1 GB FBD PC2-5300 2 x 512 MB Single Rank Kit	397409-B21
	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

NOTE: Memory Option Kits described as LP include Low Power DIMMs. For more information on ProLiant Energy Efficient Features, please visit:

<http://h18004.www1.hp.com/products/servers/platforms/energyefficient/>

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
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Hard Drives	SAS Enterprise (ENT) Drives 2.5" Drives, Hot Plug	
	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: SAS Enterprise drives have a 3 year warranty. Please see the QuickSpecs for Technical Specifications and additional information:

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

SATA SFF Hot Plug Entry (ETY) Drives

HP 250GB 3G SATA 5.4K SFF ETY HDD	460355-B21
HP 120GB 1.5G SATA 5.4K SFF ETY HDD	458924-B21

NOTE: SATA drives have a 1 year warranty. Please see the QuickSpecs for Technical Specifications and additional information:

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

SFF SATA Hot Plug Drives

HP 120GB 1.5G SATA 5.4K SFF HDD	431786-B21
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Options

NOTE: SATA drives have a 1 year warranty. Please see the QuickSpecs for Technical Specifications and additional information:

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

Storage Controllers

SAS Controllers

Smart Array E200i Controller

128 MB Battery-Backed Write Cache with Battery Housing

346914-B21

NOTE: Supports Smart Array E200i Controller only.

Smart Array E500 Controller

Smart Array E500/256MB Controller

435129-B21

HP Smart Array P400 Controller

HP Smart Array P400i Controller

HP Smart Array P400/256MB Controller

405132-B21

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.

512 MB Battery-backed write 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 QuickSpecs for Technical Specifications and additional information:

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

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

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

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

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: Supports SAS and SATA disk drive. RAID 0,1 supported.

Options

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

http://h18004.www1.hp.com/products/quickspecs/13082_div/13082_div.html
(SC08Ge HBA)

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
(SAS HBA)

SAS Cables

HP Mini SAS 4i 13.4 inch/0.35 m cable 399546-B21

NOTE: Used to connect Smart Array P400i Controller to DL360 G5 5th and 6th drive bays.

HP SAS 4i to Mini SAS 4i 31 inch/.79 meter cable 411100-B21

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.

SCSI Controllers for External Drive/Storage Support

Smart Array 6402/128 Controller 273915-B21

NOTE: For support of external drives only.

Smart Array 6404/256 Controller 273914-B21

NOTE: For support of external drives only.

Smart Array 642 Controller 291967-B21

NOTE: For support of external drives only.

128MB Battery-Backed Cache Enabler 351580-B21

NOTE: This 128-MB Battery-Backed Cache Module upgrade kit supports the Smart Array 642 Controller.

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.

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 Technical Specifications and additional information:

http://h18000.www1.hp.com/products/quickspecs/10429_div/10429_div.html
(SCSI Adapter)

http://h18000.www1.hp.com/products/quickspecs/11555_div/11555_div.html
(U320 Adapter)

http://h18000.www1.hp.com/products/quickspecs/11943_div/11943_div.html
(U320 SCSI HBA)

http://h18000.www1.hp.com/products/quickspecs/12566_div/12566_div.html
(SC11Xe HBA)

Options

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 NC373F PCI Express Multifunction Gigabit Server Adapter	394793-B21
	HP NC373T PCI Express Multifunction Gigabit Server Adapter	394791-B21
	HP NC380T PCI Express Dual Port Multifunction Gigabit Server Adapter	394795-B21
	NOTE: Supported on a Full Length-Full Height slot only.	
	HP NC510F PCIe 10 Gigabit Server Adapter	414126-B21
	NOTE: A minimum of 1 gigabyte (1 GB) of server memory is required per each NC510F adapter.	
HPC Specific Options	HP NC510C PCIe 10 Gigabit Server Adapter	414129-B21
	NOTE: A minimum of 1 gigabyte (1 GB) of server memory is required per each NC510C adapter.	
	HP NC7170 PCI-X Dual Port 1000T Gigabit Server Adapter	313881-B21
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: www.hp.com/go/ProLiantNICs	
Redundant Options	HP IB 4X SDR PCI-e single PORT HCA	431038-B21
	HP IB 4X DDR PCI-e Single PORT HCA	431039-B21
	HP IB 4X DDR PCI-e Dual Port HCA	409376-B21
	HP IB 4X DDR PCI-e DUAL PORT 0 mem HCA	483513-B21
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 Rack-Mount Tape Solutions	
	HP StorageWorks 1U USB Rack-Mount Kit with one DAT 160 USB Tape Drive	AG703A
	NOTE: Pre-configured with one DAT 160 USB tape drive.	
	SAS Rack-Mount Tape Solutions	
	NOTE: HP recommends purchasing the HP SC44Ge HBA (416096-B21) for a dedicated SAS HBA for tape.	
	HP StorageWorks 1U SAS Rack-Mount Kit with one LTO-4 Ultrium 1760	EH946A
	NOTE: Pre-configured with one LTO-4 Ultrium 1760 SAS tape drive.	
	HP StorageWorks 1U SAS Rack-Mount Kit	AE459A
NOTE: Supports up to (2) half-height SAS tape drives.		
HP StorageWorks LTO-2 Ultrium 448 SAS Internal Tape Drive	DW085A	
NOTE: Mounts inside the 1U SAS Rack-Mount Kit (AE459A).		
HP StorageWorks LTO-3 Ultrium 920 SAS Internal Tape Drive	EH847A	
NOTE: Mounts inside the 1U SAS Rack-Mount Kit (AE459A).		
SCSI Rack-Mount Tape Solutions		
NOTE: SCSI Controller required. HP recommends purchasing the HP SC11Xe HBA (412911-B21) for a dedicated SCSI HBA for tape.		

Options

HP StorageWorks 1U Rack-mount kit with one Ultrium 448 (Carbonite)	DW028B
HP StorageWorks 1U SCSI Rack-mount kit with one Ultrium 920	EH903A
<p>NOTE: Please see the Rack-Mount Tape Drive Kits QuickSpecs for additional information regarding these kits: http://h18000.www1.hp.com/products/quickspecs/10854_div/10854_div.html (Worldwide) For an up-to-date listing of the latest O/S and software support details for HP tape drives, please visit: http://www.hp.com/go/connect.</p>	

Disk-Based Backup

RDX Removable Disk Backup

HP StorageWorks RDX160 External Removable Disk Backup System	AJ766A
NOTE: 160GB of Disk Storage	
HP StorageWorks RDX320 External Removable Disk Backup System	AJ768A
NOTE: 320GB of Disk Storage	
<p>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</p>	

D2D Backup

HP StorageWorks D2D120 Backup System with Data Protector Express Software Kit	EH924A
NOTE: 2TB of Disk Storage	
HP StorageWorks D2D130 Backup System with LTO-3 Ultrium 920 SAS Tape Drive	EH952A
NOTE: 3TB of Disk Storage	
HP StorageWorks D2D2503i Backup System	EH945A
NOTE: 3TB of Disk Storage	
HP StorageWorks D2D4004i Backup System	EH938A
NOTE: 4.5TB of Disk Storage	
<p>NOTE: Please see the HP D2D Backup Systems QuickSpecs for additional information: http://www.hp.com/go/d2d</p>	

Tape Autoloaders

HP StorageWorks DAT Autoloader

HP StorageWorks DAT 72x10 tape autoloader	AE313B
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HP StorageWorks 1/8 G2 Tape Autoloader

HP StorageWorks 1/8 G2 LTO-4 Ultrium 1760 SAS Tape Autoloader	AK377A
HP StorageWorks 1/8 G2 LTO-3 Ultrium 920 SAS Autoloader	AH558A
HP StorageWorks 1/8 G2 LTO-2 Ultrium 448 Tape Autoloader	AH164A
HP StorageWorks 1/8 G2 Tape Autoloader Rack Kit	AH166A

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

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

Options

Tape Libraries	HP StorageWorks MSL2024 Tape Library		
	HP StorageWorks MSL2024 1 LTO-4 Ultrium 1840 SCSI Drive Library		AJ033A
	HP StorageWorks MSL2024 1 LTO-4 Ultrium 1760 SAS Drive Library		AK378A
	HP StorageWorks MSL2024 1 LTO-3 Ultrium 960 SCSI Drive Library		AG115A
	HP StorageWorks MSL2024 1 LTO-3 Ultrium 920 SAS Drive Library		AH559A
	HP StorageWorks MSL2024 1 LTO-2 Ultrium 448 SCSI Drive Library		AG116A
	HP StorageWorks MSL4048 Tape Library		
	HP StorageWorks MSL4048 1 LTO-4 Ultrium 1840 SCSI Drive Library		AJ035A
	HP StorageWorks MSL4048 2 LTO-4 Ultrium 1760 SAS Drive Library		AK380A
	HP StorageWorks MSL4048 1 LTO-3 Ultrium 960 SCSI Drive Library		AG322A
	HP StorageWorks MSL4048 1 LTO-3 Ultrium 920 SAS Drive Library		AH560A
	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 .			
HP StorageWorks 20 Modular Smart Array	HP StorageWorks 20 Modular Smart Array NOTE: Rack-mountable 12 (SATA) drive enclosure with U320 Host connectivity, redundant power supplies. NOTE: Please see the QuickSpecs for additional options and configuration information at: http://h18000.www1.hp.com/products/quickspecs/11942_div/11942_div.html (Worldwide)		335921-B21
HP StorageWorks 50 Modular Smart Array	HP StorageWorks 50 Modular Smart Array NOTE: Please see the QuickSpecs for additional options and configuration information at: http://h18000.www1.hp.com/products/quickspecs/12245_div/12245_div.html (Worldwide)		364430-B21
HP StorageWorks 60 Modular Smart Array	HP StorageWorks 60 Modular Smart Array NOTE: Please see the QuickSpecs for additional options and configuration information at: http://h18000.www1.hp.com/products/quickspecs/12627_div/12627_div.html (Worldwide)		418408-B21
HP StorageWorks 70 Modular Smart Array	HP StorageWorks 70 Modular Smart Array NOTE: Please see the QuickSpecs for additional options and configuration information at: http://h18000.www1.hp.com/products/quickspecs/12652_div/12652_div.html (Worldwide)		418800-B21

Options

HP StorageWorks 2000sa Modular Smart Array	HP 2012sa Single Controller Modular Smart Array	AJ752A
	HP 2012sa Dual Controller Modular Smart Array	AJ753A

NOTE: Please see the Modular Smart Array 2000sa QuickSpecs for additional options and configuration information at:
http://h18000.www1.hp.com/products/quickspecs/13045_div/13045_div.html
 (Worldwide)

High Availability Cluster Options	HP Serviceguard for Linux	
	HP Serviceguard Linux for HP ProLiant/x86 Servers Licensed per physical server Includes media and One Year 24x7 Software Support & Updates	463831-B21
	HP Serviceguard Linux Oracle Database Toolkit for HP ProLiant/x86 Servers Licensed per cluster Includes media and One Year 24x7 Software Support & Updates	463833-B21
	HP Serviceguard Extension for SAP on Linux for HP ProLiant/x86 Servers Licensed per physical server Includes media and One Year 24x7 Software Support & Updates	463834-B21
	HP Serviceguard Linux Extended Distance Cluster (XDC) for HP ProLiant/x86 Servers Licensed per physical server Includes media and One Year 24x7 Software Support & Updates	463835-B21

NOTE: The above is not a complete list of all HP Serviceguard for Linux product numbers. For a detailed list of supported configuration/certification options for HP Serviceguard for Linux, please refer to the HP Serviceguard for Linux Configuration & Ordering Guide available at: <http://www.hp.com/go/sglx/info>.

NOTE: 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.

NOTE: For additional information including a complete list of Product Numbers for HP Serviceguard for Linux, please see the following QuickSpecs at:
http://h18000.www1.hp.com/products/quickspecs/11518_div/11518_div.html
 (Worldwide)

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

Options

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
NOTE: Recommended Dual Channel Ultra320 SCSI Controller for connecting multi-drive MSL tape libraries to ProLiant servers.	

Uninterruptible Power Systems - Rack

HP R1500 G2 UPS	
HP, R1.5kVA UPS, 1U, NA	AF419A
HP, R1.5kVA UPS, 1U, INTL	AF418A
HP, R1.5kVA UPS, 1U, JPN/TW	AF421A
NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12507_div/12507_div.html (Worldwide)	
HP R3000 UPS	
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
NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/10671_div/10671_div.html (Worldwide)	
HP R3000v Uninterruptible Power System	
HP R3000v UPS	AF444A
NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13129_div/13129_div.html (Worldwide)	
HP Rack-Mountable R5500 UPS	
HP R5500 VA UPS, INTL	AF416A
HP R5500 VA UPS, NA/JPN	AF426A
NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/11871_div/11871_div.html (Worldwide)	

Options

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
Power Cord, Euro, 10A 250 V Straight (6 ft/1.83 m)	AF568A
Power Cord, UK, 10A 250 V Straight (6 ft/1.83 m)	AF570A
Power Cord, Danish, 10A 250 V Straight (6 ft/1.83 m)	AF566A
Power Cord, Swiss, 10A 250 V Straight (6 ft/1.83 m)	AF565A
Power Cord, Italian, 10A 250 V Straight (6 ft/1.83 m)	AF571A
Power Cord, South Africa, 10A 250 V Straight (8.2 ft/2.5 m)	AF567A

HP Monitored Power Distribution Unit (PDU)

HP Monitored Power Distribution Unit: Full Rack Version

HP 17.3 kVA S2324 Monitored PDU- dual input, 3Ø24A (NA/JPN)	AF503A
HP 8.6 kVA S1324 Monitored PDU- single input, 3Ø, 24A (NA/JPN)	AF504A
HP 16.6 kVA S2140 Monitored PDU- dual input, 1Ø, 40A (NA/JPN)	AF505A
HP 8.3 S1140 Monitored PDU- single input, 1Ø, 40A (NA/JPN)	AF506A
HP 22.1 kVA S2316 Monitored PDU- dual input, 3Ø, 16A (INTL)	AF507A
HP 11 kVA S1316 Monitored PDU- single input, 3Ø, 16A (INTL)	AF508A
HP 14.7 kVA S2132 Monitored PDU- dual input, 1Ø, 32A (INTL)	AF509A
HP 7.3 kVA S1132 Monitored PDU- single input, 1Ø, 32A (INTL)	AF510A

HP Monitored Power Distribution Unit: Half Rack Version

HP 4.9 kVA S124 Monitored PDU- single input, 1Ø, 24A (NA/JPN)	AF914A
HP 7.3 kVA S132 Monitored PDU- single input, 1Ø, 32A (INTL)	AF915A

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

http://h18000.www1.hp.com/products/quickspecs/12118_div/12118_div.html
(Worldwide)

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	351655-B21
NOTE: Two extension bar sticks; each with (7) C13 plugs.	
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-D71
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
8.3kVA Model - mPDU 40A, High (core only) (NA/JPN)	252663-D75
9.2kVA Model - mPDU 40 A, High (core only) (Int'l)	252663-B34
8.3kVA Model - mPDU 32A, High (core only) (Int'l)	252663-B33
4.9kVA Model - mPDU 24A, High (core only) (NA/JPN)	252663-D74

NOTE: For additional information on HP Power Distribution Units including accessories please go to: www.hp.com/go/pdu (Worldwide)

Options

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#ABA
	HP 1GB USB 2.0 Floppy Drive Key	442085-B21
	HP 256MB USB 2.0 Floppy Drive Key	442084-B21
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Rack Kits	1 U Cable Management Arm	365403-B21
	NOTE: Package contains two cable management arms.	
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HP Rack 5000 Series (Graphite Metallic)	HP 5642 Rack Unassembled	358254-B21
	<p>NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12074_div/12074_div.html (Worldwide)</p> <p>NOTE: For additional information regarding Rack Cabinets, please see the following URL: http://www.hp.com/go/rackandpower.</p>	
<hr/>		
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
	<p>NOTE: It is mandatory to use a shock pallet when shipping racks with equipment installed.</p> <p>NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12402_div/12402_div.html (Worldwide)</p> <p>NOTE: For additional information regarding Rack Cabinets, please see the following URL: http://www.hp.com/go/rackandpower.</p>	
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Options

HP Rack 10000 Series (Graphite Metallic)	HP Rack S10614 (14U) Rack Cabinet – Shock Pallet NOTE: xxxxx-B22 (shock pallet) used to ship racks with equipment installed (by custom systems, VARs and Channels). 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 QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/10995_div/10995_div.html (Worldwide) NOTE: For additional information regarding Rack Cabinets, please see the following URL: http://www.hp.com/go/rackandpower	292302-B22
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Keyboards and Monitors	TFT7600 Rackmount Keyboard Monitor US TFT7600 Rackmount Keyboard Monitor UK TFT7600 Rackmount Keyboard Monitor GR TFT7600 Rackmount Keyboard Monitor FR TFT7600 Rackmount Keyboard Monitor IT TFT7600 Rackmount Keyboard Monitor SP TFT7600 Rackmount Keyboard Monitor DEN TFT7600 Rackmount Keyboard Monitor NOR TFT7600 Rackmount Keyboard Monitor SE/FI TFT7600 Rackmount Keyboard Monitor SWI TFT7600 Rackmount Keyboard Monitor PORT TFT7600 Rackmount Keyboard Monitor BEL TFT7600 Rackmount Keyboard Monitor JPN2 TFT7600 Rackmount Keyboard Monitor RUS TFT7600 Rackmount Keyboard Monitor INTL 1U Rackmount Keyboard with USB, US 1U Rackmount Keyboard with USB, UK 1U Rackmount Keyboard with USB, GR 1U Rackmount Keyboard with USB, FR 1U Rackmount Keyboard with USB, ITL 1U Rackmount Keyboard with USB, SP 1U Rackmount Keyboard with USB, DEN 1U Rackmount Keyboard with USB, NOR 1U Rackmount Keyboard with USB, SE/FI 1U Rackmount Keyboard with USB, SWI 1U Rackmount Keyboard with USB, PORT 1U Rackmount Keyboard with USB, BEL 1U Rackmount Keyboard with USB, JPN2 1U Rackmount Keyboard with USB, RUS 1U Rackmount Keyboard with USB, INTL	AG052A AG053A AG054A AG055A AG056A AG057A AG058A AG059A AG060A AG061A AG062A AG063A AG064A AG065A AG066A AG072A AG073A AG074A AG075A AG076A AG077A AG078A AG079A AG080A AG081A AG082A AG083A AG084A AG085A AG086A
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NOTE: For additional information regarding Rack Cabinets, please see the following URL: <http://www.hp.com/go/rackandpower>.

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
	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
	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 1x4 Console Switch (ALL)	AF611A
	PS2 Server Console Cable, 6 ft, 2 pack	AF612A
	USB Server Console Cable, 6 ft, 2 pack	AF613A

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 (worldwide)	AF101A
	HP 48 Port Serial Console Server (worldwide)	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 3A must match. DIMMs 5B and 7B, DIMMs 2C and 4C, and DIMMs 6D 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	64 GB	8 GB	8 GB	8 GB	8 GB	8 GB	8 GB	8 GB	8 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 Single Rank Kit	397409-B21
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

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

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 3A must match. DIMMs 5B and 7B, DIMMs 2C and 4C, and DIMMs 6D 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 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	64 GB	8 GB	8 GB	8 GB	8 GB	8 GB	8 GB	8 GB	8 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 Single Rank Kit	397409-B21
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

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:

Memory

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

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

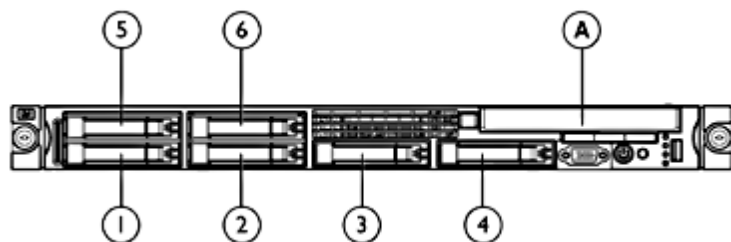
Mirrored memory FBDIMMs configuration requirements (in addition to general configuration requirements):

- 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 Enterprise (ENT) Drives 2.5" Drives, Hot Plug

	Quantity Supported	Position Supported	Controller
146GB 3G SAS 10K SP	6	1-6	HP Smart Array E200i/64MB Controller
146GB 3G SAS 10K DP			HP Smart Array E500/256MB Controller
72GB 3G SAS 10K SP			HP Smart Array P400i/512MB BBWC Controller
72GB 3G SAS 10K DP			HP Smart Array P400i/256MB 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			Please see NOTES below regarding hard drive quantity supported by Smart Array Controller.
36GB 3G SAS 15K DP			

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).

SATA SFF Hot Plug Entry (ETY) Drives

	Quantity Supported	Position Supported	Controller
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Storage

250GB 3G SATA 5.4K ETY	6	1-6	HP 8 Internal Port SAS HBA with RAID HP SC44Ge Host Bus Adapter HP Smart Array E200i/64MB Controller HP Smart Array E500/256MB 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.
120GB 1.5G SATA 5.4K ETY			

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).

SFF SATA Hot Plug Drives

	Quantity Supported	Position Supported	Controller
120GB 1.5G SATA 5.4K	6	1-6	HP 8 Internal Port SAS HBA with RAID HP SC44Ge Host Bus Adapter HP Smart Array E200i/64MB Controller HP Smart Array E500/256MB 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
20 Modular Smart Array	Please see the QuickSpecs to determine configuration requirements	External	Smart Array 6402/128 Controller Smart Array 6404/256 Controller Smart Array 642 Controller
50 Modular Smart Array	Up to 2	External	HP Smart Array P600/256 BBWC Controller
	Up to 4	External	HP Smart Array E500/256MB Controller HP Smart Array P800/512 BBWC Controller
60 Modular Smart Array	Up to 4	External	HP Smart Array P600/256 BBWC Controller
	Up to 8	External	HP Smart Array E500/256MB Controller HP Smart Array P800/512 BBWC Controller

Storage

70 Modular Smart Array	Up to 2	External	HP Smart Array P600/256 BBWC Controller
	Up to 4	External	HP Smart Array E500/256MB Controller
			HP Smart Array P800/512 BBWC Controller
HP 2000sa Modular Smart Array Controller	Up to 4	External	HP SC08Ge Host Bus Adapter

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, External	External	HP SC11Xe Host Bus Adapter	412911-B21
LTO-1 Ultrium 232			
LTO-2 Ultrium 448			
LTO-3 Ultrium 960			
LTO-3 Ultrium 920			
LTO-4 Ultrium 1760			
LTO-4 Ultrium 1840			
DAT 40			
DAT 72			
DAT 160			
1U Rack-Mount Kit			
3U Rack-Mount Kit			
HP StorageWorks USB Tape Drives, External	External	USB 2.0 Port	N/A
DAT 40 USB			
DAT 72 USB			
DAT 160 USB			
1U Rack-Mount Kit			

Storage

<p>HP StorageWorks SAS Tape Drives, External 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</p>	External	HP SC44Ge Host Bus Adapter	416096-B21
<p>HP StorageWorks SCSI Tape Automation, External DAT 72x10 Autoloader 1/8 G2 Autoloader MSL2024 MSL4048 MSL8096 MSL6000</p>	External	HP SC11Xe Host Bus Adapter	412911-B21
<p>HP StorageWorks SAS Tape Automation, External 1/8 G2 Autoloader MSL2024 MSL4048 MSL8096</p>	External	HP SC44Ge Host Bus Adapter	416096-B21
<p>HP StorageWorks Fibre Tape Automation, External MSL2024 MSL4048 MSL8096 MSL6000</p>	External	<p>Please consult the EBS connectivity matrix at: http://www.hp.com/go/ebs for detailed connectivity information.</p>	N/A
<p>HP StorageWorks RDX Removable Disk Backup System RDX160 RDX320</p>	External USB 2.0 Port		N/A
<p>HP StorageWorks D2D Backup Systems D2D120 D2D130 D2D2503i D2D4004i</p>	External	Embedded Network Controller	N/A

Power Specifications

Part Number - AC	399542-B21
Operational Input Voltage Range (V rms)	90 to 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	700	700	700	700	700	700
Nominal Input Current (A rms)	8.5	7	4	3.77	3.6	3.4
Max Rated Input Wattage Rating (Watts)	833	823	815	813	811	800
Max. Rated VA (Volt-Amp)	850	840	832	829	828	816
Efficiency (%)	83.5	84	86	86	87	87.5
Power Factor	0.98	0.98	0.98	0.98	0.98	0.98
Leakage Current (mA)	0.35	0.41	0.71	0.78	0.81	0.85
Max. Inrush Current (A peak)	30	30	30	30	30	30
Max. Inrush Current duration (mS)	3	3	3	3	3	3

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)

Technical Specifications

System Unit	Dimensions (H x W x D) (with bezel)	1.70 x 16.78 x 27.25 in (4.32 x 42.62 x 69.22 cm)	
	Weight (approximate)	Maximum	39.5 lb (17.92 kg) (all hard drives, power supplies, and processors installed)
		Minimum	32 lb (14.51 kg) (one hard drive, power supply, and processor installed)
Input Requirements (per power supply)	Rated Line Voltage	100 to 240 VAC	
	Rated Input Current	7.1 Amps (at 120VAC) to 3.5 Amps (at 240 VAC)	
	Rated Input Frequency	50 to 60 Hz	
	Rated Input Power	852 W	
BTU Rating	Maximum	2910 BTU / hr (at 120 VAC), 2870 (at 240 VAC)	
Power Specifications	To review typical system power ratings use the Power Calculator which is available via the online tool located at URL: http://h30099.www3.hp.com/configurator/calc/Power%20Calculator%20Catalog.xls		
	<ul style="list-style-type: none"> - Click on the system of interest. Example: DL360 G5 - Follow the instructions of the next screens. 		
Power Supply Output (per power supply)	Rated Steady-State Power	700 W (at 100 VAC), 700 W (at 200 VAC)	
	Maximum Peak Power	700 W (at 100 VAC), 700 W (at 200 VAC)	
System Inlet Temperature	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	-40 to 70C (-40 to 158F). Maximum rate of change is 20°C/hr (36°F/hr).	
Relative Humidity (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	6.4 B
	L pAm	49 dBA
Operating	L WAd	6.4 B
	L pAm	49 dBA
Emissions Classification (EMC)	FCC Rating	Class A
	Normative Standards	CISPR 22; EN55022; EN55024; FCC CFR 47, Pt 15; ICES-003; CNS13438; GB9254; K22;K24; EN 61000-3-2; EN 61000-3-3; EN 60950-1; IEC 60950-1

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

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)

Technical Specifications

	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	
Embedded NC373i Multifunction Gigabit Server Adapters	Network Interface Compatibility	10/100/1000-T 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)	

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.