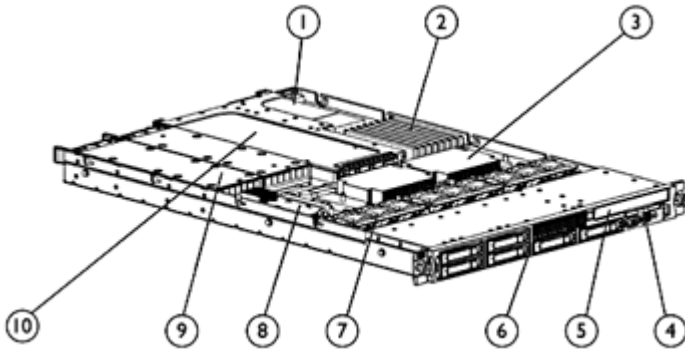
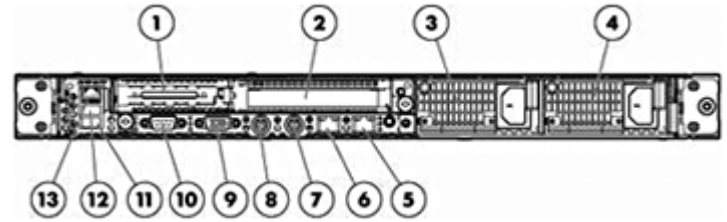


Overview



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. Quad or 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:**

Overview

- 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
- **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 (optional PCIe riser supported)
- **USB 2.0 Ports:**
 - 4 Total: (1) front, (1) internal and (2) rear accessible ports
- **Redundancy:**
 - Multiple layers of fault tolerance through critical component redundancy (power supply and fan redundancy), mirrored memory, embedded RAID capability, and full-featured remote Lights-Out management
- **Management:**
 - HP Insight Control suite delivers essential management, including proactive health management, lights out remote control, optimization of power usage, rapid server deployment, performance analysis, vulnerability scanning and patch management and virtual machine management. Now with Dynamic Power Capping technology, ICE can potentially triple the capacity of your data center by reclaiming trapped power and cooling capacity. For more information, go to: www.hp.com/go/ice.
 - HP ProLiant Onboard Administrator (powered by the Integrated Light-Out 2 management processor) for simplified server setup, health monitoring and recovery, power and thermal control, and lights-out remote administration
 - Integrated Lights-Out 2 Advanced unlocks the full capabilities of the ProLiant Onboard Administrator with high performance Integrated Remote Console, multi-user console sharing, video record and replay, and virtual media, including virtual folders for rapid server updates.
 - System Insight Display on the front bezel for quick and easy server diagnostics
- **Form Factor:**
 - 1U Rack form factor (1.75"), less than 28 inches (70.5 cm) deep
- **Operating Systems and Virtualization Software Support for ProLiant Servers:**
 - Supports Windows, RHEL, SLES, OEL, Solaris, VMware, NetWare & HP Citrix Essentials for XenServer
- **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:

Overview

<http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html>

Standard Features

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

Processor

One of the following depending on Model

Quad-Core 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.

Standard Features

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)

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.
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Chipset	Intel® 5000P chipset NOTE: For more information regarding Intel® chipsets, please see the following URL: http://www.intel.com/products/server/chipsets/ .
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Memory Protection & Functionality	Advanced ECC (multi-bit error protection), Online Spare, Mirroring 4-way interleaving
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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
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Standard Features

Expansion Slots	Expansion Slot #	Technology	Bus Width**	Connector Width	Bus Number*	Form Factor	Notes
	1	PCI-e	x4	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		PCI-X is supported with an optional PCI riser cage (also supports PCI-e x8 low profile)

* 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.

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)	1.8TB SAS	6 x 300GB SAS
Hot Plug Serial ATA (SATA)	1.50TB SATA	6 x 250GB SATA

Standard Features

Interfaces	Keyboard	1
	Mouse	1
	Serial	1
	Video	1
	USB 2.0 Ports	4 total: 2 rear, 1 front, 1 internal
		NOTE: Please see the following URL for additional information regarding USB support: http://h18004.www1.hp.com/products/servers/platforms/usb-support.html .
	Network RJ-45	2
	iLO 2 remote management port	1

Graphics Integrated ATI ES1000, 32MB video standard

- 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)

HP Insight Control suite HP Insight Control suite delivers essential infrastructure management, including proactive health management, lights out remote control, optimization of power usage, rapid server deployment, performance analysis, vulnerability scanning and patch management and virtual machine management.

HP Insight Control suite installs and licenses the following components by default using a wizard-based integrated installer:

- HP Systems Insight Manager (SIM)
- HP iLO Advanced Pack
- HP Insight Rapid Deployment software (RDP)
- HP Insight Power Manager (IPM)
- HP Insight Performance Manager module (PMP)
- HP Insight Vulnerability and Patch Manager module (VPM)
- HP Insight Virtual Machine Manager software for ProLiant (VMM)

Additional Insight software standalone products and management tools included on the Insight Software media kit can be installed manually

- HP Insight Server Migration software for ProLiant (SMP)
NOTE: HP Insight Server Migration software for ProLiant is licensed separately from Insight Control suite.
- HP Open Service Event Manager
- HP Insight Remote Support Standard
- HP Insight Remote Support Advanced (previously Service Essentials Remote Support Pack)

NOTE: Insight Server Migration software for ProLiant can be installed from the SMP CD included in the Insight Software media kit.

Standard Features

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

NOTE: As of Feb. 1, 2009, HP iLO Power Management Pack is being discontinued. Customer can either purchase HP Insight Control suite which contains all the components of IPMP or the standalone components which include iLO Advanced, Insight Power Manager and System Insight Manager.

HP Insight Control suite 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 suite and most Insight software products 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>.

HP ProLiant Onboard Administrator

HP ProLiant Onboard Administrator (powered by the Integrated Lights-Out 2 management processor) simplifies server setup, health monitoring, power and thermal control, and lights-out remote administration of ProLiant ML, DL, and BL servers. HP ProLiant Onboard Administrator functions without additional software, and can be accessed from any location via a web browser. It works hand-in-hand with HP Systems Insight Manager, Insight Control, and Insight Dynamics - VSE suite helping customers unlock the value of the ProLiant platform and deliver the highest possible quality of IT service to the business.

Capabilities of the HP ProLiant Onboard Administrator embedded in ProLiant ML/DL servers include, but are not limited to the following:

- Rom-based Setup Utility (RBSU) and Option Rom Configuration for Arrays (ORCA)
- IML and iLO event logging
- Automatic Server Recovery (ASR)
- OS independent hardware health status
- Present server power consumption
- Virtual Unit ID control
- Remote serial console
- Virtual power button control
- Dynamic Sector Repairing (with Smart Array controller)
- Drive Parameter Tracking (with Smart Array controller)
- Hot Spare Boot

NOTE: Upon the event of a failed processor in a multi-processing environment, the system will automatically reboot and attempt to use the remaining good processor.

Unlock the full remote administration capabilities of HP ProLiant Onboard Administrator with Integrated Lights-Out 2 Advanced.

Server Management Stand Alone Software Products - Insight software

HP Systems Insight Manager (SIM)

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.



Standard Features

HP Insight Rapid Deployment software (RDP)	<p>For additional information, please see: www.hp.com/go/hpsim</p> <p>Insight Rapid Deployment software (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.</p>
HP Insight Server Migration software for ProLiant (SMP)	<p>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. Insight Server Migration software for ProLiant (SMP) automates the manual processes required for migrating servers between physical or virtual platforms, whether migrating to VMware or Microsoft virtual machines. SMP allows all of the following migrations:</p> <ul style="list-style-type: none">● physical to ProLiant● physical to virtual● virtual to virtual● virtual to ProLiant <p>NOTE: For more information, visit: http://www.hp.com/go/migrate.</p>
HP Insight Dynamics - VSE suite for ProLiant (ID-VSE)	<p>Introducing HP Insight Dynamics - VSE suite for ProLiant, the world's first software integrated by design to let IT professionals analyze and optimize their virtual & physical environments in the same way. It combines the best of the industry-leading HP infrastructure management portfolio-including HP Systems Insight Manager, HP Insight Control suite and HP Virtual Server Environment-into one integrated offering for HP BladeSystem, ProLiant and Integrity servers.</p> <p>NOTE: For more information, visit: http://www.hp.com/go/insightdynamics</p>
HP Integrated Lights-Out (iLO) Advanced Pack	<p>Unlocks the full capabilities of the ProLiant Onboard Administrator with comprehensive remote control including Virtual KVM remote graphical console, power management capabilities such as power measurement, regulation, and capping, new iLO Text Console, automatic and on-demand video recording of server events, global team collaboration for up to four remote users, virtual media (floppy, CD/DVD, USB key), virtual folders, and enterprise security (directory services and two-factor authentication). For additional information, please see: www.hp.com/go/iLO</p>
HP Insight Virtual Machine Manager software for ProLiant (VMM)	<p>Get the most out of server virtualization by unifying the management of physical and virtual servers in HP Systems Insight Manager software. The Insight Virtual Machine Manager software for ProLiant provides central management and control of VMware and Microsoft virtual machines and provides physical host to virtual machine association. For additional information, please see: http://www.hp.com/go/vm-manage.</p>
HP Insight Power Manager (IPM)	<p>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. For additional information, please see: www.hp.com/go/ipm</p>

Standard Features

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

Core Infrastructure Management

HP Foundation Pack

Managing the growing number of servers can be complex and expensive for your organization. IT managers need to address changing business needs with tools that meet the challenges of managing today's complex Datacenters.

HP provides management solutions that are designed to simplify a server's installation, configuration and maintenance throughout the entire server lifecycle. This provides the customer with higher levels of operational efficiency and highly reliable systems: www.hp.com/go/foundation.

The foundation pack includes:

- HP SmartStart
- HP Management
- HP ProLiant Firmware Maintenance

SmartStart version supported (minimum): SmartStart 7.60.

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

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>.

Standard Features

HP Serviceguard for Linux (SGLX) HP Serviceguard for Linux provides high availability clustering for Linux applications running on HP Integrity, HP ProLiant and other supported industry-standard servers. Serviceguard for Linux reduces planned and unplanned downtime and delivers efficient, continuous access to business-critical applications - with all of the enterprise features you expect from HP.

This high availability clustering solution is 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.

For the most recent list of Linux distributions & kernels, servers and storage supported with Serviceguard for Linux, please see:

ftp://ftp.compaq.com/pub/products/servers/ha/linux/SGLX_Certification_Matrix.pdf

The following is a quick summary of HP Serviceguard for Linux features and support:

- Supported Virtual Machines
 - SG/LX in HP Integrity Virtual Machines guests
 - SG/LX in VMware ESX guests
 - SG/LX in Red Hat and SUSE Xen hosts (DOM0)
- 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 including software and server support 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>.

Standard Features

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

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	

Server Power Cords	High voltage power cord ships standard. Localized cables included with geographic specific models.
	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
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Standard Features

Power Supply 700W, Optional (1+ 1 redundant) power supply
NOTE: PN 399542-B21 contains the optional power supply and an IEC power cable only; purchase if connecting to PDU/UPS that supports IEC cables.

System Fans 9 fans ship standard; N+1 fan redundancy standard

Required Cabling For required cabling information, refer to the Web site at:
<http://h18000.www1.hp.com/products/servers/proliantdl360/>.

Operating Systems and Virtualization Software Support for ProLiant Servers

- Microsoft Windows Server
- Microsoft Windows Server Hyper V
- Red Hat Enterprise Linux (RHEL)
- SUSE Linux Enterprise Server (SLES)
- Oracle Enterprise Linux (OEL)
- Solaris 10 for x86/x64 based Systems
- NetWare
- VMware
- Citrix Essentials for XenServer

NOTE: For more information on HP's Certified and Supported ProLiant Servers for OS and Virtualization Software and latest listing of software drivers available for your server, please visit our Support Matrix at: <http://www.hp.com/go/ossupport> and our driver download page www.hp.com/support/DL360G5.

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.

Standard Features

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

Service and Support

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

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

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

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

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

Standard Features

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 E5450 4GB 490666-001</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</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 E5450 (3.00 GHz, 80 Watts, 1333 FSB)</p> <p>Quad-Core: 12MB (2 x 6MB) Level 2 cache; Intel Xeon Processor 5400 Sequence</p> <p>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>1.8TB 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 457923-001 DL360R05 E5430 2GB 457924-001 DL360R05 E5420 2GB 457925-001</p> <p>Dual-Core Models DL360R05 X5260 2 GB 457928-001</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>Network Controller</p> <p>Storage Controller</p> <p>Hard Drive</p> <p>Internal Storage</p> <p>Optical Drive</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) 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</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> <p>Embedded NC373i Multifunction Gigabit Server Adapters</p> <p>HP Smart Array P400i/256MB Controller (RAID 0/1/1+0/5)</p> <p>No drives included; (4) drive bays active. (6) bays supported with optional storage cable (PN 399546-B21)</p> <p>1.8TB SAS; 1.50TB SATA</p> <p>Optional DVD, DVD/CD-RW, or Floppy</p>
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Models

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
457926-001

Processor(s)	(1) Quad-Core Intel® Xeon® Processor E5405 (2.00GHz 80 Watts, 1333 FSB)
Cache Memory	Quad-Core: 12MB (2 x 6MB) Level 2 cache; Intel Xeon Processor 5400 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	1.8TB 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)

HP DL360 G5 High Efficiency

Quad-Core Models
DL360R05 L5420 2GB
457927-001

Processor	(1) Quad-Core Intel® Xeon® Processor L5420 (2.50GHz 50 Watts, 1333 FSB)
Cache Memory	Quad-Core: 12MB (2 x 6MB) Level 2 cache; Intel Xeon Processor 5400 Sequence
Memory	2 GB (2 x 1 GB) Standard; PC2-5300 Fully Buffered DIMMs (DDR2-667)
Network Controller	Embedded NC373i Multifunction Gigabit Server Adapters
Storage Controller	HP Smart Array P400i/256MB Controller (RAID 0/1/1+0/5)
Hard Drives	No drives included; (4) drive bays active
Internal Storage	1.8TB 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)

Smart Buys

The ProLiant Smart Buy program offers a collection of promotional server and option products that are configured with SMB in mind, offered at discounted prices, and positioned for quick delivery. Smart Buy server offers are available for a limited time only.

S-Buy DL360G5 E5440 SAS RPS 459961-005	Processor(s)	(1) Quad-Core Intel Xeon Processor E5440 (2.83 GHz, 80 Watts, 1333 FSB)
	Cache Memory	12MB (2 x 6MB) Level 2 cache (5400 series)
	Memory	2 GB (2 x 1 GB) PC2-5300 Fully Buffered DIMMs (DDR2-667)
	Network Controller	Two Embedded NC373i Multifunction Gigabit Server Adapters
	Storage Controller	HP Smart Array P400i/256MB Controller (RAID 0/1/1+0/5)
	Hard Drive	None ship standard; (4) drive bays active. (6) bays supported with optional storage cable (PN 399546-B21)
	Internal Storage	876GB SAS; 1.50TB SATA
	Optical Drive	DVD-ROM
	Form Factor	Rack (1U), Height 1.75-inch/4.45cm; Depth: 27.75 inches (70.5 cm)
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S-Buy DL360G5 X5420 SAS, 2P RPS 459960-005	Processor(s)	(2) Quad-Core Intel Xeon Processor E5420 (2.5 GHz, 80 Watts, 1333 FSB)
	Cache Memory	12MB (2 x 6MB) Level 2 cache (5400 series)
	Memory	4 GB (2 x 2 GB) PC2-5300 Fully Buffered DIMMs (DDR2-667)
	Network Controller	Two Embedded NC373i Multifunction Gigabit Server Adapters
	Storage Controller	HP Smart Array P400i/256MB Controller (RAID 0/1/1+0/5)
	Hard Drive	None ship standard; (4) drive bays active. (6) bays supported with optional storage cable (PN 399546-B21)
	Internal Storage	876GB SAS; 1.50TB SATA
	Optical Drive	DVD-ROM
	Form Factor	Rack (1U), Height 1.75-inch/4.45cm; Depth: 27.75 inches (70.5 cm)
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S-Buy DL360G5 X5420 SAS 459959-005	Processor(s)	(1) Quad-Core Intel Xeon Processor E5420 (2.5 GHz, 80 Watts, 1333 FSB)
	Cache Memory	12MB (2 x 6MB) Level 2 cache (5400 series)
	Memory	2 GB (2 x 1 GB) PC2-5300 Fully Buffered DIMMs (DDR2-667)
	Network Controller	Two Embedded NC373i Multifunction Gigabit Server Adapters
	Storage Controller	HP Smart Array P400i/256MB Controller (RAID 0/1/1+0/5)
	Hard Drive	None ship standard; (4) drive bays active. (6) bays supported with optional storage cable (PN 399546-B21)
	Internal Storage	876GB SAS; 1.50TB SATA
	Optical Drive	DVD-ROM
	Form Factor	Rack (1U), Height 1.75-inch/4.45cm; Depth: 27.75 inches (70.5 cm)

Configuration Information - Factory Integrated Models

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

NOTE: HP does not allow factory integration of options into standard models listed above.

Configure-to-order servers must start with a CTO Chassis.

NOTE: FIO indicates that this option only available as a Factory Installable Option.

Step 1: Base Configuration (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
	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.	
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



Configuration Information - Factory Integrated Models

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

Step 3: Choose Additional Factory Integratable Options

Performance Packs

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

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

HP DL360G5 X5450 HPM FIO Perf Pack	457951-B21
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Step 4: Choose Additional Options for Factory Integration

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



Core Options

NOTE: Some options may not be 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.

Core 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

Core Options

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/>

Smart Buy Memory (DIMMs)	1GB FBD PC2-5300 2X512MB Kit	397409-S21
	2GB FBD PC2-5300 2X1GB Kit	397411-S21
	4GB FBD PC2-5300 2X2GB Kit	397413-S21

Diskette Drive	Slimline Ejectable Floppy drive	390164-B21
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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

Hard Drives

NOTE: The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components.

SAS Hot Plug SFF Enterprise (ENT) Drives

HP 300GB 6G SAS 10K SFF DP ENT HDD	507127-B21
HP 300GB 3G SAS 10K SFF DP ENT HDD	492620-B21
HP 146GB 6G SAS 15K SFF DP ENT HDD	512547-B21
HP 146GB 6G SAS 10K SFF DP ENT HDD	507125-B21
HP 146GB 3G SAS 15K SFF DP ENT HDD	504062-B21
HP 146GB 3G SAS 10K SFF DP ENT HDD	418367-B21
HP 146GB 3G SAS 10K SFF SP HDD	431958-B21
HP 72GB 6G SAS 15K SFF DP ENT HDD	512545-B21
HP 72GB 3G SAS 15K SFF DP ENT HDD	418371-B21
HP 72GB 3G SAS 15K SFF SP HDD	431935-B21
HP 72GB 3G SAS 10K SFF DP ENT HDD	384842-B21
HP 72GB 3G SAS 10K SFF SP HDD	375861-B21



Core Options

HP 36GB 3G SAS 15K SFF DP ENT 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_na/12244_na.html

SATA Hot Plug SFF Entry (ETY) Drives

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

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_na/13021_na.html

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 NC522SFP Dual Port 10GbE Server Adapter	468332-B21
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NOTE: A minimum of two gigabyte (2 GB) of server memory is required per each NC522SFP adapter.

NOTE: Direct Attach Cable (DAC) for copper environments or fiber transceivers and cables for fiber-optic environments must be purchased separately.

HP NC7170 PCI-X Dual Port 1000T Gigabit Server Adapter	313881-B21
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NOTE: Please see the QuickSpecs for Technical Specifications and additional information: www.hp.com/go/ProLiantNICs

Redundant Options

700W HP redundant power supply with IEC cord only	399542-B21
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Additional Options

HP Insight Control suite	<p>NOTE: Electronic licensing options are available for Insight Control suite software products. Please see the appropriate Insight Control QuickSpecs for additional information. www.hp.com/go/ice</p> <p>HP Insight Control Environment</p> <p>HP Insight Control Environment, No Media 1-Server License including 1 year of 24x7 Technical Support and Updates 452148-B22</p> <p>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.</p> <p>HP Insight Software Media Kit 436222-B21</p> <p>NOTE: Insight Software DVD media without licenses. Contains Systems Insight Manager and Insight software products and components licensed by Insight Control suite. Uses an integrated installer to perform quick and accurate software installation and updates.</p> <p>NOTE: For additional License Kits, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12631_na/12631_na.html</p> <p>HP Insight Control suite for Linux</p> <p>HP Insight Control suite for Linux, Media pack (DVD) - No licenses included 464422-B22</p> <p>NOTE: This optional Media pack DVD contains the ISO image for HP Insight Control suite for Linux, HP System Insight Manager, HP Insight Power Manager, HP Insight Virtual Machine Manager software for ProLiant, and an integrated installer. Servers must be acquired separately.</p> <p>NOTE: 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).</p> <p>HP Insight Control suite for Linux, No Media, 1-Server license, including one year of 24x7 Technical Support and Updates 464423-B22</p> <p>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.</p> <p>NOTE: One certificate is shipped for each license.</p> <p>NOTE: For additional License Kits, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/13019_na/13019_na.html</p>
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Server Management **NOTE:** Electronic licensing options are available for select software products. Please
Stand Alone Software see the appropriate Insight Software standalone product QuickSpecs for additional
Products - Insight software information.

Deploy

Insight Rapid Deployment software

Insight Rapid Deployment software No Media 1-Server License including 1 year of 24x7 Technical Support and Updates 452151-B21

NOTE: This license allows 1 server to be deployed and managed via RDP. Customer



Additional Options

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_na/11053_na.html

HP Insight Server Migration software for ProLiant

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

NOTE: This license allows 1 physical to ProLiant or virtual to ProLiant migration. Customer will receive a printed license entitlement certificate and documentation via physical shipment. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support and Update Service.

HP Insight Server Migration software for ProLiant, No Media, Physical / Virtual to Virtual Single Migration License, including 1 year of 24x7 Technical Support and Updates 460753-B21

NOTE: This license allows 1 physical to virtual or virtual to virtual migration. Customer will receive a printed license entitlement certificate and documentation via physical shipment. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support and Update Service.

HP Insight Server Migration software for ProLiant, No Media, 1-Year Unlimited Migration License, including 1 year of 24x7 Technical Support 460756-B21

NOTE: This license allows unlimited migrations (physical to ProLiant, physical to virtual, virtual to virtual, and virtual to ProLiant) for one year. Customer will receive a printed license entitlement certificate and documentation via physical shipment. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support Service.

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

http://h18000.www1.hp.com/products/quickspecs/12855_na/12855_na.html

Monitor

HP Insight Dynamics-VSE suite for ProLiant

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

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

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

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

http://h18000.www1.hp.com/products/quickspecs/13050_na/13050_na.html

Control

Integrated Lights-Out Advanced Pack

Additional Options

HP Integrated Lights-Out Advanced Pack, No Media, 1-Server License, including 1 year of 24x7 Technical Support and Updates	512485-B21
NOTE: For additional License Kits, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12362_na/12362_na.html	
Optimize	
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_na/12623_na.html	
Insight Virtual Machine Manager software for ProLiant	
Insight Virtual Machine Manager software for ProLiant, 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_na/12328_na.html	
NOTE: Flexible and volume quantity license kits are available for Insight software products. Refer to: http://www.hp.com/go/insightcontrol or the various Insight software product QuickSpecs for more information.	

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).	

Additional Options

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_na/12460_na.html (Smart Array E200 Controller)	
http://h18000.www1.hp.com/products/quickspecs/12700_na/12700_na.html (Smart Array E500 Controller)	
http://h18000.www1.hp.com/products/quickspecs/12400_na/12400_na.html (Smart Array P400 Controller)	
http://h18000.www1.hp.com/products/quickspecs/12247_na/12247_na.html (Smart Array P600 Controller)	
http://h18000.www1.hp.com/products/quickspecs/12616_na/12616_na.html (Smart Array P800 Controller)	
SAS HBA	
HP SC08Ge Host Bus Adapter	488765-B21
HP SC44Ge Host Bus Adapter	416096-B21
NOTE: When using the SC44Ge with SATA Hard Drives, 1.5G SATA Hard Drives are required. Transfer rate: 1.5 Gb/s SATA, 3 Gb/s SAS.	
HP 8 Internal Port SAS HBA with RAID	347786-B21
NOTE: Supports SAS and SATA disk drive. RAID 0,1 supported. Transfer rate: 1.5 Gb/s SATA, 3 Gb/s SAS.	
NOTE: Please see the QuickSpecs for Technical Specifications and additional information:	
http://h18004.www1.hp.com/products/quickspecs/13082_na/13082_na.html (SC08Ge HBA)	
http://h18004.www1.hp.com/products/quickspecs/12617_na/12617_na.html (SC44Ge HBA)	
http://h18004.www1.hp.com/products/quickspecs/12332_na/12332_na.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.	

Additional Options

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: Recommended HBA for SCSI tape drive connect.	
NOTE: Please see the QuickSpecs for Technical Specifications and additional information:	
http://h18000.www1.hp.com/products/quickspecs/10429_na/10429_na.html (SCSI Adapter)	
http://h18000.www1.hp.com/products/quickspecs/11555_na/11555_na.html (U320 Adapter)	
http://h18000.www1.hp.com/products/quickspecs/11943_na/11943_na.html (U320 SCSI HBA)	
http://h18000.www1.hp.com/products/quickspecs/12566_na/12566_na.html (SC11Xe HBA)	

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

HPC Specific Options

HP IB 4X DDR PCI-e Dual Port HCA	409376-B21
HP IB 4X DDR PCI-e DUAL PORT 0 mem HCA	483513-B21
NOTE: Please see the QuickSpecs for additional information:	
http://h18000.www1.hp.com/products/quickspecs/13078_na/13078_na.html	

Additional Options

Tape Drives

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

USB 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).

NOTE: 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>.

Disk-Based Backup

RDX Removable Disk Backup

HP RDX500 External Removable Disk Backup System AJ935A

NOTE: 500 GB of Disk Storage.

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

http://h18000.www1.hp.com/products/quickspecs/13036_na/13036_na.html

D2D Backup

HP StorageWorks D2D2502i Backup System EJ001A

NOTE: 2 TB raw capacity/1.5 TB useable capacity.

HP StorageWorks D2D2504i Backup System EJ002A

NOTE: 4 TB raw capacity/3 TB useable capacity.

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

Tape Autoloaders

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 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.

Additional Options

Tape Libraries

HP StorageWorks MSL2024 Tape Library

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

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

HP StorageWorks MSL4048 Tape Library

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

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

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>.

High Availability Cluster Options

HP Serviceguard for Linux

HP Serviceguard for Linux on HP ProLiant and other third-party x86 Servers - Physical Media Kit 519353-B21

NOTE: This kit contains media only.

HP Serviceguard for Linux on HP ProLiant and other third-party x86 Servers Single-Server License 519354-B21

Licensed per Server

NOTE: This license allows Serviceguard for Linux to be installed on 1 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.

HP Serviceguard for Linux - Flexible-Quantity License 519355-B21
(for HP ProLiant and other third-party x86 servers)

Licensed per Server

NOTE: This part number can be used to purchase multiple licenses 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.

HP Serviceguard Linux Oracle Database Toolkit for HP ProLiant/x86 Servers 463833-B21

Licensed per cluster

Includes media and One Year 24x7 Software Support & Updates

HP Serviceguard Extension for SAP on Linux for HP ProLiant/x86 Servers 463834-B21

Licensed per physical server

Includes media and One Year 24x7 Software Support & Updates

HP Serviceguard Linux Extended Distance Cluster (XDC) for HP ProLiant/x86 Servers 463835-B21

Licensed per physical server

Includes media and One Year 24x7 Software Support & Updates

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

Additional Options

HP Serviceguard for Linux, please see the following QuickSpecs at:
http://h18000.www1.hp.com/products/quickspecs/11518_na/11518_na.html

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
HP StorageWorks 81E 8Gb SP PCI-e FC HBA	AJ762A
HP 82E 8Gb Dual-port PCI-e FC HBA	AJ763A
HP 82Q 8Gb Dual Port PCI-e FC HBA	AJ764A

StorageWorks SCSI HBA

HP U320e SCSI Host Bus Adapter	AH627A
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NOTE: Recommended HBA for MSL SCSI Tape Library connect.

HP StorageWorks 20 Modular Smart Array

HP StorageWorks 20 Modular Smart Array

335921-B21

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

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

http://h18000.www1.hp.com/products/quickspecs/11942_na/11942_na.html

HP StorageWorks 50 Modular Smart Array

HP StorageWorks 50 Modular Smart Array

364430-B21

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

http://h18000.www1.hp.com/products/quickspecs/12245_na/12245_na.html

HP StorageWorks 60 Modular Smart Array

HP StorageWorks 60 Modular Smart Array

418408-B21

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

http://h18000.www1.hp.com/products/quickspecs/12627_na/12627_na.html

Additional Options

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_na/12652_na.html	418800-B21
HP StorageWorks 2000sa Modular Smart Array	HP 2012sa Single Controller Modular Smart Array HP 2012sa Dual Controller Modular Smart Array NOTE: Please see the Modular Smart Array 2000sa QuickSpecs for additional options and configuration information at: http://h18000.www1.hp.com/products/quickspecs/13045_na/13045_na.html	AJ752A AJ753A
Uninterruptible Power Systems - Rack	HP R1500 G2 UPS HP, R1.5kVA UPS, 1U NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12507_na/12507_na.html HP R3000 UPS HP R3000 VA UPS, 2U, Low voltage L5-30 HP R3000 VA UPS, 2U, High voltage L6-20 NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/10671_na/10671_na.html HP Rack-Mountable R5500 UPS HP R5500 VA UPS NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/11871_na/11871_na.html NOTE: For additional information on HP Uninterruptible Power Systems please go to: www.hp.com/servers/rackups .	AF419A AF422A AF423A AF426A
HP Monitored Power Distribution Unit (PDU)	HP Monitored Power Distribution Unit: Full Rack Version HP 17.3 kVA S2324 Monitored PDU- dual input, 3Ø, 24A HP 8.6 kVA S1324 Monitored PDU- single input, 3Ø, 24A HP 16.6 kVA S2140 Monitored PDU- dual input, 1Ø, 40A HP 8.3 S1140 Monitored PDU- single input, 1Ø, 40A HP Monitored Power Distribution Unit: Half Rack Version HP 4.9 kVA S124 Monitored PDU- single input, 1Ø, 24A NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12118_na/12118_na.html	AF503A AF504A AF505A AF506A AF914A

Additional Options

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	252663-B24
	2.8 kVA Model - mPDU, 24A, Low	252663-D71
	4.9kVA Model - mPDU, 24A, High	252663-D72
	8.3kVA Model - mPDU, 40A, High	252663-B21
	8.3kVA Model - mPDU, 40A, High (power cord attached)	252663-D73
	8.3kVA Model - mPDU 40A, High (core only)	252663-D75
	4.9kVA Model - mPDU 24A, High (core only)	252663-D74
	NOTE: For additional information on HP Power Distribution Units including accessories please go to: www.hp.com/go/pdu	
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Rack Kits	1U Cable Management Arm	365403-B21
	NOTE: Package contains two cable management arms.	
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USB Options	HP USB 2-Button Optical Scroll Mouse (Carbonite/Silver)	DC172B
	USB 1.44-MB External Diskette Drive (Carbonite)	DC141B
	HP USB O4 Standard Keyboard	DT528A#ABA
	HP 1GB USB 2.0 Floppy Drive Key	442085-B21
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HP Rack 5000 Series (Graphite Metallic)	HP 5642 Rack Unassembled	358254-B21
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12074_na/12074_na.html NOTE: For additional information regarding Rack Cabinets, please see the following URL: http://www.hp.com/go/rackandpower .	
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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
	10642 G2 (42U) Rack Cabinet 1200mm Deep - Shock Pallet	AF034A
	10642 G2 (42U) Rack Cabinet 1200mm Deep - Pallet	AF038A
	10842 G2 (42U) 800mm Wide Rack Cabinet - Pallet	AF041A
	10842 G2 (42U) 800mm Wide Rack Cabinet - Shock Pallet	AF042A

Additional Options

10647 G2 (47U) Rack Cabinet - Pallet	AF031A
HP Rack S10614 (14U) Rack Cabinet - Shock Pallet	292302-B22
10647 G2 (47U) Rack Cabinet 1200mm Deep - Shock Pallet	AF044A
NOTE: Due to handling and shipping requirements, AF044A is only orderable through HP Factory Express. It is not for direct sales. Customer site surveys are required before an order is approved. CTO orders may require additional lead time.	
10647 G2 (47U) Rack Cabinet 1200mm Deep - Pallet	AF045A
NOTE: It is mandatory to use a shock pallet when shipping racks with equipment installed.	
NOTE: xxxxx-B22 (shock pallet) used to ship racks with equipment installed (by custom systems, VARs and Channels).	
NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12402_na/12402_na.html	
NOTE: For additional information regarding Rack Cabinets, please see the following URL: http://www.hp.com/go/rackandpower .	

Keyboards and Monitors	TFT7600 Rackmount Keyboard Monitor	AG052A
	1U Rackmount Keyboard with USB	AG072A
	NOTE: For additional information regarding Rack Cabinets, please see the following URL: http://www.hp.com/go/rackandpower .	

HP KVM Switch Options	2x1x16 IP Console Switch with Virtual Media	AF601A
	4x1x16 IP Console Switch with Virtual Media	AF602A
	2x16 Server Console Switch with Virtual Media	AF600A
	PS/2 Virtual Media Interface Adapter, 1 pack	AF604A
	NOTE: Requires PS/2 and one USB port on server.	
	Server Console Switch (KVM), 0 x 1 x 8 port	336044-B21
	Server Console Switch (KVM), 0 x 2 x 16 port	336045-B21
	Server console switch 0x2x8	AF616A
	Server console switch 0x2x16	AF617A
	PS/2 Interface Adapter, 1 pack	262588-B21
	PS/2 Interface Adapter, 8 pack	262587-B21
	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	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 .		

Additional Options

HP Serial Console Server Options	HP 16 Port Serial Console Server	AF101A
	HP 48 Port Serial Console Server	AF102A
	Serial Adapter, RJ45-DB9 DCE Female, 1 Pack	AF103A
	Serial Adapter, RJ45-DB9 DCE Female, 8 Pack	AF110A

NOTE: Cat5e cables are required to connect Serial Adapters to Serial Console Servers. Additional Serial Adapters and Cat5e cables can be found at the following URL: <http://www.hp.com/go/kvm>.

NOTE: For additional information regarding KVM switches, Serial Console servers, rack mount monitors, keyboards and all related options please see the following URL: <http://www.hp.com/go/kvm>.

Service and Support Offerings (HP Care Pack Services)

Hardware Services 4-Hour On-site Service

NOTE: To attach 3 year, 4-Hour On-site Service to Smart Buy servers, Smart Buy Care Packs must be used. For other service levels, order standard Care Pack part numbers.

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

NOTE: Use one of the following Smart Buy Care Packs to attach 3 year, 4-Hour On-site Service to Smart Buy servers. For other service levels, order standard Care Pack part numbers.

DL36x Smart Buy 4-Hour On-site Service, 5-Day x 13-Hour Coverage, 3 Years, Electronic UE891E

DL36x Smart Buy 4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic UE892E

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>.



Additional Options

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.

Memory

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/>

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.

Memory

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:

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.

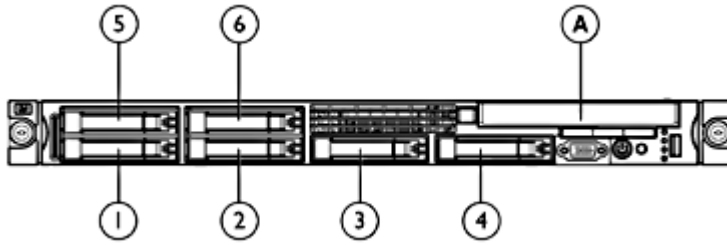
Mirrored memory FBDIMMs configuration requirements (in addition to general configuration requirements):

- 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

NOTE: The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components.

SAS Hot Plug SFF Enterprise (ENT) Drives

	Quantity Supported	Position Supported	Controller
300GB 6G SAS 10K DP	6	1-6	HP Smart Array E200i/64MB Controller
300GB 3G SAS 10K DP			HP Smart Array E500/256MB Controller
146GB 6G SAS 10K DP			HP Smart Array P400i/512MB BBWC Controller
146GB 3G SAS 15K DP			HP Smart Array P400i/256MB Controller
146GB 3G SAS 10K SP			HP Smart Array P600/256 BBWC Controller
146GB 3G SAS 10K DP			HP Smart Array P800/512 BBWC Controller
72GB 3G SAS 10K SP			Please see NOTES below regarding hard drive quantity supported by Smart Array Controller.
72GB 3G SAS 10K DP			
72GB 3G SAS 15K SP			
72GB 3G SAS 15K DP			
36GB 3G SAS 15K SP			
36GB 3G SAS 15K DP			

Storage

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 Hot Plug SFF Entry (ETY) Drives

	Quantity Supported	Position Supported	Controller
250GB 3G SATA 5.4K ETY	6	1-6	HP 8 Internal Port SAS HBA with RAID NOTE: Transfer rate: 1.5 Gb/s SATA, 3 Gb/s SAS.
120GB 1.5G SATA 5.4K ETY			HP SC44Ge Host Bus Adapter NOTE: When using the SC44Ge with SATA Hard Drives, 1.5G SATA Hard Drives are required. Transfer rate: 1.5 Gb/s SATA, 3 Gb/s SAS. 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 Up to 4	External External	HP Smart Array P600/256 BBWC Controller HP Smart Array E500/256MB Controller HP Smart Array P800/512 BBWC Controller
60 Modular Smart Array	Up to 4 Up to 8	External External	HP Smart Array P600/256 BBWC Controller HP Smart Array E500/256MB Controller HP Smart Array P800/512 BBWC Controller
70 Modular Smart Array	Up to 2 Up to 4	External External	HP Smart Array P600/256 BBWC Controller 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



Storage

Tape and Disk-Based Backup

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

	Position Supported	Controller	Controller Part Number
HP StorageWorks SCSI Tape Drives, External 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	External	HP SC11Xe Host Bus Adapter	412911-B21
HP StorageWorks USB Tape Drives, External DAT 40 USB DAT 72 USB DAT 160 USB 1U Rack-Mount Kit	External	USB 2.0 Port	N/A
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 3U Rack-Mount Kit	External	HP SC44Ge Host Bus Adapter	416096-B21
HP StorageWorks SCSI Tape Automation, External DAT 72x10 Autoloader 1/8 G2 Autoloader MSL2024 MSL4048 MSL8096 MSL6000	External	HP SC11Xe Host Bus Adapter HP U320e SCSI Host Bus Adapter NOTE: Recommended for MSL tape libraries.	412911-B21 AH627A
HP StorageWorks SAS	External	HP SC44Ge Host Bus Adapter	416096-B21



Storage

**Tape Automation,
External**
1/8 G2 Autoloader
MSL2024
MSL4048
MSL8096

HP StorageWorks Fibre Tape Automation, External MSL2024 MSL4048 MSL8096 MSL6000	External	Please consult the EBS connectivity matrix at: http://www.hp.com/go/ebs for detailed connectivity information.	N/A
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HP StorageWorks RDX Removable Disk Backup System RDX160 RDX320 RDX500	External	USB 2.0 Port	N/A
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HP StorageWorks D2D Backup Systems D2D120 D2D130 D2D2500i D2D4000i	External	Embedded Network Controller	N/A
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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

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

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 (all hard drives, power supplies, and processors installed)	39.5 lb (17.92 kg)
		Minimum (one hard drive, power supply, and processor installed)	32 lb (14.51 kg)
Input Requirements (per power supply)	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	NOTE: To review typical system power ratings use the HP Power Advisor which is available online located at url: www.hp.com/go/proliant-energy-efficient or www.hp.com/go/hppoweradvisor		
	- Click on the system of interest. Example: DL360 G5		
	- Follow the instructions of the next screens.		
Power Supply Output (per power supply)	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.	
		5 to 95% relative humidity (Rh), 38.7° C (101.7° 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.	
Altitude	Operating	3050 m (10,000 ft). This value may be limited by the type and number of options installed.	

Technical Specifications

		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	10/100/1000-T
	Compatibility	EEE 802.3 10Base-T IEEE 802.3ab 1000Base-T IEEE 802.3u 100Base-TX
	Data Transfer Method	PCI Express, four lanes (x4)
	Network Transfer Rate	10Base-T (Half-Duplex) 10 Mb/s 10Base-T (Full-Duplex) 20 Mb/s 100Base-TX (Half-Duplex) 100 Mb/s 100Base-TX (Full-Duplex) 200 Mb/s 1000Base-TX (Half and Full-Duplex) 2000 Mb/s
	Connector	RJ-45
	Cable Support	10Base-T Categories 3, 4 or 5 UTP up to 328 ft (100 m) 10/100/1000 Base-TX Category 5 UTP up to 328 ft (100 m)

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.