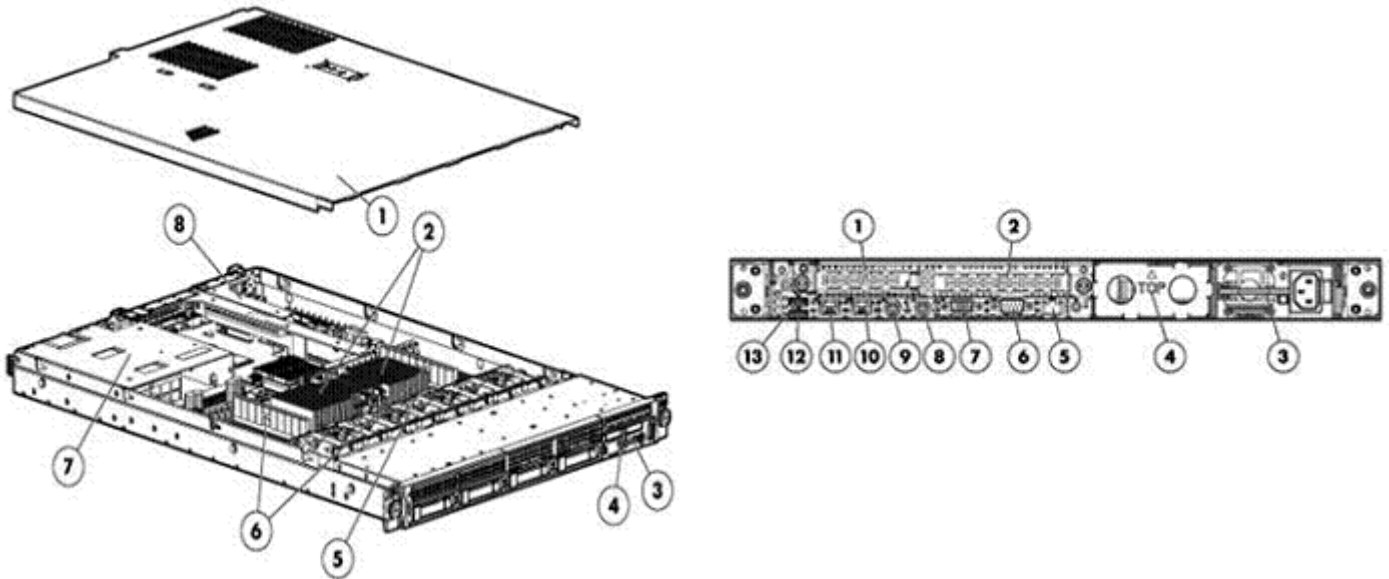


Overview



Front View:

1. Hood Cover
2. Up to two Intel Quad-Core or Dual-Core Xeon™ processors
3. Video Connector
4. Slide-out System Insight Display
5. Removable fan modules for easy serviceability
6. Eighteen DIMM slots: DDR3 Registered (RDIMM) or Unbuffered (UDIMM) memory
7. Redundant Hot Plug Power Supplies (upgradeable option)
8. 2 PCI-E Slots

Rear View:

1. PCI Express expansion slot 1, low-profile, half-length
2. PCI Express expansion slot 2 full height full length x16 (16, 8, 4, 2, 1), 75W +EXT 75W (optional PCI-X card only support)
3. Power supply bay 1 (populated)
4. Power supply bay 2
5. iLO 2 NIC connector
6. Serial connector
7. Video connector
8. Mouse connector
9. Keyboard connector
10. NIC 2 connector
11. NIC 1 connector
12. USB connector
13. USB connector

What's New

- Three new Intel Xeon 5600 Series Processors with 6 cores and 12MB L3 cache providing improved performance, better energy efficiency for lower operating costs, hardware virtualization assist and new security features like AES-NI and TXT.

At A Glance

Combining improved 1U compute performance, smart power and cooling management with infrastructure management tools and essential fault tolerance, the HP ProLiant DL360 G6 is optimized for space constrained installations.

Latest Intel 5500/5600 Series Xeon® Processors (Six-Core, Quad-Core and Dual-Core), with choice of DDR3 Registered or Unbuffered DIMMs, Serial Attached SCSI (SAS), PCI Express Gen2 technology and ProLiant Onboard Administrator provide a high performance system, ideal for the full range of scale out applications.



Overview

What's more, the DL360 G6 steps up the fault tolerant in an ultra-dense platform with redundant power, redundant fans, mirrored memory and embedded RAID capability.

- **Processors:**
 - Up to 2 Six-Core, Quad-Core or Dual-Core Intel® Xeon® 5600/5500 Series processor options
 - Intel® 5520 Chipset
- **Memory:**
 - 18 DDR3 DIMM slots available
 - Up to 192GB, using 16GB Quad Rank PC3-8500R DDR3 Registered (RDIMM) memory, operating at 800MHz when fully populated at 2 DIMMs per Channel in 12 slots
 - NOTE: If only one processor is installed, only half the DIMM slots are available.
 - NOTE: when populating with the 16GB Memory Kits (Quad-Rank), only 12 DIMMs can be populated.
 - Up to 24GB, using 2GB PC3-10600 DDR3 Unbuffered (UDIMM) memory, operating at 1066MHz when populated at 2 DIMMs per Channel in 12 slots
- **Storage Controller:**
 - Entry Models: HP Smart Array P410i/Zero Memory Controller (RAID 0/1/1+0)
 - Base Models: HP Smart Array P410i/256 MB Controller (RAID 0/1/1+0/5/5+0)
 - Performance Models: HP Smart Array P410i/512 MB BBWC Controller (RAID 0/1/1+0/5/5+0)
 - High Efficiency: HP Smart Array P410i/Zero Memory Controller (RAID 0/1/1+0)
 - Available upgrades: 256MB, 512MB with BBWC, 512MB with FBWC, 1G with FBWC, Battery kit upgrade (for the 256MB cache), and Smart Array Advanced Pack (SAAP)
- **Internal Drive Support:**
 - Up to (8) small form factor (SFF) hot-plug drive bays
 - Slimline media bay supporting DVD -ROM/DVD-RW (available only on 4 HDD models)
 - Optional DVD-on 4SFF HDD models only
- **Network Controller:**
 - One HP NC382i Dual Port Multifunction Gigabit Server Adapter (two ports total) with TCP/IP Offload Engine, including support for Accelerated iSCSI
- **Expansion Slots:**
 - Two PCI-Express Gen 2 expansion slots: (1) full-length, full-height slot; (1) low-profile slot
 - Optional PCI-X Riser expansion slot (for PCI-X card support only)
- **Ports:**
 - USB 2.0 Support
 - 4 Total: (1) front, (1) internal and (2) rear accessible ports
 - 1 internal Secure Digital (SD) slot
- **Integrated Hypervisors (Optional):**
 - VMware virtualization technology
 - Citrix XenServer virtualization technology
- **Redundancy:**
 - Multiple layers of fault tolerance through critical component redundancy (power supply and fan redundancy), mirrored memory, embedded RAID capability, and full-featured remote Lights-Out management
- **HP Unique Technology:**
 - Built-In Thermal Logic Technologies
 - Sea of Sensors: Intelligent automated management of power and cooling systems to save energy costs
 - Dynamic Power Capping, customer set limits for reduced power usage within performance requirements
- **Power Sources:**
 - Dual Common Slot Bays for High Efficiency, Right Sized, Hot plug and Redundant Power options
 - HP 460W CS HE Gold Power Supply (ships standard)
 - HP 750W CS HE Gold Power Supply (optional)
 - HP 1200W CS HE Silver Power Supply (optional)
 - HP 1200W -48Vdc Power Supply(optional)



Overview

- **Infrastructure Management:**
 - Convenient slide-out Systems Insight Display for quick and easy front view server diagnostics, along with status LEDs, Automatic Server Recovery (ASR), ROM Based Setup Utility (RBSU)
 - HP ProLiant Onboard Administrator (powered by the HP Integrated Lights-Out 2 management processor) for simplified server setup, health monitoring and recovery, power and thermal control, and lights-out remote administration.
 - HP Insight Control a product option, delivers essential infrastructure management that can help save time and money by making it easy to deploy, migrate, monitor, control and optimize your IT infrastructure through a single, simple management console. Insight Control supports both Windows and Linux-based central management servers.
 - HP Insight Dynamics for ProLiant, a product option, is an integrated command center that enables IT Staff personnel to continuously analyze and optimize a converged infrastructure, while automating and reducing the cost of common data center tasks by as much as 40 percent. This ultimately enables them to dynamically keep pace with the organization's changing business requirements.
- **Form Factor:**
 - 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, NetWare, VMware, and Citrix 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. Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.
NOTE: Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response. Warranty repairs may be accomplished through the use of Customer Self Repair (CSR) parts. These parts fall into two categories: 1) Mandatory CSR parts are designed for easy replacement. A travel and labor charge will result when customers decline to replace a Mandatory CSR part; 2) Optional CSR parts are also designed for easy replacement but may involve added complexity. Customers may choose to have HP replace Optional CSR parts at no charge. Additional information regarding worldwide limited warranty and technical support is available at: <http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html>



Standard Features

NOTE: For 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

Six-Core Processors

Intel® Xeon® Processor X5670 (2.93 GHz, 12MB L3 Cache, 95 Watts, DDR3-1333, HT Turbo 2/2/2/2/3/3)

Intel® Xeon® Processor X5660 (2.80 GHz, 12MB L3 Cache, 95 Watts, DDR3-1333, HT Turbo 2/2/2/2/3/3)

Intel® Xeon® Processor X5650 (2.66 GHz, 12MB L3 Cache, 95 Watts, DDR3-1333, HT Turbo 2/2/2/2/3/3)

Quad-Core Processors

Intel® Xeon® Processor X5570 (2.93 GHz, 8MB L3 Cache, 95 Watts, DDR3-1333, HT Turbo 2/2/3/3)

Intel® Xeon® Processor X5560 (2.80 GHz, 8MB L3 Cache, 95 Watts, DDR3-1333, HT Turbo 2/2/3/3)

Intel® Xeon® Processor X5550 (2.66 GHz, 8MB L3 Cache, 95 Watts, DDR3-1333, HT Turbo 2/2/3/3)

Intel® Xeon® Processor E5540 (2.53 GHz, 8MB L3 Cache, 80 Watts, DDR3-1066, HT Turbo 1/1/2/2)

Intel® Xeon® Processor L5530 (2.40 GHz, 8MB L3 Cache, 60 Watts, DDR3-1066, HT Turbo 1/1/2/2)

Intel® Xeon® Processor E5530 (2.40 GHz, 8MB L3 Cache, 80 Watts, DDR3-1066, HT Turbo 1/1/2/2)

Intel® Xeon® Processor L5520 (2.26 GHz, 8MB L3 Cache, 60 Watts, DDR3-1066, HT Turbo 1/1/2/2)

Intel® Xeon® Processor E5520 (2.26 GHz, 8MB L3 Cache, 80 Watts, DDR3-1066, HT Turbo 1/1/2/2)

Intel® Xeon® Processor L5506 (2.13 GHz, 4MB L3 Cache, 60 Watts, DDR3-800)

Intel® Xeon® Processor E5506 (2.13 GHz, 4MB L3 Cache, 80 Watts, DDR3-800)

Intel® Xeon® Processor E5504 (2.00 GHz, 4MB L3 Cache, 80 Watts, DDR3-800)

Dual-Core Processors

Intel® Xeon® Processor E5502 (1.86 GHz, 4MB L3 Cache, 80 Watts, DDR3-800)

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

NOTE: HT indicates that the processor model supports Intel® /Hyper-Threading Technology

NOTE: Turbo indicates the maximum potential frequency increment when using Intel® Turbo Boost Technology, with 4,3,2 and 1 cores active.

NOTE: DDR3 speed is the maximum memory speed of the processor. Actual memory speed may depend on the quantity and type of DIMMs installed.

NOTE: For the Intel 5500 Series, the letter preceding the model number indicated the performance/wattage of the processor. "X" denotes High Performance/Wattage; "E" denotes Enterprise Performance/Wattage (Mainstream); and "L" denotes Lower Wattage.

Cache Memory

One of the following depending on Model

12MB (1x12MB) Level 3 Cache on the 5600 Series 6-Core models

8MB (1 x 8MB) Level 3 cache on 5500 series

NOTE: All 5500 series processor models have 8M L3 Cache except for those identified below.

4MB (1 x 4MB) Level 3 cache

NOTE: For processors E5506/L5506/E5504/E5502.



Standard Features

Chipset Intel® 5520 Chipset
NOTE: For more information regarding Intel® chipsets, please see the following URL:
<http://www.intel.com/products/server/chipsets/>.

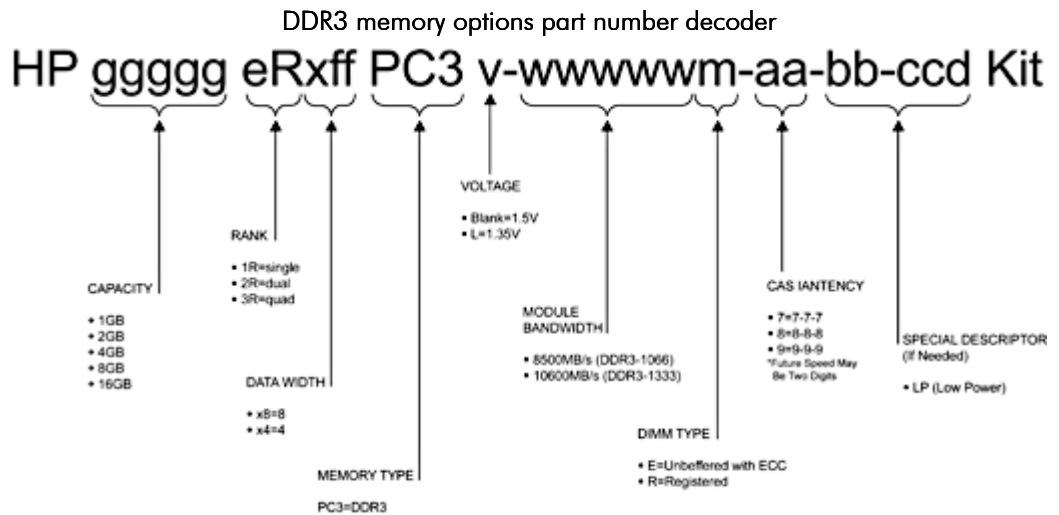
Memory Protection Advanced ECC (multi-bit error protection)
 Mirroring mode
 Lock-step mode

Memory

Type	DDR3 Registered (RDIMM) or Unbuffered (UDIMM)
Standard (Performance Models)	12GB (6 x 2GB) RDIMM
Standard (Base Models)	6GB (3 x 2GB) RDIMM
Standard (Entry Model)	4GB (2 x 2GB) RDIMM
Standard (High Efficiency Model)	4GB (2 x 2GB) UDIMM
Maximum (RDIMM)	192GB (12 x 16GB) for Registered Memory configurations
Maximum (UDIMM)	24GB (12 x 2GB) for Unbuffered Memory configurations

NOTE: Depending on the memory configuration and processor model, the memory speed may run at 1333MHz, 1066MHz, or 800MHz. Please see the Online Memory Configuration Tool at:
www.hp.com/go/ddr3memory-configurator.

NOTE: Kits described as LP include Low Power DIMMs. For more information on ProLiant Energy Efficient Features, see: www.hp.com/go/proliant-energy-efficient.



Network Controller One HP NC382i Dual Port Multifunction Gigabit Server Adapter (two ports total) with TCP/IP Offload Engine, including support for Accelerated iSCSI



Standard Features

Expansion Slots	Expansion Slots #	Technology	Bus Width**	Connector Width	Bus Number*	Form Factor	Notes
	1	PCI-e	x8	x8	4	Low profile slot	
	2	PCI-e	x16	x16	7	Full length, full height slot	
	2	PCI-X (133 MHz, 3.3 Voltage)	64-bit	x8	7		

* 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.

NOTE: For external power requirements for PCI options a PCI Thermal-Power Kit (cable) is offered optionally for higher power requirements.

Storage Controller	Entry Models	HP Smart Array P410i/Zero Memory Controller (RAID 0/1/1+0)
One of the following depending on Model	Base Models	HP Smart Array P410i/256 MB Controller (RAID 0/1/1+0/5/5+0)
	Performance Models	HP Smart Array P410i/512 MB BBWC Controller (RAID 0/1/1+0/5/5+0)
	High Efficiency Models	HP Smart Array P410i/Zero Memory Controller (RAID 0/1/1+0)
	Available upgrades: 256MB, 512MB with BBWC, 512MB with FBWC, 1G with FBWC, Battery kit upgrade (for the 256MB cache), and Smart Array Advanced Pack (SAAP)	

Storage	Diskette Drive	None Standard
One of the following depending on Model	Optical Drive	None Standard
	NOTE: This option supported on 4 drive models only. Optional DVD-ROM, DVD-RW or Slimline floppy drive Optional HP External USB CD/DVD R/RW for 8 drive models	
	Hard Drives	None Standard
	Drive Bays	4 SFF Drive Bays standard with options for up to 8 SFF drive bays total NOTE: 4 bays standard in Entry / Base & High Efficiency models, with optional upgrade of 4 additional bays with the SFF HD Backplane Kit (516966-B21). NOTE: This option available for 8 drive models. HP External USB CD/DVD R/RW Drive available for 8 drive systems.

Maximum Internal Storage Type	Hot Plug SAS	4.0TB	8 x 500GB SAS
	Hot Plug SATA	4.0TB	8 x 500GB SATA



Standard Features

Interfaces	Keyboard	1
	Mouse	1
	Serial	1
	Video	1
	Network RJ-45	2
	iLO 2 remote management port	1
	SD slot	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 .

Graphics	Integrated ATI ES1000, 32MB video standard <ul style="list-style-type: none">● 16 bit color: maximum resolution of 1600 x 1200● 32 bit color: maximum resolution of 1280 x 1024 NOTE: Maximum resolution available via iLO 2 remote console is 1280 x 1024.
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Form Factor	1U Rack form factor (1.75"), less than 28 inches (70.5 cm) deep
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HP Insight management software	HP Insight Foundation	<p>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.</p> <p>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.</p> <p>The foundation pack includes:</p> <ul style="list-style-type: none">● HP SmartStart● HP Management● HP ProLiant Firmware Maintenance <p>SmartStart version supported (minimum): SmartStart 8.20. http://www.hp.com/servers/smartstart</p> <p>NOTE: In an effort to support reducing our environmental impact, the HP ProLiant Essentials Foundation Pack media will be available as a selectable option for this server at time of order of a CTO SKU. This will allow customers to order the number of media kits that best meet their needs and eliminate receiving unnecessary duplicate media.</p> <p>HP Integrated Lights-Out 2 (iLO 2)</p>
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Standard Features

	<p>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 suites, and the Insight Dynamics for ProLiant helping customers unlock the value of the ProLiant platform and deliver the highest possible quality of IT service to the business. See www.hp.com/go/ProLiantOA</p>
HP Insight Control	<p>HP Insight Control, a product option, delivers essential infrastructure management that can help save time and money by making it easy to deploy, migrate, monitor, remote control, and optimize your IT infrastructure through a single, simple management console.</p> <p>Two versions of Insight Control are available, to serve environments requiring either a Linux-based or a Windows-based central management server: HP Insight Control for Linux, and HP Insight Control. See www.hp.com/go/insightcontrol</p>
HP Insight Dynamics for ProLiant	<p>HP Insight Control includes one year of 24 x 7 HP Software Technical Support and Update Service ensuring rapid access to HP support staff and proactive delivery of software updates. For more information about this service, please visit: http://www.hp.com/services/insight.</p> <p>HP Insight Dynamics for ProLiant, a product option, is advanced infrastructure management software that enables IT staff to instantly adjust their environments to meet dynamic business demands by provisioning, optimizing and protecting complex infrastructure in minutes. It's a powerful toolkit, integrated-by-design, that accelerates complex technology projects and simplifies daily operations, transforming data center economics. With Insight Dynamics IT professionals can plan capacity and power continuously, balance workloads across physical and virtual resources, and ensure cost-effective high availability. It also enables IT organizations to provision infrastructure consistently and automatically from pools of shared resources using a self-service portal. Resources provisioned can range from a single virtual machine to complex multi-tier environments and their associated physical and virtual resource requirements. In addition to the previous functional benefits, it also provides a cost-effective disaster recovery for physical and virtual environments that works with HP StorageWorks Continuous Access software for both the Enterprise Virtual Array and the XP storage array allowing application environments to be reactivated in minutes with the touch of a button to a remote location.</p>

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



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 SMBIOS 2.6.1
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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
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Security Trusted Platform Module	The TPM (Trusted Platform Module) is a microcontroller chip that can securely store artifacts used to authenticate the server platform. These artifacts can include passwords, certificates and encryption keys. Windows® BitLocker™ Drive Encryption (BitLocker) is a data protection feature available in Windows Server® 2008. BitLocker leverages the enhanced security capabilities of a Trusted Platform Module (TPM) version 1.2. The TPM works with BitLocker to help protect user data and to ensure that a server running Windows Server 2008 has not been tampered with while the system was offline. For more information about TPM, including a white paper, go to www.hp.com/go/TPM
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NOTE: ProLiant OS pre-installed units will come with the partition required for TPM deployment.

NOTE: The TPM key is unique to every TPM deployed server and must be retained. Misplacing or losing the key could result in data loss.

Server Power Cords	All Standard Model (BTO) servers ship with a high voltage server to PDU power cord. Localized cables may be included with geographic specific models in other world regions. NOTE: ProLiant DL servers do not ship standard with NEMA power cords 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 ship standard with only a PDU power cord (416151-B21). If a user wishes to power a ProLiant DL server using a standard wall receptacle (NEMA-15), the NEMA power cord must be ordered separately and the server will be shipped with both cords. If the order is a Factory-Integration or CTO order only the NEMA-15 power will be shipped. See Power Cords in the Additional Options section below for selection for your region.
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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

HP has a unique design for ProLiant power. The Common Slot Power Supply bay. This design provides the customer with commonality in power supplies across multiple platforms to save on the cost of spares and allows HP to offer multiple power solutions to fit the customers' needs. Many HP ProLiant Servers come with Common Slot, High Efficiency and Right-Size Power Supplies. Common Slot (CS) designates commonality of the power supply across multiple ProLiant servers. HP's new Common Slot power supplies are designed for highest efficiency to provide power efficiency without degrading performance of the ProLiant. Power Supplies will have efficiency ratings up to 92%. There are three Right Size power options available, depending on the configuration of your server. To make sure you select the correct power supply to meet your configuration, we suggest that you use the HP Power Advisor to decide the "Right-Size" for your configuration. All HP Common Slot power sources are UL, CE Mark Compliant, Hot Plug and Redundant.

The HP Power Advisor is located at: www.hp.com/go/proliant-energy-efficient or www.hp.com/go/hppoweradvisor

Common Slot ProLiant

It is highly recommended that you use the HP Power Advisor in defining the "Right-Size" power supply for your needs. HP offers multiple Power Supply Options:

- HP 460Watts, Common Slot, 92% Efficiency 80PLUS GOLD
- HP 750Watts, Common Slot, 92% Efficiency 80PLUS GOLD
- HP 1200Watts, Common Slot, 90% Efficiency 80PLUS SILVER
- HP 1200Watts -48VDC, Common Slot Power Supply

HP's ProLiant Common Slot Power supplies (460W & 750W) support multiple Energy Efficiency Initiatives. Climate Savers Computing Initiative GOLD, 80PLUS GOLD and plans on offering models that meet the Energy Star for Server requirements when they are published.

HP's ProLiant Common Slot Power supplies support multiple Energy Efficiency Initiatives. Climate Savers Computing Initiative, 80PLUS Power Supply requirements.

Redundant Power: Optional (1+ 1 or n+n redundant) power supplies can be purchased through power supply option kits (see Redundant Options for part numbers).

System Fans

3 fan modules ship standard in 1 processor models

4 fan modules ship standard in 2 processor models

Fan redundancy standard with all modules

NOTE: The processor option kit contains 1 additional fan module, when upgrading from a 1 processor to two processor models. A Fan Module Option kit can also be purchased separately for use with PCI Graphics card upgrades. See HP PCI Thermal Power Kit (519254-B21) in the Core Options section.

Required Cabling

For required cabling information, refer to the Web site at:

<http://h18000.www1.hp.com/products/servers/proliantdl360/>.



Standard Features

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)
Oracle Solaris
NetWare
VMware
Citrix XenServer

NOTE: For more information on HP's Certified and Supported ProLiant Servers for OS and Virtualization Software and latest listing of software drivers available for your server, please visit our Support Matrix at: <http://www.hp.com/go/ossupport> and our driver download page www.hp.com/support/DL360G6.

Rack Airflow Requirements

Rack 10000 G2 series Cabinets

The increasing power of new high-performance processor technology requires increased cooling efficiency for rack-mounted servers. The 10000 G2 Series Racks provide enhanced airflow for maximum cooling, allowing these racks to be fully loaded with servers using the latest processors.

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

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

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

NOTE: For additional information, refer to the Setup and Installation Guide or the Documentation CD provided with the server, or to the server documentation located in the Support section at the following URL: www.hp.com/servers/dl360.

Rack Kit

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

Telco Rack Support

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



Standard Features

Factory Express Portfolio for Servers and Storage

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

Factory Express offers service packages for simple configuration, racking, installation, complex configuration and design services as well as individual factory services, such as image loading, asset tagging, and custom packaging. HP products supported through Factory Express include a wide array of servers and storage: HP Integrity, HP ProLiant, HP ProLiant Server Blades, HP BladeSystem, HP 9000 servers as well as the 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 capitalize on your HP ProLiant servers' capabilities requires a service partner who thoroughly understands your server technology and systems environment. HP Services, an industry leader in provision of multi vender support solutions, provides a range of support services designed to meet the varying needs of your business. Whether an SMB, or large global corporation, HP has a ProLiant server support offer to help you speedily deploy and maximize system uptime.

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

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

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

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

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

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



Standard Features

<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.

HP DL360 G6 Performance Models Quad-Core Models DL360G6 X5550 12GB 504633-xx1	Processor(s)	(2) Intel® Xeon® Processor X5550 (2.66 GHz, 8MB L3 Cache, 95 Watts, DDR3-1333, HT Turbo 2/2/3/3)
	Cache Memory	8MB (1 x 8MB) Level 3 cache
	Memory	12 GB (6 x 2 GB) PC3-10600R (DDR3-1333) Registered DIMMs
	Network Controller	HP NC382i Dual Port Multifunction Gigabit Server Adapter
	Storage Controller	HP Smart Array P410i/512MB with BBWC
	Hard Drive	None ship standard
	Internal Storage	8 SFF SAS/SATA HDD Bays
	Optical Drive	None ship standard
	PCI-Express Slots	PCI-e Gen2 (1 FH/FL, 1 HH/HL) PCI-X card only support optional in the FH/FL slot
	Power Supply	Two 460W Hot Plug Power Supplies, redundant
	Fans	4 total (3 fan modules in 1 Processor Models, 1 additional fan module with second processor), fan redundancy standard
	Form Factor	1U Rack form factor (1.75"), less than 28 inches (70.5 cm) deep

HP DL360 G6 Performance Models with Insight Control Quad-Core Models HP DL360G6 X5550 470065-074 US 470065-075 APJ 470065-073 EURO	Processor(s)	(2) Intel® Xeon® Processor X5550 (2.66 GHz, 8MB L3 Cache, 95W, DDR3-1333, HT, Turbo 2/2/3/3)
	Cache Memory	8MB (1 x 8MB) Level 3 cache
	Memory	12 GB (6 x 2 GB) PC3-10600R (DDR3-1333) Registered DIMMs
	Network Controller	HP NC382i Dual Port Multifunction Gigabit Server Adapter
	Storage Controller	HP Smart Array P410i/512MB with BBWC
	Hard Drive	None ship standard
	Internal Storage	8 SFF SAS/SATA HDD Bays
	Optical Drive	None ship standard
	Power Supply	Two 460W Hot Plug Power Supplies, redundant
	Fans	4 total (3 fan modules in 1 Processor Models, 1 additional fan module with second processor), fan redundancy standard
	Insight Control	HP Insight Control No Media single server license, including 1 year of 24x7 Technical Support and Updates
	Form Factor	1U Rack form factor (1.75"), less than 28 inches (70.5 cm) deep



Models

HP DL360 G6 Base Models Quad-Core Models DL360G6 E5540 6GB 504634-xx1	Processor(s) One of the following depending on Model	(1) Intel® Xeon® Processor E5540 (2.53 GHz, 8MB L3 Cache, 80 Watts, DDR3-1066, HT Turbo 1/1/2/2) (1) Intel® Xeon® Processor E5530 (2.40 GHz, 8MB L3 Cache, 80 Watts, DDR3-1066, HT Turbo 1/1/2/2)
	Cache Memory Memory	8MB (1 x 8MB) Level 3 cache 6 GB (3 x 2 GB) PC3-10600R (DDR3-1333) Registered DIMMs
DL360G6 E5530 6GB 504635-xx1	Network Controller	HP NC382i Dual Port Multifunction Gigabit Server Adapter
	Storage Controller	HP Smart Array P410i/256MB Controller
	Hard Drive	None ship standard
	Internal Storage	4 SFF SAS/SATA HDD Bays (with optional 4SFF HDD upgrade)
	Optical Drive	One Multi-Media bay standard (not available with 4SFF HDD upgrade)
	PCI-Express Slots	PCI-e Gen2 (1 FH/FL, 1 HH/HL) PCI-X card only support optional in the FH/FL slot
	Power Supply	One 460W Hot Plug Power Supply
	Fans	3 total (3 fan modules in 1 Processor Models, 1 additional fan module with 2 Processor Model), fan redundancy standard
	Form Factor	1U Rack form factor (1.75"), less than 28 inches (70.5 cm) deep

HP DL360 G6 Efficiency Models Quad-Core Models DL360G6 L5520 4GB 504636-xx1	Processor(s)	(1) Intel® Xeon® Processor L5520 (2.26 GHz, 8MB L3 Cache, 60 Watts, DDR3-1066, HT Turbo 1/1/2/2)
	Cache Memory Memory	8MB (1 x 8MB) Level 3 cache 4 GB (2 x 2 GB) PC3-10600E (DDR3-1333) Unbuffered DIMMs
	Network Controller	HP NC382i Dual Port Multifunction Gigabit Server Adapter
	Storage Controller	HP Smart Array P410i/Zero Memory Controller
	Hard Drive	None ship standard
	Internal Storage	4 SFF SAS/SATA HDD Bays (with optional 4SFF HDD upgrade)
	Optical Drive	One Multi-Media bay standard (not available with 4SFF HDD upgrade)
	PCI-Express Slots	PCI-e Gen2 (1 FH/FL, 1 HH/HL) PCI-X support optional in the FH/FL slot
	Power Supply	One 460W Hot Plug Power Supply
	Fans	3 total (3 fan modules in 1 Processor Models, 1 additional fan module with 2 Processor Model), fan redundancy standard
	Form Factor	1U Rack form factor (1.75"), less than 28 inches (70.5 cm) deep



Models

HP DL360 G6 Entry Model	Processor(s)	(1) Intel® Xeon® Processor E5504 (2.00 GHz, 4MB L3 Cache, 80 Watts, DDR3-800)
Quad-Core Models DL360G6 E5504 4GB 504637-xx1	Cache Memory	4MB (1 x 4MB) Level 3 cache
	Memory	4 GB (2 x 2 GB) PC3-10600R (DDR3-1333) Registered DIMMs
	Network Controller	HP NC382i Dual Port Multifunction Gigabit Server Adapter
	Storage Controller	HP Smart Array P410i/Zero Memory Controller
	Hard Drive	None ship standard
	Internal Storage	4 SFF SAS/SATA HDD Bays (with optional 4SFF HDD upgrade)
	Optical Drive	One Multi-Media bay standard (not available with 4SFF HDD upgrade)
	PCI-Express Slots	PCI-e Gen2 (1 FH/FL, 1 HH/HL) PCI-X support optional in the FH/FL slot
	Power Supply	One 460W Hot Plug Power Supply
	Fans	3 total (3 fan modules in 1 Processor Models, 1 additional fan module with 2 Processor Model), fan redundancy standard
	Form Factor	1U Rack form factor (1.75"), less than 28 inches (70.5 cm) deep

Country Code Key	xx=00	US
	xx=20	Brazil
	xx=29	Japan
	xx=37	APD
	xx=42	Europe
	xx=AA	PRC



Configuration Information - Factory Integrated Models

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

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

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

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

Step 1: Base Configuration (choose one of the following configurable models)

HP Models	HP ProLiant DL360 G6 Rack CTO Chassis	484184-B21
	Factory Integrated Model ships with:	
	HP NC382i Dual Port Multifunction Gigabit Server Adapter	
	HP Smart Array P410i/Zero Memory Controller	
	Integrated Lights-Out 2 (iLO 2) embedded	
	2 PCIe G2 Slots - 1 full-length x16 and 1 low-profile x8 PCI-Express	
	4 bay Hot-Plug SAS/SATA Drives(Factory Options for up to 8)	
	4 USB ports(1-front,1-internal, 2-rear)	
	1 Internal Secure Digital(SD) slot	
	3 fan modules; fan redundancy standard	
	1U Rack form factor (1.75"), less than 28 inches (70.5 cm) deep	

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

HP Processors	Six-Core Processors	
	Intel® Xeon® Processor X5670 (2.93 GHz, 12MB L3 Cache, 95 Watts, DDR3-1333, HT Turbo 2/2/2/2/3/3), FIO	588062-L21
	Intel® Xeon® Processor X5660 (2.80 GHz, 12MB L3 Cache, 95 Watts, DDR3-1333, HT Turbo 2/2/2/2/3/3), FIO	588064-L21
	Intel® Xeon® Processor X5650 (2.66 GHz, 12MB L3 Cache, 95 Watts, DDR3-1333, HT Turbo 2/2/2/2/3/3), FIO	588066-L21
	Quad-Core Processors	
	Intel® Xeon® Processor X5570 (2.93 GHz, 8MB L3 Cache, 95 Watts, DDR3-1333, HT Turbo 2/2/3/3), FIO	507674-L21
	Intel® Xeon® Processor X5560 (2.80 GHz, 8MB L3 Cache, 95 Watts, DDR3-1333, HT Turbo 2/2/3/3), FIO	507676-L21
	Intel® Xeon® Processor X5550 (2.66 GHz, 8MB L3 Cache, 95 Watts, DDR3-1333, HT Turbo 2/2/3/3), FIO	505878-L21
	Intel® Xeon® Processor E5540 (2.53 GHz, 8MB L3 Cache, 80 Watts, DDR3-1066, HT Turbo 1/1/2/2), FIO	505880-L21
	Intel® Xeon® Processor L5530 (2.40GHz, 8MB L3 Cache, 60 Watts, DDR3-1066, HT Turbo 1/1/2/2), FIO	583379-L21
	Intel® Xeon® Processor E5530 (2.40 GHz, 8MB L3 Cache, 80 Watts, DDR3-1066, HT Turbo 1/1/2/2), FIO	505882-L21
	Intel® Xeon® Processor E5520 (2.26 GHz, 8MB L3 Cache, 80 Watts, DDR3-1066, HT Turbo 1/1/2/2), FIO	507680-L21



Configuration Information - Factory Integrated Models

Intel® Xeon® Processor L5520 (2.26 GHz, 8MB L3 Cache, 60 Watts, DDR3-1066, HT Turbo 1/1/2/2), FIO	505884-L21
Intel® Xeon® Processor L5506 (2.13 GHz, 4MB L3 Cache, 60 Watts, DDR3-800), FIO	507678-L21
Intel® Xeon® Processor E5506 (2.13 GHz, 4MB L3 Cache, 80 Watts, DDR3-800), FIO	505886-L21
Intel® Xeon® Processor E5504 (2.00 GHz, 4MB L3 Cache, 80 Watts, DDR3-800), FIO	507682-L21

Dual-Core Processors

Intel® Xeon® Processor E5502 (1.86 GHz, 4MB L3 Cache, 80 Watts, DDR3-800), FIO	507663-L21
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NOTE: Up to 2 processors supported. Performance Model configurations include two processors.

NOTE: HT indicates that the processor model supports Intel® /Hyper-Threading Technology

NOTE: Turbo indicates the maximum potential frequency increment when using Intel® Turbo Boost Technology, with 6,5,4,3,2 and 1 cores active.

NOTE: DDR3 speed is the maximum memory speed of the processor. Actual memory speed may depend on the quantity and type of DIMMs installed.

NOTE: For the Intel 5600/5500 Series, the letter preceding the model number indicated the performance/wattage of the processor. "X" denotes High Performance/Wattage; "E" denotes Enterprise Performance/Wattage (Mainstream); and "L" denotes Lower Wattage.

HP Memory

Registered DIMMs (RDIMMs)

HP 2GB 2Rx8 PC3-10600R-9 Kit	500656-B21
HP 4GB 2Rx4 PC3-10600R-9 Kit	500658-B21
HP 4GB 4Rx8 PC3-8500R-7 LP Kit	500660-B21
HP 8GB 2Rx4 PC3-10600R-9 Kit	500662-B21
HP 8GB 2Rx4 PC3-8500R-7 Kit	516423-B21
HP 16GB 4Rx4 PC3-8500R-7 Kit	500666-B21

Unbuffered with ECC DIMMs (UDIMMs)

HP 1GB 1Rx8 PC3-10600E-9 Kit	500668-B21
HP 2GB 2Rx8 PC3-10600E-9 Kit	500670-B21

NOTE: All DDR3 memory option kits consist of one DIMM per kit. For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool: www.hp.com/go/ddr3memory-configurator.

NOTE: Kits described as LP include Low Power DIMMs. For more information on ProLiant Energy Efficient Features, see: www.hp.com/go/proliant-energy-efficient

HP Power Supplies

NOTE: Many HP ProLiant Servers offer Common Slot Power Supplies. These power supplies come in multiple power ratings with high efficiency levels to offer the Right-Size solution to fit your configuration. This provides improved power delivery and the advantage of reclaiming lost power. Prior to making a power supply selection it is "highly recommended" that the "HP Power Advisor" is run to determine the right size power supply for your server configuration. The HP Power Advisor is located at: www.hp.com/go/proliant-energy-efficient or www.hp.com/go/hppoweradvisor

HP 460W CS HE Power Supply Kit	503296-B21
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Configuration Information - Factory Integrated Models

HP 750W CS HE Power Supply Kit	512327-B21
HP 1200W CS HE Power Supply Kit	500172-B21
HP 1200W -48Vdc CS Power supply	437573-B21

NOTE: Option Kits contain optional power supply, an IEC power cable and PDU IEC cables. DC Power supplies come with DC power cable included.

Step 3: Choose Additional Factory Integratable Options

HP Storage Controllers	NOTE: Please see the Additional Options section in this QuickSpecs for more HP Storage Controller choices: NOTE: For additional Storage Controller Options select from these options. See Additional Options section below for more details.	
	HP Smart Array P212/256 MB w/ Battery FIO	491191-B21
	HP Smart Array P411/256 MB w/ Battery FIO	491193-B21
	Optional Upgrades	
	256MB Cache Module FIO	534108-B21
	NOTE: Additional memory for the P410i ZM-Zero Memory models.	
HP Performance Packs	The HP ProLiant DL360 G6 performance packs are necessary to configure a HP ProLiant DL360 G6 Performance Model. HP ProLiant DL360 G6 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 460w power supplies, Smart Array P410i Controller with 512MB of BBWC:	
	HP DL360G6 X5550 HPM FIO Perf Pack	507937-B21
HP Insight Software	HP Insight Control, No Media 1-Server License Factory-Integratable Option (FIO) including 1 year of 24x7 Technical Support and Updates	582765-B21
	HP Insight Control for Linux, No Media 1-Server License Factory-Integratable Option (FIO) including 1 year of 24x7 Technical Support and Updates	TC203A

Step 4: Choose Additional Options for Factory Integration

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



Core Options

NOTE: Some options may not be factory integratable. Contact your local sales representative for additional information.

HP Unique Options	HP DL360G6 SFF HD Backplane Kit	516966-B21
	NOTE: Integrated Optical/DVD cannot be used with this option. Optional External USB CD/DVD Drive available.	
	HP DL360 SL 12.7mm SATA DVD	532066-B21
	HP DL360 SL 12.7mm SATA DVD-RW Optical kit	532068-B21
	NOTE: Integrated DVD/Optical drive option is supported on 4 Hard drive models only.	
	PCI-X Riser option	518824-B21
	NOTE: To convert full-length PCI-Express slot to PCI-X slot. This option kit is limited to PCI-X card support only.	

HP Processor

Six-Core Processors

Intel® Xeon® Processor X5670 (2.93 GHz, 12MB L3 Cache, 95 Watts, DDR3-1333, HT Turbo 2/2/2/2/3/3)	588062-B21
Intel® Xeon® Processor X5660 (2.80 GHz, 12MB L3 Cache, 95 Watts, DDR3-1333, HT Turbo 2/2/2/2/3/3)	588064-B21
Intel® Xeon® Processor X5650 (2.66 GHz, 12MB L3 Cache, 95 Watts, DDR3-1333, HT Turbo 2/2/2/2/3/3)	588066-B21

Quad-Core Processors

Intel® Xeon® Processor X5570 (2.93 GHz, 8MB L3 Cache, 95 Watts, DDR3-1333, HT Turbo 2/2/3/3)	507674-B21
Intel® Xeon® Processor X5560 (2.80 GHz, 8MB L3 Cache, 95 Watts, DDR3-1333, HT Turbo 2/2/3/3)	507676-B21
Intel® Xeon® Processor X5550 (2.66 GHz, 8MB L3 Cache, 95 Watts, DDR3-1333, HT Turbo 2/2/3/3)	505878-B21
Intel® Xeon® Processor E5540 (2.53 GHz, 8MB L3 Cache, 80 Watts, DDR3-1066, HT Turbo 1/1/2/2)	505880-B21
Intel® Xeon® Processor L5530 (2.40GHz, 8MB L3 Cache, 60 Watts, DDR3-1066, HT Turbo 1/1/2/2)	583379-B21
Intel® Xeon® Processor E5530 (2.40 GHz, 8MB L3 Cache, 80 Watts, DDR3-1066, HT Turbo 1/1/2/2)	505882-B21
Intel® Xeon® Processor E5520 (2.26 GHz, 8MB L3 Cache, 80 Watts, DDR3-1066, HT Turbo 1/1/2/2)	507680-B21
Intel® Xeon® Processor L5520 (2.26 GHz, 8MB L3 Cache, 60 Watts, DDR3-1066, HT Turbo 1/1/2/2)	505884-B21
Intel® Xeon® Processor L5506 (2.13 GHz, 4MB L3 Cache, 60 Watts, DDR3-800)	507678-B21
Intel® Xeon® Processor E5506 (2.13 GHz, 4MB L3 Cache, 80 Watts, DDR3-800)	505886-B21
Intel® Xeon® Processor E5504 (2.00 GHz, 4MB L3 Cache, 80 Watts, DDR3-800)	507682-B21

Dual-Core Processors

Intel® Xeon® Processor E5502 (1.86 GHz, 4MB L3 Cache, 80 Watts, DDR3-800)	507663-B21
NOTE: Up to 2 processors supported. Performance Model configurations include two processors.	
NOTE: HT indicates that the processor model supports Intel® /Hyper-Threading	



Core Options

Technology

NOTE: Turbo indicates the maximum potential frequency increment when using Intel® Turbo Boost Technology, with 4,3,2 and 1 cores active.

NOTE: DDR3 speed is the maximum memory speed of the processor. Actual memory speed may depend on the quantity and type of DIMMs installed.

NOTE: For the Intel 5500 Series, the letter preceding the model number indicated the performance/wattage of the processor. "X" denotes High Performance/Wattage; "E" denotes Enterprise Performance/Wattage (Mainstream); and "L" denotes Lower Wattage.

HP Memory	Registered DIMMs (RDIMMs)	
	HP 2GB 2Rx8 PC3-10600R-9 Kit	500656-B21
	HP 4GB 2Rx4 PC3-10600R-9 Kit	500658-B21
	HP 4GB 4Rx8 PC3-8500R-7 LP Kit	500660-B21
	HP 8GB 2Rx4 PC3-10600R-9 Kit	500662-B21
	HP 8GB 2Rx4 PC3-8500R-7 Kit	516423-B21
	HP 16GB 4Rx4 PC3-8500R-7 Kit	500666-B21
	Unbuffered with ECC DIMMs (UDIMMs)	
	HP 1GB 1Rx8 PC3-10600E-9 Kit	500668-B21
	HP 2GB 2Rx8 PC3-10600E-9 Kit	500670-B21
	<p>NOTE: All DDR3 memory option kits consist of one DIMM per kit. For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool: www.hp.com/go/ddr3memory-configurator.</p> <p>NOTE: Kits described as LP include Low Power DIMMs. For more information on ProLiant Energy Efficient Features, see: www.hp.com/go/proliant-energy-efficient.</p>	
HP Drive Cage Options	HP DL360G6 SFF HD Backplane Kit	516966-B21
	<p>NOTE: For 4 addition HDs in 5-8 slots.</p> <p>NOTE: Optical/DVD cannot be used with this option.</p>	
HP Optical Drives	HP DL360 SL 12.7mm SATA DVD	532066-B21
	HP DL360 SL 12.7mm SATA DVD-RW Optical kit	532068-B21
	<p>NOTE: Integrated DVD/Optical drive option is supported on 4 Hard drive models only.</p>	
	HP External USB CD/DVD R/RW Option Drive	FS943AA#ABA



Core Options

HP Hard Drives

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

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

SAS Hot Plug SFF (2.5-inch) Enterprise (ENT) Drives

HP 300GB 6G SAS 10K SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	507127-B21
HP 300GB 3G SAS 10K SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	492620-B21
HP 146GB 6G SAS 15K SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	512547-B21
HP 146GB 3G SAS 15K SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	504062-B21
HP 146GB 6G SAS 10K SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	507125-B21
HP 146GB 3G SAS 10K SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	418367-B21
HP 72GB 6G SAS 15K SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	512545-B21
HP 72GB 3G SAS 15K SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	418371-B21

SAS Hot Plug SFF (2.5-inch) Midline (MDL) Drives

HP 500GB 6G SAS 7.2K rpm SFF (2.5inch) Midline 1yr Warranty Hard Drive	507610-B21
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NOTE: SAS Enterprise drives have a 3 year warranty. Please see the QuickSpecs for Technical Specifications and additional information:

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

SATA Hot Plug SFF (2.5-inch) Midline (MDL) Drives

HP 500GB 3G SATA 7.2K rpm SFF (2.5-inch) Midline 1yr Warranty Hard Drive	507750-B21
HP 160GB 3G SATA 7.2K rpm SFF (2.5-inch) Midline 1yr Warranty Hard Drive	530888-B21

SATA Hot Plug SFF (2.5-inch) Entry (ETY) Drives

HP 250GB 3G SATA 5.4K rpm SFF (2.5-inch) Entry 1yr Warranty Hard Drive	460355-B21
HP 120GB 1.5G SATA 5.4K rpm SFF (2.5-inch) Entry 1yr Warranty Hard Drive	458924-B21

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

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

SATA Hot Plug Midline (MDL) Solid State Drives

HP 60GB 3G SATA 2.5in MDL 1y Wty SSD	572071-B21
HP 120GB 3G SATA 2.5in MDL 1y Wty SSD	572073-B21

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

http://h18000.www1.hp.com/products/quickspecs/13415_div/13415_div.html
(Worldwide)



Core Options

HP Networking

Gigabit Ethernet Adapters

HP NC112T PCIe Gigabit Server Adapter	503746-B21
HP NC360T PCI Express Dual Port Gigabit Server Adapter	412648-B21
HP NC364T PCI Express Quad Port Gigabit Server Adapter	435508-B21
HP NC373F PCI Express Multifunction Gigabit Server Adapter	394793-B21
HP NC373T PCI Express Multifunction Gigabit Server Adapter	394791-B21
HP NC375T PCI Express Quad Port Gigabit Server Adapter	538696-B21
HP NC382T PCI Express Dual Port Multifunction Gigabit Server Adapter	458492-B21

10 Gigabit Ethernet Adapters

HP NC522SFP Dual Port 10GbE Server Adapter	468332-B21
NOTE: A minimum of two Gigabytes (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 NC550SFP Dual Port 10GbE Server Adapter	581201-B21
NOTE: A minimum of two Gigabytes (2 GB) of server memory is required per each NC550SFP adapter.	
NOTE: Direct Attach Cable (DAC) for copper environments or fiber transceivers and cables for fiber-optic environments must be purchased separately.	
NOTE: Please see the QuickSpecs for Technical Specifications and additional information: www.hp.com/go/ProLiantNICs	
HP 10 GbE PCI-e G2 Dual Port NIC	516937-B21

HP Infiniband

HP 4X QDR PCI-e G2 QLogic InfiniBand Dual Port HCA	583211-B21
HP IB 4X QDR CX-2 PCI-e G2 Dual Port HCA	592520-B21
HP IB 4X DDR CX-2 PCI-e G2 Dual Port HCA	592521-B21
NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/13078_div/13078_div.html .	



Core Options

HP Power Supplies

CAUTION: Many HP ProLiant Servers now offer new power options, including Common Slot Power Supplies. These power supplies come in multiple power ratings and higher efficiency levels to offer the Right Size solution to fit your configuration. This provides improved power delivery and the advantage of reclaiming lost power. Prior to making a power supply selection it is "highly recommended" that the "HP Power Advisor" is run to determine the right size power supply for your server configuration. The HP Power Advisor is located at "www.hp.com/go/proliant-energy-efficient" In ProLiant Servers that have more than one power slot (bay), only same size power supplies are recommended. If non-matched power supplies are inserted you will get errors and operation will fail.

HP 460W CS HE Power Supply Kit 503296-B21

HP 750W CS HE Power Supply Kit 512327-B21

HP 1200W CS HE Power Supply Kit 500172-B21

HP 1200W -48Vdc CS Power supply 437573-B21

NOTE: Option Kits contain optional power supply, an IEC power cable and PDU IEC cables.

NOTE: For regional specific power cables please refer to Power Cable section below.

HP Cooling Options

HP PCI Thermal Power Kit 519254-B21

NOTE: Supports 3rd Party PCI Video Graphics cards.



Additional Options

HP Insight Software	HP Insight Control	
	HP Insight Control, Single-Server License including 1 year of 24x7 Technical Support and Updates	452148-B22
	HP Insight Control suite, No Media, Electronic License including 1 year of 24x7 Technical Support and Updates	T9074BAE
	HP Insight Control, Electronic License for bundling with ProLiant ML/DL server, including 1 year of 24x7 Technical Support and Updates	TC278AAE
	HP Insight Control, Tracking License for bundling with ProLiant ML/DL server, including 1 year of 24x7 Technical Support and Updates	TC275A
	<p>NOTE: Electronic and Flexible-Quantity licenses can be used to purchase multiple licenses with a single activation key.</p> <p>NOTE: Electronic software is available in all countries except China and Japan. Customers in China and Japan should order the physical equivalent.</p> <p>NOTE: Customer will receive a license entitlement certificate. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support and Update Service.</p> <p>NOTE: Licenses ship without media. The HP Insight Control Media Kit can be ordered separately, or can be downloaded at: http://www.hp.com/go/insightupdates.</p> <p>NOTE: For additional license options please see the Insight Control QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12631_div/12631_div.html</p>	
	HP Insight Control for Linux	
	HP Insight Control for Linux, 1-server license, including one year of 24x7 Technical Support and Updates, Electronic	TC213AAE
	HP Insight Control for Linux, No Media, 1-Server license, including one year of 24x7 Technical Support and Updates	TC209A
	HP Insight Control for Linux, Media pack (DVD) - No licenses included	TC208A
<p>NOTE: Media pack DVD contains the ISO image for HP Insight Control for Linux, HP Systems Insight Manager, HP Insight Control power management, HP Insight Control virtual machine management, and an integrated installer. Servers must be acquired separately.</p> <p>NOTE: Licenses ship without media. The Media Kit for Insight Control for Linux can be ordered separately, or can be downloaded at: http://www.hp.com/go/ic-linux (click on Download button).</p> <p>NOTE: Electronic software is available in all countries except China and Japan. Customers in China and Japan should order the physical equivalent.</p> <p>NOTE: Electronic and Flexible-Quantity licenses can be used to purchase multiple licenses with a single set of activation keys.</p> <p>NOTE: For additional License Kits, including electronic licensing options, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/13019_div/13019_div.html</p>		
HP Integrated Lights-Out (iLO) Advanced		
HP Integrated Lights-Out Advanced, No Media, 1-Server License, including 1 year of 24x7 Technical Support and Updates	512485-B21	
HP ProLiant Essentials Integrated Lights-Out Advanced Pack, Electronic, including 1 year of 24x7 Technical Support and Updates	TA850AAE	



Additional Options

<p>HP Insight Software Media Kit</p> <p>NOTE: Insight Software DVD media without licenses. Contains HP Systems Insight Manager, HP Insight Control, HP Insight Dynamics, HP Insight Control for Microsoft System Center, and Virtual Connect Enterprise Manager software. Uses an integrated installer to perform quick and accurate software installation and updates.</p> <p>NOTE: This license allows 1 server to be deployed and managed via HP iLO Advanced. Customer will receive a printed license entitlement certificate via physical shipment. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support Service</p> <p>NOTE: Electronic software is available in all countries except China and Japan. Customers in China and Japan should order the physical equivalent.</p> <p>NOTE: For additional license kits, including electronic delivery options, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12362_div/12362_div.html</p> <p>HP Insight Control server deployment</p>	<p>436222-B21</p>
<p>HP Insight Control server deployment Electronic License including 1 year 24x7 Technical Support and Updates</p>	<p>T9082AAE</p>
<p>HP Insight Control server deployment 1-Server License including 1 year 24x7 Technical Support and Updates</p> <p>NOTE: Licenses ship without media. The Insight Control Media Kit can be ordered separately, or can be downloaded at: http://www.hp.com/go/insightupdates.</p> <p>NOTE: Electronic licenses can be used to purchase multiple licenses with a single activation key, and is available in all countries except China and Japan. Customers in China and Japan should order the physical equivalent.</p> <p>NOTE: Customer will receive a license entitlement certificate, which 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.</p> <p>NOTE: For additional license kits please see the Insight Control QuickSpecs at: http://h18004.www1.hp.com/products/quickspecs/12631_div/12631_div.html</p>	<p>452151-B21</p>

<p>HP Security - TPM</p>	<p>HP Trusted Platform Module Option Kit</p>	<p>488069-B21</p>
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<p>HP Storage Controllers</p>	<p>NOTE: The DL360 G6 Server comes standard with an integrated P410i Smart Array Controller designed to manage up to 8 SFF hard drives from HP. For additional capabilities and capacities HP offers additional Smart Arrays.</p> <p>SAS Controllers</p> <p>Smart Array P800 Controller</p> <p>HP Smart Array P800/512 BBWC Controller</p> <p>Smart Array P212 Controller</p> <p>HP Smart Array P212/Zero Memory Controller</p> <p>HP Smart Array P212/256 MB Controller</p> <p>Smart Array P411 Controller</p> <p>HP Smart Array P411/256 MB Controller</p> <p>HP Smart Array P411/512 MB with BBWC Controller</p> <p>HP Smart Array P411/512MB Flash Backed Write Cache</p>	<p>381513-B21</p> <p>462828-B21</p> <p>462834-B21</p> <p>462830-B21</p> <p>462832-B21</p> <p>578229-B21</p>
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Additional Options

HP Smart Array P411/1G Flash Backed Write Cache	572531-B21
Smart Array P812 Controller	
HP Smart Array P812/1G Flash Backed Cache Controller	487204-B21
Optional Upgrades	
256 MB Cache Module	462968-B21
NOTE: Supported on HP Smart Array P212 Controller and HP Smart Array P410i Controller.	
512MB BBWC	462967-B21
1G Flash Backed Write Cache	534562-B21
NOTE: Supported on the Smart Array P410i Controller only.	
512MB Flash Backed Write Cache	534916-B21
NOTE: Supported on the Smart Array P410i Controller only.	
Battery Kit upgrade	462969-B21
NOTE: To enable BBWC on the 256MB cache.	
HP 8484 to Mini SAS 33in Cable Assembly	591734-B21
NOTE: Cable for use connecting the Smart Array P800 Controller to internal hard disk drives on select HP ProLiant G6 Servers.	
HP Smart Array Advanced Pack No Media 1-Server license including 1yr 24x7 Technical Support	516471-B21
NOTE: This part number can be used to purchase a single license or to order multiple licenses with a single activation key. Customers will receive a license entitlement certificate via e-mail. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Include one year of 24x7 HP Software Technical Support Services.	
NOTE: Please see the QuickSpecs for Technical Specifications and additional information:	
http://h18000.www1.hp.com/products/quickspecs/12616_div/12616_div.html (Smart Array P800 Controller)	
http://h18000.www1.hp.com/products/quickspecs/13203_div/13203_div.html (Smart Array P212 Controller)	
http://h18000.www1.hp.com/products/quickspecs/13202_div/13202_div.html (Smart Array P411 Controller)	
http://h18000.www1.hp.com/products/quickspecs/13558_div/13558_div.html (Smart Array P812 Controller)	
http://h18000.www1.hp.com/products/quickspecs/13200_div/13200_div.html (Smart Array Advanced Pack)	
SAS HBA	
HP SC08Ge Host Bus Adapter	488765-B21
NOTE: Please see the QuickSpecs for Technical Specifications and additional information:	
http://h18004.www1.hp.com/products/quickspecs/13082_div/13082_div.html (SC08Ge HBA)	
SCSI HBA	
HP SC11Xe Host Bus Adapter	412911-B21
NOTE: Recommended HBA for SCSI tape drive connect.	



Additional Options

NOTE: Please see the QuickSpecs for additional information:
http://h18000.www1.hp.com/products/quickspecs/12566_div/12566_div.html
(SC11Xe HBA)

HP Power Cords

NOTE: The HP ProLiant DL360 G6 ships with an IEC-IEC power cord used for rack mounting with Power Distribution Units (PDUs). For specific regional power cords purchase from the following.

Nema 5-15P to IEC320-C13	AF556A
Power Cord, Euro, 10A 250 V Straight (6 ft/1.83 m)	AF568A
Power Cord, UK, 10A 250 V Straight (6 ft/1.83 m)	AF570A
Power Cord, Danish, 10A 250 V Straight (6 ft/1.83 m)	AF566A
Power Cord, Swiss, 10A 250 V Straight (6 ft/1.83 m)	AF565A
Power Cord, Italian, 10A 250 V Straight (6 ft/1.83 m)	AF571A
Power Cord, South Africa, 10A 250 V Straight (8.2 ft/2.5 m)	AF567A

HP Backup & Recovery Software

HP Data Protector Express

HP Data Protector Express 4.0 SP1 Backup Server	BB117BA
HP Data Protector Express 4.0 SP1 for Microsoft Small Business Server	BB118BA
HP Data Protector Express Backup Server 4.0 SP1 Upgrade from Data Protector Express Single Server Edition	BB117BT

NOTE: One of these Data Protector Express base products is required. To see available options: <http://www.hp.com/go/dataprotectorexpress>

HP Tape Backup

NOTE: For the complete range of StorageWorks tape drives, autoloaders, libraries and media see: <http://www.hp.com/go/tape>. For hardware and software compatibility of HP StorageWorks tape backup products see: <http://www.hp.com/go/connect>.

HP StorageWorks DAT 320 USB Tape Drive in 1U USB Rack Kit	AP835A
HP StorageWorks DAT 320 SAS Internal Tape Drive	AJ830A
NOTE: For installation into 1U SAS rack kit (AE459B) or 3U SAS rack kit (AG576B). No peripheral bay available for installation into the server. Connection using HP Smart Array P212/Zero Memory Controller (462828-B21) recommended.	
HP StorageWorks LTO-3 Ultrium 920 SAS Internal Tape Drive	EH847A
NOTE: For installation into 1U SAS rack kit (AE459B) or 3U SAS rack kit (AG576B). No peripheral bay available for installation into the server. Connection using HP Smart Array P212/Zero Memory Controller (462828-B21) recommended.	
HP StorageWorks LTO-4 Ultrium 1760 Tape Drive in 1U SAS Rack Kit	EH946B
NOTE: Connection using HP Smart Array P212/Zero Memory Controller (462828-B21) recommended.	
HP StorageWorks LTO-5 Ultrium 3000 Tape Drive in 1U SAS Rack Kit	EJ014A
NOTE: Connection using HP Smart Array P212/Zero Memory Controller (462828-B21) recommended.	



Additional Options

HP StorageWorks 1/8 G2 LTO-4 Ultrium 1760 SAS Tape Autoloader NOTE: Requires HP 1U Tape Autoloader Rack Kit (AH166A) for rack installation. Connection using HP Smart Array P212/Zero Memory Controller (462828-B21) recommended.	AK377A
HP StorageWorks MSL2024 Tape Library with one LTO-4 Ultrium 1760 SAS Drive NOTE: Connection using HP Smart Array P212/Zero Memory Controller (462828-B21) recommended.	AK378A
HP StorageWorks MSL4048 Tape Library with two LTO-4 Ultrium 1760 SAS Drives NOTE: Connection using HP Smart Array P212/Zero Memory Controller (462828-B21) recommended.	AK380A

HP Disk Backup

NOTE: For the complete range of StorageWorks D2D Backup Systems see: <http://www.hp.com/go/d2d>. For the complete range of StorageWorks RDX drives and media see: <http://www.hp.com/go/rdx>. For hardware and software compatibility of HP StorageWorks disk backup products see: <http://www.hp.com/go/connect>.

HP StorageWorks D2D Backup Systems with Backup Data Deduplication

HP StorageWorks D2D2502i Backup System NOTE: 1.5TB of useable network disk backup capacity. Network connected appliance with connectivity using the iSCSI protocol. If the server requires a hardware iSCSI initiator, the QLogic QLA4050 Host Bus Adapter is recommended.	EJ001A
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HP StorageWorks D2D2503i Backup System NOTE: 2.25TB of useable network disk backup capacity. Network connected appliance with connectivity using the iSCSI protocol. If the server requires a hardware iSCSI initiator, the QLogic QLA4050 Host Bus Adapter is recommended.	EH945A
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HP StorageWorks D2D4004i Backup System NOTE: 3.0TB (expandable to 7.5TB) of useable network disk backup capacity. Network connected appliance with connectivity using the iSCSI protocol. If the server requires a hardware iSCSI initiator, the QLogic QLA4050 Host Bus Adapter is recommended.	EH938A
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HP StorageWorks D2D4112fc Backup System NOTE: 9.0TB (expandable to 18.0TB) of useable network disk backup capacity. Fibre Channel SAN connected appliance. Direct server attach is not supported, requires connection via SAN fabric. See http://www.hp.com/go/connect for supported Fibre Channel Host Bus Adapters.	EH993A
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HP StorageWorks RDX Removable Disk Backup Systems USB

HP StorageWorks RDX320 Internal Removable Disk Backup System NOTE: For installation into 1U USB Rack-Mount Kit (A8007A). No peripheral bay available for drive installation into the server. 320GB of disk capacity per data cartridge.	AJ767A
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HP StorageWorks RDX500 Internal Removable Disk Backup System NOTE: For installation into 1U USB Rack-Mount Kit (A8007A). No peripheral bay available for drive installation into the server. 500GB of disk capacity per data cartridge.	AJ934A
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HP StorageWorks RDX750 Internal Removable Disk Backup System NOTE: For installation into 1U USB Rack-Mount Kit (A8007A). No peripheral bay available for drive installation into the server. 750GB of disk capacity per data cartridge.	AW577A
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Additional Options

HP StorageWorks Options

StorageWorks Fibre Channel HBA

NOTE: The following is a list of all Fibre Channel Host Bus Adapters for Windows and Linux. For detailed compatibility information please see:

<http://h18006.www1.hp.com/storage/saninfrastructure/hba.html>

Brocade Fibre Channel HBAs

HP StorageWorks 81B PCI-e FC HBA Single Port AP769A

HP StorageWorks 82B PCI-e FC HBA Dual Port AP770A

HP StorageWorks 41B 4Gb PCI-e FC HBA AP767A

HP StorageWorks 42B 4Gb Dual-Port PCI-e FC HBA AP768A

Emulex Fibre Channel HBAs

HP StorageWorks 81E PCI-e FC HBA Single Port AJ762A

HP StorageWorks 82E PCI-e FC HBA Dual Port AJ763A

HP StorageWorks FC2142 4Gb PCI-e HBA A8002A

HP StorageWorks FC2242 Dual Channel 4Gb PCI-e HBA A8003A

QLogic Fibre Channel HBAs

HP StorageWorks 81Q PCI-e FC HBA Single Port AK344A

HP StorageWorks 82Q PCI-e FC HBA Dual Port AJ764A

HP StorageWorks FC1142 4Gb PCI-e HBA AE311A

HP StorageWorks FC1242 Dual Channel 4Gb PCI-e HBA AE312A

StorageWorks SCSI HBA

HP U320e SCSI Host Bus Adapter AH627A

NOTE: Recommended HBA for MSL SCSI Tape Library connect.

StorageWorks Converged Network Adapter

HP CN1000E 2P Converged Network Adapter AW520A

HP Disk Storage Systems

MSA SAN Storage Arrays

HP StorageWorks 60 Modular Smart Array 418408-B21

NOTE: Supports 12 SFF drives, and SAS 3 Gb/s and SATA 1.5 Gb/s.

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

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

HP StorageWorks 70 Modular Smart Array 418408-B21

NOTE: Supports 25 SFF drives, and SAS 3 Gb/s and SATA 1.5 Gb/s.

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

http://h18000.www1.hp.com/products/quickspecs/12652_div/12652_div.html

HP 2012sa Single Controller Modular Smart Array AJ752A

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

http://h18000.www1.hp.com/products/quickspecs/13045_div/13045_div.html
(Worldwide)

Disk Enclosures



Additional Options

HP StorageWorks D2700 Disk Enclosure AJ941A
NOTE: Please see the QuickSpecs for additional options and configuration information at:
http://h18000.www1.hp.com/products/quickspecs/13404_div/13404_div.html
 (Worldwide)

HP Uninterruptible Power Systems

HP Rack-mountable UPS

HP R1500 G2 UPS

HP, R1.5kVA UPS, 1U, NA AF419A
 HP, R1.5kVA UPS, 1U, INTL AF418A
 HP, R1.5kVA UPS, 1U, JPN/TW AF421A

NOTE: Please see the QuickSpecs for additional information:
http://h18000.www1.hp.com/products/quickspecs/12507_div/12507_div.html

HP Rack-Mountable R5500 UPS

HP R5500 VA UPS, INTL AF416A
 HP R5500 VA UPS, NA/JPN AF426A

NOTE: Please see the QuickSpecs for additional information:
http://h18000.www1.hp.com/products/quickspecs/13129_div/13129_div.html
NOTE: For additional information on HP Uninterruptible Power Systems please go to:
www.hp.com/servers/rackups.
NOTE: For additional information on sizing your server, please reference:
<http://www.upssizer.com>.

HP Power Distribution Units

HP Monitored Power Distribution Unit: Half Rack Version

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

HP Monitored Power Distribution Unit: Full Rack Version

HP 8.6 kVA S1324 Monitored PDU- single input, 3Ø, 24A (NA/JPN) AF504A
 HP 8.3 S1140 Monitored PDU- single input, 1Ø, 40A (NA/JPN) AF506A
 HP 11 kVA S1316 Monitored PDU- single input, 3Ø, 16A (INTL) AF508A
 HP 7.3 kVA S1132 Monitored PDU- single input, 1Ø, 32A (INTL) AF510A

NOTE: Please see the following QuickSpecs for additional information:
http://h18000.www1.hp.com/products/quickspecs/12118_div/12118_div.html
 (Worldwide)

Modular Power Distribution Units 1U/0U (Up to 32 outlets)

NOTE: 1U/0U mounting brackets shipped with the unit (optimized for 10000 and 9000 series racks).

HP Modular Power Distribution Units (mPDU), High Volt Model, 24A (200-240 VAC) (NA, Japan) 252663-D72
 8.3kVA Model - mPDU, 40A, High (power cord attached) (NA/JPN) 252663-D73
 HP Modular Power Distribution Units (mPDU), High Volt Model, 32A (200-240 VAC) (Int'l) 252663-B31



Additional Options

HP Modular Power Distribution Units (mPDU), High Volt Model, 16A (200-240 VAC) (WW) 252663-B24

NOTE: This PDU has a detachable input power cord and allows for adaptability to country specific power requirements.

NOTE: Please see the following QuickSpecs for additional options including shorter jumper cables and country specific power cords:
http://h18000.www1.hp.com/products/quickspecs/11041_div/11041_div.html
(Worldwide)

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

HP Rack Series

HP Rack 10000 G2 Series (Carbon/Graphite Metallic)

10642 G2 (42U) Rack Cabinet - Pallet AF001A

10642 G2 (42U) Rack Cabinet - Shock Pallet AF002A

NOTE: It is mandatory to use a shock pallet when shipping racks with equipment installed.

NOTE: Please see the QuickSpecs for additional information:
http://h18000.www1.hp.com/products/quickspecs/12402_div/12402_div.html
(Worldwide)

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

HP Rack Options

HP Server Console Switches

HP Server console switch 0x2x8 AF616A

HP Server console switch 0x2x16 AF617A

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/11834_div/11834_div.html
(Worldwide)

HP Server Console Switch G2 with Virtual Media & CAC

0x2x16 KVM Server Console G2 Switch with Virtual Media and CAC AF618A

0x2x32 KVM Server Console G2 Switch with Virtual Media and CAC AF619A

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/13475_div/13475_div.html
(Worldwide)

HP IP Console Switch G2 with Virtual Media & CAC

1x1Ex8 KVM IP Console Switch G2 with Virtual Media and CAC AF620A

2x1Ex16 KVM IP Console Switch G2 with Virtual Media and CAC AF621A

4x1Ex32 KVM IP Console Switch G2 with Virtual Media and CAC AF622A

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/13474_div/13474_div.html
(Worldwide)

Rack Kits



Additional Options

1U Cable Management Arm 365403-B21
NOTE: Package contains two cable management arms.

HP USB and SD Options HP USB 2-Button Optical Scroll Mouse (Carbonite/Silver) DC172B
 HP USB 04 Standard Keyboard DT528A#ABA
 HP 4GB SD Flash Media Kit 580387-B21
NOTE: Blank SD media device is supported for use with VMware and Citrix. SD media must be installed in the internal slot of the ProLiant server. Learn more at: <http://www.hp.com/go/proliantvirtualization>.
 HP 2GB USB Flash Media Drive Key 608447-B21
NOTE: HP qualified blank USB key for use with HP ProLiant servers that support the VMware virtualization environment and other HP value-add software like SmartStart. HP recommends this industry standard USB flash device for use with VMware ESXi. USB device must be installed in the internal slot of the ProLiant server for use with VMware ESXi. Refer to **HP VMware Getting Started Guide** for installation instructions.

HP Care Pack Services **Hardware Services 4-Hour On-site Service**
 4-Hour On-site Service, 5-Day x 13-Hour Coverage, 3 Years, Electronic U4496E
 4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic U4497E
Hardware Services 6-Hour Call to Repair On-site Service
 6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic U4498E
Hardware Services Next Business Day On-Site Service
 Hardware Installation, Electronic U4506E
 Installation & Start-Up of a ProLiant server and Microsoft or Linux O/S per the Customer Description and/or Data Sheet. To be delivered on a scheduled basis 8am-5pm, M-F, excl. HP holidays, Electronic U4507E
Support Plus
 Onsite HW support, 8am-9pm, M-F, 4hr response and Microsoft O/S SW Tech support offsite, onsite at HP's discretion, 8am-9pm, M-F 2hr response time excl. HP holidays, Electronic U4508E
Support Plus 24
 Onsite HW support 24x7, 4hr response and Microsoft O/S SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays, Electronic U4509E
 Onsite HW support 24x7, 4hr response and SuSE Linux SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays, Electronic U6310E
NOTE: For more information, customer/resellers can contact: <http://www.hp.com/services/carepack>.



Memory

NOTE: Memory configurations listed do not apply to "Factory Integrated Models".

DDR3 memory population guidelines

For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool:

www.hp.com/go/ddr3memory-configurator

Some DIMM installation guidelines are summarized below:

- For servers with eighteen (18) memory slots:
 - There are three (3) channels per processor; six (6) channels per server
 - There are three (3) DIMM slots for each memory channel; eighteen (18) total slots
 - Memory channel 1 consists of the three (3) DIMMs that are closest to the processor
 - Memory channel 3 consists of the three (3) DIMMs that are furthest from the processor
- DIMM slots that are white should be populated first
- Do not mix Unbuffered memory (UDIMMs) with Registered memory (RDIMMs)
- Do not install DIMMs if the corresponding processor is not installed
- If only one processor is installed in a 2CPU system, only half of the DIMM slots are available
- To maximize performance, balance the total memory capacity between all installed processors
- It is not required, but it is recommended to load the channels similarly if possible
- You can only have up to eight (8) ranks installed per channel
- You can only install two quad-rank DIMMs per channel
- You can only install two UDIMMs per channel; if available, the third slot in the channel must remain empty
- Populate DIMMs from heaviest load (quad-rank) to lightest load (single-rank) within a channel
- Heaviest load (DIMM with most ranks) within a channel goes furthest from the chipset
- For memory mirroring mode, channel 3 must be unpopulated. Channels 1 and 2 are populated identically
- For lock-step mode, channel 3 must be unpopulated. DIMMs in channels 1 and 2 will be installed in pairs. The paired slots will be 1,4; 2,5; 3,6 on a 3DPC system or 1,4; 2,5; on a 2DPC system
- No mixing DIMM voltage; all DIMMs must be the same voltage

DIMM Type ->	Registered Dimms (RDIMMs)						Unbuffered with ECC DIMMs (UDIMMs)	
	Dual Rank (2R)				Quad Rank (4R)		Single Rank (1R)	Dual Rank (2R)
DIMM Rank ->	2GB	4GB	8GB	8GB	4GB	16GB	1GB	2GB
DIMM Capacity ->	1333	1333	1333	1066	1066	1066	1333	1333
DIMM Native Speed (MHz)								
->								
SLOTS THAT CAN BE POPULATED								
9 slot servers	9	9	9	9	6	6	6	6
12 slot servers	12	12	12	12	12	12	12	12
16 slot servers	16	16	16	16	12	12	12	12
18 slot servers	18	18	18	18	12	12	12	12
MAXIMUM CAPACITY (GB)								
9 slot servers	18	36	72	72	24	96	6	12
12 slot servers	24	48	96	96	48	192	12	24
16 slot servers	32	64	128	128	48	192	12	24
18 slot servers	36	72	144	144	48	192	12	24



Memory

POPULATED DIMM SPEED (MHz)								
1 DIMM Per Channel	1333	1333	1333	1066	1066	1066	1333	1333
2 DIMM Per Channel	1333*	1333*	1333*	1066	800	800	1333*	1333*
3 DIMM Per Channel	800	800	800	800	n/a	n/a	n/a	n/a

* - supported with ROM update via ROM Based Setup Utility (RBSU). UDIMM support is only on 12-slot servers.

NOTES:

- Mixing DIMM speeds is allowed, but the system processor speed rules always override the DIMM capabilities
- If you do mix DIMM speeds, the memory bus will default to the minimum clock rate of all DIMMs in the system - even if the slower DIMM is on the other processor
- If you install 1x 1066MHz DIMM in channel 1 and 1x 1333MHz DIMM in channel 2, you still run at 1066MHz
- If you install 1x 1066MHz DIMM in channel 1 and 5x 1333MHz DIMMs with 1 DIMM Per Channel (DPC) in each of the other channels, you run at 1066MHz
- If you install 3DPC in one channel (if applicable) and 1DPC in all other channels, you run at 800MHz
- 95 Watt CPU's are required for 1333MHz DIMM speeds. All other CPU's are capable of up to 1066MHz
- References to the above MHz speeds are for the various speeds of DDR3 DIMMs; 1333 refers to DDR3-1333, etc.

DIMM slot and configuration diagrams

Basic memory slot & population diagram

- Population order; start with "A" first, "B" second, "C" third, etc.

18 DIMM SLOTS (9 per CPU node)					
	CPU1		CPU2		
	slot #	population order	slot #	population order	
Chnl 1	1	G	1	G	Chnl 1
	2	D	2	D	
	3	A	3	A	
Chnl 2	4	H	4	H	Chnl 2
	5	E	5	E	
	6	B	6	B	
Chnl 3	7	I	7	I	Chnl 3
	8	F	8	F	
	9	C	9	C	

Standard memory configuration (1 CPU model)

- 6GB, consisting of three (3) 2GB dual-rank PC3-10600 RDIMMs



Memory

	CPU1		CPU2		
	slot #	population order	slot #	population order	
Chnl 1	1	G; empty	1	G; empty	Chnl 1
	2	D; empty	2	D; empty	
	3	A; 2GB DIMM	3	A; empty	
Chnl 2	4	H; empty	4	H; empty	Chnl 2
	5	E; empty	5	E; empty	
	6	B; 2GB DIMM	6	B; empty	
Chnl 3	7	I; empty	7	I; empty	Chnl 3
	8	F; empty	8	F; empty	
	9	C; 2GB DIMM	9	C; empty	

Standard memory plus optional memory (1 CPU model)

- 54GB, consisting of three (3) 2GB RDIMMs plus six (6) 8GB RDIMMs
 - 3x 2GB dual-rank PC3-10600 RDIMMs
 - 6x 8GB dual-rank PC3-8500 RDIMMs

	CPU1		CPU2		
	slot #	population order	slot #	population order	
Chnl 1	1	G; 8GB DIMM	1	G; empty	Chnl 1
	2	D; 8GB DIMM	2	D; empty	
	3	A; 2GB DIMM	3	A; empty	
Chnl 2	4	H; 8GB DIMM	4	H; empty	Chnl 2
	5	E; 8GB DIMM	5	E; empty	
	6	B; 2GB DIMM	6	B; empty	
Chnl 3	7	I; 8GB DIMM	7	I; empty	Chnl 3
	8	F; 8GB DIMM	8	F; empty	
	9	C; 2GB DIMM	9	C; empty	

Standard memory replaced with optional memory (1 CPU model) RDIMM maximum configuration

- 72GB, consisting of nine (9) 8GB dual-rank PC3-8500 RDIMMs



Memory

	CPU1		CPU2		
	slot #	population order	slot #	population order	
Chnl 1	1	G; 8GB DIMM	1	G; empty	Chnl 1
	2	D; 8GB DIMM	2	D; empty	
	3	A; 8GB DIMM	3	A; empty	
Chnl 2	4	H; 8GB DIMM	4	H; empty	Chnl 2
	5	E; 8GB DIMM	5	E; empty	
	6	B; 8GB DIMM	6	B; empty	
Chnl 3	7	I; 8GB DIMM	7	I; empty	Chnl 3
	8	F; 8GB DIMM	8	F; empty	

UDIMM maximum configuration (1 CPU model)

- 12GB, consisting of six (6) 2GB dual-rank PC3-10600 UDIMMs

	CPU1		CPU2		
	slot #	population order	slot #	population order	
Chnl 1	1	G; empty	1	G; empty	Chnl 1
	2	D; 2GB DIMM	2	D; empty	
	3	A; 2GB DIMM	3	A; empty	
Chnl 2	4	H; empty	4	H; empty	Chnl 2
	5	E; 2GB DIMM	5	E; empty	
	6	B; 2GB DIMM	6	B; empty	
Chnl 3	7	I; empty	7	I; empty	Chnl 3
	8	F; 2GB DIMM	8	F; empty	
	9	C; 2GB DIMM	9	C; empty	

Standard memory replaced with optional memory (2 CPU model)

RDIMM maximum configuration

- 192GB, consisting of twelve (12) 16GB quad-rank PC3-8500 RDIMMs



Memory

	CPU1		CPU2		
	slot #	population order	slot #	population order	
Chnl 1	1	G; empty	1	G; empty	Chnl 1
	2	D; 16GB DIMM	2	D; 16GB DIMM	
	3	A; 16GB DIMM	3	A; 16GB DIMM	
Chnl 2	4	H; empty	4	H; empty	Chnl 2
	5	E; 16GB DIMM	5	E; 16GB DIMM	
	6	B; 16GB DIMM	6	B; 16GB DIMM	
Chnl 3	7	I; empty	7	I; empty	Chnl 3
	8	F; 16GB DIMM	8	F; 16GB DIMM	
	9	C; 16GB DIMM	9	C; 16GB DIMM	

UDIMM maximum configuration (2 CPU model)

- 24GB, consisting of twelve (12) 2GB dual-rank PC3-10600 UDIMMs

	CPU1		CPU2		
	slot #	population order	slot #	population order	
Chnl 1	1	G; empty	1	G; empty	Chnl 1
	2	D; 2GB DIMM	2	D; 2GB DIMM	
	3	A; 2GB DIMM	3	A; 2GB DIMM	
Chnl 2	4	H; empty	4	H; empty	Chnl 2
	5	E; 2GB DIMM	5	E; 2GB DIMM	
	6	B; 2GB DIMM	6	B; 2GB DIMM	
Chnl 3	7	I; empty	7	I; empty	Chnl 3
	8	F; 2GB DIMM	8	F; 2GB DIMM	
	9	C; 2GB DIMM	9	C; 2GB DIMM	

NOTE: Capacity references are rounded to the common Gigabyte values.

- 1GB = 1024MB
- 2GB = 2048MB
- 4GB = 4096MB
- 8GB = 8192MB
- 16GB = 16384MB



Memory

Following are memory options available from HP:

HP Memory

Registered DIMMs (RDIMMs)

HP 2GB 2Rx8 PC3-10600R-9 Kit	500656-B21
HP 4GB 2Rx4 PC3-10600R-9 Kit	500658-B21
HP 4GB 4Rx8 PC3-8500R-7 LP Kit	500660-B21
HP 8GB 2Rx4 PC3-10600R-9 Kit	500662-B21
HP 8GB 2Rx4 PC3-8500R-7 Kit	516423-B21
HP 16GB 4Rx4 PC3-8500R-7 Kit	500666-B21

Unbuffered with ECC DIMMs (UDIMMs)

HP 1GB 1Rx8 PC3-10600E-9 Kit	500668-B21
HP 2GB 2Rx8 PC3-10600E-9 Kit	500670-B21

NOTE: All DDR3 memory option kits consist of one DIMM per kit. For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool: www.hp.com/go/ddr3memory-configurator.

NOTE: Kits described as LP include Low Power DIMMs. For more information on ProLiant Energy Efficient Features, see: www.hp.com/go/proliant-energy-efficient



Storage

1-8 8 x SFF SAS Hot Pluggable Hard Drive Bays. Optical Media Bay not available for this configuration



1-4 4 x SFF SAS Hot Pluggable Hard Drives



A Optical Media Bay

5, 6 Blanks (HDD Bays will not function)

Drive Support

	Quantity Supported	Position Supported	Controller
Removable Media			
HP DL360 SL 12.7mm SATA DVD-RW	1	Slim Line Bay	Integrated SATA
HP DL360 SL 12.7mm SATA DVD	1	Slim Line Bay	Integrated SATA

NOTE: DVD/Optical drive options supported on 4 hard drive models only.

Hard Drives

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

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

SAS Hot Plug SFF (2.5-inch) Enterprise (ENT) Drives

	Quantity Supported	Position Supported	Controller
300GB 6G SAS 10K DP	8	1-8	HP Smart Array P800/512 BBWC Controller
300GB 3G SAS 10K DP			HP Smart Array P212/Zero Memory Controller
146GB 6G SAS 15K DP			HP Smart Array P212/ 256 MB Controller



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146GB 3G SAS 15K DP
 146GB 6G SAS 10K DP
 146GB 3G SAS 10K DP
 72GB 6G SAS 15K DP
 72GB 3G SAS 15K DP

HP Smart Array P410i/Zero Memory Controller
 HP Smart Array P410i/256 MB Controller
 HP Smart Array P410i/512 MB BBWC Controller
 HP Smart Array P411/256 MB Controller
 HP Smart Array P411/512 MB BBWC Controller
 HP Smart Array P411/512 MB FBWC Controller
 HP Smart Array P411/1G FBWC Controller
 HP Smart Array P812/1G Flash Backed Cache Controller

SAS Hot Plug SFF (2.5-inch) Midline (MDL) Drives

	Quantity Supported	Position Supported	Controller
500GB 6G SAS 7.2K DP	8	1-8	HP Smart Array P800/512 BBWC Controller HP Smart Array P212/Zero Memory Controller HP Smart Array P212/ 256 MB Controller HP Smart Array P410i/Zero Memory Controller HP Smart Array P410i/256 MB Controller HP Smart Array P410i/512 MB BBWC Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P411/512 MB FBWC Controller HP Smart Array P411/1G FBWC Controller HP Smart Array P812/1G Flash Backed Cache Controller

SATA Hot Plug SFF (2.5-inch) Midline (MDL) Drives

	Quantity Supported	Position Supported	Controller
500GB 3G SATA 7.2K 160GB 3G SATA 7.2K	8	1-8	HP Smart Array P800/512 BBWC Controller HP Smart Array P212/Zero Memory Controller HP Smart Array P212/ 256 MB Controller HP Smart Array P410i/Zero Memory Controller HP Smart Array P410i/256 MB Controller HP Smart Array P410i/512 MB BBWC Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P411/512 MB FBWC Controller HP Smart Array P411/1G FBWC Controller HP Smart Array P812/1G Flash Backed Cache Controller

SATA Hot Plug SFF (2.5-inch) Entry (ETY) Drives

	Quantity Supported	Position Supported	Controller
250GB 3G SATA 5.4K 120GB 1.5G SATA 5.4K	8	1-8	HP Smart Array P800/512 BBWC Controller HP Smart Array P212/Zero Memory Controller HP Smart Array P212/ 256 MB Controller HP Smart Array P410i/Zero Memory Controller HP Smart Array P410i/256 MB Controller



Storage

HP Smart Array P410i/512 MB BBWC Controller
 HP Smart Array P411/256 MB Controller
 HP Smart Array P411/512 MB BBWC Controller
 HP Smart Array P411/512 MB FBWC Controller
 HP Smart Array P411/1G FBWC Controller
 HP Smart Array P812/1G Flash Backed Cache Controller

SATA Hot Plug Midline (MDL) Solid State Drives

	Quantity Supported	Position Supported	Controller
60GB 3.0G SATA SSD	8	1-8	HP Smart Array P212/Zero Memory Controller
120GB 3.0G SATA SSD			HP Smart Array P212/ 256 MB Controller
			HP Smart Array P410i/Zero Memory Controller
			HP Smart Array P410i/256 MB Controller
			HP Smart Array P410i/512 MB BBWC Controller
			HP Smart Array P411/256 MB Controller
			HP Smart Array P411/512 MB BBWC Controller
			HP Smart Array P411/512 MB FBWC Controller
			HP Smart Array P411/1G FBWC Controller
			HP Smart Array P812/1G Flash Backed Cache Controller

External Storage

	Quantity Supported	Position Supported	Host Controller or Adapter
60 Modular Smart Array	Up to 4	External	HP Smart Array P212/256 MB Controller
			Up to 8
			HP Smart Array P411/256 MB Controller
			HP Smart Array P411/512 MB BBWC Controller
			HP Smart Array P411/512 MB FBWC Controller
			HP Smart Array P411/1G FBWC Controller
70 Modular Smart Array	Up to 2	External	HP Smart Array P212/256 MB Controller
			Up to 4
			HP Smart Array P411/256 MB Controller
			HP Smart Array P411/512 MB BBWC Controller
			HP Smart Array P411/512 MB FBWC Controller
			HP Smart Array P411/1G FBWC Controller
HP 2000sa Modular Smart Array Controller	Up to 4	External	HP SC08Ge Host Bus Adapter
D2700 Disk Enclosure	Up to 2	External	HP Smart Array P212/256 MB Controller
			Up to 4
			HP Smart Array P411/512 MB BBWC Controller
			HP Smart Array P411/512 MB FBWC Controller
			HP Smart Array P411/1G FBWC Controller
		HP Smart Array P812/1G Flash Backed Cache Controller	



Storage

Tape and Disk Backup

NOTE: For the complete range of StorageWorks tape drives, autoloaders, libraries and media, including the internal fitting models, see: <http://www.hp.com/go/tape>. For the complete range of StorageWorks D2D Backup Systems see: <http://www.hp.com/go/d2d>. For the complete range of StorageWorks RDX drives and media see: <http://www.hp.com/go/rdx>. For hardware and software compatibility of HP StorageWorks disk and tape backup products see: <http://www.hp.com/go/connect>.

	Position Supported	Controller	Part Number
HP StorageWorks SCSI Tape Drives LTO-1 Ultrium 232 LTO-2 Ultrium 448 LTO-3 Ultrium 920 LTO-3 Ultrium 960 LTO4 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
		NOTE: Please check the full compatibility information at: http://www.hp.com/go/connect	
HP StorageWorks USB Tape Drives DAT 40 DAT 72 DAT 160 DAT 320 1U USB Rack-Mount Kit	External	USB 2.0 Port	N/A
HP StorageWorks SAS Tape Drives DAT 160 DAT 320 LTO-2 Ultrium 448 LTO-3 Ultrium 920 LTO-4 Ultrium 1760 LTO-4 Ultrium 1840 LTO-5 Ultrium 3000 LTO-5 Ultrium 3280 1U Rack-Mount Kit 3U Rack-Mount Kit	External	HP Smart Array P212/Zero Memory Controller	462828-B21
HP StorageWorks SCSI Tape Autoloaders DAT 72x10 Autoloader 1/8 G2 Autoloader	External	HP SC11Xe Host Bus Adapter	412911-B21
		NOTE: Please check the full compatibility information at: http://www.hp.com/go/connect	



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HP StorageWorks SCSI Tape Libraries, External MSL2024 MSL4048 MSL8096 MSL6000	External	HP U320e SCSI Dual Channel Controller	AH627A
		NOTE: Please check the full compatibility information at: http://www.hp.com/go/connect	
HP StorageWorks SAS Tape Autoloaders and Libraries 1/8 G2 Autoloader MSL2024 MSL4048 MSL8096	External	HP Smart Array P212/Zero Memory Controller	462828-B21
		NOTE: Please check the full compatibility information at: http://www.hp.com/go/connect	
HP StorageWorks Fibre Channel Tape Libraries MSL2024 MSL4048 MSL8096 MSL6000	External	Please consult the EBS connectivity matrix at: http://www.hp.com/go/ebs for detailed connectivity information.	N/A
HP StorageWorks USB RDX Removable Disk Backup System RDX160 RDX320 RDX500 RDX750	External	USB 2.0 Port	N/A
HP StorageWorks D2D Backup Systems, iSCSI D2D2500i D2D4000i	External	Embedded Network Controller. If the server requires a hardware iSCSI initiator, the QLogic QLA4050 Host Bus Adapter is recommended.	
HP StorageWorks D2D Backup Systems, Fibre Channel D2D4000fc	External	Direct server attach is not supported, requires connection via SAN fabric. See: http://www.hp.com/go/connect	N/A



Power Specifications

HP 460W Power Supply Part Number - AC 460W PSU 80PLUS GOLD Rated	503296-B21						
Input Voltage Range (Vrms)	100 to 240						
Frequency Range (Nominal) (Hz)	50/60						
Nominal Input Voltage (Vrms)	100	120	200	208	220	230	240
Maximum Rated Output Wattage	460	460	460	460	460	460	460
Nominal Input Current (A rms)	5.5	4.5	2.6	2.5	2.4	2.3	2.2
Max Rated Input Wattage Rating (Watts)	526	520	505	505	503	503	503
Max. Rated VA (Volt-Amp)	548	542	527	527	524	524	524
Efficiency (%) at Max. Rated Output Wattage	87.5	88.5	91	91	91.5	91.5	91.5
Power Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Leakage Current (mA)	0.42	0.50	0.83	0.87	0.92	0.96	1.00
Max. Inrush Current (A peak)	30	30	30	30	30	30	30
Max. Inrush Current duration (mS)	20	20	20	20	20	20	20
Maximum British Thermal Unit Rating (BTU-Hr)	1794	1773	1725	1725	1715	1715	1715

Optional Power Supplies

HP 750W Power Supply Part Number - AC 750W PSU 80PLUS GOLD Rated	512327-B21						
Input Voltage Range (Vrms)	100 to 240						
Frequency Range (Nominal) (Hz)	50/60						
Nominal Input Voltage (Vrms)	100	120	200	208	220	230	240
Maximum Rated Output Wattage	750	750	750	750	750	750	750
Nominal Input Current (A rms)	8.9	7.4	4.3	4.1	3.9	3.7	3.6
Max Rated Input Wattage Rating (Watts)	857	847	824	825	820	820	820
Max. Rated VA (Volt-Amp)	894	884	859	859	854	854	854
Efficiency (%) at Max. Rated Output Wattage	87.5	88.5	91	91	91.5	91.5	91.5
Power Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Leakage Current (mA)	0.42	0.50	0.83	0.87	0.92	0.96	1.00
Max. Inrush Current (A peak)	30	30	30	30	30	30	30
Max. Inrush Current duration (mS)	20	20	20	20	20	20	20
Maximum British Thermal Unit Rating (BTU-Hr)	2925	2892	2812	2812	2797	2797	2797



Power Specifications

HP 1200W Power Supply Part Number - AC1200W PSU 80PLUS SILVER Rated	500172-B21						
Input Voltage Range (Vrms)	100 to 240						
Frequency Range (Nominal) (Hz)	50/60						
Nominal Input Voltage (Vrms)	100	120	200	208	220	230	240
Maximum Rated Output Wattage	800	900	1200	1200	1200	1200	1200
Nominal Input Current (A rms)	9.7	9.0	7.0	6.8	6.4	9.1	5.9
Max Rated Input Wattage Rating (Watts)	930	1034	1348	1348	1348	1348	1348
Max. Rated VA (Volt-Amp)	970	1079	1406	1406	1406	1406	1406
Efficiency (%) at Max. Rated Output Wattage	86	87	89	89	89	89	89
Power Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Leakage Current (mA)	0.42	0.50	0.83	0.87	0.92	0.96	1.00
Max. Inrush Current (A peak)	30	30	30	30	30	30	30
Max. Inrush Current duration (mS)	20	20	20	20	20	20	20
Maximum British Thermal Unit Rating (BTU-Hr)	3174	3530	4600	4600	4600	4600	4600

HP 1200W PSU 48VDC Input Part Number	437573-B21		
Input Voltage Range (DCV)	36-72		
Frequency Range (Nominal) (Hz)	DC		
Nominal Input Voltage (Vrms)	36	48	72
Maximum Rated Output Wattage	1200	1200	1200
Nominal Input Current (A rms)	38	28	19
Max Rated Input Wattage Rating (Watts)	1380	1350	1365
Max. Rated VA (Volt-Amp)	1380	1350	1365
Efficiency (%) at Max. Rated Output Wattage	87	89	88
Power Factor	N/A	N/A	N/A
Leakage Current (mA)	N/A	N/A	N/A
Max. Inrush Current (A peak)	20	25	35
Max. Inrush Current duration (mS)	1	1	3
Maximum British Thermal Unit Rating (BTU-Hr)	4713	4610	4662

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



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 (for Standard 460W PSU, see power specifications tables for detail on 460W, 750W and 1200W power supplies)	Rated Line Voltage	100 to 240 VAC
		Rated Input Current	4.5 Amps (at 120VAC) to 2.2 Amps (at 240 VAC)
		Rated Input Frequency	50 to 60 Hz
	BTU Rating	Maximum	1773 BTU / hr (at 120 VAC), 1715 (at 240 VAC)
	Power Specifications	To review typical system power ratings use the HP Power Advisor which is available via the online tool located at URL: www.hp.com/go/proliant-energy-efficient or www.hp.com/go/hppoweradvisor	
		- Click on the system of interest. Example: DL360 G6 - Follow the instructions of the next screens.	
	Power Supply Output (per power supply)	Rated Steady-State Power	460 W (at 100 VAC), 460 W (at 200 VAC)
		Maximum Peak Power	460 W (at 100 VAC), 460 W (at 200 VAC)
		NOTE: See Power Supply Specifications tables for complete details on 460W PSU and optional 750W and 1200W Power Supply Options.	
	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 70° C (-40° to 158° F). 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.



Technical Specifications

	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. 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 (Single Processor, Note 1)	
	L WAd	4.3 B Average Bystander
	L pAm	27 dBA
	Operating	
	L WAd	4.8 B Average Bystander
	L pAm	32 dBA
	Idle (Dual Processors, Note 2)	
	L WAd	4.9 B Average Bystander
	L pAm	33 dBA
	Operating	
	L WAd	5.4 B Average Bystander
	L pAm	38 dBA
	NOTES:	
	Note 1) Configuration tested included an Intel X5520 quad-core 2.27GHz processor, one 72GB SAS HDD, four 250GB 5400 rpm SATA hard drives, six system fans, three 4GB(2x2GB) DIMM's, and one power supply (1P SKU).	
	Note 2) Configuration tested included two Intel X5520 quad-core 2.27GHz processors, one 72GB SAS HDD, four 250GB 5400 rpm SATA hard drives, eight system fans, six 4GB(2x2GB) DIMM's, and one power supply (2P SKU).	
	Note 3) Values are subject to change without notification and are for reference only.	
	Note 4) Performance of system, options, and ancillary equipment will vary depending on the system configuration.	
	Note 5) Levels presented do not account for non-Hewlett-Packard installed hardware.	
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



Technical Specifications

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 P410i Controller	Dimensions	Embedded
	Disk Drive and Enclosure Interface - Transfer rate	6Gb/s SAS (Serial Attached SCSI) 3Gb/s SATA (Serial ATA)
	SAS Connectors	2 internal (Mini-SAS) x8 wide port connectors
	Cache Memory Speed	DDR2-800MHz with 40 or 72-bit wide bus provides up to 4.2 GB/s maximum bandwidth.
	Server Interface	x8 5G PCIe 2.0 provides 4GB/s maximum bandwidth
	SAS Speed	x8 3G SAS provides 2.4GB/s maximum bandwidth
	Cache Memory	40-bit 256MB ECC protected cache (72-bit 512MB BBWC module upgrades available); transportable with battery-backed upgrade
	Logical Drives Supported	Up to 64 logical drives
	Maximum Logical Drive Capacity	Greater than 2TB
	Host Memory Addressing	64-bit, supporting greater than 4GB server memory space
	RAID Support	RAID 6, 6+0 (Advanced Data Guarding) NOTE: RAID 6, 6+0 can be enabled with either <ul style="list-style-type: none">• Minimum of 256 MB cache, Battery kit and Smart Array Advanced Pack License key option upgrades• Minimum of 512 MB BBWC and Smart Array Advanced Pack License key option upgrades RAID 5, 5+0 (Distributed Data Guarding) NOTE: The 256 MB is required to enable RAID 5, 5+0 support of the Smart Array P410i RAID 1+0 (Striping & Mirroring) RAID 0 (Striping)
	Upgradeable Firmware	Upgradeable Firmware with recovery ROM feature



Technical Specifications

Embedded NC382i Dual Port Multifunction Gigabit Server Adapter	Network Interface	10Base-T/100Base-TX/1000Base-TX	
	Compatibility	IEEE 802.3 10Base-T	
		IEEE 802.3ab 1000Base-T	
		IEEE 802.3u 100Base-TX	
		IEEE 802.3ad 1000Base-TX	
		IEEE 802.1p 100Base-TX	
		IEEE 802.1q 100Base-TX	
	Data Transfer Method	PCI Express, four lanes (x4)	
	Controller	BCM5709C	
	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	Two RJ-45		
Cable Support	10Base-T	Categories 3, 4 or 5 UTP; up to 328 ft (100 m)	
	100Base-TX	Category 5 or higher UTP; up to 328 ft (100 m)	
	1000Base-TX	Category 5 or higher UTP; up to 328 ft (100 m)	

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.



Technical Specifications

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

