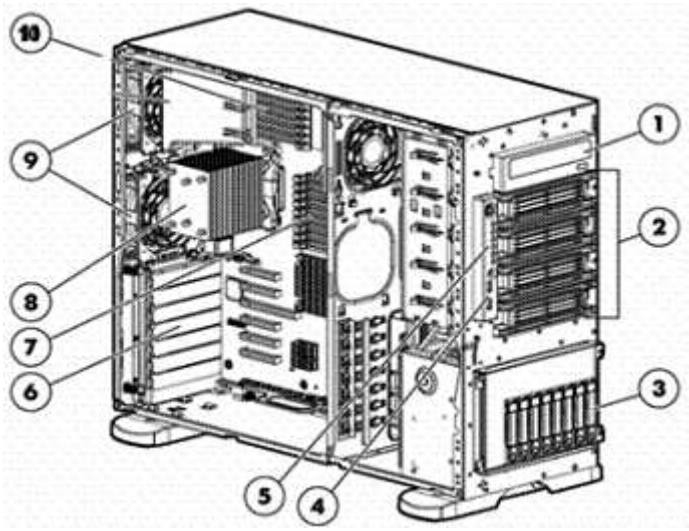
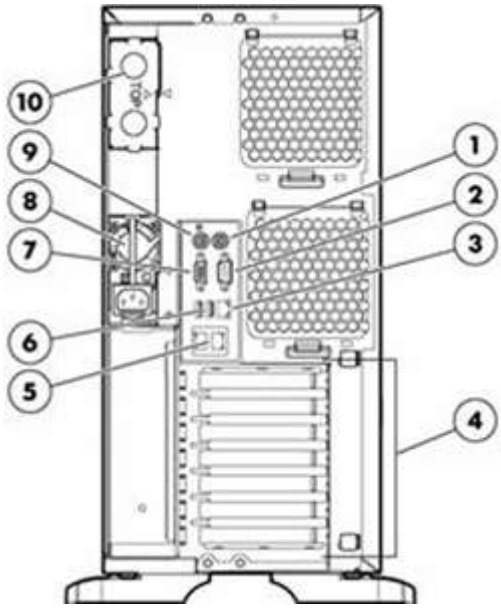
RETIRED: This document has been officially retired, and the base products listed herein are now considered obsolete and are no longer available for sale. Consequently, the information contained within may no longer be current. This document is provided exclusively for reference and informational purposes.

Overview

HP ProLiant ML350 Generation 6 (G6)

The HP ProLiant ML350 G6 is the best price-performance, dual-processor Tower server that delivers excellence with performance, expandability and availability. The G6 server has more memory capacity and HDD expandability than previous generations. It combines the latest Intel Xeon 5600 processors with QPI technology, best-in-class availability features, and unsurpassed flexibility in a system ideal for growing businesses and especially well suited to meet the needs of remote branch offices.





Front View:

1. SATA DVD ROM or DVD RW optical drive
2. Four (4) removable media bays
3. Eight (8) 2.5" (shown) or six (6) 3.5" SAS or SATA hot plug drive bays
4. Two (2) USB ports
5. LEDs: System power, Health, Power cap, NIC 1&2, UID
6. Six (6) expansion slots
7. Nine (9) DIMM slots (Processor 2): DDR3 Registered (RDIMM) or Unbuffered (UDIMM) memory
8. Processor heatsink
9. Three (3) system fans
10. Nine (9) DIMM slots (Processor 1): DDR3 Registered (RDIMM) or Unbuffered (UDIMM) memory

Rear View:

1. PS/2 mouse port
2. Serial port
3. Dedicated remote management port
4. Six (6) expansion slots
5. Two (2) network ports
6. Two (2) USB ports
7. Video port
8. Power supply bay 1
9. PS/2 keyboard port
10. Power supply bay 2

What's New

- Support for new HP Hard Drive.

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® X5675 (3.06GHz/6-core/12MB/95W, DDR3-1333, HT, Turbo 1/1/2/2/3/3) Processor Intel® Xeon® X5670 (2.93GHz/6-core/12MB/95W, DDR3-1333, HT, Turbo 1/1/2/2/3/3) Processor Intel® Xeon® X5660 (2.80GHz/6-core/12MB/95W, DDR3-1333, HT, Turbo 1/1/2/2/3/3) Processor Intel® Xeon® X5650 (2.66GHz/6-core/12MB/95W, DDR3-1333, HT, Turbo 1/1/2/2/3/3) Processor Intel® Xeon® E5649 (2.53GHz/6-core/12MB/80W, DDR3-1333, HT, Turbo 1/1/2/2/3/3) Processor Intel® Xeon® E5645 (2.40GHz/6-core/12MB/80W,DDR3-1333, HT, Turbo 1/1/2/2/3/3) Processor **Quad-Core Processors** Intel® Xeon® X5672 (3.20GHz/4-core/12MB/95W,DDR3-1333, HT, Turbo 1/1/2/2/3/3) Processor Intel® Xeon® E5620 (2.40GHz/4-core/12MB/80W, DDR3-1066, HT, Turbo) Processor Intel® Xeon® E5603 (1.60GHz/4-core/4MB/80W) Processor Intel® Xeon® X5570 (2.93GHz/4-core/8MB/95W, DDR3-1333, HT, Turbo 2/2/3/3) Processor Intel® Xeon® X5560 (2.80GHz/4-core/8MB/95W, DDR3-1333, HT, Turbo 2/2/3/3) Processor Intel® Xeon® X5550 (2.66GHz/4-core/8MB/95W, DDR3-1333, HT, Turbo 2/2/3/3) Processor Intel® Xeon® E5540 (2.53GHz/4-core/8MB/80W, DDR3-1066, HT, Turbo 1/1/2/2) Processor Intel® Xeon® E5607 (2.26GHz/4-core/8MB/80W, DDR3-1333, HT, Turbo 1/1/2/2/3/3) Processor Intel® Xeon® L5630 (2.13GHz/4-core/12MB/40W, DDR3-1066, HT, Turbo 1/1/2/2) Processor Intel® Xeon® L5520 (2.26GHz/4-core/8MB/60W, DDR3-1066, HT, Turbo 1/1/2/2) Processor Intel® Xeon® L5506 (2.13GHz/4-core/4MB/60W, DDR3-800) Processor Intel® Xeon® E5606 (2.13 GHz/4-core/8MB/80W,DDR3-1066, Turbo 1/1/2/2/3/3) Processor **Dual-Core Processors** Intel® Xeon® E5502 (1.86GHz/2-core/4MB/80W, DDR3-800) Processor **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 5600 and 5500 Series, the letter preceding the model number indicates the performance/wattage of the processor. "X" denotes High Performance/Wattage; "E" denotes Enterprise Performance/Wattage (Mainstream); and "L" denotes Lower Wattage. **NOTE:** Customers transitioning from 5500 series processors to 5600 series processors must include a third fan along with the two fans present on the server
Cache Memory One of the following depending on Model	12MB (1 x 12MB) Level 3 cache **NOTE:** For 5600 series processors (other than those indicated below) 8MB (1 x 8MB) Level 3 cache **NOTE:** For E5606/E5607/X5570/X5560/X5550/E5540/L5520 processors 4MB (1 x 4MB) Level 3 cache **NOTE:** For E5603/E5507/E5502/L5506 processors
Chipset	Intel® 5520 Chipset **NOTE:** For more information regarding Intel® chipsets, please see the following URL: http://www.intel.com/products/server/chipsets/.
Upgradeability	Upgradeable to two processors

Standard Features

NOTE: total 4, 8 or 12 cores

Memory Protection

Advanced ECC
Mirroring mode
Lock-step mode
Online Spare (Requires X5600 or E5600 processor family)

Memory
One of the following depending on model

Type	DDR3 Registered (RDIMM) or Unbuffered (UDIMM)
Standard (Performance Models)	12 GB (6 x 2 GB) RDIMM
Standard (Base Models)	6 GB (3 x 2 GB) RDIMM
Standard (Entry Models)	4 GB (2 x 2 GB) RDIMM
Standard (Entry Models)	4 GB (1 x 4 GB) RDIMM
Maximum (RDIMM)	288 GB (18 x 16 GB) RDIMM
Maximum (UDIMM)	48 GB (12 x 4 GB)

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: The 16 GB memory module is a quad ranked 800MHz DDR3 memory.

Network Controller

Embedded NC326i PCI Express Dual Port Gigabit Server Adapter

Expansion Slots

Expansion Slot #	Technology	Bus Width	Connector Width	Bus Number	Form Factor	Notes
6	PCI Express Gen2	x4	x8	5	Standard Height/Length	
5	PCI Express Gen2	x4	x8	8	Standard Height/Length	
4	PCI Express Gen2	x8	x16	11	Standard Height/Length	
3	PCI Express Gen2	x8	x8	14	Standard Height/Length	
2	PCI Express Gen2	x4	x8	17	Standard Height/Length	
1	PCI Express Gen2	x4	x8	20	Standard Height/Length	

NOTE: Bus number - 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: Six total expansion slots. One PCI-Express x16 Gen2 (x8 speed); One PCI-Express x8 Gen2 (x8 speed); Four PCI-Express x8 Gen2 (x4 speed). Optional PCI-X Expander provides additional two 64-bit/100-MHz PCI-X slots by using a single PCI Express slot.

Storage Controller
One of the following depending on model

Entry Models	Embedded HP Smart Array P410i/Zero Memory Controller (RAID 0/1/1+0)
Base Models	Embedded HP Smart Array P410i/256MB Controller (RAID 0/1/1+0/5/5+0)
	Embedded HP Smart Array P410i/512 MB BBWC Controller (RAID 0/1/1+0/5/5+0)
Performance Models	Embedded HP Smart Array P410i/1GB FBWC Controller

Standard Features

	Available upgrades: 256MB, 512MB with BBWC, Battery kit upgrade (for BBWC), and Smart Array Advanced Pack (SAAP)		
Internal Storage Devices	Diskette Drive	None included standard (not supported)	
	Optical Drives	HP Half-Height SATA DVD-ROM Optical Drive	
	Hard Drives	None standard	
Maximum Internal Storage One of the following depending on model	Hot Plug LFF SAS	24TB	8 x 3TB
	Hot Plug LFF SATA	24TB	8 x 3TB
	Hot Plug SFF SAS	16TB	16 x 1TB
	Hot Plug SFF SATA	16TB	16 x 1TB
	Hot Plug SFF SSD	6.4TB	16 x 400GB
Interfaces	Serial	1	
	Network RJ-45	3 (1 dedicated for HP Integrated Lights-Out 2 (iLO2)	
	Keyboard	1	
	Pointing Device (Mouse)	1	
	Graphics	1	
	SD slot	1 (internal)	
	USB 2.0 Ports	6 (2 front, 2 rear, 2 internal)	
Industry Standard Compliance	ACPI V2.0 Compliant PCI-Express Gen2 PXE Support WOL Support PCI-X 1.0a Compliant Novell Certified Microsoft® Logo certifications USB 2.0 Support SMBIOS 2.6.1		
Server Power Cords	ProLiant ML servers in a rack-mount configuration no longer ship standard with NEMA power cords that allow connection to 110V US wall outlets in a home or office. These servers are primarily connected to PDU's in data center racks so they now ship standard with only a PDU power cord (416151-B21). If a user wishes to power a ProLiant ML rack-mount server using a 110V receptacle (NEMA-15), the NEMA power cord must be ordered separately. The 12' cord (AF556A) or 6' cord (187335-001) can be purchased online at HP.COM. In a tower configuration, the servers ship standard with a 6' country specific NEMA power cord. If customers require a local power cord, they can check the power cord matrix for the appropriate country specific sku. Please see the following power cord matrix: http://www.hp.com/go/powercordmatrix.		
Power Supply One of the following depending on Model	HP 750W CS HE Gold Power Supply (standard on some models) HP 460W CS HE Gold Power Supply (standard on some models)		
Common Slot Power Supplies	HP has a new design for ProLiant power- the new 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. The new HP Common Slot power supplies are designed for the highest power efficiency without degrading performance of the ProLiant server. Power Supplies have efficiency ratings up to 92%. There are three		

Standard Features

	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, please use the HP Power Advisor at: www.hp.com/go/proliant-energy-efficient or www.hp.com/go/hppoweradvisor. All HP Common Slot power sources are UL, CE Mark Compliant, Hot Plug and Redundant. It is highly recommended that you use the HP Power Advisor in defining the "Right-Size" power supply for your needs. The HP ProLiant Common Slot Power supplies meet multiple Energy Efficiency Initiatives: Climate Savers Computing Initiative GOLD and ECOS Consulting 80PLUS GOLD for the 460w and 750w Power Supplies and Climate Savers Computing Initiative Silver, ECOS Consulting 80PLUS Silver for 1200w Power Supply. HP has also been working with the EPA on developing an ENERGY STAR? Computer Server specification and plans on offering models that meet the requirements when they are published. Please visit the ENERGY STAR website at www.energystar.gov for updates on the specification development process and approved platforms. The HP Power Advisor is located at: www.hp.com/go/proliant-energy-efficient or www.hp.com/go/hppoweradvisor
System Fans	3 system fans ship standard **NOTE:** Does not include power supply or processor heat sink fans. N+1 fan redundancy optional with redundant fan kit
Required Cabling	For required cabling information, refer to the HP ProLiant ML350 G6 cabling matrix at: http://www.hp.com/servers/proliantML350. **NOTE:** Please see the "Storage" section of this QuickSpecs for important information on controllers and cables required to support SAS or SATA hard drives as well as storage management software available for SATA hard drives.
Operating Systems and Virtualization Software Support for ProLiant Servers	Microsoft Windows Server Red Hat Enterprise Linux (RHEL) SUSE Linux Enterprise Server (SLES) NetWare **NOTE:** NetWare support on Intel Xeon 5500 family only. VMware HP Citrix Essentials for XenServer **NOTE:** For more information on HP's Certified and Supported ProLiant Servers for OS and Virtualization Software and latest listing of software drivers available for your server, please visit our Support Matrix at: http://www.hp.com/go/ossupport
Graphics	Integrated ATI RN50, 64MB video standard • 16 bit color: maximum resolution of 1600 x 1200 • 32 bit color: maximum resolution of 1280 x 1024 **NOTE:** Maximum resolution available via iLO remote console is 1280 x 1024.
Form Factor	Tower or Rack (5U) **NOTE:** Rack models (with a Tower to Rack conversion kit) support: • Square or round hole racks 24"- 36" deep, including HP Rack System /E and HP Systems • Telco racks with 3rd part option kit from Rack Solutions

Standard Features

http://www.racksolutions.com/hp

HP Insight Management	HP Insight Foundation	Managing the growing number of servers can be complex and expensive for your organization. IT managers need to address changing business needs with tools that meet the challenges of managing today's complex Datacenters. HP provides management solutions that are designed to simplify a server's installation, configuration and maintenance throughout the entire server lifecycle. This provides the customer with higher levels of operational efficiency and highly reliable systems: http://www.hp.com/go/foundation The foundation pack includes: • HP SmartStart • HP Management DVD • HP ProLiant Smart Update Firmware DVD **NOTE:** In an effort to support reducing our environmental impact, the HP Insight Foundation Suite for ProLiant 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.
	HP Integrated Lights-Out (iLO)	HP Integrated Lights-Out (iLO) simplifies server setup, health monitoring, power and thermal control, and lights-out remote administration of ProLiant ML, DL, and BL servers. HP iLO functions without additional software and can be accessed from any location via a web browser. HP iLO works hand-in-hand with HP Systems Insight Manager, Insight Control suites, and Insight Dynamics for ProLiant, helping customers unleash the value of the ProLiant platform and deliver the highest possible quality of IT service. For more information, visit: www.hp.com/go/iLO
Intelligent Manageability	HP Systems Insight Manager SmartStart Redundant ROM System Firmware Update ROMPaq ProLiant RBSU (ROM-Based Setup Utility) Automatic Server Recovery-2 (ASR-2) Dynamic Sector Repairing (with Smart Array Controller) Drive Parameter Tracking (with Smart Array Controller) Pre-Failure Warranty (covers processors, memory, and SAS hard drives)	
Security	Power-on password Setup password Serial interface control Disk configuration lock Power switch security	
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

Optional Features

HP Insight Management	HP Insight Control	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. For more information, see http://www.hp.com/go/insightcontrol. 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, see: http://www.hp.com/services/insight.
	HP Insight Dynamics	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 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. **NOTE:** For more information, visit: http://www.hp.com/go/insightdynamics
Storage Software		Whether you need to solve a specific data protection, archiving, or storage command and control challenge, or deliver on strategic consolidation, compliance, or continuity initiatives, look no further than HP storage software. Our storage software helps you reduce costs, simplify storage infrastructure, protect vital assets and respond faster to business opportunities. Storage software that gets the job done: • **Data Protection and Recovery Software** Whether you're a large enterprise or a smaller business, HP data protection and recovery software will cost-effectively protect you against disaster and ensure business continuity. • **Data Archive and Migration Software** HP's storage software enables you to comply with data retention and retrieval requirements, improve application performance, and reduce costs by efficiently migrating infrequently accessed or less valuable data to lower cost storage. • **Storage Resource Management Software (SRM)** HP's storage resource management software reduces operational costs and provides the command and control foundation you need to efficiently manage and visualize your physical and virtual environments. • **Data Replication Software** HP offers array-based and host-based replication software for use in disaster recovery, testing, application development and reporting.

Optional Features

- **Storage Device Management Software**
  Maximize your investment in HP storage and networking with software that enables hardware-specific configuration, performance tuning and connectivity management.
- **HP StoreVirtual VSA**
  With HP StoreVirtual VSA you can use the power of virtualization to turn a set of heterogeneous and disconnected physical disk drives in your servers and storage devices into a single pool of logical storage capacity.

NOTE: For more information available Storage Software including QuickSpecs, please see: http://www.hp.com/go/storage/software

HP Proactive Insight experience	Prevent problems with innovative, automated monitoring tools and proactive services. The HP Proactive Insight experience consist of using Insight Online, Insight Remote Support, and Proactive Care Support Service as one integrated solution. The Proactive Insight experience provides you with expert advice and personalized, cloud-based automated IT support, helping to prevent unplanned down time and solve problems quickly. For more information, visit: www.hp.com/go/proactiveinsightexperience
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 MSAxxxx, 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 Simple Configurator	SCE is a guided self service tool to help sales and non technical people provide customers with initial configurations in 3 to 5 minutes. You may then send the configuration on for configuration help, or use in your existing ordering processes. If you require "custom" rack configuration or configuration for products not available in SCE, please contact HP's Customer Business Center or an Authorized Partner for assistance. http://www.hp.com/products/configurator

Service and Support

Service and Support

HP Technology Services for Industry Standard Servers and BladeSystem
Capitalizing on HP ProLiant server and HP BladeSystem capabilities requires a service partner who understands your increasingly complex business technology environment. That's why it makes sense to team up with the people who know HP infrastructure hardware and software best - the experienced professionals at HP Services.

What HP ProLiant and BladeSystem Services can do for you
HP ProLiant and BladeSystem Services can help you design, deploy, test, integrate, support, and manage IT and infrastructure solutions. This way, HP proposes services solutions that include more than just uplift of base warranty. You can get the support you need by choosing from one of a number of service packaged solutions we have designed to address wider set of customer support needs:.

HP Technology Services meets business challenges with services offered in three packages -
Optimized Care Package, Standard Care Package, and Basic Care Package - available for each product group. Such packaged solutions enable customers to optimize technology operations, minimize risk and drive better business outcomes with easy-to-buy, easy-to-use scalable support packages for servers, storage, networking and software.

Optimized Care Package

Supports maintaining servers at optimum performance availability

HP ProLiant Server Hardware Installation
Provides for the basic hardware installation of HP branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner
http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-9356EN

HP Installation and Startup for Insight Control Software
Provides for the deployment and basic configuration of HP Insight Control on HP ProLiant ML and DL series servers or HP BladeSystem servers
http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA0-9972ENW.pdf

3-Year HP Critical Advantage
Provides end-to-end infrastructure support solution for business critical applications running on virtualized/x86 infrastructures, enabling the customers to cost effectively build, operate, and continuously improve their IT environment
http://h20195.www2.hp.com/V2/GetDocument.aspx?docname=4AA3-1772ENW

Additional Services: Microsoft or Linux or VMware education courses + Facility & technology environmental assessment services + Energy Efficiency Design, Factory Express

Standard Care Package

Package that maintains high level of server availability

HP ProLiant Server Hardware Installation
Provides for the basic hardware installation of HP branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner
http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-9356EN

HP Installation and Startup for Insight Control Software
Provides for the deployment and basic configuration of HP Insight Control on HP ProLiant ML and DL series servers or HP BladeSystem servers
http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA0-9972ENW.pdf

3-Year HP 6 hour Hardware Support Onsite Call-to-Repair Service
Provides an IT manager with a team of support specialists who will quickly begin troubleshooting the system to help return the hardware to operating condition within 6 hours of the initial service request

Service and Support

	to the HP Global Solution Center http://h20195.www2.hp.com/V2/GetPDF.aspx/5982-6547EN.pdf **3-Year , HP 24x7 Software Support for Insight Control** Provides for the deployment and basic configuration of HP Insight Control on HP ProLiant ML and DL series servers or HP BladeSystem servers http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-6645EEE.pdf **Additional Services -** Software OS (Microsoft, Linux (SUSE/Red Hat) & VMware Installation & Start Up, and Software Support; Install and Startup Services for Insight Control; Microsoft or Linux or VMware education courses; +30 Proactive Select Credits, Factory Express
Basic Care Package	**Delivers minimum recommended support service level** **HP ProLiant Server Hardware Installation** Provides for the basic hardware installation of HP branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-9356EN **HP Installation and Startup for Insight Control Software** Provides for the deployment and basic configuration of HP Insight Control on HP ProLiant ML and DL series servers or HP BladeSystem servers http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA0-9972ENW.pdf **3-Year HP 24x7 4 hour Response, Hardware Support Onsite Service** Provides for the deployment and basic configuration of HP Insight Control on HP ProLiant ML and DL series servers or HP BladeSystem servers http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA0-9972ENW.pdf **3-Year , HP 24x7 Software Support for Insight Control** Provides for the deployment and basic configuration of HP Insight Control on HP ProLiant ML and DL series servers or HP BladeSystem servers http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-6645EEE.pdf **Additional Services:** Software OS (Microsoft, Linux (SUSE/Red Hat) & VMware Installation & Start Up and Software Support); +10 Proactive Select Credits, Factory Express
Insight Remote Support	The packages include HP Insight Remote Support that uses proven technology to deliver secure, reliable 24x7 remote monitoring, diagnoses, and problem resolution. It is available at no additional cost to all warranty, HP Care Pack Service, and service agreement customers.
For more information	To learn more on HP ProLiant servers and HP BladeSystem servers, please contact your HP sales representative or HP Authorized Channel Partner. Or visit: http://www.hp.com/services/proliant

Pre-configured Models

NOTE: For the Standard Features shipped in the "Factory Integrated Models", please see the "Configuration Information - Factory Integrated Models" section.
NOTE: Pre-configured models ship with the configurations below. Options can be selected from the Core or Additional options section of this QuickSpecs.
NOTE: HP does not allow factory integration of options into pre-configured models. Any additional options purchased will be shipped separately.
NOTE: If you desire a custom configuration please see "Configuration Information - Factory Integrated Models" section of this QuickSpecs.
NOTE: Not all models are available in all regions. Check with your local country HP offices for availability.

Entry Models

HP ProLiant ML350 G6 E5606 1P 4GB-R P410i/ZM 460W RPS LFF Tower Server 638180-xx1	**Processor**	(1) Intel® Xeon® E5606 (2.13GHz/4-core/8MB/80W, DDR3-1066, Turbo 1/1/2/2/3/3) Processor
	Cache Memory	8MB (1 x 8MB) L3 cache
	Memory	4GB (1 x 4GB) PC3-10600R (DDR3-1333) Registered DIMMs
	Network Controller	Embedded NC326i PCI Express Dual Port Gigabit Server Adapter
	Storage Controller	HP Smart Array P410i/Zero Memory Controller
	Hard Drive	None ship standard
	Internal Storage	(6) LFF SATA/SAS HDD bays; upgradeable to (8) in total
	Optical Drive	HP Half-Height SATA DVD-ROM Optical Drive
	Power Supply	(1) 460 Watt Hot-Plug (Redundancy enabled) power supply
	Fans	3 fans ship standard
	Accessories	PS/2 Keyboard and Mouse ship standard **NOTE:** EURO (-421) Models excludes the keyboard.
	Form Factor	Tower (5U)
	Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response

Base Models

HP ProLiant ML350 G6 E5645 1P 6GB-R P410i/256 750W RPS SFF Server 638181-xx1	**Processor**	(1) Intel® Xeon® E5645 (2.40GHz/6-core/12MB/80W, DDR3-1333, HT, Turbo 1/1/2/2/3/3) Processor
	Cache Memory	12MB (1 x 12MB) L3 cache
	Memory	6GB (3 x 2GB) PC3-10600 (DDR3-1333) Registered DIMMs
	Network Controller	Embedded NC326i PCI Express Dual Port Gigabit Server Adapter
	Storage Controller	Embedded HP Smart Array P410i/256MB Controller
	Hard Drive	None ship standard
	Internal Storage	(8) SFF SAS/SATA HDD Bays; upgradeable to (16)
	Optical Drive	HP Half-Height SATA DVD-ROM Optical Drive
	Power Supply	(1) 750 Watt Hot-Plug (Redundancy enabled) power supply
	Fans	3 fans ship standard
	Accessories	PS/2 Keyboard and Mouse ship standard **NOTE:** EURO (-421) Models excludes the keyboard.
	Form Factor	Tower (5U)
	Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response

Pre-configured Models

HP ProLiant ML350 G6 E5620 1P 6GB-R P410i/256 460W RPS Tower Server 594869-xx1	**Processor**	(1) Intel® Xeon® E5620 (2.40GHz/4-core/12MB/80W, DDR3-1066, HT, Turbo (1/1/2/2) Processor
	Cache Memory	12MB (1 x 12MB) L3 cache
	Memory	6GB (3 x 2GB) PC3-10600R (DDR3-1333) Registered DIMMs
	Network Controller	Embedded NC326i PCI Express Dual Port Gigabit Server Adapter
	Storage Controller	Embedded HP Smart Array P410i/256MB Controller
	Hard Drive	None ship standard
	Internal Storage	(8) SFF SAS/SATA HDD Bays; upgradeable to (16)
	Optical Drive	SATA DVD ROM
	Power Supply	(1) 460 Watt Hot-Plug (Redundancy enabled) power supply
	Fans	3 fans ship standard
	Accessories	PS/2 Keyboard and Mouse ship standard **NOTE:** EURO (-421) Models excludes the keyboard.
	Form Factor	Tower (5U)
	Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response

Performance Models

HP ProLiant ML350 G6 X5650 2P 12GB-R P410i/1GB FBWC 750W RPS Tower Server 594874-xx1	**Processor**	(2) Intel® Xeon® X5650 (2.66GHz/6-core/12MB/95W, DDR3-1333, HT, Turbo 1/1/2/2/3/3) Processors
	Cache Memory	12MB (1 x 12MB) L3 cache
	Memory	12 GB (6 x 2GB) PC3-10600R (DDR3-1333) Registered DIMMs
	Network Controller	Embedded NC326i PCI Express Dual Port Gigabit Server Adapter
	Storage Controller	Embedded HP Smart Array P410i/1G FBWC Controller
	Hard Drive	None ship standard
	Internal Storage	(8) SFF SAS/SATA HDD Bays; upgradeable to (16)
	Optical Drive	SATA DVD ROM
	Power Supply	(2) 750 Watt Hot-Plug Redundant power supplies
	Fans	4 full Redundant fans
	Accessories	PS/2 Keyboard and Mouse ship standard **NOTE:** EURO (-421) Models excludes the keyboard.
	Form Factor	Tower (5U)
	Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response

Country Code Key	**Tower Code Key**	**Rack Code Key**
xx=00	US	US
xx=01	Australia	N/A
xx=03	UK	N/A
xx=04	Germany	N/A
xx=05	France	N/A
xx=20	Brazil	N/A
xx=29	Japan	Japan
xx=37	APD	APD
xx=42	Europe **NOTE:** EURO (-421) Models excludes the keyboard.	Europe
xx=AA	PRC	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 configurable product offerings and requirements.
NOTE: Configure-to-order (CTO) 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

ML350G6 Tower Models

HP ProLiant ML350 G6 SFF Configure-to-order Tower Chassis 483447-B21

Includes:

Embedded NC326i PCI Express Dual Port Gigabit Server Adapter
Embedded Smart Array P410i Controller
Eight (8) Hot-Plug (SFF) SAS/SATA Drive Bays
Seven (7) HDD blanks
Six (6) Expansion slots: One Express x16 Gen2 (x8 speed); One PCI-Express x8 Gen2 (x8 speed); Four PCI-Express x8 Gen2 (x4 speed)
Six (6) USB ports
PS/2 Keyboard & Mouse (selection required)
Tower Form Factor

HP ProLiant ML350 G6 LFF Configure-to-order Tower Chassis 483448-B21

Includes:

Embedded NC326i PCI Express Dual Port Gigabit Server Adapter
Embedded Smart Array P410i Controller
Six (6) Hot-Plug (LFF) SAS/SATA Drive Bays
Five (5) HDD blanks
Six (6) Expansion slots: One Express x16 Gen2 (x8 speed); One PCI-Express x8 Gen2(x8 speed); Four PCI-Express x8 Gen2 (x4 speed)
Six (6) USB ports
P/S 2 Keyboard & Mouse (selection required)
Tower Form Factor

ML350G6 Rack Models

HP ProLiant ML350 G6 SFF Configure-to-order Rack Server 483443-B21

Includes:

Embedded NC326i PCI Express Dual Port Gigabit Server Adapter
Embedded Smart Array P410i Controller
Eight (8) Hot-Plug (SFF) SAS/SATA Drive Bays
Seven (7) HDD blanks
Six (6) Expansion slots: One Express x16 Gen2 (x8 speed); One PCI-Express x8 Gen2 (x8 speed); Four PCI-Express x8 Gen2 (x4 speed)
Six (6) USB ports
Rack (5U) Form Factor

HP ProLiant ML350 G6 LFF Configure-to-order Rack Server 483444-B21

Includes:

Embedded NC326i PCI Express Dual Port Gigabit Server Adapter
Embedded Smart Array P410i Controller
Six (6) Hot-Plug (LFF) SAS/SATA Drive Bays
Five (5) HDD blanks
Six (6) Expansion slots: One Express x16 Gen2 (x8 speed); One PCI-Express x8 Gen2 (x8 speed); Four PCI-Express x8 Gen2 (x4 speed)
Six (6) USB ports
Rack (5U) Form Factor

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

HP Processors	**Six-Core Processors**	
	HP ML350 G6 Intel® Xeon® X5675 (3.06GHz/6-core/12MB/95W) FIO Processor Kit	638315-L21
	HP ML350 G6 Intel® Xeon® X5660 (2.80GHz/6-core/12MB/95W) FIO Processor Kit	601238-L21
	HP ML350 G6 Intel® Xeon® X5650 (2.66GHz/6-core/12MB/95W) FIO Processor Kit	601240-L21
	HP ML350 G6 Intel® Xeon® E5649 (2.53GHz/6-core/12MB/80W) FIO Processor Kit	638316-L21
	HP ML350 G6 Intel® Xeon® E5645 (2.40GHz/6-core/12MB/80W) FIO Processor Kit	638317-L21
	Quad-Core Processors	
	HP ML350 G6 Intel® Xeon® X5672 (3.20GHz/4-core/12MB/95W) FIO Processor Kit	638314-L21
	HP ML350 G6 Intel® Xeon® E5620 (2.40GHz/4-core/12MB/80W) FIO Processor Kit	601246-L21
	HP ML350 G6 Intel® Xeon® E5607 (2.26GHz/4-core/8MB/80W) FIO Processor Kit	638318-L21
	HP ML350 G6 Intel® Xeon® E5606 (2.13GHz/4-core/8MB/80W) FIO Processor Kit	638319-L21
	HP ML350 G6 Intel® Xeon® E5603 (1.60GHz/4-core/4MB/80W) FIO Processor Kit	638320-L21
	HP ML350 G6 Intel® Xeon® L5630 (2.13GHz/4-core/12MB/40W) FIO Processor Kit	601252-L21
	NOTE: Low Voltage DIMMs can only be used with Intel® Xeon® processor 5600 series processors	
HP Memory	**Registered DIMMs (RDIMMs)**	
	NOTE: Low Voltage DIMMs can only be used with Intel® Xeon® processor 5600 series processors	
	HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500656-B21
	HP 4GB (1x4GB) Single Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	593339-B21
	HP 4GB (1x4GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500658-B21
	HP 8GB (1x8GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500662-B21
	HP 16GB (1x16GB) Quad Rank x4 PC3-8500 (DDR3-1066) Registered CAS-7 Memory Kit	500666-B21
	HP 4GB (1x4GB) Single Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit	604504-B21
	HP 8GB (1x8GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit	604506-B21
	HP 16GB (1x16GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 LP Memory Kit	627812-B21
	NOTE: Low Voltage DIMMs can only be used with Intel® Xeon® processor 5600 series processors	
	Unbuffered with ECC DIMMs (UDIMMs)	
	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: http://h18004.www1.hp.com/products/servers/platforms/energyefficient/	
	HP 1GB (1x1GB) Single Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	500668-B21
	HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	500670-B21

Configuration Information - Factory Integrated Models

	HP 4GB (1x4GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	500672-B21
	HP 4GB (1x4GB) Dual Rank x8 PC3L-10600 (DDR3-1333) Unbuffered CAS-9 Low Power Memory Kit	619488-B21
HP Power Supplies	**NOTE:** 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/hppoweradvisor	
	HP 460W Common Slot Gold Hot Plug Power Supply Kit	503296-B21
	HP 750W Common Slot Gold Hot Plug Power Supply Kit	512327-B21
	HP 1200W Common Slot Silver Hot Plug Power Supply Kit	500172-B21
	NOTE: Option Kits contain optional power supply, an IEC power cable and PDU IEC cables.	

Step 3: Choose Additional Factory Integratable Options

HP Storage Controllers	HP Smart Array P212/256 BBWC 1-ports Int/1-ports Ext PCIe x8 FIO SAS Controller **NOTE:** SAS Controller supporting RAID 0/1/1+0/5.	491191-B21
	HP Smart Array P411/256 BBWC 2-ports Ext PCIe x8 FIO SAS Controller **NOTE:** SAS Controller supporting RAID 0/1/1+0/5.	491193-B21
	Upgrade Options	
	HP 256MB Factory Integrated P-Series Cache Module **NOTE:** Available for P410i only.	534108-B21
HP Insight Software	HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle Single Server FIO License	582765-B21

Step 4: Choose Additional Options for Factory Integration

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

Core Options

NOTE: Some options may not be integrated at the factory. To ensure only valid configurations are ordered, HP recommends the use of an HP approved configurator. Contact your local sales representative for additional information.

HP Unique Options	HP ML350 G6 Redundant Fan/Baffle Kit	515081-B21
	HP ML350/ML330G6 2 Slot PCI-X Riser Kit **NOTE:** The HP PCI-X Expander kit converts a single PCI Express slot (Slot 1) into two full height, full length 64-bit 100MHz PCI-X slots. The PCI-X Expander Kit can only be plug in Slot 1.	488413-B21
	HP ML350G6 Tower to Rack Conversion Kit **NOTE:** See "Redundant Options" section below for Hot Plug Redundant Power supplies.	534534-B21
	HP 2.5 Hard Disk Drive Blank Kit	503771-B21
HP Processors	**Six-Core Processors**	
	HP ML350 G6 Intel® Xeon® X5675 (3.06GHz/6-core/12MB/95W) Processor Kit	638315-B21
	HP ML350 G6 Intel® Xeon® X5670 (2.93GHz/6-core/12MB/95W) Processor Kit	601236-B21
	HP ML350 G6 Intel® Xeon® X5660 (2.80GHz/6-core/12MB/95W) Processor Kit	601238-B21
	HP ML350 G6 Intel® Xeon® X5650 (2.66GHz/6-core/12MB/95W) Processor Kit	601240-B21
	HP ML350 G6 Intel® Xeon® E5649 (2.53GHz/6-core/12MB/80W) Processor Kit	638316-B21
	HP ML350 G6 Intel® Xeon® E5645 (2.40GHz/6-core/12MB/80W) Processor Kit	638317-B21
	Quad-Core Processors	
	HP ML350 G6 Intel® Xeon® X5672 (3.20GHz/4-core/12MB/95W) Processor Kit	638314-B21
	HP ML350 G6 Intel® Xeon® E5620 (2.40GHz/4-core/12MB/80W) Processor Kit	601246-B21
	HP ML350 G6 Intel® Xeon® E5607 (2.26GHz/4-core/8MB/80W) Processor Kit	638318-B21
	HP ML350 G6 Intel® Xeon® E5606 (2.13GHz/4-core/8MB/80W) Processor Kit	638319-B21
	HP ML350 G6 Intel® Xeon® E5603 (1.60GHz/4-core/4MB/80W) Processor Kit	638320-B21
	HP ML350 G6 Intel® Xeon® L5630 (2.13GHz/4-core/12MB/40W) Processor Kit	601252-B21
HP Memory	**Registered RDIMMs**	
	HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500656-B21
	HP 4GB (1x4GB) Single Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	593339-B21
	HP 4GB (1x4GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500658-B21
	HP 8GB (1x8GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500662-B21
	HP 16GB (1x16GB) Quad Rank x4 PC3-8500 (DDR3-1066) Registered CAS-7 Memory Kit	500666-B21
	HP 4GB (1x4GB) Single Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit	604504-B21
	HP 8GB (1x8GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit **NOTE:** Low Voltage DIMMs can only be used with Intel® Xeon® processor 5600 series processors	604506-B21
	HP 16GB (1x16GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 LP Memory Kit	627812-B21
	Unregistered with ECC UDIMMs	

Core Options

	HP 1GB (1x1GB) Single Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	500668-B21
	HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	500670-B21
	HP 4GB (1x4GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	500672-B21
	HP 4GB (1x4GB) Dual Rank x8 PC3L-10600 (DDR3-1333) Unbuffered CAS-9 Low Power Memory Kit	619488-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 Drive Cage Options	HP ML350/370 G6 8 Small Form Factor (SFF) 2nd Drive Cage Kit **NOTE**: The Second drive cage installation replaces 2 internal optical bays. It is required to purchase a SAS RAID controller or SAS Expander Card to support over 8 HDD **NOTE:** To cover an empty SFF HDD slot, please order the following SFF hard drive blank spare kit: 392613-001	507803-B21
	HP ML350/ML/DL370G6 2 Large Form Factor Drive Kit **NOTE:** The Second drive cage installation replaces 2 internal optical bays. **NOTE:** To cover an empty LFF HDD slot, please order the following LFF hard drive blank spare kit: 389015-001	487936-B21
HP Optical Drives	HP Half-Height SATA DVD-ROM Optical Drive	447326-B21
	HP Half-Height SATA DVD-RW Optical Drive	447328-B21
	NOTE: Please note that some of the earlier BTO models may not support adding SATA Optical Drives. To ensure compatibility of the SATA Optical Drives, please add additional optical drives only on models with Quad-Core 5400 Series.	
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 900GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	619291-B21
	HP 600GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	581286-B21
	HP 450GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	581284-B21
	HP 300GB 6G SAS 15K rpm SFF (2.5-inch) Hot Plug Enterprise 3yr Warranty Hard Drive	627117-B21
	HP 300GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	507127-B21
	HP 146GB 6G SAS 15K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	512547-B21
	SAS Hot Plug LFF (3.5-inch) Enterprise (ENT) Drives	

Core Options

HP 600GB 6G SAS 15K rpm LFF (3.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	516828-B21
HP 450GB 6G SAS 15K rpm LFF (3.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	516816-B21
HP 300GB 6G SAS 15K rpm LFF (3.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	516814-B21
SAS Hot Plug LFF (3.5-inch) Midline (MDL) Drives	
HP 3TB 6G SAS 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive	625031-B21
HP 2TB 6G SAS 7.2K rpm LFF (3.5-inch) Dual Port Midline 1yr Warranty Hard Drive	507616-B21
HP 1TB 6G SAS 7.2K rpm LFF (3.5-inch) Dual Port Midline 1yr Warranty Hard Drive	507614-B21
NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12244_div/12244_div.html (Worldwide)	
SAS Hot Plug SFF (2.5-inch) Midline (MDL) Drives	
HP 1TB 6G SAS 7.2K rpm SFF (2.5-inch) Dual Port Midline 1yr Warranty Hard Drive	605835-B21
HP 500GB 6G SAS 7.2K rpm SFF (2.5-inch) Dual Port Midline 1yr Warranty Hard Drive	507610-B21
SATA Hot Plug SFF (2.5-inch) Midline (MDL) Drives	
HP 1TB 3G SATA 7.2K rpm SFF (2.5-inch) Hot Plug Midline 1yr Warranty Hard Drive	625609-B21
HP 500GB 3G SATA 7.2K rpm SFF (2.5-inch) Midline 1yr Warranty Hard Drive	507750-B21
SATA Hot Plug LFF (3.5-inch) Midline (MDL) Drives	
HP 3TB 3G SATA 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive	628059-B21
HP 2TB 3G SATA 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive	507632-B21
HP 1TB 3G SATA 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive	454146-B21
HP 500GB 3G SATA 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive	458928-B21
SATA Hot Plug LFF (3.5-inch) Entry (ETY) Drives	
HP 250GB 3G SATA 7.2K rpm LFF (3.5-inch) Entry 1yr Warranty Hard Drive	571230-B21
NOTE: SATA hard 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)	
3G SATA MLC Hot Plug SFF (2.5-inch) Enterprise Mainstream Solid State Drives	
HP 400GB 3G SATA MLC SFF (2.5-inch) Enterprise Mainstream 3yr Warranty Solid State Drive	636597-B21
HP 200GB 3G SATA MLC SFF (2.5-inch) Enterprise Mainstream 3yr Warranty Solid State Drive	636595-B21
HP 100GB 3G SATA MLC SFF (2.5-inch) Enterprise Mainstream 3yr Warranty Solid State Drive	636593-B21
3G SATA MLC Hot Plug LFF (3.-5inch) Enterprise Mainstream Solid State Drives	
HP 400GB 3G SATA MLC LFF (3.5-inch) Enterprise Mainstream 3yr Warranty Solid State Drive	636611-B21
HP 200GB 3G SATA MLC LFF (3.5-inch) Enterprise Mainstream 3yr Warranty Solid State Drive	636609-B21
HP 100GB 3G SATA MLC LFF (3.5-inch) Enterprise Mainstream 3yr Warranty Solid State Drive	636607-B21
6G SAS SLC Hot Plug Enterprise Performance Solid State Drives	
HP 400GB 6G SAS SLC SFF (2.5-inch) Enterprise Performance 3yr Warranty Solid State Drive	632494-B21

Core Options

	HP 200GB 6G SAS SLC SFF (2.5-inch) Enterprise Performance 3yr Warranty Solid State Drive	632492-B21
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/14038_div/14038_div.html (Worldwide)	
	Hard Drive Kits	
	HP 2.5 Hard Disk Drive Blank Kit	503771-B21
HP Networking	**Gigabit Ethernet adapters**	
	HP NC112T PCI Express Gigabit Server Adapter	503746-B21
	HP NC360T PCI-E Dual Port Gigabit Server Adapter	412648-B21
	HP NC364T PCI-E Quad Port Gigabit Server Adapter **NOTE:** Does not support Windows 2000. **NOTE:** There is a maximum of five NC364T PCI Express Quad Port Gigabit Server Adapter NICs allowed in this server.	435508-B21
	HP NC365T 4-port Ethernet Server Adapter	593722-B21
	HP NC373F PCI-E Multifunction 1000SX Gigabit Svr Adapter	394793-B21
	HP NC373T PCI-E 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 Gigabit Server Adapter	468332-B21
	HP NC523SFP 10Gb 2-port Server Adapter	593717-B21
	HP NC550SFP Dual Port 10GbE Server Adapter	581201-B21
	HP NC552SFP 10Gb 2-port Ethernet Server Adapter	614203-B21
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: www.hp.com/go/ProLiantNICs	
HP I/O Expansion Options	HP ML350/ML330G6 2 Slot PCI-X Riser Kit **NOTE:** The HP PCI-X Expander kit converts a single PCI Express slot (Slot 1) into two full height, full length 64-bit 100MHz PCI-X slots. The PCI-X Expander Kit can only be plug in Slot 1.	488413-B21
HP Power Supplies	**NOTE:** 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/hppoweradvisor.	
	Power Supplies	
	HP 460W Common Slot Gold Hot Plug Power Supply Kit	503296-B21
	HP 750W Common Slot Gold Hot Plug Power Supply Kit	512327-B21
	HP 1200W Common Slot Silver Hot Plug Power Supply Kit	500172-B21
	NOTE: Option Kits contain optional power supply, an IEC power cable and PDU IEC cables.	
HP Cooling Options	HP ML350 G6 Redundant Fan/Baffle Kit	515081-B21

Additional Options

NOTE: Some options may not be integrated at the factory. To ensure only valid configurations are ordered, HP recommends the use of an HP approved configurator. Contact your local sales representative for additional information.

HP Insight Software	**HP Insight Control**	
	HP Insight Control including 1yr 24x7 Technical Support and Updates Electronic License	T9074BAE
	HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle Electronic License	TC278AAE
	HP Insight Control including 1yr 24x7 Technical Support and Updates Single Server License	452148-B22
	HP Insight Management Media Kit **NOTE:** HP Insight Management Media Kit contains DVDs without licenses. Contains HP Systems Insight Manager, HP Insight Control, HP Matrix Operating Environment, and Virtual Connect Enterprise Manager software. Uses an integrated installer to perform quick and accurate software installation and updates.	436222-B21
	HP Insight Control Server Deployment including 1yr 24x7 Support Electronic License	T9082AAE
	HP Insight Control Server Deployment including 1yr 24x7 Support Single Server License	452151-B21
	NOTE: Electronic and Flexible-Quantity licenses can be used to purchase multiple licenses with a single activation key. **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. **NOTE:** Licenses ship without media. Media kits can be ordered separately, or can be downloaded at: http://www.hp.com/go/insightupdates. **NOTE:** For additional license options please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12631_div/12631_div.html	
	HP Integrated Lights-Out (iLO)	
	HP Integrated Lights-Out (iLO) Advanced for ProLiant	
	HP iLO Advanced including 1yr 24x7 Technical Support and Updates Electronic License	TA850AAE
	HP iLO Advanced Electronic License with 3yr 24x7 Tech Support and Updates	BD506AAE
	HP iLO Advanced including 1yr 24x7 Technical Support and Updates Single Server License	512485-B21
	HP iLO Advanced 1 Server License with 3yr 24x7 Tech Support and Updates	BD505A
	NOTE: For additional license options please see the QuickSpecs at: http://h18004.www1.hp.com/products/quickspecs/14276_div/14276_div.html **NOTE:** For more information, visit: http://www.hp.com/go/ilo.	
HP I/O Accelerator Options	**Second Generation Accelerators**	
	HP 365GB Multi Level Cell G2 PCIe ioDrive2 for ProLiant Servers	673642-B21
	HP 785GB Multi Level Cell G2 PCIe ioDrive2 for ProLiant Servers	673644-B21
	HP 1205GB Multi Level Cell G2 PCIe ioDrive2 for ProLiant Servers	673646-B21
	HP 2410GB Multi Level Cell G2 PCIe ioDrive2 Duo for ProLiant Servers	673648-B21
	First Generation Accelerators	
	HP 160GB Single Level Cell PCIe ioDrive for ProLiant Servers **NOTE:** A low-profile PCI bracket is included for use in low-profile slots.	600278-B21
	HP 320GB Multi Level Cell PCIe ioDrive for ProLiant Servers	600279-B21

Additional Options

	NOTE: A low-profile PCI bracket is included for use in low-profile slots.	
	HP 320GB Single Level Cell PCIe ioDrive Duo for ProLiant Servers	600281-B21
	HP 640GB Multi Level Cell PCIe ioDrive Duo for ProLiant Servers	600282-B21
	HP 1.28TB Multi Level Cell PCIe ioDrive Duo for ProLiant Servers	641027-B21
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13587_div/13587_div.html (Worldwide)	
HP Graphics Options	HP 350/370G6 Graphic Card Cable Kit	537721-B21
HP Security	HP Trusted Platform Module Option	488069-B21
	NOTE: 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.	
	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.	
HP Storage Controllers	**SAS Controllers**	
	HP Smart Array P212 Controller	
	HP Smart Array P212/ZM 1-ports Int/1-ports Ext PCIe x8 SAS Controller	462828-B21
	HP Smart Array P212/256 1-ports Int/1-ports Ext PCIe x8 SAS Controller	462834-B21
	HP Smart Array P410 Controller	
	HP Smart Array P410/256 2-ports Int PCIe x8 SAS Controller	462862-B21
	HP Smart Array P410/512 BBWC 2-ports Int PCIe x8 SAS Controller	462864-B21
	HP Smart Array P410/512 FBWC 2-ports Int PCIe x8 SAS Controller	578230-B21
	HP Smart Array P410/1G FBWC 2-ports Int PCIe x8 SAS Controller	572532-B21
	NOTE: HP NHP Internal SAS/SATA 4 Port Cable Kit (487734-B21) is required when adding Smart Array P410 Controller on Non-Hot Plug SATA/SAS server models.	
	HP Smart Array P411 Controller	
	HP Smart Array P411/256 2-ports Ext PCIe x8 SAS Controller	462830-B21
	HP Smart Array P411/512 BBWC 2-ports Ext PCIe x8 SAS Controller	462832-B21
	HP Smart Array P411/512 FBWC 2-ports Ext PCIe x8 SAS Controller	578229-B21
	HP Smart Array P411/1G FBWC 2-ports Ext PCIe x8 SAS Controller	572531-B21
	Smart Array P812 Controller	
	HP Smart Array P812/1G FBWC 2-ports Int/4-ports Ext PCIe x8 SAS Controller	487204-B21
	Optional Upgrades	
	HP 256MB P-series Cache Upgrade	462968-B21
	NOTE: Supported on HP Smart Array P212 & HP Smart Array P410/ZM Controller only.	
	HP 512MB P-Series Battery Backed Write Cache Upgrade	462967-B21

Additional Options

	NOTE: Supported on HP Smart Array P410 Controller, and HP Smart Array P411 Controller only.	
	HP 650 mAh P-Series Battery **NOTE:** Supported on HP Smart Array P212 Controller, HP Smart Array P410 Controller, and HP Smart Array P411 Controller only.	462969-B21
	HP 15 Position 24in SFP Battery Cable Assembly **NOTE:** Supported on HP Smart Array P212 Controller, HP Smart Array P410 Controller, and HP Smart Array P411 Controller only.	496029-B21
	HP 512MB Flash Backed Write Cache **NOTE:** Supported on the Smart Array P410i Controller only.	534916-B21
	HP 1GB Flash Backed Cache **NOTE:** Supported on the Smart Array P410i Controller only.	534562-B21
	HP 24 Bay SAS Expander Card	468406-B21
	HP Smart Array Advanced Pack including 1yr 24x7 Technical Support and Updates Single Server License **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.	516471-B21
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13203_div/13203_div.html (Smart Array P212 Controller) http://h18000.www1.hp.com/products/quickspecs/13201_div/13201_div.html (Smart Array P410 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 Modular Smart Array SC08e 2-ports Ext PCIe x8 SAS Host Bus Adapter	614988-B21
	NOTE: Please see the QuickSpecs for additional information: http://h18004.www1.hp.com/products/quickspecs/13082_div/13082_div.html	
	SCSI HBA	
	HP SC11Xe Ultra320 Single Channel/ PCIe x4 SCSI Host Bus Adapter **NOTE:** Supports external drive attach.	412911-B21
	NOTE: Please see the following QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/12566_div/12566_div.html	
HP Tape Backup	**NOTE:** For the complete range of tape drives, autoloaders, libraries and media see: http://www.hp.com/go/tape. For hardware and software compatibility of HP tape backup products see: http://www.hp.com/storage/SPOCK and www.hp.com/go/ebs.	
	HP StoreEver DAT 160 SAS Internal Tape Drive **NOTE:** Connection using HP Smart Array P212 Controller (462828-B21) recommended.	Q1587B
	HP StoreEver LTO-2 Ultrium 448 SAS Internal Tape Drive	DW085B
	HP StoreEver LTO-4 Ultrium 1760 SAS Internal WW Tape Drive **NOTE:** Connection using HP Smart Array P212 Controller (462828-B21)	EH919B

Additional Options

	recommended.	
	HP StoreEver LTO-4 Ultrium 1840 SAS External Tape Drive **NOTE:** Connection using HP Smart Array P212 Controller (462828-B21) recommended.	EH861B
	HP StoreEver LTO-5 Ultrium 3000 SAS Internal Tape Drive **NOTE:** Connection using HP Smart Array P212 Controller (462828-B21) recommended.	EH957B
	HP StoreEver LTO-5 Ultrium 3000 SAS External Tape Drive **NOTE:** Connection using HP Smart Array P212 Controller (462828-B21) recommended.	EH958B
	HP StoreEver LTO-6 Ultrium 6250 Tape Drive in 1U Rack-mount Kit	C0L99A
	HP StoreEver LTO-6 Ultrium 6650 SAS Internal Tape Drive	EH963A
	HP StoreEver LTO-6 Ultrium 6650 SAS External Tape Drive	EH964A
	HP StoreEver LTO-6 Ultrium 6250 Internal Tape Drive	EH969A
	HP StoreEver LTO-6 Ultrium 6250 External Tape Drive	EH970A
HP Disk Backup	**HP D2D Backup Systems with Backup Data Deduplication**	
	HP StoreOnce D2D4112 Backup System	EH993C
	HP StoreOnce D2D2502i Backup System	EJ001C
	HP StoreOnce D2D2504i Backup System	EJ002C
	HP RDX Removable Disk Backup Systems USB	
	HP RDX320 USB3.0 Internal Disk Backup System	B7B62A
	HP RDX500 USB3.0 Internal Disk Backup System	B7B64A
	HP RDX1000 USB3.0 Internal Disk Backup System	B7B67A
	HP StoreOnce Backup systems	
	HP StoreOnce 2620 iSCSI Backup	BB852A
	HP StoreOnce 4220 Backup	BB855A
HP Storage Options	**NOTE:** The following is a list of all Fibre Channel Host Bus Adapters for Windows and Linux. For detailed compatibility information please see: http://h18006.www1.hp.com/storage/saninfrastructure/hba.html	
	Brocade Fibre Channel HBAs	
	HP 82B 8Gb 2-port PCIe Fibre Channel Host Bus Adapter	AP770B
	HP 81B 8Gb 1-port PCIe Fibre Channel Host Bus Adapter	AP769B
	HP 41B 4Gb 1-port PCIe Fibre Channel Host Bus Adapter	AP767B
	HP 42B 4Gb 2-port PCIe Fibre Channel Host Bus Adapter	AP768B
	Emulex Fibre Channel HBAs	
	HP 82E 8Gb 2-port PCIe Fibre Channel Host Bus Adapter	AJ763B
	HP 82Q 8Gb 2-port PCIe Fibre Channel Host Bus Adapter	AJ764A
	HP 81E 8Gb 1-port PCIe Fibre Channel Host Bus Adapter	AJ762B
	HP FC2142SR 4Gb 1-port PCIe Fibre Channel Host Bus Adapter	A8002B
	HP FC2242SR 4Gb 2-port PCIe Fibre Channel Host Bus Adapter	A8003B
	QLogic Fibre Channel HBAs	
	HP 81Q 8Gb 1-port PCIe Fibre Channel Host Bus Adapter	AK344A
	HP FC1142SR 4Gb 1-port PCIe Fibre Channel Host Bus Adapter	AE311A
	HP FC1242SR 4Gb 2-port PCIe Fibre Channel Host Bus Adapter	AE312A

Additional Options

	Converged Network Adapter	
	HP CN1100E Dual Port Converged Network Adapter	BK835A
	HP CN1000Q Dual Port Converged Network Adapter	BS668A
HP Disk Storage Systems	**Disk Enclosures**	
	HP D2600 Disk Enclosure	AJ940A
	HP 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 Tower UPS**	
	HP T1500 G3 UPS Models	
	HP T1500 G3 1400VA INTL Tower Uninterruptible Power System	AF451A
	HP T1500 G3 1400VA NA Tower Uninterruptible Power System	AF450A
	HP T1500J JP Uninterruptible Power System	AF458A
	NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/13160_div/13160_div.html (Worldwide)	
	HP T1000 G3 UPS Models	
	HP T1000 G3 1000VA INTL Tower Uninterruptible Power System	AF449A
	HP T1000 G3 1000VA NA Tower Uninterruptible Power System	AF448A
	HP T1000J JP Uninterruptible Power System	AF457A
	HP R1500 G3 Uninterruptible Power Supply (UPS)	
	HP R1.5kVA G3 1U NA Uninterruptible Power System	AF469A
	HP R1.5kVA G3 1U JP/TW Uninterruptible Power System	AF470A
	HP R1.5kVA G3 1U INTL Uninterruptible Power System	AF471A
	NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/14059_div/14059_div.html (Worldwide)	
	R5000 Uninterruptible Power System (UPS)	
	HP R5KVA 3U IEC309-32A High Voltage INTL Uninterruptible Power System	AF461A
	HP R5KVA 3U L630 High Voltage NA/JP Uninterruptible Power System	AF460A
	NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/14109_div/14109_div.html (Worldwide)	
	R7000 Uninterruptible Power System (UPS)	
	HP R7KVA 4U 50A High Voltage NA/JP Uninterruptible Power System	AF462A
	HP R7KVA 4U IEC-32A High Voltage INTL Uninterruptible Power System	AF463A
	HP R5KVA and R7KVA 3U Extended Runtime Module	AF464A
	NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/14110_div/14110_div.html (Worldwide)	
	HP R/T3000 G2 Uninterruptible Power System (UPS)	
	HP R/T3000 G2 2U Detachable Cord High Voltage INTL Uninterruptible Power System	AF468A
	HP R/T3000 G2 2U L530 Low Voltage NA/JP Uninterruptible Power System	AF466A

Additional Options

	HP R/T3000 G2 2U L620 High Voltage NA/JP Uninterruptible Power System	AF467A
	NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/14058_div/14058_div.html (Worldwide)	
	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.	
	NOTE: Please see the UPS and PDU cable matrix's on the HP Power Protection and Management page. Under Power Cords, click on the "HP Power Cord Matrix" link. That link will list cable descriptions, requirements, and specifications for UPS and PDU units. Please see the following link: www.hp.com/products/powercords.	
HP Power Distribution Units	**Monitored PDUs**	
	HP Monitored Power Distribution Unit: Full Rack Version	
	HP 8.6kVA 24A Single Input Three Phase NA/JP Monitored Power Distribution Unit	AF504A
	HP 8.3kVA 40A Single Input Single Phase NA/JP Monitored Power Distribution Unit	AF506A
	HP 11kVA 16A Single Input Three Phase INTL Monitored Power Distribution Unit	AF508A
	HP 7.3kVA 32A Single Input Single Phase INTL Monitored Power Distribution Unit	AF510A
	HP Monitored Power Distribution Unit: Half Rack Version	
	HP 4.9kVA 24A Single Input Single Phase NA/JP Monitored Power Distribution Unit	AF914A
	HP 7.3kVA 32A Single Input Single Phase INTL Monitored Power Distribution Unit	AF915A
	NOTE: Please see the following QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/12118_div/12118_div.html (Worldwide)	
	Modular PDUs 1U/0U	
	NOTE: 1U/0U mounting brackets shipped with the unit (optimized for 10000 G2 and 9000 series racks).	
	HP 3.6kVA 16A High Voltage INTL Modular Power Distribution Unit	252663-B24
	HP 4.9kVA 24A High Voltage NA/JP Modular Power Distribution Unit	252663-D72
	HP 8.3kVA 40A High Voltage NA/JP Modular Power Distribution Unit	252663-D73
	HP 7.3kVA 32A High Voltage INTL Modular Power Distribution Unit	252663-B31
	NOTE: For additional information on HP Power Distribution Units including accessories please go to: www.hp.com/go/pdu.	
	NOTE: Please see the UPS and PDU cable matrix's on the HP Power Protection and Management page. Under Power Cords, click on the "HP Power Cord Matrix" link. That link will list cable descriptions, requirements, and specifications for UPS and PDU units. Please see the following link: www.hp.com/products/powercords.	
	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)	
HP Intelligent Power Distribution Units (iPDU)	**iPDU Core Units**	
	HP 4.9kVA 24A Single Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF520A
	HP 8.6kVA 24A Three Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF522A
	HP 7.3kVA 32A Single Phase INTL Core Intelligent Modular Power Distribution Unit	AF525A

Additional Options

	HP 11kVA 16A Three Phase INTL Core Intelligent Modular Power Distribution Unit	AF526A
	iPDU Extension Bars	
	HP 5xC13 Intelligent PDU Extension Bar G2 Kit	AF547A
	HP 5xC13 Outlets Power and UID LEDs Pair Standard Extension Bar	AF528A
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13650_div/13650_div.html (Worldwide)	
HP Rack Options	**HP TFT7600 G2 KVM Console Rackmount Keyboard Monitor**	
	HP TFT7600 G2 KVM Console Rackmount Keyboard US Monitor	AZ870A
	HP TFT7600 G2 KVM Console Rackmount Keyboard UK Monitor	AZ871A
	HP TFT7600 G2 KVM Console Rackmount Keyboard DE Monitor	AZ872A
	HP TFT7600 G2 KVM Console Rackmount Keyboard FR Monitor	AZ873A
	HP TFT7600 G2 KVM Console Rackmount Keyboard IT Monitor	AZ874A
	HP TFT7600 G2 KVM Console Rackmount Keyboard ES Monitor	AZ875A
	HP TFT7600 G2 KVM Console Rackmount Keyboard DK Monitor	AZ876A
	HP TFT7600 G2 KVM Console Rackmount Keyboard NO Monitor	AZ877A
	HP TFT7600 G2 KVM Console Rackmount Keyboard SE/FI Monitor	AZ878A
	HP TFT7600 G2 KVM Console Rackmount Keyboard CH Monitor	AZ879A
	HP TFT7600 G2 KVM Console Rackmount Keyboard PT Monitor	AZ880A
	HP TFT7600 G2 KVM Console Rackmount Keyboard BE Monitor	AZ881A
	HP TFT7600 G2 KVM Console Rackmount Keyboard JP Monitor	AZ882A
	HP TFT7600 G2 KVM Console Rackmount Keyboard RU Monitor	AZ883A
	HP TFT7600 G2 KVM Console Rackmount Keyboard Intl Monitor	AZ884A
	HP TFT7600 G2 KVM Console Rackmount Keyboard US TAA Monitor	AZ885A
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13731_div/13731_div.html (Worldwide)	
	HP 1U Rackmount Keyboard with USB	
	HP 1U IT Rackmount Keyboard with USB	AG076A
	HP 1U US Rackmount Keyboard with USB	AG072A
	HP 1U BE Rackmount Keyboard with USB	AG083A
	HP 1U DK Rackmount Keyboard with USB	AG078A
	HP 1U FR Rackmount Keyboard with USB	AG075A
	HP 1U DE Rackmount Keyboard with USB	AG074A
	HP 1U INT Rackmount Keyboard with USB	AG086A
	HP 1U NO Rackmount Keyboard with USB	AG079A
	HP 1U PT Rackmount Keyboard with USB	AG082A
	HP 1U RU Rackmount Keyboard with USB	AG085A
	HP 1U ES Rackmount Keyboard with USB	AG077A
	HP 1U SE/FI Rackmount Keyboard with USB	AG080A
	HP 1U Rackmount Keyboard with USB	AG081A
	HP 1U UK Rackmount Keyboard with USB	AG073A
	HP 1U JP Rackmount Keyboard with USB	AG084A

Additional Options

	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12465_div/12465_div.html (Worldwide)	
	HP USB Keyboard and Mouse	
	HP USB BFR with PVC Free IN Keyboard/Mouse Kit	672097-D63
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13972_div/13972_div.html (Worldwide)	
	NOTE: For additional information regarding Rack Options, please see the following URL: http://www.hp.com/go/rackandpower.	
	HP Server Console Switches	
	HP Server Console 0x2x8 Port Analog Switch	AF616A
	HP Server Console 0x2x16 Port Analog Switch	AF617A
	HP TAA 0x2x16xKVM Server Console G2 Switch	AF626A
	HP KVM CAT5 1-pack USB Interface Adapter	336047-B21
	HP Server Console Switch G2 with Virtual Media & CAC	
	HP 0x2x16 KVM Server Console Switch G2 with Virtual Media CAC Software	AF618A
	HP 0x2x32 KVM Server Console Switch G2 with Virtual Media CAC Software	AF619A
	HP KVM CAT5 1-pack USB Interface Adapter	336047-B21
	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	
	HP 1x4 USB/PS2 KVM Console Switch	AF611A
	HP 1x1Ex8 KVM IP Console Switch G2 with Virtual Media CAC Software	AF620A
	HP 2x1Ex16 KVM IP Console Switch G2 with Virtual Media CAC Software	AF621A
	HP 4x1Ex32 KVM IP Console Switch G2 with Virtual Media CAC Software	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	
	HP ML350G6 Tower to Rack Conversion Kit	534534-B21
HP USB and SD Options	HP 2GB USB Flash Media Drive Key Kit **NOTE:** HP qualified blank USB key for use with HP ProLiant servers that support the VMware virtualization environment and other HP value-add software. 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.	608447-B21
	HP 4GB SD Enterprise Performance Flash Media Kit **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.	580387-B21
	HP USB 2-Button Optical Scroll Mouse	DC172B
	HP USB Standard Keyboard DT528A ABA	DT528A#ABA

Additional Options

HP Care Pack Services	**Hardware Services On-site Service**	
	HP 3 year 4 hour 13x5 ProLiant ML350(p) Hardware Support	U4512E
	HP 3 year 4 hour 24x7 ProLiant ML350(p) Hardware Support	U4513E
	HP 3 year 6 hour 24x7 Call to Repair ProLiant ML350(p) Hardware Support	U4514E
	Proactive Care Personalized Support Option **NOTE:** To add an onsite Account Support Manager (ASM) to Proactive Care. ASM is an assigned resource who delivers support planning and brings technical expertise and best practices advice for the customer's environment.	
	HP 3 year ISS ProactiveCare Personalized Support	U6W98E
	Installation Services **NOTE:** Reduce the time required to get your system up and running and help minimize disruptions to your business.	
	HP Install ProLiant ML350(p) Service	U4522E
	HP Startup ProLiant ML350(p) Service	U4523E
	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
- If any Quad rank DIMMs are installed, all channels are limited to only 2 DIMMs 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
- Low Voltage DIMMs can only be used with Intel® Xeon® processor 5600 series processors
- If mixing DIMM voltage is a requirement, please note that the DIMMs will run at 1.5V since all 1.35V are capable of supporting 1.5V operations

DIMM slot/capacity/populated speed table											
DIMM Type ->	**Registered DIMMS (RDIMMs)**								**Unbuffered with ECC DIMMs (UDIMMs)**		
DIMM Rank ->	**Single Rank (1R)**	**Dual Rank (2R)**					**Quad Rank (4R)**		**Single Rank (1R)**	**Dual Rank (2R)**	
DIMM Capacity ->	4GB	2GB	4GB	8GB	8GB	16GB	4GB	16GB	1GB	2GB	4GB
DIMM Native Speed (MHz) ->	1333	1333	1333	1067	1333	1333	1067	1067	1333	1333	1333
Voltage	LV/Std	Std	Std	Std	LV/Std	LV/Std	Std	Std	Std	Std	Std
SLOTS THAT CAN BE POPULATED											
18 slot servers	18	18	18	18	18	18	12	12	12	12	12
MAXIMUM CAPACITY (GB)											
18 slot servers	72	36	72	144	144	288	48	192	12	24	48

Memory

POPULATED DIMM SPEED (MHz)											
1 DIMM Per Channel	1333	1333	1333	1067	1333	1333	1067	1067	1333	1333	1333
2 DIMM Per Channel	1333*	1333*	1333*	1067	1333*	1066/ 1333**	800	800	1333	1333	1333*
3 DIMM Per Channel	800	800	800	800	800	800***	n/a	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.
** 2DPC: LV runs at 1066, Std voltage runs at 1333
** 3DPC: LV/Std voltage runs at 800

NOTES:

- PC3-10600 DIMMs have a maximum speed of 1333MHz. PC3-8500 DIMMs have a maximum speed of 1066MHz
- 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, the maximum speed will be 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, the maximum speed will be 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
- Maximum memory speed will also depend on the processor installed
- 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 (Base Model)

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 RDIMM	3	A; empty	
Chnl 2	4	H; empty	4	H; empty	Chnl 2
	5	E; empty	5	E; empty	
	6	B; 2GB RDIMM	6	B; empty	
Chnl 3	7	I; empty	7	I; empty	Chnl 3
	8	F; empty	8	F; empty	
	9	C; 2GB RDIMM	9	C; empty	

Standard memory plus optional memory (1 CPU model)

- 54GB, consisting of three (3) 2GB RDIMMs plus six (6) 8GB RDIMMs (Base Model)
  - 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 RDIMM	1	G; empty	Chnl 1
	2	D; 8GB RDIMM	2	D; empty	
	3	A; 2GB RDIMM	3	A; empty	
Chnl 2	4	H; 8GB RDIMM	4	H; empty	Chnl 2
	5	E; 8GB RDIMM	5	E; empty	
	6	B; 2GB RDIMM	6	B; empty	
Chnl 3	7	I; 8GB RDIMM	7	I; empty	Chnl 3
	8	F; 8GB RDIMM	8	F; empty	
	9	C; 2GB RDIMM	9	C; empty	

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

- 96GB, consisting of six (6) 16GB quad-rank PC3-8500 RDIMMs

	CPU1		CPU2		
	slot #	population order	slot #	population order	
Chnl 1	1	G; empty	1	G; empty	Chnl 1
	2	D; 16GB RDIMM	2	D; empty	
	3	A; 16GB RDIMM	3	A; empty	
Chnl 2	4	H; empty	4	H; empty	Chnl 2
	5	E; 16GB RDIMM	5	E; empty	
	6	B; 16GB RDIMM	6	B; empty	

Memory

Chnl 3	7	I; empty	7	I; empty	Chnl 3
	8	F; 16GB RDIMM	8	F; empty	
	9	C; 16GB RDIMM	9	C; empty	

UDIMM maximum configuration (1 CPU model)

- 24GB, consisting of six (6) 4GB 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; 4GB UDIMM	2	D; empty	
	3	A; 4GB UDIMM	3	A; empty	
Chnl 2	4	H; empty	4	H; empty	Chnl 2
	5	E; 4GB UDIMM	5	E; empty	
	6	B; 4GB UDIMM	6	B; empty	
Chnl 3	7	I; empty	7	I; empty	Chnl 3
	8	F; 4GB UDIMM	8	F; empty	
	9	C; 4GB UDIMM	9	C; empty	

Standard memory replaced with optional memory (2 CPU model)
RDIMM maximum configuration (2 CPU model)

- 288GB, consisting of eighteen (18) 16GB dual-rank PC3L-10600 RDIMMs

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

UDIMM maximum configuration (2 CPU model)

- 48GB, consisting of twelve (12) 4GB dual-rank PC3-10600 UDIMMs

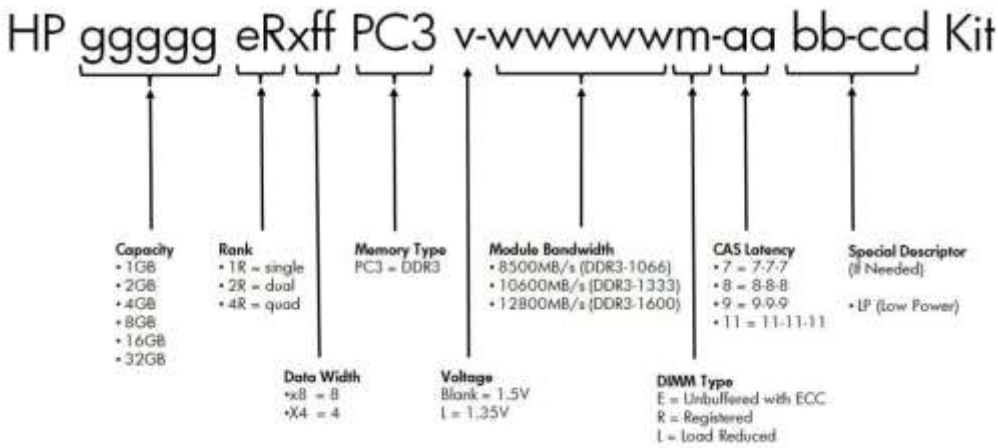
Memory

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

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

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

DDR3 memory options part number decoder



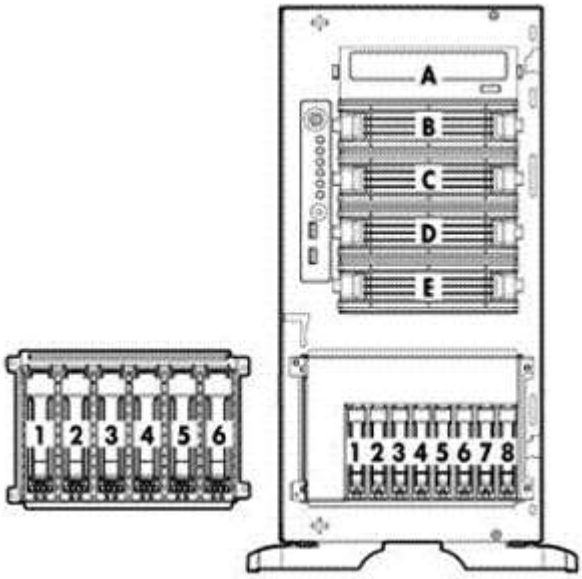
Following are memory options available from HP:

Memory	**Registered DIMMs (RDIMMs)**	
	HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500656-B21
	HP 4GB (1x4GB) Single Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	593339-B21
	HP 4GB (1x4GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500658-B21
	HP 8GB (1x8GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500662-B21
	HP 16GB (1x16GB) Quad Rank x4 PC3-8500 (DDR3-1066) Registered CAS-7 Memory Kit	500666-B21
	HP 4GB (1x4GB) Single Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit	604504-B21

Memory

HP 8GB (1x8GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit	604506-B21
NOTE: Low Voltage DIMMs can only be used with Intel® Xeon® processor 5600 series processors	
HP 16GB (1x16GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 LP Memory Kit	627812-B21
Unbuffered with ECC DIMMs (UDIMMs)	
HP 1GB (1x1GB) Single Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	500668-B21
HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	500670-B21
HP 4GB (1x4GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	500672-B21
HP 4GB (1x4GB) Dual Rank x8 PC3L-10600 (DDR3-1333) Unbuffered CAS-9 Low Power Memory Kit	619488-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: http://h18004.www1.hp.com/products/servers/platforms/energyefficient/	

Storage



1 - 6	6 x 3.5" (LFF) Hot-Plug SAS/SATA hard drive bays
Or	
1 - 8	8 x 2.5" (SFF) Hot-Plug SAS/SATA hard drive bays
B,C,D,E	Available half height media bays
A-E	Removable Optical Drive
D+E	8 x 2.5" (SFF) Hot-Plug SAS/SATA hard drive bays or 2 x 3.5" (LFF) Hot-Plug SAS/SATA hard drive bays

Drive Support

	Quantity Supported	Position Supported	Controller
Removable Media			
HP Half-Height SATA DVD-ROM Optical Drive	Up to 1	A-E	Integrated SATA Controller
HP Half-Height SATA DVD RW Optical Drive	Up to 1	A-E	Integrated SATA Controller

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
900GB 6G SAS 10K 600GB 6G SAS 10K 450GB 6G SAS 10K 300GB 6G SAS 10K 300GB 6G SAS 15K 146GB 6G SAS 15K	Up to 16 SFF	1-8 and D+E	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/ 256 MB Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller HP Smart Array P410/512 MB FBWC Controller HP Smart Array P410/1G FBWC 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 LFF (3.5-inch) Enterprise (ENT) Drives

	Quantity Supported	Position Supported	Controller

Storage

600GB 6G SAS 15K 450GB 6G SAS 15K 300GB 6G SAS 15K	Up to 8 LFF	1-6 and D+E	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/ 256 MB Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller HP Smart Array P410/512 MB FBWC Controller HP Smart Array P410/1G FBWC 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 LFF (3.5-inch) Midline (MDL) Drives

	Quantity Supported	Position Supported	Controller
3TB 6G SAS 7.2K 2TB 6G SAS 7.2K 1TB 6G SAS 7.2K	Up to 6 LFF	1-6 and D+E	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/ 256 MB Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller HP Smart Array P410/512 MB FBWC Controller HP Smart Array P410/1G FBWC 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
1TB 6G SAS 7.2K 500GB 6G SAS 7.2K	Up to 16 SFF	1-8 and D+E	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/ 256 MB Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller HP Smart Array P410/512 MB FBWC Controller HP Smart Array P410/1G FBWC 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
1TB 3G SATA 7.2K 500GB 3G SATA 7.2K	Up to 16	1-8 and D+E	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/ 256 MB Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller HP Smart Array P410/512 MB FBWC Controller HP Smart Array P410/1G FBWC Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P411/512 MB FBWC Controller

Storage

			HP Smart Array P411/1G FBWC Controller HP Smart Array P812/1G Flash Backed Cache Controller

	Quantity Supported	Position Supported	Controller
SATA Hot Plug LFF (3.5-inch) Midline (MDL) Drives			
3TB 3G SATA 7.2K 2TB 3G SATA 7.2K 1TB 3G SATA 7.2K 500GB 3G SATA 7.2K	Up to 6 LFF	1-6 and D+E	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/ 256 MB Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller HP Smart Array P410/512 MB FBWC Controller HP Smart Array P410/1G FBWC 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

	Quantity Supported	Position Supported	Controller
SATA Hot Plug LFF (3.5-inch) Entry (ETY) Drives			
250GB 3G SATA 7.2K	Up to 8	1-6 and D+E	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/ 256 MB Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller HP Smart Array P410/512 MB FBWC Controller HP Smart Array P410/1G FBWC 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

	Quantity Supported	Position Supported	Controller
SATA Hot Plug 2.5" Enterprise Mainstream Solid State Drives			
400GB 3G SATA MLC SFF 200GB 3G SATA MLC SFF 100GB 3G SATA MLC SFF	Up to 16	1-8 and D+E	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/ 256 MB Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller HP Smart Array P410/512 MB FBWC Controller HP Smart Array P410/1G FBWC 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

	Quantity Supported	Position Supported	Controller
SATA Hot Plug 3.5" Midline (MDL) Solid State Drives			
400GB 3G SATA MLC LFF 200GB 3G SATA MLC LFF	Up to 8	1-6 and D+E	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/ 256 MB Controller

Storage

100GB 3G SATA MLC LFF	HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller HP Smart Array P410/512 MB FBWC Controller HP Smart Array P410/1G FBWC 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

6G SAS Hot Plug Enterprise Performance Solid State Drives

	Quantity Supported	Position Supported	Controller
400GB 6G SAS SLC SFF 200GB 6G SAS SLC SFF	Up to 16	1-8 and D+E	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/ 256 MB Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller HP Smart Array P410/512 MB FBWC Controller HP Smart Array P410/1G FBWC 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

6G SAS Hot Plug Enterprise Performance Solid State Drives

	Quantity Supported	Position Supported	Controller
800GB 6G SAS MLC SFF 400GB 6G SAS MLC SFF 200GB 6G SAS MLC SFF	Up to 16	1-8 and D+E	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/ 256 MB Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller HP Smart Array P410/512 MB FBWC Controller HP Smart Array P410/1G FBWC 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
D2700 Disk Enclosure	Up to 2 Up to 4	External	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

Tape and Disk-Based Backup

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

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backup products see: http://www.hp.com/storage/SPOCK.

	Position Supported	Controller	Controller/HBA Option Kit Part Number
HP 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	Internal or External	HP SC11Xe Ultra320 Single Channel/ PCIe x4 SCSI Host Bus Adapter **NOTE:** Please check the full compatibility information at: http://www.hp.com/storage/SPOCK	412911-B21
HP SCSI Rack Mount Kits 1U Rack-Mount Kit 3U Rack-Mount Kit	External	HP SC11Xe Ultra320 Single Channel/ PCIe x4 SCSI Host Bus Adapter	412911-B21
HP USB Tape Drives DAT 40 DAT 72 DAT 160 DAT 320	Internal or External	USB 2.0 Port	N/A
HP USB Rack Mount Kits 1U USB Rack-Mount Kit	External	USB 2.0 Port	
HP 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	Internal or External	HP Smart Array P212/ZM 1-ports Int/1-ports Ext PCIe x8 SAS Controller **NOTE:** Please check the full compatibility information at: http://www.hp.com/storage/SPOCK	462828-B21
HP SAS Rack Mount Kits 1U Rack-Mount Kit 3U Rack-Mount Kit	External	HP Smart Array P212/ZM 1-ports Int/1-ports Ext PCIe x8 SAS Controller **NOTE:** Please check the full compatibility information at: http://www.hp.com/storage/SPOCK	462828-B21
HP SCSI Tape Autoloaders DAT 72x10 Autoloader 1/8 G2 Autoloader	External	HP SC11Xe Ultra320 Single Channel/ PCIe x4 SCSI Host Bus Adapter	412911-B21
HP SCSI Tape Libraries MSL2024 MSL4048 MSL8096	External	**NOTE:** Please check the full compatibility information at: http://www.hp.com/storage/SPOCK	

Storage

MSL6000

HP SAS Tape Autoloaders and Libraries 1/8 G2 Autoloader MSL2024 MSL4048 MSL8096	External	HP Smart Array P212/ZM 1-ports Int/1-ports Ext PCIe x8 SAS Controller **NOTE:** Please check the full compatibility information at: http://www.hp.com/storage/SPOCK	462828-B21
HP Fibre Channel Tape Libraries MSL2024 MSL4048 MSL8096 MSL6000	External	Please consult the EBS connectivity matrix at: http://www.hp.com/go/ebs for connectivity information and the supported Fibre Channel HBAs shown in this QuickSpec.	
HP USB RDX Removable Disk Backup System RDX160 RDX320 RDX500 RDX750 RDX1TB	Internal or External	USB 2.0 port	N/A
HP 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 D2D Backup Systems, Fibre Channel D2D4000fc	External	Direct server attach is not supported, requires connection via SAN fabric. See: http://www.hp.com/storage/SPOCK	

Power Specifications

HP 460W Common Slot Gold Hot Plug Power Supply Kit							
Part Number	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 Rating	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
Maximum Rated Input Wattage Rating (Watts)	526	520	505	505	503	503	503
Maximum Rated VA (Volt-Amp)	548	542	527	527	524	524	524
Efficiency (%)	87.5	88.5	91	91	91.5	91.5	91.5
Power Factor				0.97			
Leakage Current (mA)	0.42	0.50	0.83	0.87	0.92	0.96	1.00
Maximum Inrush Current (A peak)				30			
Maximum Inrush Current duration (mS)				20			
Maximum British Thermal Unit Rating (BTU-Hr)	1794	1773	1725	1725	1715	1715	1715

HP 750W Common Slot Gold Hot Plug Power Supply Kit							
Part Number	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 Rating	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
Maximum Rated Input Wattage Rating (Watts)	857	847	824	825	820	820	820
Maximum Rated VA (Volt-Amp)	894	884	859	859	854	854	854
Efficiency (%)	87.5	88.5	91	91	91.5	91.5	91.5
Power Factor				0.97			
Leakage Current (mA)	0.42	0.50	0.83	0.87	0.92	0.96	1.00
Maximum Inrush Current (A peak)				30			
Maximum Inrush Current duration (mS)				20			
Maximum British Thermal Unit Rating (BTU-Hr)	2925	2892	2812	2812	2797	2797	2797

HP 1200W Common Slot Silver Hot Plug Power Supply Kit							
Part Number	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 Rating	800	900	1200	1200	1200	1200	1200
Nominal Input Current (A rms)	9.7	9.0	7.0	6.8	6.4	6.1	5.9

Power Specifications

Maximum Rated Input Wattage Rating	930	1034	1348	1348	1348	1348	1348
Maximum Rated VA (Volt-Amp)	970	1079	1406	1406	1406	1406	1406
Efficiency (%)	86	87	89	89	89	89	89
Power Factor	0.97						
Leakage Current (mA)	0.42	0.50	0.83	0.87	0.92	0.96	1.00
Maximum Inrush Current (A peak)	30						
Maximum Inrush Current duration (mS)	20						
Maximum British Thermal Unit Rating (BTU-Hr)	3174	3530	4600	4600	4600	4600	4600

NOTE: To review typical system power ratings use the HP Power Advisor which is available online located at url: www.hp.com/go/proliant-energy-efficient or www.hp.com/go/hppoweradvisor.
NOTE: Option Kits contain optional power supply, an IEC power cable and PDU IEC cables.

Technical Specifications

System Unit	**Tower Dimensions** (H x W x D) (with feet/bezel)	18.5 x 8.59 x 23.46 in (47 x 21.8 x 59.6 cm)	
	Rack Dimensions (H x W x D) (with feet/bezel)	8.54 x 17.5 x 21.9 in. (21.7 x 44.5 x 55.7cm)	
	Tower Weight (approximate)	Maximum (all hard drives, power supplies, and processors installed)	70 lb (31.8 kg)
		Minimum (one hard drive, power supply, and processor installed)	54 lb (24.5 kg)
	Rack Weight (approximate)	Maximum (all hard drives, power supplies, and processors installed)	66 lb (29.9 kg)
		Minimum (one hard drive, power supply, and processor installed)	48 lb (21.8 kg)
	Input Requirements (per power supply)	Rated Line Voltage	100 to 240 VAC
		Rated Input Current	7.1 Amps (at 120VAC) to 3.5 Amps (at 240 VAC)
		Rated Input Frequency	50 to 60 Hz
		Rated Input Power	852 W
	BTU Rating	Maximum	460W - 1773 BTU / hr (at 120 VAC), 1715 (at 240 VAC) 750W - 2892 BTU / hr (at 120 VAC), 2797 (at 240 VAC) 1200W - 3530 BTU / hr (at 120 VAC), 4600 (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 - Click on the system of interest. Example: ML350 G6 - Follow the instructions of the next screens.	
	Power Supply Output (per power supply)	Rated Steady-State Power	460(750) W (at 100 VAC), 460(750) W (at 200 VAC)
		Maximum Peak Power	460(750) W (at 100 VAC), 460(750) 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 304.8 m (1.8°F per every 1000 ft) above sea level to a maximum of 3048 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 10°C/hr (18°F/hr). The upper limit may be

			limited by the type and number of options installed. System performance may be reduced if operating with a fan fault or above 30°C (86°F).
		Non-operating	-30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).
	Relative Humidity (non-condensing)	Operating	10 to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing.
		Non-operating	5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.
	Altitude	Operating	3048 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
		Non-operating	9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
	Acoustic Noise	Listed are the declared A-Weighted sound power levels (LWAd) and declared average bystander position A-Weighted sound pressure levels (LpAm) when the product is operating in a 23°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109).	
		Idle	
		L WAd	4.7 B (1P Non-Redundant) 4.6 B (2P Redundant)
		L pAm	32.48dB (1P Non-Redundant) 31.18dB (2P Redundant)
		Operating	
		L WAd	4.8 B (1P Non-Redundant) 4.7 B (2P Redundant)
		L pAm	32.39dB (1P Non-Redundant) 31.62dB (2P Redundant)
		NOTE: The Listed sound levels apply to standard shipping configurations. Additional options may result in increased sound levels.	
	Emissions Classification (EMC)	**FCC Rating**	Class B
		Normative Standards	CISPR 22; EN55022; EN55024; FCC CFR 47, Pt 15; ICES-003; CNS13438; GB9254; K22;K24; EN 61000-3-2; EN 61000-3-3; EN 60950-1; IEC 60950-1
		NOTE: Product conformance to cited product specifications is based on sample (type) testing, evaluation, or assessment. This product or family of products is eligible to bear the appropriate compliance logos and statements.	
Smart Array 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 4X connectors	
	Cache Memory Speed	DDR2-800MHz with 40 or 72-bit wide bus	

Technical Specifications

	Server Interface	x4 PCIe 2.0 provides 2GB/s maximum bandwidth
	SAS Speed	8 6Gb/s SAS links provide 4.8GB/s maximum bandwidth
	Cache Memory	Zero Memory RAID has no cache memory 40-bit 256MB ECC protected cache (battery upgrade available) 72-bit 512MB BBWC or 72-bit 512MB and 1G FBWC
	Logical Drives Supported	Zero Memory, Up to 2 logical volumes (8 physical drives) Up to 64 logical drives with cache
	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 one of the following combinations: • 256 MB cache, Battery kit and Smart Array Advanced Pack License key option upgrades • 512 MB BBWC/FBWC and Smart Array Advanced Pack License key option upgrades • 1G FBWC and Smart Array Advanced Pack License key option upgrades RAID 5, 5+0 (Distributed Data Guarding) **NOTE:** A minimum or 256 MB cache is required to enable RAID 5, 5+0 support RAID 1+0 (Striping & Mirroring) RAID 0 (Striping), RAID 1 (Mirroring)
Embedded NC326i PCI Express Dual Port 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
	Data Transfer Method	PCI Express, four lanes (x4)
	Controller	BCM5715
	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) 2000Mb/s
	Connector	RJ-45
	Cable Support	10Base-T Categories 3, 4 or 5 UTP; up to 328 ft (100 m) 10/100/1000Base-TX Category 5 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.

Summary of Changes

Date	Version History	Action	Description of Change:
30-Jul-2014	From Version 74 to 75	Changed	Product descriptions updated throughout the QuickSpec.
		Removed	HT support for Intel® Xeon® E5606 processor.
05-Mar-2013	From Version 73 to 74	Added	Optional Features: Added HP Proactive Insight experience section.
19-Feb-2013	From Version 72 to 73	Changed	Changes made in the Standard Features, Optional Features and Additional Options sections.
31-Jan-2013	From Version 71 to 72	Removed	Deleted information from the HP Insight Software Section. Deleted information from the HP Tape Backup section. Deleted information from the HP Care Pack Services section
07-Dec-2012	From Version 70 to 71	Added	HP I/O Expansion Options HP R5KVA and R7KVA 3U Extended Runtime Module was added to HP UPS HP Power Distribution Units and HP Intelligent Power Distribution Units (iPDU) sections
		Changed	Updated HP Insight Management Software throughout the document. Renamed several of the categories in Hard Drives Revised HP Tape Backup and HP Disk Backup Revised HP Rack Options, specifically the Keyboards and Monitors section, USB Keyboard and Mouse section, HP Server Console Switch G2 with Virtual Media & CAC and HP IP Console Switch G2 with Virtual Media & CAC In Storage/HP SCSI Tape Drives, updated the name of the controller
		Removed	Removed HP Performance Packs from Step 3 of Configuration Information. Removed 6G SAS Hot Plug Enterprise Mainstream Solid State Drives from the Hard Drives section Removed HP Backup & Recovery Software
24-Sep-2012	From Version 69 to 70	Changed	Changes made to the Optional Features section.
24-Aug-2012	From Version 68 to 69	Changed	Changes made to the Core Options, Standard Features, and Additional Options.
17-Aug-2012	From Version 67 to 68	Changed	Changes made throughout the QuickSpec.
17-May-2012	From Version 66 to 67	Changed	Changes made in the Options section.
14-May-2012	From Version 65 to 66	Changed	HP Insight Software was revised

Summary of Changes

			Second Generation Accelerators were added to HP I/O Accelerator Options HP ML350 G6 Intel Xeon X5560, X5550, E5540, L5520, L5506 and E5502 Processors were removed
26-Mar-2012	From Version 64 to 65	Added	New models were added to HP Insight Software HP D2D Backup Systems with Backup Data Deduplication was added to HP Disk Backup HP USB Keyboard and Mouse was added to HP Rack Options
19-Mar-2012	From Version 63 to 64	Changed	Changes made in Step 1 Configuration Information and the Options sections.
16-Mar-2012	From Version 62 to 63	Changed	Country Code was revised in Pre-Configured Models.
06-Mar-2012	From Version 61 to 62	Changed	Changed a link in the Hard Drives section of Core Options. Changes also made in the Models section.
13-Feb-2012	From Version 60 to 61	Changed	Changes made in the Standard Features, Options and Storage sections only.
20-Jan-2012	From Version 59 to 60	Changed	URL was revised in HP Tape Backup section.
13-Jan-2012	From Version 58 to 59	Changed	URL was revised in Tape and Disk Backup HP CN1000Q Dual Port Converged Network Adapter was added to HP Storage Options
02-Dec-2011	From Version 56 to 58	Changed	Change made to the Canada version only.
18-Nov-2011	From Version 55 to 56	Changed	Changes made to the North America and Canada versions only.
14-Nov-2011	From Version 54 to 55	Changed	Changes made throughout the QuickSpec.
10-Oct-2011	From Version 53 to 54	Removed	HP CN1000Q Dual Port Converged Network Adapter was removed from HP Storage Options.
26-Sep-2011	From Version 52 to 53	Changed	Changes made throughout the QuickSpec.
14-Sep-2011	From Version 51 to 52	Changed	Change made to a Note in the System Fans section.
09-Sep-2011	From Version 50 to 51	Changed	Corrections made in the HP Tape Backup section.
08-Sep-2011	From Version 49 to 50	Changed	Corrections made in the HP Tape Backup section.
06-Sep-2011	From Version 48 to 49	Changed	Changes made within the Standard Features, Models and Options sections.
25-Aug-2011	From Version 46 to 48	Changed	Changes made to the Canada version only.
01-Aug-2011	From Version 45 to 46	Changed	Hard Drive descriptions were revised.
11-Jul-2011	From Version 44 to 45	Changed	Changes made in the Standard Features, Models, Options and Storage sections.
23-Jun-2011	From Version 43 to 44	Changed	Link was corrected in Service and Support.
13-Jun-2011	From Version 42 to 43	Changed	Changes made to the North America and Canada versions only.
13-May-2011	From Version 41 to 42	Changed	Changes made throughout the QuickSpec.
29-Apr-2011	From Version 40 to 41	Changed	Changes made to the North America and Canada versions only.
19-Apr-2011	From Version 39 to 40	Changed	Changes made throughout the QuickSpec.
16-Mar-2011	From Version 37 to 38	Changed	Changes made to processor descriptions in Step 2 of the Configuration Information section.
14-Feb-2011	From Version 36 to 37	Changed	Changes made throughout the QuickSpec.
10-Jan-2011	From Version 35 to 36	Changed	HP NC523SFP 10Gb 2-port Server Adapter was added to HP Networking HP CN1000Q 2P Converged Network Adapter was added

Summary of Changes

			to HP StorageWorks Options Oracle Enterprise Linux (OEL) was removed from Operating Systems and Virtualization Software Support for ProLiant Servers
10-Dec-2010	From Version 34 to 35	Changed	Changes made to the North America and Canada versions only.
03-Dec-2010	From Version 33 to 34	Changed	Activated a link in the High Performance Clusters section.
23-Nov-2010	From Version 32 to 33	Changed	Smart Array P812 Controller product description was revised.
18-Nov-2010	From Version 31 to 32	Changed	Urls for Common Slot Power Supplies and notes for Power Supplies were revised Smart Array P410i Controller was completely revised HP Management DVD and HP ProLiant Smart Update Firmware DVD were added to HP Insight management software HP I/O Accelerator Options was added to Additional Options HP StorageWorks RDX 1TB Internal Removable Disk Backup System was added to HP Disk Backup HP 10642G2 and 10647G2 1200mm deep Rack cabinet Shock Rack were added to HP Rack Series What's New was removed from the Overview
03-Nov-2010	From Version 30 to 31	Changed	Changes made to the North America and Canada versions only.
21-Oct-2010	From Version 29 to 30	Added	Added a NOTE to the HP Storage Controllers section.
19-Oct-2010	From Version 28 to 29	Changed	Changes made throughout the QuickSpec.
24-Sep-2010	From Version 27 to 28	Changed	Changes made to the Smart Buys section of the North America and Canada versions only.
10-Sep-2010	From Version 26 to 27	Changed	Processor was updated for Model 594874.
27-Aug-2010	From Version 25 to 26	Changed	Changes made in the Processor section of Standard Features and in the HP Disk Backup section of Additional Options.
16-Aug-2010	From Version 24 to 25	Changed	Changes made throughout the QuickSpec.
13-Jul-2010	From Version 23 to 24	Added	Added new Smart Buys to the North America and Canada versions only.
08-Jul-2010	From Version 22 to 23	Changed	Corrected an inactive link in the At A Glance section.
21-Jun-2010	From Version 21 to 22	Changed	Changes made throughout the QuickSpec.
28-Apr-2010	From Version 20 to 21	Changed	Changes made within the At A Glance, Additional Options and Storage sections.
22-Apr-2010	From Version 19 to 20	Added	Electronic software is available in all countries except China and Japan. Customers in China and Japan should order the physical equivalent note was added to HP Integrated Lights-Out (iLO) Advanced.
19-Apr-2010	From Version 18 to 19	Removed	Removed the following from the Infrastructure Management section in At A Glance:

Summary of Changes

			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)
09-Apr-2010	From Version 17 to 18	Changed	Changes made within the Standard Features, Models and Core and Additional Options sections.
29-Mar-2010	From Version 16 to 17	Changed	Changes made throughout the entire QuickSpec.
16-Feb-2010	From Version 15 to 16	Changed	Changes made throughout the entire QuickSpec.
29-Jan-2010	From Version 14 to 15	Changed	Changes made within the HP Insight Software section of the Additional Options section.
18-Dec-2009	From Version 13 to 14	Changed	Changes made within the Core and Additional Options sections and in the Power Specifications section.
23-Nov-2009	From Version 12 to 13	Removed	Removed 580385-B21.
16-Nov-2009	From Version 11 to 12	Changed	Changes made within the At A Glance, Standard Features, Core and Additional Options sections.
19-Oct-2009	From Version 10 to 11	Added	Added the HPC Interconnects section.
		Changed	Changes made within the At A Glance, Standard Features, Core and Additional Options sections.
16-Sep-2009	From Version 9 to 10	Changed	Changes made throughout the entire QuickSpec.
03-Aug-2009	From Version 8 to 9	Changed	Changes made within the At A Glance, Standard Features, Core and Additional Options sections.
15-Jul-2009	From Version 7 to 8	Added	Added part number 500666-B21 to the Memory section within Core Options.
13-Jul-2009	From Version 6 to 7	Changed	Changes made throughout the entire QuickSpec.
02-Jun-2009	From Version 5 to 6	Added	Added the What's New section.
		Changed	Changes made within the At A Glance, Standard Features, Models, Core Options, Additional Options, Storage and Technical Specifications sections.
18-May-2009	From Version 4 to 5	Changed	Changes made to the North America and Canada versions only.
15-May-2009	From Version 3 to 4	Changed	RAID 5, 5+0 (Distributed Data Guarding) NOTE was changed for the Smart Array P410i Controller in the Technical Specifications section.
27-Apr-2009	From Version 2 to 3	Added	HP 8GB 2Rx4 PC3-10600R-9 Kit to Memory throughout the QuickSpec Secure Digital (SD) Memory Cards to the Additional Options section Battery Kit and HP Smart Array Advanced Pack (SAAP) to Storage Controllers in the Additional Options section HP StorageWorks LTO-3 Ultrium 920 SAS Internal Tape Drive to Tape Drives in the Additional Options section
		Changed	Updated System Fans in the Standard Features section, HP KVM Switch Options in the Additional Options section and Power Supply Output in the Technical Specifications section Completely revised High Availability Cluster Options in the Options section HP ProLiant Essentials Accelerated Pack was removed from Server Management Stand Alone Software Products

Summary of Changes

			in the Standard Features and Additional Options section HP Smart Array P411/256 MB and P411/512 MB Controllers were removed from Storage Controllers in Step 3 of the Configuration Information - Factory Integrated Models section and the Additional Options section
03-Apr-2009	From Version 1 to 2	Changed	Corrected a part number error in the Unique Options section.

Summary of Changes

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