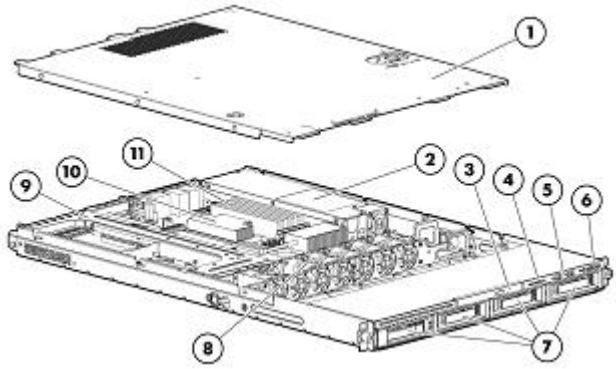
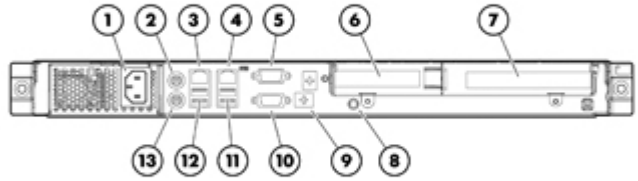
RETIRED: This document has been officially retired, and the base products listed herein are now considered obsolete and are no longer available for sale. Consequently, the information contained within may no longer be current. This document is provided exclusively for reference and informational purposes.

QuickSpecs

Overview

The HP ProLiant DL120 G6 Server is an entry-level rack-optimized server providing you with all confidence of a HP ProLiant server. The single processor, 1U server is ideal for single-application IT infrastructure, web and edge-of-network applications. The HP ProLiant DL120 provides two PCI-Express slots with an optional 3rd x4 PCI-Express slot optional upgrades, including HP HBAs and Smart Array Controllers, provide support for SAS hard disk drives. DL120 G6 HP Lights Out 100i Remote Management provides cost-effective remote management from anywhere, anytime. Plus, you get the cost-effective solution of a single-processor platform with the performance advantages of quad-core technology.





Front View:

1. Cover
2. Power Supply (400 Watt)
3. Optional Slim 9.5mm DVD ROM
4. System ID Tag
5. Front USB connectors (2)
6. Power Button, UID Button, and Front LED Indicators
7. Support for up to four Non-Hot Plug SATA or Hot Plug SAS Hard Drives
8. Non Hot Plug Dual Rotor Fans (4)
9. Two PCI express Slots (one x16, one x4 Lanes)
10. Processor Socket (Intel® Xeon® Quad-Core)
11. Six PC3-10600E UB ECC DDR3 Memory Slots

Rear View:

1. Power supply cable socket
2. Mouse connector
3. NIC 1 connector
4. NIC 2 connector
5. Serial Connector
6. Expansion slot 2, PCI-e x8, Low-profile, Half-length
7. Expansion slot 1, PCI-e x16, Full height, Full-length
8. UID button/LED
9. Management NIC connector
10. Security - Trusted Platform Module Video connector
11. USB connectors (2)
12. USB connectors (2)
13. Keyboard connector

What's New

- Support for HP NC365T 4-port Ethernet Server Adapter

Standard Features

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

Processor One of the following depending on Model	Quad-Core Processors Intel® Xeon® X3430 (2.40GHz/4-core/8MB/95W, 1333, Turbo 1/1/2/3) Processor Intel® Xeon® X3440 (2.53GHz/4-core/8MB/95W, 1333, HT, Turbo 1/1/2/3) Processor NOTE: Available through Configure To Order only. See Factory Integration Models section for more details. Intel® Xeon® X3450 (2.66GHz/4-core/8MB/95W, 1333, HT, Turbo 1/1/4/4) Processor Intel® Xeon® X3460 (2.80GHz/4-core/8MB/95W, 1333, HT, Turbo 1/1/4/5) Processor NOTE: Available through Configure To Order only. See Factory Integration Models section for more details. Intel® Xeon® X3470 (2.93GHz/4-core/8MB/95W, 1333, HT, Turbo 1/1/4/5) Processor NOTE: Available through Configure To Order only. See Factory Integration Models section for more details. 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 are 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. Dual-Core Processors Intel® Celeron® G1101 (2.26GHz/2-core/2MB/73W, 1066) Processor NOTE: Available through Configure To Order only. See Factory Integration Models section for more details. Intel® Pentium® G6950 (2.80GHz/2-core/3MB/73W, 1066, HT) Processor Intel® Xeon® L3406 (2.26GHz/2-core/4MB/30W, 1066, HT, Turbo 2/2) Processor NOTE: Available through Configure To Order only. See Factory Integration Models section for more details. Intel® Core™ i3-530 (2.93GHz/2-core/4MB/73W, 1333, HT) Processor NOTE: Available through Configure To Order only. See Factory Integration Models section for more details. Intel® Core™ i3-540 (3.06GHz/2-core/4MB/73W, 1333, HT) Processor NOTE: Available through Configure To Order only. See Factory Integration Models section for more details.
Cache Memory	Integrated 1x8MB Level3 Intel® Smart Cache
Chipset	Intel® 3420 Chipset
Memory Protection	ECC

Standard Features

Memory One of the following depending on Model	Type	DDR3 1066/1333MHz Unbuffered (UDIMM) and Registered (RDIMM) NOTE: Registered DIMMS (RDIMMs) are supported only with Xeon Processor family
	DIMM Slots	Total 6 DIMM slots
	Standard (Entry Model)	2GB (1x2GB) UDIMM
	Standard (Base Models)	2GB (1x2GB) UDIMM
	Standard (Performance Models)	4GB (2x2GB) RDIMM
	Maximum Memory	Supports up to 16GB DDR3 1066/1333 Unbuffered ECC DIMM or 16GB DDR3 800/1066/1333 Registered DIMM. Supports up to 4 UDIMMs or 6 dual rank RDIMMs

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.

Network Controller	Embedded HP NC107i PCI Express Gigabit Server Adapter (x2)

Expansion Slots	Technology	Bus Width***	Connector Width	Bus Number*	Device No.**	Form Factor	Notes
1 (Standard)	PCIe G2	X16	x16	0	1	Full length, full height slot	
2 (Standard)	PCIe G2	X4	x8	0	28	Half height, low profile slot	
1 (Optional)	PCI-X (133MHz, 3.3Volt)	64-bit	N/A	0	1	Full length, full height slot	

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

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

*** Indicates the number of physical electrical lanes running to a PCI-e connector.

Standard Features

Storage Controllers	Entry and Base Model	HP Smart Array B110i SATA RAID Controller (RAID 0/1/1+0) NOTE: Transfer rate: 3Gb/s SATA NOTE: SATA Hot Plug available via Hot Plug Advance Pack for B110i NOTE: Hot Plug SAS and SATA controllers available via PCI card option. NOTE: Smart Array SAS Controller requires the HP CA ASSY 384SATA to MINI-SAS Kit (P/N 487734-B21) must be ordered. NOTE: Available upgrade: HP Smart Array Hot Plug Advance Pack for B110i. NOTE: HP Smart Array B110i does not support greater than 2TB hard drive.	
	Performance Model	HP Smart Array P212/256MB Controller (RAID 0/1/1+0/5/5+0) NOTE: Available upgrades: Battery Kit upgrade (for BBWC), and Smart Array Advanced Pack (SAAP).	
Internal Storage Devices Drives	Optical Drive	Optional 9.5mm DVD-ROM, or DVD-RW Drive	
	Hard Drives One of the following depending on Model	Entry Model	Up to 4 non-hot plug SATA/SAS 3.5" drives supported. 1x160GB non hot plug SATA 3.5" drive ships standard NOTE: SAS requires optional HBA or SA card
		Base Model (Cold Plug)	Up to 4 cold plug SATA/SAS 3.5" drives supported. None ships standard NOTE: SAS requires optional HBA or SA Controller card. NOTE: SATA Hot Plug available via Hot Plug Advance Pack for B110i.
		Performance Model (Hot Plug)	Up to 4 hot plug SATA/SAS 3.5" drives supported. None ships standard
Maximum Internal Storage One of the following depending on Model	Hot Plug SAS	8.0TB	(4 x 2TB) 3.5" SAS
	Non-Hot Plug SATA	8.0TB	(4 x 2TB) 3.5" SATA
Interfaces	Serial	1	
	Pointing Device	1	
	Keyboard	1	
	Graphics	1 (rear)	
	Network RJ-45	2	
	USB 2.0	7 (2 front, 1 internal, 4 rear) NOTE: Internal USB port (optional) for flexible storage, security, or USB drive key deployment. NOTE: Please see the following URL for additional information regarding USB support: http://h18004.www1.hp.com/products/servers/platforms/usb-support.html	

Standard Features

Industry Standard Compliance	ACPI 3.0a PCI 2.3 Compliant PXE Support WOL Support Microsoft® Logo certifications USB 2.0 IPMI 2.0 DCMI 1.0	
Server Power Cords	North America	One 6' Highline (IEC-IEC) power cord ships standard
	Japan	One 6' Highline (IEC) power cord and one 6' Lowline power cord ship standard
	ROW	One 6' Highline (IEC) power cord ships standard
	NOTE: HP ProLiant DL120 G6 server ship standard worldwide with a C13 to C14 2M Highline jumper cord. Japanese models also include a 2M Lowline power cord. If customers require a local power cord, they can check the power cord matrix for the appropriate country specific cord. Please see the following power cord matrix: http://www.hp.com/go/powercordmatrix.	
Power Supply	Auto-sensing 400-Watt PFC Power Supply, CE Mark Compliant	
System Fans	4 dual rotor fans ship standard.	
Required Cabling	For required cabling information, refer to the Web site at: http://h10010.www1.hp.com/wwpc/us/en/sm/WF05a/15351-15351-3328412-241644-241475-3579703.html.	
Operating Systems and Virtualization Software	Microsoft Windows Server Red Hat Enterprise Linux (RHEL) SUSE Linux Enterprise Server (SLES) 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, including how to purchase from HP, please visit our OS Support Site at: http://www.hp.com/go/ossupport and our driver download page http://www.hp.com/support/DL120G6	
Graphics	64MB shared supports all display resolutions up to 1600 x 1200 16bpp @ 75Hz	
Form Factor	Rack (1U), (1.69 in/4.32 cm), 27.56" deep NOTE: New fixed mounting rails included with all models.	
Embedded Manageability	**HP ProLiant LO100**	HP ProLiant Lights-Out 100, simplifies server setup, control, and lights-out remote administration of ProLiant 100 Series servers and functions without

		additional software. It can be accessed from any location via LAN or Internet and works hand-in-hand with HP Systems Insight Manager (SIM), helping customers unlock the value of the ProLiant platform and deliver the highest possible quality of IT service to the business. Advanced Licenses are required for Virtual KVM and Virtual Media feature activation. Key features of LO100 are: • IPMI 2.0 & SMASH CLP support • ROM Setup Utility • Improvements to virtual media with the addition of USB 2.0 drives and protocol support for much faster transfer speeds and DVD-ROM support plus simplified virtual media (floppy and CD with no FTTP server requirements) • Enhanced browser interface and embedded KVM over IP provides OS-independent remote graphical console • 24x7 Technical Support and Update (TSU) 1 year support and license upgrades included in Advanced license NOTE: For more information, see: http://www.hp.com/go/lo100
Core Server Management	HP Insight Foundation suite for ProLiant	Insight Foundation is being baselined at version v8.70 which means the following: • Its Media Kit (contains 2 SmartStart CDs, the Firmware DVD, and the Management DVD) will continue to ship with all supported ProLiant G7 or earlier BTO servers until the last supported server is no longer shipping. • The Media Kit will not be updated past version 8.70. • ProLiant G7 or earlier CTO servers are able to order the Media Kit with the understanding that the media is not updated. Please check specific server QuickSpecs for availability of CTO Kit. • PSP and Firmware DVD downloads will be updated through 2Q 2012 at the HP Insight Foundation Suite for ProLiant downloads tab: http://www.hp.com/go/foundation Customers are urged to use the replacement product, HP Service Pack for ProLiant, instead of Insight Foundation Suite which is found at these location: • www.hp.com/go/spp • www.hp.com/go/spp/download
Core Infrastructure Management	HP Systems Insight Manager	HP Systems Insight Manager (HP SIM) provides a unified, secure and extensible standards-based environment to centrally manage servers, storage and other infrastructure devices, (both HP and non-HP) across multiple operating system platforms.
	Insight Management Agents	HP Insight Management Agents and Insight Management Providers are available for HP Systems Insight Manager (SIM) Integration. ProLiant 100-series G6 servers can use the same SNMP based Insight Management Agents supported by other ProLiant servers. As a result, administrators can use HP Systems Insight Manager (SIM) 5.3 and greater to manage ProLiant 100-series G6 servers. Administrators can also use any other SNMP- based management tool. These agents are obtained as part of

the ProLiant 100-series model-specific "Easy Set-up" CDs, or through http://www.hp.com/servers/easysetup

The following capabilities are enabled on the 100-series G6 servers by the SNMP agents:

- Health monitoring capabilities, including monitoring for drives, fans, network, power supplies, and temperature
- Alerting capabilities, including basic alert notification for Smart Array drive pre-failure only
- Performance monitoring capabilities providing information on processor, memory, disk free space, network utilization

For additional information, please see: http://www.hp.com/go/insight

Easy Set-up CD

Easy Set-up CDs are available on all 100-series G6 servers and are also available as an ISO image web download. HP ProLiant Easy Set-up CDs provide easy, step-by-step, single and multi-server server utilities for the ProLiant 100-series G6 servers to streamline server setup for 100-series G6 servers. The user experience is consistent with SmartStart and offers the following capabilities:

- Boot environment and GUI
- Assisted Installation: Windows 2003 Server and Windows 2008 Server drivers
- Manual installation: Windows 2003 Server, Windows 2008 Server, and Linux drivers (specific OS support varies by server. Refer to each server's QuickSpecs for supported versions)
- HP Insight Diagnostics
- AutoRun
- Array Configuration Utility (ACU) has been combined with Array Diagnostics Utility (ADU) to offer both configuration of array controllers and storage devices and testing of array controller hardware
- SmartStart Scripting Toolkit (SSSTK) and Smart Components for software and drivers for DL100 and SL100 servers

NOTE: OS and SW available for Manual Installation are listed on each servers' QuickSpecs.

SmartStart Scripting Toolkit (SSSTK)

The SmartStart Scripting Toolkit is a server deployment product that delivers an unattended automated installation for high-volume server deployments. The SmartStart Scripting Toolkit includes a set of utilities for configuring and deploying servers in a customized, predictable, and unattended manner. These utilities enable you to duplicate the configuration of a source server on target servers with minimum user interaction.

The Toolkit is designed for IT experts with experience in scripting operating system installations and configuring ProLiant server hardware.

For additional information, please see: http://h18004.www1.hp.com/products/servers/management/toolkit/index.html

Standard Features

	Subscriber's Choice	Subscriber's Choice Driver and Support Alerts/Notifications is a web-based email subscription service that provides software and driver change notifications for ProLiant products. Sign up at: http://www.hp.com/go/subscriberschoice and customize your profile to receive various new alerts as they become available, on a weekly or monthly basis.
	ROMPaq, software and latest drivers	The latest software, drivers, and firmware fully optimized and tested for your ProLiant server and options; downloaded from Software and Drivers download pages website at: http://www.hp.com/go/support and from www.hp.com/servers/easysetup. Contains the following: • HP Insight Management Agents for Systems Insight Manager (SIM) Integration • HP Systems Management Homepage • Array Configuration Utility (ACU) • Array Diagnostics Utility (ADU) • HP Insight Diagnostics

Intelligent Manageability

HP ProLiant Lights-Out 100 with optional LO100 Advanced Licenses for Virtual KVM and Virtual Media.
Embedded IPMI standard reporting
Easy Set-up CD and ISO Image Web downloads
Array Configuration Utility (ACU)
Array Diagnostics Utility (ADU)
HP Insight Diagnostics
HP Insight Management Agents and Insight Management Providers for Systems Insight Manager (SIM) Integration

Security

Power-on password
Keyboard password
USB Port control
Removable DVD-ROM Drive Assembly (optional)
Dedicated/Shared LO100 management NIC port
Administrator's password

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.
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 Control management software	Insight Control server deployment	HP Insight Control server deployment is a deployment solution for HP ProLiant and Integrity servers hosted on a Windows CMS. It automates the process of deploying and provisioning server software, enabling companies to quickly and easily adapt to changing business demands. Insight Control server deployment includes software optimizations for HP servers, including the HP scripting toolkits, configuration jobs for leading industry-standard operating systems, sample unattended files, and HP server support packs that include software drivers, management agents, and important documentation. Deploying servers can be accomplished either through imaging or through scripting. Insight Control server deployment is hosted on a Windows server and is intended for heterogeneous environments deploying Windows, Linux, VMware ESX and Microsoft Hyper-V systems. Insight Control server deployment includes one year of 24 x 7 HP Software Technical Support and Update Service ensuring rapid access to HP support staff and proactive delivery of software updates. For more information about this service, please visit: http://www.hp.com/services/insight.
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 Enterprise Configurator		The HP eConfigure-Enterprise Configurator now provides factory default racking for our HP hardware portfolio. This approach is aligned with our strategic direction to meet the needs and expectations of our valued customers. If you require "custom" rack configuration, please contact HP's Customer Business Center or an Authorized Partner for assistance. http://www.hp.com/products/configurator.

Service and Support	**HP 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.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 to the HP Global Solution Center. http://h20195.www2.hp.com/V2/GetPDF.aspx/5982-6547EN.pdf **Additional Services:** Software OS (Microsoft, Linux (SUSE/Red Hat) Installation and Start Up and Software Support) plus Microsoft or Linux education courses +30 Proactive Select Credits, Factory Express.

Service and Support

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.pdf 3-Year HP 24x7 4 hour Response, Hardware Support Onsite Service Provides you with rapid remote support and if required an HP authorized representative who will arrive on site any time and day of the year to begin hardware maintenance service within 4 hours of the service request being logged. http://h20195.www2.hp.com/V2/GetPDF.aspx/5982-6547EEE.pdf Additional Services: Software OS (Microsoft, Linux (SUSE/Red Hat) Installation and Start Up and Software Support); +10 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.pdf 3-Year HP 13x5 4 hour Response, Hardware Support Onsite Service Delivers increased equipment availability and productivity with rapid remote support and onsite response for your HP server and storage hardware http://h20195.www2.hp.com/V2/GetPDF.aspx/5982-6547EEE.pdf Additional Services: Software OS (Microsoft, Linux (SUSE/Red Hat) Installation and Start Up and Software Support), 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: Not all models are available in all regions. Check with your local country HP offices for availability.

Entry Model

HP ProLiant DL120 G6 G6950 1P 2GB-U B110i NHP SATA 160GB LFF 400W PS ETY Server
490930-xx1

Processor	(1) Intel® Pentium® G6950 (2.80GHz/2-core/3MB/73W, 1066) Processor
Cache Memory	3MB Intel® Smart Cache
Memory	2GB (1x2GB) PC3-10600E DDR3 UB ECC NOTE: Total of 6 DIMM slots
Network Controller	Embedded HP NC107i PCI Express Gigabit Server Adapter (x2)
Storage Controller	HP Smart Array B110i SATA RAID Controller (RAID 0/1/1+0)
Hard Drives	1 x 160GB 3.5" Non-hot plug SATA
Internal Storage	Up to 4 large form factor Non-hot plug SATA
Optical Drive	None Ships Standard
Power Supply	Auto-sensing 400-Watt PFC Power Supply, CE Mark Compliant
Form Factor	1U
Warranty	Server Warranty includes 3 year Next Day Parts replacement, 0-Years Labor, 0-Years Onsite support. (3-1-1 warranty in APJ)

Base Model

HP ProLiant DL120 G6 X3430 1P 2GB-U B110i Cold Plug SATA 4 LFF 400W PS Base Svr
490931-xx1

Processor	(1) Intel® Xeon® X3430 (2.40GHz/4-core/8MB/95W, 1333, Turbo 1/1/2/3) Processor
Cache Memory	8MB Intel® Smart Cache
Memory	2GB (1x2GB) PC3-10600E DDR3 UB ECC NOTE: Total of 6 DIMM slots
Network Controller	Embedded HP NC107i PCI Express Gigabit Server Adapter (x2)
Storage Controller	HP Smart Array B110i SATA RAID Controller (RAID 0/1/1+0)
Hard Drives	None Ships Standard
Internal Storage	Up to 4 large form factor Cold Plug drives NOTE: Hot Plug support requires HP Smart Array Hot Plug Advance Pack for B110i or Smart Array Controller and HP CA ASSY 38" 4 SATA to MINI-SAS Kit (P/N 591475-B21).
Optical Drive	None Ships Standard
Power Supply	Auto-sensing 400-Watt PFC Power Supply, CE Mark Compliant
Form Factor	1U
Warranty	Server Warranty includes 3 year Next Day Parts replacement, 0-Years Labor, 0-Years Onsite support. (3-1-1 warranty in APJ)

Pre-configured Models

Performance Model

HP ProLiant DL120 G6 X3450 1P 4GB-U P212/256 Hot Plug 4 LFF 400W PS Perf Server 490932-xx1	Processor	(1) Intel® Xeon® X3450 (2.66GHz/4-core/8MB/95W, 1333, HT, Turbo 1/1/4/4) Processor
	Cache Memory	8MB Intel® Smart Cache
	Memory	4GB (2x2GB) PC3-10600R-9 DDR3 RDIMM NOTE: Total of 6 DIMM slots
	Network Controller	Embedded HP NC107i PCI Express Gigabit Server Adapter (x2)
	Storage Controller	HP Smart Array P212/256MB Controller
	Hard Drives	None Ships Standard
	Internal Storage	Up to 4 large form factor Hot Plug drives
	Optical Drive	None Ships Standard
	Power Supply	Autosensing 400-Watt PFC Power Supply, CE Mark Compliant
	Form Factor	1U
	Warranty	Server Warranty includes 3 year Next Day Parts replacement, 0-Years Labor, 0-Years Onsite support. (3-1-1 warranty in APJ)

Country Code Key	xx=00	US
	xx=29	Japan
	xx=37	APD (Asia excluding Japan)
	xx=42	EURO
	xx=AA	PRC

NOTE: This section lists some of the steps required to configure a Factory Integrated Model. To ensure only valid configurations are ordered, HP recommends the use of an HP approved configurator. Contact your local sales representative for information on CTO product offerings and requirements.
NOTE: HP does not allow factory integration of options into standard models listed above. Configure-to-order servers must start with a CTO Chassis.
NOTE: FIO indicates that this option only available as a Factory Installable Option.

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

Models	HP ProLiant DL120 G6 Non-hot Plug Configure-to-order Server	490933-B21
	Includes:	
	Embedded NC107i Gigabit Server Adapter (x2)	
	1 full length PCI Express Gen2 x16 slot (x16 connector) and 1 half length low profile PCI Express x4 slot (x8 connector)	
	HP Smart Array B110i SATA RAID Controller (RAID 0/1/1+0)	
	Rack (1U) form factor, (1.7 in/4.32 cm)	
	Fixed, mounting rails	
	HP ProLiant DL120 G6 Hot Plug Configure-to-order Server	583183-B21
	Includes:	
	Embedded NC107i Gigabit Server Adapter (x2)	
	Hot-Plug drive cage, including cables	
	1 full length PCI Express x16 slot (x16 lane) and 1 half length low profile PCI Express x4 slot (x8 lane)	
	HP Smart Array B110i SATA RAID Controller (RAID 0/1/1+0)	
	Rack (1U) form factor, (1.7 in/4.32 cm)	
	Fixed, mounting rails	

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

HP Processor	Quad-Core Processors	
	HP DL120 G6 Intel® Xeon® X3430 (2.40GHz/4-core/8MB/95W) FIO Processor Kit	581869-L21
	HP DL120 G6 Intel® Xeon® X3440 (2.53GHz/4-core/8MB/95W) FIO Processor Kit	578471-L21
	HP DL120 G6 Intel® Xeon® X3450 (2.66GHz/4-core/8MB/95W) FIO Processor Kit	581870-L21
	HP DL120 G6 Intel® Xeon® X3460 (2.80GHz/4-core/8MB/95W) FIO Processor Kit	578473-L21
	HP DL120 G6 Intel® Xeon® X3470 (2.93GHz/4-core/8MB/95W) FIO Processor Kit	578475-L21
	Dual-Core Processors	
	HP DL120 G6 Intel® Pentium® G1101 (2.26GHz/2-core/2MB/73W) FIO Processor Kit	599309-L21
	HP DL120 G6 Intel® Pentium® G6950 (2.80GHz/2-core/3MB/73W) FIO Processor Kit	599308-L21
	HP DL120 G6 Intel® Xeon® L3406 (2.26GHz/2-core/4MB/30W) FIO Processor Kit	611530-L21
	HP DL120 G6 Intel® Core™ i3-530 (2.93GHz/2-core/4MB/73W) FIO Processor Kit	599310-L21
	HP DL120 G6 Intel® Core™ i3-540 (3.06GHz/2-core/4MB/73W) FIO Processor Kit	599311-L21

Configuration Information - Factory Integrated Models

HP Memory	Unbuffered with ECC DIMMs (UDIMM)	
	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
	Registered DIMMs (RDIMM)	
	HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500656-B21
	HP 4GB (1x4GB) Quad Rank x8 PC3-8500 (DDR3-1066) Registered CAS-7 Low Power Memory Kit	500660-B21
	NOTE: Registered DIMMS (RDIMMs) are supported only with Xeon Processor family. 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 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. NOTE: The below Hard drives can only be selected with the Non-Hot Plug CTO Chassis (P/N 490933-B21) NOTE: HP Smart Array B110i does not support greater than 2TB hard drive.	
	SATA Non-Hot Plug LFF (3.5-inch) Midline (MDL) Drives	
	HP 2TB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Midline 1yr Warranty Hard Drive	507774-B21
	HP 1TB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Midline 1yr Warranty Hard Drive	507772-B21
	HP 500GB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Midline 1yr Warranty Hard Drive	458941-B21
	SATA Non-Hot Plug LFF (3.5-inch) Entry (ETY) Drives	
	HP 250GB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Entry 1yr Warranty Hard Drive	571232-B21
	HP 160GB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Entry 1yr Warranty Hard Drive	458947-B21
HP Power Supplies	HP 400W Factory Integrated Power Supply Kit	515739-B21
	HP 500W Power Supply Kit	583437-B21

Step 3: Choose Additional Options for Factory Integration (only one of the following from each list unless otherwise noted)

HP Storage Controllers	SAS Controllers	
	HP Smart Array P212/256 BBWC 1-ports Int/1-ports Ext PCIe x8 FIO SAS Controller	491191-B21
	HP Smart Array P411/256 BBWC 2-ports Ext PCIe x8 FIO SAS Controller	491193-B21

Step 4: Choose Additional Factory Integratable Options

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 Internal USB Cable G6 Kit NOTE: This option required to connect a USB device internally.	536769-B21
HP Memory	**Unbuffered with ECC DIMMs (UDIMM)**	
	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
	Registered DIMMs (RDIMM)	
	HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500656-B21
	HP 4GB (1x4GB) Quad Rank x8 PC3-8500 (DDR3-1066) Registered CAS-7 Low Power Memory Kit	500660-B21
	NOTE: Registered DIMMS (RDIMMs) are supported only with Xeon Processor family. 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 Optical Drives	HP 9.5mm SATA DVD-ROM Optical Drive	481045-B21
	HP 9.5mm SATA DVD-RW Optical Drive	481047-B21
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 LFF (3.5-inch) Enterprise (ENT) Drives	
	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 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

SAS Non-Hot Plug LFF (3.5-inch) Enterprise (ENT) Drives	
HP 600GB 6G SAS 15K rpm LFF (3.5-inch) Non-hot Plug Dual Port Enterprise 3yr Warranty Hard Drive	516830-B21
HP 450GB 6G SAS 15K rpm LFF (3.5-inch) Non-hot Plug Dual Port Enterprise 3yr Warranty Hard Drive	516826-B21
HP 300GB 6G SAS 15K rpm LFF (3.5-inch) Non-hot Plug Dual Port Enterprise 3yr Warranty Hard Drive	516824-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)	
SATA Hot Plug LFF (3.5-inch) Midline (MDL) Drives	
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 Non-Hot Plug LFF (3.5-inch) Midline (MDL) Drives	
HP 2TB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Midline 1yr Warranty Hard Drive	507774-B21
HP 1TB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Midline 1yr Warranty Hard Drive	507772-B21
HP 500GB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Midline 1yr Warranty Hard Drive	458941-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
HP 160GB 3G SATA 7.2K rpm LFF (3.5-inch) Entry 1yr Warranty Hard Drive	458945-B21
SATA Non-Hot Plug LFF (3.5-inch) Entry (ETY) Drives	
HP 250GB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Entry 1yr Warranty Hard Drive	571232-B21
HP 160GB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Entry 1yr Warranty Hard Drive	458947-B21
NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13201_div/13201_div.html (Worldwide)	

Core Options

HP Networking	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	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
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: www.hp.com/go/ProLiantNICs	
HP I/O Expansion Options	HP DL320 G6 PCI-X Riser Kit NOTE: For PCI-X Card support only. NOTE: The PCI-X Riser option is available to convert the full-length, full-height PCI-Express slot to PCI-X slot for PCI-X cards only.	516230-B21
HP Power Supplies	HP 500W Power Supply Kit	583437-B21

Additional Options

Entry-Level Server Management	HP Lights-Out 100i (LO100i) Advanced including 1yr 24x7 Support Electronic License NOTE: Electronic LTUs are only available through limited points of sales; if not available, order a printed license entitlement certificate (xxxxxx-B2x) instead.	TA859AAE
HP Insight Software	HP Insight Control server deployment	
	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: Electronic software is available in all countries except China and Japan. Customers in China and Japan should order the physical equivalent. 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. The Insight Software Media Kit can be ordered separately, or can be downloaded at: http://www.hp.com/go/insightcontrol (click on Download button). NOTE: For additional license options please see the Insight Control QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12631_div/12631_div.html	
HP Security-TPM	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. NOTE: 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.	

Additional Options

HP Storage Controllers	SAS Controllers	
	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
	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
	Optional Upgrades	
	HP 1GB Flash Backed Cache	534562-B21
	HP 512MB Flash Backed Write Cache	534916-B21
	HP Smart Array P411/1G FBWC 2-ports Ext PCIe x8 SAS Controller	572531-B21
	HP Smart Array P411/512 FBWC 2-ports Ext PCIe x8 SAS Controller	578229-B21
	HP 256MB P-series Cache Upgrade NOTE: Supported on HP Smart Array P212 Controller only.	462968-B21
	HP 512MB P-Series Battery Backed Write Cache Upgrade NOTE: Supported on HP Smart Array P411 Controller only.	462967-B21
	HP 650 mAh P-Series Battery NOTE: To enable BBWC on the 256MB cache. NOTE: Supported on HP Smart Array P212 Controller, and HP Smart Array P411only.	462969-B21
	HP Smart Array Advanced Pack including 1yr 24x7 Technical Support and Updates Single Server License	516471-B21
	HP Smart Array Hot Plug Advance Pack for B110i w/1y 24x7 Supp Physical 1 Svr LTU 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.	TC421A
	HP Mini 4 SATA to Mini SAS 38in Cable Assembly	591475-B21
	SCSI HBA	
	HP SC11Xe Ultra320 Single Channel/ PCIe x4 SCSI Host Bus Adapter	412911-B21
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13202_div/13202_div.html (Smart Array P411 Controller) http://h18000.www1.hp.com/products/quickspecs/13200_div/13200_div.html (Smart Array Advanced Pack) http://h18000.www1.hp.com/products/quickspecs/12566_div/12566_div.html (SC11Xe HBA)	

Additional Options

HP Backup & Recovery Software	Data Protector Express	
	HP Data Protector Express V5.0 for 1 Server E-LTU	TC330AAE
	HP Data Protector Express V5.0 for 3 Servers E-LTU	TC331AAE
	HP Data Protector Express V5.0 for 10 Servers E-LTU	TC332AAE
	HP Basic Upgrade to Data Protector Express V5 for 1 Server E-LTU	TC333AAE
	NOTE: Only one of these Data Protector Express base products is required. To see available options: http://www.hp.com/go/dataprotectorexpress	
HP Tape Backup	NOTE: For the complete range of 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/go/connect. NOTE: Connection using the HP P212 SAS Smart Array Controller (462828-B21) recommended.	
	HP DAT 160 SAS Internal Tape Drive NOTE: For installation into 1U SAS Rack-Mount Kit (AE459B) or 3U SAS Rack-Mount Kit (AG576B). No peripheral bay available for installation into the server.	Q1587A
	HP DAT 320 USB in 1U Rack-mount Kit	AP835B
	HP DAT 320 SAS Internal Tape Drive NOTE: For installation into 1U SAS Rack-Mount Kit (AE459B) or 3U SAS Rack-Mount Kit (AG576B). No peripheral bay available for installation into the server.	AJ830A
	HP Ultrium 448 SAS Internal Drive NOTE: For installation into 1U SAS Rack-Mount Kit (AE459B) or 3U SAS Rack-Mount Kit (AG576B). No peripheral bay available for installation into the server.	DW085A
	HP Ultrium 920 SAS Internal Tape Drive NOTE: For installation into 1U SAS Rack-Mount Kit (AE459B) or 3U SAS Rack-Mount Kit (AG576B). No peripheral bay available for installation into the server.	EH847A
	HP 1/8 G2 Ultrium 920 SAS Autoloader NOTE: Requires HP 1U Tape Autoloader Rack-Mount Kit (AH166A) for rack installation.	AH558A
	HP MSL2024 Ultrium 920 SAS Tape Library	AH559A

Additional Options

HP Disk Backup	NOTE: 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 backup products see: http://www.hp.com/go/connect.	
	HP D2D Backup Systems with Backup Data Deduplication	
	HP D2D2502i Backup System NOTE: 1.5TB of usable network disk backup capacity. Network connected appliance with connectivity using the iSCSI protocol. If the server requires a hardware iSCSI initiator, the QLogic QLA4050 Host Bus Adapter is recommended.	EJ001B
	HP D2D2504i Backup System NOTE: 3.0TB of usable network disk backup capacity. Network connected appliance with connectivity using the iSCSI protocol. If the server requires a hardware iSCSI initiator, the QLogic QLA4050 Host Bus Adapter is recommended. USB Removable Media RDX Disk Backup Systems	EJ002B
	USB Removable Media RDX Disk Backup Systems	
	HP RDX1000 Internal Removable Disk Backup System NOTE: For installation into 1U USB Rack-Mount Kit (A8007A). No peripheral bay available for drive installation into the server. 1 TB of disk capacity per data cartridge.	BV847A
	HP RDX320 Internal Removable Disk Backup System NOTE: For installation into 1U USB Rack-Mount Kit (A8007A). No peripheral bay available for drive installation into the server. 320GB of disk capacity per data cartridge.	AJ767A
	HP RDX500 Internal Removable Disk Backup System NOTE: For installation into 1U USB Rack-Mount Kit (A8007A). No peripheral bay available for drive installation into the server. 500GB of disk capacity per data cartridge.	AJ934A
HP Storage Options	SCSI HBA	
	HP U320e SCSI Dual Channel Host Bus Adapter NOTE: Recommended HBA for MSL SCSI Tape Library connect.	AH627A

Additional Options

HP Uninterruptible Power Systems	HP Rack-mountable UPS	
	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
	NOTE: Please see QuickSpecs Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/14110_div/14110_div.html (Worldwide)	
	HP Rack-Mountable R5500 UPS	
	HP R5500 6000VA INTL 3U Rackmount Uninterruptible Power System	AF416A
	HP R5500 5000kVA NA/JP 3U Rackmount Uninterruptible Power System	AF426A
	NOTE: Please see QuickSpecs Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/11871_div/11871_div.html (Worldwide)	
	R5000 Uninterruptible Power System (UPS)	
	HP R5KVA 3U L630 High Voltage NA/JP Uninterruptible Power System	AF460A
	HP R5KVA 3U IEC309-32A High Voltage INTL Uninterruptible Power System	AF461A
	NOTE: Please see QuickSpecs Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/14109_div/14109_div.html (Worldwide)	
	HP R/T3000 G2 Uninterruptible Power System (UPS)	
	HP R/T3000 G2 2U L530 Low Voltage NA/JP Uninterruptible Power System	AF466A
	HP R/T3000 G2 2U L620 High Voltage NA/JP Uninterruptible Power System	AF467A
	HP R/T3000 G2 2U Detachable Cord High Voltage INTL Uninterruptible Power System	AF468A
	NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/14058_div/14058_div.html (Worldwide)	
	HP R/T3000 UPS	
	HP R/T3000 3300VA High Voltage NA/JPN 2U Rackmount Uninterruptible Power System	AF453A
	NOTE: Please see QuickSpecs Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/10671_div/10671_div.html (Worldwide)	
	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 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.	

Additional Options

HP Power Distribution Units	**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
	Modular Power Distribution Units 1U/0U (Up to 32 outlets) NOTE: 1U/0U mounting brackets shipped with the unit (optimized for 10000 and 9000 series racks).	
	HP 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
	HP 3.6kVA 16A High Voltage INTL Modular Power Distribution Unit	252663-B24
	NOTE: This PDU has a detachable input power cord and allows for adaptability to country specific power requirements.	
	NOTE: Please see the following Modular Power Distribution Unit (Zero-U/1U Modular PDUs) QuickSpecs for additional options including shorter jumper cables and country specific power cords: http://h18000.www1.hp.com/products/quickspecs/11041_div/11041_div.html (Worldwide)	
	NOTE: For additional information on HP Power Distribution Units including accessories please go to: www.hp.com/go/pdu.	
	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 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 11.4kVA 16A 415V Three Phase L22-20 NA/JP Core Intelligent Power Distribution Unit	AF900A
	HP 17.3kVA 24A 415V Three Phase L22-30 NA/JP Core Intelligent Power Distribution Unit	AF902A
	HP 17.3kVA 24A 415V Three Phase IEC309 NA/JP Core Intelligent Power Distribution Unit	AF901A
	HP 7.3kVA 32A Single Phase INTL Core Intelligent Modular Power Distribution Unit	AF525A
	HP 11kVA 16A Three Phase INTL Core Intelligent Modular Power Distribution Unit	AF526A
	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 Series	Rack 10000 G2 Series	
	HP 10642 G2 1200mm deep Shock Rack	AF092A
	HP 10647 G2 1200mm deep Shock Rack	AF094A
	HP 10642 G2 Pallet Universal Rack	AF001A
	HP 10642 G2 Shock Universal Rack	AF002A

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

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

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

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

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

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

NOTE: HP ProLiant DL rack models have fixed rails which provide support for racks with round mounting holes and tool-free support for racks with square mounting holes (including Compaq/HP 7000, 9000, 10000 and HP series), with an adjustment range of 26" - 36".

NOTE: Support for all 2 and 4 post Telco racks and threaded hole racks requires an additional option kit from Rack Solutions. The Rack Solutions brackets can be purchased at: www.hp.com/go/rackandpower.

Additional Options

HP Rack Options	HP KVM Switch Options	
	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
	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 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)	
	HP Serial Console Server Options	
	HP Server Console 0x2x8 Port Analog Switch	AF616A
	HP Server Console 0x2x16 Port Analog Switch	AF617A
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/11834_div/11834_div.html (Worldwide)	
	NOTE: Cat5e cables are required to connect Serial Adapters to Serial Console Servers. Additional Serial Adapters and Cat5e cables can be found at the following URL: http://www.hp.com/go/kvm.	
	NOTE: For additional information regarding KVM switches, Serial Console servers, rack mount monitors, keyboards and all related options please see the following URL: http://www.hp.com/go/kvm.	
HP Care Pack Services	Hardware Services On-site Service	
	HP 3 year 4 hour 13x5 ProLiant DL120 Hardware Support	UJ252E
	HP 3 year 4 hour 24x7 ProLiant DL120 Hardware Support	UJ253E
	Hardware Services Next Business Day On-Site Service	
	HP 3 year Next business day ProLiant DL120 Hardware Support	UJ251E
	Installation Services	
	HP 3 year 6 hour 24x7 Call to Repair ProLiant DL120 Hardware Support	UJ254E
	HP Installation ProLiant DL120 Service	UJ261E
	NOTE: For more information, customer/resellers can contact: http://www.hp.com/hps/	

Memory

HP ProLiant DL120 G6 Models

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

Standard Memory

SATA Models:
4GB of PC3-10600E DDR3 UDIMM running at 1333MHz with ECC capabilities memory installed.

SAS Models
4GB of PC3-10600R RDIMM running at 1333MHz

Standard Memory Plus Optional Memory

Up to 16 GB memory is available with the optional installation of 4 x 4GB PC3-10600E UDIMM ECC DDR3 SDRAM DIMM Memory kits, operating at 1333MHz when fully populated at 2 DIMMs per Channel in 4 slots
Up to 12GB memory is available with the optional installation of 6 x 2GB PC3-10600R RDIMM DDR3 SDRAM DIMM Memory kits, operating at 1333MHz when fully populated at 3 DIMMs per Channel in 6 slots
Up to 16 GB memory is available with the optional installation of 4 x 4GB PC3-8500R RDIMM DDR3 DIMM Memory kits, operating at 1066MHz when fully populated at 2 DIMMs per Channel in 4 slots

NOTE: The below chart does not represent all possible memory configurations.
NOTE: For best performance, it is recommended that customer installs memory in identical pairs (Slots 1 and 3 are interleaving pair. Slots 2 and 4 are interleaving pair).
Some DIMM installation guidelines are summarized below:

- For the HP ProLiant DL120 G6 server with six (6) memory slots
- There are two (2) channels per server
- There are three (3) DIMM slots for each memory channel; six (6) total slots
- Memory channel 1 consists of the three (3) DIMMs that are closest to the processor
- Memory channel 2 consists of the three (3) DIMMs that are furthest from the processor
- Different processor (CPU) has different memory support
- Do not mix Unbuffered memory (UDIMMs) with Registered memory (RDIMMs)
- It is not required, but it is recommended to load the channels similarly if possible
- Support up to 4 DIMMs (2 DIMMs per channel) max 8GB PC3 10600E (DDR3 1333 MHz)
- Support up to 4 DIMMs (2 DIMMs per channel) max 16GB PC3-8500R (DDR3-1066 MHz)
- Support up to 6 DIMMs (3 DIMMs per channel) max 12GB PC3-10600R (DDR3-1333 MHz). Support single, double and quad ranks of DIMM
- Populate DIMMs from heaviest load (double-rank) to lightest load (single-rank) within a channel
- Heaviest load (DIMM with most ranks) within a channel goes furthest from the CPU
- No mixing DIMM voltage; all DIMMs must be the same voltage

Memory

The UDIMM installing sequence:

	DIMM1E	DIMM2C	DIMM3A	DIMM4F	DIMM5D	DIMM6B
1 DIMMs	Empty	Empty	DIMM	Empty	Empty	Empty
2 DIMMs	Empty	Empty	DIMM	Empty	Empty	DIMM
4 DIMMs	Empty	DIMM	DIMM	Empty	DIMM	DIMM

The RDIMM installing sequence:

	DIMM1E	DIMM2C	DIMM3A	DIMM4F	DIMM5D	DIMM6B
1 DIMMs	Empty	Empty	DIMM	Empty	Empty	Empty
2 DIMMs	Empty	Empty	DIMM	Empty	Empty	DIMM
4 DIMMs	Empty	DIMM	DIMM	Empty	DIMM	DIMM
6 DIMMs	DIMM	DIMM	DIMM	DIMM	DIMM	DIMM

Following are memory options available from HP:

HP Memory	Unbuffered with ECC DIMMs (UDIMM)	
	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
	Registered DIMMs (RDIMM)	
	HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500656-B21
	HP 4GB (1x4GB) Quad Rank x8 PC3-8500 (DDR3-1066) Registered CAS-7 Low Power Memory Kit	500660-B21

NOTE: Registered DIMMS (RDIMMs) are supported only with Xeon Processor family.
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

1- 4 Four SATA or SAS drive bays



A Optical Drive Bay: Optional DVD-ROM, or DVD-RW drive

Drive Support

	Quantity Supported	Position Supported	Controller
Removable Media			
9.5mm IDE DVD-ROM or DVD-RW Drive	Up to 1	A	HP Smart Array B110i SATA RAID Controller (RAID 0/1/1+0) NOTE: Transfer rate:3Gb/s SATA

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 LFF (3.5-inch) Enterprise (ENT) Drives

	Quantity Supported	Position Supported	Controller
600GB 6G SAS 15K 450GB 6G SAS 15K 300GB 6G SAS 15K	Up to 4	1-4	HP Smart Array P212 Controller NOTE: Support for transfer rates up to 3 Gb/s

SAS Hot Plug LFF (3.5-inch) Midline (MDL) Drives

	Quantity Supported	Position Supported	Controller
2TB 6G SAS 7.2K 1TB 6G SAS 7.2K	Up to 4	1-4	HP Smart Array P212 Controller NOTE: Support for transfer rates up to 3 Gb/s

SAS Non-Hot Plug LFF (3.5-inch) Enterprise (ENT) Drives

	Quantity Supported	Position Supported	Controller
600GB 6G SAS 15K 450GB 6G SAS 15K	Up to 4	1-4	HP Smart Array P212 Controller NOTE: Support for transfer rates up to 3 Gb/s

Storage

SATA Hot Plug LFF (3.5-inch) Midline (MDL) Drives

	Quantity Supported	Position Supported	Controller
2TB 3G SATA 7.2K 1TB 3G SATA 7.2K 750GB 3G SATA 7.2K 500GB 3G SATA 7.2K 250GB 3G SATA 7.2K	Up to 4	1-4	HP Smart Array B110i SATA RAID Controller (RAID 0/1/1+0) NOTE: Transfer rate:3Gb/s SATA NOTE: Smart Array Hot Plug Advanced Pack for B110i needs to be purchased to enable Hot Plug

SATA Non-Hot Plug LFF (3.5-inch) Midline (MDL) Drives

	Quantity Supported	Position Supported	Controller
2TB 3G SATA 7.2K 1TB 3G SATA 7.2K 500GB 3G SATA 7.2K	Up to 4	1-4	HP Smart Array B110i SATA RAID Controller (RAID 0/1/1+0) NOTE: Transfer rate:3Gb/s SATA NOTE: Smart Array Hot Plug Advanced Pack for B110i needs to be purchased to enable Hot Plug

SATA Hot Plug LFF (3.5-inch) Entry (ETY) Drives

	Quantity Supported	Position Supported	Controller
250GB 3G SATA 7.2K 160GB 3G SATA 7.2K	Up to 4	1-4	HP Smart Array B110i SATA RAID Controller (RAID 0/1/1+0) NOTE: Transfer rate:3Gb/s SATA

SATA Non-Hot Plug LFF (3.5-inch) Entry (ETY) Drives

	Quantity Supported	Position Supported	Controller
250GB 3G SATA 7.2K 160GB 3G SATA 7.2K	Up to 4	1-4	HP Smart Array B110i SATA RAID Controller (RAID 0/1/1+0) NOTE: Transfer rate:3Gb/s SATA

SATA Non-Hot Plug LFF (3.5-inch) Drives

	Quantity Supported	Position Supported	Controller
250GB 1.5G SATA 7.2K 160GB 1.5G SATA 7.2K	Up to 4	1-4	HP Smart Array B110i SATA RAID Controller (RAID 0/1/1+0) NOTE: Transfer rate:3Gb/s SATA

Maximum Storage Capacity - (SAS drives)

Internal	8.0TB (4 x 2TB SAS)
External	28.0TB (1 x (14 x 2TB SAS))
Total	36.0TB

Maximum Storage Capacity - (SATA Drives)

Internal	8.0TB (4 x 2TB SATA)
External	24.0TB [1 x (12 x 2TB SATA)]
Total	32.0TB

NOTE: In order to implement integrated SATA RAID with Easy 'set-up CD' on Windows 2000/2003, the use of a floppy drive is necessary.

Storage

Tape and Disk 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 backup products see: http://www.hp.com/go/connect.

	Position	Recommended Controller	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 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 1U USB Rack-Mount Kit	External	USB 2.0 Port	N/A
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 1U Rack-Mount Kit 3U Rack-Mount Kit	External	HP Smart Array P212/ZM 1-ports Int/1-ports Ext PCIe x8 SAS Controller	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	HP U320e SCSI Dual Channel Host Bus Adapter	AH627A

Storage

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	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 QuickSpecs.	
HP USB RDX Removable Disk Backup System RDX160 RDX320 RDX500 RDX750	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/go/connect	

Power Specifications

HP 400W Power Supply Factory Integrated Kit	515739-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	400	400	400	400	400	400	400
Nominal Input Current (A rms)	5.5	5.0	2.5	2.4	2.3	2.2	2.1
Max Rated Input Wattage Rating (Watts)	510	500	480	480	480	480	480
Max. Rated VA (Volt-Amp)	520	520	500	500	500	500	500
Efficiency (%) at Max. Rated Output Wattage	83.0	84.0	86.0	86.0	87.0	87.0	87.0
Power Factor	0.97						
Leakage Current (mA)	0.75	0.75	0.85	0.90	0.95	0.95	1.00
Max. Inrush Current (A peak)	35						
Max. Inrush Current duration (mS)	20						
Maximum British Thermal Unit Rating (BTU-Hr)	1739	1705	1636	1636	1636	1636	1636

HP 500W Power Supply Kit	583437-B21					
Input Voltage Range (Vrms)	100 to 240					
Frequency Range (Nominal) (Hz)	47/63					
Nominal Input Voltage (Vrms)	100	120	200	220	230	240
Maximum Rated Output Wattage	500	500	500	500	500	500
Nominal Input Current (A rms)	5.74	4.99	2.86	2.58	2.46	2.36
Max Rated Input Wattage Rating (Watts)	568	568	562	556	556	556
Max. Rated VA (Volt-Amp)	574	574	573	567	567	567
Efficiency (%) at Max. Rated Output Wattage	88	88	89	90	90	90
Power Factor	0.99	0.99	0.98	0.98	0.98	0.98
Leakage Current (mA)	0.42	0.50	0.81	0.91	0.95	1.00
Maximum Inrush Current (A peak)	30	30	30	30	30	30
Maximum Inrush Current duration (mS)	20	20	20	20	20	20
Maximum British Thermal Unit Rating (BTU-Hr)						

System Unit	**Dimensions** (H x W x D) (with bezel)	4.32 x 44.81 x 70.0 mm (1.69" x 17.64" x 27.56")	
	Weight (approximate)	Maximum (four hard drives, power supply, and processor installed)	31.49 lb (14.3kg)
		Minimum (one hard drive, power supply, and processor installed)	28.2lb (12.8kg)
	Input Requirements (per power supply)	Range Line Voltage	90 - 132 VAC, 180 - 264 VAC
		Rated Input Current	6 A (at 100 VAC), 3 A (at 200 VAC)
		Rated Input Frequency	47 to 63 Hz
		Rated Input Power	<550W (at 100 VAC) 550W (at 200 VAC)
	BTU Rating	Maximum	1314 BTU/hr (at 100 VAC), 1314 BTU/hr (at 200 VAC)
	Power Specifications	To review typical system power ratings use the Power Advisor which is available via the online tool located at URL: www.hp.com/go/proliant-energy-efficient or www.hp.com/go/hppoweradvisor - Click on the system of interest. Example: DL120 G6 - Follow the instructions of the next screens.	
	Power Supply Output (per power supply)	Rated Steady-State Power	400 W (at 100 VAC), 400 W (at 200 VAC)
		Maximum Peak Power	430 W (at 100 VAC), 430 W (at 200 VAC)
	System Inlet Temperature	Operating	10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 305 m (1.8°F per every 1000 ft) above sea level to a maximum of 3050 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 10°C/hr (18°F/hr). The upper limit may be limited by the type and number of options installed. System performance may be reduced if operating with a fan fault or above 30°C (86°F).
		Non-operating	-30° to 65°C (-22° to 149°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	3050 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
		Non-operating	9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
	Acoustic Noise	Listed are the declared A-Weighted sound power levels (LWAd) and declared average bystander position A-Weighted sound pressure levels (LpAm) when the product is operating in a 23°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109).	
		Idle	
		LWAd	6.30 B
		LpAm	44.1 dBA
		Operating	
		LWAd	6.34 B
		LpAm	44.4 dBA
	Emissions Classification (EMC)	**FCC Rating**	Class A
		Normative Standards	CISPR 22; EN55022; EN55024; FCC CFR 47, Pt 15; ICES-003; CNS13438; GB9254; 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.	
Power Supply	**Input voltage specifications**	Rated input voltage	100 VAC to 240 VAC
	Input Specifications	Rated input line	90 VAC to 264VAC
		Frequency range	47 to 63 Hz
		Rated input power	@ 115V input, Rated input power = 500W (assume output wattage=400W @ 230V input, Rated input power = 500W (assume output wattage=400W)
		Rated input current	6 A, 3 A (110 V, 220 V)
		Steady state power	400W (rated)
	BTU Rating	1710 BTU/hr	
	Ambient temperature range	Operating	41° to 122° F (5° to 50° C)
		Non-operating	-40° to 167° F (-40° to 75° C)
	Relative humidity (non-condensing)	Operating	5% to 95%
		Non-operating	5% to 95%
	Dielectric voltage withstand	Input to output	2150 VDC minimum, withstand 1 min
		Input to ground	2150 VDC minimum, withstand 1 min

	Maximum Wet Bulb Temperature	104° F (40° C)
HP Smart Array B110i SATA RAID Controller (RAID 0/1/1+0)	Simultaneous drive transfer channels	4 channels
	Transfer rate synchronous (maximum theoretical)	150 MB/s per channel; 300 MB/s in RAID 0 pair
	Data transfer method	Intel® 82801IR Integrated Serial ATA Host Controller (non-RAID mode) Intel® 82801IR Integrated Serial ATA Host Controller (RAID Mode)
	Drive support	Serial ATA
	Data transfer modes	Legacy Mode Combined Mode
	Protocol	Serial ATA
	Feature	NCQ (Native Command Queuing); AHCI (Advanced Host Controller Interface)
	RAID levels supported	0, 1
	RAID Features	Supports multiple logical volumes Setup through ROM based Array Configuration Utility Installation scripting support NOTE: This controller does not support Hot Plug functions or LED functions.
	RAID OS Support	Microsoft Windows Server 2003 NOTE: In order to implement integrated SATA RAID with Smart Start 7.90 on Windows 2000/2003, the use of a floppy drive is necessary. Linux (Red Hat, SuSE, UnitedLinux)
Embedded HP NC107i PCIe Gigabit Server Adapter	Network Interface	10Base-T/ 100Base-TX/ 1000Base-TX Combines a triple-speed IEEE 802.3TM - Compliant Media Access Controller (MAC) with a triple-speed Ethernet transceiver.
	Ports	Single Port
	Compatibility	IEEE 802.3 10Base-T IEEE 802.3ab 1000Base-T IEEE 802.3u 100Base-TX
	Data Transfer Method	Four lane (x4), 100MHz PCI Express Reference Clock
	Controller	BCM5723
	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 connector

	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)

HP 160GB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Entry 1yr Warranty Hard Drive	458947-B21	Capacity	160,041MB	
		Height Maximum drive dimension	1.028 in. (26.1 mm)	
		Width	4.00 in (101.6 mm)	
		Depth Maximum drive dimension	5.787 in (147.0 mm)	
		Interface	Serial ATA	
		Transfer Rate (Maximum)	3Gb/s	
		Native Command Queuing	Supported	
		Seek Time (typical reads, including settling)	Single Track	2.0 ms
			Average	<11 ms
			Full-Stroke	22.0 ms
			Rotational Speed	7,200 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	312,581,808
		Operating Temperature (system inlet air temperature)	50° to 95° F (10° to 35° C)	

Environment-friendly Products and Approach	End-of-life Management and Recycling	Hewlett-Packard offers end-of-life HP product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to: http://www.hp.com/go/green. To recycle your product, please go to: http://www.hp.com/go/green or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner. The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: http://www.hp.com/go/green. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.

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