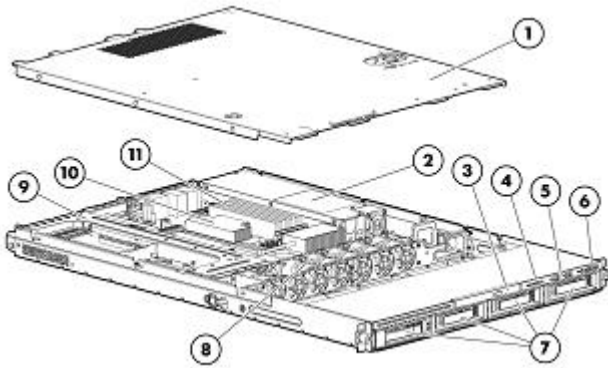


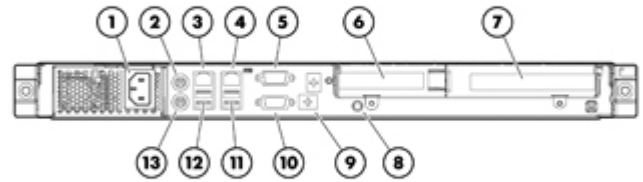
Overview

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
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Chipset	Intel® 3420 Chipset
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Memory Protection	ECC
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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)
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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.	
	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	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
	One of the following depending on Model	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/supportos> 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



Standard Features

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 ProLiant 100 Series G6 Core Management Software for ProLiant 100 Series Servers

HP provides management solutions that are designed to simplify a server's installation, configuration, and maintenance throughout the entire server lifecycle. This provides the customers with higher levels of operational efficiency and highly reliable systems.

While ProLiant 100 series G6 servers do not support the Insight Foundation Suite for ProLiant, they support a key subset of this important suite software tools and utilities which are very suitable for this class of server: SIM, SMH, agents, providers, and a SmartStart 'like' deployment CD called Easy Set-up which greatly simplifies server set-up. Additionally the ProLiant DL100 and SL100 G6 models support the SmartStart Scripting Toolkit (SSSTK), an automated scalable deployment utility.

Information on core management supported on ProLiant 100 series G6 servers can be found at these URLs:

- Core Management: <http://www.hp.com/go/coremanagement>
- HP ProLiant 100 series Easy Set-up CDs:
www.hp.com/servers/easysetup

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



Standard Features

<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

Easy Set-up CD

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

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: <ul style="list-style-type: none">● 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
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Security	Power-on password Keyboard password USB Port control Removable DVD-ROM Drive Assembly (optional) Dedicated/Shared LO100 management NIC port Administrator's password
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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
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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 MSAxxx, VA7xxx, EVA, XP, rackable tape libraries and configurable network switches.

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

HP Enterprise Configurator

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



Service and Support

Service and Support

HP Care Pack Services: Packaged server and storage services for increased uptime, productivity and ROI

When you buy HP server and storage products and solutions, it's also a good time to think about what levels of support you may need. Our portfolio of service options reduce deployment and management worries while helping you get the most out of your server and storage investments. We take a holistic approach to your environment, bridging servers, blades, storage, software and network infrastructures with our packaged HP Care Pack Services for servers and storage.

Protect your business beyond warranty

When it comes to robustness and reliability, standard computing equipment warranties have matured along with technology. Good news that can also create problems stemming from depending on standard warranties designed to only protect against product defects and some downtime causes. Using a standard approach to warranty uplifts, such as HP Care Pack Services, helps reduce downtime risks and provides operational consistency for mission-critical and standard business computing.

HP Care Pack Services: Upgrading or extending standard server and storage warranties cost effectively

HP Care Pack Services offer a standard reactive hardware and software support services suite sold separately, or combined with our Support Plus and Support Plus 24 services. The portfolio also provides a combination of integrated proactive and reactive services, such as Proactive 24 Service and Critical Service. In addition with HP Proactive Select, you can acquire the specific proactive constancy and technical services. HP Proactive Select menu offers a broad set of service options that you can mix and match depending on your specific requirements. Proactive service options include offers for server, storage, network, SAN device, software, environment and education services.

HP server and storage lifecycle support services offers a full spectrum of customer care-from technology support to complex migrations to complete managed services. HP Factory Express provides customization, integration and deployment services for turnkey solutions. HP Education Services offer flexible, comprehensive training on to help your IT staff get the most out of your server and storage investments. HP Financial solutions extend innovative financing and cost-effective asset management programs-from purchase to equipment retirement.

Learn more: www.hp.com/services/servers and www.hp.com/services/storage

NOTE: Care Pack Services availability may vary by product and country.

HP Care Pack Services are sold by HP and HP Authorized Service Partners:

- Services for customers purchasing from HP or an enterprise reseller are quoted using HP order configuration tools.
- Customers purchasing from a commercial reseller can find HP Care Pack Services at <http://www.hp.com/go/lookuptool>



Service and Support

Recommended HP Care Pack Services for optimal satisfaction with your HP product

Recommended Services 3-Year HP Hardware Support Onsite Service, 4-hour response, 13x5

Delivers increased equipment availability and productivity with rapid remote support and onsite response for your HP server and storage hardware.

- Help improve or maintain system uptime
- Convenient onsite support
- Committed response time

<http://h20195.www2.hp.com/V2/GetPDF.aspx/5982-6547EEE>

3-Year HP Hardware Support Onsite Service, next-day response, 9x5

Provides high-quality remote assistance and onsite support for your covered hardware if required, helping you to improve product uptime.

- Help improve or maintain system uptime
- Convenient onsite support
- Reliable response time

<http://h20195.www2.hp.com/V2/GetPDF.aspx/5982-6547EEE>

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.

- Expedited installation, with all service prerequisites met before the installation is performed
- Installation in accordance with manufacturer's specifications, enhancing the supportability of your HP-installed hardware and software
- Service delivery at a mutually scheduled time
- Allows your IT resources to stay focused on their core tasks and priorities
- Availability of an HP service specialist to answer questions during the onsite delivery of this service

<http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-9356EN>



Service and Support

Optional HP Care Pack Services that will enhance your HP product experience

Optional Services

3-Year HP Hardware Support Onsite Service, 4-hour response, 24x7

As an alternative to our recommended support level, for customers who need same day response service level 24x7.

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>

3-Year HP Hardware Support Onsite Call-to-Repair (CTR) Service, 6- or 24-hour

As an alternative to our recommended support level, for customers who need committed call-to-repair for server hardware.

Provides your 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 or 24 hours of the initial service request to the HP Global Solution Center.

<http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-6636ENN>

HP Proactive Select Service

Customer needs on demand access to consulting, technical proactive services and education courses

Provides a flexible way to purchase HP best-in-class consultancy and technical services. You can buy Proactive Select Service Credits when you purchase your hardware and then use the credits over the next 12 months.

<http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA2-3842ENN>

eSupport

HP eSupport is a portfolio of technology-based services that assist you with managing your business environment - from the desktop to the data center.

Support Portal

The HP support portal provides one-stop access to the information, tools and services you need to manage the daily operations of your IT environment.

Features include:

- Access to self-solve tools (including search technical knowledge base)
- Efficient logging and tracking of support cases
- Collaboration with other business and IT professionals
- Download of patches and drivers
- Access to diagnostic tools
- Proactive notification of relevant information

Access to certain features of the support portal requires an HP service agreement. To access the support portal, visit: <http://www.hp.com/support>



Service and Support

HP Insight Remote Support software delivers secure remote support for your HP Servers and Storage, 24 X 7, so you can spend less time solving problems and more time focused on your business. You can have your systems remotely monitored for hardware failure using secure technology that's been proven at thousands of companies around the world. In many cases, you can avoid problems before they occur.

Customer Technical Training

In today's cost-conscious business environment, IT professionals, developers, consultants and users face an interesting challenge: how to keep up with the latest technologies and expand important skills while delivering profitable results on current projects. To help address this challenge, HP offers innovative training solutions that help keep you up-to-date on virtualization, server, storage, Insight Control, Citrix, Microsoft® and open source/Linux-related topics-while spending less time away from business-critical activities.

HP Services Awards

HP Technology Services continues to be recognized for service and support excellence by customers, partners, industry organizations and publications around the world. Recent honors and award reflect our services team's dedications, technical expertise, professionalism and uncompromising commitment to customer satisfaction.

Additional Services Information

To learn more on HP ProLiant servers, HP BladeSystem servers and HP StorageWorks storage products, please contact your HP sales representative or HP Authorized Channel Partner. Or visit:
www.hp.com/services/proliant or www.hp.com/services/bladeSystem or <http://www.hp.com/hps/storage>



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



Configuration Information - Factory Integrated Models

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

NOTE: HP does not allow factory integration of options into standard models listed above. Configure-to-order servers must start with a CTO Chassis.

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

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

Models	HP ProLiant 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	
	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)	
	SATA Non-Hot Plug LFF (3.5-inch) Midline (MDL) Drives	
HP Hard 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



Configuration Information - Factory Integrated Models

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
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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	
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HP Optical Drives	HP 9.5mm SATA DVD-ROM Optical Drive 481045-B21 HP 9.5mm SATA DVD RW Optical Drive 481047-B21	
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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	
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Core Options

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
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HP 450GB 6G SAS 15K rpm LFF (3.5-inch) Non-hot Plug Dual Port Enterprise 3yr Warranty Hard Drive	516826-B21
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HP 300GB 6G SAS 15K rpm LFF (3.5-inch) Non-hot Plug Dual Port Enterprise 3yr Warranty Hard Drive	516824-B21
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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
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HP 1TB 3G SATA 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive	454146-B21
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HP 500GB 3G SATA 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive	458928-B21
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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
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HP 1TB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Midline 1yr Warranty Hard Drive	507772-B21
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HP 500GB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Midline 1yr Warranty Hard Drive	458941-B21
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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
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HP 160GB 3G SATA 7.2K rpm LFF (3.5-inch) Entry 1yr Warranty Hard Drive	458945-B21
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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
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HP 160GB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Entry 1yr Warranty Hard Drive	458947-B21
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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 Express Dual Port Gigabit Server Adapter	412648-B21
	HP NC364T PCI Express Quad Port Gigabit Server Adapter	435508-B21
	HP NC365T 4-port Ethernet Server Adapter	593722-B21
	HP NC373F PCI Express Multifunction Gigabit Server Adapter	394793-B21
	HP NC373T PCI Express Multifunction Gigabit Server Adapter	394791-B21
	HP NC375T PCI Express Quad Port Gigabit Server Adapter	538696-B21
	HP NC382T PCI Express Dual Port Multifunction Gigabit Server Adapter	458492-B21

NOTE: Please see the QuickSpecs for Technical Specifications and additional information: www.hp.com/go/ProLiantNICs

HP I/O Expansion Options	HP 1U PCI-X Riser Option Kit	516230-B21
	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.	

HP Power Supplies	HP 500W Power Supply Kit	583437-B21
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Additional Options

Entry-Level Server Management	<p>HP LO100i Advanced Pack License, including 1 year of 24x7 Technical Support and Updates, Electronic</p> <p>NOTE: Electronic LTUs are only available through limited points of sales; if not available, order a printed license entitlement certificate (xxxxxx-B2x) instead.</p>	TA859AAE
HP Insight Software	<p>HP Insight Control server deployment</p> <p>HP Insight Control Server Deployment including 1yr 24x7 Support Electronic License T9082AAE</p> <p>HP Insight Control Server Deployment including 1yr 24x7 Support Single Server License 452151-B21</p> <p>NOTE: Electronic and Flexible-Quantity licenses can be used to purchase multiple licenses with a single activation key.</p> <p>NOTE: Electronic software is available in all countries except China and Japan. Customers in China and Japan should order the physical equivalent.</p> <p>NOTE: Customer will receive a license entitlement certificate. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support and Update Service.</p> <p>NOTE: Licenses ship without media. The Insight Software Media Kit can be ordered separately, or can be downloaded at: http://www.hp.com/go/insightcontrol (click on Download button).</p> <p>NOTE: For additional license options please see the Insight Control QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12631_div/12631_div.html</p>	
HP Security-TPM	<p>HP Trusted Platform Module Option Kit 488069-B21</p> <p>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.</p> <p>NOTE: For more information about TPM, including a white paper, go to: www.hp.com/go/TPM</p> <p>NOTE: ProLiant OS pre-installed units will come with the partition required for TPM deployment.</p> <p>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.</p>	



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 462968-B21

NOTE: Supported on HP Smart Array P212 Controller only.

HP 512MB P-Series Battery Backed Write Cache Upgrade 462967-B21

NOTE: Supported on HP Smart Array P411 Controller only.

HP 650 mAh P-Series Battery 462969-B21

NOTE: To enable BBWC on the 256MB cache.

NOTE: Supported on HP Smart Array P212 Controller, and HP Smart Array P411 only.

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 TC421A

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.

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 5.0 for 1 Server E-LTU	TC330AAE
HP Data Protector Express 5.0 for 3 Servers E-LTU	TC331AAE
HP Data Protector Express 5.0 for 10 Servers E-LTU	TC332AAE
HP Data Protector Express 5.0 for 1 Server Upgrade from HP Data Protector Express Basic	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 StorageWorks tape drives, autoloaders, libraries and media see: <http://www.hp.com/go/tape>. For hardware and software compatibility of HP StorageWorks tape backup products see: <http://www.hp.com/go/connect>.

NOTE: Connection using the HP P212 SAS Smart Array Controller (462828-B21) recommended.

HP StorageWorks DAT 160 SAS Internal Tape Drive	Q1587A
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.	
HP StorageWorks DAT 320 USB in 1U Rack-mount Kit	AP835B
HP StorageWorks DAT 320 SAS Internal Tape Drive	AJ830A
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.	
HP StorageWorks Ultrium 448 SAS Internal Drive	DW085A
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.	
HP StorageWorks Ultrium 920 SAS Internal Tape Drive	EH847A
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.	
HP StorageWorks 1/8 G2 Ultrium 920 SAS Autoloader	AH558A
NOTE: Requires HP 1U Tape Autoloader Rack-Mount Kit (AH166A) for rack installation.	
HP StorageWorks MSL2024 Ultrium 920 SAS Tape Library	AH559A



Additional Options

HP Disk Backup

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

HP StorageWorks D2D Backup Systems with Backup Data Deduplication

HP StorageWorks D2D2502i Backup System

EJ001B

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.

HP StorageWorks D2D2504i Backup System

EJ002B

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

USB Removable Media RDX Disk Backup Systems

HP StorageWorks RDX 1TB Internal Removable Disk Backup System

BV847A

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.

HP StorageWorks RDX320 Internal Removable Disk Backup System

AJ767A

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.

HP StorageWorks RDX500 Internal Removable Disk Backup System

AJ934A

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.

HP StorageWorks Options

StorageWorks SCSI HBA

HP StorageWorks U320e SCSI Dual Channel Host Bus Adapter

AH627A

NOTE: Recommended HBA for MSL SCSI Tape Library connect.



Additional Options

HP Uninterruptible Power Systems HP Rack-mountable UPS

HP UPS R1500 G2

HP R1500 G2 1440VA Low Voltage NA 1U Rackmount Uninterruptible Power System AF419A

HP R1500 G2 1440VA INTL 1U Rackmount Uninterruptible Power System AF418A

HP R1500 G2 1200kVA Low Voltage JP 1U Rackmount Uninterruptible Power System AF421A

NOTE: Please see QuickSpecs Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/12507_div/12507_div.html
 (Worldwide)

HP R/T3000 UPS

HP R/T3000 3300VA High Voltage NA/JPN 2U Rackmount Uninterruptible Power System AF453A

HP R/T3000 3300VA INTL 2U Rackmount Uninterruptible Power System AF454A

NOTE: Please see QuickSpecs Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/10671_div/10671_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)

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

HP Monitored Power Distribution Unit: Full Rack Version

HP 8.6 kVA S1324 Monitored PDU- single input, 3Ø, 24A (NA/JPN) AF504A

HP 8.3 S1140 Monitored PDU- single input, 1Ø, 40A (NA/JPN) AF506A

HP 11 kVA S1316 Monitored PDU- single input, 3Ø, 16A (INTL) AF508A

HP 7.3 kVA S1132 Monitored PDU- single input, 1Ø, 32A (INTL) AF510A

HP Monitored Power Distribution Unit: Half Rack Version

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

HP 7.3 kVA S132 Monitored PDU- single input, 1Ø, 32A (INTL) AF915A

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

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

HP Modular Power Distribution Units (mPDU), High Volt Model, 24A (200-240 VAC) (NA, Japan) 252663-D72

HP Modular Power Distribution Units (mPDU), High Voltage 8.3 kVA Modular PDU, 40A, NA/JPN 252663-D73

HP Modular Power Distribution Units (mPDU), High Volt Model, 32A (200-240 VAC) (Int'l) 252663-B31



Additional Options

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

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

4.9kVA iPDU Core, 24A Single phase L6-30 input NA/JPN	AF520A
8.6kVA iPDU Core, 24A Three phase L15-30 input, NA/JPN	AF522A
7.3kVA iPDU Core, 32A Single Phase IEC332P6 input, INTL	AF525A
11kVA iPDU Core, 16A Three phase IEC516P6 input, INTL	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



Additional Options

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.

HP Rack Options

HP KVM Switch Options

HP 0x2x16 KVM SVR CNSL G2 VM CAC SW	AF618A
HP 0x2x32 KVM SVR CNSL G2 VM CAC SW	AF619A
HP 1x1Ex8 KVM IP CNSL G2 VM CAC SW	AF620A
HP 2x1Ex16 KVM IP CNSL G2 VM CAC SW	AF621A
HP 4x1Ex32 KVM IP CNSL G2 VM CAC SW	AF622A

HP Serial Console Server Options

Server console switch 0x2x8	AF616A
Server console switch 0x2x16	AF617A

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

4-Hour On-site Service, 5-Day x 13-Hour Coverage, 3 Years, Electronic	UJ252E
4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	UJ253E

Hardware Services Next Business Day On-Site Service

9-Hour x 5-Day Coverage, 3 Years, Electronic	UJ251E
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Installation Services

Hardware Services 6-Hour Call to Repair On-Site Service	UJ254E
Hardware Installation, Electronic	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



Storage

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 DP 450GB 6G SAS 15K DP 300GB 6G SAS 15K DP	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 DP 450GB 6G SAS 15K DP	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	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
1TB 3G SATA 7.2K			
750GB 3G SATA 7.2K			
500GB 3G SATA 7.2K			
250GB 3G SATA 7.2K			

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

	Quantity Supported	Position Supported	Controller
2TB 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
1TB 3G SATA 7.2K			
500GB 3G SATA 7.2K			

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

	Quantity Supported	Position Supported	Controller
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
160GB 3G SATA 7.2K			

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

	Quantity Supported	Position Supported	Controller
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
160GB 3G SATA 7.2K			

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

	Quantity Supported	Position Supported	Controller
250GB 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
160GB 1.5G SATA 7.2K			

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 2TGB 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 StorageWorks tape drives, autoloaders, libraries and media, including the internal fitting models, see: <http://www.hp.com/go/tape>. For the complete range of StorageWorks D2D Backup Systems see: <http://www.hp.com/go/d2d>. For the complete range of StorageWorks RDX drives and media see: <http://www.hp.com/go/rdx>. For hardware and software compatibility of HP StorageWorks disk and tape backup products see: <http://www.hp.com/go/connect>.

	Position	Recommended Controller	Part Number
HP StorageWorks SCSI Tape Drives LTO-1 Ultrium 232 LTO-2 Ultrium 448 LTO-3 Ultrium 920 LTO-3 Ultrium 960 LTO4 Ultrium 1760 LTO-4 Ultrium 1840 DAT 40 DAT 72 DAT 160 1U Rack-Mount Kit 3U Rack-Mount Kit	External	HP SC11Xe Ultra320 Single Channel/ PCIe x4 SCSI Host Bus Adapter	412911-B21
HP StorageWorks USB Tape Drives DAT 40 DAT 72 DAT 160 DAT 320 1U USB Rack-Mount Kit	External	USB 2.0 Port	N/A
HP StorageWorks SAS Tape Drives DAT 160 DAT 320 LTO-2 Ultrium 448 LTO-3 Ultrium 920 LTO-4 Ultrium 1760 LTO-4 Ultrium 1840 LTO-5 Ultrium 3000 LTO-5 Ultrium 3280 1U Rack-Mount Kit 3U Rack-Mount Kit	External	HP Smart Array P212/ZM 1-ports Int/1-ports Ext PCIe x8 SAS Controller	462828-B21
HP StorageWorks SCSI Tape Autoloaders DAT 72x10 Autoloader 1/8 G2 Autoloader	External	HP SC11Xe Ultra320 Single Channel/ PCIe x4 SCSI Host Bus Adapter	412911-B21



Storage

HP StorageWorks SCSI Tape Libraries MSL2024 MSL4048 MSL8096 MSL6000	External	HP StorageWorks U320e SCSI Dual Channel Host Bus Adapter	AH627A
HP StorageWorks 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 StorageWorks 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 StorageWorks USB RDX Removable Disk Backup System RDX160 RDX320 RDX500 RDX750	External	USB 2.0 port	N/A
HP StorageWorks D2D Backup Systems, iSCSI D2D2500i D2D4000i	External	Embedded Network Controller. If the server requires a hardware iSCSI initiator, the QLogic QLA4050 Host Bus Adapter is recommended.	
HP StorageWorks D2D Backup Systems, Fibre Channel D2D4000fc	External	Direct server attach is not supported, requires connection via SAN fabric. See: http://www.hp.com/go/connect	



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)						



Technical Specifications

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	31.49 lb (14.3kg)
		(four hard drives, power supply, and processor installed)	
		Minimum	28.2lb (12.8kg)
		(one hard drive, power supply, and processor installed)	
	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	
Power Supply Output (per power supply)	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).
Relative Humidity (non-condensing)		Non-operating	-30° to 65°C (-22° to 149°F). Maximum rate of change is 20°C/hr (36°F/hr).
		Operating	10 to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing.
		Non-operating	5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.



Technical Specifications

Altitude	Operating	3050 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
	Non-operating	9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
Acoustic Noise	Listed are the declared A-Weighted sound power levels (LWAd) and declared average bystander position A-Weighted sound pressure levels (LpAm) when the product is operating in a 23°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109).	
	Idle	
	LWAd	6.30 B
	LpAm	44.1 dBA
Emissions Classification (EMC)	Operating	
	LWAd	6.34 B
	LpAm	44.4 dBA
	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



Technical Specifications

Maximum Wet Bulb Temperature	104° F (40° C)
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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



Technical Specifications

Cable Support	10Base-T 10/100/1000Base-TX	Categories 3, 4 or 5 UTP; up to 328 ft (100 m) Category 5 UTP; up to 328 ft (100 m)
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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.



Technical Specifications

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

