Overview

HP ProLiant DL120 Generation 7 (G7)

The HP ProLiant DL120 G7 Server is an entry-level rack-optimized server providing you with all the confidence of an 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 optional upgrades, including HP HBAs and Smart Array Controllers, which provide support for SAS hard disk drives. The DL120 G7 supports HP iLO 3 Remote Management which 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.
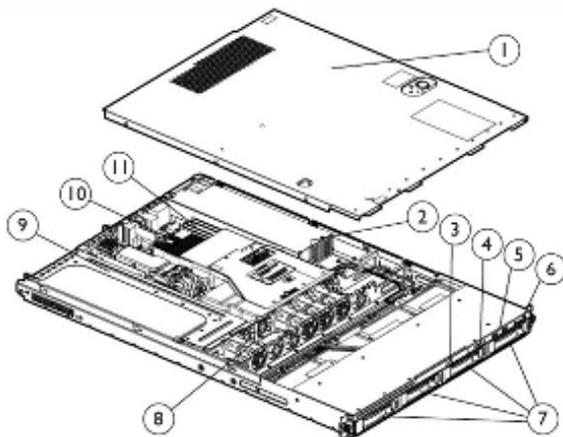
Front View:

1. Cover
2. Power Supply
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 LFF Hot Plug SATA/SAS or eight SFF Hot Plug SATA/SAS Hard Drives
8. Non Hot Plug Dual Rotor Fans (4)
9. Two PCI express Slots (one x16, one x4 Lanes)
10. Processor Socket
11. Four PC3-10600E UB ECC DDR3 Memory Slots
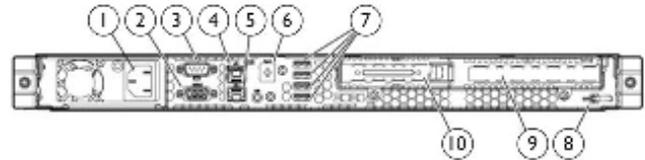
Rear View:

1. Power cord connector
2. Video connector
3. Serial connector
4. NIC 1 connector / shared iLO3 management port
5. NIC 2 connector
6. iLO3 dedicated LAN port (optional)
7. USB connectors (4)

8. T10/T15 tool
9. Expansion slot 4, PCI e2 x16
10. Expansion slot 3, PCI e2 x8

What's New

- Support for HP 1TB 3G SATA 7.2K 2.5in Midline Hard Drive

Standard Features

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

Processor One of the following depending on Model	**Quad-Core Processors** Intel® Xeon® E3-1280 (3.50GHz/4-core/8MB/95W, 1333, HT, Turbo 1/2/3/4) Processor **NOTE:** Available through Configure To Order only. See Factory Integration Models section for more details. Intel® Xeon® E3-1270 (3.40GHz/4-core/8MB/80W, 1333, HT, Turbo 1/2/3/4) Processor **NOTE:** Available through Configure To Order only. See Factory Integration Models section for more details. Intel® Xeon® E3-1240 (3.30GHz/4-core/8MB/80W, 1333, HT, Turbo 1/2/3/4) Processor Intel® Xeon® E3-1230 (3.20GHz/4-core/8MB/80W, 1333, HT, Turbo 1/2/3/4) Processor **NOTE:** Available through Configure To Order only. See Factory Integration Models section for more details. Intel® Xeon® E3-1220 (3.10GHz/4-core/8MB/80W, 1333, Turbo 1/2/3/4) Processor **Dual-Core Processors** Intel® Xeon® E3-1220L (2.20GHz/2-core/3MB/20W, 1333, Turbo 0/0/0/10) Processor **NOTE:** Available through Configure To Order only. See Factory Integration Models section for more details. Intel® Core™ i3-2120 (3.30GHz/2-core/3MB/65W, 1333, HT) Processor **NOTE:** Available through Configure To Order only. See Factory Integration Models section for more details. Intel® Core™ i3-2100 (3.10GHz/2-core/3MB/65W, 1333, HT) Processor **NOTE:** HT indicates that the processor model supports Intel® Hyper-Threading Technology. **NOTE:** Turbo indicates the maximum potential frequency increment when using Intel® Turbo Boost Technology, with 4, 3, 2, and 1 cores active. **NOTE:** DDR3 speed is the maximum memory speed of the processor. Actual memory speed may depend on the quantity and type of DIMMs installed.

Cache Memory One of the following depending on Model	Integrated 1x8MB Level3 Intel® Smart Cache Integrated 1x3MB Level3 Intel® Smart Cache

Chipset	Intel® C200 Series Chipset

Memory Protection	ECC

Memory One of the following depending on Model	Type	DDR3 1333MHz Unbuffered (UDIMM)
	DIMM Slots	Total 4 DIMM slots
	Standard (Entry Model)	2GB (1x2GB) UDIMM
	Standard (Base Models)	4GB (2x2GB) UDIMM
	Standard (Performance Models)	4GB (2x2GB) UDIMM
	Maximum Memory	Supports up to 16GB DDR3 1333 Unbuffered ECC DIMM. Supports up to 4 UDIMMs

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

Network Controller	HP NC112i 1-Port Ethernet Server Adapter (x2)

Expansion Slots	**Technology**	**Bus**	**Connector**	**Bus**	**Device**	**Form**	**Notes**

		Width***	Width	Number*	No.**	Factor
1 (Standard)	PCIe G2	X16	x16	0	1	Full length, full height slot
2 (Standard)	PCIe G2	X4	x8	0	6	Half height, low profile 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.

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:** 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 One of the following depending on Model	Entry Model (Cold Plug)	Up to 4 pluggable SATA/SAS 3.5" drives supported. 1x250GB pluggable SATA 3.5" drive ships standard **NOTE:** SAS requires optional HBA or SA card **NOTE:** SATA Hot Plug functionality available via Hot Plug Advance Pack for B110i
		Base Model (Cold Plug)	Up to 4 pluggable SATA/SAS 3.5" drives supported. 1x250GB pluggable SATA 3.5" drive ships standard **NOTE:** SAS requires optional HBA or SA card. **NOTE:** SATA Hot Plug functionality 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
	Hot Plug SATA	8.0TB	(4 x 2TB) 3.5" SATA

Interfaces	Serial	1
	Graphics	1 (rear)
	Network RJ-45	2

	Optional iLO 3 remote RJ-45 management port	1 **NOTE:** This is shared NIC port for iLO. If users do not purchase iLO dedicated NIC option card they can still use this port as shared NIC Port
	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

Industry Standard Compliance	ACPI 3.0a
	PCI Express Rev 2.0
	PXE Support
	WOL Support
	Microsoft® Logo certifications
	USB 2.0
	IPMI 2.0
	DCMI 1.0
	Serial ATA Gen ll

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 G7 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 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/WF25a/15351-15351-3328412-241644-3328421-5075933.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/DL120G7

Graphics	Embedded Matrox G200
	Resolution Color Depths: 600 x 1200, 64K, 256, 16
	1280 x 1024, 16.7M, 64k, 256, 16
	1024 x 768, 16.7M, 64k, 256,16
	800 x 600, 16.7M, 64k, 256, 16

640 x 480, 16.7M, 64k, 256, 16
NOTE: Maximum resolution available via HP Integrated Lights-Out 3 (iLO 3) remote console is 1280 x 1024.

Form Factor	Rack (1U), (1.75 in/44.45 mm), 27.56" deep **NOTE:** Fixed mounting rails included with all models.

HP Insight management software	HP Insight Foundation suite for ProLiant	Managing the growing number of servers can be complex and expensive for your organization. IT managers need to address changing business needs with tools that meet the challenges of managing today's complex Datacenters. HP provides management solutions that are designed to simplify a server's installation, configuration and maintenance throughout the entire server lifecycle. This provides the customer with higher levels of operational efficiency and highly reliable systems: www.hp.com/go/foundation. The HP Insight Foundation suite for ProLiant keeps systems up-to-date, and its products are available as free downloads as well as for purchase. These tools and utilities provide management solutions that are designed to simplify a server's installation, configuration, and maintenance throughout the entire server life-cycle and provide customers with higher levels of operational efficiency and highly reliable solutions. It provides a complete server maintenance solution by combining • Smart Update Firmware DVD • Two SmartStart CDs (one supporting 32 bit operating systems and one supporting 64 bit operating systems) • Management DVD that includes HP Systems Insight Manager (HP SIM). SmartStart versions supported (minimum): SmartStart 8.40. On the web downloads will be at Version 8.70. The media kit may still be shipping with earlier versions. Info at: http://www.hp.com/servers/smartstart **NOTE:** In an effort to support reducing our environmental impact, the HP Insight Foundation Suite for ProLiant media will be available as a selectable option for this server at time of order of a CTO SKU. This will allow customers to order the number of media kits that best meet their needs and eliminate receiving unnecessary duplicate media.
	HP Integrated Lights-Out Standard (iLO 3)	HP Integrated Lights-Out Standard (iLO 3) simplifies server setup, health monitoring, and lights-out remote administration of ProLiant ML, DL, and BL servers. HP iLO functions without additional software and can be accessed from any location via a web browser. HP iLO works hand-in-hand with HP Systems Insight Manager, Insight Control suites, and Insight Dynamics for ProLiant, helping customers unleash the value of the ProLiant platform and deliver the highest possible quality of IT service. For more information, visit: www.hp.com/go/iLO
	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

Security	Power-on password
	Keyboard password
	USB Port control
	Removable DVD-ROM Drive Assembly (optional)
	Dedicated/Shared LO100 management NIC port
	Administrator's password
	iLO 3 (Integrated Lights-Out 3) has 12 customizable user accounts and SSL encryption
	iLO 3 can be disabled via a Global Setting
	iLO Advanced supports directory services integration

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 one year 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	HP Insight Control	HP Insight Control, a product option, delivers essential infrastructure management that can help save time and money by making it easy to deploy, migrate, monitor, remote control, and optimize your IT infrastructure through a single, simple management console.
		Two versions of Insight Control are available, to serve environments requiring either a Linux-based or a Windows-based central management server: HP Insight Control for Linux, and HP Insight Control. See www.hp.com/go/insightcontrol
		HP Insight Control includes one year of 24 x 7 HP Software Technical Support and Update Service ensuring rapid access to HP support staff and proactive delivery of software updates. For more information about this service, please visit: http://www.hp.com/services/insight.
	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.

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Service and Support

Service and Support	**HP Technology Services for Industry Standard Servers and BladeSystem** Capitalizing on HP ProLiant server and HP BladeSystem capabilities requires a service partner who understands your increasingly complex business technology environment. That's why it makes sense to team up with the people who know HP infrastructure hardware and software best - the experienced professionals at HP Services.
	What HP ProLiant and BladeSystem Services can do for you HP ProLiant and BladeSystem Services can help you design, deploy, test, integrate, support, and manage IT and infrastructure solutions. This way, HP proposes services solutions that include more than just uplift of base warranty. You can get the support you need by choosing from one of a number of service packaged solutions we have designed to address wider set of

customer support needs.

HP Technology Services meets business challenges with services offered in three packages:

Optimized Care Package, Standard Care Package, and Basic Care Package

Available for each product group. Such packaged solutions enable customers to optimize technology operations, minimize risk and drive better business outcomes with easy-to-buy, easy-to-use scalable support packages for servers, storage, networking and software.

Optimized Care Package	**Supports maintaining servers at optimum performance availability** **HP ProLiant Server Hardware Installation** Provides for the basic hardware installation of HP branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner. http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-9356EN **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/5981-6636ENN **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.
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 **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 **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 **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 **Additional Services** Software OS (Microsoft, Linux (SUSE/Red Hat) Installation and Start Up and Software Support), Factory Express.
Insight Remote	The packages include HP Insight Remote Support that uses proven technology to deliver

Support	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

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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 G7 i3-2100 2GB-U 250GB LFF Cold Plug SATA B110i RAID 400W Svr 628690-xx1	Processor	(1) Intel® Core™ i3-2100 (3.10GHz/2-core/3MB/65W, 1333, HT) Processor
	Cache Memory	3MB Intel® Smart Cache
	Memory	2GB (1 x 2GB) PC3-10600E DDR3 UB ECC **NOTE:** Total of 4 DIMM slots
	Network Controller	HP NC112i 1-port Ethernet Server (x2)
	Storage Controller	HP Smart Array B110i SATA RAID Controller
	Hard Drives	1 x 250GB 3.5" Hot plug SATA
	Internal Storage	Up to 4 large form factor Cold Plug drives
	Optical Drive	None ships standard
	Management	HP Integrated Lights-Out Standard (iLO 3)
	Power Supply	Auto-sensing PFC Power Supply, CE Mark Compliant
	Form Factor	1U
	Warranty	Server Warranty includes 1 year Next Day Parts replacement, 1-Years Labor, 1-Years Onsite support.

Base Model

HP ProLiant DL120 G7 E3-1220 4GB-U 250GB LFF Cold Plug SATA B110i RAID 400W Svr 628691-xx1	Processor	(1) Intel® Xeon® E3-1220 (3.10GHz/4-core/8MB/80W,, 1333, Turbo 1/2/3/4) Processor
	Cache Memory	8MB Intel® Smart Cache
	Memory	4GB (2 x 2GB) PC3-10600E DDR3 UB ECC **NOTE:** Total of 4 DIMM slots
	Network Controller	HP NC112i 1-port Ethernet Server (x2)
	Storage Controller	HP Smart Array B110i SATA RAID Controller
	Hard Drives	1 x 250GB 3.5" Hot plug SATA
	Internal Storage	Up to 4 large form factor Hot Plug drives
	Optical Drive	None ships standard
	Management	HP Integrated Lights-Out Standard (iLO 3)
	Power Supply	Auto-sensing PFC Power Supply, CE Mark Compliant
	Form Factor	1U

| | Warranty | Server Warranty includes 1 year Next Day Parts replacement, 1-Years Labor, 1-Years Onsite support. |

Performance Model

HP ProLiant DL120 G7 E3-1240 4GB-U P212/256 RAID 400W PS Server 628692-xx1	Processor	(1) Intel® Xeon® E3-1240 (3.30GHz/4-core/8MB/80W,, 1333, HT, Turbo 1/2/3/4) Processor
	Cache Memory	8MB Intel® Smart Cache
	Memory	4GB (2 x 2GB) PC3-10600E DDR3 UB ECC **NOTE:** Total of 4 DIMM slots
	Network Controller	HP NC112i 1-Port Ethernet Server (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
	Management	HP Integrated Lights-Out Standard (iLO 3)
	Power Supply	Auto-sensing PFC Power Supply, CE Mark Compliant
	Form Factor	1U
	Warranty	Server Warranty includes 1 year Next Day Parts replacement, 1-Years Labor, 1-Years Onsite support.

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 G7 Pluggable 4 LFF Configure-to-order Server	647339-B21
	Includes:	
	Embedded NC112i 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 Integrated Lights-Out Standard (iLO 3)	
	HP Smart Array B110i SATA RAID Controller (RAID 0/1/1+0)	
	Rack (1U) form factor, (1.75 in/44.45 mm)	
	One Highline IEC Power Cord	

4 Non-Hot Plug Fans

Fixed, mounting rails

| HP ProLiant DL120 G7 Hot Plug 8 SFF Configure-to-order Server | 647340-B21 |

NOTE: This configuration requires the HP Smart Array P410 Controller be purchased separately to support 8SFF HDDs.

Includes:

Embedded NC112i 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, (1.75 in/44.45 mm)

One Highline IEC Power Cord

4 Non-Hot Plug Fans

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 G7 Intel® Xeon® E3-1280 (3.50GHz/4-core/8MB/95W) FIO Processor Kit	641916-L21
	HP DL120 G7 Intel® Xeon® E3-1270 (3.40GHz/4-core/8MB/80W) FIO Processor Kit	641915-L21
	HP DL120 G7 Intel® Xeon® E3-1240 (3.30GHz/4-core/8MB/80W) FIO Processor Kit	641914-L21
	HP DL120 G7 Intel® Xeon® E3-1230 (3.20GHz/4-core/8MB/80W) FIO Processor Kit	641913-L21
	HP DL120 G7 Intel® Xeon® E3-1220 (3.10GHz/4-core/8MB/80W) FIO Processor Kit	641912-L21
	Dual-Core Processors	
	HP DL120 G7 Intel® Xeon® E3-1220L (2.20GHz/2-core/3MB/20W) FIO Processor Kit	641911-L21
	HP DL120 G7 Intel® Xeon® i3-2120 (3.30GHz/2-core/3MB/65W) FIO Processor Kit	644361-L21
	HP DL120 G7 Intel® Xeon® i3-2100 (3.10GHz/2-core/3MB/65W) FIO Processor Kit	644360-L21
HP Memory	**Unbuffered with ECC DIMMs (UDIMM)**	
	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
	NOTE: All DDR3 memory option kits consist of one DIMM per kit. For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool: www.hp.com/go/ddr3memory-configurator. **NOTE:** Kits described as LP include Low Power DIMMs. For more information on ProLiant Energy Efficient Features, see: www.hp.com/go/proliant-energy-efficient	
HP Power Supplies	HP 400W Factory Integrated Power Supply Kit	515739-B21
	HP 365W Hot Plug Redundant Power Supply Kit with Backplane	532092-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 P410/ZM 2-ports Int PCIe x8 FIO SAS Controller	462860-B21
	HP Smart Array P410/256 BBWC 2-ports Int PCIe x8 FIO SAS Controller	491195-B21
	HP Smart Array P411/256 BBWC 2-ports Ext PCIe x8 FIO SAS Controller	491193-B21
HP Insight Software	HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle Single Server FIO License	582765-B21
	HP Insight Control for Linux including 1yr 24x7 Support ML/DL Bundle 1 Server FIO License	TC203A
HP Insight Foundation Software	HP PL Foundation Pk Single Rel FIO SW	534516-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	536769-B21
	NOTE: This option required to connect a USB device internally.	

HP Memory	**Unbuffered with ECC DIMMs (UDIMM)**	
	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
	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 SFF (2.5-inch) Enterprise (ENT) Drives

HP 600GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	581286-B21
HP 450GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	581284-B21
HP 300GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	507127-B21
HP 146GB 6G SAS 15K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	512547-B21
HP 146GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	507125-B21
HP 72GB 6G SAS 15K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	512545-B21

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

HP 500GB 6G SAS 7.2K rpm SFF (2.5-inch) Dual Port Midline 1yr Warranty Hard Drive	507610-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 SFF (2.5-inch) Midline (MDL) Drives

HP 1TB 3G SATA 7.2K rpm SFF (2.5-inch) Hot Plug Midline 1yr Warranty Hard Drive	625609-B21
HP 500GB 3G SATA 7.2K rpm SFF (2.5-inch) Midline 1yr Warranty Hard Drive	507750-B21
HP 160GB 3G SATA 7.2K rpm SFF (2.5-inch) Midline 1yr Warranty Hard Drive	530888-B21

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 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

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/13021_div/13021_div.html
(Worldwide)

HP Networking	HP NC112T PCI Express Gigabit Server Adapter	503746-B21
	HP NC360T PCI Express Dual Port Gigabit Server Adapter	412648-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 Dedicated iLO Management Port Option	514206-B21

HP Power Supplies	HP 365W Hot Plug Redundant Power Supply Kit with Backplane	532092-B21

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Additional Options

HP Insight Software	**HP Insight Control**	
	HP Insight Control including 1yr 24x7 Technical Support and Updates Single Server License	452148-B22
	HP Insight Control including 1yr 24x7 Technical Support and Updates Electronic License	T9074BAE
	HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle Electronic License	TC278AAE
	HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle Tracking License	TC275A
	HP Insight Software Media Kit	436222-B21

NOTE: Insight Software DVD media without licenses. Contains HP Systems Insight Manager, HP Insight Control, HP Insight Dynamics, HP Insight Control for Microsoft System Center, and Virtual Connect Enterprise Manager software. Uses an integrated installer to perform quick and accurate software installation and updates.

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 HP Insight Control Media Kit can be ordered separately, or can be downloaded at: http://www.hp.com/go/insightupdates.
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 Insight Control for Linux

HP Insight Control for Linux including 1yr 24x7 Support Electronic License	TC213AAE
HP Insight Control for Linux including 1yr 24x7 Support Single Server License	TC209A

HP Insight Control for Linux Media Kit	TC208A

NOTE: Media pack DVD contains the ISO image for HP Insight Control for Linux, HP Systems Insight Manager, HP Insight Control power management, HP Insight Control virtual machine management, and an integrated installer. Servers must be acquired separately.

NOTE: Licenses ship without media. The Media Kit for Insight Control for Linux can be ordered separately, or can be downloaded at: http://www.hp.com /go/ic-linux (click on Download button).
NOTE: Electronic software is available in all countries except China and Japan. Customers in China and Japan should order the physical equivalent.
NOTE: Electronic and Flexible-Quantity licenses can be used to purchase multiple licenses with a single set of activation keys.
NOTE: For additional License Kits, including electronic licensing options, please see the QuickSpecs at: http://h18000.www1.hp.com/products /quickspecs/13019_div/13019_div.html

HP Integrated Lights-Out (iLO) Advanced

HP iLO Advanced including 1yr 24x7 Technical Support and Updates Single Server License	512485-B21

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

HP iLO Advanced including 1yr 24x7 Technical Support and Updates Electronic License	TA850AAE

NOTE: Electronic software is available in all countries except China and Japan. Customers in China and Japan should order the physical equivalent.

NOTE: For additional license kits, including electronic delivery options, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs /12362_div/12362_div.html

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 Kit	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.

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 P410 Controller

HP Smart Array P410/256 2-ports Int PCIe x8 SAS Controller	462862-B21
HP Smart Array P410/512 BBWC 2-ports Int PCIe x8 SAS Controller	462864-B21
HP Smart Array P410/512 FBWC 2-ports Int PCIe x8 SAS Controller	578230-B21
HP Smart Array P410/1G FBWC 2-ports Int PCIe x8 SAS Controller	572532-B21

Smart Array P411 Controller

HP Smart Array P411/1G FBWC 2-ports Ext PCIe x8 SAS Controller	572531-B21
HP Smart Array P411/256 2-ports Ext PCIe x8 SAS Controller	462830-B21
HP Smart Array P411/512 BBWC 2-ports Ext PCIe x8 SAS Controller	462832-B21
HP Smart Array P411/512 FBWC 2-ports Ext PCIe x8 SAS Controller	578229-B21

Optional Upgrades

HP 1GB Flash Backed Cache	534562-B21
HP 512MB Flash Backed Write Cache	534916-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

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/13203_div/13203_div.html (Smart Array P212 Controller)
http://h18000.www1.hp.com/products/quickspecs/13201_div/13201_div.html (Smart Array P410 Controller)

http://h18000.www1.hp.com/products/quickspecs/13202_div/13202_div.html
(Smart Array P411 Controller)
http://h18000.www1.hp.com/products/quickspecs/13200_div/13200_div.html
(Smart Array Advanced Pack)
http://h18000.www1.hp.com/products/quickspecs/12566_div/12566_div.html
(SC11Xe HBA)

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 **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 StorageWorks DAT 320 USB in 1U Rack-mount Kit	AP835B
	HP StorageWorks 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 StorageWorks 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 StorageWorks 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 StorageWorks 1/8 G2 Ultrium 920 SAS Autoloader **NOTE:** Requires HP 1U Tape Autoloader Rack-Mount Kit (AH166A) for rack installation.	AH558A
	HP StorageWorks MSL2024 Ultrium 920 SAS Tape Library	AH559A
HP Disk Backup	**NOTE:** For the complete range of StorageWorks D2D Backup Systems see: http://www.hp.com/go/d2d. For the complete range of StorageWorks RDX drives and media see: http://www.hp.com/go/rdx. For hardware and software compatibility of HP StorageWorks disk backup products see: http://www.hp.com/go/connect.	
	HP StorageWorks D2D Backup Systems with Backup Data Deduplication	
	HP StorageWorks D2D2502i Backup System **NOTE:** 1.5TB of 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	EJ001B

recommended.

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

HP Modular Smart Array	HP StorageWorks 70 Modular Smart Array **NOTE:** Please see the QuickSpecs for additional options and configuration information at: http://h18000.www1.hp.com/products/quickspecs/12652_div/12652_div.html (Worldwide)	418800-B21
	Disk Enclosures	
	HP StorageWorks D2600 Disk Enclosure	AJ940A
	HP StorageWorks D2700 Disk Enclosure	AJ941A
	NOTE: Please see the QuickSpecs for additional options and configuration information at: http://h18000.www1.hp.com/products/quickspecs/13404_div/13404_div.html	

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

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

NOTE: Please see the following 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 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.

HP Rack Options	**HP USB Keyboard and Mouse**	
	HP USB BFR-PVC US Keyboard/Mouse Kit	631341-B21
	HP USB BFR-PVC UK Keyboard/Mouse Kit	631344-B21
	HP USB BFR-PVC FR Keyboard/Mouse Kit	631346-B21
	HP USB BFR-PVC SP Keyboard/Mouse Kit	631348-B21
	HP USB BFR-PVC GR Keyboard/Mouse Kit	631358-B21
	HP USB BFR-PVC JP Keyboard/Mouse Kit	631360-B21
	HP USB BFR-PVC IT Keyboard/Mouse Kit	631362-B21
	HP USB BFR-PVC PRC Keyboard/Mouse Kit	631364-B21
	HP USB BFR-PVC Arab Keyboard/Mouse Kit	638212-B21
	HP USB BFR-PVC RU Keyboard/Mouse Kit	638214-B21

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/13972_div/13972_div.html
(Worldwide)

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
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 G7 Models
NOTE: Memory configurations listed do not apply to "Factory Integrated Models".
Standard Memory
SATA Models:
2GB or 4GB of PC3-10600E DDR3 UDIMM running at 1333MHz with ECC capabilities memory installed.

SAS Models
4GB of PC3-10600R UDIMM 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.

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:

- The HP ProLiant DL120 G7 Server has four memory slots
- There are two channels per server with two DIMM slot per channel
- Memory channel A consists of the two (2) DIMMs that are closest to the processor
- Memory channel B consists of the two (2) DIMMs that are furthest from the processor
- Different types of processors have different types of memory support.
- Support for single/dual-rank 1066/1333 MT/s ECC UDIMM (unbuffered DIMMS)
- The server supports up to 16 GB (4 x 4-GB) for Unbuffered DIMMs
- No support for LV-DIMMs; RDIMMs; Non-ECC UDIMMs
- Do not install DIMMs if the processor is not installed
- Populate DIMMs from heaviest load (double-rank) to lightest load (single-rank)
- Non-ECC DIMMs are not supported

- Always use HP qualified DIMM
- Farthest DIMM (either CHA or CHB) should always be populated first"

The UDIMM installing sequence:

	DIMM1C	DIMM2A	DIMM3D	DIMM4B
1 DIMMs	Empty	DIMM	Empty	Empty
2 DIMMs	Empty	DIMM	Empty	DIMM
3 DIMMs	DIMM	DIMM	Empty	DIMM
4 DIMMs	DIMM	DIMM	DIMM	DIMM

Following are memory options available from HP:

HP Memory	**Unbuffered with ECC DIMMs (UDIMM)**	
	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

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

contents

Storage
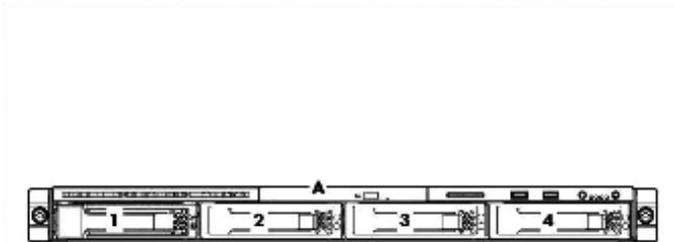
1- 4   Four SATA or SAS drive bays

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

1-8   Eight SFF Hot-Plug 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: The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components.

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

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

	Quantity Supported	Position Supported	Controller
600GB 6G SAS 10K DP 450GB 6G SAS 10K DP 300GB 6G SAS 10K DP 146GB 6G SAS 10K DP 146GB 6G SAS 15K DP 72GB 6G SAS 15K DP	Up to 8	1-8	HP Smart Array P410 Controller

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 HP Smart Array P410 Controller

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 HP Smart Array P410 Controller

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

	Quantity Supported	Position Supported	Controller
500GB 6G SAS 7.2K	Up to 8	1-8	HP Smart Array P410 Controller

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

	Quantity Supported	Position Supported	Controller
1TB 3G SATA 7.2K 500GB 3G SATA 7.2K 160GB 3G SATA 7.2K	Up to 8	1-8	HP Smart Array P410 Controller

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

	Quantity Supported	Position Supported	Controller

	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:** Smart Array Hot Plug Advanced Pack for B110i needs to be purchased to enable Hot Plug HP Smart Array P212 Controller HP Smart Array P410 Controller

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:** Smart Array Hot Plug Advanced Pack for B110i needs to be purchased to enable Hot Plug HP Smart Array P212 Controller HP Smart Array P410 Controller

Maximum Storage Capacity - (SAS drives)

Internal	8.0TB (4 x 2TB SAS)
External	16.0TB (8 x 2TB SAS)
Total	24.0TB

Maximum Storage Capacity - (SATA Drives)

Internal	8.0TB (4 x 2TB SATA)
External	16.0TB (8 x 2TB SATA)
Total	24.0TB

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
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 Factory Integrated Power Supply 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)	5.2	4.2	2.5	2.4	2.3	2.2	2.1
Max Rated Input Wattage Rating (Watts)	510	505	490	490	490	490	490
Max. Rated VA (Volt-Amp)	515	510	500	500	500	500	500
Efficiency (%) at Max. Rated Output Wattage	78	80	82	82	82	83	83
Power Factor	0.97						
Leakage Current (mA)	<0.5	<0.5	<1	<1	<1	<1	<1
Max. Inrush Current (A peak)	35						
Max. Inrush Current duration (mS)	20						
Maximum British Thermal Unit Rating (BTU-Hr)	1739	1722	1671	1671	1671	1671	1671

HP 365W Hot Plug Redundant Power Supply Kit with Backplane	532092-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	320	320	360	360	360	360	360
Nominal Input Current (A rms)	4.15	3.41	2.23	2.16	2.03	1.94	1.86
Max Rated Input Wattage Rating (Watts)	412	406	445	445	444	443	443
Max. Rated VA (Volt-Amp)	413	407	447	447	446	446	445
Efficiency (%) at Max. Rated Output Wattage	77.4	78.5	80.5	80.6	80.7	80.8	81.0
Power Factor	0.99						
Leakage Current (mA)	0.75	0.75	0.85	0.90	0.95	0.95	1.00
Maximum Inrush Current (A peak)	35						
Maximum Inrush Current duration (mS)	20						
Maximum British Thermal Unit Rating (BTU-Hr)	1354	1334	1462	1462	1459	1456	1456

Technical Specifications

System Unit	**Dimensions** (H x W x D) 44.45 x 448.1 x 700.0 mm (1. 75" x 17.64" x 27.56")

(with bezel)

Weight (approximate)	Maximum (four hard drives, power supply, and processor installed)	26.23 lb
	Minimum (one hard drive, power supply, and processor installed)	22.84 lb
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	<570W (at 100 VAC) 570W (at 200 VAC)
BTU Rating	Maximum	1943 BTU/hr (at 100 VAC), 1943 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 G7 - 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	5.9 B
	LpAm	42.3 dBA
	Operating	
	LWAd	5.9 B
	LpAm	43.6 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.

Integrated Lights-Out Standard (iLO 3) integrated on system board	**Architecture**	PCI Express based health and remote management ASIC
	Processor	PCI Express RISC processor core running at 250MHz
	Upgradeability	Option firmware upgradeable via Flash ROM
	Video Support	1600 x 1200 DVR max resolution
	Interfaces	One Ethernet Sideband connection (10/100/1000 Mb/s) One Ethernet network connection (10/100Mb/s)
	Memory	128-MB SDRAM with ECC
	Operating System Support	Microsoft Windows 2008 R2 Microsoft Windows 2008 (32 bit and 64 bit) Microsoft Windows Server 2008 Standard Edition (32bit and 64bit) Microsoft Windows Server 2008 Enterprise Edition (32bit and 64bit) Microsoft Windows Server 2003 and Windows Server 2003 R2, and Windows Server 2003 for Embedded Systems Standard Edition, and Enterprise Edition Red Hat Linux 5.5 (32 bit and 64 bit) Red Hat Linux 6.0 (32 bit and 64 bit) SUSE LINUX Enterprise Server 11 (32bit and 64bit) SUSE LINUX Enterprise Server 10 (32bit and 64bit) VMware ESX 4.0 VMware ESX 4.1 Microsoft Windows 7 Microsoft Windows XP Professional Edition Microsoft Windows Vista Business and Ultimate Editions
	Client System Support	Red Hat Enterprise Desktop 5.00 SUSE Linux Enterprise Desktop 11 SUSE Linux Enterprise Desktop 10
	Client Browser Support	Microsoft Internet Explorer 8 Microsoft Internet Explorer 7 Microsoft Internet Explorer 6 Firefox 3.6 (on supported Windows and Linux systems) Firefox 3.5 (on supported Windows and Linux systems) Firefox 3.0 (on supported Windows and Linux systems)

	Command Line Support	Secure Shell and serial port access	
	Security	Secure Socket Layer Secure Shell version 2 (Password and certificate) Advanced Encryption Standard (AES) and Triple Data Encryption AES encryption of video RC4 encryption of video	
	Directory Support Services	Standard (3DES) on browser, CLP and XML scripting interface Active Directory v1.0 (Windows 2003)	
	Driver Support	HP ProLiant iLO 3 Management Controller Driver Package iLO Management Channel Interface Driver	
	Management protocols supported	SNMPv1, IPMI 2.0 (System and LAN interface), DMTF Systems Management Architecture for Server Hardware Command Line Protocol (SMASH CLP), HP RIBCL XML	

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 = 570W (assume output wattage=400W @ 230V input, Rated input power = 570W (assume output wattage=400W)
		Rated input current	6 A, 3 A (100 V, 200 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)

HP NC112i 1-port Ethernet Server Adapter	**Network Interface**	10Base-T/ 100Base-TX/ 1000Base-TX	
	Ports	Single Port	
		802.3, 802.3u, 802.3x, 802.3ab, 802.3ad, 802.1p, 802.1Q PCIe Rev. 2.0 (2.5 GHz) x1 FCC (U.S. only) Class B DOC (Canada) Class B CE EN 55024, EN55022 Class B VCCI Class II UL 1950 CSA 950 EN 60950 CE ACPI 1.0 MicroSoft WHQL (Windows Hardware Quality Labs)	
	Data Transfer Method	Singlelane (x1)	
	Controller	Intel 82574L	
	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 250GB 3G SATA 7.2K rpm LFF (3.5-inch) Entry 1yr Warranty Hard Drive	571230-B21	**Capacity**	250,059MB	
		Height	1.04 in (26.4 mm)	
		Width	4.36 in (110.7 mm)	
		Depth	7.25 in (184.2 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	21.0 ms

		Rotational Speed	7,200 rpm
Physical Configuration		Bytes/Sector	512
		Logical Blocks	488,397,168
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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