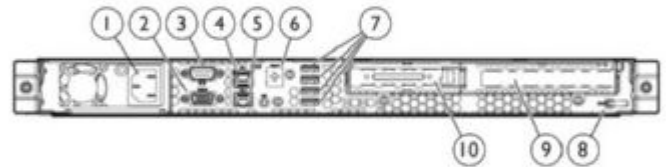
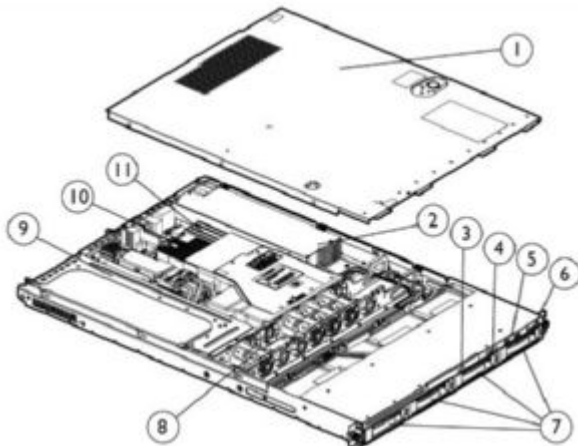


Overview

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
5. NIC 2 connector / shared iLO3 management port
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 new Intel® Core™ Quad-Core, Pentium® and Celeron® Dual-Core processors
- Support for HP 900GB 6G SAS 10K SFF (2.5-inch) Enterprise 3yr Warranty Hard Drive
- Support for HP 1TB 6G SAS 7.2K 2.5in MidLine Hard Drive
- Support for HP 1TB 3G SATA 7.2K 3.5in 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 (2.2GHz/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™ i3-2130 (3.40GHz/2-core/3MB/65W), 1333, HT Processor

NOTE: Available through Configure To Order only. See Factory Integration Models section for more details.

Intel® Core™ i3-2120 (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: Available through Configure To Order only. See Factory Integration Models section for more details.

Intel® Pentium® G860 (3.0GHz/2-core/3MB/65W), 1333 Processor

NOTE: Available through Configure To Order only. See Factory Integration Models section for more details.

Intel® Pentium® G850 (2.90GHz/2-core/3MB/65W), 1333 Processor

NOTE: Available through Configure To Order only. See Factory Integration Models section for more details.

Intel® Pentium® G840 (2.80GHz/2-core/3MB/65W), 1333 Processor

NOTE: Available through Configure To Order only. See Factory Integration Models section for more details.

Intel® Pentium® G630 (2.70GHz/2-core/3MB/65W), 1066 Processor

NOTE: Available through Configure To Order only. See Factory Integration Models section for more details.

Intel® Pentium® G620 (2.60GHz/2-core/3MB/65W), 1066 Processor

NOTE: Available through Configure To Order only. See Factory Integration Models section for more details.

Intel® Celeron® G530 (2.40GHz/2-core/2MB/65W), 1066 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 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.

Standard Features

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

Chipset Intel® C200 Series Chipset

Memory Protection ECC

Memory Type DDR3 1333MHz Unbuffered (UDIMM)
 One of the following depending on Model 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 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	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).



Standard Features

Internal Storage Devices	Optical Drive	Optional 9.5mm DVD-ROM, or DVD-RW Drive	
	Hard Drives	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
	One of the following depending on Model	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.

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 II

Standard Features

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
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System Fans	4 dual rotor fans ship standard.
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Required Cabling	For required cabling information, refer to the Web site at: www.hp.com/servers/dl120G7 .
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Operating Systems and Virtualization Software	Microsoft Windows Server Red Hat Enterprise Linux (RHEL) SUSE Linux Enterprise Server (SLES)
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NOTE: For more information on HP's Certified and Supported ProLiant Servers for OS and Virtualization Software and latest listing of software drivers available for your server, including how to purchase from HP, please visit our OS Support Site at: <http://www.hp.com/go/ossupport>

Graphics	Embedded Matrox G200
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Resolution Color Depths:	The Matrox G200EH driver supports the following resolutions: 640x 480, 800x 600, 1024x 768, 1152x 864, 1280x 720, 1280x 768, 1280x 960, 1280x1024, 1360x 768, 1400x1050, 1440x 900, 1600x 900, 1600x1200, 1680x1050, 1920x1080, 1920x1200
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	The Matrox G200EH driver supports the following color depths: 8 bits, 256 colors, 15 bits, 32768 colors, 16 bits, 65536 colors, 24 bits, 16777216 colors, 32 bits, 4294967296 colors
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NOTE: When Remote Console is used, the color depth is limited to 15 bits, or 32768 colors.
NOTE: The resolution and frequency limitations of the attached monitor will further limit the combinations of resolution and depth
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.
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Standard Features

HP Insight management software	HP Insight Foundation suite for ProLiant	Insight Foundation is being baselined at version v8.70 which means the following: <ul style="list-style-type: none">• Its Media Kit (contains 2 SmartStart CDs, the Firmware DVD, and the Management DVD) will continue to ship with all supported ProLiant G7 or earlier BTO servers until the last supported server is no longer shipping.• The Media Kit will not be updated past version 8.70.• ProLiant G7 or earlier CTO servers are able to order the Media Kit with the understanding that the media is not updated. Please check specific server QuickSpecs for availability of CTO Kit.• PSP and Firmware DVD downloads will be updated through 2Q 2012 at the HP Insight Foundation Suite for ProLiant downloads tab: http://www.hp.com/go/foundation
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: <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	

Standard Features

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>

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>.

Optional Features

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 Technology Services for Industry Standard Servers and BladeSystem

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

What HP ProLiant and BladeSystem Services can do for you

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

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

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

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

Optimized Care Package

Supports maintaining servers at optimum performance availability

HP ProLiant Server Hardware Installation

Provides for the basic hardware installation of HP branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner.

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

3-Year HP 6 hour Hardware Support Onsite Call-to-Repair Service

Provides an IT manager with a team of support specialists who will quickly begin troubleshooting the system to help return the hardware to operating condition within 6 hours of the initial service request to the HP Global Solution Center.

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

Additional Services

Software OS (Microsoft, Linux (SUSE/Red Hat) Installation and Start Up and Software Support) plus Microsoft or Linux education courses +30 Proactive Select Credits, Factory Express.

Standard Care Package Package that maintains high level of server availability

HP ProLiant Server Hardware Installation

Provides for the basic hardware installation of HP branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner.

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

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

Provides you with rapid remote support and if required an HP authorized representative who will arrive on site any time and day of the year to begin hardware maintenance service within 4 hours of the service request being logged.

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

Additional Services

Software OS (Microsoft, Linux (SUSE/Red Hat) Installation and Start Up and Software Support); +10 Proactive Select Credits, Factory Express.

Service and Support

Basic Care Package **Delivers minimum recommended support service level**

HP ProLiant Server Hardware Installation

Provides for the basic hardware installation of HP branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner.

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

3-Year HP 13x5 4 hour Response, Hardware Support Onsite Service

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

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

Additional Services

Software OS (Microsoft, Linux (SUSE/Red Hat) Installation and Start Up and Software Support), Factory Express.

Insight Remote Support

The packages include HP Insight Remote Support that uses proven technology to deliver secure, reliable 24x7 remote monitoring, diagnoses, and problem resolution. It is available at no additional cost to all warranty, HP Care Pack Service, and service agreement customers.

For more information

To learn more on HP ProLiant servers and HP BladeSystem servers, please contact your HP sales representative or HP Authorized Channel Partner. Or visit:

<http://www.hp.com/services/proliant>

Pre-configured Models

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

NOTE: Not all models are available in all regions. Check with your local country HP offices for availability.

Entry Model

<p>HP ProLiant DL120 G7 i3-2100 2GB-U 250GB LFF Cold Plug SATA B110i RAID 400W Svr 628690-xx1</p>	<p>Processor</p> <p>Cache Memory</p> <p>Memory</p> <p>Network Controller</p> <p>Storage Controller</p> <p>Hard Drives</p> <p>Internal Storage</p> <p>Optical Drive</p> <p>Management</p> <p>Power Supply</p> <p>Form Factor</p> <p>Warranty</p>	<p>(1) Intel® Core™ i3-2100 (3.10GHz/2-core/3MB/65W,1333, HT) Processor</p> <p>3MB Intel® Smart Cache</p> <p>2GB (1 x 2GB) PC3-10600E DDR3 UB ECC NOTE: Total of 4 DIMM slots</p> <p>HP NC112i 1-port Ethernet Server (x2)</p> <p>HP Smart Array B110i SATA RAID Controller</p> <p>1 x 250GB 3.5" SATA</p> <p>Up to 4 large form factor Cold Plug drives</p> <p>None ships standard</p> <p>HP Integrated Lights-Out Standard (iLO 3)</p> <p>Auto-sensing PFC Power Supply, CE Mark Compliant</p> <p>1U</p> <p>Server Warranty includes 1 year Next Day Parts replacement, 1-Years Labor, 1-Years Onsite support. NOTE: A HP Smart Array Hot Plug Advance Pack for B110i w/1y 24x7 Supp Physical 1 Svr LTU (TC421A) is required for Hot plug system.</p>
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Base Model

<p>HP ProLiant DL120 G7 E3-1220 4GB-U 250GB LFF Cold Plug SATA B110i RAID 400W Svr 628691-xx1</p>	<p>Processor</p> <p>Cache Memory</p> <p>Memory</p> <p>Network Controller</p> <p>Storage Controller</p> <p>Hard Drives</p> <p>Internal Storage</p> <p>Optical Drive</p> <p>Management</p> <p>Power Supply</p> <p>Form Factor</p> <p>Warranty</p>	<p>(1) Intel® Xeon® E3-1220 (3.10GHz/4-core/8MB/80W,1333, Turbo 1/2/3/4) Processor</p> <p>8MB Intel® Smart Cache</p> <p>4GB (2 x 2GB) PC3-10600E DDR3 UB ECC NOTE: Total of 4 DIMM slots</p> <p>HP NC112i 1-port Ethernet Server (x2)</p> <p>HP Smart Array B110i SATA RAID Controller</p> <p>1 x 250GB 3.5" SATA</p> <p>Up to 4 large form factor drives</p> <p>None ships standard</p> <p>HP Integrated Lights-Out Standard (iLO 3)</p> <p>Auto-sensing PFC Power Supply, CE Mark Compliant</p> <p>1U</p> <p>Server Warranty includes 1 year Next Day Parts replacement, 1-Years Labor, 1-Years Onsite support. NOTE: A HP Smart Array Hot Plug Advance Pack for B110i w/1y 24x7 Supp Physical 1 Svr LTU (TC421A) is required for Hot plug system.</p>
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Pre-configured Models

Performance Model

HP ProLiant DL120 G7 Processor
E3-1240 4GB-U
P212/256 RAID 400W
PS Server
628692-xx1

Cache Memory
Memory

Network Controller

Storage Controller

Hard Drives

Internal Storage

Optical Drive

Management

Power Supply

Form Factor

Warranty

(1) Intel® Xeon® E3-1240 (3.30GHz/4-core/8MB/80W,1333, HT, Turbo 1/2/3/4) Processor

8MB Intel® Smart Cache

4GB (2 x 2GB) PC3-10600E DDR3 UB ECC

NOTE: Total of 4 DIMM slots

HP NC112i 1-Port Ethernet Server (x2)

HP Smart Array P212/256MB Controller

None ships standard

Up to 4 large form factor Hot Plug drives

None ships standard

HP Integrated Lights-Out Standard (iLO 3)

Auto-sensing PFC Power Supply, CE Mark Compliant

1U

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

NOTE: A HP Smart Array Hot Plug Advance Pack for B110i w/1y 24x7 Supp Physical 1 Svr LTU (TC421A) is required for Hot plug system

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	

Configuration Information - Factory Integrated Models

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 (2.2GHz/2-core/3MB/20W) FIO Processor Kit	641911-L21	
	HP DL120 G7 Intel® Core™ i3-2130 (3.40GHz/2-core/3MB/65W) FIO Processor Kit	663419-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 DL120 G7 Intel® Pentium® G860 (3.0GHz/2-core/3MB/65W) FIO Processor Kit	663418-L21	
	HP DL120 G7 Intel® Pentium® G850 (2.90GHz/2-core/3MB/65W) FIO Processor Kit	656610-L21	
	HP DL120 G7 Intel® Pentium® G840 (2.80GHz/2-core/3MB/65W) FIO Processor Kit	656609-L21	
	HP DL120 G7 Intel® Pentium® G630 (2.70GHz/2-core/3MB/65W) FIO Processor Kit	663417-L21	
	HP DL120 G7 Intel® Pentium® G620 (2.60GHz/2-core/3MB/65W) FIO Processor Kit	656608-L21	
	HP DL120 G7 Intel® Celeron G530 (2.40GHz/2-core/2MB/65W) FIO Processor Kit	663416-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 365W Redundant Power Supply Kit w/ Backplane	532092-B21	
	HP 400W Power Supply FIO Kit with Right Angle Connector	663420-B21	

Configuration Information - Factory Integrated Models

Step 3: Choose Additional Factory Integration Only Options (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
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Step 4: Choose Additional Options for Factory Integration

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

Core Options

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

HP Unique Options HP 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 900GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	619291-B21
HP 600GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	581286-B21
HP 450GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	581284-B21
HP 300GB 6G SAS 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 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
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Core Options

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 1TB 6G SAS 7.2K rpm SFF (2.5-inch) Dual Port Midline 1yr Warranty Hard Drive 605835-B21

HP 500GB 6G SAS 7.2K rpm SFF (2.5-inch) Dual Port Midline 1yr Warranty Hard Drive 507610-B21

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

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

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-E Dual Port Gigabit Server Adapter 412648-B21

HP NC365T 4-port Ethernet Server Adapter 593722-B21

HP NC373F PCI-E Multifunction 1000SX Gigabit Svr Adapter 394793-B21

HP NC373T PCI-E Multifunction Gigabit Server Adapter 394791-B21

HP NC375T PCI Express Quad Port Gigabit Server Adapter 538696-B21

HP NC382T PCI Express Dual Port Multifunction Gigabit Server Adapter 458492-B21

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

HP I/O Expansion Options

HP Dedicated iLO Management Port Option 514206-B21

HP Power Supplies

HP 365W Redundant Power Supply Kit w/ Backplane 532092-B21

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 Management Media Kit	436222-B21
	<p>NOTE: HP Insight Management Media Kit contains DVDs without licenses. Contains HP Systems Insight Manager, HP Insight Control, HP Matrix Operating Environment, and Virtual Connect Enterprise Manager software. Uses an integrated installer to perform quick and accurate software installation and updates.</p> <p>NOTE: Electronic and Flexible-Quantity licenses can be used to purchase multiple licenses with a single activation key.</p> <p>NOTE: Customer will receive a license entitlement certificate. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support and Update Service.</p> <p>NOTE: Licenses ship without media. The HP Insight Management Media Kit can be ordered separately, or can be downloaded at: http://www.hp.com/go/insightupdates.</p> <p>NOTE: For additional license options please see the Insight Control QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12631_div/12631_div.html</p>	
	HP Insight Control for Linux	
	HP Insight Control for Linux 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 w/1yr 24x7 Supp ML/DL/SL Bundle Electronic 1 Svr LTU	TC203AAE
	HP Insight Control for Linux Media Kit	TC208A
	<p>NOTE: Media pack DVD contains the ISO image for HP Insight Control for Linux, HP Systems Insight Manager, HP Insight Control power management, HP Insight Control virtual machine management, and an integrated installer. Servers must be acquired separately.</p> <p>NOTE: Licenses ship without media. The Media Kit for Insight Control for Linux can be ordered separately, or can be downloaded at: http://www.hp.com/go/ic-linux (click on Download button).</p> <p>NOTE: Electronic and Flexible-Quantity licenses can be used to purchase multiple licenses with a single set of activation keys.</p> <p>NOTE: For additional License Kits, including electronic licensing options, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/13019_div/13019_div.html</p>	
	HP Integrated Lights-Out (iLO) Advanced	
	HP iLO Advanced including 1yr 24x7 Technical Support and Updates Single Server License	512485-B21
	<p>NOTE: This license allows 1 server to be deployed and managed via HP iLO Advanced. Customer will receive a printed license entitlement certificate via physical shipment. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support Service.</p>	

Additional Options

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

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: 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

HP Trusted Platform Module Option 488069-B21

NOTE: The TPM (Trusted Platform Module) is a microcontroller chip that can securely store artifacts used to authenticate the server platform. These artifacts can include passwords, certificates and encryption keys. Windows® BitLocker™ Drive Encryption (BitLocker) is a data protection feature available in Windows Server® 2008. BitLocker leverages the enhanced security capabilities of a Trusted Platform Module (TPM) version 1.2. The TPM works with BitLocker to help protect user data and to ensure that a server running Windows Server 2008 has not been tampered with while the system was offline.

NOTE: For more information about TPM, including a white paper, go to:

www.hp.com/go/TPM

NOTE: ProLiant OS pre-installed units will come with the partition required for TPM deployment.

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

Additional Options

HP Storage Controllers

SAS Controllers

Smart Array P212 Controller

HP Smart Array P212/ZM 1-ports Int/1-ports Ext PCIe x8 SAS Controller 462828-B21

HP Smart Array P212/256 1-ports Int/1-ports Ext PCIe x8 SAS Controller 462834-B21

Smart Array 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 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.

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)

Additional Options

HP Tape Backup	<p>NOTE: For the complete range of Storage tape drives, autoloaders, libraries and media see: http://www.hp.com/go/tape. For hardware and software compatibility of HP Storage tape backup products see: http://www.hp.com/storage/SPOCK.</p> <p>NOTE: Connection using the HP P212 SAS Smart Array Controller (462828-B21) recommended.</p>	
	HP 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 DAT 320 USB in 1U Rack-mount Kit	AP835B
	HP 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 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 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 1/8 G2 Ultrium 920 SAS Autoloader	AH558A
	NOTE: Requires HP 1U Tape Autoloader Rack-Mount Kit (AH166A) for rack installation.	
	HP MSL8048 0-drive Tape Library	AU300A
	HP MSL4048 0-Drive Tape Library	AK381A
	HP MSL2024 1 LTO-5 Ultrium 3000 SAS Tape Library	BL537A
	HP MSL2024 0-Drive Tape Library	AK379A
	HP MSL2024 Ultrium 920 SAS Tape Library	AH559A

HP Disk Backup	<p>NOTE: For the complete range of Storage D2D Backup Systems see: http://www.hp.com/go/d2d. For the complete range of Storage RDX drives and media see: http://www.hp.com/go/rdx. For hardware and software compatibility of HP Storage disk backup products see: http://www.hp.com/storage/SPOCK.</p> <p>HP Storage D2D Backup Systems with Backup Data Deduplication</p>	
	HP D2D2502i Backup System	EJ001C
	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 D2D2504i Backup System	EJ002C
	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 RDX1000 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.	



Additional Options

	<p>HP 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.</p> <p>HP 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.</p>	
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HP Modular Smart Array	<p>HP MSA70 Array 418800-B21 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)</p> <p>Disk Enclosures</p> <p>HP D2600 Disk Enclosure AJ940A HP D2700 Disk Enclosure AJ941A NOTE: Please see the QuickSpecs for additional options and configuration information at: http://h18000.www1.hp.com/products/quickspecs/13404_div/13404_div.html</p>	
	<hr/>	
	<p>HP Uninterruptible Power Systems</p> <p>HP Rack-mountable UPS</p> <p>HP R1500 G3 Uninterruptible Power Supply (UPS)</p> <p>HP R1.5kVA G3 1U NA Uninterruptible Power System AF469A HP R1.5kVA G3 1U JP/TW Uninterruptible Power System AF470A HP R1.5kVA G3 1U INTL Uninterruptible Power System AF471A NOTE: Please see QuickSpecs Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/14059_div/14059_div.html (Worldwide)</p> <p>HP R/T3000 UPS</p> <p>HP R/T3000 G2 Uninterruptible Power System (UPS)</p> <p>HP R/T3000 G2 2U L530 Low Voltage NA/JP Uninterruptible Power System AF466A HP R/T3000 G2 2U L620 High Voltage NA/JP Uninterruptible Power System AF467A HP R/T3000 G2 2U Detachable Cord High Voltage INTL Uninterruptible Power System AF468A NOTE: Please see QuickSpecs Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/14058_div/14058_div.html (Worldwide)</p> <p>HP Rack-Mountable R5000 UPS</p> <p>HP R5KVA 3U L630 High Voltage NA/JP Uninterruptible Power System AF460A HP R5KVA 3U IEC309-32A High Voltage INTL Uninterruptible Power System AF461A HP R5KVA and R7KVA 3U Extended Runtime Module AF464A NOTE: Please see QuickSpecs Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/14109_div/14109_div.html (Worldwide)</p> <p>HP Rack-Mountable R7000 UPS</p> <p>HP R7KVA 4U IEC-32A High Voltage INTL Uninterruptible Power System AF463A</p>	
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Additional Options

HP R7KVA 4U 50A High Voltage NA/JP Uninterruptible Power System AF462A

NOTE: Please see QuickSpecs Technical Specifications and additional information:

http://h18000.www1.hp.com/products/quickspecs/14110_div/14110_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 8.6kVA 24A Single Input Three Phase NA/JP Monitored Power Distribution Unit AF504A

HP 8.3kVA 40A Single Input Single Phase NA/JP Monitored Power Distribution Unit AF506A

HP 11kVA 16A Single Input Three Phase INTL Monitored Power Distribution Unit AF508A

HP 7.3kVA 32A Single Input Single Phase INTL Monitored Power Distribution Unit AF510A

HP Monitored Power Distribution Unit: Half Rack Version

HP 4.9kVA 24A Single Input Single Phase NA/JP Monitored Power Distribution Unit AF914A

HP 7.3kVA 32A Single Input Single Phase INTL Monitored Power Distribution Unit AF915A

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

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

HP 4.9kVA 24A High Voltage NA/JP Modular Power Distribution Unit 252663-D72

HP 8.3kVA 40A High Voltage NA/JP Modular Power Distribution Unit 252663-D73

HP 7.3kVA 32A High Voltage INTL Modular Power Distribution Unit 252663-B31

HP 3.6kVA 16A High Voltage INTL Modular Power Distribution Unit 252663-B24

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

NOTE: Please see the following Modular Power Distribution Unit (Zero-U/1U Modular PDUs) QuickSpecs for additional options including shorter jumper cables and country specific power cords:

http://h18000.www1.hp.com/products/quickspecs/11041_div/11041_div.html
(Worldwide)

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

NOTE: Please see the UPS and PDU cable matrix's on the HP Power Protection and Management page. Under Power Cords, click on the "HP Power Cord Matrix" link. That link will list cable descriptions, requirements, and specifications for UPS and PDU units. Please see the following link:

www.hp.com/products/powercords.

Additional Options

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 Shock Universal Rack

AF002A

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

http://h18000.www1.hp.com/products/quickspecs/12402_div/12402_div.html
(Worldwide)

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

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

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

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

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

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

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

Additional Options

HP Rack Options

HP USB Keyboard and Mouse

HP USB BFR with PVC Free INDIA Keyboard/Mouse Kit	672097-D63
HP USB BFR with PVC Free AP-INTL Keyboard/Mouse Kit	672097-373
HP USB BFR with PVC Free INTL Keyboard/Mouse Kit	672097-B33
HP USB BFR with PVC Free PORT Keyboard/Mouse Kit	672097-133
HP USB BFR with PVC Free TURK Keyboard/Mouse Kit	672097-143
HP USB BFR with PVC Free CZ Keyboard/Mouse Kit	672097-223
HP USB BFR with PVC Free FIN Keyboard/Mouse Kit	672097-353
HP USB BFR with PVC Free SWE Keyboard/Mouse Kit	672097-103
HP USB BFR with PVC Free SWIS Keyboard/Mouse Kit	672097-113
HP USB BFR with PVC Free KOR Keyboard/Mouse Kit	672097-KD3
HP USB BFR with PVC Free US Keyboard/Mouse Kit	631341-B21
HP USB BFR with PVC Free UK Keyboard/Mouse Kit	631344-B21
HP USB BFR with PVC Free FR Keyboard/Mouse Kit	631346-B21
HP USB BFR with PVC Free ES Keyboard/Mouse Kit	631348-B21
HP USB BFR with PVC Free DE Keyboard/Mouse Kit	631358-B21
HP USB BFR with PVC Free JP Keyboard/Mouse Kit	631360-B21
HP USB BFR with PVC Free IT Keyboard/Mouse Kit	631362-B21
HP USB BFR with PVC Free CN Keyboard/Mouse Kit	631364-B21
HP USB BFR with PVC Free AE Keyboard/Mouse Kit	638212-B21
HP USB BFR with PVC Free 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 Serial Console Server Switches

HP Server Console 0x2x8 Port Analog Switch	AF616A
HP Server Console 0x2x16 Port Analog Switch	AF617A

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

http://h18000.www1.hp.com/products/quickspecs/11834_div/11834_div.html
(Worldwide)

HP Server Console Switch G2 with Virtual Media & CAC

HP 0x2x16 KVM Server Console Switch G2 with Virtual Media CAC Software	AF618A
HP 0x2x32 KVM Server Console Switch G2 with Virtual Media CAC Software	AF619A

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

http://h18000.www1.hp.com/products/quickspecs/13475_div/13475_div.html
(Worldwide)

HP IP Console Switch G2 with Virtual Media & CAC

HP 1x1Ex8 KVM IP Console Switch G2 with Virtual Media CAC Software	AF620A
HP 2x1Ex16 KVM IP Console Switch G2 with Virtual Media CAC Software	AF621A
HP 4x1Ex32 KVM IP Console Switch G2 with Virtual Media CAC Software	AF622A

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

http://h18000.www1.hp.com/products/quickspecs/13474_div/13474_div.html
(Worldwide)

Additional Options

HP Care Pack Services Hardware Services On-site Service

HP 3 year 4 hour 13x5 ProLiant DL120 Hardware Support UJ252E

HP 3 year 4 hour 24x7 ProLiant DL120 Hardware Support UJ253E

Hardware Services Next Business Day On-Site Service

HP 3 year Next business day ProLiant DL120 Hardware Support UJ251E

Installation Services

HP 3 year 6 hour 24x7 Call to Repair ProLiant DL120 Hardware Support UJ254E

HP Installation ProLiant DL120 Service UJ261E

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

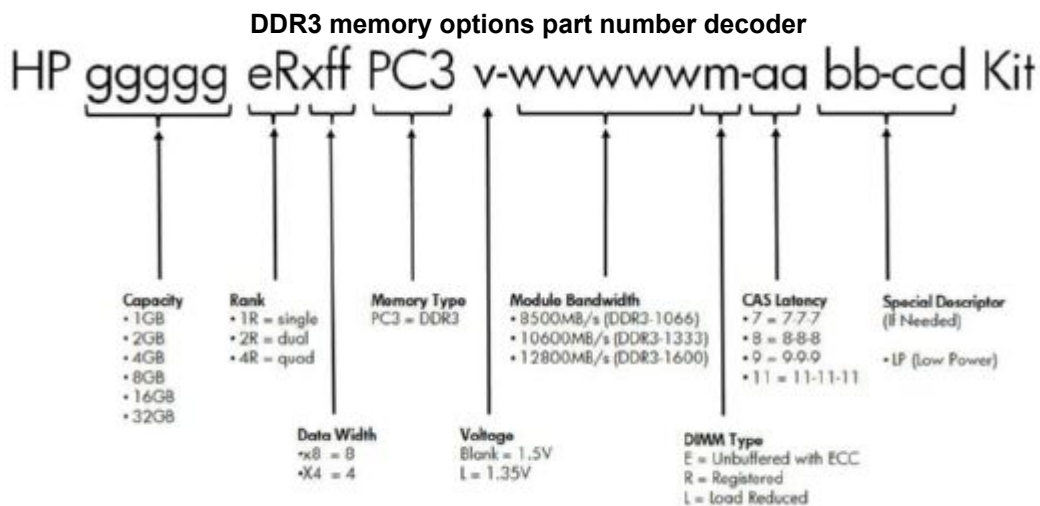
Up to 16 GB memory is available with the optional installation of 4 x 4GB PC3-10600E UDIMM ECC DDR3 SDRAM DIMM Memory kits, operating at 1333MHz when fully populated at 2 DIMMs per Channel in 4 slots.

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"



Memory

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)

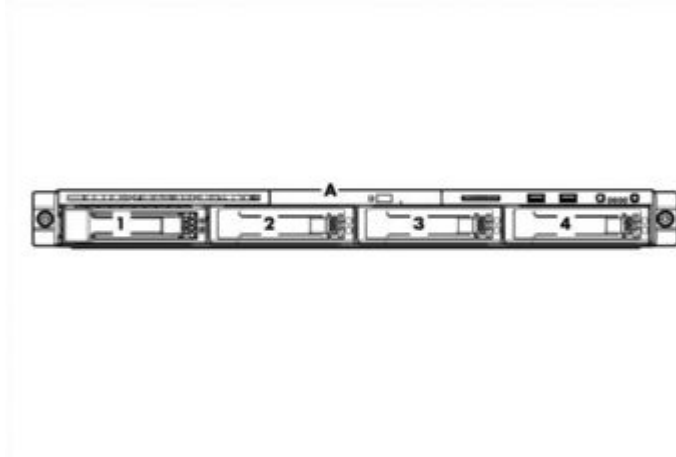
HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit 500670-B21

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.

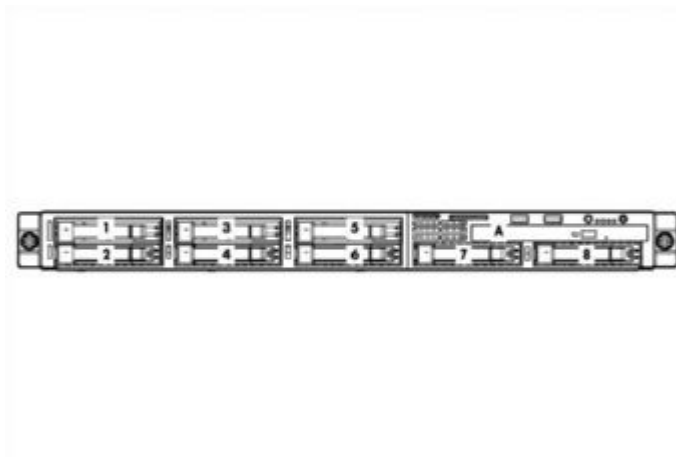
NOTE: Kits described as LP include Low Power DIMMs. For more information on ProLiant energy efficient features, see: www.hp.com/go/proliant-energy-efficient

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
900GB 6G SAS 10K 600GB 6G SAS 10K 450GB 6G SAS 10K 300GB 6G SAS 10K 146GB 6G SAS 15K 72GB 6G SAS 15K	Up to 8	1-8	HP Smart Array P410 Controller

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



Storage

	Quantity Supported	Position Supported	Controller
600GB 6G SAS 15K	Up to 4	1-4	HP Smart Array P212 Controller
450GB 6G SAS 15K			HP Smart Array P410 Controller
300GB 6G SAS 15K			

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

	Quantity Supported	Position Supported	Controller
2TB 6G SAS 7.2K	Up to 4	1-4	HP Smart Array P212 Controller
1TB 6G SAS 7.2K			HP Smart Array P410 Controller

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

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

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

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

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)
1TB 3G SATA 7.2K			NOTE: Smart Array Hot Plug Advanced Pack for B110i needs to be purchased to enable Hot Plug
500GB 3G SATA 7.2K			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	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

Storage

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

External Storage

	Quantity Supported	Position Supported	Controller
70 HP Modular Smart Array	Up to 8	External	HP Smart Array P212/256MB Controller HP Smart Array P212/256MB Controller HP Smart Array P411/256MB Controller

Tape and Disk Backup

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

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



Storage

LTO-5 Ultrium 3280
1U Rack-Mount Kit
3U Rack-Mount Kit

HP SCSI Tape Autoloaders DAT 72x10 Autoloader 1/8 G2 Autoloader	External	HP SC11Xe Ultra320 Single Channel/ PCIe x4 SCSI Host Bus Adapter	412911-B21
HP SCSI Tape Libraries MSL2024 MSL4048 MSL8096 MSL6000	External	HP U320e SCSI Dual Channel Host Bus Adapter	AH627A
HP SAS Tape Autoloaders and Libraries 1/8 G2 Autoloader MSL2024 MSL4048 MSL8096	External	HP Smart Array P212/ZM 1-ports Int/1-ports Ext PCIe x8 SAS Controller	462828-B21
HP Fibre Channel Tape Libraries MSL2024 MSL4048 MSL8096 MSL6000	External	Please consult the EBS connectivity matrix at: http://www.hp.com/go/ebs for connectivity information and the supported Fibre Channel HBAs shown in this QuickSpecs.	
HP USB RDX Removable Disk Backup System RDX160 RDX320 RDX500 RDX750	External	USB 2.0 port	N/A
HP D2D Backup Systems, iSCSI D2D2500i D2D4000i	External	Embedded Network Controller. If the server requires a hardware iSCSI initiator, the QLogic QLA4050 Host Bus Adapter is recommended.	
HP D2D Backup Systems, Fibre Channel D2D4000fc	External	Direct server attach is not supported, requires connection via SAN fabric. See: http://www.hp.com/storage/SPOCK	

Power Specifications

HP 365W Redundant Power Supply Kit w/ 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)	<table border="0"> <tr> <td>Maximum</td> <td>26.23 lb</td> </tr> <tr> <td colspan="2">(four hard drives, power supply, and processor installed)</td> </tr> <tr> <td>Minimum</td> <td>22.84 lb</td> </tr> <tr> <td colspan="2">(one hard drive, power supply, and processor installed)</td> </tr> </table>	Maximum	26.23 lb	(four hard drives, power supply, and processor installed)		Minimum	22.84 lb	(one hard drive, power supply, and processor installed)	
Maximum	26.23 lb									
(four hard drives, power supply, and processor installed)										
Minimum	22.84 lb									
(one hard drive, power supply, and processor installed)										
	Input Requirements (For 400W power supply)	<table border="0"> <tr> <td>Range Line Voltage</td> <td>90 - 132 VAC, 180 - 264 VAC</td> </tr> <tr> <td>Rated Input Current</td> <td>6 A (at 100 VAC), 3 A (at 200 VAC)</td> </tr> <tr> <td>Rated Input Frequency</td> <td>47 to 63 Hz</td> </tr> <tr> <td>Rated Input Power</td> <td><570W (at 100 VAC) 570W (at 200 VAC)</td> </tr> </table>	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)
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	<table border="0"> <tr> <td>Maximum</td> <td>1943 BTU/hr (at 100 VAC) 1943 BTU/hr (at 200 VAC)</td> </tr> </table>	Maximum	1943 BTU/hr (at 100 VAC) 1943 BTU/hr (at 200 VAC)						
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								
	Power Supply Output (For 400W power supply)	<table border="0"> <tr> <td>Rated Steady-State Power</td> <td>400 W (at 100 VAC), 400 W (at 200 VAC)</td> </tr> <tr> <td>Maximum Peak Power</td> <td>430 W (at 100 VAC), 430 W (at 200 VAC)</td> </tr> </table>	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)				
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	<table border="0"> <tr> <td>Operating</td> <td>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).</td> </tr> <tr> <td>Non-operating</td> <td>-30° to 65°C (-22° to 149°F). Maximum rate of change is 20°C/hr (36°F/hr).</td> </tr> </table>	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).				
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)	<table border="0"> <tr> <td>Operating</td> <td>10 to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing.</td> </tr> <tr> <td>Non-operating</td> <td>5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.</td> </tr> </table>	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.				
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	<table border="0"> <tr> <td>Operating</td> <td>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).</td> </tr> <tr> <td>Non-operating</td> <td>9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min).</td> </tr> </table>	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).				
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								



Technical Specifications

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).

Emissions Classification (EMC)	Idle	
	LWAd	5.9 B
	LpAm	42.3 dBA
	Operating	
	LWAd	5.9 B
	LpAm	43.6 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.

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) 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

Technical Specifications

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 2008)
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

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 2008. Linux (Red Hat, SuSE, UnitedLinux)

Technical Specifications

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 50° to 95° F (10° to 35° C) (system inlet air temperature)				

Technical Specifications

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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The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

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