

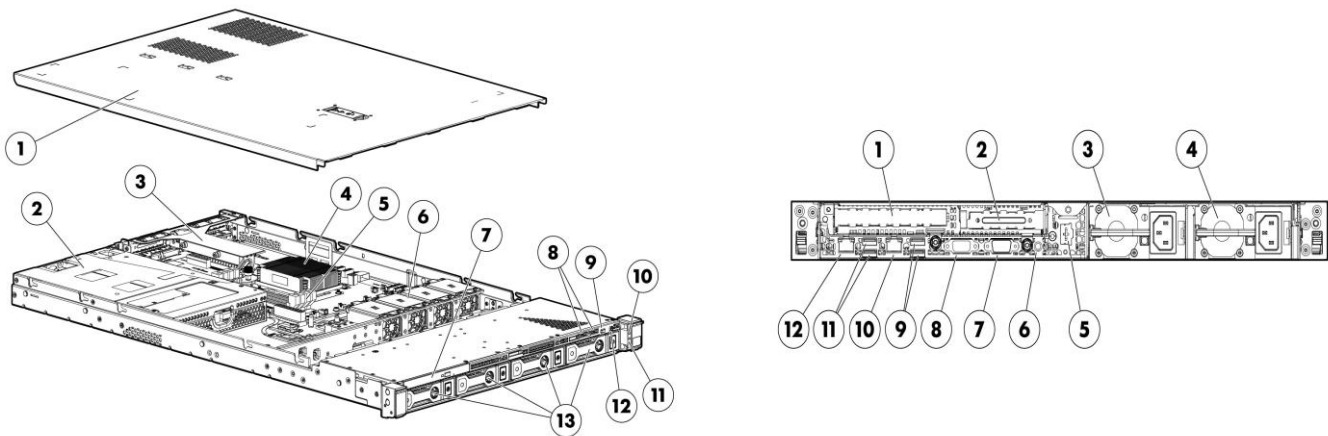
Overview

HP ProLiant DL320e Generation 8 (Gen8)

The latest 1P rack server, HP ProLiant DL320e Gen8 Server series, is a new entry level rack-optimized platform, ideal for single-application IT infrastructure, web and edge-of-network applications. The ProLiant DL320e Gen8 Server is not only affordable but is more powerful by enabling powerful quad-core processor computing performance with larger memory & storage capacity, all in a small package.

The DL320e Gen8 supports the latest technology, such as Intel® Xeon® E3 Pentium processors, PCI-e Gen3, DDR3 1600MHz memory, up to 12TB internal storage, RAID solution as well as High Efficiency Hot Plug Redundant Power Supply Kit.

HP ProLiant DL320e Gen8 Server series supports HP iLO Management Engine, a complete set of embedded management features supporting the complete lifecycle of the server, from initial deployment, through ongoing management, to service alerting and remote support.



Front View:

1. Access Panel
2. Power Supply
3. PCI Riser Cage
4. Processor
5. DIMMs
6. Fans
7. Optical drive
8. 2 USB Connectors
9. UID LED button
10. Health LED
11. NIC status LED
12. Power On/Standby button and LED
13. Hard Drive Bays

Rear View:

1. Expansion slot 2, PCIe x16
2. Expansion slot 1, PCIe x8
3. Power Supply 2
4. Power Supply 1
5. Dedicated iLO port
6. UID LED button
7. Serial Connector
8. Video Connector
9. USB Connectors
10. NIC Connector 1
11. USB Connectors
12. NIC Connector 2

What's New

- New HDD offering.

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

Entry Processors

Intel® Pentium® G2120 (3.1GHz/2-core/3MB/55W) Processor

NOTE: Intel® Pentium® G2120 Processor supports up to 1600MHz DDR3 memory speeds.

Performance Processors

NOTE: All support up to 1600MHz DDR3 memory speeds.

Intel® Xeon® E3-1220Lv2 (2.3GHz/2-core/3MB/17W, HT)

Intel® Xeon® E3-1220v2 (3.1GHz/4-core/8MB/69W)

Intel® Xeon® E3-1230v2 (3.3GHz/4-core/8MB/69W, HT)

Intel® Xeon® E3-1240v2 (3.4GHz/4-core/8MB/69W, HT)

Intel® Xeon® E3-1270v2 (3.5GHz/4-core/8MB/69W, HT)

Intel® Xeon® E3-1290v2 (3.7GHz/4-core/8MB/87W, HT)

NOTE: HT indicates that the processor model supports Intel® /Hyper-Threading Technology (Depends on the processor).

NOTE: DDR3 speed is the maximum memory speed of the processor. Actual memory speed may depend on the quantity and type of DIMMs and CPU installed (options for 1600, 1333, 1066MHz).

Cache Memory

One of the following depending on model

8MB (1x8MB) Level 3

NOTE: For Quad-core processors.

3MB (1x3MB) Level 3

NOTE: For Dual-core processors.

Chipset

Intel® C204 Series Chipset

NOTE: For more information regarding Intel® chipsets, please see the following URL:

<http://www.intel.com/products/server/chipsets/>.

Upgradeability

Up to 4 DIMM slots available for higher Memory capacity

Up to 8 bay SFF Hot plug Drive Cage; Or 4 bay LFF Hot plug or Non hot plug Drive Cages

1 PCIe 2.0 expansion slot

1 PCIe 3.0 I/O slot for additional communications and storage expansion (depends on processor)

Redundant Power Supply

Optical Drive Bay

On System Management Processor

HP iLO (Firmware: HP iLO 4)

NOTE: For more information, visit: <http://www.hp.com/go/ilo>.

Memory Protection

ECC

Memory

One of the following depending on model

Type

HP SmartMemory

Unbuffered (UDIMM)

DIMM Slots Available

4 DIMMs (2 Channels/ 2 DIMMs per channel)

Maximum Capacity (UDIMM)

32GB (4 x 8GB@1600MHz)

NOTE: HP memory from previous generation servers are not fully compatible with the HP ProLiant DL320e Gen8 Server.

NOTE: To realize the performance memory capabilities listed in this document, HP SmartMemory is

Standard Features

required. For additional information, please see the HP SmartMemory QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/14225_div/14225_div.html

NOTE: Depending on the memory configuration and processor model, the memory speed may run at 1600MHz, 1333MHz, or 1066MHz. Please see Memory Population Table or the Online Memory Configuration Tool at: <http://www.hp.com/go/ddr3memory-configurator>.

Network Controller

HP Ethernet 1Gb 2-port 330i Adapter

NOTE: The HP ProLiant DL320e Gen8 server has an embedded dual-port network adapter. The server can be further upgraded with various networking products

Expansion Slots

Expansion Slots #	Technology	Bus Width*	Connector Width	Form Factor	Notes
1	PCIe 2.0	x4	x8	Low profile slot	
2	PCIe 3.0	x16	x16	Half-length, full-height slot	

*Indicates the number of physical electrical lanes running to the connector.

NOTE: PCIe 3.0 support with Intel Xeon E3-1200v2 family only.

HP Server ROM

HP ROM (Read Only Memory) is now digitally signed using HP's Corporate Signing Service. This signature is verified before the flash process starts, reducing accidental programming and preventing malicious efforts to corrupt system ROM.

HP ROM provides for essential initialization and validation of hardware components before control is passed to the customer-installed operating system. The ROM also provides the capability of booting from various fixed media (HDD, CD-ROM) and removable media (USB), to continue operation to the operating system.

HP ROM performs very early configuration of the video controller, to allow monitoring of initialization progress via an attached monitor. If configuration or hardware errors are discovered during this early phase of hardware initialization, suitable messages are now displayed on the connected monitor. Additionally, these configuration or hardware errors are logged to the Integrated Management Log (IML) to assist in diagnosis.

HP's ProLiant ROM is used to configure the following:

- Processor and chipset status registers
- System memory, memory map, and memory initialization
- System hardware configuration (Integrated PCI devices and optional PCIe cards).
- Customer-specific BIOS configuration (using the HP ROM-Based Setup Utility (RBSU)).

NOTE: For further information, please refer to HP's RBSU (ROM based setup utility) user guide: <http://www.hp.com/support/rbsu>.

Storage Controller

One of the following depending on model

Entry Models
(Non hot plug)

HP Dynamic Smart Array B120i Controller

NOTE: Supports 3.0Gb/s SATA.

NOTE: Supports RAID 0/1/10 only. It does not have FBWC support so cannot support advanced RAID (5 onwards). For FBWC, a standup Smart Array Controller card must be configured.

Base Models
(Hot plug)

HP Dynamic Smart Array B120i Controller

NOTE: Supports 3.0Gb/s SATA.

NOTE: Supports RAID 0/1/10 only. It does not have FBWC support so cannot support advanced RAID (5 onwards). For FBWC, a standup Smart Array Controller card must be configured.

Standard Features

Performance Models (Hot plug)	HP Smart Array P222/512MB FBWC controller NOTE: P222 can support RAID 0/1/10/5/5+0/6/6+0. NOTE: HP Smart Array Advanced Pack (SAAP 2.0) is no longer required to enable RAID 6 & 60 (Advanced Data Guarding). However, controller must be in firmware version 4.68 (or later). NOTE: The DL320e Gen8 can support other advanced controllers as well, depending on model and configuration NOTE: For set up instructions for HP Smart Array B120i SATA Controller please refer to the HP ProLiant DL300 series server user guide. NOTE: For general information about HP Smart Array B120i SATA RAID Controller, please visit: http://h18004.www1.hp.com/products/servers/proliantstorage/arraycontrollers/dynamicsmartarray/index.html
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Internal Storage Devices	Diskette Drive	None
	Optical Drive	Optional DVD-ROM, DVD-RW
	Hard Drives One of the following depending on model	None ship standard (Base Models and Performance Models) 1x NHP 500GB SATA 3.5" drive (Entry Models)
	Hard Drive Bays	8 SFF drive bays or 4 LFF Non hot plug/Hot plug NOTE: HP ProLiant DL320e Series servers offer both SFF, and LFF versions in CTO. The Optical Drive bay is available with both models. NOTE: LFF versions are not an upgradeable option from SFF models, or vice versa, also between Non Hot Plug LFF and Hot Plug LFF. NOTE: All Pre-configured Models come populated with some hard drive blanks installed. Should the customer need additional hard drive blanks, they can order more using either P/N 666987-B21: HP SFF Gen8 Hard Drive Blank Kit or P/N 666986-B21: HP LFF Gen8 Hard Drive Blank Kit. These part numbers for single HDD blanks below are also provided should the customer require replacement HDD blanks for their server.

Maximum Internal Storage	Hot Plug SFF SAS	9.6TB	8 x 1.2TB
	Hot Plug SFF SATA	8.0TB	8 x 1TB
	Hot Plug LFF SAS	16.0TB	4 x 4TB
	Hot Plug LFF SATA	16.0TB	4 x 4TB
	Hot Plug SFF SAS SSD	6.4TB	8 x 800GB
	Hot Plug SFF SATA SSD	6.4TB	8 x 800GB
	Hot Plug LFF SATA SSD	3.2TB	4 x 800GB
	Non-Hot Plug LFF SATA	12.0 TB	4 x 3TB

Interfaces	Serial	1
	Video	1 Rear standard video
	HP iLO Remote Management Network Port	1Gb Dedicated
	SD slot	1 Internal NOTE: The SD slot is not a hot-pluggable device. Customers should not attempt to plug an SD card into the SD slot while the server is powered.
	USB 2.0 Ports	7 total: 4 rear, 2 front, 1 internal (Optional)

Standard Features

Industry Standard Compliance

ACPI 2.0b Compliant
PCIe 3.0
PXE Support
WOL Support
USB 2.0 Compliant

Server Power Cords

All Pre-configured Models servers ship with a high voltage server to PDU power cord.
NOTE: HP ProLiant DL servers no longer ship standard with a 12-foot NEMA 5-15P to C13 power cords (227099-001) that allow connection to 110V US wall outlets in a home or office. ProLiant DL servers are primarily connected to PDU's in data center racks so they now ship standard with only a PDU 6-foot C-14 to C13 power cord (142258-001). If a user wishes to power a ProLiant DL server using a 110V receptacle (NEMA-15), the 12-foot NEMA 5-15 to C13 power cord must be ordered separately. See Power Cords section for Worldwide Power Cord options.

Power Specifications

To review typical system power ratings use the HP Power Advisor which is available via the online tool located at URL: <http://www.hp.com/go/proliant-energy-efficient> or <http://www.hp.com/go/hppoweradvisor>.

NOTE: Power Specification and Technical Content for supported power supplies can be found at: http://h18000.www1.hp.com/products/quickspecs/14209_div/14209_div.html

Common Slot Power Supply

NOTE: The default power supply for DL320e Gen8 server is a 350W Non Hot Plug, Non Redundant (ATX) power supply with 85% efficiency.

NOTE: To choose a Redundant Common Slot Power Supply option for the DL320e Gen8 server, a Factory Integrated Model must be chosen, beginning with a CTO server. Also, an HP DL320e Gen8 RPS Enablement FIO Kit (675451-B21) is required.

HP's Common Slot (CS) power supplies allow for commonality of power supplies across a wide range of ProLiant and Integrity servers, as well as HP Storage solutions, and are designed to provide the highest power supply efficiency without degrading system performance. HP CS power supplies are tested by the Electric Power Research Institute (EPRI) and certified through the ECOS 80 Plus power supply program. The 460W HP CS power supply option provides an efficiency rating of up to 94%. All HP Common Slot power sources are UL, CE Mark Compliant, hot-plug and support redundant configurations.

NOTE: Mixing of power supplies (for instance Common Slot Platinum Plus power supplies and Common Slot Gold power supplies) in the same server is not supported. All power supplies must be of the same output and efficiency rating. If non-matched power supplies are inserted you will get errors and operation will fail.

HP CS Platinum Plus power supplies are required when enabling HP's Intelligent Power Discovery (IPD) solution. IPD is the first technology to create an automated, energy-aware network between IT systems and facilities. This allows your company to reclaim millions of dollars in wasted power capacity and downtime costs across data centers. For more information on HP's IPD solution, go to <http://www.hp.com/go/ipd>.

It is highly recommended that you use the HP Power Advisor in defining the "Right-Size" power supply for your needs. HP Power Advisor can be accessed at: <http://www.hp.com/go/hppoweradvisor>.

NOTE: The 80 PLUS program is a unique forum that unites electric utilities, the computer industry, and consumers in an effort to bring energy efficient technology solutions to the marketplace. 80 Plus independently tests power supply efficiency and publicly posts the results on 80Plus.org.

Redundant Power: Optional (1+1 or n+n redundant) power supplies can be purchased through power

Standard Features

supply option kits (see Power Supplies for part numbers).

NOTE: Power Specification and Technical Content for supported power supplies can be found at: http://h18000.www1.hp.com/products/quickspecs/14209_div/14209_div.html

System Fans 4 fan modules ship standard, non-redundant

Operating Systems and Virtualization Software Support for ProLiant Servers

[Microsoft Windows Server](#)
[Red Hat Enterprise Linux \(RHEL\)](#)
[SUSE Linux Enterprise Server \(SLES\)](#)
[VMware](#)

NOTE: For more information on HP's Certified and Supported ProLiant Servers for OS and Virtualization Software and latest listing of software drivers available for your server including how to purchase from HP, please visit our OS Support Site at: <http://www.hp.com/go/ossupport> and our driver download page: <http://www.hp.com/support/DL320eGen8>.

Graphics Integrated Matrox G200 video standard

- 1280 x 1024 (32 bpp)
- 1920 x 1200 (16 bpp)

HP iLO 4 On System Management Memory

- 16 MB Flash
- 256 MB DDR 3 with ECC (112 MB after ECC and video)

Form Factor

One of the following depending on model

1U Rack form factor

8 SFF Drive Bay Version:

1.7" (4.32cm) Height x 17.11" (43.46cm) Width x 27.5" (69.90cm) Length

4 LFF Drive Bay Version:

1.7" (4.32cm) Height x 17.11" (43.46cm) Width x 29.5" (75.00cm) Length

On System Management

HP iLO Management Engine

HP iLO Management Engine is a comprehensive set of embedded management features supporting the complete lifecycle of the server, from initial deployment, through ongoing management, to service alerting and remote support. HP iLO Management Engine comes standard on all HP ProLiant Gen8 servers. The HP iLO Management Engine portfolio includes:

- **HP iLO:** The HP iLO (Integrated Lights-Out) management processor is the core foundation for the HP iLO Management Engine
- **HP Agentless Management:** Provides built in server health monitoring and alerting capability without OS agents, that starts working the moment a power cord and an Ethernet cable are connected.
- **HP Active Health System:** Always on, continuous monitoring for increased stability and shorter downtimes; 100% configuration history; Health and service alerts and easy export and upload to Service and Support.
- **HP Intelligent Provisioning:** Lets customers provision and configure a single server without any separate media. No more SmartStart CDs or Smart Update Firmware DVD are needed.

Standard Features

- To start Intelligent Provisioning:
 - Press the F10 key during the ProLiant Gen8 server boot process (also known as power on self test or POST).
 - Please go to the Intelligent Provisioning website at <http://www.hp.com/go/intelligentprovisioning> for additional information and to view usage videos.
 - Use the Service Pack for ProLiant (SPP) at <http://www.hp.com/go/spp> to get firmware and software updates.
- **HP iLO Mobile App:** Enables the ability to access, deploy, and manage your server anytime from anywhere from select smartphones and mobile devices. For additional information please visit: <http://www.hp.com/go/ilo/mobileapp>

NOTE: For more information, visit: <http://www.hp.com/go/ilo> or HP iLO Management Engine technologies whitepaper

HP Insight Management HP Service Pack for ProLiant

HP Service Pack for ProLiant (SPP) and HP Smart Update Manager (HP SUM) provide a comprehensive approach to firmware and system software maintenance. Together they provide better operating stability and ensure maximum uptime. The SPP will be updated at a predictable cadence, typically coinciding with new HP server hardware launches. By enabling firmware to be updated online and integrating firmware and system software updates in one operation, HP SUM and the SPP offer faster updates of individual servers and dramatically faster updates of entire BladeSystem enclosures. Further improving system uptime and stability is the fact that HP provides 12 months of support for each Service Pack for ProLiant release.

The user experience around HP SUM and the SPP has been improved in several ways, starting with the web download. A single web page provides access to a single download containing both the latest version of HP SUM and the latest SPP. Optional smaller subsets with only specific types of servers or specific operating systems are offered to save on download time. The HP SUM application provides a straightforward, intuitive user interface that guides the user through the steps of discovery, analyses and update, providing comprehensive information on available updates, criticality and interdependencies. This information is also available in reports. By providing the option of multiple local or shared repositories which can be easily updated from hp.com, HP SUM provides the tools to optimize stability and consistency throughout the company. While HP SUM and the SPP recommend the combinations of firmware and system software that HP has found to be the best practice, the application gives customers the flexibility to set their own specific baseline.

The Service Pack for ProLiant has been rigorously tested with specific attention for interaction between firmware, drivers and agents both within the server as well as in interaction with the BladeSystem enclosure components (Onboard Administrator and Virtual Connect). This testing ensures the highest quality as well as providing the input for HP SUM to deploy updates taking into account all interdependencies, when determining the correct updates and order of update deployment.

Standard Features

NOTE: The Service Pack for ProLiant (which includes HP SUM) can be downloaded from <http://www.hp.com/go/spp/download>. More information can be found: <http://www.hp.com/go/SmartUpdate>, <http://www.hp.com/go/spp> and <http://www.hp.com/go/hpsum>

Security

Power-on password
Administrator's password

Warranty

This product is covered by a global limited warranty and supported by HP Services and a worldwide network of HP Authorized Channel Partners resellers. Hardware diagnostic support and repair is available for three years from date of purchase. Support for software and initial setup is available for 90 days from date of purchase. Enhancements to warranty services are available through HP Care Pack services or customized service agreements. Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.

NOTE: Server Warranty includes 1-Year Parts, 1-Year Labor, 1-Year Onsite support with next business day response. Warranty repairs may be accomplished through the use of Customer Self Repair (CSR) parts. These parts fall into two categories: 1) Mandatory CSR parts are designed for easy replacement. A travel and labor charge will result when customers decline to replace a Mandatory CSR part; 2) Optional CSR parts are also designed for easy replacement but may involve added complexity. Customers may choose to have HP replace Optional CSR parts at no charge. Additional information regarding worldwide limited warranty and technical support is available at: <http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html>

Optional Features

HP Insight management software	HP Insight Control	<p>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. HP Insight Control also supports Location and Power Discovery Services to automate many configuration, asset tracking, and power management tasks to speed implementation and prevent downtime. For more information, see http://www.hp.com/go/insightcontrol.</p> <p>HP Insight Control includes one year of 24 x 7 HP Software Technical Support and Update Service ensuring rapid access to HP support staff and proactive delivery of software updates. For more information about this service, see: http://www.hp.com/services/insight.</p>
	HP iLO Essentials	<p>HP iLO Essentials license ideal for small and medium business customers. The specially created HP iLO Essentials (a subset of iLO Advanced functionality) saves SMB customers time and money, by ease of remote server set up through the interactive virtual media, lowering operational costs with remote access via the Integrated Remote Console, and faster time to resolution with email-based proactive notifications. With this newly designed HP iLO Essentials license SMB customers now have the option of a server management package solely design and priced just right for their IT environments. HP iLO Essentials is available on all HP ProLiant Gen8 e-series making this an ideal solution for small business owners. For more information, see: http://www.hp.com/go/iLO/essentials</p>
	HP iLO Advanced	<p>HP Integrated Lights-Out Advanced License a product option, providing smart remote server management without compromise. iLO Advanced unlocks the full set of remote administration functionality for all HP ProLiant servers by activating the full Virtual Keyboard Video and Mouse remote console, multi-user collaboration, console record and replay, GUI-based and scripted virtual media and virtual folders, and enhanced security and power management functionality. For more information, see: http://www.hp.com/go/iLOADvanced</p>
	HP Matrix Operating Environment	<p>The HP Matrix Operating Environment (Matrix OE) for ProLiant and Integrity servers is an integrated command center that helps you instantly adjust to dynamic business demands. This advanced infrastructure management software lets you reduce the cost of common data center tasks by up to 40 percent while keeping pace with your changing business.</p> <p>The HP Matrix OE includes the automated provisioning, optimization, and recovery management capabilities for HP CloudSystem Matrix, the ideal platform for private cloud and Infrastructure as a Service (IaaS).</p>

NOTE: For more information, visit: <http://www.hp.com/go/matrixoe>

High Performance Clusters	HP Cluster Platforms	<p>HP Cluster Platforms are specifically engineered, factory-integrated large-scale ProLiant clusters optimized for High Performance Computing, with a choice of servers, networks and software. Operating system options include specially priced offerings for Red Hat Enterprise Linux and SUSE Linux Enterprise Server, as well as Microsoft Windows HPC Server. A Cluster Platform Configurator simplifies ordering. http://www.hp.com/go/clusters.</p>
	HP HPC Interconnects	<p>High Performance Computing (HPC) interconnect technologies are available for this server as part of the HP Cluster Platform portfolio. These high-speed InfiniBand and Gigabit interconnects are fully supported by HP when</p>

Optional Features

HP Insight Cluster Management Utility	integrated within an HP cluster. Flexible, validated solutions can be defined with the help of configuration tools. http://www.hp.com/techservers/clusters/ucp/index.html HP Insight Cluster Management Utility (CMU) is an HP-licensed and HP-supported suite of tools that are used for lifecycle management of hyperscale clusters of Linux ProLiant systems. CMU includes software for the centralized provisioning, management and monitoring of nodes. CMU makes the administration of clusters user friendly, efficient, and effective. http://www.hp.com/go/cmu
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Storage Software

Whether you need to solve a specific data protection, archiving, or storage command and control challenge, or deliver on strategic consolidation, compliance, or continuity initiatives, look no further than HP storage software. Our storage software helps you reduce costs, simplify storage infrastructure, protect vital assets and respond faster to business opportunities. Storage software that gets the job done:

- **Data Protection and Recovery Software**
Whether you're a large enterprise or a smaller business, HP data protection and recovery software will cost-effectively protect you against disaster and ensure business continuity.
- **Data Archive and Migration Software**
HP's storage software enables you to comply with data retention and retrieval requirements, improve application performance, and reduce costs by efficiently migrating infrequently accessed or less valuable data to lower cost storage.
- **Storage Resource Management Software (SRM)**
HP's storage resource management software reduces operational costs and provides the command and control foundation you need to efficiently manage and visualize your physical and virtual environments.
- **Data Replication Software**
HP offers array-based and host-based replication software for use in disaster recovery, testing, application development and reporting.
- **Storage Device Management Software**
Maximize your investment in HP storage and networking with software that enables hardware-specific configuration, performance tuning and connectivity management.
- **HP StoreVirtual VSA**
With HP StoreVirtual VSA you can use the power of virtualization to turn a set of heterogeneous and disconnected physical disk drives in your servers and storage devices into a single pool of logical storage capacity.

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

HP Insight Online

HP Insight Online is a new addition to the HP Support Center for one stop, secure access to product and HP support information personalized to your IT environment. Insight Online can automatically display devices remotely monitored by HP Insight Remote Support. With Insight Online's easy navigation you can efficiently track your IT support contracts and device status from anywhere and at anytime.
<http://www.hp.com/go/insightonline>

HP Proactive Insight experience

Prevent problems with innovative, automated monitoring tools and proactive services. The HP Proactive Insight experience consist of using Insight Online, Insight Remote Support, and Proactive Care Support Service as one integrated solution. The Proactive Insight experience provides you with expert advice and personalized, cloud-based automated IT support, helping to prevent unplanned down time and solve problems quickly. For more information, visit:
<http://www.hp.com/go/proactiveinsightexperience>

Optional Features

Factory Express Portfolio for Servers and Storage HP Factory Express offers configuration, customization, integration and deployment services for HP servers and storage products. Customers can choose how their factory solutions are built, tested, integrated, shipped and deployed.

Factory Express offers service packages for simple configuration, racking, installation, complex configuration and design services as well as individual factory services, such as image loading, asset tagging, and custom packaging. HP products supported through Factory Express include a wide array of servers and storage: HP Integrity, HP ProLiant, HP ProLiant Server Blades, HP BladeSystem, HP 9000 servers as well as the MSAxxxx, VA7xxx, EVA, XP, rackable tape libraries and configurable network switches.

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

HP Simple Configurator SCE is a guided self service tool to help sales and non technical people provide customers with initial configurations in 3 to 5 minutes. You may then send the configuration on for configuration help, or use in your existing ordering processes. If you require "custom" rack configuration or configuration for products not available in SCE, please contact HP's Customer Business Center or an Authorized Partner for assistance. <http://www.hp.com/products/configurator>

Service and Support

Service and Support

HP Technology Services for Industry Standard Servers

HP Technology Services delivers confidence, reduces risk and helps customers realize agility and stability. Connect to HP to help prevent problems and solve issues faster. Our support technology lets you to tap into the knowledge of millions of devices and thousands of experts to stay informed and in control, anywhere, any time.

Protect your business beyond warranty with HP Care Pack Services

HP Care Pack Services enable you to order the right service level, length of coverage and response time as you purchase your new server, giving you full entitlement for the term you select.

Optimized Care

Optimized Care: Supports maintaining servers at optimum performance availability

HP Proactive Care with 24x7 coverage, three year Care Pack Service

HP Proactive Care helps prevent problems and stabilize IT by utilizing secure, real-time, predictive analytics and proactive consultations when your products are connected to HP. This Care Pack Service combines three years' proactive reporting and advice with our 24x7 coverage and enhanced escalation management, four hour hardware response time and two hour call back for software questions on leading industry standard software running on your HP ProLiant server.

<http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA3-8855ENW.pdf>

Standard Care

Standard Care: Service recommendation that maintains high level of server availability

Foundation Care 24x7, three-year Care Pack Service

HP Foundation Care 24x7 connects you to HP 24 hours a day, seven days a week for assistance on resolving issues. Hardware onsite response within four hours if needed; collaborative software included in this Care Pack service provides troubleshooting assistance on industry leading software running on your HP server. Simplify your support experience and make HP your first call for hardware or software questions.

<http://h20195.www2.hp.com/V2/GetDocument.aspx?docname=4AA4-8876ENW&cc=us&lc=en>

Related Services

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>

Factory Express 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. 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>.

Data Privacy Services

Protect your data through better media management. HP Data privacy services help manage and protect sensitive data to reduce the risk of unauthorized access to private information and help meet compliance requirements. Our retention services allow you to keep drives and other devices upon failure, our removal services provide convenient data sanitization and our recovery services allow you to safely retire IT assets and capture any remaining value from the hardware.

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

Additional HP Care Pack services can be found at: <http://www.hp.com/go/cpc>

Service and Support

Get connected to HP to improve your support experience

Prevent problems with innovative, automated monitoring tools and proactive services. Combining Proactive Care Services with our remote support technology such as Insight Online provides you with expert advice and personalized, cloud-based automated IT support, helping to prevent unplanned down time and solve problems quickly. For more information, visit:

<http://www.hp.com/go/proactiveinsightexperience>

HP Support Center

Personalized online support portal with access to information, tools and experts to support HP business products. Submit support cases online, chat with HP experts, access support resources or collaborate with peers. Learn more <http://www.hp.com/go/hpsc>

HP's Support Center Mobile App* allows you to resolve issues yourself or quickly connect to an agent for live support. Now, you can get access to personalized IT support anywhere, anytime. HP Insight Remote Support and HP Support Center are available at no additional cost with a HP warranty, HP Care Pack or HP contractual support agreement.

*HP' Support Center Mobile App is subject to local availability

Warranty / Service Coverage

For ProLiant servers and storage systems, the services cover HP-branded hardware options qualified for the server, purchased at the same time or afterward, internal to the enclosure, as well as external monitors up to 22" and tower UPS products; these items will be covered at the same service level and for the same coverage period as the server unless the maximum supported lifetime and/or the maximum usage limitation has been exceeded. Coverage of the UPS battery is not included; standard warranty terms and conditions apply.

The defective media retention service feature option applies only to Disk or eligible SSD/Flash Drives replaced by HP due to malfunction. It does not apply to any exchange of Disk or SSD/Flash Drives that have not failed. SSD/Flash Drives that are specified by HP as consumable parts and/or that have exceeded maximum supported lifetime and/or the maximum usage limit as set forth in the manufacturer's operating manual or the technical data sheet are not eligible for the defective media retention service feature option.

For more information

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

Pre-configured Models

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

NOTE: Pre-configured models ship with the configurations below. Options can be selected from the Core or Additional options section of this QuickSpecs.

NOTE: HP does not allow factory integration of options into pre-configured models. Any additional options purchased will be shipped separately.

NOTE: If you desire a custom configuration please see "Configuration Information - Factory Integrated Models" section of this QuickSpecs.

NOTE: Maximum speed supported depends on the CPU installed. Entry model will support maximum speed of 1600 MHz. Please see Memory Population Table or the Online Memory Configuration Tool at: <http://www.hp.com/go/ddr3memory-configurator>.

NOTE: All Pre-configured Models come populated with some hard drive blanks installed. Should the customer need additional hard drive blanks, they can order more using either P/N 666987-B21: HP SFF Gen8 Hard Drive Blank Kit or P/N 666986-B21: HP LFF Gen8 Hard Drive Blank Kit.

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

Base Models

<p>HP ProLiant DL320e Gen8 E3-1220v2 1P 4GB-U Hot Plug 4 LFF 350W PS Server 675421-xx1</p>	<p>Processor(s) Cache Memory Memory Network Controller Storage Controller Hard Drive</p> <p>Internal Storage Optical Drive Bay PCI-Express Slots Power Supply</p> <p>Fans Management</p> <p>Form Factor Warranty</p>	<p>(1) Intel® Xeon® E3-1220v2 (3.1GHz/4-core/8MB/69W, HT) Processor 8MB (1x8MB) Level3 4GB (1 x 4GB) Unbuffered DIMMs PC3-12800E (1600MHz) HP Ethernet 1Gb 2-port 330i Adapter HP Dynamic Smart Array B120i Controller None ship standard NOTE: Only SATA 3 Gbit/s data transmission guaranteed without HP Smart Array Card. 4 bay LFF Hot Plug Drive Cage; includes 3 LFF hard drive blanks None ships standard 1 PCIe3 x16 and 1 PCIe2 x8 350 Watts Non-Hot Plug, Non redundant Power Supply NOTE: The 350 Watts Non-Hot Plug Non redundant Power Supply is rated at 85% efficiency. 4 fan modules ship standard, non-redundant HP iLO Management Engine (standard) Optional: HP iLO Essentials or HP Insight Control 1U, HP Friction Rail Kit Server Warranty includes 1-Year Parts, 1-Year Labor, 1-Year Onsite support with next business day response.</p>
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Performance Models

<p>HP ProLiant DL320e Gen8 E3-1240v2 1P 8GB-U P222 Hot Plug 4 LFF 350W PS Server 675422 -xx1</p>	<p>Processor(s) Cache Memory Memory Network Controller Storage Controller Hard Drive Internal Storage Optical Drive Bay PCI-Express Slots</p>	<p>(1) Intel® Xeon® E3-1240v2 (3.4GHz/4-core/8MB/69W, HT) Processor 8MB (1x8MB) Level3 8GB (2 x 4GB) Unbuffered DIMMs PC3-12800E (1600MHz) HP Ethernet 1Gb 2-port 330i Adapter HP Smart Array P222/512MB FBWC Controller None ship standard 4 bay LFF Hot Plug Drive Cage; includes 3 LFF hard drive blanks None ships standard 1 PCIe2 x8 available</p>
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Pre-configured Models

Power Supply	350 Watts Non-Hot Plug, Non redundant Power Supply NOTE: The 350 Watts Non-Hot Plug Non redundant Power Supply is rated at 85% efficiency.
Fans	4 fan modules ship standard, non-redundant
Management	HP iLO Management Engine (standard) Optional: HP Insight Control
Form Factor	1U, HP Friction Rail Kit
Warranty	Server Warranty includes 1-Year Parts, 1-Year Labor, 1-Year Onsite support with next business day response

Country Code Key	xx = 00	U.S.
	xx = 20	Brazil
	xx = 29	Japan
	xx = 37	APD
	xx = 42	Europe
	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 configurable product offerings and requirements.

NOTE: Factory Integrated Models must start with a CTO Server.

NOTE: FIO indicates that this option is only available as a factory installable option.

NOTE: All Factory Integrated Models will be populated with sufficient hard drive blanks based on the number of initial hard drives ordered with the server.

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

HP Models

HP ProLiant DL320e Gen8 Hot Plug 4 LFF Configure-to-order Server 675597-B21

NOTE: All 6G SATA/SAS Drives listed in HDD section are tested and supported for both 3G and 6G speed. A HP Smart Array Controller is required for 6G HDD.

Factory Integrated Model ships with:

1U Chassis with 4 LFF Hot Plug Drive Cage

HP Ethernet 1Gb 2-port 330i Adapter

HP iLO Management Engine (standard)

HP Dynamic Smart Array B120i SATA Controller (RAID 0/1/10)

NOTE: For set up instructions for HP Dynamic Smart Array B120i SATA Controller please refer to the HP ProLiant DL300 series server user guide

NOTE: For general information about HP Dynamic Smart Array B120i SATA Controller, please visit:

<http://h18013.www1.hp.com/products/servers/proliantstorage/arraycontrollers/dynamicsmartarray/index.html>

HP ProLiant DL320e Gen8 Hot Plug 8 SFF Configure-to-order Server 675598-B21

Factory Integrated Model ships with:

1U Chassis with 8 SFF Hot Plug Drive Cage

HP Ethernet 1Gb 2-port 330i Adapter

HP iLO Management Engine (standard)

HP Dynamic Smart Array B120i SATA Controller (RAID 0/1/10)

NOTE: For set up instructions for HP Dynamic Smart Array B120i SATA Controller please refer to the HP ProLiant DL300 series server user guide

NOTE: For general information about HP Dynamic Smart Array B120i SATA Controller, please visit:

<http://h18013.www1.hp.com/products/servers/proliantstorage/arraycontrollers/dynamicsmartarray/index.html>

HP ProLiant DL320e Gen8 Non-hot Plug 4 LFF Configure-to-order Server 675596-B21

NOTE: All 6G SATA/SAS Drives listed in HDD section are tested and supported for both 3G and 6G speed. A HP Smart Array Controller is required for 6G HDD.

Factory Integrated Model ships with:

1U Chassis with 4 LFF Non hot plug Drive Cage

HP Ethernet 1Gb 2-port 330i Adapter

HP iLO Management Engine (standard)

HP Dynamic Smart Array B120i SATA Controller (RAID 0/1/10)

NOTE: For set up instructions for HP Dynamic Smart Array B120i SATA Controller please refer to the HP ProLiant DL300 series server user guide

NOTE: For general information about HP Dynamic Smart Array B120i SATA Controller, please visit:

<http://h18013.www1.hp.com/products/servers/proliantstorage/arraycontrollers/dynamicsmartarray/index.html>

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

Configuration Information - Factory Integrated Models

HP Processors

Entry Processors

NOTE: All support up to 1600MHz DDR3 memory speeds.

HP DL320e Gen8 Intel® Pentium® G2120 (3.1GHz/2-core/3MB/55W) FIO Processor Kit 703278-L21

Performance Processors

NOTE: All support up to 1600MHz DDR3 memory speeds.

HP DL320e Gen8 Intel® Xeon® E3-1220Lv2 (2.3GHz/2-core/3MB/17W) FIO Processor Kit 682789-L21

HP DL320e Gen8 Intel® Xeon® E3-1220v2 (3.1GHz/4-core/8MB/69W) FIO Processor Kit 682787-L21

HP DL320e Gen8 Intel® Xeon® E3-1230v2 (3.3GHz/4-core/8MB/69W) FIO Processor Kit 682785-L21

HP DL320e Gen8 Intel® Xeon® E3-1240v2 (3.4GHz/4-core/8MB/69W) FIO Processor Kit 682783-L21

HP DL320e Gen8 Intel® Xeon® E3-1270v2 (3.5GHz/4-core/8MB/69W) FIO Processor Kit 682781-L21

HP DL320e Gen8 Intel® Xeon® E3-1290v2 (3.7GHz/4-core/8MB/87W) FIO Processor Kit 682777-L21

HP Memory

NOTE: To realize the performance memory capabilities listed in this document, HP SmartMemory is required. For additional information, please see the HP SmartMemory QuickSpecs at:

http://h18000.www1.hp.com/products/quickspecs/14225_div/14225_div.html (Worldwide)

NOTE: HP memory from previous generation servers are not fully compatible with new Active Health features on the DL320e Gen8 Server.

Unbuffered with ECC DIMMs (UDIMMs)

HP 2GB (1x2GB) Single Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit 669320-B21

HP 2GB (1x2GB) Single Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit 647905-B21

HP 4GB (1x4GB) Dual Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit 669322-B21

HP 4GB (1x4GB) Dual Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit 647907-B21

HP 8GB (1x8GB) Dual Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit 669324-B21

HP 8GB (1x8GB) Dual Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit 647909-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: <http://www.hp.com/go/ddr3memory-configurator>.

NOTE: Depending on the memory configuration and processor model, 1600MHz and 1333MHz memory may operate at a lower speed. Please see the "Memory" section later in this document and the Online Memory Configuration Tool for details at <http://www.hp.com/go/ddr3memory-configurator>.

NOTE: For additional memory rules and guidelines, see the "Memory" section later in this document.

NOTE: For more information on ProLiant Energy Efficient Features, see: <http://www.hp.com/go/proliant-energy-efficient>

NOTE: PC3L is a low voltage memory.

HP Power Supplies

NOTE: Prior to making a power supply selection it is highly recommended that the HP Power Advisor is run to determine the right size power supply for your server

Configuration Information - Factory Integrated Models

configuration. The HP Power Advisor is located at:
<http://www.hp.com/go/hppoweradvisor>.

HP 350W 1U Factory Integrated Power Supply Kit 675450-B21

NOTE: The 350 Watts Power Supply is rated at 85% efficiency.

HP Common Slot Platinum Plus Power Supply Kits

NOTE: The following Power Supplies offer 94% efficiency with support for Intelligent Power Discovery.

HP 460W Common Slot Platinum Plus Hot Plug Power Supply Kit 656362-B21

HP Common Slot Gold Power Supplies

NOTE: The following Power Supplies offer 92% efficiency.

HP 460W CS Gold Ht Plg Power Supply Kit 503296-B21

HP DL320e Gen8 Factory Integrated RPS Enablement Kit 675451-B21

NOTE: When selecting Common Slot power supply options for the DL320e Gen8 server, a HP DL320e Gen8 RPS Enablement FIO Kit (675451-B21) is required for HP common slot redundant power supply configurations.

NOTE: Option Kits for AC power supplies include the power supply and one PDU IEC cable.

NOTE: HP ProLiant servers ship with an IEC-IEC power cord used for rack mounting with Power Distribution Units (PDUs). For a full list of optional HP power cords please go to <http://www.hp.com/products/powercords>

NOTE: Power Specification and Technical Content for supported power supplies can be found at:

http://h18000.www1.hp.com/products/quickspecs/14209_div/14209_div.html

Step 3: Choose Additional Factory Integratable Options

HP USB Kit HP Gen8 FIO Internal USB Kit 662961-B21

HP Rail Kits

NOTE: Gen8 rail kits have changed significantly from prior generation rail kits. Please take a moment to review the installation documentation that comes with the server to help you with the installation of your Gen8 server.

NOTE: Rail kits are optional for Gen8 and are no longer included standard with the server. Customers have the option to purchase their server without a rail kit.

CAUTION: HP recommends that at least two people are used for all rack server installations. Please refer to your installation instructions for proper tools and number of people to use for any installation.

HP 1U FIO Friction Rail Kit 663200-B21

NOTE: Kit contains non-telescoping friction rails which do not allow for in rack serviceability. The HP 1U Gen8 Cable Management Arm is not available when using Friction Rails. Caution: HP recommends that a minimum of two people is required for all Rack Server installations. Please refer to your installation instructions for proper tools and number of people to use for any installation.

HP Insight Software HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle Single Server FIO License C6N36A

HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle FIO Electronic License C6N36ABE

NOTE: The Electronic software license is available in EMEA only.

Converged Infrastructure Management Software **HP OneView with iLO Advanced - Server hardware required on same purchase order**

HP OneView for ProLiant DL Server incl 3yr 24x7 Supp FIO Bundle Physical 1 Svr Lic E5Y43A

Configuration Information - Factory Integrated Models

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 DL320e Gen8 Mini SAS Cable Kit NOTE: HP DL320e Gen8 mini SAS cable kit would be required for the server to be compatible with 4LFF Hot Plug drives, H222 and P222 controllers.	685018-B21
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HP Memory	<p>NOTE: To realize the performance memory capabilities listed in this document, HP SmartMemory is required. For additional information, please see the HP SmartMemory QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/14225_div/14225_div.html (Worldwide)</p> <p>NOTE: HP memory from previous generation servers are not fully compatible with SmartMemory features in Gen8 Servers.</p> <p>Unbuffered with ECC DIMMs (UDIMMs)</p> <p>HP 2GB (1x2GB) Single Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit 669320-B21</p> <p>HP 2GB (1x2GB) Single Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit 647905-B21</p> <p>HP 4GB (1x4GB) Dual Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit 669322-B21</p> <p>HP 4GB (1x4GB) Dual Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit 647907-B21</p> <p>HP 8GB (1x8GB) Dual Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit 669324-B21</p> <p>HP 8GB (1x8GB) Dual Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit 647909-B21</p> <p>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: http://www.hp.com/go/ddr3memory-configurator.</p> <p>NOTE: Kits described as LP include Low Power DIMMs. For more information on ProLiant Energy Efficient Features, see: http://www.hp.com/go/proliant-energy-efficient.</p> <p>NOTE: PC3L is a low voltage memory.</p>	
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HP Optical Drives	HP 9.5mm SATA DVD-ROM JackBlack Optical Drive 652238-B21 HP 9.5mm SATA DVD-RW JackBlack Optical Drive 652241-B21	
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HP Hard Drives	<p>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.</p> <p>NOTE: Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.</p> <p>12G SAS Hot Plug SmartDrive SFF (2.5-inch) Enterprise Drives</p> <p>HP 1.8TB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 512e 3yr Warranty Hard Drive 791034-B21</p> <p>HP 1.2TB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive 781518-B21</p> <p>HP 900GB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive 785069-B21</p> <p>HP 600GB 12G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive 759212-B21</p> <p>HP 600GB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive 781516-B21</p>	
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Core Options

HP 450GB 12G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	759210-B21
HP 300GB 12G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	759208-B21
HP 300GB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	785067-B21
12G SAS Hot Plug SFF (2.5-inch) SC HDD	
HP 600GB 12G SAS 15K rpm SFF (2.5-inch) SC 512e Enterprise 3yr Warranty Hard Drive	748387-B21
12G SAS Hot Plug LFF (3.5-inch) SC HDD	
HP 8TB 12G SAS 7.2K rpm LFF (3.5-inch) SC 512e Helium 1yr Warranty Hard Drive	793703-B21
HP 6TB 12G SAS 7.2K rpm LFF (3.5-inch) SC 512e Helium 1yr Warranty Hard Drive	793699-B21
12G SAS Hot Plug SmartDrive LFF (3.5-inch) Converter Enterprise Drives	
HP 600GB 12G SAS 15K rpm LFF (3.5-inch) SC Converter Enterprise 3yr Warranty Hard Drive	765424-B21
HP 450GB 12G SAS 15K rpm LFF (3.5-inch) SC Converter Enterprise 3yr Warranty Hard Drive	737394-B21
HP 300GB 12G SAS 15K rpm LFF (3.5-inch) SC Converter Enterprise 3yr Warranty Hard Drive	737261-B21
12G SAS Hot Plug SFF (2.5-inch) SC 512e Drives	
HP 2TB 12G SAS 7.2K rpm SFF (2.5-inch) SC 512e 1yr Warranty Hard Drive	765466-B21
HP 1TB 12G SAS 7.2K rpm SFF (2.5-inch) SC 512e 1yr Warranty Hard Drive	765464-B21
12G SAS Hot Plug LFF (3.5-inch) Midline (MDL) 512e Drives	
HP 6TB 12G SAS 7.2K rpm LFF (3.5-inch) SC Midline 512e 1yr Warranty Hard Drive	765259-B21
HP 4TB 12G SAS 7.2K rpm LFF (3.5-inch) SC Midline 512e 1yr Warranty Hard Drive	765257-B21
12G SAS Hot Plug LFF (3.5-inch) SC 512e Performance Drives	
HP 6TB 12G SAS 7.2K rpm LFF (3.5-inch) SC 512e Performance 1yr Warranty Hard Drive	793671-B21
HP 4TB 12G SAS 7.2K rpm LFF (3.5-inch) SC 512e Performance 1yr Warranty Hard Drive	793669-B21
6G SAS Hot Plug with SmartDrive SFF (2.5-inch) Enterprise Drives	
HP 1.2TB 6G SAS 10K rpm SFF (2.5-inch) SC Dual Port Enterprise 3yr Warranty Hard Drive	718162-B21
HP 900GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652589-B21
HP 600GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652583-B21
HP 450GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652572-B21
HP 300GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652564-B21
HP 300GB 6G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652611-B21
HP 146GB 6G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652605-B21
6G SAS Hot Plug SmartDrive SFF (2.5-inch) Midline Drives	
HP 1TB 6G SAS 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	652749-B21
HP 500GB 6G SAS 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	652745-B21
6G SAS Hot Plug SmartDrive LFF (3.5-inch) Midline Drives	
HP 6TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	761477-B21
HP 4TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	695510-B21
HP 3TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	652766-B21
HP 2TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	652757-B21
HP 1TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	652753-B21

NOTE: Please see the [QuickSpecs for Technical Specifications and additional](#)

Core Options

information:

http://h18000.www1.hp.com/products/quickspecs/12244_div/12244_div.html
(Worldwide)

6G SATA Hot Plug SFF (2.5-inch) SC HDD

HP 8TB 6G SATA 7.2K rpm LFF (3.5-inch) SC 512e Helium 1yr Warranty Hard Drive 793695-B21

HP 6TB 6G SATA 7.2K rpm LFF (3.5-inch) SC 512e Helium 1yr Warranty Hard Drive 793683-B21

6G SATA Hot Plug with SmartDrive SFF (2.5-inch) Midline (MDL) Drives

HP 1TB 6G SATA 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive 655710-B21

HP 500GB 6G SATA 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive 655708-B21

6G SATA Hot Plug with SmartDrive LFF (3.5-inch) Midline (MDL) Drives

HP 6TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive 753874-B21

HP 4TB 6G SATA 7.2k rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive 693687-B21

HP 3TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive 628061-B21

HP 2TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive 658079-B21

HP 1TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive 657750-B21

HP 500GB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive 658071-B21

6G SATA Non-Hot Plug LFF (3.5-inch) Midline (MDL) Drives

HP 3TB 6G SATA 7.2K rpm LFF (3.5-inch) Non-hot plug Midline 1yr Warranty Hard Drive 628065-B21

HP 2TB 6G SATA 7.2K rpm LFF (3.5-inch) Non-hot plug Midline 1yr Warranty Hard Drive 659339-B21

HP 1TB 6G SATA 7.2K rpm LFF (3.5-inch) Non-hot plug Midline 1yr Warranty Hard Drive 659337-B21

HP 500GB 6G SATA 7.2K rpm LFF (3.5-inch) Non-hot plug Midline 1yr Warranty Hard Drive 659341-B21

6G SATA Hot Plug SFF (2.5-inch) SC 512e Drives

HP 2TB 6G SATA 7.2K rpm SFF (2.5-inch) SC 512e 1yr Warranty Hard Drive 765455-B21

HP 1TB 6G SATA 7.2K rpm SFF (2.5-inch) SC 512e 1yr Warranty Hard Drive 765453-B21

6G SATA Hot Plug LFF (3.5-inch) Midline (MDL) 512e Drives

HP 6TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 512e 1yr Warranty Hard Drive 765255-B21

HP 4TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 512e 1yr Warranty Hard Drive 765253-B21

6G SATA Hot Plug LFF (3.5-inch) SC 512e Performance Drives

HP 6TB 6G SATA 7.2K rpm LFF (3.5-inch) SC 512e Performance 1yr Warranty Hard Drive 793667-B21

HP 4TB 6G SATA 7.2K rpm LFF (3.5-inch) SC 512e Performance 1yr Warranty Hard Drives 793665-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)

12G SAS Value Endurance Hot Plug SFF (2.5-inch) Enterprise Value Solid State

HP 1.6TB 12G SAS Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive 762263-B21

HP 800GB 12G SAS Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive 762261-B21

12G SAS Hot Plug Value Endurance LFF (3.5-inch) Enterprise Value Solid State Drives

Core Options

HP 1.6TB 12G SAS Value Endurance LFF 3.5-in SC Enterprise Value 3yr Wty Solid State Drive	762272-B21
HP 800GB 12G SAS Value Endurance LFF 3.5-in SC Enterprise Value 3yr Wty Solid State Drive	762270-B21
12G SAS High Endurance Hot Plug SFF (2.5-inch) Enterprise Performance Solid State Drives	
HP 400GB 12G SAS High Endurance SFF 2.5-in SC Enterprise Performance 3yr Wty Solid State Drive	741155-B21
NOTE: This drive supports Gen8 servers only.	
12G SAS Mainstream Endurance Hot Plug SFF (2.5-inch) Enterprise Mainstream H2 Solid State Drives	
HP 1.6TB 12G SAS Mainstream Endurance SFF 2.5-in ENT Mainstream SC 3yr Wty H2 Solid State Drive	779176-B21
HP 800GB 12G SAS Mainstream Endurance SFF 2.5-in ENT Mainstream SC 3yr Wty H2 Solid State Drive	779172-B21
HP 400GB 12G SAS Mainstream Endurance SFF 2.5-in ENT Mainstream SC 3yr Wty H2 Solid State Drive	779168-B21
HP 200GB 12G SAS Mainstream Endurance SFF 2.5-in ENT Mainstream SC 3yr Wty H2 Solid State Drive	779164-B21
12G SAS Hot Plug SFF (2.5-inch) SC Read/Write Intensive Solid State Drives	
HP 1.92TB 12G SAS Read Intensive SFF 2.5-in SC 3yr Wty Solid State Drive	802891-B21
HP 800GB 12G SAS Write Intensive SFF 2.5-in SC 3yr Wty Solid State Drive	802586-B21
HP 400GB 12G SAS Write Intensive SFF 2.5-in SC 3yr Wty Solid State Drive	802582-B21
HP 200GB 12G SAS Write Intensive SFF 2.5-in SC 3yr Wty Solid State Drive	802578-B21
6G SATA Value Endurance Hot Plug SFF (2.5-inch) Enterprise Boot Solid State Drives	
HP 120GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Boot 3yr Wty Solid State Drive	717965-B21
HP 80GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Boot 3yr Wty Solid State Drive	734360-B21
6G SATA Value Endurance Hot Plug LFF (3.5-inch) Enterprise Boot Solid State Drives	
HP 120GB 6G SATA Value Endurance LFF 3.5-in SC Enterprise Boot 3yr Wty Solid State Drive	718171-B21
HP 80GB 6G SATA Value Endurance LFF 3.5-in SC Enterprise Boot 3yr Wty Solid State Drive	734362-B21
6G SATA Hot Plug Value Endurance LFF (3.5-inch) Converter Enterprise Value M1 Solid State Drives	
HP 800GB 6G SATA Value Endurance LFF 3.5-in SC Converter ENT Value 3yr Wty M1 Solid State Drive	764945-B21
HP 480GB 6G SATA Value Endurance LFF 3.5-in SC Converter ENT Value 3yr Wty M1 Solid State Drive	764943-B21
HP 240GB 6G SATA Value Endurance LFF 3.5-in SC Converter ENT Value 3yr Wty M1 Solid State Drive	764941-B21
HP 120GB 6G SATA Value Endurance LFF 3.5-in SC Converter ENT Value 3yr Wty M1 Solid State Drive	764939-B21
6G SATA Hot Plug Value Endurance LFF (3.5-inch) Converter Enterprise Value G1 Solid State Drives	
HP 480GB 6G SATA Value Endurance LFF 3.5-in SC Converter ENT Value 3yr Wty G1	756660-B21

Core Options

Solid State Drive	
HP 240GB 6G SATA Value Endurance LFF 3.5-in SC Converter ENT Value 3yr Wty G1 Solid State Drive	756639-B21
HP 120GB 6G SATA Value Endurance LFF 3.5-in SC Converter ENT Value 3yr Wty G1 Solid State Drive	756624-B21
6G SATA Hot Plug Value Endurance SFF (2.5-inch) Enterprise Value G1 Solid State Drives	
HP 480GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty G1 Solid State Drive	756657-B21
HP 240GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty G1 Solid State Drive	756636-B21
HP 120GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty G1 Solid State Drive	756621-B21
6G SATA Value Endurance Hot Plug SFF (2.5-inch) Enterprise Value Solid State Drives	
HP 1.6TB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive	757339-B21
HP 800GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive	717973-B21
HP 480GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive	717971-B21
HP 600GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive	739898-B21
HP 300GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive	739888-B21
HP 240GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive	717969-B21
6G SATA Value Endurance Hot Plug LFF (3.5-inch) Enterprise Value Solid State Drives	
HP 1.6TB 6G SATA Value Endurance LFF 3.5-in SC Converter Enterprise Value 3yr Wty Solid State Drive	757342-B21
HP 800GB 6G SATA Value Endurance LFF 3.5-in SC Enterprise Value 3yr Wty Solid State Drive	718189-B21
HP 600GB 6G SATA Value Endurance LFF 3.5-in SC Converter Enterprise Value 3yr Wty Solid State Drive	739900-B21
HP 480GB 6G SATA Value Endurance LFF 3.5-in SC Enterprise Value 3yr Wty Solid State Drive	718183-B21
HP 300GB 6G SATA Value Endurance LFF 3.5-in SC Converter Enterprise Value 3yr Wty Solid State Drive	739890-B21
HP 240GB 6G SATA Value Endurance LFF 3.5-in SC Enterprise Value 3yr Wty Solid State Drive	718177-B21
6G SATA Hot Plug Light Endurance SFF (2.5-inch) Enterprise Light G1 Solid State Drives	
HP 960GB 6G SATA Light Endurance SFF 2.5-in SC Enterprise Light 3yr Wty G1 Solid State Drive	756601-B21
6G SATA Hot Plug Light Endurance LFF (3.5-inch) Enterprise Light G1 Solid State Drives	
HP 960GB 6G SATA Light Endurance LFF 3.5-in SC Converter ENT Light 3yr Wty G1 Solid State Drive	756604-B21

Core Options

6G SATA Value Endurance Hot Plug SFF (2.5-inch) Enterprise Value M1 Solid State Drive

HP 800GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty M1 Solid State Drive	764929-B21
HP 480GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty M1 Solid State Drive	764927-B21
HP 240GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty M1 Solid State Drive	764925-B21
HP 120GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty M1 Solid State Drive	764923-B21

6G SATA Mainstream Endurance Hot Plug SFF (2.5-inch) Enterprise Mainstream Solid State Drives

HP 800GB 6G SATA Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691868-B21
HP 400GB 6G SATA Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691866-B21
HP 200GB 6G SATA Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691864-B21
HP 100GB 6G SATA Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691862-B21

6G SATA Mainstream Endurance Hot Plug LFF (3.5-inch) Enterprise Mainstream Solid State Drives

HP 800GB 6G SATA Mainstream Endurance LFF 3.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691860-B21
HP 400GB 6G SATA Mainstream Endurance LFF 3.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691856-B21
HP 200GB 6G SATA Mainstream Endurance LFF 3.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691854-B21
HP 100GB 6G SATA Mainstream Endurance LFF 3.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691852-B21

6G SATA Hot Plug SFF (2.5-inch) SC Read Intensive Solid State Drives

HP 960GB 6G SATA Read Intensive SFF 2.5-in SC 3yr Wty Solid State Drive	789155-B21
HP 480GB 6G SATA Read Intensive SFF 2.5-in SC 3yr Wty Solid State Drive	789145-B21
HP 240GB 6G SATA Read Intensive SFF 2.5-in SC 3yr Wty Solid State Drive	789135-B21

6G SATA Hot Plug LFF (3.5-inch) SC Read Intensive Solid State Drives

HP 960GB 6G SATA Read Intensive LFF 3.5-in SC Converter 3yr Wty Solid State Drive	789157-B21
HP 480GB 6G SATA Read Intensive LFF 3.5-in SC Converter 3yr Wty Solid State Drive	789147-B21
HP 240GB 6G SATA Read Intensive LFF 3.5-in SC Converter 3yr Wty Solid State Drive	789137-B21

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

http://h18000.www1.hp.com/products/quickspecs/14038_div/14038_div.html (Worldwide)

Hard Drive Kits

NOTE: All Factory Integrated Models will be populated with sufficient hard drive blanks based on the number of initial hard drives ordered with the server.

NOTE: The part numbers for single HDD blanks below are provided should the customer require replacement HDD blanks for their server.

NOTE: The mixing of standard SAS drives with SAS SSD drives is supported within the server, but limits the RAID configuration to two separate RAID 0 volumes. Mixing of

Core Options

other drives types is not supported.

HP Large Form Factor Hard Drive Blank Kit	666986-B21
HP Small Form Factor Hard Drive Blank Kit	666987-B21

HP Networking

Gigabit Ethernet Adapters

HP NC112T PCI Express Gigabit Server Adapter	503746-B21
HP NC365T 4-port Ethernet Server Adapter	593722-B21
HP Ethernet 1Gb 2-port 361T Adapter	652497-B21
HP Ethernet 1Gb 4-port 331T Adapter	647594-B21
HP Ethernet 1Gb 2-port 332T Adapter	615732-B21

10 Gigabit Ethernet Adapters

NOTE: A minimum of two Gigabytes (2 GB) of server memory is required per each adapter.

HP NC523SFP 10Gb 2-port Server Adapter	593717-B21
HP NC552SFP 10Gb 2-port Ethernet Server Adapter	614203-B21
HP Ethernet 10Gb 2-port 530T Adapter	656596-B21
HP Ethernet 10Gb 2-port 560SFP+ Adapter	665249-B21

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

HP Power Supplies

NOTE: Prior to making a power supply selection it is highly recommended that the HP Power Advisor is run to determine the right size power supply for your server configuration. The HP Power Advisor is located at: <http://www.hp.com/go/hppoweradvisor>

HP Common Slot Platinum Plus Power Supply Kits

NOTE: The following Power Supplies offer 94% efficiency with support for Intelligent Power Discovery.

HP 460W Common Slot Platinum Plus Hot Plug Power Supply Kit	656362-B21
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HP Common Slot Gold Power Supplies

NOTE: The following Power Supplies offer 92% efficiency.

HP 460W CS Gold Ht Plg Power Supply Kit	503296-B21
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NOTE: Option Kits for AC power supplies include the power supply and one PDU IEC cable.

NOTE: HP ProLiant servers ship with an IEC-IEC power cord used for rack mounting with Power Distribution Units (PDUs). For a full list of optional HP power cords please go to <http://www.hp.com/products/powercords>

NOTE: Power Specification and Technical Content for supported power supplies can be found at: http://h18000.www1.hp.com/products/quickspecs/14209_div/14209_div.html

Additional Options

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

HP Management Hardware	HP Dedicated iLO Management Port Kit	674845-B21
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HP Insight Software	HP Insight Control	
	HP Insight Control including 1yr 24x7 Technical Support and Updates Single Server License	C6N27A
	HP Insight Control including 1yr 24x7 Technical Support and Updates Electronic License	C6N28ABE
	NOTE: The Electronic software license is available in EMEA only.	
	HP Insight Control Server Provisioning Media Kit	BD883A
	HP Insight Management Media Kit	C6N31A
	HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle FIO Electronic License	C6N36ABE

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 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 QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12631_div/12631_div.html

HP Integrated Lights-Out (iLO)

HP Integrated Lights-Out (iLO) Advanced for ProLiant

HP iLO Advanced including 1yr 24x7 Technical Support and Updates E-LTU	E6U59ABE
NOTE: The Electronic software license is available in EMEA only.	
HP iLO Advanced including 3yr 24x7 Technical Support and Updates E-LTU	E6U64ABE
NOTE: The Electronic software license is available in EMEA only.	
HP iLO Advanced including 1yr 24x7 Technical Support and Updates Single Server License	512485-B21
HP iLO Advanced 1 Server License with 3yr 24x7 Tech Support and Updates	BD505A

HP iLO Essentials

HP Integrated Lights-Out Essentials including 3yr 24x7 Technical Support and Updates E-LTU	E6U61ABE
NOTE: The Electronic software license is available in EMEA only.	
HP Integrated Lights-Out Essentials including 1yr 24x7 Technical Support and Updates E-LTU	E6U62ABE
NOTE: The Electronic software license is available in EMEA only.	
HP Integrated Lights-Out Essentials including 3yr 24x7 Tech Support and Updates Single Svr License	BD774A
HP Integrated Lights-Out Essentials including 1yr 24x7 Tech Support and Updates Single Svr License	BD775A

NOTE: For additional license options please see the QuickSpecs at: http://h18004.www1.hp.com/products/quickspecs/14276_div/14276_div.html

NOTE: For more information, visit: <http://www.hp.com/go/ilo>.

Additional Options

Converged Infrastructure Management Software

HP OneView

HP OneView with iLO Advanced

HP OneView Media Kit Phys No Lic E5Y37A

HP OneView incl 3yr 24x7 Supp Phys 1 Svr Lic E5Y34A

HP OneView incl 3yr 24x7 Supp Flex Qty E-LTU E5Y35AAE

HP OneView without iLO Advanced

HP OneView w/o iLO Adv incl 3yr 24x7 Supp Phys 1 Svr Lic E5Y38A

HP OneView w/o iLO Adv inc 3yr 24x7 Supp Flex Qty E-LTU E5Y39AAE

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

http://h18000.www1.hp.com/products/quickspecs/14621_div/14621_div.html
(Worldwide)

High Performance Clusters

HP Cluster Management Utility

HP Insight Cluster Management Utility 1yr 24x7 Flexible License QL803B

HP Insight Cluster Management Utility for ConvergedSystem 3yr 24x7 Flexible License G2E81A

HP Insight Cluster Management Utility 3yr 24x7 Flexible License BD476A

NOTE: These part numbers can be used to purchase one certificate for multiple licenses and support with a single activation key. Each license is for one node (server). Customer will receive a printed end user license agreement and license entitlement certificate via physical shipment. The license entitlement certificate must be redeemed online in order to obtain a license key. Customer also will receive a support agreement.

HP Insight Cluster Management Utility Media BD477A

NOTE: For additional license kits please see the QuickSpecs at http://h18004.www1.hp.com/products/quickspecs/12612_div/12612_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. For more information about TPM, including a white paper, go to: <http://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 1U Security Bezel Kit 664918-B21

HP Storage Controllers

SAS Controllers

Smart Array P222 Controller

HP Smart Array P222/512 FBWC 6Gb 1-port Int/1-port Ext SAS Controller 631667-B21

Smart Array P420 Controller

HP Smart Array P420/1GB FBWC 6Gb 2-ports Int SAS Controller 631670-B21

HP Smart Array P420/2GB FBWC 6Gb 2-ports Int SAS Controller 631671-B21

Additional Options

Smart Array P421 Controller

HP Smart Array P421/1GB FBWC 6Gb 2-ports Ext SAS Controller 631673-B21

HP Smart Array P421/2GB FBWC 6Gb 2-ports Ext SAS Controller 631674-B21

Optional Upgrades

HP 2GB P-series Smart Array Flash Backed Write Cache 631681-B21

HP DL320e Gen8 Mini SAS Cable Kit 685018-B21

HP SmartCache No Media 24x7 Technical Support 1 Svr License D7S26A

HP SmartCache No Media 24x7 Technical Support Flexible License D7S27A

HP SmartCache No Media 24x7 Technical Support Electronic License D7S27AAE

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

http://h18000.www1.hp.com/products/quickspecs/14227_div/14227_div.html
(Smart Array P222 Controller)

http://h18000.www1.hp.com/products/quickspecs/14228_div/14228_div.html
(Smart Array P420 Controller)

http://h18000.www1.hp.com/products/quickspecs/14229_div/14229_div.html
(Smart Array P421 Controller)

Host Bus Adapter

HP H220 Host Bus Adapter 650933-B21

HP H221 PCIe 3.0 SAS Host Bus Adapter 729552-B21

HP H222 Host Bus Adapter 650926-B21

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

http://h18004.www1.hp.com/products/quickspecs/14336_div/14336_div.html
(HBA 220)

http://h18004.www1.hp.com/products/quickspecs/14222_div/14222_div.html
(HBA 221)

http://h18004.www1.hp.com/products/quickspecs/14337_div/14337_div.html
(HBA 222)

SCSI HBA

HP SC11Xe Ultra320 Single Channel/ PCIe x4 SCSI Host Bus Adapter 412911-B21

NOTE: Please see the following QuickSpecs for additional information:

http://h18000.www1.hp.com/products/quickspecs/12566_div/12566_div.html
(SC11Xe HBA)

HP Tape Backup

NOTE: For the complete range of tape drives, autoloaders, libraries and media see:

<http://www.hp.com/go/tape>. For hardware and software compatibility of HP tape backup products see: <http://www.hp.com/storage/SPOCK> and <http://www.hp.com/go/ebs>.

NOTE: For Internal drives to be connected to DL servers please make sure that you order rack mount kit as well.

HP StoreEver LTO-6 Ultrium 6250 Tape Drive in 1U Rack-mount Kit COL99A

HP StoreEver LTO-6 Ultrium 6650 SAS Internal Tape Drive EH963A

HP StoreEver LTO-6 Ultrium 6650 SAS External Tape Drive EH964A

HP StoreEver LTO-6 Ultrium 6250 Internal Tape Drive EH969A

HP StoreEver LTO-6 Ultrium 6250 External Tape Drive EH970A

HP StoreEver 1/8 G2 LTO-6 Ultrium 6250 FC Tape Autoloader COH19A

HP Tape Storage

HP StoreEver MSL6480

Additional Options

Systems	<p>HP StoreEver MSL6480 Scalable Base Module QU625A</p> <p>NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/14604_div/14604_div.html (Worldwide)</p>
HP Disk Backup	<p>NOTE: For the complete range of RDX drives and media see: http://www.hp.com/go/rdx. For hardware and software compatibility of HP disk backup products see: http://www.hp.com/storage/SPOCK.</p> <p>HP RDX Removable Disk Backup System</p> <p>HP RDX320 USB3.0 External Disk Backup System B7B63A</p> <p>HP RDX500 USB3.0 Internal Disk Backup System B7B64A</p> <p>HP RDX500 USB 3.0 External Disk Backup System B7B66A</p> <p>HP RDX1000 USB3.0 Internal Disk Backup System B7B67A</p> <p>HP RDX1000 USB 3.0 External Disk Backup System B7B69A</p> <p>HP RDX 2TB USB3.0 Internal Disk Backup System E7X52A</p> <p>HP RDX 2TB USB3.0 External Disk Backup System E7X53A</p> <p>NOTE: Please see the QuickSpecs for additional part numbers, Technical Specifications, and additional information: http://h18000.www1.hp.com/products/quickspecs/13036_div/13036_div.html (Worldwide)</p>
HP Disk Storage Systems	<p>Disk Enclosures</p> <p>HP D2600 w/12 4TB 6G SAS 7.2K LFF Dual Port MDL HDD 48TB Bundle E7W32A</p> <p>NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13404_div/13404_div.html (Worldwide)</p> <p>HP D6000 w/70 4TB 6G SAS 7.2K LFF Dual Port MDL HDD 280TB Bundle E7W31A</p> <p>HP D6000 w/35 4TB 6G SAS 7.2K LFF Dual Port MDL HDD 140TB Bundle E7W30A</p> <p>HP D6000 w/70 3TB 6G SAS 7.2K LFF Dual port MDL HDD 210TB Bundle QQ700A</p> <p>HP D6000 w/35 3TB 6G SAS 7.2K LFF Dual port MDL HDD 105TB Bundle QQ699A</p> <p>HP D6000 w/70 2TB 6G SAS 7.2K LFF Dual port MDL HDD 140TB Bundle QQ698A</p> <p>HP D6000 w/35 2TB 6G SAS 7.2K LFF Dual port MDL HDD 70TB Bundle QQ697A</p> <p>HP D6000 Dual I/O Module Disk Enclosure QQ695A</p> <p>NOTE: Please see the QuickSpecs for additional part numbers, Technical Specifications, and additional information: http://h18000.www1.hp.com/products/quickspecs/14419_div/14419_div.html (Worldwide)</p>
HP Storage Options	<p>Fibre Channel HBA</p> <p>NOTE: The following is a list of all Fibre Channel Host Bus Adapters for Windows and Linux. For detailed compatibility information please see: http://h18006.www1.hp.com/storage/saninfrastructure/hba.html</p> <p>QLogic Fibre Channel HBAs</p> <p>HP 81Q 8Gb 1-port PCIe Fibre Channel Host Bus Adapter AK344A</p> <p>HP 82Q 8Gb 2-port PCIe Fibre Channel Host Bus Adapter AJ764A</p> <p>Converged Network Adapter</p> <p>HP CN1000Q Dual Port Converged Network Adapter BS668A</p>

Additional Options

HP StoreFabric CN1100R Dual Port Converged Network Adapter QW990A

HP Uninterruptible Power Systems

HP DirectFlow Three Phase UPS

Power Unit (1U UPS)

NOTE: #0D1 will appear after the part number on the sales order if HP factory integration is indicated.

HP R12000 DirectFlow - 1U Rackmount Uninterruptible Power System G9Y75A

HP R12000 DirectFlow - POD 1U Rackmount Uninterruptible Power System AF478A

Input/Output Module Options for 1U UPS

NOTE: Choose one I/O Module per UPS.

NOTE: #0D1 will appear after the part number on the sales order if HP factory integration is indicated.

HP 32A 400-415 Volt Three Phase INTL R12000 DirectFlow UPS IEC309 Input/Output Module AF488A

HP 30A 400-415 Volt Three Phase NA R10000 DirectFlow UPS IEC309 Input/Output Module AF489A

HP 32A 380 Volt Three Phase China R12000 DirectFlow UPS Unterminated Input/Output Module AF490A

HP 30A 480 Volt Three Phase NA R12000 DirectFlow UPS L22-30 Input/Output Module AF491A

HP 30A 480 Volt Three Phase NA R12000 DirectFlow UPS IEC309 Input/Output Module AF492A

HP 30A 400-415 Volt Three Phase NA R12000 DirectFlow UPS IEC309 Input/Output Module G9Y76A

HP Tower UPS

HP T750 G4 UPS Models

HP T750 G4 NA/JP Uninterruptible Power System J2P85A

HP T750 G4 INTL Uninterruptible Power System J2P88A

HP T1000 G4 UPS Models

HP T1000 G4 NA/JP Uninterruptible Power System J2P86A

HP T1000 G4 INTL Uninterruptible Power System J2P89A

HP T1500 G4 UPS Models

HP T1500 G4 NA/JP Uninterruptible Power System J2P87A

HP T1500 G4 INTL Uninterruptible Power System J2P90A

HP Rack/Tower UPS

HP R/T2200 G4 UPS Models

HP R/T2200 G4 NA/JP Uninterruptible Power System J2R00A

HP R/T3000 G4 UPS Models

HP R/T3000 G4 Low Voltage NA/JP Uninterruptible Power System J2R01A

HP R/T3000 G4 High Voltage NA/JP Uninterruptible Power System J2R02A

HP R/T3000 G4 High Voltage INTL Uninterruptible Power System J2R04A

HP Rack-mountable UPS

HP R1500 G4 Uninterruptible Power Supply (UPS)

HP R1500 G4 NA Uninterruptible Power System J2Q99A

HP R1500 G4 INTL Uninterruptible Power System J2R03A

HP R1500 G4 JP/TWN Uninterruptible Power System J2R05A

Additional Options

R5000 Uninterruptible Power System (UPS)

HP R5000 3U IEC309-32A High Voltage INTL Uninterruptible Power System	AF461A
HP R5000 3U L630 High Voltage NA/JP Uninterruptible Power System	AF460A

NOTE: Please see the QuickSpecs for additional information:

http://h18000.www1.hp.com/products/quickspecs/14109_div/14109_div.html
(Worldwide)

R7000 Uninterruptible Power System (UPS)

HP R7000 4U 50A High Voltage NA/JP Uninterruptible Power System	AF462A
HP R7000 4U IEC-32A High Voltage INTL Uninterruptible Power System	AF463A

NOTE: Please see the QuickSpecs for additional information:

http://h18000.www1.hp.com/products/quickspecs/14110_div/14110_div.html
(Worldwide)

NOTE: For additional information on HP Uninterruptible Power Systems please go to:
<http://www.hp.com/servers/rackups>.

NOTE: For additional information on sizing your HP UPS, please reference:
<http://www.upssizer.com>

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

HP Basic Power

Distribution Units (bPDU)

HP Basic Power Distribution Unit: 1U/OU Version

HP 1.9kVA 120 Volt L5-20 Input (12xNEMA 5-20R) NA/JP Basic PDU	H5M54A
HP 3.6kVA 200-240 Volt Detachable C20 Input (12xC13) WW Basic PDU	H5M56A

HP Basic Power Distribution Unit: Half Height Version

HP 2.8kVA 120 Volt L5-30 Input (18xNEMA 5-20R) NA/JP Basic PDU	H5M55A
HP 3.6kVA 200-240 Volt Detachable C20 Input (18xC13) WW Basic PDU	H5M57A
HP 4.9kVA 208 Volt L6-30 Input (20xC13) NA/JP Basic PDU	H5M58A
HP 7.3kVA 230 Volt IEC309 32A Input (20xC13) INTL Basic PDU	H5M68A
HP 8.6kVA 208 Volt L15-30 3-Phase Input (18xC13) NA/JP Basic PDU	H5M61A

HP Basic Power Distribution Unit: Mid Height Version

HP 4.9kVA 208 Volt L6-30 Input (24xC13/6xC19) NA/JP Basic PDU	H5M59A
HP 7.3kVA 230 Volt IEC309 32A Input (24xC13/6xC19) INTL Basic PDU	H5M70A
HP 8.3kVA 208 Volt CS8265C Input (30xC13/6xC19) NA/JP Basic PDU	H5M60A
HP 11kVA 230 Volt IEC309 63A Input (30xC13/6xC19) INTL Basic PDU	H5M71A
HP Hardwired 200-240 Volt Input (30xC13/6xC19) WW Basic PDU	H5M75A
HP 5.7kVA 208 Volt L21-20 3-Phase Input (24xC13/3xNEMA 5-20R) NA/JP Basic PDU	H5M63A
HP 8.6kVA 208 Volt L21-30 3-Phase Input (24xC13/3xC19/3xNEMA 5-20R) NA/JP Basic PDU	H5M64A
HP 8.6kVA 208 Volt L15-30 3-Phase Input (24xC13/6xC19) NA/JP Basic PDU	H5M62A
HP 11kVA 400 Volt IEC309 16A 3-Phase Input (30xC13/6xC19) INTL Basic PDU	H5M72A

HP Basic Power Distribution Unit: Full Height Version

HP 11kVA 400 Volt IEC309 16A 3-Phase Input (36xC13/6xC19) INTL Basic PDU	H5M73A
HP 11kVA 400 Volt IEC309 30A 3-Phase Input (36xC13/6xC19) NA Basic PDU	H5M67A

HP Basic Power Distribution Unit: 480/277 Volt Version

HP 19.9kVA 480 Volt IEC309 30A 3-Phase Input (30 Outlet) NA Basic PDU	H3X08A
HP 800VA - 277V Input / 230V Output NA Rack Mount Transformer	H3X09A

Additional Options

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

http://h18000.www1.hp.com/products/quickspecs/14557_div/14557_div.html
(Worldwide)

NOTE: Additional HP Power Distribution Units are available. For a complete list of all HP PDUs and additional information please visit

<http://www.hp.com/go/rackandpower>.

HP Remote Monitoring Power Distribution Units (mPDU)

HP Remote Monitored Power Distribution Unit: 1U Version

HP 2.8kVA 120 Volt L5-30 Input (12xNEMA 5-20R)NA/JP Monitored PDU D9N43A

HP 3.6kVA 200-240 Volt Detachable C20 Input (12xC13) WW Monitored PDU D9N46A

HP 4.9kVA 208 Volt L6-30 Input (12xC13) NA/JP Monitored PDU D9N44A

HP Remote Monitored Power Distribution Unit: Half Height Version

HP 3.6kVA 200-240 Volt Detachable C20 Input (16xC13) WW Monitored PDU D9N45A

HP Remote Monitored Power Distribution Unit: Mid Height Version

HP 4.9kVA 208 Volt L6-30 Input (20xC13/4xC19) NA/JP Monitored PDU D9N47A

HP 7.3kVA 230 Volt IEC309 32A Input (20xC13/4xC19) INTL Monitored PDU D9N48A

HP 8.6kVA 208 Volt L15-30 3-Phase Input (18xC13/3xC19) NA/JP Monitored PDU D9N51A

HP 5.7kVA 208 Volt L21-20 3-Phase Input (18xC13/3xNEMA 5-20R) NA/JP Monitored PDU D9N52A

HP 8.6kVA 208 Volt L21-30 3-Phase Input (20xC13/3xC19/3xNEMA 5-20R) NA/JP Monitored PDU D9N53A

HP 11kVA 400 Volt IEC309 16A 3-Phase Input (18xC13/3xC19) INTL Monitored PDU D9N55A

HP Remote Monitored Power Distribution Unit: Full Height Version

HP 8.3kVA 208 Volt CS8265C Input (30xC13/3xC19) NA Monitored PDU D9N49A

HP 7.3kVA 230 Volt IEC309 32A Input (32xC13/4xC19) INTL Monitored PDU D9N50A

HP 11kVA 400 Volt IEC309 16A 3-Phase Input (30xC13/3xC19) INTL Monitored PDU D9N57A

HP 14.4kVA 208 Volt CS8365C 3-Phase Input (12xC13/12xC19)NA Monitored PDU D9N58A

HP 16.6kVA 400 Volt IEC309 30A 3-Phase Input (30xC13/3xC19) NA Monitored PDU D9N61A

HP 16.6kVA 400 Volt IEC309 30A 3-Phase Input (12xC13/12xC19) NA Monitored PDU D9N62A

HP 17.3kVA 208 Volt IEC309 60A 3-Phase Input (24xC13/3xC19) NA/JP Monitored PDU D9N54A

HP 17.3kVA 208 Volt IEC309 60A 3-Phase Input (12xC13/12xC19) NA/JP Monitored PDU D9N59A

HP 17.3kVA 208 Volt IEC309 60A 3-Phase Watertight Input (12xC13/12xC19) NA/JP Monitored PDU G9Z07A

HP 19.9kVA 480 Volt 3-Phase (30 Outlet) NA Monitored PDU D9N63A

HP 22kVA 400 Volt IEC309 32A 3-Phase Input (12xC13/12xC19) INTL Monitored PDU D9N60A

HP 22kVA 400 Volt IEC309 32A 3-Phase Input (30xC13/3xC19) INTL Monitored PDU D9N56A

HP 22kVA 400 Volt IEC309 32A 3-Phase Watertight Input (12xC13/12xC19) INTL Monitored PDU G9Z08A

HP Environmental Sensor for Remote Monitored PDUs

HP Environmental Sensor for Remote Monitored and Managed PDUs E2D53A

NOTE: Please see the QuickSpecs for additional information:

http://h18000.www1.hp.com/products/quickspecs/14669_div/14669_div.html
(Worldwide)

HP Intelligent Power

iPDU Core Units



Additional Options

Distribution Units (iPDU)	HP 4.9kVA 24A Single Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF520A
	HP 8.3kVA 40A Single Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF521A
	HP 8.6kVA 24A Three Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF522A
	HP 14.4kVA 40A Three Phase NA/JP Intelligent Modular Power Distribution Unit	AF533A
	HP 17.3kVA 48A Three Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF523A
	HP 7.3kVA 32A Single Phase INTL Core Intelligent Modular Power Distribution Unit	AF525A
	HP 11kVA 16A Three Phase INTL Core Intelligent Modular Power Distribution Unit	AF526A
	HP 22kVA 32A Three Phase INTL Core Intelligent Modular Power Distribution Unit	AF527A
	HP 17.3kVA 48A 208V Three Phase 12 Outlet Core NA/JP Intelligent Power Distribution Unit	AF535A
	HP 17.3kVA 24A 415V Three Phase 12 Outlet Core NA/JP Intelligent Power Distribution Unit	AF537A
	HP 22kVA 32A 400V Three Phase 12 Outlet Core INTL Intelligent Power Distribution Unit	AF538A
	iPDU Kits with Standard Extension Bars	
	HP 4.9kVA 24A Single Phase NA/JP Intelligent Modular Power Distribution Kit	AF531A
	HP 8.6kVA 24A Three Phase NA/JP Intelligent Modular Power Distribution Kit	AF532A
	HP 7.3kVA 32A Single Phase INTL Intelligent Modular Power Distribution Kit	AF534A
	iPDU Extension Bars	
	HP 5xC13 Intelligent PDU Extension Bar G2 Kit	AF547A
	HP 5xC13 Outlets Power and UID LEDs Pair Standard Extension Bar	AF528A
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13650_div/13650_div.html (Worldwide)	
	NOTE: Additional HP Power Distribution Units are available. For a complete list of all HP PDUs and additional information please visit: http://www.hp.com/go/rackandpower .	

HP Managed Power Distribution Units (maPDU)

Half Height Models

HP 3.6kVA 200-240 Volt Detachable C20 Input (7xC13/1xC19) WW Managed PDU	H8B49A
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Full Height Models

HP 2.8kVA 120 Volt L5-30 Input (24x NEMA 5-20) NA/JP Managed PDU	H8B48A
HP 4.9kVA 208 Volt L6-30 Input (20xC13/4xC19) NA/JP Managed PDU	H8B50A
HP 7.3kVA 200-240 Volt IEC309 32A Input (20xC13/4xC19) INTL Managed PDU	H8B51A
HP 8.6kVA 208 Volt L15-30 3 Phase Input (18xC13/6xC19) NA/JP Managed PDU	H8B52A
HP 8.6kVA 208 Volt L21-30 3 Phase Input (20xC13/3xC19/1x NEMA 5-20) NA/JP Managed PDU	H8B53A
HP 11kVA 400 Volt IEC309 16A 3 Phase Input (21xC13/3xC19) INTL Managed PDU	H8B54A
HP 14.4kVA 208V CS8365C 3 Phase Input (12xC13/12xC19) NA/JP Managed PDU	H8B55A
HP 17.3kVA 208V IEC309 60A 3 Phase Input (12xC13/12xC19) NA/JP Managed PDU	H8B56A

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:
<http://www8.hp.com/h20195/v2/GetHtml.aspx?docname=c04376673>
 (Worldwide)

HP Rack Series

HP Intelligent Series Racks

Additional Options

HP 636 1075mm Pallet Intelligent Rack	BW895A
HP 636 1075mm Shock Intelligent Rack	BW896A
HP 642 1075mm Pallet Intelligent Rack	BW903A
HP 642 1075mm Shock Intelligent Rack	BW904A
HP 647 1075mm Pallet Intelligent Rack	BW911A
HP 647 1075mm Shock Intelligent Rack	BW912A

NOTE: Please see the QuickSpecs for Technical Specifications such as height, width, depth, weight, and color:

http://h18000.www1.hp.com/products/quickspecs/14223_div/14223_div.html
(Worldwide)

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

HP Rack Options

HP Location Discovery Services

HP 36U Location Discovery Kit	BW945A
HP 42U Location Discovery Kit	BW946A
HP 47U Location Discovery Kit	BW947A

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

http://h18000.www1.hp.com/products/quickspecs/14429_div/14429_div.html
(Worldwide)

HP USB Keyboard and Mouse

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
HP USB BFR with PVC Free IN 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 PT Keyboard/Mouse Kit	672097-133
HP USB BFR with PVC Free TR Keyboard/Mouse Kit	672097-143
HP USB BFR with PVC Free CZ Keyboard/Mouse Kit	672097-223
HP USB BFR with PVC Free FI Keyboard/Mouse Kit	672097-353
HP USB BFR with PVC Free SE Keyboard/Mouse Kit	672097-103
HP USB BFR with PVC Free CH Keyboard/Mouse Kit	672097-113
HP USB BFR with PVC Free KR Keyboard/Mouse Kit	672097-KD3

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 Server Console Switches

Additional Options

HP 0x1x8 G3 KVM Console Switch	AF651A
HP 0x2x16 G3 KVM Console Switch	AF652A
HP TAA 0x2x16 G3 KVM Console Switch	AF653A
HP USB Remote Access Key for G3 KVM Console Switches	AF650A
HP KVM Console USB Interface Adapter	AF628A

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
HP KVM Console USB 2.0 Virtual Media CAC Interface Adapter	AF629A
KVM USB Cnsl Itfc Adapter 1PK ALL	336047-B21

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

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

HP 1x4 USB/PS2 KVM Console Switch

HP 1x4 USB/PS2 KVM Console Switch	AF611A
HP 1x1Ex8 KVM IP Console Switch G2 with Virtual Media CAC Software	AF620A
HP 2x1Ex16 KVM IP Console Switch G2 with Virtual Media CAC Software	AF621A
HP 4x1Ex32 KVM IP Console Switch G2 with Virtual Media CAC Software	AF622A

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

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

Rail Kits

HP 1U Cable Management Arm for Ball Bearing Rail Kit	663203-B21
HP 1U Small Form Factor Ball Bearing Rail Kit	663201-B21
HP 1U Large Form Factor Ball Bearing Rail Kit	663202-B21

HP USB and SD Options

HP Flash Media Kits for USB Drives

HP 8GB USB Enterprise Mainstream Flash Media Drive Key Kit	737953-B21
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HP Enterprise Mainstream Flash Media Kits for Memory Cards

HP 8GB SD Enterprise Mainstream Flash Media Kit	726113-B21
HP 32GB SD Enterprise Mainstream Flash Media Kit	700136-B21

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

http://h18000.www1.hp.com/products/quickspecs/13971_div/13971_div.html

HP Care Pack Services

Proactive Care

NOTE: Collaborative Support plus Proactive services delivered by the onshore, local language Advanced Solution Center (ASC), end-to-end case ownership from a Technical Solution Specialists and Technical Account Manager who remotely delivers firmware/software revision management, proactive scans and incident trend reports. Recommended for customers running a virtualized infrastructure and/or customers who desire an enhanced call support experience.

Additional Options

HP 3 year 4 hour 24x7 ProLiant DL320e Proactive Care Service	U6F03E
HP 3 year 4 hour 24x7 with Defective Media Retention ProLiant DL320e Proactive Care Service	U6F04E
HP 3 year 4-Hour 24x7 with Comprehensive Defective Material Retention DL320e ProactiveCare Service	U9A26E
Foundation Care	
HP 3 year 24x7 DL320e Foundation Care Service	U2GH5E
HP 3 year 24x7 with Defective Media Retention DL320e Foundation Care Service	U2GH6E
HP 3 year 24x7 with Comprehensive Defective Material Retention DL320e Foundation Care Service	U2GH7E
Installation Services	
NOTE: Reduce the time required to get your system up and running and help minimize disruptions to your business.	
HP Installation DL320e/DL120 Service	U6F51E
HP Startup DL320e/DL120 Service	U6F53E
NOTE: For more information, customer/resellers can contact: http://www.hp.com/services/carepack	

Memory

HP SmartMemory

New HP SmartMemory now provides additional protection for your servers. With HP Authentication it can verify that you have true HP Qualified Memory in your HP ProLiant Gen8 server. With HP SmartMemory your new HP ProLiant server can take advantage of additional Gen8 enhancements in performance, durability and future manageability support through HP Active Health System

For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool:
<http://www.hp.com/go/ddr3memory-configurator>

Memory Subsystem Architecture

Intel Processor socket supports 2 channels and 2 DIMMs per channel. Total max. memory up to 32GB DDR3 PC3-12800E1600MHz.

Standard Memory Plus Optional Memory

Up to 32 GB memory is available with the optional installation of 4 x 8GB PC3-12800E UDIMM ECC DDR3 UDIMM Memory kits, operating at 1600MHz 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

General Memory Population Rules and Guidelines:

- The HP ProLiant DL320e Gen8 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 1333/1600 MT/s ECC UDIMM (unbuffered DIMMS)
- The server supports up to 32 GB (4 x 8-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)
- Always use HP qualified DIMM

Farthest DIMM (either CHA or CHB) should always be populated first

The UDIMM installing sequence:

Memory		Slot			
		DIMM1C	DIMM2A	DIMM3D	DIMM4B
Standard (Entry Model)	2 GB	Empty	2 GB	Empty	Empty
Standard (Base Model)	4 GB	Empty	4 GB	Empty	Empty
Standard (Performance Model)	8 GB	Empty	4 GB	Empty	4 GB
Maximum	32 GB	8 GB	8 GB	8 GB	8 GB

Memory Speed by Processor Model

Processor Models	Supported Memory Speeds
E3-1220v2, E3-1220Lv2, E3-1230v2, E3-1240v2, E3-1270v2, E3-1290v2, G2120, G2100 T	1600/1333MHz

Following are memory options available from HP:

Memory

HP Memory

NOTE: To realize the performance memory capabilities listed in this document, HP SmartMemory is required. For additional information, please see the HP SmartMemory QuickSpecs at:

http://h18000.www1.hp.com/products/quickspecs/14225_div/14225_div.html
(Worldwide)

NOTE: HP memory from previous generation servers are not fully compatible with the DL320e Gen8 Server.

Unbuffered with ECC DIMMs (UDIMMs)

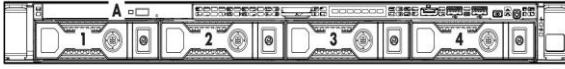
HP 2GB (1x2GB) Single Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit	669320-B21
HP 2GB (1x2GB) Single Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit	647905-B21
HP 4GB (1x4GB) Dual Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit	669322-B21
HP 4GB (1x4GB) Dual Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit	647907-B21
HP 8GB (1x8GB) Dual Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit	669324-B21
HP 8GB (1x8GB) Dual Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit	647909-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: <http://www.hp.com/go/ddr3memory-configurator>.

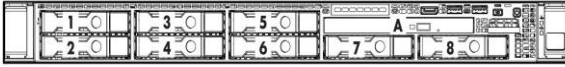
NOTE: Kits described as LP include Low Power DIMMs. For more information on ProLiant Energy Efficient Features, see: <http://www.hp.com/go/proliant-energy-efficient>.

NOTE: PC3L is a low voltage memory.

Storage



- 1 - 4 4 x 3.5" (LFF) SAS/SATA hard drive bays
- A Optical Drive Bay: Optional DVD-ROM, or DVD-RW drive



- 1 - 8 8 x 2.5" (SFF) SAS/SATA hard drive bays
- A Optical Drive Bay: Optional DVD-ROM, or DVD-RW drive

Technical Specifications

System Unit	Dimensions (H x W x D)	8 SFF	1.7 x 17.11 x 27.5 inches (4.32 x 43.46 x 69.90 cm)
		4 LFF	1.7 x 17.11 x 29.5 inches (4.32 x 43.46 x 75.0 cm)
	Weight (approximate)	Maximum (all hard drives, power supply, and processor installed)	8 SFF/4 LFF - 16.2/16.8 kg, 35.7/37.0 lb
		Minimum (one hard drive, power supply, and processor installed)	8 SFF/4 LFF - 10.9/11.9 kg, 24.0/26.2 lb
	Input Requirements (HP ProLiant 350 W power supply)	Rated Line Voltage	100 to 120 VAC
		Rated Input Current	6 Amps (at 100VAC) to 3 Amps (at 200 VAC)
		Rated Input Frequency	50 to 60 Hz
	Power Supply Output (per power supply)	Rated Steady-State Power	350 W (at 100 to 120 VAC), 350 W (at 200 to 240 VAC)
		Maximum Peak Power	400 W (at 100 to 120 VAC), 400 W (at 200 to 240 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 304.8 m (1.8°F per every 1000 ft) above sea level to a maximum of 3048 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 10°C/hr (18°F/hr). The upper limit may be limited by the type and number of options installed. System performance may be reduced if operating with a fan fault or above 30°C (86°F).
		Non-operating	-30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).
	Relative Humidity (non-condensing)	Operating	10 to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing.
		Non-operating	5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.
	Altitude	Operating	3048 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
		Non-operating	9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
	Acoustic Noise	Listed are the declared A-Weighted sound power levels (LWAd) and declared average bystander position A-Weighted sound pressure levels (LpAm) when the product is operating in a 23°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109).	

Technical Specifications

Idle (Note 1)

LWAd	5.0 B
LpAm	35 dB Average Bystander

Operating

LWAd	5.1 B
LpAm	35 dB Average Bystander

NOTE: Values are subject to change without notification and are for reference only.

NOTE: Performance of system, options, and ancillary equipment will vary depending on the system configuration.

NOTE: Levels presented do not account for non-Hewlett-Packard installed hardware.

Emissions Classification (EMC)	FCC Rating	Class A
	Normative Standards	CISPR 22; EN55022; EN55024; FCC CFR 47, Pt 15; ICES-003; CNS13438; GB9254; K22;K24; EN 61000-3-2; EN 61000-3-3; EN 60950-1; IEC 60950-1

NOTE: Product conformance to cited product specifications is based on sample (type) testing, evaluation, or assessment. This product or family of products is eligible to bear the appropriate compliance logos and statements.

HP Dynamic Smart Array B120i Controller	Dimensions	Embedded
	Disk Drive and Enclosure Interface - Transfer rate	Up to 6Gb/s SATA (Serial ATA)
	Connectors	6 internal SATA connectors
	Server Interface	x4 PCIe 2.0
	SATA Speed	6Gb/s SATA links
	Cache Memory	Zero Memory RAID has no cache memory
	Logical Drives Supported	Up to 8 logical volumes (6 physical drives)
	Host Memory Addressing	64-bit, supporting greater than 4GB server memory space
	Hot Plug Support	Yes
	RAID Support	RAID 0 (Striping), RAID 1 (Mirroring) RAID 1+0 (Striping & Mirroring)

HP Ethernet 1Gb 2-port 330i Adapter	Compatibility	IEEE 802.3 10Base-T IEEE 802.3ab 1000Base-T IEEE 802.3u 100Base-TX
	Data Transfer Method	PCI Express, four lanes (x8)
	Controller	BCM5717
	Network Transfer Rate	10Base-T (Half-Duplex)
		10Base-T (Full-Duplex)
		100Base-TX (Half-Duplex)
		100Base-TX (Full-Duplex)
		1000Base-TX (Half and Full-Duplex)
	Connector	RJ-45
	Cable Support	10Base-T

Technical Specifications

100Base-TX

1000BaseTX

**Environment-friendly
Products and Approach****End-of-life Management
and Recycling**

Hewlett-Packard offers end-of-life HP product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to: <http://www.hp.com/go/green>. To recycle your product, please go to: <http://www.hp.com/go/green> or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.

The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: <http://www.hp.com/go/green>. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.

Summary of Changes

Date	Version History	Action	Description of Change
01-Jun-2015	From Version 31 to 32	Added	New Hard Drives were added to Core Options.
		Removed	Obsolete SKUs were removed from Core Options and Additional Options.
30-Mar-2015	From Version 30 to 31	Added	New Hard Drives added to Core Options.
09-Feb-2015	From Version 29 to 30	Added	New Hard Drives, DirectFlow UPS, Rack and Tower G4 Models, LCD8500 1U Rackmount Models and Options were added to the Additional Options section.
		Changed	HP Uninterruptible Power Systems, HP Rack Options, and HP Care Pack Services in Additional Options section were revised.
01-Dec-2014	From Version 28 to 29	Added	HP 1.6TB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive and HP 1.6TB 6G SATA Value Endurance LFF 3.5-in SC Converter Enterprise Value 3yr Wty Solid State Drive were added to HP Hard Drives.
		Removed	Proactive Care Services (U6F09E and U6F10E), Collaborative Support, and Proactive Care Personalized Support Option were removed from HP Care Pack Services.
01-Nov-2014	From Version 27 to 28	Changed	The Service and Support section was updated.
29-Sep-2014	From Version 26 to 27	Added	New Solid State Drives were added. HP Managed Power Distribution Units (mPDU) was added to Additional Options.
		Changed	Service and Support section was revised. HP Hard Drives was revised in Core Options section.
09-Sep-2014	From Version 25 to 26	Added	12G SAS Hot Plug VE SFF (2.5in) SC EV SSD and 12G SAS Hot Plug VE SFF (2.5in) SCC EV SSD hard drives were added to Core Options section.
18-Aug-2014	From Version 24 to 25	Added	New Hard Drives were added.
		Changed	Core Options and Additional Options sections were revised.
10-Jun-2014	From Version 23 to 24	Added	Additional Options – Added HP iLO Advanced including 1yr 24x7 Technical Support and Updates Electronic License and HP iLO Advanced Electronic License with 3yr 24x7 Tech Support and Updates to HP Insight Software. Additional Options - HP RDX 2TB USB3.0 Internal Disk Backup System and HP RDX 2TB USB3.0 External Disk Backup System were added to HP Disk Backup. HP D6000 Disk Enclosures. HP KVM Console USB Interface Adapter and HP KVM Console USB 2.0 Virtual Media CAC Interface Adapter were added to Server Console Switches.
		Changed	Core Options, Additional Options and Memory were revised. HP Remote Monitoring Power Distribution Units (mPDU) was revised. 2GB USB Flash Media Drive Key Kit was removed from HP Flash Media Kits for USB Drives.
		Removed	6G SAS SLC Hot Plug SFF (2.5-inch) Enterprise Performance Solid State Drives – Removed from Hard Drives. HP H221 Host Bus Adapter – Removed from Storage Controllers.
18-Apr-2014	From Version 22 to 23	Changed	Service and Support, Memory, Hard Drives, HP Insight Software, Tape Backup, and Basic and Remote Monitoring Power Distribution Units were revised.
18-Feb-2014	From Version 21 to 22	Changed	Hard Drives were revised.
13-Dec-2013	From Version 20 to 21	Changed	Intel Pentium G2100T Processor and Intel Core i3-3220T and -3240 Processors were removed from Processors HP Power Distribution Units was removed from Additional Options

Summary of Changes

			<p>HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle FIO Electronic License was added to Insight Software</p> <p>HP SmartCache and HP H221 PCIe 3.0 SAS Host Bus Adapter were added to Storage Controllers</p> <p>HP 1.2TB 6G SAS 10k rpm SFF SC Dual Port Enterprise 3yr Warranty Hard Drive was added and 3G SATA MLC Hot Plug SFF and LFF Enterprise Mainstream Solid State Drives were removed from Hard Drives</p> <p>HP Basic Power Distribution Units and HP Remote Monitoring Power Distribution Units were revised in Additional Options</p> <p>HP 8GB USB Enterprise Mainstream Flash Media Drive Key Kit was added and HP 4GB SD Enterprise Performance Flash Media Kit was removed from HP Flash Media Kits for USB Drives</p>
11-Oct-2013	From Version 19 to 20	Added	<p>Converged Infrastructure Management Software was added</p> <p>HP 300 GB and 600 GB SATA Value Endurance SFF and LFF Enterprise Boot Solid State Drives were added to Hard Drives</p> <p>HP Remote Monitoring Power Distribution Units were added to Additional Options</p> <p>HP 8GB SD Enterprise Mainstream Flash Media Kit was added to HP USB and SD options</p>
20-Sep-2013	From Version 18 to 19	Changed	<p>HP Dynamic Smart Array B120i Controller in Technical Specifications was revised.</p>
10-Sep-2013	From Version 17 to 18	Changed	<p>Processors, Memory, Insight Management, High Performance Clusters, Storage Controllers, Storage Options, and Power Distribution Units were revised.</p>
21-Aug-2013	From Version 16 to 17	Changed	<p>Overview image callouts were revised.</p>
01-Aug-2013	From Version 15 to 16	Changed	<p>Overview image callouts were revised.</p>
21-Jun-2013	From Version 14 to 15	Changed	<p>Overview image was revised.</p>
12-Jun-2013	From Version 13 to 14	Changed	<p>Changes were made in the North America and Canada versions only.</p>
15-May-2013	From Version 12 to 13	Added	<p>Additional Options: Added HP Basic Power Distribution Units section.</p>
		Removed	<p>Additional Options: Removed HP I/O Accelerator Options section.</p>
		Changed	<p>Standard Features: Updated Maximum Internal Storage section</p> <p>Optional Features: Activated HYPERLINK in Storage Software section.</p> <p>Pre-Configured Models: Updated Performance Models section.</p> <p>Core Options: Updated HP Hard Drives, HP USB and SD Options and HP Care Pack Services sections.</p> <p>Technical Specifications: Updated HP Dynamic Smart Array B120i Controller section.</p>
29-Apr-2013	From Version 10 to 11	Changed	<p>Technical Specifications: Updated HP Dynamic Smart array B120i Controller section.</p>
26-Apr-2013	From Version 9 to 10	Changed	<p>Changes made in the the Pre-Configured Models Section- Performance Models > Management Section</p>
25-Mar-2013	From Version 8 to 9	Added	<p>Added a Note to the Power Supplies section.</p>
25-Feb-2013	From Version 7 to 8	Changed	<p>Changes made to the following sections:</p> <p>Optional Features: HP Insight management, Added Storage Software & HP Proactive Insight experience</p> <p>Models</p> <p>Configuration Information: Step 3</p> <p>Core Options: Hard Drives, HP Networking</p> <p>Additional Options: HP Insight Software, HP USB and SD Options,</p>

Summary of Changes

			HP Care Pack Services
04-Jan-2013	From Version 6 to 7	Removed	Removed 6G SAS MLC Hot Plug SFF (2.5-inch) Enterprise Mainstream Solid State Drives
07-Dec-2012	From Version 5 to 6	Changed	Changes made to the following sections: Standard Features: Upgradeability, Storage Controller, Graphics, On System Management HP Insight software throughout the QuickSpec Models
		Removed	Removed HP iLO Advance License, HP Backup & Recovery Software and HP Disk Storage Systems from the Additional Options section. External Storage from the Storage section.
17-Nov-2012	From Version 4 to 5	Removed	Removed a Note from the Tape Backup section.
02-Nov-2012	From Version 3 to 4	Changed	Changes were made in the Technical Specifications section.
28-Sep-2012	From Version 1 to 2	Changed	Changes were made in Overview, Standard Features, Configuration Information, Core Options and Memory sections.

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