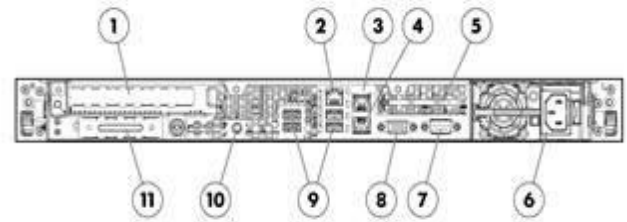
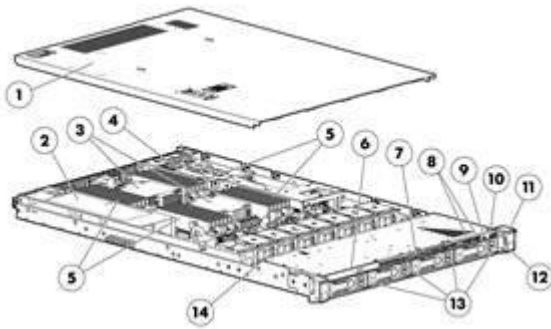


### Overview

#### HPE ProLiant DL160 Generation 8 (Gen8)

The HPE ProLiant DL160 Gen8 is a dual-socket, high-performance, dense rack server with enhanced manageability and scalability suited for High Performance Computing (HPC) environments, web serving and other hyperscale environments.



#### Front View:

1. Access panel
2. Power supply (500 Watts multi-output - standard, common slot power supply factory installable options available)
3. Up to two Intel® Xeon® E5-2600 Series processors
4. FlexibleLOM slot
5. Up to 24 DIMM slots: DDR3 Registered (RDIMM), Load Reduced (LRDIMM) or Unbuffered (UDIMM) memory
6. Optical Disk Drive Bay
7. Serial label pull tab
8. (2) Front USB connectors
9. UID LED button
10. Power On/Standby button
11. Health LED
12. Aggregate network LED
13. Up to 4 LFF SAS/ SATA Hard drives
14. Up to seven Non hot plug redundant Fans

#### Rear View:

1. PCIe 3.0 I/O slot
2. Integrated Lights-Out Management Engine port
3. 1 GbE LAN port for NIC 1 (RJ-45)
4. 1 GbE LAN port for NIC 1 (RJ-45)
5. Torx tool
6. Power supply cable socket
7. Serial connector
8. Video connector
9. USB connectors
10. UID LED button
11. FlexibleLOM slot

#### 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

#### Eight -Core Processors

Intel® Xeon® E5-2680 (2.7GHz/8-core/20MB/8GT-s QPI/130W, DDR3-1600, HT, Turbo2-4/4/5/5/5/7/8/8)

Intel® Xeon® E5-2670 (2.6GHz/8-core/20MB/8GT-s QPI/115W, DDR3-1600, HT, Turbo2-4/4/5/5/6/6/7/7)

Intel® Xeon® E5-2665 (2.4GHz/8-core/20MB/8GT-s QPI/115W, DDR3-1600, HT, Turbo2-4/4/5/5/6/6/7/7)

Intel® Xeon® E5-2660 (2.2GHz/8-core/20MB/8GT-s QPI/95W, DDR3-1600, HT, Turbo2-5/5/6/6/7/7/8/8)

Intel® Xeon® E5-2650 (2.0GHz/8-core/20MB/8GT-s QPI/95W, DDR3-1600, HT, Turbo2-4/4/5/5/5/7/8/8)

Intel® Xeon® E5-2650L (1.8GHz/8-core/20MB/8.0 GT-s QPI/70W, DDR3-1600, HT, Turbo2-2/2/3/3/4/4/5/5)

#### Six-Core Processors

Intel® Xeon® E5-2667 (2.9GHz/6-core/15MB/8GT-s QPI/130W, DDR3-1600, HT, Turbo2-3/3/3/4/5/6)

Intel® Xeon® E5-2640 (2.5GHz/6-core/15MB/7.2GT-s QPI/95W, DDR3-1333, HT, Turbo2-3/3/4/4/5/5)

Intel® Xeon® E5-2630 (2.3GHz/6-core/15MB/7.2GT-s QPI/95W, DDR3-1333, HT, Turbo2-3/3/4/4/5/5)

Intel® Xeon® E5-2630L (2.0GHz/6-core/15MB/8.0GT-s QPI/60W, DDR3-1333, HT, Turbo2-3/3/4/4/5/5)

Intel® Xeon® E5-2620 (2.0GHz/6-core/15MB/7.2GT-s QPI/95W, DDR3-1333, HT, Turbo2-3/3/4/4/5/5)

#### Quad- Core Processors

Intel® Xeon® E5-2609 (2.4GHz/4-core/10MB/6.4GT-s QPI/80W)

Intel® Xeon® E5-2603 (1.8GHz/4-core/10MB/6.4GT-s QPI/80W)

**NOTE:** Up to 2 processors supported.

**NOTE:** HT indicates that the processor model supports Intel® Hyper-Threading Technology.

**NOTE:** Turbo 2 indicates the maximum potential bin increments when using Intel® Turbo Boost Technology, with 8,7,6,5,4,3,2 and 1 cores active DDR3 speed is the maximum memory speed of the processor. Actual memory speed may depend on the quantity and type of DIMMs installed (options for 1600, 1333, 1066MHz).

**NOTE:** For the Intel® C600 Chipset E5-2600 Series, the letter preceding the model number indicates the Product Line (E3, E5, E7); 2600x v#, 2 = number of CPUs in a Node, 6 is socket/segment designation, 00 = Processor SKU, x = L for low power SKUs and v# (not yet designated) = version number.

### Cache Memory

One of the following depending on model

20MB (1x20MB) Level 3

**NOTE:** For Eight-core processors.

15MB (1x15MB) Level 3

**NOTE:** For Six-core processors.

10MB (1x10MB) Level 3

**NOTE:** For Quad-core processors.

5MB (1x5MB) Level 3

**NOTE:** For Dual-core processors.

## Standard Features

**NOTE:** All processor models above list the L3 Cache associated with that particular processor.

### Chipset

Intel® C600 Chipset

Intel® E5-2600 processor Family

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

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

### Upgradeability

Upgradeable to two processors (16 Cores)

Up to 24 DIMM slots available for higher Memory capacity

Up to 8 SFF Hard Drive Bays; Or 4 LFF Drive Bay

2 PCIe Generation 3 IO slots for additional communications and storage expansion

Optical Drive Bay

### On System Management

HPE iLO (Firmware: HPE iLO 4)

### Chipset

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

### Memory Protection

Advanced memory protection

Lockstep Mode

### Memory

One of the following depending on model

Type	HPE SmartMemory PC3-10600R Registered DDR3 (1333MHz)
DIMM Slots Available	24 DIMM slots
Standard (Entry Models)	4 GB (1 x 4 GB) RDIMM
Standard (Base Models)	8 GB (2 x 4 GB) RDIMM
Standard (Performance / Energy Star Models)	16 GB (4 x 4 GB) RDIMM
Maximum (RDIMM)	384 GB (24 x 16 GB)
Maximum (LRDIMM)	768 GB (24 x 32 GB)
Maximum (UDIMM)	128 GB (16 x 8 GB)

**NOTE:** HPE memory from previous generation servers are not qualified or warranted with this HPE ProLiant Server. HPE SmartMemory is required to realize the memory performance improvements and enhanced functionality listed in this document for Gen8. For additional information, please see the HPE SmartMemory QuickSpecs at:

[http://h18000.www1.hp.com/products/quickspecs/14225\\_div/14225\\_div.html](http://h18000.www1.hp.com/products/quickspecs/14225_div/14225_div.html)

**NOTE:** LRDIMM, RDIMM and UDIMMs are all distinct memory technologies and cannot be mixed within a server. The majority of ProLiant Gen8 servers support RDIMM, UDIMM and LRDIMM.

**NOTE:** If only one processor is installed, only 12 DIMM slots are available. When populating with two processors 24 DIMM slots are available. For maximum speed on some memory options on 16 DIMM slots may be populated.

**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

HPE 361i Integrated Dual Port Gigabit Server Adapter

Expansion Slots #	Technology	Bus Width	Connector Width*	Form Factor	Notes
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## Standard Features

1	PCIe 3.0	X16	x16	Half length, full height or Full length, full height	
2	PCIe 3.0	X8	x8	Low Profile	Internal only

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

**NOTE:** In order to access expansion slot #2 (the low profile internal only slot), expansion slot #1 may only be populated with a half-length, full height form factor card. If full length card is installed on the slot #1, low profile internal only slot will be inaccessible.

## HPE Server ROM

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

HPE 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.

HPE 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.

The HPE 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 HPE ROM-Based Setup Utility (RBSU)).

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

## Storage Controller

One of the following depending on model

Entry Models	HPE Dynamic Smart Array B120i controller
Base Models	HPE Dynamic Smart Array B120i controller
Performance Models	HPE Smart Array P420/1GB FBWC controller

**NOTE:** Available upgrades: 512MB FBWC for B120i, 2GB FBWC for P420 Controller/ 1GB FBWC controller

**NOTE:** HPE Dynamic Smart Array B120i controller supports up to 3Gb/s speed in HPE ProLiant DL160 Gen8. HPE Smart Array controller is required in PCIe slot to achieve 6Gb/s.

## Internal Storage Devices

Diskette Drives	Via USB only
Optical Drives	Optional SATA 9.5mm DVD-ROM Optical Drive Optional SATA 9.5mm DVD RW Optical Drive
Drive Bays	Up to 4 Hot plug SAS/SATA 3.5" drives
One of the following depending on model	Up to 8 Hot plug SAS/SATA 2.5" drives

## Maximum Internal

Hot Plug LFF SATA	16.0TB	4 x 4TB
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## Standard Features

<b>Storage</b> One of the following depending on model	Hot Plug LFF SATA SSD	3.2TB	4 x 800GB
	Hot Plug LFF SAS	16.0TB	4 x 4TB
	Hot Plug SFF SATA	8.0TB	8 x 1TB
	Hot Plug SFF SATA SSD	6.4TB	8 x 800GB
	Hot Plug SFF SAS	9.6TB	8 x 1.2TB
	Hot Plug SAS SSD	6.4TB	8 x 800GB
	Non-Hot Plug LFF SATA	12.0TB	4 x 3TB
	Non-Hot Plug LFF SAS	2.4TB	4 x 600GB

<b>Interfaces</b>	Network RJ-45(Ethernet)	2 NIC ports, 1 dedicated iLO port
	Serial	1 (Rear)
	Pointing Device (Mouse)	0 (via USB only)
	Graphics	2 VGA ports(1 rear, 1 front)
	Keyboard	0 (via USB only)
	USB 2.0 Ports	7 (two front, one internal, four rear)

**NOTE:** In order to use internal USB port, the internal USB Cable Gen8 Kit (P/N: 662961-B21) is required. Please note that this is a Factory installable Only (FIO) option and cannot be bought standalone.

<b>Industry Standard Compliance</b>	ACPI 2.0 Compliant
	PCIe 3.0 Compliant
	PXE Support
	WOL Support
	Microsoft® Logo certifications
	IPMI 2.0, SMASH CLP, DCMI 1.0 compliant
	USB 2.0 Support

<b>Server Power Cords</b>	One 6' Highline (IEC-IEC) power cord ships standard
	<b>NOTE:</b> HPE ProLiant DL servers no longer ship standard with a 12-foot NEMA 5-15P to C13 power cords that allow connection to 110V US wall outlets in a home or office. HPE ProLiant DL servers are primarily connected to PDU's in data center racks and 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. If customers require a local power cord, they can check the power cord matrix for the appropriate cord. Please see the following power cord matrix: <a href="http://www.hp.com/go/powercordmatrix">http://www.hp.com/go/powercordmatrix</a> .

<b>Power Specifications</b>	To review typical system power ratings, use the HPE Power Advisor tool available at URL: <a href="http://www.hp.com/go/proliant-energy-efficient">http://www.hp.com/go/proliant-energy-efficient</a> or <a href="http://www.hp.com/go/hppoweradvisor">http://www.hp.com/go/hppoweradvisor</a> .
	<b>NOTE:</b> Power Specification and Technical Content for supported power supplies can be found at: <a href="http://h18000.www1.hp.com/products/quickspecs/14209_div/14209_div.html">http://h18000.www1.hp.com/products/quickspecs/14209_div/14209_div.html</a>

<b>Common Slot Power Supplies</b>	The HPE Common Slot (CS) power supplies allow for commonality of power supplies across a wide range of ProLiant and Integrity servers, as well as HPE Storage solutions, and are designed to provide the highest power supply efficiency without degrading system performance. HPE CS power supplies are tested by the Electric Power Research Institute (EPRI) and certified through the ECOS 80 Plus
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## Standard Features

power supply program. HPE CS power supply options provide efficiency ratings of up to 94% and are available in three power output options - 460W, 750W and 1200W - allowing the customer to "right-size" a power supply for their specific server configuration. All HPE Common Slot power sources are UL, CE Mark Compliant, hot-plug and support redundant configurations.

HPE CS Platinum Plus power supplies are required when enabling the HPE 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 the HPE IPD solution, go to <http://www.hp.com/go/ipd>.

**NOTE:** It is highly recommended that you use the HPE Power Advisor in defining the "Right-Size" power supply for your needs. HPE 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](http://80Plus.org).

**NOTE:** Common Slot power supplies require a new power backplane kit (p/n: 662959-B21) for installation. The Common Slot power supply and power backplane kits must be factory installed - neither should be bought as a standalone option for HPE ProLiant DL160 Gen8.

**NOTE:** 10GbE FlexibleLOM mandatorily need common slot power supply and are not supported with 500W multi-output power supply. These FlexibleLOM options require Aux power connector that comes with the common slot power supply. Please see the options section for specific details.

**NOTE:** Since DL160 Gen8 only has only one power supply slot, above mentioned power supplies will not be Hot Plug in case of DL160 Gen8.

**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](http://h18000.www1.hp.com/products/quickspecs/14209_div/14209_div.html)

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### System Fans

One of the following depending on model

5 non-hot plug redundant fans ship standard in 1P models

7 non-hot plug redundant fans ship standard in 2P models

**NOTE:** The processor option kit contains two additional fan modules when upgrading from one processor to two processor models.

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### Required Cabling

For required cabling information, refer to the Web site at: <http://www.hp.com/servers/dl160-Gen8>

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### Operating Systems and Virtualization Software Support for ProLiant Servers

[Microsoft Windows Server](#)

[Oracle Solaris](#)

[Red Hat Enterprise Linux \(RHEL\)](#)

[SUSE Linux Enterprise Server \(SLES\)](#)

[VMware](#)

**NOTE:** For more information on the HPE Certified and Supported ProLiant Servers for OS and Virtualization Software and latest listing of software drivers available for your server, please visit our Support Matrix at: <http://www.hp.com/go/ossupport> and our driver download page

## Standard Features

<http://www.hp.com/support/DL160Gen8>

### Graphics

Integrated Matrox G200 video standard

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

HPE 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

Rack (1U), (1.75 in/4.45 cm)

8 SFF Models

1.7" (43.2mm) Height x 17.1" (434.6mm) Width x 27.5" (699mm) Length

4 LFF Models

1.7" (43.18mm) Height x 17.11" (434.6mm) Width x 29.5" (750mm) Length

### On System Management HPE iLO Management Engine

HPE iLO Management Engine is 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. HPE iLO Management Engine comes standard on all HPE ProLiant Gen8 Servers. HPE iLO Management Engine portfolio includes:

- **HPE iLO:** The HPE iLO management processor is the core foundation for HPE iLO Management Engine. HPE iLO for HPE ProLiant servers simplify server setup, engage health monitoring and power and thermal control, and promote remote administration for HPE ProLiant ML, DL, BL and SL servers. Furthermore with the new HPE iLO is the ability to access, deploy, and manage your server anytime from anywhere with your Smartphone device.
- **HPE Agentless Management:** With HPE iLO Management Engine in every HPE ProLiant Gen8 server, the base hardware monitoring and alerting capability is built into the system (running on the HPE iLO chipset) and starts working the moment that a power cord and an Ethernet cable is connected to the server.
- **HPE Active Health System:** HPE Active Health System is an essential component of the HPE iLO Management Engine. It provides: Diagnostics tools/scanners wrapped into one; Always on, continuous monitoring for increased stability and shorter downtimes; Rich configuration history; Health and service alerts; Easy export and upload to Service and Support.
- **HPE Active Health System:** HPE Active Health System is an essential component of the HPE iLO Management Engine. It provides customers with: Diagnostics tools/scanners wrapped into one; Always on, continuous monitoring for increased stability and shorter downtimes; Rich configuration history; Health and service alerts; Easy export and upload to Service and Support.

## Standard Features

- **HPE Intelligent Provisioning:** HPE Intelligent Provisioning includes everything you need for painless system setup and deployment. All your HPE Gen8 ProLiant servers and Gen8 ProLiant server blades are ready to set-up right out-of-the box. The firmware, drivers, and tools that you need to quickly get your systems online are embedded on a NAND flash chip on the server motherboard- no more SmartStart CDs or firmware DVDs needed. Intelligent Provisioning is agentless for improved performance, but you still have the ability to run agents if needed.
  - 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/sppt> to get firmware and software updates.

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

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### HPE Insight management software

### HPE Service Pack for ProLiant (SPP)

HPE Service Pack for ProLiant (SPP) and HPE Smart Update Manager (HPE SUM) version 5 provide a new, 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 HPE server hardware launches. By enabling all firmware to be updated online and integrating firmware and system software updates in one operation HPE 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 Hewlett Packard Enterprise provides 12 months of support on each Service Pack for ProLiant.

The user experience around HPE 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 HPE SUM version 5 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 HPE SUM application has been re-written to provide a more 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 [hpe.com](http://hpe.com), HPE SUM provides the tools to optimize stability and consistency throughout the company. While HPE SUM and the SPP will recommend the combinations of firmware and system software that Hewlett Packard Enterprise has found to be the best practice, the application gives



## Standard Features

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 HPE SUM to deploy updates taking into account all interdependencies, when determining the correct updates and order of update deployment.

**NOTE: The Service Pack for ProLiant (which includes HPE SUM 5) can be downloaded from <http://www.hp.com/go/spp/download>. More information can be found: <http://www.hp.com/go/spp> and <http://www.hp.com/go/hpsum>**

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### Security

Power-on password  
Setup password  
Diskette boot control  
Secure Sockets Layer (SSL)  
Secure Shell (SSH)

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### Warranty

This product is covered by a global limited warranty and supported by HPE Services and a worldwide network of Hewlett Packard Enterprise Authorized Channel Partners. Hardware diagnostic support and parts replacement 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 HPE 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 3 year Next Day Parts replacement, 0-Years Labor, 0-Years Onsite support (3-1-1 warranty in APJ). 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

### HPE Insight management software

HPE Insight Control

HPE 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. For more information, visit: <http://www.hp.com/go/insightcontrol>.

HPE Insight Control includes one year of 24 x 7 HPE Software Technical Support and Update Service ensuring rapid access to Hewlett Packard Enterprise support staff and proactive delivery of software updates. For more information about this service, please visit: <http://www.hp.com/services/insight>.

**NOTE: HPE Insight Control 7.2 introduces Insight Control server provisioning, a new capability ideal for multi-server OS and firmware provisioning to ProLiant and BladeSystem servers. Insight Control server provisioning is included and licensed as part of HPE Insight Control. A media kit, "HPE Insight Control server provisioning USB media kit" (# BD883A), including a USB, is available for customers who require a physical copy of the media loaded with Insight Control server provisioning software. Please note that this media kit is separate and in addition to the "HPE Insight Management DVD media kit" (#C6N31A).**

HPE Matrix Operating Environment

The HPE 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.

The HPE Matrix OE includes the automated provisioning, optimization, and recovery management capabilities for HPE CloudSystem Matrix, the ideal platform for private cloud and Infrastructure as a Service (IaaS).

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

HPE iLO Scale-Out

The HPE iLO Scale-Out license ideal for web/hosting/cloud service providers and High Performance Computing environments. This license is a specific subset of iLO Advanced functionality, provides fast remote access through Text Console via SSH, lower operational cost with Dynamic power capping, and faster time to resolution through Email-based Alerting and proactive notifications. With this newly designed HPE iLO Scale-Out HPC customers now have a server management package solely design and priced for their massive data environments. HPE iLO Scale-Out is available on all HPE ProLiant Gen8 SL and BL and DL 160 servers. For more information, see: <http://www.hp.com/go/iLO/scale-out>

HPE iLO Advanced

HPE 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 HPE 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

## Optional Features

and power management functionality. For more information, see: <http://www.hp.com/go/iloadvanced>

### HPE OneView

The HPE OneView architecture combines server, storage, and networking with control of datacenter environmentals into a single, integrated management platform. Architected to deliver lifecycle management for the complete Converged Infrastructure, it facilitates collaboration, removes friction, collapses cycle times, eliminates error-prone work, and accelerates time to value. HPE OneView v1.0 combines management of servers and virtual connect with open integration to automate and customize existing tools and processes. With OneView, you'll work smarter—with greater visibility and control—and fully capitalize on the benefits of a Converged Infrastructure.

For more information on HPE OneView management, see: <http://www.hp.com/go/oneview>.

### High Performance Clusters

HPE Cluster Platforms	HPE 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. <a href="http://www.hp.com/go/clusters">http://www.hp.com/go/clusters</a>
HPE HPC Interconnects	High Performance Computing (HPC) interconnect technologies are available for this server as part of the HPE Cluster Platform portfolio. These high-speed InfiniBand and Gigabit interconnects are fully supported by Hewlett Packard Enterprise when integrated within an HPE cluster. Flexible, validated solutions can be defined with the help of configuration tools. <a href="http://www.hp.com/techservers/clusters/ucp/index.html">http://www.hp.com/techservers/clusters/ucp/index.html</a>
HPE Insight Cluster Management Utility	HPE Insight Cluster Management Utility (CMU) is an HPE-licensed and HPE-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. <a href="http://www.hp.com/go/cmu">http://www.hp.com/go/cmu</a>

### 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 HPE 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, HPE data protection and recovery software will cost-effectively protect you against disaster and ensure business continuity.
- Data Archive and Migration Software**  
 The HPE 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)**  
 The HPE 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.

## Optional Features

- **Data Replication Software**  
Hewlett Packard Enterprise 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 HPE storage and networking with software that enables hardware-specific configuration, performance tuning and connectivity management.
- **HPE StoreVirtual VSA**  
With HPE 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>.

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### HPE Insight Online

HPE Insight Online is a new addition to the HPE Support Center for one stop, secure access to product and Hewlett Packard Enterprise support information personalized to your IT environment. Insight Online can automatically display devices remotely monitored by HPE 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>

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### Factory Express Portfolio for Servers and Storage

HPE Factory Express offers configuration, customization, integration and deployment services for Hewlett Packard Enterprise 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. Hewlett Packard Enterprise products supported through Factory Express include a wide array of servers and storage: HPE Integrity, HPE ProLiant, HPE ProLiant Server Blades, HPE BladeSystem, HPE 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>.

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### HPE 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 the HPE Customer Business Center or an Authorized Partner for assistance. <http://www.hp.com/products/configurator>

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## Service and Support

### Service and Support

#### **HPE Technology Services for Industry Standard Servers and BladeSystem**

HPE Technology Services delivers confidence, reduces risk and helps customers realize agility and stability. Connect to Hewlett Packard Enterprise 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 HPE Care Pack Services**

HPE 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.

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### Optimized Care

#### **Supports maintaining servers at optimum performance availability**

##### **HPE Proactive Care with 24x7 coverage, three year Care Pack Service**

HPE Proactive Care helps prevent problems and stabilize IT by utilizing secure, real-time, predictive analytics and proactive consultations when your products are connected to Hewlett Packard Enterprise. 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 HPE ProLiant server. <http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA3-8855ENW.pdf>

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### Standard Care

#### **Support recommendation that maintains high level of server availability**

##### **Foundation Care 24x7, three-year Care Pack Service**

HPE Foundation Care 24x7 connects you to Hewlett Packard Enterprise 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 HPE server. Simplify your support experience and make Hewlett Packard Enterprise your first call for hardware or software questions. <http://h20195.www2.hp.com/V2/GetDocument.aspx?docname=4AA4-8876ENW&cc=us&lc=en>

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### Basic Care

#### **Delivers minimum recommended support service level**

##### **Foundation Care NBD, three-year Care Pack Service**

HPE Foundation Care Next Business Day connects you to Hewlett Packard Enterprise during business hours for assistance on resolving issues – features next business day hardware onsite response if needed and software call back within two hours. Collaborative software support is included and provides troubleshooting assistance on industry leading software running on your server. Simplify your support experience and make Hewlett Packard Enterprise your first call for hardware or software questions. <http://h20195.www2.hp.com/V2/GetDocument.aspx?docname=4AA4-8876ENW&cc=us&lc=en>

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### Related Services

#### **HPE ProLiant Server Hardware Installation**

Provides for the basic hardware installation of HPE 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>

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

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## Service and Support

### **Get connected to Hewlett Packard Enterprise to improve your support experience**

Connecting products to Hewlett Packard Enterprise will help prevent problems with 24x7 monitoring, prefailure alerts, automatic call logging, and parts dispatch. With Connected products, you can have a dashboard to manage your IT anywhere, anytime, from any device.

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### **HPE Support Center**

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

The HPE 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. HPE Insight Remote Support and HPE Support Center are available at no additional cost with a Hewlett Packard Enterprise warranty, HPE Care Pack or Hewlett Packard Enterprise contractual support agreement.

**\*HPE Support Center Mobile App is subject to local availability.**

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### **Warranty / Service Coverage**

For ProLiant servers and storage systems, the services cover HPE-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 Hewlett Packard Enterprise 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 Hewlett Packard Enterprise 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.

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### **For more information**

To learn more on HPE ProLiant servers and HPE BladeSystem servers, please contact your Hewlett Packard Enterprise sales representative or Hewlett Packard Enterprise 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:** Hewlett Packard Enterprise 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:** 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: HPE SFF Gen8 Hard Drive Blank Kit or P/N 666986-B21: HPE LFF Gen8 Hard Drive Blank Kit.

**NOTE:** Not all models are available in all regions. Check with your local country Hewlett Packard Enterprise offices for availability.

### Entry Model

<b>HP ProLiant DL160 Gen8 E5-2603 1P 4GB-R SATA 4 LFF 500W PS Entry Server</b> 662082-xx1	<b>Processor(s)</b> <b>Cache Memory</b> <b>Memory</b> <b>Network Controller</b> <b>Storage Controller</b> <b>Hard Drive</b> <b>Internal Storage</b> <b>Optical Drive</b> <b>Power Supply</b> <b>Fans</b> <b>Management</b> <b>Form Factor</b>  <b>Warranty</b>	(1) Intel® Xeon® E5-2603 (1.8GHz/4-core/10MB/6.4GT-s QPI/80W) 10MB (1 x 10MB) L3 cache 4GB (1 x 4GB DDR3-1333MHz RDIMMs) <b>NOTE: Total of 24 DIMM slots</b> HPE 361i Integrated Dual Port Gigabit Server Adapter HPE Dynamic Smart Array B120i controller <b>NOTE: Provides data transmission speeds up to 3Gb/s.</b> None ship standard; includes 3 LFF hard drive blanks Up to 4 large form factor drives (1) (Optional: DVD-ROM, DVD-RW) 500W Platinum FIO Power Supply with Backplane (ships standard) (5) Non hot plug redundant fans HPE iLO Management Engine (standard) Optional: HPE iLO Scale-Out or HPE Insight Control 1U <b>NOTE: Includes Rack Mounting Gen8 non-telescoping Friction Rail Kit which does not allow for in rack serviceability. The HPE 1U Gen8 Cable Management Arm is not available when using Friction Rails.</b> <b>CAUTION: Hewlett Packard Enterprise recommends that a minimum of two people are required for all Rack Server installations. Please refer to your installation instructions for proper tools and number of people to use for any installation</b> Server Warranty includes 3 year Next Day Parts replacement, 0-Years Labor, 0-Years Onsite support (3-1-1 warranty in APJ)
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### Base Model

<b>HP ProLiant DL160 Gen8 E5-2620 1P 8GB-R SATA 4 LFF 500W PS</b>	<b>Processor(s)</b> <b>Cache Memory</b>	(1) Intel® Xeon® E5-2620 (2.0GHz/6-core/15MB/7.2GT-s QPI/95W, DDR3-1333, HT, Turbo2- 3/3/4/4/5/5) processor 15MB (1 x 15MB) L3 cache
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## Pre-configured Models

<b>Base Server</b> 662083-xx1	<b>Memory</b>	8GB (2x4GB DDR3-1333MHz RDIMMs) <b>NOTE: Total of 24 DIMM slots</b>
	<b>Network Controller</b>	HPE 361i Integrated Dual Port Gigabit Server Adapter
	<b>Storage Controller</b>	HPE Dynamic Smart Array B120i controller <b>NOTE: Provides data transmission speeds up to 3Gb/s.</b>
	<b>Hard Drive</b>	None ship standard; includes 3 LFF hard drive blanks
	<b>Internal Storage</b>	Up to 4 large form factor drives
	<b>Optical Drive</b>	(1) (Optional: DVD-ROM, DVD-RW)
	<b>Power Supply</b>	500W Platinum FIO Power Supply with Backplane (ships standard)
	<b>Fans</b>	(5) Non hot plug redundant fans
	<b>Management</b>	HPE iLO Management Engine (standard) Optional:HPE iLO Scale-Out or HPE Insight Control
	<b>Form Factor</b>	1U <b>NOTE: Includes Rack Mounting Gen8 non-telescoping Friction Rail Kit which does not allow for in rack serviceability. The HPE 1U Gen8 Cable Management Arm is not available when using Friction Rails.</b> <b>CAUTION: Hewlett Packard Enterprise 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</b>
	<b>Warranty</b>	Server Warranty includes 3 year Next Day Parts replacement, 0-Years Labor, 0-Years Onsite support (3-1-1 warranty in APJ)

## Energy Star- Performance Model

<b>HP ProLiant DL160 Gen8 E5-2640 2P 16GB-R P420 Hot Plug 8 SFF 500W PS Perf Server</b> 662084-xx1	<b>Processor(s)</b>	(2) Intel® Xeon® E5-2640 (2.5GHz/6-core/15MB/7.2GT-s QPI/95W, DDR3-1333, HT, Turbo2- 3/3/4/4/5/5) processor
	<b>Cache Memory</b>	15MB (1 x 15MB) L3 cache
	<b>Memory</b>	16GB (4x 4GB DDR3-1333MHz RDIMMs) <b>NOTE: Total of 24 DIMM slots</b>
	<b>Network Controller</b>	HPE 361i Integrated Dual Port Gigabit Server Adapter
	<b>Storage Controller</b>	HPE Smart Array P420/ 1G FBWC controller
	<b>Hard Drive</b>	None ship standard; includes 7 SFF hard drive blanks
	<b>Internal Storage</b>	Up to 8 small form factor drives
	<b>Optical Drive</b>	(1) (Optional: DVD-ROM, DVD-RW)
	<b>Power Supply</b>	500W Platinum FIO Power Supply with Backplane (ships standard)
	<b>Fans</b>	(7) Non hot plug redundant fans
	<b>Management</b>	HPE iLO Management Engine (standard) Optional: HPE iLO Scale-Out or HPE Insight Control
	<b>Form Factor</b>	1U <b>NOTE: Includes Rack Mounting Gen8 non-telescoping Friction Rail Kit which does not allow for in rack serviceability. The HPE 1U Gen8 Cable Management Arm is not available when using Friction Rails.</b> <b>CAUTION: Hewlett Packard Enterprise recommends that a minimum of two people are required for all Rack Server installations. Please refer to</b>



## Pre-configured Models

**your installation instructions for proper tools and number of people to use for any installation**

**Warranty**

Server Warranty includes 3 year Next Day Parts replacement, 0-Years Labor, 0-Years Onsite support (3-1-1 warranty in APJ)

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**Country Code Key**

xx=00

U.S.

xx=29

Japan

xx=37

APD

xx=42

Euro

xx=AA

PRC

## Configuration Information - Factory Integrated Models

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

**NOTE:** Configure-to-order (CTO) servers must start with a CTO Chassis.

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

**NOTE:** Rail kits and cable management solutions are optional in CTO. See "Step 3: Choose Additional Factory Integratable Options" for details on ordering.

**NOTE:** The DL160 ships standard with the HPE Dynamic Smart Array B120i Controller which provides support for up to 4 SATA drives (data transmission speeds up to 3Gb/s). Customers requiring more than 4 drives or SAS support are required to choose a HPE Smart Array controller

**NOTE:** Power Supply not included - choose from Power Options section.

**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)

#### HPE Models

HP ProLiant DL160 Gen8 SFF Configure-to-order Server

666281-B21

#### Factory Integrated Model ships with:

2 x HPE Smart Socket Guides for fast processor installation

HPE 361i Integrated Dual Port Gigabit Server Adapter

Drive cage: Eight small form factor

I/O Slots- Two std

(1) FH/FL x16 PCIe 3.0 or (1) FH/HL x16 PCIe3.0 and (1)low profile x8 PCIe 3.0

(1)FlexibleLOM slot for networking upgrade

(24) DIMM slots for DIMMs installation

HPE Dynamic Smart Array B120i controller

(5) Non-hot plug redundant fans

(7) USB ports-4 rear, 2 front, 1 internal

HPE iLO Management Engine (standard)

Rack (1U), (1.75 in / 4.45 cm)

Power supply not included- Please choose from the power supply option section in Step 2 below.

HP ProLiant DL160 Gen8 LFF Configure-to-order Server

666282-B21

#### Factory Integrated Model ships with:

2 x HPE Smart Socket Guides for fast processor installation

HPE 361i Integrated Dual Port Gigabit Server Adapter

Drive cage: Four large form factor

I/O Slots- Two std

(1) FH/FL x16 PCIe 3.0 or (1) FH/HL x16 PCIe3.0 and (1)low profile x8 PCIe 3.0

(1)FlexibleLOM slot for networking upgrade

(24) DIMM slots for DIMMs installation

HPE Dynamic Smart Array B120i controller

(5) Non-hot plug redundant fans

(7) USB ports-4 rear, 2 front, 1 internal

HPE iLO Management Engine (standard)

Rack (1U), (1.75 in / 4.45 cm)

Power supply not included- Please choose from the power supply option section in Step 2 below.

## Configuration Information - Factory Integrated Models

HP ProLiant DL160 Gen8 Non-hot Plug LFF Configure-to-order Server

685622-B21

### Factory Integrated Model ships with:

2 x HPE Smart Socket Guides for fast processor installation

HPE 361i Integrated Dual Port Gigabit Server Adapter

Drive cage: Four large form factor

I/O Slots- Two std

(1) FH/FL x16 PCIe 3.0 or (1) FH/HL x16 PCIe3.0 and (1)low profile x8 PCIe 3.0

(1)FlexibleLOM slot for networking upgrade

(24) DIMM slots for DIMMs installation

HPE Dynamic Smart Array B120i controller

(5) Non-hot plug redundant fans

(7) USB ports-4 rear, 2 front, 1 internal

HPE iLO Management Engine (standard)

Rack (1U), (1.75 in / 4.45 cm)

Power supply not included- Please choose from the power supply option section in Step 2 below.

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

### HPE Memory

**NOTE:** HPE memory from previous generation servers are not qualified or warranted with this HPE ProLiant Server. HPE SmartMemory is required to realize the memory performance improvements and enhanced functionality listed in this document for Gen8. For additional information, please see the HPE SmartMemory QuickSpecs at:

[http://h18000.www1.hp.com/products/quickspecs/14225\\_div/14225\\_div.html](http://h18000.www1.hp.com/products/quickspecs/14225_div/14225_div.html)

**NOTE:** LRDIMM, RDIMM and UDIMMs are all distinct memory technologies and cannot be mixed within a server. The majority of ProLiant Gen8 servers support RDIMM, UDIMM and LRDIMM.

#### Registered DIMMs (RDIMMs)

HP 4GB (1x4GB) Single Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit 647893-B21

HP 4GB (1x4GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit 647895-B21

HP 8GB (1x8GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit 647897-B21

HP 8GB (1x8GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit 647899-B21

HP 8GB (1x8GB) Dual Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit 690802-B21

HP 16GB (1x16GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit 647901-B21

HP 16GB (1x16GB) Dual Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit 672631-B21

#### 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 647905-B21

## Configuration Information - Factory Integrated Models

Voltage Memory Kit	
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

### Load Reduction DIMMs (LRDIMMs)

HP 32GB (1x32GB) Quad Rank x4 PC3L-10600L (DDR3-1333) Load Reduced CAS-9 Low Voltage Memory Kit	647903-B21
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**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.

**NOTE:** Not all Intel E5 processor series support 1600MHz or 1333MHz speeds. Memory speed is a function of the processor QPI speed.

## HPE Power Supplies

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

**NOTE:** HPE ProLiant DL160 Gen8 has only one power supply slot, above mentioned power supplies will not be Hot Plug for DL160 Gen8.

HP 500W Platinum Factory Integrated Power Supply Kit with Backplane	656365-B21
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**NOTE:** Since this power supply is not common slot it does not allow iPDU to obtain HPE Location Discovery Services information. iLO Advanced Pack is required for Discovery Services in DL160 Gen8.

### HPE Common Slot Platinum Plus Power Supply Kits

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

**NOTE:** Common slot power supplies need an enablement kit(P/N: 662959-B21) in DL160 Gen8.

HP 460W Common Slot Platinum Plus Hot Plug Power Supply Kit	656362-B21
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**NOTE:** Requires Power Backplane kit (p/n: 662959-B21).

HP 750W Common Slot Platinum Plus Hot Plug Power Supply Kit	656363-B21
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**NOTE:** Requires Power Backplane kit (p/n: 662959-B21).

### HPE Common Slot -48VDC Power Supplies

## Configuration Information - Factory Integrated Models

HP 750W Common Slot -48VDC Hot Plug Power Supply Kit

636673-B21

**NOTE:** Requires Power Backplane kit (p/n: 662959-B21).

**NOTE:** The HPE 750W Common Slot -48VDC power supply does not ship with a power cable. It has been designed with a terminal block connection allowing for custom design of power cords by the user.

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

**NOTE:** HPE ProLiant servers ship with an IEC-IEC power cord used for rack mounting with Power Distribution Units (PDUs). For a full list of optional HPE 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](http://h18000.www1.hp.com/products/quickspecs/14209_div/14209_div.html)

### Enablement Kit

HP DL160 Gen8 FIO Power Backplane Kit

662959-B21

**NOTE:** When configuring the HPE ProLiant DL160 Gen8 with a Common Slot power supply, the HPE Power Backplane DL160 Gen8 FIO Kit (PN 662959-B21) must be used for proper installation. The Common Slot power supply and power backplane kit for the DL160 Gen8 must be factory installed and cannot be purchased as separate options.

**NOTE:** Common Slot power supply is mandatory with 10Gigabit FlexibleLOM.

**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](http://h18000.www1.hp.com/products/quickspecs/14209_div/14209_div.html)

## Step 3: Choose Additional Factory Integratable Options

<b>HPE Insight Software</b>	HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle Single Server FIO License	C6N36A
<b>Converged Infrastructure Management Software</b>	<b>HPE OneView with iLO Advanced - Server hardware required on same purchase order</b> HP OneView for ProLiant DL Server incl 3yr 24x7 Supp FIO Bundle Physical 1 Svr Lic	E5Y43A
<b>HPE Optical Drives</b>	HP 9.5mm SATA DVD-ROM JackBlack Optical Drive HP 9.5mm SATA DVD-RW JackBlack Optical Drive	652238-B21 652241-B21
<b>HPE USB and SD Options</b>	HP Gen8 FIO Internal USB Kit <b>NOTE:</b> Required to enable the internal USB port.	662961-B21
<b>HPE Rack Options</b>	HP 1U FIO Friction Rail Kit <b>NOTE:</b> Includes Rack Mounting Gen8 non-telescoping Friction Rail Kit which does not allow for in rack serviceability. The HPE 1U Gen8 Cable Management Arm is not available when using Friction Rails. <b>CAUTION:</b> Hewlett Packard Enterprise 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. <b>NOTE:</b> Additional Rack Options can be found in the "Additional Options" section	663200-B21

## Configuration Information - Factory Integrated Models

of this QuickSpecs.

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### Step 4: Choose Additional Options for Factory Integration

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

## Core Options

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

### HPE Processors

#### Eight-Core Processors

HP DL160 Gen8 Intel® Xeon® E5-2680 (2.7GHz/8-core/20MB/130W) Processor Kit	662933-B21
HP DL160 Gen8 Intel® Xeon® E5-2670 (2.6GHz/8-core/20MB/115W) Processor Kit	662932-B21
HP DL160 Gen8 Intel® Xeon® E5-2665 (2.4GHz/8-core/20MB/115W) Processor Kit	662925-B21
HP DL160 Gen8 Intel® Xeon® E5-2660 (2.2GHz/8-core/20MB/95W) Processor Kit	662924-B21
HP DL160 Gen8 Intel® Xeon® E5-2650 (2.0GHz/8-core/20MB/95W) Processor Kit	662931-B21
HP DL160 Gen8 Intel® Xeon® E5-2650L (1.8GHz/8-core/20MB/70W) Processor Kit	668863-B21

#### Six-Core Processors

HP DL160 Gen8 Intel® Xeon® E5-2667 (2.9GHz/6-core/15MB/130W) Processor Kit	662927-B21
HP DL160 Gen8 Intel® Xeon® E5-2640 (2.5GHz/6-core/15MB/95W) Processor Kit	662930-B21
HP DL160 Gen8 Intel® Xeon® E5-2630 (2.3GHz/6-core/15MB/95W) Processor Kit	662929-B21
HP DL160 Gen8 Intel® Xeon® E5-2620 (2.0GHz/6-core/15MB/95W) Processor Kit	662928-B21
HP DL160 Gen8 Intel® Xeon® E5-2630L (2.0GHz/6-core/15MB/60W) Processor Kit	662921-B21

#### Quad-Core Processors

HP DL160 Gen8 Intel® Xeon® E5-2609 (2.4GHz/4-core/10MB/80W) Processor Kit	662923-B21
HP DL160 Gen8 Intel® Xeon® E5-2603 (1.8GHz/4-core/10MB/80W) Processor Kit	662922-B21

**NOTE:** Up to 2 processors supported. Energy Star - High Performance Model and Energy Star Certified configurations include two processors with 7 non- Hot Plug Redundant fans.

**NOTE:** For the Intel® C600 Chipset E5-2600 Series, the letter preceding the model number indicates the Product Line (E3, E5, E7); 2600x v#, 2 = number of CPUs in a Node, 6 is socket/segment designation, 00 = Processor SKU, x = L for low power SKUs and v# (not yet designated) = version number.

### HPE Memory

**NOTE:** HPE memory from previous generation servers are not qualified or warranted with this HPE ProLiant Server. HPE SmartMemory is required to realize the memory performance improvements and enhanced functionality listed in this document for Gen8. For additional information, please see the HPE SmartMemory QuickSpecs at:

[http://h18000.www1.hp.com/products/quickspecs/14225\\_div/14225\\_div.html](http://h18000.www1.hp.com/products/quickspecs/14225_div/14225_div.html).

**NOTE:** LRDIMM, RDIMM and UDIMMs are all distinct memory technologies and cannot be mixed within a server. The majority of ProLiant Gen8 servers support RDIMM, UDIMM and LRDIMM.

#### Registered DIMMs (RDIMMs)

HP 4GB (1x4GB) Single Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647893-B21
HP 4GB (1x4GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	647895-B21
HP 8GB (1x8GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647897-B21

## Core Options

HP 8GB (1x8GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	647899-B21
HP 8GB (1x8GB) Dual Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	690802-B21
HP 16GB (1x16GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647901-B21
HP 16GB (1x16GB) Dual Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	672631-B21

### 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

### Load Reduction DIMMs (LRDIMMs)

HP 32GB (1x32GB) Quad Rank x4 PC3L-10600L (DDR3-1333) Load Reduced CAS-9 Low Voltage Memory Kit	647903-B21
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**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.

**NOTE:** Not all Intel E5 processor series support 1600MHz or 1333MHz speeds. Memory speed is a function of the processor QPI speed.

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<b>HPE Optical Drives</b>	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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## HPE Hard Drives

**NOTE:** HPE ProLiant Gen8 Smart Storage solutions are equipped with entirely re-designed Small Form Factor (SFF 2.5 in) and Large Form Factor (LFF 3.5 in) hot plug carriers for HPE Qualified Hard Drives and Solid State Drives. These new carriers provide status and activity indicators as well as caution indicators for "Do Not Remove".



## Core Options

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

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

### 12G SAS Hot Plug SmartDrive SFF (2.5-inch) Enterprise Drives

HP 600GB 12G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	759212-B21
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

### 12G SAS Hot Plug SFF (2.5-inch) Enterprise Drives

HP 1.2TB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	781518-B21
HP 900GB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	785069-B21
HP 600GB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	781516-B21
HP 300GB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	785067-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 6TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 512e 1yr Warranty Hard Drive	765255-B21
HP 4TB 12G SAS 7.2K rpm LFF (3.5-inch) SC Midline 512e 1yr Warranty Hard Drive	765257-B21
HP 4TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 512e 1yr Warranty Hard Drive	765253-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) 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 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

## Core Options

HP 146GB 6G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652605-B21
<b>6G SAS Hot Plug SmartDrive SFF (2.5-inch) Midline Drives</b>	
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
<b>6G SAS Hot Plug SmartDrive LFF (3.5-inch) Midline Drives</b>	
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
<b>6G SATA Hot Plug with SmartDrive SFF (2.5-inch) Midline (MDL) Drives</b>	
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
<b>6G SATA 2.5in WI-PLP SCC SSD</b>	
HP 1.2TB 6G SATA Write Intensive-2 LFF 3.5-in SCC 3yr Wty Solid State Drive	804680-B21
HP 800GB 6G SATA Write Intensive-2 LFF 3.5-in SCC 3yr Wty Solid State Drive	804674-B21
HP 400GB 6G SATA Write Intensive-2 LFF 3.5-in SCC 3yr Wty Solid State Drive	804668-B21
HP 200GB 6G SATA Write Intensive-2 LFF 3.5-in SCC 3yr Wty Solid State Drive	804642-B21
HP 800GB 6G SATA Write Intensive-2 LFF 3.5-in LPC 3yr Wty Solid State Drive	831725-B21
<b>6G SATA 2.5in MU-PLP SCC SSD</b>	
HP 1.6TB 6G SATA Mixed Use-2 LFF 3.5-in SCC 3yr Wty Solid State Drive	804634-B21
HP 800GB 6G SATA Mixed Use-2 LFF 3.5-in SCC 3yr Wty Solid State Drive	804628-B21
HP 480GB 6G SATA Mixed Use-2 LFF 3.5-in SCC 3yr Wty Solid State Drive	832417-B21
HP 200GB 6G SATA Mixed Use-2 LFF 3.5-in SCC 3yr Wty Solid State Drive	804616-B21
<b>6G SATA 2.5in RI-PLP SCC SSD</b>	
HP 1.6TB 6G SATA Read Intensive-2 LFF 3.5-in SCC 3yr Wty Solid State Drive	804608-B21
HP 800GB 6G SATA Read Intensive-2 LFF 3.5-in SCC 3yr Wty Solid State Drive	804602-B21
HP 480GB 6G SATA Read Intensive-2 LFF 3.5-in SCC 3yr Wty Solid State Drive	804596-B21
HP 240GB 6G SATA Read Intensive-2 LFF 3.5-in SCC 3yr Wty Solid State Drive	804590-B21
HP 120GB 6G SATA Read Intensive-2 LFF 3.5-in SCC 3yr Wty Solid State Drive	804584-B21
HP 80GB 6G SATA Read Intensive-2 LFF 3.5-in SCC 3yr Wty Solid State Drive	804578-B21
<b>6G SATA 2.5in WI-PLP SC SSD</b>	
HP 1.2TB 6G SATA Write Intensive-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804677-B21
HP 800GB 6G SATA Write Intensive-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804671-B21
HP 400GB 6G SATA Write Intensive-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804665-B21
HP 200GB 6G SATA Write Intensive-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804639-B21
<b>6G SATA 2.5in MU-PLP SC SSD</b>	
HP 1.6TB 6G SATA Mixed Use-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804631-B21
HP 800GB 6G SATA Mixed Use-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804625-B21
HP 480GB 6G SATA Mixed Use-2 SFF 2.5-in SC 3yr Wty Solid State Drive	832414-B21
HP 200GB 6G SATA Mixed Use-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804613-B21

## Core Options

### 6G SATA 2.5in RI-PLP SC SSD

HP 1.6TB 6G SATA Read Intensive-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804605-B21
HP 800GB 6G SATA Read Intensive-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804599-B21
HP 480GB 6G SATA Read Intensive-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804593-B21
HP 240GB 6G SATA Read Intensive-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804587-B21
HP 120GB 6G SATA Read Intensive-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804581-B21
HP 80GB 6G SATA Read Intensive-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804575-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) 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 QuickSpecs for Technical Specifications and additional information:**

[http://h18000.www1.hp.com/products/quickspecs/13021\\_div/13021\\_div.html](http://h18000.www1.hp.com/products/quickspecs/13021_div/13021_div.html)

(Worldwide)

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

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
HP 1.8TB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 512e 3yr Warranty Hard Drive	791034-B21
HP 600GB 12G SAS 15K rpm SFF (2.5-inch) SC 512e Enterprise 3yr Warranty Hard	748387-B21

## Core Options

Drive

### 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 Value Endurance LFF (3.5-inch) Enterprise Value Solid State Drives

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 SFF (2.5in) RI-3 SC Solid State Drives

HPE 3.84TB 12G SAS Read Intensive-3 SFF 2.5-in SC 3yr Wty FIO Solid State Drive 816576-B21

HPE 1.92TB 12G SAS Read Intensive-3 SFF 2.5-in SC 3yr Wty FIO Solid State Drive 816572-B21

HPE 960GB 12G SAS Read Intensive-3 SFF 2.5-in SC 3yr Wty FIO Solid State Drive 816568-B21

HPE 480GB 12G SAS Read Intensive-3 SFF 2.5-in SC 3yr Wty FIO Solid State Drive 816562-B21

### 12G SAS SFF (2.5in) MU-3 SC Solid State Drives

HPE 3.2TB 12G SAS Mixed Use-3 SFF 2.5-in SC 3yr Wty FIO Solid State Drive 822567-B21

HPE 1.6TB 12G SAS Mixed Use-3 SFF 2.5-in SC 3yr Wty FIO Solid State Drive 822563-B21

HPE 800GB 12G SAS Mixed Use-3 SFF 2.5-in SC 3yr Wty FIO Solid State Drive 822559-B21

HPE 400GB 12G SAS Mixed Use-3 SFF 2.5-in SC 3yr Wty FIO Solid State Drive 822555-B21

### 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 Hot Plug LFF (3.5-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 Value Endurance SFF (2.5-inch) Enterprise Boot Solid State Drives

**NOTE:** These drives support Gen8 servers only.

HP 120GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Boot 3yr Wty Solid State Drive 717965-B21

## Core Options

HP 80GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Boot 3yr Wty Solid State Drive 734360-B21

### **6G SATA Hot Plug MU-3 SFF (2.5-inch) SC Solid State Drives**

HP 1.92TB 6G SATA Mixed Use-3 SFF 2.5-in SC 3yr Wty Solid State Drive 817011-B21

HP 960GB 6G SATA Mixed Use-3 SFF 2.5-in SC 3yr Wty Solid State Drive 816995-B21

HP 480GB 6G SATA Mixed Use-3 SFF 2.5-in SC 3yr Wty Solid State Drive 816985-B21

HP 240GB 6G SATA Mixed Use-3 SFF 2.5-in SC 3yr Wty Solid State Drive 816975-B21

HP 120GB 6G SATA Mixed Use-3 SFF 2.5-in SC 3yr Wty Solid State Drive 816965-B21

### **6G SATA Hot Plug RI-3 SFF (2.5-inch) SC Solid State Drives**

HP 3.84TB 6G SATA Read Intensive-3 SFF 2.5-in SC 3yr Wty Solid State Drive 816929-B21

HP 1.92TB 6G SATA Read Intensive-3 SFF 2.5-in SC 3yr Wty Solid State Drive 816919-B21

HP 960GB 6G SATA Read Intensive-3 SFF 2.5-in SC 3yr Wty Solid State Drive 816909-B21

HP 480GB 6G SATA Read Intensive-3 SFF 2.5-in SC 3yr Wty Solid State Drive 816899-B21

HP 240GB 6G SATA Read Intensive-3 SFF 2.5-in SC 3yr Wty Solid State Drive 816889-B21

HP 120GB 6G SATA Read Intensive-3 SFF 2.5-in SC 3yr Wty Solid State Drive 816879-B21

### **6G SATA Hot Plug LFF (3.5-inch) RI-3 SCC SSD**

HP 3.84TB 6G SATA Read Intensive-3 LFF 3.5-in SC Converter 3yr Wty Solid State Drive 816933-B21

HP 1.92TB 6G SATA Read Intensive-3 LFF 3.5-in SC Converter 3yr Wty Solid State Drive 816923-B21

HP 960GB 6G SATA Read Intensive-3 LFF 3.5-in SC Converter 3yr Wty Solid State Drive 816913-B21

HP 480GB 6G SATA Read Intensive-3 LFF 3.5-in SC Converter 3yr Wty Solid State Drive 816903-B21

HP 240GB 6G SATA Read Intensive-3 LFF 3.5-in SC Converter 3yr Wty Solid State Drive 816893-B21

HP 120GB 6G SATA Read Intensive-3 LFF 3.5-in SC Converter 3yr Wty Solid State Drive 816883-B21

### **6G SATA Hot Plug LFF (3.5-inch) MU-3 SCC SSD**

HP 1.92TB 6G SATA Mixed Use-3 LFF 3.5-in SC Converter 3yr Wty Solid State Drive 817015-B21

HP 960GB 6G SATA Mixed Use-3 LFF 3.5-in SC Converter 3yr Wty Solid State Drive 816999-B21

HP 480GB 6G SATA Mixed Use-3 LFF 3.5-in SC Converter 3yr Wty Solid State Drive 816989-B21

HP 240GB 6G SATA Mixed Use-3 LFF 3.5-in SC Converter 3yr Wty Solid State Drive 816979-B21

HP 120GB 6G SATA Mixed Use-3 LFF 3.5-in SC Converter 3yr Wty Solid State Drive 816969-B21

### **6G SATA Value Endurance Hot Plug LFF (3.5-inch) Enterprise Boot Solid State Drives**

**NOTE:** These drives support Gen8 servers only.

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 764945-B21

## Core Options

M1 Solid State Drive	
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
<b>6G SATA Hot Plug Value Endurance LFF (3.5-inch) Converter Enterprise Value G1 Solid State Drives</b>	
HP 480GB 6G SATA Value Endurance LFF 3.5-in SC Converter ENT Value 3yr Wty G1 Solid State Drive	756660-B21
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
<b>6G SATA Hot Plug Value Endurance SFF (2.5-inch) Enterprise Value G1 Solid State Drives</b>	
HP 120GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty G1 Solid State Drive	756621-B21
<b>6G SATA Hot Plug Value Endurance SFF (2.5-inch) Enterprise Value Solid State Drives</b>	
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 600GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive	739898-B21
HP 480GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive	717971-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
<b>6G SATA Value Endurance Hot Plug LFF (3.5-inch) Enterprise Value Solid State Drives</b>	
<b>NOTE: These drives support Gen8 servers only.</b>	
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

## Core Options

HP 240GB 6G SATA Value Endurance LFF 3.5-in SC Enterprise Value 3yr Wty Solid State Drive	718177-B21
<b>6G SATA Hot Plug Light Endurance SFF (2.5-inch) Enterprise Light G1 Solid State Drives</b>	
HP 960GB 6G SATA Light Endurance SFF 2.5-in SC Enterprise Light 3yr Wty G1 Solid State Drive	756601-B21
<b>6G SATA Value Endurance Hot Plug SFF (2.5-inch) Enterprise Value M1 Solid State Drive</b>	
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
<b>6G SATA Mainstream Endurance Hot Plug SFF (2.5-inch) Enterprise Mainstream Solid State Drives</b>	
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
<b>6G SATA Mainstream Endurance Hot Plug LFF (3.5-inch) Enterprise Mainstream Solid State Drives</b>	
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
<b>6G SATA Non Hot-plug (2.5-inch) Value Enterprise Solid State Drives</b>	
HP 120GB 6G SATA 2.5in VE Non Hot-plug Solid State Drive	745794-B21
<b>6G SATA Hot Plug SFF (2.5-inch) SC Read Intensive Solid State Drives</b>	
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
<b>6G SATA Hot Plug LFF (3.5-inch) SC Read Intensive Solid State Drives</b>	
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	789137-B21

## Core Options

Drive

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

[http://h18000.www1.hp.com/products/quickspecs/14038\\_div/14038\\_div.html](http://h18000.www1.hp.com/products/quickspecs/14038_div/14038_div.html)

(Worldwide)

### Hard Drive Kits

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

## HPE Networking

### Gigabit Ethernet Adapters

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

### 10 Gigabit Ethernet Adapters

**NOTE: No more than two 10GbE I/O devices are supported in a single ProLiant server.**

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

**NOTE: Direct Attach Cable (DAC) for copper environments or fiber transceivers and cables for fiber-optic environments must be purchased separately.**

HP NC523SFP 10Gb 2-port Server Adapter	593717-B21
HP NC552SFP 10Gb 2-port Ethernet Server Adapter	614203-B21
HP Ethernet 10Gb 2-port 530SFP Adapter	652503-B21
HP Ethernet 10Gb 2-port 530T Adapter	656596-B21
HP Ethernet 10Gb 2-port 560SFP+ Adapter	665249-B21
HP Ethernet 10Gb 2-port 561T Adapter	716591-B21

### FlexibleLOM Adapters

HP Ethernet 1Gb 4-port 331FLR Adapter	629135-B21
HP FlexFabric 10Gb 2-port 526FLR-SFP+ Adapter	629138-B21
HP FlexFabric 10Gb 2-port 554FLR-SFP+ Adapter	629142-B21
HP Ethernet 10Gb 2-port 530FLR-SFP+ Adapter	647581-B21
HP Ethernet 1Gb 4-port 366FLR Adapter	665240-B21
HP Ethernet 10Gb 2-port 560FLR-SFP+ Adapter	665243-B21
HP Ethernet 1Gb 4-port 331FLR FIO Adapter	684208-B21
HP Ethernet 10Gb 2-port 530FLR-SFP+ FIO Adapter	684210-B21
HP Ethernet 10Gb 2-port 561FLR-T Adapter	700699-B21
HP FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter	700751-B21
HP FlexFabric 10Gb 2-port 533FLR-T Adapter	700759-B21

**NOTE: HPE ProLiant DL160 Gen8 has a dedicated slot for FlexibleLOM. PCIe slots need not be consumed for installing FlexibleLOM.**

**NOTE: Please note that common slot power supply is mandatorily required with 10Gb FlexibleLOM and 10Gb Ethernet adapters. Common slot power supplies are factory installable only and cannot be bought as standalone option kit in HPE**



## Core Options

ProLiant DL160 Gen8.

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

### HPE InfiniBand

HP InfiniBand 4X QDR ConnectX-2 PCIe G2 Dual Port HCA	592520-B21
HP InfiniBand FDR 2-port 545QSFP Adapter	702211-B21
HP Infiniband FDR/Ethernet 10Gb/40Gb 2-port 544QSFP Adapter	649281-B21
HP Infiniband FDR/Ethernet 10Gb/40Gb 2-port 544FLR-QSFP Adapter	649282-B21
HP Infiniband QDR/Ethernet 10Gb 2-port 544FLR-QSFP Adapter	649283-B21
QLogic InfiniBand 4X QDR PCI-E G2 Dual Port HCA	583211-B21

**NOTE:** Please see the QuickSpecs for additional information:

[http://h18000.www1.hp.com/products/quickspecs/13078\\_div/13078\\_div.html](http://h18000.www1.hp.com/products/quickspecs/13078_div/13078_div.html)

### HPE Power Supplies

**NOTE:** Prior to making a power supply selection it is highly recommended that the HPE Power Advisor is run to determine the right size power supply for your server configuration. The HPE Power Advisor is located at:

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

**NOTE:** Field upgrade is possible only from 460W Common Slot Power Supply to either of the below mentioned Common Slot Power Supplies. The 500W multi output power supplies are not field upgradable.

#### HPE Common Slot Platinum Plus Power Supply Kits

**NOTE:** The following AC Power Supplies offer 94% Efficiency with support for Intelligent Power Discovery.

HP 750W Common Slot Platinum Plus Hot Plug Power Supply Kit	656363-B21
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#### HPE Common Slot -48VDC Power Supplies

**NOTE:** The following Power Supplies offer 92% Efficiency

HP 750W Common Slot -48VDC Hot Plug Power Supply Kit	636673-B21
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**NOTE:** The HPE 750W Common Slot -48VDC power supply does not ship with a power cable. It has been designed with a terminal block connection allowing for custom design of power cords by the user.

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

**NOTE:** HPE ProLiant servers ship with an IEC-IEC power cord used for rack mounting with Power Distribution Units (PDUs). For a full list of optional HPE 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](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, Hewlett Packard Enterprise recommends the use of a Hewlett Packard Enterprise approved configurator. Contact your local sales representative for additional information.

<b>HPE Insight software</b>	<b>HPE Insight Control</b>	
	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
	HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle FIO Electronic License	C6N36ABE
	HP Insight Control Server Provisioning Media Kit	BD883A
	HP Insight Management Media Kit	C6N31A
	<b>NOTE: HPE Insight Management Media Kit contains DVDs without licenses. Contains HPE Systems Insight Manager, HPE Insight Control, HPE Matrix Operating Environment, and Virtual Connect Enterprise Manager software. Uses an integrated installer to perform quick and accurate software installation and updates.</b>	
	<b>NOTE: HPE Insight Control 7.2 introduces Insight Control server provisioning, a new capability ideal for multi-server OS and firmware provisioning to ProLiant and BladeSystem servers. Insight Control server provisioning is included and licensed as part of HPE Insight Control. A media kit, "HPE Insight Control server provisioning USB media kit" (# BD883A), including a USB, is available for customers who require a physical copy of the media loaded with Insight Control server provisioning software. Please note that this media kit is separate and in addition to the "HPE Insight Management DVD media kit" (#C6N31A).</b>	
	<b>HPE Integrated Lights-Out (iLO)</b>	
	<b>HPE Integrated Lights-Out (iLO) Advanced for ProLiant</b>	
	HP iLO Advanced including 1yr 24x7 Technical Support and Updates E-LTU	E6U59ABE
	<b>NOTE: The Electronic software license is available in EMEA only.</b>	
<hr/>		
<b>HPE iLO Advanced License</b>	HP iLO Advanced including 3yr 24x7 Technical Support and Updates E-LTU	E6U64ABE
	<b>NOTE: The Electronic software license is available in EMEA only.</b>	
	HP iLO Advanced 1 Server License with 3yr 24x7 Tech Support and Updates	BD505A
	HP iLO Advanced including 1yr 24x7 Technical Support and Updates Single Server License	512485-B21
	<b>HPE Integrated Lights-Out (iLO)</b>	
	<b>HPE iLO Scale Out</b>	
	HP Integrated Lights-Out Scale-Out 3yr 24x7 Tech Support and Updates Flex Quantity License	BD776A
	HP Integrated Lights-Out Scale-Out 1yr 24x7 Tech Support and Updates Flex Quantity License	BD778A
	HP Integrated Lights-Out Scale-Out including 3yr 24x7 Tech Support and Updates Flex Qty E-LTU	BD776AAE
	HP Integrated Lights-Out Scale-Out including 1yr 24x7 Tech Support and Updates	BD778AAE

## Additional Options

Flex Qty E-LTU

HP Integrated Lights-Out Scale-Out including 3yr 24x7 Tech Support and Updates Tracking License BD777A

HP Integrated Lights-Out Scale-Out including 1yr 24x7 Tech Support and Updates Tracking License BD779A

**NOTE: Customer will receive a license entitlement certificate, which must be redeemed online or via fax in order to obtain the license activation key(s).**

**Includes one year of 24 x 7 HPE Software Technical Support Service.**

**NOTE: For additional license kits, including electronic delivery options, please see the iLO QuickSpecs at <http://www.hp.com/go/iLO>**

### Converged Infrastructure Management Software

#### HPE OneView

##### HPE OneView with iLO Advanced

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

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

HP OneView Media Kit Phys No Lic E5Y37A

##### HPE OneView without iLO Advanced

HP OneView w/o iLO including 3yr 24x7 Support 1 Server LTU P8B24A

HP OneView w/o iLO including 3yr 24x7 Support Flex Quantity E-LTU P8B26AAE

HP OneView w/o iLO including 3yr 24x7 Support FIO 1 Server LTU P8B31A

**NOTE: For additional license kits please see the QuickSpecs at:**

[http://h18004.www1.hp.com/products/quickspecs/14621\\_div/14621\\_div.html](http://h18004.www1.hp.com/products/quickspecs/14621_div/14621_div.html)

### HPE High Performance Clusters

#### HPE 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: Order a minimum of one license per cluster to purchase media including software and documentation, which will be delivered to the customer, and also licenses CMU management. No license key is delivered or required**

**NOTE: For additional license kits please see the QuickSpecs at:**

[http://h18004.www1.hp.com/products/quickspecs/12612\\_div/12612\\_div.html](http://h18004.www1.hp.com/products/quickspecs/12612_div/12612_div.html)

### HPE I/O Accelerator Options

#### Second Generation Accelerators

HP 1205GB Multi Level Cell G2 PCIe ioDrive2 for ProLiant Servers 673646-B21

**NOTE: When the Full length Graphic card is installed in the system, no additional PCIe slots is available and only embedded storage controller B120i is available for up to 4 SATA HDDs configuration**

## Additional Options

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

[http://h18004.www1.hp.com/products/quickspecs/13587\\_div/13587\\_div.html](http://h18004.www1.hp.com/products/quickspecs/13587_div/13587_div.html)  
(Worldwide)

### HPE PCIe Workload Accelerator Options

#### Value Endurance (VE) PCIe Workload Accelerators

HP 6.4TB FH/HL Value Endurance (VE) PCIe Workload Accelerator	763840-B21
HP 3.2TB HH/HL Value Endurance (VE) PCIe Workload Accelerator	763838-B21
HP 1.6TB HH/HL Value Endurance (VE) PCIe Workload Accelerator	763836-B21
HP 1.3TB HH/HL Value Endurance (VE) PCIe Workload Accelerator	763834-B21

#### Light Endurance (LE) PCIe Workload Accelerators

HP 5.2TB FH/HL Light Endurance (LE) PCIe Workload Accelerator	775672-B21
HP 2.6TB HH/HL Light Endurance (LE) PCIe Workload Accelerator	775670-B21
HP 1.3TB HH/HL Light Endurance (LE) PCIe Workload Accelerator	775668-B21
HP 1.0TB HH/HL Light Endurance (LE) PCIe Workload Accelerator	775666-B21

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

[http://h18004.www1.hp.com/products/quickspecs/14528\\_div/14528\\_div.html](http://h18004.www1.hp.com/products/quickspecs/14528_div/14528_div.html)  
(Worldwide)

### HPE Security

HP Trusted Platform Module Option	488069-B21
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**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
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**HPE Storage Controllers** **NOTE:** Embedded HPE B120i Dynamic Smart Array controller supports only up to 4 SATA drives. For SAS support and more than 4 drives support (in 8SFF models), a HPE Smart Array controller is required.

#### SAS Controllers

##### Smart Array P222 Controller

HP Smart Array P222/512 FBWC 6Gb 1-port Int/1-port Ext SAS Controller	631667-B21
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**NOTE:** Mini SAS 700mm cable (PN 662963-B21) required with this controller.

**NOTE:** HPE Smart Array P222 controller can only be installed in the external PCI-e slot.

## Additional Options

**NOTE:** HPE Smart Array P222 controller is supported on LFF models only.

### HPE Smart Array P420 Controller

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

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

**NOTE:** HPE Smart Array P420 controller can only be installed in the internal PCI-e slot. It is not supported on external PCI-e slot.

### HPE Smart Array P421 Controller

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

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

### HPE Smart Array P822 Controller

HP Smart Array P822/2GB FBWC 6Gb 2-ports-Int/4-ports Ext SAS Controller 615418-B21

**NOTE:** Requires two cable kits (P/N: 676895-B21 and P/N: 662963-B21) with 8SFF models.

### Optional upgrades

HP 1GB P-series Smart Array Flash Backed Write Cache 631679-B21

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

HP Mini SAS 800mm Gen8 Cable Kit 676895-B21

**NOTE:** This cable option kit is required with HPE Smart Array P822/ 2GB FBWC controller.

HP Mini SAS 700mm Gen8 Cable Kit 662963-B21

**NOTE:** This cable option kit is required with HPE Smart Array P822/ 2GB FBWC controller, HPE Smart Array P222/512 FBWC controller and H222 Host bus adapter.

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

[http://h18000.www1.hp.com/products/quickspecs/14227\\_div/14227\\_div.html](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](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](http://h18000.www1.hp.com/products/quickspecs/14229_div/14229_div.html)

(Smart Array P421 Controller)

[http://h18000.www1.hp.com/products/quickspecs/14337\\_div/14337\\_div.html](http://h18000.www1.hp.com/products/quickspecs/14337_div/14337_div.html)

(Smart Array P822 Controller)

### HPE Smart Array Advanced Pack

[http://h18000.www1.hp.com/products/quickspecs/13200\\_div/13200\\_div.html](http://h18000.www1.hp.com/products/quickspecs/13200_div/13200_div.html)  
(SAAP)

### Host Bus Adapter

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

**NOTE:** Supports SCSI Tapes only, no RAID support.

**NOTE:** HBA is recommended for SCSI tape drive support.

HP H220 Host Bus Adapter 650933-B21

## Additional Options

HP H221 PCIe 3.0 SAS Host Bus Adapter 729552-B21

HP H222 Host Bus Adapter 650926-B21

**NOTE: Mini SAS 700mm cable (PN 662963-B21) required with this controller**

**NOTE: HPE H222 Host Bus Adapter is supported on LFF models only.**

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

[http://h18004.www1.hp.com/products/quickspecs/12566\\_div/12566\\_div.html](http://h18004.www1.hp.com/products/quickspecs/12566_div/12566_div.html)

**(SC11Xe HBA)**

[http://h18004.www1.hp.com/products/quickspecs/14336\\_div/14336\\_div.html](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](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](http://h18004.www1.hp.com/products/quickspecs/14337_div/14337_div.html)

**(HBA 222)**

### HPE 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 HPE 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.**

**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

### HPE Tape Storage Systems

#### HPE StoreEver MSL6480

HP StoreEver MSL6480 Scalable Base Module QU625A

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

[http://h18000.www1.hp.com/products/quickspecs/14604\\_div/14604\\_div.html](http://h18000.www1.hp.com/products/quickspecs/14604_div/14604_div.html)

**(Worldwide)**

### HPE Disk Backup

**NOTE: For the complete range of RDX drives and media see:**

<http://www.hp.com/go/rdx>. For hardware and software compatibility of HPE disk backup products see: <http://www.hp.com/storage/SPOCK>.

#### HPE RDX Removable Disk Backup System

HP RDX500 USB3.0 Internal Disk Backup System B7B64A

HP RDX1000 USB3.0 Internal Disk Backup System B7B67A

HP RDX 2TB USB3.0 Internal Disk Backup System E7X52A

**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](http://h18000.www1.hp.com/products/quickspecs/13036_div/13036_div.html)

**(Worldwide)**

## Additional Options

### HPE Disk Storage Systems

#### Disk Enclosures

HP D2600 w/12 4TB 6G SAS 7.2K LFF Dual Port MDL HDD 48TB Bundle E7W32A

**NOTE: Please see the QuickSpecs for additional part numbers, Technical Specifications, and additional information:**

[http://h18000.www1.hp.com/products/quickspecs/13404\\_div/13404\\_div.html](http://h18000.www1.hp.com/products/quickspecs/13404_div/13404_div.html)  
(Worldwide)

HP D6000 w/70 4TB 6G SAS 7.2K LFF Dual Port MDL HDD 280TB Bundle E7W31A

HP D6000 w/35 4TB 6G SAS 7.2K LFF Dual Port MDL HDD 140TB Bundle E7W30A

HP D6000 w/70 3TB 6G SAS 7.2K LFF Dual port MDL HDD 210TB Bundle QQ700A

HP D6000 w/35 3TB 6G SAS 7.2K LFF Dual port MDL HDD 105TB Bundle QQ699A

HP D6000 w/70 2TB 6G SAS 7.2K LFF Dual port MDL HDD 140TB Bundle QQ698A

HP D6000 w/35 2TB 6G SAS 7.2K LFF Dual port MDL HDD 70TB Bundle QQ697A

HP D6000 Dual I/O Module Disk Enclosure QQ695A

**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](http://h18000.www1.hp.com/products/quickspecs/14419_div/14419_div.html)  
(Worldwide)

### HPE Storage Options

#### Fibre Channel HBA

**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>

#### Brocade Fibre Channel HBAs

HP 81B 8Gb 1-port PCIe Fibre Channel Host Bus Adapter AP769B

HP 82B 8Gb 2-port PCIe Fibre Channel Host Bus Adapter AP770B

#### Emulex Fibre Channel HBAs

HP 81E 8Gb 1-port PCIe Fibre Channel Host Bus Adapter AJ762B

HP 82E 8Gb 2-port PCIe Fibre Channel Host Bus Adapter AJ763B

HP StoreFabric SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter C8R38A

HP StoreFabric SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter C8R39A

#### QLogic Fibre Channel HBAs

HP 81Q 8Gb 1-port PCIe Fibre Channel Host Bus Adapter AK344A

HP 82Q 8Gb 2-port PCIe Fibre Channel Host Bus Adapter AJ764A

HP StoreFabric SN1000Q 16GB 1-port PCIe Fibre Channel Host Bus Adapter QW971A

HP StoreFabric SN1000Q 16GB 2-port PCIe Fibre Channel Host Bus Adapter QW972A

#### Converged Network Adapter

HP CN1100E Dual Port Converged Network Adapter BK835A

HP StoreFabric CN1100R Dual Port Converged Network Adapter QW990A

### HPE Uninterruptible Power Systems

#### HPE DirectFlow Three Phase UPS

##### Power Unit (1U UPS)

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

HP R12000 DirectFlow - 1U Rackmount Uninterruptible Power System

G9Y75A

## Additional Options

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 HPE 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

**NOTE: All Input/Output Modules support dual output outlets except the AF484A.**

### HPE Tower UPS

#### HPE T750 G4 UPS Models

HP T750 G4 NA/JP Uninterruptible Power System J2P85A

HP T750 G4 INTL Uninterruptible Power System J2P88A

#### HPE T1000 G4 UPS Models

HP T1000 G4 NA/JP Uninterruptible Power System J2P86A

HP T1000 G4 INTL Uninterruptible Power System J2P89A

#### HPE T1500 G4 UPS Models

HP T1500 G4 NA/JP Uninterruptible Power System J2P87A

HP T1500 G4 INTL Uninterruptible Power System J2P90A

### HPE Rack/Tower UPS

#### HPE R/T2200 G4 UPS Models

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

#### HPE 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

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

[http://h18000.www1.hp.com/products/quickspecs/14-059\\_div/14-059\\_div.html](http://h18000.www1.hp.com/products/quickspecs/14-059_div/14-059_div.html)

(Worldwide)

#### HPE R1500 G4 Uninterruptible Power Supply (UPS)

HP R1500 G4 NA Uninterruptible Power System J2Q99A

HP R1500 G4 INTL Uninterruptible Power System J2R03A



## Additional Options

HP R1500 G4 JP/TWN Uninterruptible Power System J2R05A

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

[http://h18000.www1.hp.com/products/quickspecs/14058\\_div/14058\\_div.html](http://h18000.www1.hp.com/products/quickspecs/14058_div/14058_div.html)  
(Worldwide)

### 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 Technical Specifications and additional information:**

[http://h18000.www1.hp.com/products/quickspecs/14109\\_div/14109\\_div.html](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 Technical Specifications and additional information:**

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

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

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

**NOTE: Please see the UPS and PDU cable matrix's on the HPE Power Protection and Management page. Under Power Cords, click on the "HPE 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>.

## HPE Basic Power Distribution Units (bPDU)

HP 1.9kVA 120 Volt L5-20 Input (12xNEMA 5-20R) NA/JP Basic PDU H5M54A

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 ( 12xC13) WW Basic PDU H5M56A

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 4.9kVA 208 Volt L6-30 Input (24xC13/6xC19) NA/JP Basic PDU H5M59A

HP 8.3kVA 208 Volt CS8265C Input (30xC13/6xC19) NA/JP Basic PDU H5M60A

HP 8.6kVA 208 Volt L15-30 3-Phase Input (18xC13) NA/JP Basic PDU H5M61A

HP 8.6kVA 208 Volt L15-30 3-Phase Input (24xC13/6xC19) NA/JP Basic PDU H5M62A

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

HP 7.3kVA 230 Volt IEC309 32A Input (20xC13) INTL Basic PDU H5M68A

HP 7.3kVA 230 Volt IEC309 32A Input (24xC13/6xC19) INTL Basic PDU H5M70A

## Additional Options

HP 11kVA 230 Volt IEC309 63A Input (30xC13/6xC19) INTL Basic PDU	H5M71A
HP 11kVA 400 Volt IEC309 16A 3-Phase Input (30xC13/6xC19) INTL Basic PDU	H5M72A
HP 11kVA 400 Volt IEC309 16A 3-Phase Input (36xC13/6xC19) INTL Basic PDU	H5M73A
HP Hardwired 200-240 Volt Input (30xC13/6xC19) WW Basic PDU	H5M75A

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

[http://h18000.www1.hp.com/products/quickspecs/14557\\_div/14557\\_div.html](http://h18000.www1.hp.com/products/quickspecs/14557_div/14557_div.html)

**(Worldwide)**

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

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

### HPE Remote Monitored Power Distribution Units (mPDU)

#### HPE 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

#### HPE Remote Monitored Power Distribution Unit: Half Height Version

HP 3.6kVA 200-240 Volt Detachable C20 Input (16xC13) WW Monitored PDU	D9N45A
HP 4.9kVA 208 Volt L6-30 Input (12xC13) NA/JP Monitored PDU	G9Z05A
HP 7.3kVA 230 Volt IEC309 32A Input (12xC13) INTL Monitored PDU	G9Z06A

#### HPE 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

#### HPE 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 (30xC13/3xC19) INTL Monitored PDU	D9N56A

## Additional Options

HP 22kVA 400 Volt IEC309 32A 3-Phase Input (12xC13/12xC19) INTL Monitored PDU	D9N60A
HP 22kVA 400 Volt IEC309 32A 3-Phase Watertight Input (12xC13/12xC19) INTL Monitored PDU	G9Z08A

### HPE Environmental Sensor for Remote Monitored PDUs

HP Environmental Sensor for Remote Monitored and Managed PDUs	E2D53A
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**NOTE: Please see the QuickSpecs for additional information:**

[http://h18000.www1.hp.com/products/quickspecs/14669\\_div/14669\\_div.html](http://h18000.www1.hp.com/products/quickspecs/14669_div/14669_div.html)

(Worldwide)

### HPE Intelligent Power Distribution Units (iPDU)

#### iPDU Core Units

HP 4.9kVA 24A Single Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF520A
HP 8.3kVA 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 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 14.4kVA 40A Three Phase NA/JP Intelligent Modular Power Distribution Unit	AF533A

#### PDU 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
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 Extension Bars

HP 5xC13 Intelligent PDU Extension Bar G2 Kit	AF547A
HP 5xC13 Outlets Power and UID LEDs Pair Standard Extension Bar	AF528A

### HPE 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	H8B53A

## Additional Options

### Managed PDU

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)

## HPE Rack Series

### Rack Intelligent Series rack

HP 36U 600mm x 1075mm Enterprise Pallet Rack	BW895A
HP 36U 600mm x 1075mm Enterprise Shock Rack	BW896A
HP 42U 600mm x 1075mm Enterprise Pallet Rack	BW903A
HP 42U 600mm x 1075mm Enterprise Shock Rack	BW904A
HP 47U 600mm x 1075mm Enterprise Pallet Rack	BW911A
HP 47U 600mm x 1075mm Enterprise Shock Rack	BW912A

**NOTE:** Please see the QuickSpecs for additional information:

[http://h18000.www1.hp.com/products/quickspecs/14-223\\_div/14-223\\_div.html](http://h18000.www1.hp.com/products/quickspecs/14-223_div/14-223_div.html)  
(Worldwide)

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

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

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

**NOTE:** Quick deploy rail system provides tool-free support for racks with square or round mounting holes (including Compaq/HPE 7000, 9000, 10000 G2 and HPE series), with an adjustment range of 24" - 36". The ambidextrous cable management arm can be mounted on either the left or right side for improved cable management.

**NOTE:** High Airflow Inserts (High Air Flow Rack Door Insert for the 7142 Rack (single) - PN: 327281-B21; or High Air Flow Rack Door Insert for the 7142 Rack (6-pack) - PN: 327281-B22) are required to support the HPE ProLiant DL160 in 7000 series racks. Cable Management Arm is not supported on 7000 series racks.

**NOTE:** Cable management arm must be removed to access power supplies when the cable management arm is mounted on the right.

## Additional Options

HP LCD8500 1U US Rackmount Console Kit	AF630A
HP LCD8500 1U UK Rackmount Console Kit	AF631A
HP LCD8500 1U DE Rackmount Console Kit	AF632A
HP LCD8500 1U FR Rackmount Console Kit	AF633A
HP LCD8500 1U JP Rackmount Console Kit	AF642A
HP LCD8500 1U RU Rackmount Console Kit	AF643A
HP LCD8500 1U INTL Rackmount Console Kit	AF644A
HP LCD8500 1U US TAA Rackmount Console Kit	AF645A

### **HPE LCD8500 1U Rackmount Console Kit Options**

HP Kit LCD 1.83m Latch Display Port Cable	G7T29A
HP Location Discovery Services LCD8500 Kit	TL052A
HP Rack LED Light Kit	BW939A

### **HPE 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](http://h18000.www1.hp.com/products/quickspecs/14429_div/14429_div.html)

**(Worldwide)**

### **HPE 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**

## Additional Options

### information:

[http://h18000.www1.hp.com/products/quickspecs/13972\\_div/13972\\_div.html](http://h18000.www1.hp.com/products/quickspecs/13972_div/13972_div.html)

(Worldwide)

### HPE Server Console Switches

HP KVM Console USB Interface Adapter	AF628A
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

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

[http://h18000.www1.hp.com/products/quickspecs/11834\\_div/11834\\_div.html](http://h18000.www1.hp.com/products/quickspecs/11834_div/11834_div.html)

(Worldwide)

### HPE 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 Ifc 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](http://h18000.www1.hp.com/products/quickspecs/13475_div/13475_div.html)

(Worldwide)

### HPE 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](http://h18000.www1.hp.com/products/quickspecs/13474_div/13474_div.html)

(Worldwide)

### Rack Kits

HP Rack Cable Management Velcro Clips	379820-B21
HP 1U Small Form Factor Ball Bearing Rail Kit	663201-B21

**NOTE:** For SFF models.

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

**NOTE:** For LFF models.

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

## HPE Flash Media Kits for HPE Enterprise Mainstream Flash Media Kits for Memory Cards

### USB Drives

HP 8GB SD Enterprise Mainstream Flash Media Kit	726113-B21
HP 8GB USB Enterprise Mainstream Flash Media Drive Key Kit	737953-B21

## Additional Options

HP 32GB SD Enterprise Mainstream Flash Media Kit

700136-B21

**HPE Care Pack Services** **Proactive Care** - Collaborative Support plus Proactive services delivered by the on shore/near shore Advanced Solution Center (ASC) and backed by the global delivery organization, 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.

**Proactive Care Personalized Support Environmental Option** - to add an onsite Account Support Manager (ASM) to Proactive Care. ASM is an assigned resource who delivers support planning and brings technical expertise and best practices advice for the customer's environment.

HP 3 year 4 hour 24x7 ProLiant DL16x Proactive Care Service U3A18E

HP 3 year 4-Hour 24x7 with Comprehensive Defective Material Retention DL16x ProactiveCare Service U8Z30E

HP 3 year 4 hour 24x7 with Defective Media Retention ProLiant DL16x Proactive Care Service U3A21E

### Foundation Care

HPE 3 year Foundation Care Next business day DL16x Service U2GW1E

HPE 3 year Foundation Care Next business day with DMR DL16x Service U2GW2E

HPE 3 year Foundation Care Next business day with CDMR DL16x Service U2GW3E

HPE 3 year Foundation Care 24x7 DL16x Service U2GW4E

HPE 3 year Foundation Care 24x7 wDMR DL16x Service U2GW5E

HPE 3 year Foundation Care 24x7 wCDMR DL16x Service U2GW6E

### Installation Services

**NOTE: Reduce the time required to get your system up and running and help minimize disruptions to your business.**

HP Startup ProLiant DL16x Service U8K79E

HP Installation ProLiant DL16X Gen8 Service U9520E

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

## Memory

### HPE SmartMemory

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

### HPE ProLiant DL160 Gen8

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

### Standard Memory

4GB (1x4GB) , 8GB (2 x 4GB) or 16GB(4 x 4GB) depending on model, DDR3-1333MHz Registered RDIMM memory

### Maximum Memory

Up to 768GB

**NOTE:** Charts do not represent all possible memory configurations.

### DDR3 memory population guidelines

**NOTE:** For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool:

<http://www.hp.com/go/ddr3memory-configurator>

Some DIMM installation guidelines are summarized below:

- For servers with twenty-four (24) memory slots:
  - There are four (4) channels per processor; eight (8) channels per server
  - There are three (3) DIMM slots for each memory channel; twenty-four (24) total slots
- White DIMM slots denote the first slot of a channel. For 1 DPC (DIMM per channel) populate white slots only.
- Install DIMMs only if the corresponding processor is installed.
- If only one processor is installed in a two processor system, only half of the DIMM slots are available.
- When two processors are installed, balance the DIMMs across the two processors.
- To maximize performance, balance the total memory capacity between all installed processors
  - Populate DIMMs from heaviest load (quad-rank) to lightest load (single-rank) within a channel
  - Heaviest load (DIMM with most ranks) within a channel goes furthest from the processor
- Do not mix UDIMMs, RDIMMs or LRDIMMs
- LR DIMMs are supported up to 3 DIMMs per channel.
- DIMMs of different voltages (1.35V & 1.5V) may be mixed in any order
- The system will power them at the higher voltage
- DIMMs of different speed grades may be mixed in any order
  - The system will select a common optimal speed
- To realize the performance memory capabilities listed in this document, HPE SmartMemory is required. For additional information, please see the HPE SmartMemory QuickSpecs at: [http://h18000.www1.hp.com/products/quickspecs/14225\\_div/14225\\_div.html](http://h18000.www1.hp.com/products/quickspecs/14225_div/14225_div.html) (Worldwide)

<b>DIMM slot/capacity/populated speed table</b>
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## Memory

DIMM Type	Registered DIMMS (RDIMMs)							Load Reduced (LRDIMMs)	Unbuffered with ECC DIMMs (UDIMMs)					
	Single Rank (1R)			Dual Rank (2R)				Quad Rank (4R)	Single Rank (1R)		Dual Rank (2R)			
DIMM Capacity	4GB	4GB	8GB	8GB	8GB	16GB	16GB	32GB	2GB	2GB	4GB	4GB	8GB	8GB
DIMM Native Speed (MHz)	1333	1600	1600	1333	1600	1333	1600	1333	1600	1333	1600	1333	1333	1600
	LV	Std	Std	LV	Std	LV	Std	LV	Std	LV	Std	LV	LV	Std
<b>SLOTS THAT CAN BE POPULATED</b>														
24 slot servers	24	24	24	24	24	24	24	24	16	16	16	16	16	16
<b>MAXIMUM CAPACITY (GB)*</b>														
	96	96	192	192	192	384	384	768	32	32	64	64	128	128
<b>POPULATED DIMM SPEED (MHz)</b>														
1 DIMM Per Channel	1333	1600	1600	1333	1600	1333	1600	1333***	1600	1333	1600	1333	1333	1600
2 DIMM Per Channel	1333	1600	1600	1333	1600	1333	1600	1333***	1600	1333****	1600	1333****	1333****	1600
3 DIMM Per Channel	1066**	1333##	1333##	1066**	1333##	1066**	1333##	1066	n/a	n/a	n/a	n/a	n/a	n/a

### NOTES:

Memory speed is a function of the processor QPI bus speed.

\* Maximum capacity will vary based on individual server platform qualification schedule

\*\* For HPE SmartMemory, RDIMM support 3DPC@1066 at 1.35V. Third party memory may only support up to 3DPC@1066 at 1.5V.

\*\*\* LRDIMM enables 3 DIMMs per channel. HPE SmartMemory will support up to 3DPC@1066 at 1.35V. Third party memory may only support 3DPC @1066 at 1.5V.

\*\*\*\* For HPE SmartMemory, UDIMM is supported at 2DPC@1333. Third party memory may only support up to 2DPC@1066

## RBSU setting required

### Memory Speed by Processor Model

Processor Models

E5-2680, E5-2670, E5-2667, E5-2665, E5-2660, E5-2650, E5-2650L

E5-2640, E5-2630, E5-2630L, E5-2620

E5-2609, E5-2603

Supported Memory Speeds

1600/1333/1066MHz

1333/1066MHz

1066MHz

## Memory

<b>Standard and Maximum Memory Capacity</b> (Pre-configured Models)			
<b>Pre-Configured Models</b>	<b>Standard Memory</b>	<b>Maximum Memory Plus Optional Memory</b>	<b>Standard Memory Replaced with Optional Memory</b>
Intel Xeon E5-2640	16GB (4x 4GB)	336GB (20x16GB, 4x4GB)	768GB (24 x 32GB)
Intel Xeon E5-2620	8GB (2x 4GB)	360GB (22x16GB, 2x4GB)	768GB (24 x 32GB)
Intel Xeon E5-2603	4GB (1x 4GB)	372GB (23x16GB, 1x4GB)	768GB (24 x 32GB)

### DIMM slot and configuration diagrams

#### Basic memory slot & population diagram

- Population order; start with "A" first, "B" second, "C" third, etc.

<b>24 DIMM SLOTS (12 per CPU node)</b>					
	<b>CPU1</b>		<b>CPU2</b>		
	slot #	population order	slot #	population order	
Chnl 1	1	A	1	C	Chnl 1
	2	E	2	G	
	3	I	3	K	
Chnl 2	4	B	4	D	Chnl 2
	5	F	5	H	
	6	J	6	L	
Chnl 3	7	L	7	J	Chnl 3
	8	H	8	F	
	9	D	9	B	
Chnl 4	10	K	10	I	Chnl 4
	11	G	11	E	
	12	C	12	A	

#### Standard memory configuration (1 CPU model)

- 8GB, consisting of four (4) 2GB dual-rank PC3-10600 UDIMMs

	<b>CPU1</b>		<b>CPU2</b>		
	slot #	population order	slot #	population order	
Chnl 1	1	A; 2GB DIMM	1	C; empty	Chnl 1
	2	E; empty	2	G; empty	
	3	I; empty	3	K; empty	
Chnl 2	4	B; 2GB DIMM	4	D; empty	Chnl 2
	5	F; empty	5	H; empty	
	6	J; empty	6	L; empty	

## Memory

Chnl 3	7	L; empty	7	J; empty	Chnl 3
	8	H; empty	8	F; empty	
	9	D; 2GB DIMM	9	B; empty	
Chnl 4	10	K; empty	10	I; empty	Chnl 4
	11	G; empty	11	E; empty	
	12	C; 2GB DIMM	12	A; empty	

### Standard memory plus optional memory (1 CPU model)

- 60GB, consisting of three (3) 4GB RDIMMs plus six (6) 8GB RDIMMs
- 3x 4GB dual-rank PC3-10600 RDIMMs
- 6x 8GB dual-rank PC3-10600 RDIMMs

	CPU1		CPU2		
	slot #	population order	slot #	population order	
Chnl 1	1	A; 4GB DIMM	1	C; empty	Chnl 1
	2	E; 8GB DIMM	2	G; empty	
	3	I; 8GB DIMM	3	K; empty	
Chnl 2	4	B; 4GB DIMM	4	D; empty	Chnl 2
	5	F; 8GB DIMM	5	H; empty	
	6	J; empty	6	L; empty	
Chnl 3	7	L; empty	7	J; empty	Chnl 3
	8	H; 8GB DIMM	8	F; empty	
	9	D; 8GB DIMM	9	B; empty	
Chnl 4	10	K; empty	10	I; empty	Chnl 4
	11	G; 8GB DIMM	11	E; empty	
	12	C; 4GB DIMM	12	A; empty	

### Standard memory replaced with optional memory (1 CPU model)

#### RDIMM maximum configuration

- 192GB, consisting of twelve (12) 16GB quad-rank PC3L-10600 RDIMMs

	CPU1		CPU2		
	slot #	population order	slot #	population order	
Chnl 1	1	A; 16GB DIMM	1	C; empty	Chnl 1
	2	E; 16GB DIMM	2	G; empty	
	3	I; 16GB DIMM	3	K; empty	
Chnl 2	4	B; 16GB DIMM	4	D; empty	Chnl 2
	5	F; 16GB DIMM	5	H; empty	

## Memory

	6	J; 16GB DIMM	6	L; empty	
Chnl 3	7	L; 16GB DIMM	7	J; empty	Chnl 3
	8	H; 16GB DIMM	8	F; empty	
	9	D; 16GB DIMM	9	B; empty	
Chnl 4	10	K; 16GB DIMM	10	I; empty	Chnl 4
	11	G; 16GB DIMM	11	E; empty	
	12	C; 16GB DIMM	12	A; empty	

### UDIMM maximum configuration (1 CPU model)

- 64GB, consisting of eight (8) 4GB dual-rank PC3-10600 UDIMMs

	CPU1		CPU2		
	slot #	population order	slot #	population order	
Chnl 1	1	A; 8GB DIMM	1	C; empty	Chnl 1
	2	E; 8GB DIMM	2	G; empty	
	3	I; empty	3	K; empty	
Chnl 2	4	B; 8GB DIMM	4	D; empty	Chnl 2
	5	F; 8GB DIMM	5	H; empty	
	6	J; empty	6	L; empty	
Chnl 3	7	L; empty	7	J; empty	Chnl 3
	8	H; 8GB DIMM	8	F; empty	
	9	D; 8GB DIMM	9	B; empty	
Chnl 4	10	K;	10	I; empty	Chnl 4
	11	G; 8GB DIMM	11	E; empty	
	12	C; 8GB DIMM	12	A; empty	

### Standard memory replaced with optional memory (2 CPU model)

#### RDIMM maximum configuration

- 768GB, consisting of twenty-four (24) 32GB quad-rank PC3-10600 LRDIMMs DDR3 Registered (LRDIMM) memory, operating at 1333MHz or 1066MHz when populated at 3 DIMMs per Channel in 24 slots.

	CPU1		CPU2		
	slot #	population order	slot #	population order	
Chnl 1	1	A; 32GB DIMM	1	A; 32GB DIMM	Chnl 1
	2	E; 32GB DIMM	2	E; 32GB DIMM	
	3	I; 32GB DIMM	3	I; 32GB DIMM	
Chnl 2	4	B; 32GB DIMM	4	B; 32GB DIMM	Chnl 2

## Memory

	5	F; 32GB DIMM	5	F; 32GB DIMM	
	6	J; 32GB DIMM	6	J; 32GB DIMM	
Chnl 3	7	L; 32GB DIMM	7	L; 32GB DIMM	Chnl 3
	8	H; 32GB DIMM	8	H; 32GB DIMM	
	9	D; 32GB DIMM	9	D; 32GB DIMM	
Chnl 4	10	K; 32GB DIMM	10	K; 32GB DIMM	Chnl 4
	11	G; 32GB DIMM	11	G; 32GB DIMM	
	12	C; 32GB DIMM	12	C; 32GB DIMM	

### UDIMM maximum configuration (2 CPU model)

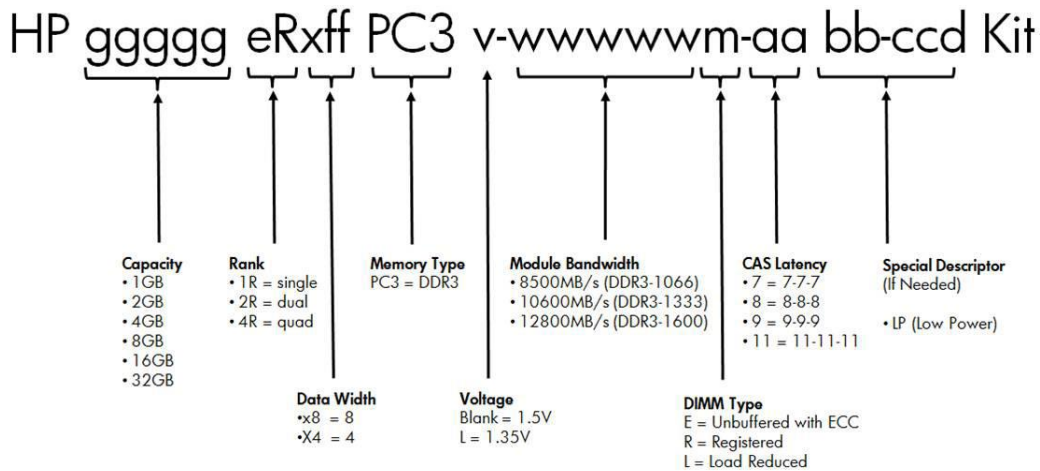
- 128GB, consisting of sixteen (16) 8GB dual-rank PC3-10600E DDR3 Unbuffered (UDIMM) memory operating at 1333MHz when populated at 2 DIMMs per Channel in 16 slots

	CPU1		CPU2		
	slot #	population order	slot #	population order	
Chnl 1	1	A; 8GB DIMM	1	C; 8GB DIMM	Chnl 1
	2	E; 8GB DIMM	2	G; 8GB DIMM	
	3	I; empty	3	K; empty	
Chnl 2	4	B; 8GB DIMM	4	D; 8GB DIMM	Chnl 2
	5	F; 8GB DIMM	5	H; 8GB DIMM	
	6	J; empty	6	L; empty	
Chnl 3	7	L; empty	7	J; empty	Chnl 3
	8	H; 8GB DIMM	8	F; 8GB DIMM	
	9	D; 8GB DIMM	9	B; 8GB DIMM	
Chnl 4	10	K; empty	10	I; empty	Chnl 4
	11	G; 8GB DIMM	11	E; 8GB DIMM	
	12	C; 8GB DIMM	12	A; 8GB DIMM	

**NOTE:** Capacity references are rounded to the common Gigabyte values.

- 1GB = 1024MB
- 2GB = 2048MB
- 4GB = 4096MB
- 8GB = 8192MB
- 16 GB=16384MB
- 32GB = 32768MB

Memory



Following are memory options available from HPE:

HPE Memory

**NOTE:** HPE memory from previous generation servers are not qualified or warranted with this HPE ProLiant Server. HPE SmartMemory is required to realize the memory performance improvements and enhanced functionality listed in this document for Gen8. For additional information, please see the HPE SmartMemory QuickSpecs at:

[http://h18000.www1.hp.com/products/quickspecs/14225\\_div/14225\\_div.html](http://h18000.www1.hp.com/products/quickspecs/14225_div/14225_div.html)

**NOTE:** LRDIMM, RDIMM and UDIMMs are all distinct memory technologies and cannot be mixed within a server. The majority of ProLiant Gen8 servers support RDIMM, UDIMM and LRDIMM.

**Registered DIMMs (RDIMMs)**

HP 4GB (1x4GB) Single Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647893-B21
HP 4GB (1x4GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	647895-B21
HP 8GB (1x8GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647897-B21
HP 8GB (1x8GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	647899-B21
HP 8GB (1x8GB) Dual Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	690802-B21
HP 16GB (1x16GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647901-B21
HP 16GB (1x16GB) Dual Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	672631-B21

**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	669322-B21

## Memory

### Memory Kit

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

### Load Reduction DIMMs (LRDIMMs)

HP 32GB (1x32GB) Quad Rank x4 PC3L-10600L (DDR3-1333) Load Reduced CAS-9 Low Voltage Memory Kit 647903-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>.

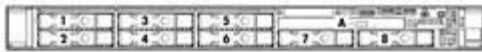
**NOTE:** PC3L is a low voltage memory.

**NOTE:** Not all Intel E5 processor series support 1600MHz or 1333MHz speeds. Memory speed is a function of the processor QPI speed.

## Storage



- 1-4 Four LFF Hot-plug SAS/SATA hard drive bays
- A Optional DVD-ROM, or DVD RW



- 1-8 Eight SFF Hot-plug SATA/SAS hard drive bays
- A Optional DVD-ROM, or DVD RW

## Drive Support

### External Storage

	Quantity Supported	Position Supported	Host Controller or Adapter
D2600 Disk Enclosure	Up to 4	External	HPE Smart Array P222/512MB FBWC Controller
	Up to 8	External	HPE Smart Array P421/1GB FBWC Controller HPE Smart Array P421/2GB FBWC Controller
D2700 Disk Enclosure	Up to 2	External	HPE Smart Array P222/512MB FBWC Controller
	Up to 4	External	HPE Smart Array P421/1GB FBWC Controller HPE Smart Array P421/2GB FBWC Controller



## Technical Specifications

<b>System Unit</b>	<b>Dimensions</b> (H x W x D) (with bezel)	4 LFF	1.7" (43.2mm) Height x 17.1" (434.6mm) Width x 29.5" (750mm) Length	
		8 SFF	1.7" (43.2mm) Height x 17.1" (434.6mm) Width x 27.5" (699mm) Length	
	<b>Weight</b> (approximate)	Maximum (all hard drives, power supplies, and processors installed)	33.00 lb (15.2kg)	
		Minimum (one hard drive, power supply, and processor installed)	31 lb (14.1kg)	
	<b>Input Requirements</b> (per power supply)	Rated Line Voltage	100 to 120 VAC, 200 to 240 VAC	
		Rated Input Current	10 A at 100 VAC 5 A at 200 VAC	
		Rated Input Frequency	50 Hz to 60 Hz	
	<b>BTU Rating</b>	Rated Input Power	562 W at 100V AC input 562 W at 200V AC input	
		Maximum	500W	1917 at 100 V AC 1898 at 115 V AC 1856 at 200 V AC 1850 at 230 V AC
			460W	1764 at 100V AC 1736 at 115V AC 1694 at 200V AC 1687 at 230V AC
		Maximum	750W	2878 at 100 V AC 2834 at 115 V AC 2769 at 200 V AC 2758 at 230 V AC
	<b>Power Specifications</b>	To review typical system power ratings use the Power Advisor which is available via the online tool located at URL: <a href="http://www.hp.com/go/proliant-energy-efficient">http://www.hp.com/go/proliant-energy-efficient</a> or <a href="http://www.hp.com/go/hppoweradvisor">http://www.hp.com/go/hppoweradvisor</a>		
		<ul style="list-style-type: none"> <li>- Click on the system of interest. Example: DL160 G8</li> <li>- Follow the instructions of the next screens.</li> </ul>		
	<b>Power Supply Output</b> (per power supply)	Rated Steady-State Power	500 Watts (at 100 VAC), 500 Watts (at 200 VAC)	
		Maximum Peak Power (See Power Specifications Tables)	500Watts (at 100 VAC), 500 Watts (at 200 VAC)	
	<b>System Inlet Temperature</b>	Operating	10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 305 m (1.8°F per every 1000 ft) above sea level to a maximum of 3050 m (10,000 ft), no direct	

## Technical Specifications

		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).
<b>Relative Humidity</b> (non-condensing)	Non-operating	-30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).
	Operating	10 to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing.
	Non-operating	5% to 95% relative humidity (Rh), 38.7° C (101.7° F) maximum wet bulb temperature, non-condensing
<b>Altitude</b>	Operating	30480 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).
<b>Acoustic Noise</b>		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). <b>NOTE: The listed sound levels apply to standard shipping configurations. Additional options may result in increased sound levels.</b>
	<b>Idle</b>	
	LWAd	5.3 B (1P SKU) 5.3 B (2P SKU)
	LpAm	36 dBA (1P SKU) 36 dBA (2P SKU)
	<b>Operating</b>	
	LWAd	5.3 B (1P SKU) 5.9 B (2P SKU)
	LpAm	37 dBA (1P SKU) 42 dBA (2P SKU)
<b>Emissions Classification (EMC)</b>	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.**

## Technical Specifications

<b>HPE Ethernet 1Gb 2-port Network Interface 361i Adapter</b>	<b>Capability</b>	10Base-T/100Base-TX/1000Base-TX IEEE 802.3 10Base-T IEEE 802.3ab 1000Base-T IEEE 802.3u 100Base-TX IEEE 1588, IEEE 802.1AS
	<b>Data Transfer Method</b>	PCI Express v 2.1, 5.0 GT/s and 2.5 GT/s bus speeds and supports for x1, x2, x4 links widths (Lanes)
	<b>Controller</b>	I350 Powerville
	<b>Network Transfer Rate</b>	10Base-T (Half-Duplex) 10 Mb/s per port, 20 Mb/s Combined 10Base-T (Full-Duplex) 20 Mb/s per port, 40 Mb/s Combined 100Base-TX (Half-Duplex) 100 Mb/s per port, 200 Mb/s Combined 100Base-TX (Full-Duplex) 200 Mb/s per port, 400 Mb/s Combined 1000Base-TX (Half and Full-Duplex) 1000Mb/s per port, 2000 Mb/s Combined
	<b>Connector</b>	RJ-45
	<b>Cable Support</b>	10Base-T Categories 3, 4 or 5 UTP; up to 328 ft (100 m) 10/100/1000Base-TX Category 5 UTP; up to 328 ft (100 m)

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

<b>Environment-friendly Products and Approach</b>	<b>End-of-life Management and Recycling</b>	Hewlett Packard Enterprise offers end-of-life Hewlett Packard Enterprise product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to: <a href="http://www.hp.com/go/green">http://www.hp.com/go/green</a> . To recycle your product, please go to: <a href="http://www.hp.com/go/green">http://www.hp.com/go/green</a> or contact your nearest Hewlett Packard Enterprise sales office. Products returned to Hewlett Packard Enterprise will be recycled, recovered or disposed of in a responsible manner.
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The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities.

## Technical Specifications

This information (product disassembly instructions) is posted on the Hewlett Packard Enterprise web site at: <http://www.hp.com/go/green>. These instructions may be used by recyclers and other WEEE treatment facilities as well as Hewlett Packard Enterprise OEM customers who integrate and re-sell Hewlett Packard Enterprise equipment.

## Summary of Changes

Date	Version History	Action	Description of Change
01-Dec-2015	From Version 35 to 36	Added	New Hard Drives offering was added to HPE Hard Drives section.
		Removed	Obsolete SKUs were removed from the QuickSpecs.
28-Sep-2015	From Version 34 to 35	Added	Added new 6Gb SATA Solid State Drives. Added new HPE OneView management software.
		Removed	Obsolete SKUs were removed from the QuickSpecs.
17-Aug-2015	From Version 33 to 34	Added	New Solid State Drives offering was added to HPE Hard Drives section.
01-Jun-2015	From Version 32 to 33	Added	New Hard Drives were added to Core Options.
		Removed	Obsolete SKUs were removed from Configuration Information - Factory Integrated Models, Core Options, and Additional Options.
30-Mar-2015	From Version 31 to 32	Added	New Hard Drives were added to Core Options.
		Removed	Removed obsolete SKUs from HPE Insight software and HPE Care Pack Services.
09-Feb-2015	From Version 30 to 31	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	HPE Uninterruptible Power Systems, HPE Rack Options, and HPE Care Pack Services in Additional Options section were revised.
01-Dec-2014	From Version 29 to 30	Added	HPE 1.6TB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive and HPE 1.6TB 6G SATA Value Endurance LFF 3.5-in SC Converter Enterprise Value 3yr Wty Solid State Drive were added to HPE Hard Drives.
01-Nov-2014	From Version 28 to 29	Changed	Version number increased in sequence to match Product Bulletin version number.
01-Nov-2014	From Version 27 to 28	Changed	Service and Support section was revised.
29-Sep-2014	From Version 26 to 27	Added	New Solid State Drives were added.  HPE Managed Power Distribution Units (maPDU) was added to Additional Options.
		Changed	Service and Support section was revised. HPE Hard Drives was revised in Core Options section.  Broken hyperlinks were updated throughout the QuickSpecs.
18-Aug-2014	From Version 25 to 26	Added	New Hard Drives were added. HPE Remote mPDUs half height version were added.
		Changed	Core Options and Additional Options sections were revised.
10-Jun-2014	From Version 24 to 25	Added	762272-B21, 762270-B21, 739898-B21 and 739888-B21 – Added to Hard drives. Gigabit Ethernet Adapters 593722-B21 and 615732-B21. HPE PCIe Workload Accelerator Options, HPE Tape Storage Systems, HPE Disk Storage Systems and HPE Remote Monitoring Power Distribution Units (mPDU) – Added to Additional Options.
		Changed	Core Options, Additional Options and Memory were revised.

## Summary of Changes

		Removed	Core Options – Removed 690829-B21, 690825-B21, 653078-B21 and 653082-B21 from Hard drives. H221 Host Bus Adapter. HPE Flash Media Kits for USB Drives.
18-Apr-2014	From Version 23 to 24	Changed	Service and Support, Memory, Core Options, and Additional Options were revised.
18-Feb-2014	From Version 22 to 23	Changed	Hard Drives and HPE InfiniBand were revised HPE secure Encryption was added to Core Options
13-Dec-2013	From Version 21 to 22	Changed	Dual Core Processors were removed from Processors NVIDIA Quadro 4000 2GB PCI-E Adapter were removed from Graphics Options First Generation Accelerators were removed from HPE I/O Accelerator Options HPE OneView was added to Optional Features Converged Infrastructure Management Software was added HPE H221 PCIe 3.0 SAS Host Bus Adapter was added to Storage Controllers HPE 8GB USB Enterprise Mainstream Flash Media Drive Key Kit was added and HPE 4GB SD Enterprise Performance Flash Media Kit was removed from HPE Flash Media Kits for USB Drives
11-Oct-2013	From Version 20 to 21	Changed	Changes made: Support for new Value Endurance Solid State Drives and SD Enterprise Mainstream Flash Media Kit
20-Sep-2013	From Version 19 to 20	Changed	HPE Dynamic Smart Array B120i Controller in Technical Specifications was revised.
13-Sep-2013	From Version 18 to 19	Changed	High Performance Clusters, Memory, HPE Networking, HPE Optical Drives, HPE InfiniBand, HPE Insight software, HPE iLO Advanced License, HPE Storage Controllers, HPE Tape Backup, HPE Disk Backup, HPE Storage Options, and HPE Rack Options were revised.
15-Jul-2013	From Version 17 to 18	Changed	Additional Options: Updated HPE Disk Backup section.
24-May-2013	From Version 16 to 17	Changed	Additional Options: Updated HPE Storage Options section.
13-May-2013	From Version 15 to 16	Removed	Additional Options: Removed HPE Disk Storage Systems and Modular PDUs 1u/0U sections. Storage: Removed Drive Support section.
		Changed	Overview: Updated What's New with HPE 4TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive. Standard Features: Updated Maximum Internal Storage section. Configuration Information-Factory Integrated Models: Updated Step 1, Step 2 and Step 3. Core Options: Updated HPE Memory, HPE Optical Drives and HPE Hard Drives sections. Additional Options: Updated HPE I/O Accelerator Options, HPE Rack Options, HPE USB and SD Options and HPE Care Pack Services sections. Memory: Updated HPE Memory,
29-Apr-2013	From Version 14 to 15	Changed	Technical Specifications: Updated HPE Dynamic Smart Array B120i Controller section.
25-Mar-2013	From Version 13 to 14	Removed	Additional Options: Removed 641027-B21, 600279-B21 and 600282-B21 from the HPE i/o Accelerator Options section.
25-Feb-2013	From Version 11 to 13	Removed	Removed HPE Storage Controllers, Software 582765-B21 and

Summary of Changes

			<p>TC203A from HPE Insight Software                  Core Options: Removed SAS Hot Plug SmartDrive SFF (2.5 inch) Enterprise Drives and SAS Hot Plug SmartDrive SFF (2.5 inch) Midline Drive, 6G SAS MLC Hot Plug SFF (2.5 inch) Enterprise Mainstream Solid Stated Drive and Removed p/ns 652503-B21 and 665249-B21 from HPE Networking.                  Additional Options: Removed p/n T9074BAE, 45214B22, TC278AAE, 436222-B21, TC213AAE, TC209A, TC203AAE, TC208A and NOTES from HPE Insight Control, Removed HPE Backup &amp; Recovery Software section</p>
		<p>Changes</p>	<p>What's New: Updated with Support for HPE 1.2TB 6G SAS 10K 2.5in DP ENT SC HDD, Support for HPE 4TB 6G SATA 7.2k rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive, Support for 6G SATA ME 2.5in SC EM SSD and Support new HPE iLO Scale-Out license for massive scale out environments.                  Standard Features: Maximum Internal Storage updated storage amounts                  Optional Features: Updated first link and NOTE in HPE Insight Control                  Pre-Configured Models: Updated NOTES before Entry Models, Updated Hard Drive throughout entire section                  Configuration Information - Factory Integrated Models: Updated description in Step 1, updated product description to HPE Memory and Updated product description to 652238-B21                  Core Options: Updated product descriptions in Unbuffered with ECC DIMMs (UDIMMs) and HPE Optical Drives, Updated note in HPE Hard Drives                  Additional Options: Completely updated HPE iLO Advanced License, Update product description for TC293B and TC294A, Updated product description for 655915-B21 in HPE Graphics Options, Updated NOTES in HPE Storage Controllers, Completely updated HPE Tape Backup, HPE Disk Backup, HPE Storage Options, HPE Disk Storage Systems, HPE Power Distribution Units, HPE Intelligent Power Distribution Units (iPDU), HPE Rack Series, HPE USB and SD Options, and HPE Care Pack Services.                  Storage: Update amounts and Controllers</p>
		<p>Added</p>	<p>Standard Features: HPE iLO 4 On System Management Memory to Graphics                  Optional Features: HPE ILO Scale-Out and HPE iLO Advanced to HPE Insight Management Software and Storage Software section.                  Pre-Configured Models: Added note to Storage Controller throughout Entry Models section                  Configuration Information - Factory Integrated Models: Added NOTES before Step 1 and added p/n 652241-B21 to HPE Insight Software                  Core Options: Added p/n 697574-B21, 693687-B21, 6G SAS ME Hot Plug SFF (2.5-inch) Enterprise Mainstream Solid State Drives, 6G SATA ME Hot Plug SFF (2.5-inch) Enterprise Mainstream Solid State Drives and 6G SATA ME Hot Plug SFF</p>

## Summary of Changes

			(3.5-inch) Enterprise Mainstream Solid State Drives sections to HPE Hard Drive, Added p/ns 656596-B21, 652503-B21, 665249-B21, 665240-B21 and 665243-B21 to HPE Networking Additional Options: Added Second Generation Accelerators section to HPE I/O Accelerator Options, HPE Location Discovery Services, HPE TFT7600 G2 KVM Console Rackmount Keyboard Monitor, HPE Server Console Switch G2 with Virtual Media & CAC to HPE Rack Options Storage: Added 6G SAS ME Hot Plug SFF (2.5-inch) Enterprise Mainstream Solid State Drives
19-Dec-2012	From Version 10 to 11	Changes	Changes made to the description of the Disk Drive Interface - Transfer rate in the Technical Specifications section.
24-Sep-2012	From Version 9 to 10	Changes	Changes made in Optional Features section.
13-Aug-2012	From Version 8 to 9	Changes	Changes made throughout the QuickSpecs.
30-Jul-2012	From Version 7 to 8	Changes	Change made in the Configuration Information - Factory Integrated Models section.
15-Jun-2012	From Version 6 to 7	Changes	Revised a Note in the Standard Features, Power Specifications section.
06-Jun-2012	From Version 5 to 6	Changes	Changed "Smart Drive" to "SmartDrive" and Changed a Note in the Power Supplies section.
04-Jun-2012	From Version 4 to 5	Changes	Changes were made throughout.
18-May-2012	From Version 3 to 4	Changed	Changes made in the Processors section of Standard Features.
04-May-2012	From Version 2 to 3	Removed	Removed the Note in the Graphics section of Standard Features.
06-Apr-2012	From Version 1 to 2	Changes	Storage Controller note and Step 1 in Configuration Information - Factory Integrated Models were revised Tape and Disk Backup was removed from Storage and Cache Memory was removed from HPE Embedded SATA controller



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

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