

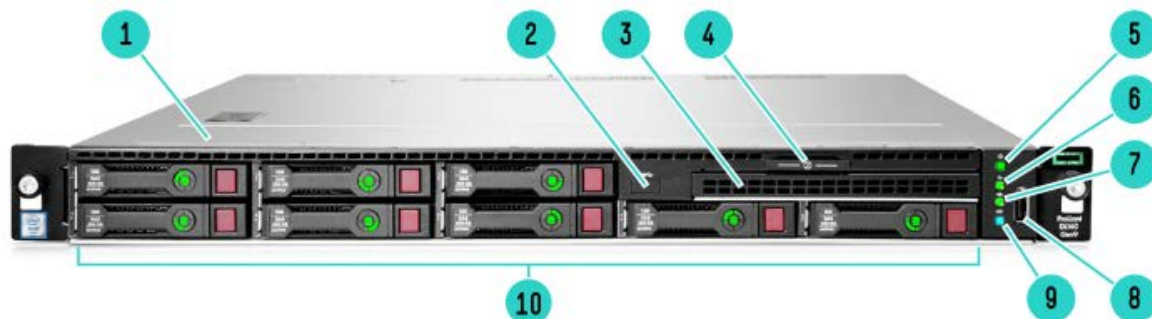
# QuickSpecs

## HPE ProLiant DL160 Generation9 (Gen9)

### Overview

#### HPE ProLiant DL160 Generation9 (Gen9)

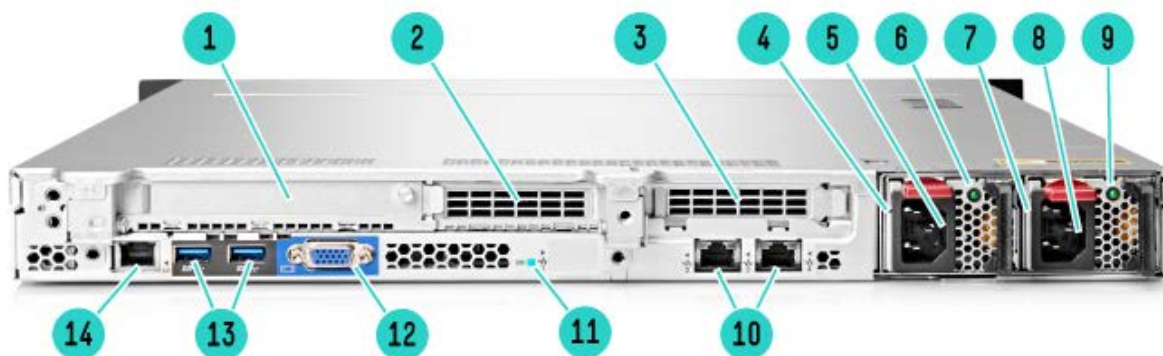
The HPE ProLiant DL160 Gen9 is the next generation 2P 1U value server replacing DL360e Gen8. It delivers the right balance of performance, storage, reliability, manageability and efficiency in a dense and compact chassis, to meet the needs of a diverse set of customers- from SMBs and service providers with a wide range of workloads - from general purpose IT to the New Style of IT, such as, Big Data and Cloud.



### Front View

- |   |  |
|---|--|
| 1. Access Panel                                 | 2. Optional USB3.0 (optional with 8SFF only) |
| 3. Optical disk drive bay                       | 4. Serial label pull tab                     |
| 5. Power On/Standby button and system power LED | 6. Health LED                                |
| 7. NIC status LED                               | 8. USB 2.0 connector                         |
| 9. UID button/LED                               | 10. 8SFF drive cage                          |

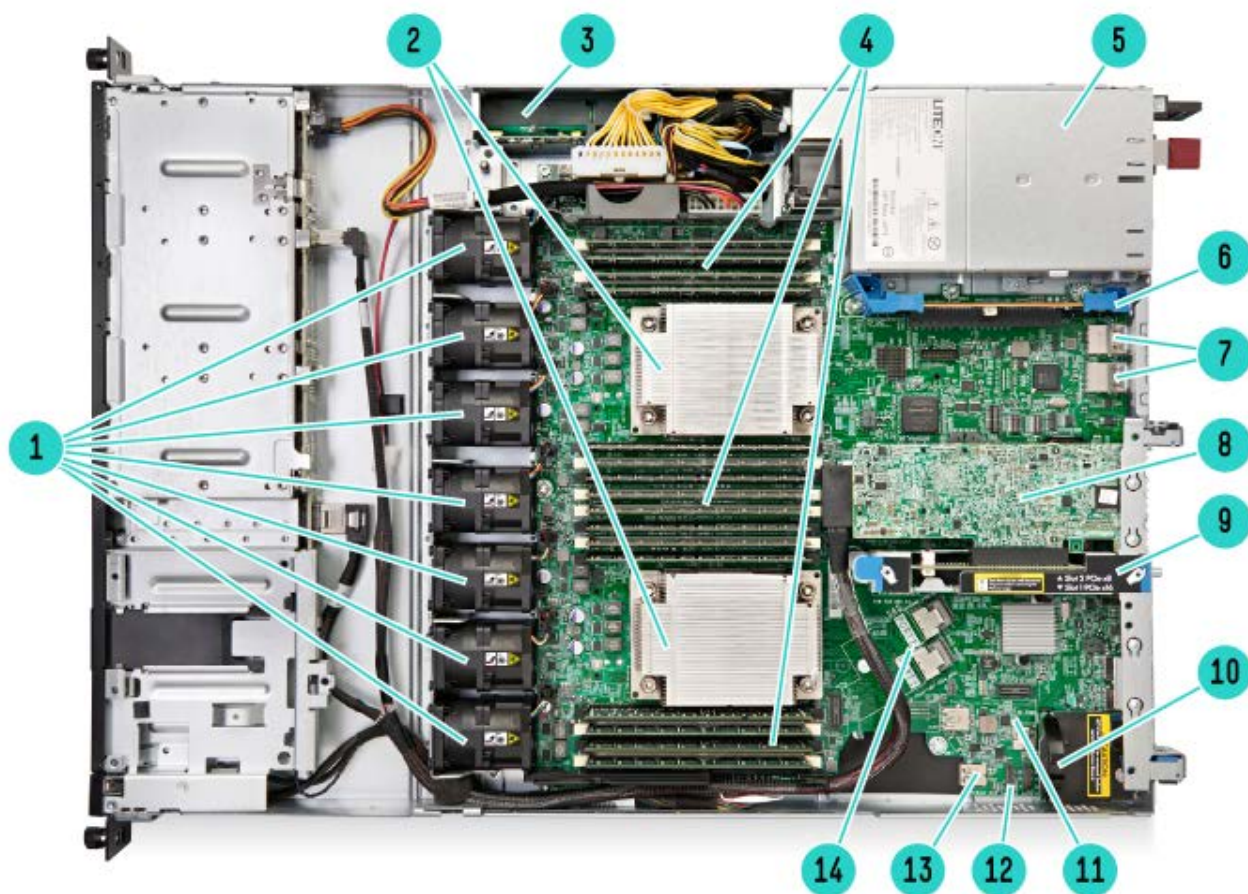
## Overview



## Rear View

- |  |  |
|--|--|
| 1. PCIe3 slot 1 (primary, associated with processor 1)   | 2. PCIe3 slot 2 (primary, associated with processor 1) |
| 3. PCIe3 slot 3 (secondary, associated with processor 2) | 4. Power supply 1 bay                                  |
| 5. Power supply 1 Power Connector (Optional)             | 6. Power supply 1 LED (Optional)                       |
| 7. Power supply 2 bay                                    | 8. Power supply 2 power connector                      |
| 9. Power Supply 2 LED                                    | 10. Embedded 2x1GbE network adapter                    |
| 11. Unit ID LED  | 12. Video Connector                                    |
| 13. USB3.0 connectors                                    | 14. Dedicated iLO connector (optional)                 |

## Overview



## Internal View

- |  |   |
|--|---|
| 1. Hot Swappable fans (up to 7)                                | 2. Processor heat sinks (processors with HPE Smart Sockets placed below heat sinks) |
| 3. HPE Smart Storage Battery (optional)                        | 4. DDR4 DIMM slots (up to 16). Shown fully populated in 16 Slots (8 per Processor)  |
| 5. Entry level power supply bay (1x900W shown)                 | 6. Connector for secondary PCIe riser (associated with CPU2)                        |
| <b>NOTE:</b> RPS (with one module) shown in the picture above. | 8. HPE Smart Array P440 controller (optional)                                       |
| 7. Embedded 2x1GbE network adapter                             | 10. Dedicated iLO module connector (optional)                                       |
| 9. Primary PCIe riser (2 PCIe3 slots associated with CPU1)     | 12. Internal SATA ports (one for ODD and another one reserved)                      |
| 11. MicroSD card slot  | 14. Embedded B140i SATA controller (2x SATA ports for up to eight drives)           |
| 13. Internal USB 3.0 connector                                 |   |

## What's New

- Support for ClearOS – an easy to use OS with an application marketplace

## QuickSpecs

## HPE ProLiant DL160 Generation9 (Gen9)

### Standard Features

**NOTE:** For more information regarding Intel Xeon processors, please see the following <http://www.intel.com/xeon>.

#### Processor

Up to two of the following depending on model

Model	CPU frequency	Cores	L3 Cache	Power	QPI	DDR4 Hz
E5-2660v3	2.6GHz	10	25MB	105W	9.6GT/s	2133
E5-2650v3	2.3GHz	10	25MB	105W	9.6GT/s	2133
E5-2650Lv3	1.8GHz	12	30MB	65W	9.6GT/s	2133
E5-2640v3	2.6GHz	8	20MB	90W	8.0GT/s	1866
E5-2630v3	2.4GHz	8	20MB	85W	8.0GT/s	1866
E5-2630Lv3	1.8GHz	8	20MB	55W	8.0GT/s	1866
E5-2623v3	3.0GHz	4	10MB	105W	8.0GT/s	1866
E5-2620v3	2.4GHz	6	15MB	85W	8.0GT/s	1866
E5-2609v3	1.9GHz	6	15MB	85W	6.4GT/s	1600
E5-2603v3	1.6GHz	6	15MB	85W	6.4GT/s	1600
E5-2695v4	2.1GHz	18	45MB	120W	9.6GT/s	2400
E5-2683v4	2.1GHz	16	40MB	120W	9.6GT/s	2400
E5-2680v4	2.4GHz	14	35MB	120W	9.6GT/s	2400
E5-2660v4	2.0GHz	14	35MB	105W	9.6GT/s	2400
E5-2650v4	2.2GHz	12	30MB	105W	9.6GT/s	2400
E5-2650Lv4	1.7GHz	14	35MB	65W	9.6GT/s	2400
E5-2640v4	2.4GHz	10	25MB	90W	8.0GT/s	2133
E5-2630v4	2.2GHz	10	25MB	85W	8.0GT/s	2133
E5-2630Lv4	1.8GHz	10	25MB	55W	8.0GT/s	2133
E5-2623v4	2.6GHz	4	10MB	85W	8.0GT/s	2133
E5-2620v4	2.1GHz	8	20MB	85W	8.0GT/s	2133
E5-2609v4	1.7GHz	8	20MB	85W	6.4GT/s	1866
E5-2603v4	1.7GHz	6	15MB	85W	6.4GT/s	1866

#### Chipset

One of the following depending on model

Intel® C610 Series Chipset

Intel® E5-2600v3 Processor Family

Intel® E5-2600v4 Processor Family

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

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

#### On System Management Chipset

HPE iLO (Firmware HPE iLO4 2.0 or later) 2GB NAND

**NOTE:** Read and learn more in the [iLO QuickSpecs](#).

#### Memory

One of the following depending on model

Type:

HPE SmartMemory

DDR4 Registered (RDIMM) or Load Reduced (LRDIMM)

DIMM Slots Available 16 (8 DIMM slots per processor, 4 channels per processor, 2 DIMMs per channel)

Maximum Capacity (LRDIMM) 1TB (16 x 64GB LRDIMM @2400MHz)

Maximum Capacity (RDIMM) 512GB (16 x 32GB RDIMM @2400MHz)

## QuickSpecs

## HPE ProLiant DL160 Generation9 (Gen9)

### Standard Features

<b>Memory Protection</b> One of the following depending on model	Advanced ECC	Advanced ECC uses single device data correction to detect and correct single and all multibit error that occurs within a single DRAM chip.
	Online Spare	Memory online spare mode detects a rank that is degrading and switches operation to the spare rank.
	Mirroring mode	Memory mirroring inter-socket stores a copy of memory with dynamic failover in case of failure. Once a DIMM in a mirrored set is detected as failed, the mirror failover uses its mirrored DIMM.

<b>Network Controller</b>	HPE Ethernet 1Gb 2-Port 361i Adapter
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### Expansion Slots

CPU1 PCIe riser slots	<b>Expansion Slots #</b>	<b>Technology</b>	<b>Bus Width</b>	<b>Connector Width</b>	<b>Form Factor</b>	<b>Notes</b>
	1	PCIe 3.0	x16	x16	Full-height, half-length slot	Processor 1
	2	PCIe 3.0	x8	x8	Low profile slot	Processor 1
<b>NOTE:</b> Bus Width data indicates the number of physical electrical lanes running to the connector.						
CPU 1 FlexibleLOM riser slots	<b>Expansion Slots #</b>	<b>Technology</b>	<b>Bus Width</b>	<b>Connector Width</b>	<b>Form Factor</b>	<b>Notes</b>
	1	Flexible LOM	x8	x8	Flexible LOM	Processor 1 (can only be used for FlexibleLOMs)
	2	PCIe 3.0	x8	x8	Low profile slot	Processor 1
<b>NOTE:</b> This riser is mandatory for installing FlexibleLOMs.						
CPU2 riser PCIe slots	<b>Expansion Slots #</b>	<b>Technology</b>	<b>Bus Width</b>	<b>Connector Width</b>	<b>Form Factor</b>	<b>Notes</b>
	3	PCIe 3.0	x16	x16	Low profile slot	Processor 2
	<b>NOTE:</b> When populating slots on CPU2 riser, second processor must be installed. <b>NOTE:</b> Only one of the CPU1 PCIe risers can be selected in any given configuration. <b>NOTE:</b> One of the CPU 1 risers is mandatory for all configurations.					

<b>Storage Controller</b> One of the following depending on model	Entry Models	HPE Dynamic Smart Array B140i Controller
		HPE H240 FIO Smart Host Bus Adapter
	Base Models	HPE H240 FIO Smart Host Bus Adapter
	Performance Models	HPE Smart Array P440/4G Controller
<b>NOTE:</b> B140i provides support for up to 8 SATA drives, data transmission speeds up to 6Gb/s and supports RAID 0, 1 & 5.		
<b>NOTE:</b> H240 provides support for up to 8 SAS/SATA drives, data transmission speeds up to 12Gb/s and supports RAID 0, 1 & 5.		
<b>NOTE:</b> P440 provides support for up to 8 SAS/SATA drives, data transmission speeds up to 12Gb/s.		

<b>Internal Storage Devices</b> One of the following depending on model	Optical Drive	Optional: DVD-ROM, DVD-RW
	Hard Drives	None ship standard
	Hard Drive Bays	4 LFF drive bays total with Optical bay
		8 SFF drive bays total with Optical Bay
	<b>NOTE:</b> HPE ProLiant DL160 Gen9 server offers both SFF and LFF versions.	

## Standard Features

The Optical Drive bay is available with both models.

**NOTE:** Drive cage changes are not supported.

**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 HPE SFF Gen9 Hard Drive Blank Kit or (666987-B21) or HPE LFF Gen9 Hard Drive Blank Kit (666986-B21). These part numbers for single HDD blanks below are also provided should the customer require replacement HDD blanks for their server.

### Maximum Internal Storage

One of the following depending on model

	CAPACITY	CONFIGURATION
Hot Plug SFF SAS	16.0TB	8 x 2TB
Hot Plug SFF SATA	16.0TB	8 x 2TB
Hot Plug LFF SAS	40.0TB	4 x 10TB
Hot Plug LFF SATA	40.0TB	4 x 10TB
Hot Plug SFF SAS SSD	30.72TB	8 x 3.84TB
Hot Plug SFF SATA SSD	30.72TB	8 x 3.84TB
Hot Plug LFF SATA SSD	15.36TB	4 x 3.84TB
Non Hot Plug LFF SATA	16TB	4 x 4TB

### Power Supply

One of the following depending on model

HPE 550W FIO Power Supply

HPE 900W Redundant Power Supply

Looking for high-efficiency power solutions at an entry-level price for your ProLiant Gen9 Essential Server? HPE Entry-Level Power Supplies offer an optimized set of features with options for both redundant and non-redundant power configurations.

The HPE 550W FIO Power Supply offers Silver-certified 80 Plus power efficiency (up to 89%) with an optimized set of features for non-redundant power configurations.

The HPE 900W AC 240VDC Power Input Module with Power Backplane can be configured to support power redundancy in ProLiant servers that offer only a single power supply bay, providing additional protection against power loss. With an 80 Plus Gold power efficiency rating (up to 92%), this power option helps to reduce operating expenses while protecting against trapped power capacity in the data center. Hot-plug AC power input modules allow for better serviceability with fast and easy deployment and replacement.

### System Fans

One of the following depending on model

	Non-redundant	Redundant
1P model	3 fans	4 fans
	Non-redundant	Redundant
2P model	6 fans	7 fans

**NOTE:** Redundant fan option kit (PN: 725587-B21) can be bought separately if redundancy is required with 1P or 2P configurations.

**NOTE:** Additional fans required with 2P configurations are included in "-B21" processor option kits.

### Interfaces

Video	1 (Vaux Support)
LOM Network Ports	2x1GbE network ports
HPE iLO Remote Management Network Port	1 GbE (Optional)
USB	4 USB ports (standard); 1 (optional) Front: 1xUSB 2.0 std; 1xUSB3.0 optional (with 8SFF models only) Rear: 2xUSB 3.0



## Standard Features

	Internal: 1xUSB 3.0
Micro SD Slot	1 Micro SD
	<b>NOTE:</b> The SD slot is not a hot-pluggable device. Customers should not attempt to plug an SD card into the SD slot while the server is powered.
<b>Operating Systems and Virtualization Software Support for ProLiant Servers</b>	<p><b>Microsoft Windows Server</b></p> <p><b>Red Hat Enterprise Linux (RHEL)</b></p> <p><b>SUSE Linux Enterprise Server (SLES)</b></p> <p><b>VMware</b></p> <p><b>ClearOS</b></p> <p><b>NOTE:</b> ClearOS allows you to build a fully functional server that is just right for you at no upfront cost. It is available via CTO preload, Intelligent Provisioning or via download. For more information on ClearOS, please visit <a href="http://www.hpe.com/servers/clearos">http://www.hpe.com/servers/clearos</a>.</p> <p><b>NOTE:</b> For more information on the Hewlett Packard Enterprise 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: <a href="http://www.hpe.com/info/ossupport">http://www.hpe.com/info/ossupport</a> and our <b>driver download page</b>.</p>
<b>Upgradeability</b> One of the following depending on model	<p>Upgradeable to 2 processors (36 Cores)</p> <p><b>NOTE:</b> Processor upgrade from E5-2600v3 to E5-2600v4 is supported for processors up to 105W.</p> <p>Up to 16 DIMM slots available</p> <p><b>NOTE:</b> To take advantage of DIMMs 9-16, second processor must be installed.</p> <p>FlexibleLOM slot for 1GbE or 10GbE or QDR/FDR InfiniBand Networking Options</p> <p>Optional 2nd CPU riser slot (x16, low profile)</p> <p><b>NOTE:</b> 2nd CPU must be installed if this riser is configured.</p> <p>Up to 8 SFF Hard Drive Bays; or 4 LFF Hard Drive Bays</p> <p>Redundant Power Supply</p> <p>Redundant Fan</p> <p>Optical Drive Bay (8 SFF/4 LFF)</p>
<b>Industry Standard Compliance</b>	<p>ACPI 2.0b Compliant</p> <p>PCIe 3.0 Compliant</p> <p>PXE Support</p> <p>WOL Support</p> <p>Microsoft® Logo certifications</p> <p>USB 3.0 Support</p> <p>ASHRAE A3</p> <p><b>NOTE:</b> Supports A3 extended ambient temperature.</p> <p><b>NOTE:</b> Refer to technical specifications section for more details.</p>
<b>Graphics</b>	<p>Integrated Matrox G200eH2 video standard</p> <ul style="list-style-type: none"> <li>1280 x 1024 (32 bpp)</li> <li>1920 x 1200 (16 bpp)</li> </ul>
<b>HPE Server UEFI/Legacy ROM</b>	<p>Unified Extensible Firmware Interface (UEFI) is an industry standard that provides better manageability and more secured configuration than the legacy ROM while interacting with your server at boot time. HPE ProLiant Gen9 platform defaults to UEFI and can be factory or field configured for Legacy BIOS Boot Mode.</p>

## Standard Features

**NOTE:** The UEFI System Utilities function is analogous to the HPE ROM-Based Setup Utility (RBSU) of legacy BIOS. For more information, please visit <http://www.hpe.com/servers/uefi>.

UEFI enables numerous new capabilities specific to HPE ProLiant servers such as:

- Secure Boot
- Operating system specific functionality
- Support for > 2.2 TB (using GPT) boot drives
- USB 3.0 Stack
- Embedded UEFI Shell
- Mass Configuration Deployment Tool using RESTful API for iLO 4
- PXE boot support for IPv6 networks
- Boot support for option cards that only support a UEFI option ROM
- Network Stack configurations

**NOTE:** For UEFI Boot Mode, boot environment and OS image installations should be configured properly to support UEFI.

**NOTE:** UEFI FIO Setting (758959-B22) can be selected to configure the system in Legacy mode in the factory for your HPE ProLiant Gen9 Server.

<b>Form Factor</b> One of the following depending on model	1U Rack form factor	
	8SFF and 4LFF version: 1.7" (4.3cm) Height x 17.1" (43.5cm) Width x 23.9" (60.8cm) Length	
<b>Embedded Management</b>	<b>HPE Integrated Lights-Out (HPE iLO)</b>	Monitor your servers for ongoing management, service alerting, reporting and remote management with HPE iLO. Learn more at <a href="http://www.hpe.com/info/ilo">http://www.hpe.com/info/ilo</a> .
	<b>UEFI</b>	Configure and boot your servers securely with industry standard Unified Extensible Firmware Interface (UEFI). Learn more at <a href="http://www.hpe.com/servers/uefi">http://www.hpe.com/servers/uefi</a> .
	<b>RESTful API</b>	RESTful API for iLO 4 is Redfish 1.0 conformance for simplified server management such as configuration and maintenance tasks based on modern industry standards. Learn more at <a href="http://www.hpe.com/info/restfulapi">http://www.hpe.com/info/restfulapi</a> .



## Standard Features

	<b>Intelligent Provisioning</b>	Hassle free server and OS provisioning for 1 or few servers with Intelligent Provisioning. Learn more at <a href="http://www.hpe.com/servers/intelligentprovisioning">http://www.hpe.com/servers/intelligentprovisioning</a> .
	<b>Embedded Remote Support</b>	The Hewlett Packard Enterprise embedded remote support, when used with Insight Online direct connect or HPE Insight Remote Support, allows HPE ProLiant servers to transmit hardware events directly to Hewlett Packard Enterprise or a Hewlett Packard Enterprise Authorized Partner for automated phone home support. Learn more at <a href="http://www.hpe.com/info/insightonline/explore">http://www.hpe.com/info/insightonline/explore</a> .
<b>Server utilities</b>	<b>Smart Update</b>	Optimize firmware and driver updates with Smart Update solutions including Smart Update Manager (SUM) and Service Pack for ProLiant (SPP). Learn more at <a href="http://www.hpe.com/servers/smartupdatemanager">http://www.hpe.com/servers/smartupdatemanager</a> .
	<b>HPE Systems Insight Manager (HPE SIM)</b>	HPE SIM allows you to monitor the health of your HPE ProLiant Servers and HPE Integrity Servers, and also provides you with basic support for non-HPE servers. HPE SIM also integrates with Smart Update Manager to provide quick and seamless firmware updates. Learn more at <a href="http://www.hpe.com/servers/hpsim">http://www.hpe.com/servers/hpsim</a> .
	<b>Scripting Tool Kit and Windows PowerShell</b>	Provision 1 to many servers using your own scripts to discover and deploy them with Scripting Tool Kit (STK) for Windows and Linux or Scripting Tools for Windows PowerShell. Learn more at <a href="http://www.hpe.com/servers/proliant/stk">http://www.hpe.com/servers/proliant/stk</a> or <a href="http://www.hpe.com/servers/powershell">http://www.hpe.com/servers/powershell</a> .
	<b>RESTful Interface Tool</b>	RESTful Interface tool is a scripting tool to provision using RESTful API for iLO 4 to discover and deploy servers at scale. Learn more at <a href="http://www.hpe.com/info/resttool">http://www.hpe.com/info/resttool</a> .
	<b>HPE iLO Mobile Application</b>	Enables the ability to access, deploy, and manage your server anytime from anywhere from select smartphones and mobile devices. For additional information please visit: <a href="http://www.hpe.com/info/ilo/mobileapp">http://www.hpe.com/info/ilo/mobileapp</a> .
	<b>HPE Insight Online</b>	HPE Insight Online, available at no additional cost as part of your Hewlett Packard Enterprise warranty or contractual support agreement with Hewlett Packard Enterprise, is a personalized dashboard for simplified tracking of IT operations and support information from anywhere, anytime. Learn more at <a href="http://www.hpe.com/info/insightonline/explore">http://www.hpe.com/info/insightonline/explore</a> .
<b>Security</b>		Power-on password
		Serial interface control
		Administrator's password
		TPM 2.0
		TPM 2.0
		<b>NOTE: TPM 1.2 is not upgradable to TPM 2.0.</b>
		UEFI

## Standard Features

### Warranty

This product is covered by a global limited warranty and supported by HPE Services and a worldwide network of HPE Authorized Channel Partners resellers. Hardware diagnostic support and repair is available for three years from date of purchase. Support for software and initial setup is available for 90 days from date of purchase. Enhancements to warranty services are available through HPE Pointnext operational 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 Parts, 1-Year Labor, 1-Year Onsite support with next business day response. Warranty repairs may be accomplished through the use of Customer Self Repair (CSR) parts. These parts fall into two categories: 1) Mandatory CSR parts are designed for easy replacement. A travel and labor charge will result when customers decline to replace a Mandatory CSR part; 2) Optional CSR parts are also designed for easy replacement but may involve added complexity. Customers may choose to have Hewlett Packard Enterprise replace Optional CSR parts at no charge. Additional information regarding worldwide limited warranty and technical support is available at:

<http://h17007.www1.hpe.com/us/en/enterprise/servers/warranty/>

## Optional Features

<b>Embedded Management</b>	<b>iLO Essentials</b>	HPE iLO Essentials is the preferred license for small and medium business that offers full remote server management capabilities for small and medium business via the Integrated Remote Console (IRC), virtual media, and e-mail based alerts. Learn more about HPE iLO Essentials at <a href="http://www.hpe.com/servers/iLO/essentials">http://www.hpe.com/servers/iLO/essentials</a> .
	<b>iLO Scale-Out</b>	HPE iLO Scale-Out is the preferred license built for web hosting, cloud service providers, and high performance computing data centers, managing massive scale out environments for the DL 100 and 10 series servers, not available for ML servers. This license offers sophisticated scripting tools that provides remote access through Text Console via SSH, Dynamic power capping, Email-based Alerting and proactive notifications. For more information, visit <a href="http://www.hpe.com/servers/iLO/scale-out">http://www.hpe.com/servers/iLO/scale-out</a> .
	<b>iLO Advanced</b>	HPE iLO Advanced licenses offer smart remote functionality without compromise, for all HPE ProLiant servers. The license includes the full integrated remote console, virtual keyboard, video, and mouse (KVM), multi-user collaboration, console record and replay, and GUI-based and scripted virtual media and virtual folders. You can also activate the enhanced security and power management functionality. Learn more about HPE iLO Advanced at <a href="http://www.hpe.com/servers/iloadvanced">http://www.hpe.com/servers/iloadvanced</a> .
<b>Server Management</b>	<b>HPE Insight Control</b>	HPE Insight Control, lets you deploy, migrate, monitor, remote control, and optimize your IT infrastructure through a single, simple management console. For more information, see <a href="http://www.hpe.com/info/insightcontrol">http://www.hpe.com/info/insightcontrol</a> .
<b>Rack and Power Infrastructure</b>	HPE Rack and Power Infrastructure products and services create highly efficient and intelligent solutions for existing or new IT data centers. HPE Rack and Power infrastructure solutions – rack infrastructure, power protection and management, performance optimized data centers (PODs) – are the foundation you are looking for to help secure your long-term IT success. These products are designed to help you react to changes in the industry. They deliver efficient, easy-to-use capabilities to manage, monitor, deploy and provision infrastructure from entry to enterprise. As an industry leader, Hewlett Packard Enterprise is uniquely positioned to address the key concerns of power, cooling, cable management and system access. Learn more at <a href="#">HPE Rack and Power Infrastructure</a> .	
<b>High Performance Clusters</b>	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 HPEC Server. A Cluster Platform Configurator simplifies ordering. <a href="https://www.hpe.com/us/en/solutions/hpc-high-performance-computing/hpc-software.html">https://www.hpe.com/us/en/solutions/hpc-high-performance-computing/hpc-software.html</a> .	
<b>HPC Interconnects</b>	<b>NOTE:</b> High Performance Computing (HPC) interconnect technologies are available for this server under the HPE Cluster Platform product portfolio. These high-speed interconnects are fully supported by Hewlett Packard Enterprise when they are part of these configure to order clusters. Solutions can be defined with a lot of flexibility with the help of configuration tools. Please visit the following URL to configure HPEC Clusters with InfiniBand Interconnects: <a href="https://www.hpe.com/info/hpc/solutions">https://www.hpe.com/info/hpc/solutions</a> .	
<b>Storage Software</b>	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 Hewlett Packard Enterprise 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**

## Optional Features

Whether you're a large enterprise or a smaller business, Hewlett Packard Enterprise data protection and recovery software will cost-effectively protect you against disaster and ensure business continuity.

- **Data Archive and Migration Software**

Hewlett Packard Enterprise 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)**

Hewlett Packard Enterprise storage resource management software reduces operational costs and provides the command and control foundation you need to efficiently manage and visualize your physical and virtual environments.

- **Data Replication Software**

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 Hewlett Packard Enterprise 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 create a virtual array within your host server. Manage it as a single pool of shared storage capacity, and scale it to match your evolving needs. HPE ProLiant Gen9 servers include a 3-year limited license for HPE StoreVirtual VSA software with 1TB of capacity at no extra cost. Simply select to install HPE StoreVirtual VSA software during server setup within Intelligent Provisioning. More information, instructional videos, and free console management software are available at <http://www.hpe.com/info/vsa1TB>.

**NOTE:** For more information about Storage Software including QuickSpecs, please see:

<https://www.hpe.com/us/en/storage/software-defined.html>

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### ClearOS

HPE and ClearCenter will help you lower the cost of building on-premise solutions without sacrificing security and ease of use. HPE ProLiant servers with ClearOS give you a simple, secure, and affordable operating system with an intuitive web based graphical user interface that provides a cloud-like experience on- premise, and an Application Marketplace with over 100 apps and growing. Whether you're starting out or scaling, you decide what applications you need and pay as you grow.

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### One Config Simple (SCE)

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 Hewlett Packard Enterprise Customer Business Center or an Authorized Partner for assistance. <http://ocs.ext.hpe.com/>.

## Service and Support

### HPE Support Services

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. HPE Support Services enable you to choose the right service level, length of coverage and response time as you purchase your new server, giving you full entitlement to the support for need for your IT and business.

### Connect your devices

Unlock all of the benefits of your technology investment by connecting your products to Hewlett Packard Enterprise. Achieve up to 77%<sup>1</sup> reduction in down time, near 100%<sup>2</sup> diagnostic accuracy and a single consolidated view of your environment. By connecting, you will receive 24x7 monitoring, pre-failure alerts, automatic call logging, and automatic parts dispatch. HPE Proactive Care Service and HPE Datacenter Care Service customers will also benefit from proactive activities to help prevent issues and increase optimization. All of these benefits are already available to you with your server storage and networking products, securely connected to Hewlett Packard Enterprise support.

1- IDC 2 - HP CSC reports 2014 - 2015

### Recommended Support

#### **Basic: HPE Foundation Care NBD, three-year Support Service**

HPE Foundation Care Next Business Day connects you to Hewlett Packard Enterprise during business hours for assistance on resolving issues – This service features need based next business day hardware onsite response and software call back within two hours. In addition, Collaborative software support and provides troubleshooting assistance on industry leading software running on your HPE server. Simplify your support experience and make Hewlett Packard Enterprise your first call to help resolve hardware or software problems.

<https://www.hpe.com/h20195/V2/GetDocument.aspx?docname=4AA4-8876ENW&cc=us&lc=en>

#### **Standard: HPE Foundation Care 24x7, three-year Support Service**

HPE Foundation Care 24x7 gives you access to Hewlett Packard Enterprise 24 hours a day, seven days a week for assistance on resolving issues. This service includes need based Hardware onsite response within four hours. In addition, collaborative software support is included in this service that provides troubleshooting assistance on industry leading software running on your HPE server. Simplify your support experience and make Hewlett Packard Enterprise your first call to help resolve hardware or software problems.

<https://www.hpe.com/h20195/V2/GetDocument.aspx?docname=4AA4-8876ENW&cc=us&lc=en>

#### **Optimized: HPE Proactive Care\* with 24x7 coverage, three year Support Service**

HPE Proactive Care gives customers an enhanced call experience. When your products are connected to Hewlett Packard Enterprise, Proactive Care helps prevent problems and maintains IT stability by utilizing personalized proactive reports with recommendations and advice. This service combines three years proactive reporting and advice with our 24x7 coverage, four hour hardware response time when there is a problem. This service also includes collaborative software support for Independent Software Vendors (ISVs), (Red Hat, VMWare, Microsoft, etc.) running on your HPE servers.

### Parts and Materials

Hewlett Packard Enterprise will provide Hewlett Packard Enterprise-supported replacement parts and materials necessary to maintain the covered hardware product in operating condition, including parts and materials for available and recommended engineering improvements.

Parts and components that have reached their maximum supported lifetime and/or the maximum usage limitations as set forth in the manufacturer's operating manual, product QuickSpecs, or the technical product data sheet will not be provided, repaired, or replaced as part of these services.

The defective media retention service feature option applies only to Disk or eligible SSD/Flash Drives replaced by Hewlett Packard Enterprise due to malfunction.

### Related Services

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

Provides for the basic hardware installation of Hewlett Packard Enterprise branded servers, storage devices

## Service and Support

and networking options to assist you in bringing your new hardware into operation in a timely and professional manner.

<https://www.hpe.com/h20195/V2/GetPDF.aspx/5981-9356EN.pdf>

### HPE Installation and Startup Service

Provides for the installation and startup of Hewlett Packard Enterprise technology including BladeSystems, C-Class enclosure, HPE ProLiant c-Class and Integrity server blades, storage blades, SAN switch blades, HPE Virtual Connect modules (Ethernet and Fibre Channel), Ethernet network interconnects, and InfiniBand, as well as the installation of one supported operating system type (Windows® or Linux).

### HPE Technology Services Support Credits

Offer flexible services and technical skills to meet your changing IT demands. With a menu of service that is tailored to suit your needs, you get additional resources and specialist skills to help you maintain peak performance of your IT. Offered as annual credits, you can plan your budgets while proactively responding to your dynamic business.

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### HPE Education Services

Keep your IT staff trained making sure they have the right skills to deliver on your business outcomes. Book on a class today and learn how to get the most from your technology investment.

<http://www.hpe.com/ww/learn>

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### HPE Support Center

The HPE Support Center is a 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.hpe.com/support/hpesc>

The Hewlett Packard Enterprise 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 Support Service or Hewlett Packard Enterprise contractual support agreement.

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

For more information: <http://www.hpe.com/services>



## QuickSpecs

## HPE ProLiant DL160 Generation9 (Gen9)

### Pre-configured Models

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

1. Pre-configured models ship with the configurations below. Options can be selected from the Core or Additional options section of this QuickSpecs.
2. Hewlett Packard Enterprise does not allow factory integration of options into pre-configured models. Any additional options purchased will be shipped separately.
3. 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 HPE SFF Hard Drive Blank Kit (666987-B21) or HPE LFF Hard Drive Blank Kit (666986-B21).

**NOTE:** All pre-configured servers ship with a standard 6-foot IEC C-13/C-14 jumper cord (A0K02A). This jumper cord is also included with each standard AC power supply option kit. If a different power cord is required, please check the [ProLiant Power Cables](#) web page.

**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.

	Entry Models		Base Models
<b>[SKU Number]</b>	830570-B21	830571-B21	830572-B21
<b>Model Name</b>	HPE DL160 Gen9 E5-2603v4 1P 8GB-R B140i 4LFF 550W PS Entry Server	HPE DL160 Gen9 E5-2603v4 1P 8GB-R H240 8SFF 550W PS Entry Server	HPE DL160 Gen9 E5-2620v4 1P 16GB-R H240 8SFF 550W PS Base Server
<b>Processor</b>	Intel® Xeon® E5-2603v4		Intel® Xeon® E5-2620v4
<b>Number of Processors</b>	One		
<b>Memory</b>	8GB (1x8GB Registered DIMMs, 2400 MHz) <b>NOTE:</b> Due to processor limitation, these DDR4 DIMMs will operate at 1866 MHz in this model.		16GB (1x16GB Registered DIMMs, 2400 MHz) <b>NOTE:</b> Due to processor limitation, these DDR4 DIMMs will operate at 2133 MHz in this model.
<b>Network Controller</b>	HPE Embedded Dual Port 361i Adapter Network Interface		
<b>Storage Controller</b>	HPE Dynamic Smart Array B140i	HPE H240 FIO Smart Host Bus Adapter	HPE H240 FIO Smart Host Bus Adapter
<b>Hard Drive</b>	None ship standard		
<b>Internal Storage</b>	4 LFF HDD Bays	8 SFF HDD Bays	8 SFF HDD Bays
<b>Optical Drive Bay</b>	1; (Optional: DVD-ROM, DVD-RW)		
<b>Optical Drive</b>	Optional Slim Optical Bay (SATA DVD-RW/ROM Optical Drive)		
<b>PCI-Express Slots</b>	2 Standard (1-FH/HL, 1-LP) PCIe 3.0		
<b>Power Supply</b>	(1) HPE 550W FIO Power Supply		
<b>Fans</b>	3 hot swap fans, non-redundant		4 hot swap fans, redundant
<b>Management</b>	iLO Management (standard), Intelligent Provisioning (standard), iLO Essentials (optional), iLO Scale-out (optional only for DL), iLO Advanced (optional)		
<b>Form Factor</b>	Rack (1U), HPE Easy Install Rails		
<b>Warranty</b>	Server Warranty includes 3-Year Parts, 1-Year Labor, 1-Year Onsite support with next business day response.		

## QuickSpecs

## HPE ProLiant DL160 Generation9 (Gen9)

### Smart Buy Models

	E5-2600v4 Series Smart Buys			
[SKU Number]	830574-S01	860102-S01	867445-S01	830577-S01
Model Name	HP ProLiant DL160 Gen9 E5-2609v4 1.7GHz 8-core 8GB-R B140i 4LFF 550W PS US Server/S-Buy	HPE ProLiant DL160 Gen9 E5-2609v4 SFF US Svr/S-B	HPE ProLiant DL160 Gen9 E5-2609v4 SFF US Svr/S-Buy	HP ProLiant DL160 Gen9 E5-2620v4 2.1GHz 8-core 8GB-R P440/2GB 8SFF 900W PS US Server/S-Buy
Processor	Intel® Xeon® E5-2609v4			Intel® Xeon® E5-2620v4
Number of Processors	One			
Memory	8GB (1x8GB Registered DIMMs, 2400 MHz) <b>NOTE: The DIMMs will operate at 1866MHz with this processor.</b>			8GB (1x8GB Registered DIMMs, 2400 MHz) <b>NOTE: The DIMMs will operate at 2133MHz with this processor.</b>
Network Controller	HPE Embedded Dual Port 361i Adapter Network Interface			
Storage Controller	HPE Dynamic Smart Array B140i	HPE H240 Smart HBA		HPE Flexible Smart Array P440/2G + Smart Storage battery
Hard Drive	None ship standard			
Internal Storage	4 LFF HDD Bays	8 SFF HDD Bays		
Optical Drive Bay	None Included; Optional: DVD-ROM, DVD-RW			
PCI-Express Slots	2 Standard (1-FH/HL, 1-LP) PCIe 3.0			
Power Supply	One (1) HPE 550W FIO Power Supply		One (1) HPE 900W Redundant Capable Power Supply Kit	
Fans	3 hot swap fans, non-redundant			
Management	Standard: iLO Management Optional: iLO Essentials, iLO Advanced, Insight Control			
Form Factor	Rack (1U), HPE Easy Install Rails			
Warranty	3-Year Parts, 1-Year Labor, 1-Year Onsite support with next business day response.			

## Configuration Information - Factory Integrated Models

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 an HPE approved configurator. Contact your local sales representative for information on configurable product offerings and requirements.

1. Factory Integrated Models must start with a CTO Server.
2. FIO indicates that this option is only available as a factory installable option.
3. All Factory Integrated Models will be populated with sufficient hard drive blanks based on the number of initial hard drives ordered with the server.
4. Some options may not be integrated at the factory. Contact your local sales representative for additional information.

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

CTO Server	HP ProLiant DL160 Gen9 Hot Plug 8SFF Configure-to-order Server	HP ProLiant DL160 Gen9 Hot Plug 4LFF Configure-to-order Server	HP ProLiant DL160 Gen9 Non-hot Plug 4LFF Configure-to-order Server
SKU Number	754520-B21	754521-B21	754522-B21
Processor	2 (optional) x HPE Smart Socket Guide		
DIMM Slots	16 DIMM slots for RDIMM, LRDIMM DDR4 Memory		
Storage Controller	HPE Dynamic Smart Array B140i		
PCIe	Optional (None ship standard)		
Drive Cage	8SFF Hot Plug	4LFF Hot Plug	4LFF Non Hot Plug
Network Controller	HPE Embedded Dual Port 361i Adapter Network Interface		
Fans	3 hot swap fans, non-redundant		
Management	iLO Management (standard), Intelligent Provisioning (standard)		
USB	1 front, 1 internal, 2 rear		
Ears	HPE Thumbscrew Ears		

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

HPE Processors	E5-2600v4 series Processors	
	HPE DL160 Gen9 Intel® Xeon® E5-2620v4 (2.1GHz/8-core/20MB/85W) FIO Processor Kit	801287-L21
	HPE DL160 Gen9 Intel® Xeon® E5-2609v4 (1.7GHz/8-core/20MB/85W) FIO Processor Kit	801288-L21
	HPE DL160 Gen9 Intel® Xeon® E5-2603v4 (1.7GHz/6-core/15MB/85W) FIO Processor Kit	801289-L21
	HPE DL160 Gen9 Intel® Xeon® E5-2650Lv4 (1.7GHz/14-core/35MB/65W) FIO Processor Kit	801290-L21
	HPE DL160 Gen9 Intel® Xeon® E5-2630Lv4 (1.8GHz/10-core/25MB/55W) FIO Processor Kit	801291-L21
	HPE DL160 Gen9 Intel® Xeon® E5-2623v4 (2.6GHz/4-core/10MB/85W) FIO Processor Kit	801301-L21
	HPE DL160 Gen9 Intel® Xeon® E5-2660v4 (2.0GHz/14-core/35MB/105W) FIO Processor Kit	801283-L21
	HPE DL160 Gen9 Intel® Xeon® E5-2650v4 (2.2GHz/12-core/30MB/105W) FIO Processor Kit	801284-L21
	HPE DL160 Gen9 Intel® Xeon® E5-2640v4 (2.4GHz/10-core/25MB/90W) FIO Processor Kit	801285-L21
	HPE DL160 Gen9 Intel® Xeon® E5-2680v4 (2.4GHz/14-core/35MB/120W) FIO Processor Kit	825494-L21

## Configuration Information - Factory Integrated Models

HPE DL160 Gen9 Intel® Xeon® E5-2695v4 (2.1GHz/18-core/45MB/120W) FIO Processor Kit	825498-L21
HPE DL160 Gen9 Intel® Xeon® E5-2683v4 (2.1GHz/16-core/40MB/120W) FIO Processor Kit	825500-L21
HPE DL160 Gen9 Intel® Xeon® E5-2630v4 (2.2GHz/10-core/25MB/85W) FIO Processor Kit	801286-L21

**NOTE:** If two processors are desired, select one xxxxxx-L21 and one corresponding xxxxxx-B21

**NOTE:** Up to two processors supported. Mixing different processor models is not supported.

**NOTE:** DDR4 speed is the maximum memory speed of the processor. Actual memory speed may depend on the quantity and type of DIMMs installed.

**NOTE:** When v4 Processor is selected, then only PC4-2400T Memory Kit can be selected.

**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:** Select one or more memory kits from below.

**NOTE:** LRDIMM, RDIMM are all distinct memory technologies and cannot be mixed within a server. The majority of ProLiant Gen9 servers support LRDIMM and RDIMM

**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 Gen9

**NOTE:** If only one processor is installed, only half of the total DIMM slots are available. When populating with two processors all DIMM slots are available

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

**NOTE:** Depending on the memory configuration and processor model, the memory speed may run at 2400MHz, 2133MHz, 1866MHz, 1600MHz or 1333MHz. Please see Memory Population Table or the Online Memory Configuration Tool at: <http://www.hpe.com/go/ddr4config>

#### Registered DIMMs (RDIMMs) for E5-2600v4 Series

HP 8GB (1x8GB) Single Rank x8 DDR4-2400 CAS-17-17-17 Registered Memory Kit	805347-B21
HP 16GB (1x16GB) Single Rank x4 DDR4-2400 CAS-17-17-17 Registered Memory Kit	805349-B21
HP 16GB (1x16GB) Dual Rank x4 DDR4-2400 CAS-17-17-17 Registered Memory Kit	836220-B21
HP 32GB (1x32GB) Dual Rank x4 DDR4-2400 CAS-17-17-17 Registered Memory Kit	805351-B21

#### Load Reduced DIMMs (RDIMMs) for E5-2600v4 Series

HP 32GB (1x32GB) Dual Rank x4 DDR4-2400 CAS-17-17-17 Load Reduced Memory Kit	805353-B21
HP 64GB (1x64GB) Quad Rank x4 DDR4-2400 CAS-17-17-17 Load Reduced Memory Kit	805358-B21

#### HPE Standard Memory for E5-2600v4 Series

HPE 8GB (1x8GB) Single Rank x8 DDR4-2400 CAS-17-17-17 Registered Standard Memory Kit	851353-B21
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**NOTE:** HPE Standard Memory DIMMs have no SmartMemory features.

### HPE I/O Expansion Options

HP DL160 Gen9 CPU1 Riser FIO Kit	725585-B21
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**NOTE:** This riser enables two PCIe3 slots.

### HPE Power Supplies

**NOTE:** Prior to selecting a power supply option, it is highly recommended that you review your server configuration in the HPE Power Advisor tool to determine the right size power supply for your server configuration. The HPE Power Advisor is located at: <http://www.hpe.com/go/hppoweradvisor>

**NOTE:** Mixing of power supplies in the same server is not supported. All power supplies must be of the same input voltage, output rating, and efficiency rating. If non-matching power supplies are installed, you may receive an error message and/or experience operational issues with your server.

#### HPE Entry-Level Power Supplies

## Configuration Information - Factory Integrated Models

HP 550W FIO Power Supply Kit	730941-B21
HPE 900W AC 240VDC Power Input FIO Module	828734-B21
<b>NOTE:</b> HP Server RPS FIO Backplane Kit (828735-B21) is required for this power supply.	
<b>NOTE:</b> Up to two of these option kits can be installed in one system.	
HPE 900W AC 240VDC Power Backplane FIO Kit	828735-B21
<b>NOTE:</b> One is required when one or two HPE 900W AC 240VDC Power Input FIO Modules (828734-B21) are ordered.	

### Step 3: Choose Additional Factory Integratable Options (only one of the following from each list unless otherwise noted)

#### HPE Storage Controllers

**NOTE:** One of the cable options below is required to be selected depending on combinations of CTO Server and Storage Controller. If not using the embedded B140i controller, must select one of the following HP Storage Controllers and Cable Options noted below.

**NOTE:** HP ProLiant DL160 Gen9 NHP 4LFF CTO Server (754522-B21) includes SATA Cables required to support the embedded B140i controller and no cable option is required.

#### HPE Smart Array Controllers

HP Smart Array P440/4GB FBWC 12Gb 1-port Int FIO SAS Controller 761872-B21

**NOTE:** Includes the HP Smart Storage Battery

**NOTE:** If HP ProLiant DL160 Gen9 8SFF CTO Server (754520-B21) or HP ProLiant DL160 Gen9 4LFF CTO Server (754521-B21) is selected in Step 1 above.

#### HPE Smart Host Bus Adapters

HP H240 12Gb 2-ports Int FIO Smart Host Bus Adapter 761873-B21

**NOTE:** Includes the HP Smart Storage Battery

**NOTE:** If HP ProLiant DL160 Gen9 8SFF CTO Server (754520-B21) or HP ProLiant DL160 Gen9 4LFF CTO Server (754521-B21) is selected in Step 1 above.

#### HPE Cable Options

HP DL160 Gen9 4LFF Smart Array B140i SATA Cable FIO Kit 768775-B21

**NOTE:** Required if using the embedded B140i as the primary controller with the HP ProLiant DL160 Gen9 4LFF CTO Server (754521-B21).

HP DL160 Gen9 8SFF Smart Array B140i SATA Cable FIO Kit 774611-B21

**NOTE:** Required if using the embedded B140i as the primary controller with the HP ProLiant DL160 Gen9 8SFF CTO Server (754520-B21).

HP DL160 Gen9 4LFF Smart Array P440 SAS Cable Kit 725593-B21

**NOTE:** Required with the HP ProLiant DL160 Gen9 4LFF CTO Server (754521-B21) if Smart Array P440/4GB FBWC 12Gb 1-port Int FIO SAS Controller (761872-B21) is selected.

HP DL160 Gen9 8SFF Smart Array P440 SAS Cable Kit 774619-B21

**NOTE:** Required with the HP ProLiant DL160 Gen9 8SFF CTO Server (754520-B21) if Smart Array P440/4GB FBWC 12Gb 1-port Int FIO SAS Controller (761872-B21) is selected.

HP DL160 Gen9 4LFF Smart Array H240 SAS Cable Kit 725590-B21

**NOTE:** Required with the HP ProLiant DL160 Gen9 4LFF CTO Server (754521-B21) if HP H240 12Gb 1-port Int FIO Smart HBA (761873-B21) is selected.

HP DL160 Gen9 8SFF Smart Array H240 SAS Cable Kit 774621-B21

**NOTE:** Required with the HP ProLiant DL160 Gen9 8SFF CTO Server (754520-B21) if HP H240 12Gb 1-port Int FIO Smart HBA (761873-B21) is selected.

#### BIOS Mode

HP Legacy FIO Mode Setting 758959-B22

**NOTE:** If B140i is the primary controller, then this option cannot be selected.

**NOTE:** Selecting this option changes the default UEFI BIOS setting into Legacy BIOS setting

#### Controller State

HP Mfg FIO Enable HBA Mode Setting 792962-B21

## Configuration Information - Factory Integrated Models

	<b>NOTE:</b> Can only be selected with H240 FIO Smart Host Bus Adapter	
	<b>NOTE:</b> If H240 is the primary controller then RAID is not allowed with this selection.	
	HP AHCI-Enable FIO Setting	801845-B21
	<b>NOTE:</b> If B140i is the primary controller then RAID is not allowed with this selection.	
<b>HPE Security</b>	HP DL160 Gen9 Quick Release Ear FIO Kit	774609-B21
	<b>NOTE:</b> Required for Security Bezel option	
<b>HPE Insight Software</b>	HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle Single Server FIO License	C6N36A
<b>HPE Converged Infrastructure Management Software</b>	<b>HPE OneView (with HPE iLO Advanced)</b>	
	HP OneView for ProLiant DL Server incl 3yr 24x7 Supp FIO Bundle Physical 1 Svr Lic	E5Y43A
	<b>HPE OneView (without HPE iLO Advanced)</b>	
	HP OneView w/o iLO including 3yr 24x7 Support FIO 1 Server LTU	P8B31A

## Step 4: Choose Additional Options for Factory Integration from Core and Additional Options sections below

**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.



## QuickSpecs

## HPE ProLiant DL160 Generation9 (Gen9)

### 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 an HPE approved configurator. Contact your local sales representative for additional information.

<b>HPE Unique Options</b>	HP DL180 Gen9 Dedicated iLO Management Port Kit	725581-B21
	HPE DL160 Gen9 Low Profile PCIe CPU2 Riser Kit	725586-B21
	<b>NOTE:</b> CPU 2 is required if this riser is to be installed, enables one PCIe3 slot.	
	HP DL160 Gen9 Front USB 3.0 Enablement Kit	725594-B21
	<b>NOTE:</b> This kit is required to enable a front USB3.0 port on SFF models only.	
	HP DL160 Gen9 FlexibleLOM Enablement Kit	781844-B21
	<b>NOTE:</b> This riser kit is required when FlexibleLOM is selected.	

<b>HPE Processors</b>	<b>E5-2600v4 series Processors</b>	
	HP DL160 Gen9 Intel® Xeon® E5-2609v4 (1.7GHz/8-core/20MB/85W) Processor Kit	801288-B21
	HP DL160 Gen9 Intel® Xeon® E5-2603v4 (1.7GHz/6-core/15MB/85W) Processor Kit	801289-B21
	HP DL160 Gen9 Intel® Xeon® E5-2650Lv4 (1.7GHz/14-core/35MB/65W) Processor Kit	801290-B21
	HP DL160 Gen9 Intel® Xeon® E5-2630Lv4 (1.8GHz/10-core/25MB/55W) Processor Kit	801291-B21
	HP DL160 Gen9 Intel® Xeon® E5-2620v4 (2.1GHz/8-core/20MB/85W) Processor Kit	801287-B21
	HP DL160 Gen9 Intel® Xeon® E5-2623v4 (2.6GHz/4-core/10MB/85W) Processor Kit	801301-B21
	HP DL160 Gen9 Intel® Xeon® E5-2660v4 (2.0GHz/14-core/35MB/105W) Processor Kit	801283-B21
	HP DL160 Gen9 Intel® Xeon® E5-2650v4 (2.2GHz/12-core/30MB/105W) Processor Kit	801284-B21
	HP DL160 Gen9 Intel® Xeon® E5-2640v4 (2.4GHz/10-core/25MB/90W) Processor Kit	801285-B21
	HP DL160 Gen9 Intel® Xeon® E5-2680v4 (2.4GHz/14-core/35MB/120W) Processor Kit	825494-B21
	HP DL160 Gen9 Intel® Xeon® E5-2695v4 (2.1GHz/18-core/45MB/120W) Processor Kit	825498-B21
	HP DL160 Gen9 Intel® Xeon® E5-2683v4 (2.1GHz/16-core/40MB/120W) Processor Kit	825500-B21
	HP DL160 Gen9 Intel® Xeon® E5-2630v4 (2.2GHz/10-core/25MB/85W) Processor Kit	801286-B21
	<b>E5-2600v3 series Processors</b>	
	HP DL160 Gen9 Intel® Xeon® E5-2609v3 (1.9GHz/6-core/15MB/85W) Processor Kit	733943-B21
	HP DL160 Gen9 Intel® Xeon® E5-2603v3 (1.6GHz/6-core/15MB/85W) Processor Kit	763235-B21
	HP DL160 Gen9 Intel® Xeon® E5-2640v3 (2.6GHz/8-core/20MB/90W) Processor Kit	733935-B21
	HP DL160 Gen9 Intel® Xeon® E5-2630v3 (2.4GHz/8-core/20MB/85W) Processor Kit	733937-B21
	HP DL160 Gen9 Intel® Xeon® E5-2620v3 (2.4GHz/6-core/15MB/85W) Processor Kit	733939-B21
	HP DL160 Gen9 Intel® Xeon® E5-2630Lv3 (1.8GHz/8-core/20MB/55W) Processor Kit	763241-B21
	HP DL160 Gen9 Intel® Xeon® E5-2623v3 (3GHz/4-core/10MB/105W) Processor Kit	779836-B21
	HP DL160 Gen9 Intel® Xeon® E5-2660v3 (2.6GHz/10-core/25MB/105W) Processor Kit	733931-B21
	HP DL160 Gen9 Intel® Xeon® E5-2650v3 (2.3GHz/10-core/25MB/105W) Processor Kit	733933-B21
	HP DL160 Gen9 Intel® Xeon® E5-2650Lv3 (1.8GHz/12-core/30MB/65W) Processor Kit	763237-B21
	<b>NOTE:</b> Processor upgrade from E5-2600v3 to E5-2600v4 is supported for processors up to 105W. Please refer to DL160 Gen9 User Guide for more details.	

<b>HPE Memory</b>	<b>Registered DIMMs (RDIMMs) for E5-2600v4 Series</b>	
	HP 8GB (1x8GB) Single Rank x8 DDR4-2400 CAS-17-17-17 Registered Memory Kit	805347-B21
	HP 16GB (1x16GB) Single Rank x4 DDR4-2400 CAS-17-17-17 Registered Memory Kit	805349-B21
	HPE 16GB (1x16GB) Dual Rank x4 DDR4-2400 CAS-17-17-17 Registered Memory Kit	836220-B21
	HP 32GB (1x32GB) Dual Rank x4 DDR4-2400 CAS-17-17-17 Registered Memory Kit	805351-B21

## Core Options

**NOTE:** These Memory DIMMs are supported only on E5-2600v4 processors.

### Registered DIMMs (RDIMMs) for E5-2600v3 Series

HP 4GB (1x4GB) Single Rank x8 DDR4-2133 CAS-15-15-15 Registered Memory Kit	726717-B21
HP 8GB (1x8GB) Single Rank x4 DDR4-2133 CAS-15-15-15 Registered Memory Kit	726718-B21
HP 8GB (1x8GB) Dual Rank x8 DDR4-2133 CAS-15-15-15 Registered Memory Kit	759934-B21
HP 16GB (1x16GB) Dual Rank x4 DDR4-2133 CAS-15-15-15 Registered Memory Kit	726719-B21
HP 32GB (1x32GB) Dual Rank x4 DDR4-2133 CAS-15-15-15 Registered Memory Kit	728629-B21

**NOTE:** These Memory DIMMs are supported only on E5-2600v3 processors.

### Load Reduced DIMMs (LRDIMMs) for E5-2600v4 Series

HPE 32GB (1x32GB) Dual Rank x4 DDR4-2400 CAS-17-17-17 Load Reduced Memory Kit	805353-B21
HPE 64GB (1x64GB) Quad Rank x4 DDR4-2400 CAS-17-17-17 Load Reduced Memory Kit	805358-B21

**NOTE:** These Memory DIMMs are supported only on E5-2600v4 processors.

### Load Reduced DIMMs (LRDIMMs) for E5-2600v3 Series

HP 16GB (1x16GB) Dual Rank x4 DDR4-2133 CAS-15-15-15 Load Reduced Memory Kit	726720-B21
HP 32GB (1x32GB) Quad Rank x4 DDR4-2133 CAS-15-15-15 Load Reduced Memory Kit	726722-B21
HP 64GB (1x64GB) Quad Rank x4 DDR4-2133 CAS-15-15-15 Load Reduced Memory Kit	726724-B21

**NOTE:** These Memory DIMMs are supported only on E5-2600v3 processors.

### HPE Standard Memory for E5-2600v4 Series

HPE 8GB (1x8GB) Single Rank x8 DDR4-2400 CAS-17-17-17 Registered Standard Memory Kit	851353-B21
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**NOTE:** These Memory DIMMs are supported only on E5-2600v4 processors.

### HPE Standard Memory for E5-2600v3 Series

HPE 4GB (1x4GB) Single Rank x8 DDR4-2133 CAS-15-15-15 Registered Standard Memory Kit	803026-B21
HPE 8GB (1x8GB) Single Rank x4 DDR4-2133 CAS-15-15-15 Registered Standard Memory Kit	803028-B21

**NOTE:** These Memory DIMMs are supported only on E5-2600v3 processors.

<b>HPE Optical Drives</b>	HPE 9.5mm SATA DVD-ROM JackBlack Gen9 Optical Drive	726536-B21
	HPE 9.5mm SATA DVD-RW JackBlack G9 Optical Drive	726537-B21

<b>HPE Drives</b>	<b>SAS Hot Plug SFF (2.5-inch) Enterprise (ENT) Drives</b>	
	HPE 1.2TB SAS 12G Enterprise 10K SFF (2.5in) SC 3yr Wty Digitally Signed Firmware HDD	872479-B21
	HPE 1.2TB SAS 12G Enterprise 10K SFF (2.5in) SC 3yr Wty HDD	781518-B21
	HPE 900GB SAS 12G Enterprise 10K SFF (2.5in) SC 3yr Wty HDD	785069-B21
	HPE 600GB SAS 12G Enterprise 10K SFF (2.5in) SC 3yr Wty Digitally Signed Firmware HDD	872477-B21
	HPE 600GB SAS 12G Enterprise 10K SFF (2.5in ) SC 3yr Wty HDD	781516-B21
	HPE 300GB SAS 12G Enterprise 10K SFF (2.5in) SC 3yr Wty Digitally Signed Firmware HDD	872475-B21
	HPE 300GB SAS 12G Enterprise 10K SFF (2.5in) SC 3yr Wty HDD	785067-B21
	HPE 900GB SAS 12G Enterprise 15K SFF (2.5in) SC 3yr Wty Digitally Signed Firmware HDD	870759-B21
	HPE 600GB SAS 12G Enterprise 15K SFF (2.5in) SC 3yr Wty Digitally Signed Firmware	870757-B21

## Core Options

HDD	
HPE 600GB SAS 12G Enterprise 15K SFF (2.5in) SC 3yr Wty HDD	759212-B21
HPE 450GB SAS 12G Enterprise 15K SFF (2.5in) SC 3yr Wty HDD	759210-B21
HPE 300GB SAS 12G Enterprise 15K SFF (2.5in) SC 3yr Wty Digitally Signed Firmware HDD	870753-B21
HPE 300GB SAS 12G Enterprise 15K SFF (2.5in) SC 3yr Wty HDD	759208-B21
<b>SAS Hot Plug SFF (2.5-inch) Enterprise 512e Drives</b>	
HPE 2.4TB SAS 12G Enterprise 10K SFF (2.5in) SC 3yr Wty 512e Digitally Signed Firmware HDD	881457-B21
HPE 1.8TB SAS 12G Enterprise 10K SFF (2.5in) SC 3yr Wty 512e Digitally Signed Firmware HDD	872481-B21
HPE 1.8TB SAS 12G Enterprise 10K SFF (2.5in) SC 3yr Wty 512e HDD	791034-B21
HPE 900GB SAS 12G Enterprise 15K SFF (2.5in) SC 3yr Wty 512e Digitally Signed Firmware HDD	870765-B21
HPE 600GB SAS 12G Enterprise 15K SFF (2.5in) SC 3yr Wty 512e Digitally Signed Firmware HDD	870763-B21
HPE 600GB SAS 12G Enterprise 15K SFF (2.5in) SC 3yr Wty 512e HDD	748387-B21
<b>SAS Hot Plug SFF (2.5-inch) Midline (MDL) Drives</b>	
HPE 1TB SAS 12G Midline 7.2K SFF (2.5in) SC 1yr Wty Digitally Signed Firmware HDD	832514-B21
<b>SAS Hot Plug SFF (2.5-inch) Midline 512e Drives</b>	
HPE 2TB SAS 12G Midline 7.2K SFF (2.5in) SC 1yr Wty 512e HDD	765466-B21
HPE 1TB SAS 12G Midline 7.2K SFF (2.5in) SC 1yr Wty 512e Digitally Signed Firmware HDD	765464-B21
<b>SAS Hot Plug LFF (3.5-inch) Enterprise (ENT) Drives</b>	
HPE 600GB SAS 12G Enterprise 15K LFF (3.5in) SC 3yr Wty HDD	765424-B21
HPE 450GB SAS 12G Enterprise 15K LFF (3.5in) SCC 3yr Wty HDD	737394-B21
HPE 300GB SAS 12G Enterprise 15K LFF (3.5in) SCC 3yr Wty HDD	737261-B21
<b>SAS Hot Plug LFF (3.5-inch) Midline (MDL) Drives</b>	
HPE 6TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty Digitally Signed Firmware HDD	846514-B21
HPE 4TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty Digitally Signed Firmware HDD	872487-B21
HPE 4TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty HDD	818367-B21
HPE 3TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty Digitally Signed Firmware HDD	846528-B21
HPE 2TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty Digitally Signed Firmware HDD	872485-B21
HPE 2TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty HDD	818365-B21
HPE 1TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty Digitally Signed Firmware HDD	846524-B21
<b>SAS Hot Plug LFF (3.5-inch) Midline 512e Drives</b>	
HPE 8TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty 512e Digitally Signed Firmware HDD	819201-B21
HPE 6TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty 512e HDD	861754-B21
<b>SAS Hot Plug LFF (3.5-inch) 512e Performance Drives</b>	
HPE 4TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty 512e HDD	861756-B21
<b>SAS Hot Plug LFF (3.5-inch) Midline 512e Helium Drives</b>	
HPE 10TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty Helium 512e Digitally Signed Firmware HDD	857644-B21
HPE 8TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty Helium 512e Digitally Signed Firmware HDD	861590-B21
<b>SATA Hot Plug SFF (2.5-inch) Midline (MDL) Drives</b>	

## Core Options

HPE 1TB SATA 6G Midline 7.2K SFF (2.5in) SC 1yr Wty Digitally Signed Firmware HDD 655710-B21

### **SATA Hot Plug SFF (2.5-inch) Midline 512e Drives**

HPE 2TB SATA 6G Midline 7.2K SFF (2.5in) SC 1yr Wty 512e Digitally Signed Firmware HDD 765455-B21

HPE 1TB SATA 6G Midline 7.2K SFF (2.5in) SC 1yr Wty 512e Digitally Signed Firmware HDD 765453-B21

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

HPE 6TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty Digitally Signed Firmware HDD 846510-B21

HPE 4TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty Digitally Signed Firmware HDD 872491-B21

HPE 4TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty HDD 861678-B21

HPE 3TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty Digitally Signed Firmware HDD 861693-B21

HPE 2TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty Digitally Signed Firmware HDD 872489-B21

HPE 2TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty HDD 861676-B21

HPE 1TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty HDD 861691-B21

### **SATA Hot Plug LFF (3.5-inch) Midline 512e Drives**

HPE 8TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty 512e Digitally Signed Firmware HDD 819203-B21

HPE 6TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty 512e HDD 861750-B21

HPE 4TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty 512e HDD 861752-B21

### **SATA Hot Plug LFF (3.5-inch) Midline 512e Helium Drives**

HPE 10TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty Helium 512e Digitally Signed Firmware HDD 857648-B21

HPE 8TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty Helium 512e Digitally Signed Firmware HDD 861594-B21

### **SATA Non-hot Plug LFF 7.2K (3.5-inch) Standard Drives**

HPE 4TB SATA 6G Midline 7.2K LFF (3.5in) RW 1yr Wty HDD 801888-B21

HPE 2TB SATA 6G Midline 7.2K LFF (3.5in) RW 1yr Wty HDD 801884-B21

HPE 1TB SATA 6G Midline 7.2K LFF (3.5in) RW 1yr Wty HDD 801882-B21

### **SSD Selection**

To streamline the configuration process for HPE ProLiant Gen9 servers and to provide the best product availability, HPE recommends SSDs from the list located here:

<http://www.hpe.com/products/recommend>

### **12G SAS Hot Plug SFF (2.5-inch) Read Intensive Solid State Drives**

HPE 7.68TB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD 870144-B21

HPE 3.84TB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD 872394-B21

HPE 3.84TB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD 875330-B21

HPE 1.92TB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD 872392-B21

HPE 1.92TB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD 875326-B21

HPE 960GB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD 872390-B21

HPE 960GB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD 875313-B21

HPE 480GB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware 875311-B21

## Core Options

### SSD

#### 12G SAS Hot Plug SFF (2.5-inch) Write Intensive Solid State Drives

HPE 1.6TB SAS 12G Write Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	873357-B21
HPE 800GB SAS 12G Write Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	873355-B21
HPE 400GB SAS 12G Write Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	873351-B21

#### 12G SAS Mixed Use Hot Plug SFF (2.5-inch) Solid State Drives

HPE 3.2TB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	873367-B21
HPE 3.2TB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	872386-B21
HPE 1.6TB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	873365-B21
HPE 1.6TB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	872382-B21
HPE 800GB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	873363-B21
HPE 800GB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	872376-B21
HPE 400GB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	873359-B21
HPE 400GB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	872374-B21

#### 12G SAS Mixed Use Hot Plug LFF (3.5-inch) Solid State Drives

HPE 800GB SAS 12G Mixed Use LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD	872378-B21
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#### 6G SATA Hot Plug SFF (2.5-inch) Write Intensive Solid State Drives

HPE 1.6TB SATA 6G WI SFF SC DS SSD	872363-B21
HPE 800GB SATA 6G WI SFF SC DS SSD	872359-B21
HPE 400GB SATA 6G WI SFF SC DS SSD	872355-B21

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

HPE 3.84TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	877764-B21
HPE 3.8TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	868830-B21
HPE 1.92TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	877758-B21
HPE 1.92TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	871770-B21
HPE 1.92TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	868826-B21
HPE 1.92TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	875513-B21
HPE 1.6TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	869386-B21
HPE 960GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	877752-B21
HPE 960GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	869384-B21
HPE 960GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty SSD	871768-B21
HPE 960GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	868822-B21
HPE 960GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	875511-B21
HPE 480GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	877746-B21
HPE 480GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	869378-B21

## Core Options

HPE 480GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	868818-B21
HPE 480GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	875509-B21
HPE 240GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	877740-B21
HPE 240GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	869376-B21
HPE 240GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	868814-B21
HPE 240GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	875503-B21
HPE 150GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	869374-B21
<b>Read Intensive - 6G SATA - M.2 - Solid State Drives</b>	
HPE 960GB SATA 6G Read Intensive M.2 2280 3yr Wty Digitally Signed Firmware SSD	875500-B21
HPE 480GB SATA 6G Read Intensive M.2 2280 3yr Wty Digitally Signed Firmware SSD	875319-B21
HPE 480GB SATA 6G Read Intensive M.2 2280 3yr Wty Digitally Signed Firmware SSD	875498-B21
HPE 150GB SATA 6G Read Intensive M.2 2280 3yr Wty Digitally Signed Firmware SSD	875317-B21
<b>6G SATA Hot Plug SFF (2.5-inch) SC Mixed Use Solid State Drives</b>	
HPE 1.92TB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	877788-B21
HPE 1.92TB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	872352-B21
HPE 1.92TB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	875478-B21
HPE 1.6TB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty SSD	804631-B21
HPE 960GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	877782-B21
HPE 960GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	872348-B21
HPE 960GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	875474-B21
HPE 480GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	877776-B21
HPE 480GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	872344-B21
HPE 480GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	875470-B21
HPE 240GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	880295-B21
HPE 240GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	875483-B21
<b>Mixed Use - 6G SATA - M.2 - Solid State Drives</b>	
HPE 960GB SATA 6G Mixed Use M.2 2280 3yr Wty Digitally Signed Firmware SSD	875492-B21
HPE 480GB SATA 6G Mixed Use M.2 2280 3yr Wty Digitally Signed Firmware SSD	875490-B21
HPE 240GB SATA 6G Mixed Use M.2 2280 3yr Wty Digitally Signed Firmware SSD	875488-B21
<b>6G SATA Hot Plug LFF (3.5-inch) Write Intensive Solid State Drives</b>	
HPE 1.6TB SATA 6G WI LFF SCC DS SSD	872365-B21
HPE 800GB SATA 6G WI LFF SCC DS SSD	872361-B21
HPE 400GB SATA 6G WI LFF SCC DS SSD	872357-B21
<b>6G SATA Hot Plug LFF (3.5-inch) Read Intensive Solid State Drives</b>	
HPE 1.92TB SATA 6G Read Intensive LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD	877760-B21
HPE 1.6TB SATA 6G Read Intensive LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD	869388-B21
HPE 960GB SATA 6G Read Intensive LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD	877754-B21



## QuickSpecs

## HPE ProLiant DL160 Generation9 (Gen9)

### Core Options

HPE 480GB SATA 6G Read Intensive LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD	877748-B21
HPE 480GB SATA 6G Read Intensive LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD	869380-B21
<b>6G SATA Hot Plug LFF (3.5-inch) SC Mixed Use Solid State Drives</b>	
HPE 1.92TB SATA 6G Mixed Use LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD	877790-B21
HPE 1.92TB SATA 6G Mixed Use LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD	875480-B21
HPE 1.6TB SATA 6G Mixed Use LFF (3.5in) SCC 3yr Wty SSD	804634-B21
HPE 960GB SATA 6G Mixed Use LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD	877784-B21
HPE 960GB SATA 6G Mixed Use LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD	875476-B21
HPE 960GB SATA 6G Mixed Use LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD	872350-B21
HPE 480GB SATA 6G Mixed Use LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD	875472-B21
HPE 480GB SATA 6G Mixed Use LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD	872346-B21
<b>M.2 SSD</b>	
HPE 340GB SATA 6G Read Intensive 3yr Wty M.2 Kit	835563-B21
HPE 340GB SATA 6G Read Intensive 3yr Wty Dual M.2 Kit	835565-B21
HPE Universal SATA HHHL 3yr Wty M.2 Kit	878783-B21
<b>NOTE: M.2 drives go in PCIe slots and use B140i SATA controller only.</b>	
<b>Hard Drive Blank Kits</b>	
HPE Large Form Factor Hard Drive Blank Kit	666986-B21
HPE Small Form Factor Hard Drive Blank Kit	666987-B21

### HPE Networking

#### 1 Gigabit Ethernet adapters

HPE Ethernet 1Gb 4-port 331T Adapter	647594-B21
HPE Ethernet 1Gb 2-port 332T Adapter	615732-B21
HPE Ethernet 1Gb 2-port 361T Adapter	652497-B21
HPE Ethernet 1Gb 4-port 366T Adapter	811546-B21

#### 10 Gigabit Ethernet adapters

HPE Ethernet 10Gb 2-port 530SFP Adapter	652503-B21
HPE Ethernet 10Gb 2-port 530T Adapter	656596-B21
HPE Ethernet 10Gb 2-port 546SFP+ Adapter	779793-B21
HPE Ethernet 10Gb 2-port 560SFP+ Adapter	665249-B21
HPE Ethernet 10Gb 2-port 561T Adapter	716591-B21
HPE Ethernet 10Gb 2-port 562SFP+ Adapter	727055-B21

**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. See cables/options below.

#### 25 Gigabit Ethernet adapters

HPE Ethernet 4x25Gb 1-port 620QSFP28 Adapter	817762-B21
HPE Ethernet 10/25Gb 2-port 640SFP28 Adapter	817753-B21

#### FlexibleLOM Adapters

HPE Ethernet 1Gb 4-port 331FLR Adapter	629135-B22
HPE Ethernet 1Gb 4-port 366FLR Adapter	665240-B21
HPE FlexFabric 10Gb 2-port 533FLR-T Adapter	700759-B21

## QuickSpecs

## HPE ProLiant DL160 Generation9 (Gen9)

### Core Options

HPE FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter	700751-B21
HPE FlexFabric 10Gb 4-port 536FLR-T Adapter	764302-B21
HPE FlexFabric 10Gb 2-port 556FLR-T Adapter	794525-B21
HPE Ethernet 10Gb 2-port 546FLR-SFP+ Adapter	779799-B21
HPE Ethernet 10Gb 2-port 560FLR-SFP+ Adapter	665243-B21
HPE Ethernet 10Gb 2-port 561FLR-T Adapter	700699-B21
HPE Ethernet 10Gb 2-port 562FLR-SFP+ Adapter	727054-B21
HPE Ethernet 10/25Gb 2-port 640FLR-SFP28 Adapter	817749-B21

**NOTE:** FlexibleLOM riser kit (P/N: 765509-B21) is required when any FlexibleLOM is selected.

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

<b>HPE InfiniBand</b>	HPE InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+QSFP Adapter	764284-B21
	HPE InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+FLR-QSFP Adapter	764285-B21

**NOTE:** Please see the **HPE InfiniBand Options for HP ProLiant and Integrity Servers QuickSpecs** for additional information.

<b>HPE I/O Expansion Options</b>	HPE DL160 Gen9 Low Profile PCIe CPU2 Riser Kit	725586-B21
	<b>NOTE:</b> CPU 2 is required if this riser is to be installed, enables one PCIe3 slot.	
	HP DL160 Gen9 FlexibleLOM Enablement Kit	781844-B21
	<b>NOTE:</b> This enablement kit is required when FlexibleLOM is selected.	

<b>HPE Power Supplies</b>	<b>HPE Entry-Level Power Supplies</b>	
	HPE 900W Standard AC 240VDC Power Input Module	775595-B21
	<b>NOTE:</b> This part number can only be bought standalone and is for field integration only.	
	<b>NOTE:</b> RPS Backplane is mandatorily needed with this power input module.	
	HPE 900W Standard AC 240VDC RPS Power Backplane	814835-B21
	<b>NOTE:</b> This part number can only be bought standalone and is for field integration only.	
	<b>NOTE:</b> This RPS backplane is mandatorily needed with 900W RPS input module.	
	HPE 900W Standard AC 240VDC Redundant Power Supply Kit	820792-B21
	<b>NOTE:</b> This Redundant Power supply kit includes 2 power supply input module and 1 backplane kit.	
	<b>NOTE:</b> This part number is both factory installed option and field integrable option.	
	<b>NOTE:</b> This Power supply supports both 100-240V AC and 240V DC.	
	<b>NOTE:</b> Supports Gold-level efficiency (92%) with a standard C14 inlet connector. No support for HPE Power Discovery Services. Only compatible with select HPE ProLiant Gen9 Essential servers.	
	<b>NOTE:</b> HPE 900W Gold (Redundant) AC 240VDC Power Input Module (775595-B21) must be used with Power Backplane (814835-B21).	
	<b>NOTE:</b> Each Redundant Power Supply Backplane can support up to two (2) power input modules.	
	<b>NOTE:</b> Redundant AC Power Input Modules do not share power. Redundant AC Power Input Module #1 is the primary AC Power Input Module. Redundant AC Power Input Module #2 is the backup AC Power Input Module.	

**NOTE:** Mixing of power supplies in the same server is not supported. All power supplies must be of the same input voltage, output rating, and efficiency rating. If non-matching power supplies are installed, you may receive an error message and/or experience operational issues with your server.

**NOTE:** Prior to selecting a power supply option, it is highly recommended that you review your server configuration in the HPE Power Advisor tool to determine the right size power supply for your server

Core Options

configuration. The HPE Power Advisor is located at: <http://www.hpe.com/info/hppoweradvisor>.

HPE Cooling Options	HP DL160 Gen9 Redundant Fan Kit <b>NOTE:</b> This kit includes one fan and is required for enabling fan redundancy with 1P and 2P configurations.	725587-B21
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## 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 an HPE approved configurator. Contact your local sales representative for additional information.

### HPE Insight Software

#### HPE Insight Control

HPE Insight Control including 1yr 24x7 Technical Support and Updates 1-server LTU C6N27A

HPE Insight Control including 1yr 24x7 TSU E-LTU C6N28ABE

HPE Insight Control Upgrade from iLO Advanced including 1yr 24x7 Support E-LTU C6N38ABE

**NOTE:** Electronic and Flexible-Quantity licenses can be used to purchase multiple licenses with a single activation key.

**NOTE:** Customer will receive a license entitlement certificate. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24x7 HPE Software Technical Support and Update Service.

**NOTE:** Licenses ship without media. The HPE Insight Control Media Kit can be ordered separately, or can be downloaded at: <https://www.hpe.com/info/insightmanagement>.

**NOTE:** For additional license options please see the [HPE Insight Control QuickSpecs](#).

### Embedded Management

#### HPE iLO Advanced

HPE iLO Advanced including 1yr 24x7 Technical Support and Updates 1-server LTU 512485-B21

HPE iLO Advanced including 3yr 24x7 Tech Support and Updates 1-server LTU BD505A

HPE iLO Advanced including 1yr 24x7 Technical Support and Updates E-LTU E6U59ABE

HPE iLO Advanced including 3yr 24x7 Technical Support and Updates E-LTU E6U64ABE

#### HPE iLO Essentials

HPE iLO Essentials including 3yr 24x7 Tech Support and Updates 1-server LTU BD774A

HPE iLO Essentials including 1yr 24x7 Tech Support and Updates 1-server LTU BD775A

HPE iLO Essentials including 3yr 24x7 Technical Support and Updates E-LTU E6U61ABE

HPE iLO Essentials including 1yr 24x7 Technical Support and Updates E-LTU E6U62ABE

#### HPE iLO Scale-out

HPE iLO Scale-Out 3yr 24x7 Tech Support and Updates Flexible Quantity LTU BD776A

HPE iLO Scale-Out including 3yr 24x7 Tech Support and Updates Flex Qty E-LTU BD776AAE

HPE iLO Scale-Out including 3yr 24x7 Tech Support and Updates Tracking LTU BD777A

HPE iLO Scale-Out 1yr 24x7 Tech Support and Updates Flexible Quantity LTU BD778A

HPE iLO Scale-Out including 1yr 24x7 Tech Support and Updates Flex Qty E-LTU BD778AAE

HPE iLO Scale-Out including 1yr 24x7 Tech Support and Updates Tracking LTU BD779A

### HPE Converged Infrastructure Management Software

#### HPE OneView Advanced (with HPE iLO Advanced)

HPE OneView including 3yr 24x7 Support Physical 1-server LTU E5Y34A

HPE OneView including 3yr 24x7 Support Flexible Quantity E-LTU E5Y35AAE

HPE OneView Physical Media Kit LTU E5Y37A

#### HPE OneView Advanced (without HPE iLO Advanced)

HPE OneView w/o iLO including 3yr 24x7 Support 1-server LTU P8B24A

HPE OneView w/o iLO including 3yr 24x7 Support Track 1-server LTU P8B25A

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

**NOTE:** Full licenses of HPE OneView Advanced also provide the right-to-use HPE Insight Control without additional charge.

**NOTE:** Server provisioning (via 'HPE Insight Control server provisioning') is licensed as

## Additional Options

part of HPE OneView Advanced and provides multi-server OS and driver provisioning. Media kit #BD883A can be ordered for a physical copy of this software (USB flash drive).

**NOTE:** Licenses ship without media. The HPE OneView Media Kit can be ordered separately, or can be downloaded at: <http://www.hpe.com/info/hpeoneview>

**NOTE:** Electronic and Flexible-Quantity licenses can be used to purchase multiple licenses with a single activation key.

### High Performance Clusters

#### HPE Cluster Management Utility

HPE Insight Cluster Management Utility 1yr 24x7 Flexible LTU	QL803B
HPE Insight Cluster Management Utility 3yr 24x7 Flexible LTU	BD476A
HPE Insight Cluster Management Utility Media	BD477A

**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.

**NOTE:** For additional license kits please see the [HPE Insight Cluster Management Utility QuickSpecs](#).

### HPE PCIe Workload Accelerator Options

#### HPE Read Intensive PCIe Workload Accelerator

HPE 6.4TB Read Intensive-2 FH/HL PCIe Workload Accelerator	831739-B21
HPE 3.2TB Read Intensive-2 HH/HL PCIe Workload Accelerator	831737-B21
HPE 1.6TB Read Intensive-2 HH/HL PCIe Workload Accelerator	831735-B21
HPE 1.3TB Read Intensive-2 HH/HL PCIe Workload Accelerator	831733-B21

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

HPE 5.2TB FH/HL Light Endurance (LE) PCIe Workload Accelerator	775672-B21
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**NOTE:** Please see the [HPE PCIe Workload Accelerators for ProLiant Servers QuickSpecs](#) for Technical Specifications and additional information.

### HPE Security

HPE 1U Security Bezel Kit	664918-B21
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**NOTE:** Quick Release Ear option kit (P/N 774609-B21) is required for installing security bezel.

HPE Trusted Platform Module 2.0 Kit	745823-B21
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**NOTE:** HPE Trusted Platform Module 2.0 Option works with Gen9 servers with UEFI Mode not Legacy Mode. It is not compatible with HP ProLiant Gen8 servers or earlier generation variants.

**NOTE:** HPE Gen9 servers purchased earlier may need the latest firmware update to be compatible with the TPM 2.0 Option.

**NOTE:** HPE server systems can have a TPM module (of any type) installed only once. It cannot be replaced with any other TPM module.

HPE Trusted Platform Module Option	488069-B21
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**NOTE:** The HPE Trusted Platform Module Option (488069-B21) is the TPM 1.2 version. Compatible server platforms include Gen8 and Gen9 servers.

**NOTE:** HPE server systems can have a TPM module (of any type) installed only once. It cannot be replaced with any other TPM module.

## Additional Options

### HPE Storage Controllers

#### SAS Controllers

##### HPE Smart Array Controllers

HPE Smart Array P440/4GB FBWC 12Gb 1-port Int SAS Controller 726821-B21

HPE Smart Array P440/2GB FBWC 12Gb 1-port Int SAS Controller 820834-B21

**NOTE:** Includes the HPE Smart Storage Battery.

HPE Smart Array P441/4GB FBWC 12Gb 2-ports Ext SAS Controller 726825-B21

##### HPE Smart Host Bus Adapters

HPE H240 12Gb 2-ports Int Smart Host Bus Adapter 726907-B21

HPE H241 12Gb 2-ports Ext Smart Host Bus Adapter 726911-B21

##### HPE Cable Options

HP DL160 Gen9 4LFF Smart HBA H240 SAS Cable Kit 725590-B21

HP DL160 Gen9 8SFF Smart HBA H240 SAS Cable Kit 774621-B21

HP DL160 Gen9 4LFF Smart Array P440 SAS Cable Kit 725593-B21

HP DL160 Gen9 8SFF Smart Array P440 SAS Cable Kit 774619-B21

**NOTE:** One of the above cables is required to be selected depending on the combination of server model and storage controller. Cable option kit descriptions include the right server model and storage controllers names.

**NOTE:** NHP server model includes SATA cables required to connect drives to embedded B140i SATA controller.

##### Optional Software

HPE Smart Array SR SmartCache (Single Key/Single Server) LTU D7S26A

HPE Smart Array SR SmartCache (Single Key/Multiple Servers) LTU D7S27A

HPE Smart Array SR SmartCache (Single Key/Multiple Servers) E-LTU D7S27AAE

**NOTE:** HPE SmartCache is supported when one of the supported Smart Array Controllers is installed in the server.

HPE Smart Array SR Secure Encryption (Data at Rest Encryption/per Server Entitlement) E-LTU Q2F26AAE

##### Optional Upgrades

HP 96W Smart Storage Battery with 145mm Cable for DL/ML/SL Servers 727258-B21

**NOTE:** This option is mandatorily required with HPE Smart Array controllers. One server can accommodate only 1 Smart Storage Battery that would suffice the requirement of all HPE Smart Array controllers.

### HPE Tape Backup

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

<http://www.hpe.com/storage/storeever>. For hardware and software compatibility of HPE tape backup products <http://www.hpe.com/storage/BURACompatibility>.

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

#### Tape Drives

##### SAS Rack-Mount Tape Solutions

HPE StoreEver LTO-7 Ultrium 15000 Internal Tape Drive BB873A

HPE StoreEver LTO-7 Ultrium 15000 External Tape Drive BB874A

HPE StoreEver MSL LTO-7 Ultrium 15000 FC Drive Upgrade Kit N7P36A

HPE StoreEver MSL LTO-7 Ultrium 15000 SAS Drive Upgrade Kit N7P37A

HPE StoreEver LTO-6 Ultrium 6250 Tape Drive in a 1U Rack Mount Kit COL99A



## Additional Options

HPE StoreEver LTO-6 Ultrium 6250 External Tape Drive	EH970A
HPE StoreEver MSL LTO-6 Ultrium 6250 SAS Drive Upgrade Kit	C0H27A
HPE StoreEver MSL LTO-6 Ultrium 6250 Fibre Channel Drive Upgrade Kit	C0H28A
HPE StoreEver LTO-5 Ultrium 3000 SAS Tape Drive in a 1U Rack Mount Kit	EJ014B
HPE StoreEver LTO-5 Ultrium 3000 SAS External Tape Drive	EH958B
HPE StoreEver MSL LTO-5 Ultrium 3000 SAS Drive Upgrade Kit	BL540B
HPE StoreEver LTO-4 Ultrium 1760 SAS (1) in a 1U Rack Mount Kit	EH946C
HPE StoreEver LTO-4 Ultrium 1760 SAS External Tape Drive	EH920B
HPE StoreEver 1U SAS Rack Mount Kit	AE459B

### HPE DAT Autoloader

HPE StoreEver 1/8 G2 LTO-7 Ultrium 15000 FC Tape Autoloader	N7P34A
HPE StoreEver 1/8 G2 LTO-7 Ultrium 15000 SAS Tape Autoloader	N7P35A
HPE StoreEver 1/8 G2 LTO-6 Ultrium 6250 Fibre Channel Tape Autoloader	C0H19A
HPE StoreEver 1/8 G2 LTO-5 Ultrium 3000 SAS Tape Autoloader	BL536B

### HPE MSL2024 Tape Library

HPE StoreEver MSL2024 0-drive Tape Library	AK379A
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### HPE MSL4048 Tape Library

HPE StoreEver MSL4048 0-drive Tape Library	AK381A
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### HPE StoreEver MSL6480

HPE StoreEver MSL6480 Scaleable Expansion Module	QU626A
HPE StoreEver MSL6480 Scalable Base Module	QU625A

**NOTE:** Please see the [HPE StoreEver MSL6480 Tape Library QuickSpecs](#) for Technical Specifications and additional information).

## HPE Disk Backup

### HPE RDX Removable Disk Backup System

HPE RDX 4TB USB 3.0 External Disk Backup System	Q2R33A
HPE RDX 3TB USB 3.0 Internal Disk Backup System	P9L71A
HPE RDX+ 3TB USB 3.0 External Disk Backup System	P9L72A
HPE RDX 2TB USB3.0 External Disk Backup System	E7X53B
HP RDX+ 1TB External Backup System	B7B69B
HP RDX+ 500GB External Backup System	B7B66B
HPE RDX+ External Docking System	C8S07B
HPE D3700 Enclosure	QW967A
HPE D3600 Enclosure	QW968A
HPE StoreOnce 5100 48TB System	BB915A
HPE StoreOnce 3540 24TB System	BB914A
HPE StoreOnce 3520 12TB System	BB922A
HPE StoreOnce 3100 8TB System	BB913A

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

<https://www.hpe.com/us/en/product-catalog/storage/disk-based-backup-systems.html>. For hardware and software compatibility of HPE disk backup products see: <http://www.hpe.com/storage/spock>.

**NOTE:** Please see the [HPE RDX Removable Disk Backup System QuickSpecs](#) for additional part numbers, Technical Specifications, and additional information

## HPE Storage

### Emulex Fibre Channel HBAs

## Additional Options

<b>Options</b>	HPE 82E 8Gb 2-port PCIe Fibre Channel Host Bus Adapter	AJ763B
	HPE 81E 8Gb 1-port PCIe Fibre Channel Host Bus Adapter	AJ762B
	HPE StoreFabric SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter	C8R39A
	HPE StoreFabric SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter	C8R38A
	<b>QLogic Fibre Channel HBAs</b>	
	HPE 82Q 8Gb 2-port PCIe Fibre Channel Host Bus Adapter	AJ764A
	HPE 81Q 8Gb 1-port PCIe Fibre Channel Host Bus Adapter	AK344A
	HPE StoreFabric SN1000Q 16GB 1-port PCIe Fibre Channel Host Bus Adapter	QW971A
	HPE StoreFabric SN1000Q 16GB 2-port PCIe Fibre Channel Host Bus Adapter	QW972A
	HPE StoreFabric SN1100Q 16Gb Single Port Fibre Channel Host Bus Adapter	P9D93A
	HPE StoreFabric SN1100Q 16Gb Dual Port Fibre Channel Host Bus Adapter	P9D94A
	<b>Converged Network Adapter</b>	
	HPE StoreFabric CN1200E 10Gb Converged Network Adapter	E7Y06A
	HPE StoreFabric CN1100R Dual Port Converged Network Adapter	QW990A
	HPE StoreFabric CN1200E 10GBASE-T Dual Port Converged Network Adapter	N3U51A
	HPE StoreFabric CN1100R 10GBASE-T Dual Port Converged Network Adapter	N3U52A

### HPE Data Center Racks

#### HPE Advanced Series Racks

HPE 42U 600mm x 1075mm Advanced Pallet Rack	H6J65A
HPE 42U 600mm x 1075mm Advanced Shock Rack	H6J66A
HPE 42U 600mm x 1200mm Advanced Pallet Rack	H6J67A
HPE 42U 600mm x 1200mm Advanced Shock Rack	H6J68A
HPE 36U 600mm x 1075mm Advanced Pallet Rack	H6J77A
HPE 36U 600mm x 1075mm Advanced Shock Rack	H6J78A
HPE 14U 600mm x 1075mm Advanced Shock Rack	H6J82A
HPE 22U 600mm x 1075mm Advanced Pallet Rack	H6J83A
HPE 22U 600mm x 1075mm Advanced Shock Rack	H6J84A
HPE 48U 600mm x 1075mm Advanced Pallet Rack	H6J87A
HPE 48U 600mm x 1075mm Advanced Shock Rack	H6J88A

**NOTE:** Please see the [HPE Advanced Series Racks QuickSpecs](#) for information on additional racks options and rack specifications.

#### HPE Enterprise Series Racks

HPE 42U 600mm x 1075mm Enterprise Pallet Rack	BW903A
HP 42U 600mm x 1075mm Enterprise Shock Rack	BW904A
HP 42U 600mm x 1200mm Enterprise Pallet Rack	BW907A
HP 42U 600mm x 1200mm Enterprise Shock Rack	BW908A
HP 47U 600mm x 1075mm Enterprise Pallet Rack	BW911A
HP 47U 600mm x 1075mm Enterprise Shock Rack	BW912A
HP 47U 600mm x 1200mm Enterprise Pallet Rack	BW913A
HP 47U 600mm x 1200mm Enterprise Shock Rack	BW914A
HP 42U 800mm x 1075mm Enterprise Pallet Rack	BW917A
HP 42U 800mm x 1075mm Enterprise Shock Rack	BW918A

**NOTE:** Please see the [HPE Enterprise Series Racks QuickSpecs](#) for information on additional racks options and rack specifications.

**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

## Additional Options

people to use for any installation.

<b>HPE Power Distribution Units (PDUs)</b>	<b>HPE Basic Power Distribution Units (PDU)</b>	
	HPE 800VA - 277V Input / 230V Output NA Rack Mount Transformer	H3X09A
	<b>NOTE: Please see the <a href="#">HPE Basic Power Distribution Units (PDU) QuickSpecs</a> for information on additional options and product specifications.</b>	
	<b>HPE Metered Power Distribution Units (PDU)</b>	
	HPE Metered 2.8kVA/L5-30P 24A/120V Outlets (12) 5-20R/Horizontal NA/JP PDU	D9N43A
	HPE Metered 3.6kVA/60320 C20 Detachable 16A/230V Outlets (12) C13/Horizontal WW PDU	D9N46A
	HPE Metered 4.9kVA/L6-30P 24A/208V Outlets (12) C13/Horizontal NA/JP PDU	D9N44A
	HPE Metered 3.6kVA/60320 C20 Detachable 16A/230V Outlets (16) C13/Vertical WW PDU	D9N45A
	HPE Metered 4.9kVA/L6-30P 24A/208V Outlets (12) C13/Vertical NA/JP PDU	G9Z05A
	HPE Metered 4.9kVA/L6-30P 24A/208V Outlets (20) C13 (4) C19/Vertical NA/JP PDU	D9N47A
	HPE Metered 3Ph 8.6kVA/L15-30P 24A/208V Outlets (18) C13 (3) C19/Vertical NA/JP PDU	D9N51A
	HPE Metered 3Ph 8.6kVA/L21-30P 24A/120-208V Outlets (18) C13 (3) C19 (3) 5-20R/Vertical NA/JP PDU	D9N53A
	HPE Metered 8.3kVA/CS8265C 40A/208V Outlets (30) C13 (3) C19/Vertical NA PDU	D9N49A
	HPE Metered 3Ph 14.4kVA/CS8365C 40A/208V Outlets (12) C13 (12) C19/Vertical NA/JP PDU	D9N58A
	HPE Metered 3Ph 16.6kVA/60309 32A-30A 5-wire 24A/230V Outlets (30) C13 (3) C19/Vertical NA/JP PDU	D9N61A
	HPE Metered 3Ph 16.6kVA/60309 32A-30A 5-wire 24A/230V Outlets (12) C13 (12) C19/Vertical NA/JP PDU	D9N62A
	HPE Metered 3Ph 17.3kVA/60309 60A 4-wire 48A/208V Outlets (24) C13 (3) C19/Vertical NA/JP PDU	D9N54A
	HPE Metered 3Ph 17.3kVA/60309 60A 4-wire 48A/208V Outlets (12) C13 (12) C19/Vertical NA/JP PDU	D9N59A
	HPE Metered 3Ph 17.3kVA/60309 60A 4-wire 48A/208V Outlets (12) C13 (12) C19/Vertical NA/JP PDU	G9Z07A
	HPE Metered 3Ph 19.9kVA/L22-30P 24A/277V Outlets (30) RF-203P-HP/Vertical NA PDU	D9N63A
	HP Environmental Sensor for Remote Monitored and Managed PDUs	E2D53A
	<b>NOTE: Please see the <a href="#">HPE Metered Power Distribution Units (PDU) QuickSpecs</a> for information on additional options and product specifications.</b>	
	<b>HPE Intelligent Power Distribution Unit (PDU)</b>	
	HPE Intelligent Modular 4.9kVA/L6-30P 24A/208V Outlets (6) C19/Horizontal NA/JP PDU	AF520A
	HPE Intelligent Modular 8.3kVA/CS8265C 40A/208V Outlets (6) C19/Horizontal NA/JP PDU	AF521A
	HPE Intelligent Modular 3Ph 8.6kVA/L15-30P 24A/208V Outlets (6) C19/Horizontal NA/JP PDU	AF522A
	HPE Intelligent Modular 3Ph 17.3kVA/60309 60A 4-wire 48A/208V (6) C19/Horizontal NA/JP PDU	AF523A
	HPE Intelligent Modular 3Ph 17.3kVA/60309 30A 5-wire 24A/240V (6) C19/Horizontal NA/JP PDU	AF901A
	HPE Intelligent Modular 3Ph 17.3kVA/IEC 60309 60A 4-wire 48A/208V (12)	AF535A

## Additional Options

C19/Horizontal NA/JP PDU	
HPE Intelligent Modular 4.9kVA/L6-30P 24A/208V Outlets (20) C13 (6) C19/Horizontal NA/JP PDU	AF531A
HPE Intelligent Modular 3Ph 8.6kVA/L15-30P 24A/208V Outlets (20) C13 (6) C19/Horizontal NA/JP PDU	AF532A
HPE Intelligent Modular 3Ph 14.4kVA/CS8365C 40A/208V Outlets (6) C19/Horizontal NA/JP PDU	AF533A
HPE 5xC13 Intelligent PDU Extension Bar G2 Kit	AF547A
HPE 5xC13 Outlets Power and UID LEDs Pair Standard Extension Bar	AF528A

**NOTE:** Please see the [HPE Intelligent Power Distribution Unit \(PDU\) QuickSpecs](#) for information on additional options and product specifications.

### HPE Metered and Switched Power Distribution Units (PDU)

HPE Metered Switched 2.8kVA/L5-30P 24A/120V Outlets (24) 5-20R /Vertical NA/JP PDU	H8B48A
HPE Metered Switched 3.6kVA/60320 C20 Detachable 16A/230V Outlets (7) C13 (1) C19/Vertical WW PDU	H8B49A
HPE Metered Switched 4.9kVA/L6-30P 24A/208V Outlets (20) C13 (4) C19/Vertical NA/JP PDU	H8B50A
HPE Metered Switched 3Ph 8.6kVA/L15-30P 24A/208V Outlets (18) C13 (6) C19/Vertical NA/JP PDU	H8B52A
HPE Metered Switched 3Ph 8.6kVA/L21-30P 24A/208V Outlets (20)C13 (3)C19 (1)5-20R/Vertical NA/JP PDU	H8B53A
HPE Metered Switched 3Ph 14.4kVA/CS8365C 40A/208V Outlets (12) C13 (12) C19/Vertical NA/JP PDU	H8B55A
HPE Metered Switched 3Ph 17.3kVA/60309 4-wire 48A/208V Outlets (12) C13 (12) C19/Vertical NA/JP PDU	H8B56A

**NOTE:** Please see the [HPE Metered and Switched Power Distribution Units \(PDU\) QuickSpecs](#) for information on additional options and product specifications.

**NOTE:** To learn more, please visit the [HPE Uninterruptible Power Systems \(UPS\) web page](#).

## HPE Rack Mount Consoles, KVM Switches, and Keyboards

### HPE Location Discovery Services

HPE Location Discovery Services LCD8500 Kit	TL052A
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**NOTE:** Please see the [HPE Location Discovery Services QuickSpecs](#) for information on additional options and product specifications.

### HPE Rack Mount Consoles

HP LCD8500 1U US Rackmount Console Kit	AF630A
HP LCD8500 1U US TAA Rackmount Console Kit	AF645A

### HPE KVM Switches

HP 0x1x8 G3 KVM Console Switch	AF651A
HP 0x2x16 G3 KVM Console Switch	AF652A
HP TAA 0x2x16 G3 KVM Console Switch	AF653A
HP USB Remote Access Key for G3 KVM Console Switches	AF650A
HP KVM Console USB Interface Adapter	AF628A
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
HP 1x4 USB/PS2 KVM Console Switch	AF611A

## Additional Options

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:** To learn more, please visit the [HPE KVM Switches web page](#).

### HPE USB Keyboard and Mouse

HPE USB US Keyboard/Mouse Kit	631341-B21
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### Rail Kits

HP 1U Small Form Factor Easy Install Rail Kit	734807-B21
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**NOTE:** This applies to both LFF and SFF models and it does not include cable management arm.

HPE 1U Cable Management Arm for Easy Install Rail Kit	734811-B21
HP 1U Short Friction Rail Kit	775612-B21

### HPE Other Options

HPE Rack LED Light Kit	BW939A
HP Kit LCD 1.83m Latch Display Port Cable	G7T29A
HP ConvergedSystem Door Branding Kit	TK815A
HP ConvergedSystem Rack Light Kit	TK816A
HP ConvergedSystem Rack Side Panel 1075mm Kit	TK817A

## HPE Uninterruptible Power Systems (UPS)

### HPE DirectFlow Three Phase UPS

#### Power Unit (1U UPS)

HPE R12000 DirectFlow - 1U Rackmount Uninterruptible Power System	G9Y75A
HPE R12000 DirectFlow - POD 1U Rackmount Uninterruptible Power System	AF478A

#### Input/Output Module Options for 1U UPS

HPE 30A 400-415 Volt Three Phase NA R10000 DirectFlow UPS IEC309 Input/Output Module	AF489A
HPE 30A 480 Volt Three Phase NA R12000 DirectFlow UPS L22-30 Input/Output Module	AF491A
HPE 30A 480 Volt Three Phase NA R12000 DirectFlow UPS IEC309 Input/Output Module	AF492A
HPE 30A 400-415 Volt Three Phase NA R12000 DirectFlow UPS IEC309 Input/Output Module	G9Y76A
HPE DirectFlow UPS Management Card	AF493A

#### Power Unit (2U UPS)

HPE R18000 DirectFlow - 2U Rackmount Uninterruptible Power System	AF479A
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#### Input/Output Module Options for 2U UPS

HPE 30A 480 Volt Three Phase NA R18000 DirectFlow UPS IEC309 Input/Output Module	AF486A
HPE 30A 480 Volt Three Phase NA R18000 DirectFlow UPS IEC309 Input/Output Module	AF487A
HPE 30A 400 Volt Three Phase NA R18000 DirectFlow UPS IEC309 Input/Output Module	D9Q02A
HPE 30A 400-415V Three Phase NA R18000 DirectFlow UPS 1:1 IEC309 Input/Output Module	AF484A

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

### Battery Pack Options

HPE DirectFlow UPS - 1U Rackmount Lithium-ion Battery Pack	AF480A
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## Additional Options

HPE DirectFlow UPS - 3U Rackmount VRLA Battery Pack	AF482A
HPE WW DirectFlow Secondary Battery Cable	AF497A

**NOTE:** Please see the [HPE DirectFlow Three Phase Uninterruptible Power System QuickSpecs](#) for information on additional options and product specifications.

### HPE Tower UPS

#### HPE T750 G4 UPS Models

HPE T750 G4 NA/JP Uninterruptible Power System	J2P85A
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#### HPE T1000 G4 UPS Models

HPE T1000 G4 NA/JP Uninterruptible Power System	J2P86A
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#### HPE T1500 G4 UPS Models

HPE T1500 G4 NA/JP Uninterruptible Power System	J2P87A
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### HPE Rack/Tower UPS

#### HPE R/T2200 G4 UPS Models

HPE R/T2200 G4 NA/JP Uninterruptible Power System	J2R00A
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#### HPE R/T3000 G4 UPS Models

HPE R/T3000 G4 Low Voltage NA/JP Uninterruptible Power System	J2R01A
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HPE R/T3000 G4 High Voltage NA/JP Uninterruptible Power System	J2R02A
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#### R1500 G4 Models

HPE R1500 G4 NA Uninterruptible Power System	J2Q99A
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#### R7000 Uninterruptible Power System (UPS)

HPE R7000 4U 50A High Voltage NA/JP Uninterruptible Power System	AF462A
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#### R5000 Uninterruptible Power System (UPS)

HPE R5000 3U L630 High Voltage NA/JP Uninterruptible Power System	AF460A
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**NOTE:** Please see the [HPE Line Interactive Single Phase UPS QuickSpecs](#) for information on additional options and product specifications.

### HPE UPS Options

HPE R/T2200 G4 Extended Runtime Module	J2R09A
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HPE R/T3000 G4 Extended Runtime Module	J2R10A
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HPE 2U Rack/Tower UPS Shipping Kit	L4Q11A
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**NOTE:** To learn more, please visit the [HPE Uninterruptible Power Systems \(UPS\) web page](#).

## HPE USB and SD Options

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

HPE 32GB microSD Mainstream Flash Media Kit	700139-B21
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HPE Dual 8GB microSD Enterprise Midline USB Kit	741279-B21
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HPE 8GB microSD Enterprise Mainstream Flash Media Kit	726116-B21
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HPE 8GB USB Enterprise Mainstream Flash Media Drive Key Kit	737953-B21
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## HPE Support Services

### Foundation Care

HPE 3 year Foundation Care 24x7 DL160 Gen9 Service	U7AZ7E
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HPE 3 year Foundation Care 24x7 wDMR DL160 Gen9 Service	U7AZ8E
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HPE 3 year Foundation Care 24x7 wCDMR DL160 Gen9 Service	U7AZ9E
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### Proactive Care

HPE 3 year Proactive Care 24x7 DL160 Gen9 Service	U7BA0E
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HPE 3 year Proactive Care 24x7 with DMR DL160 Gen9 Service	U7BA1E
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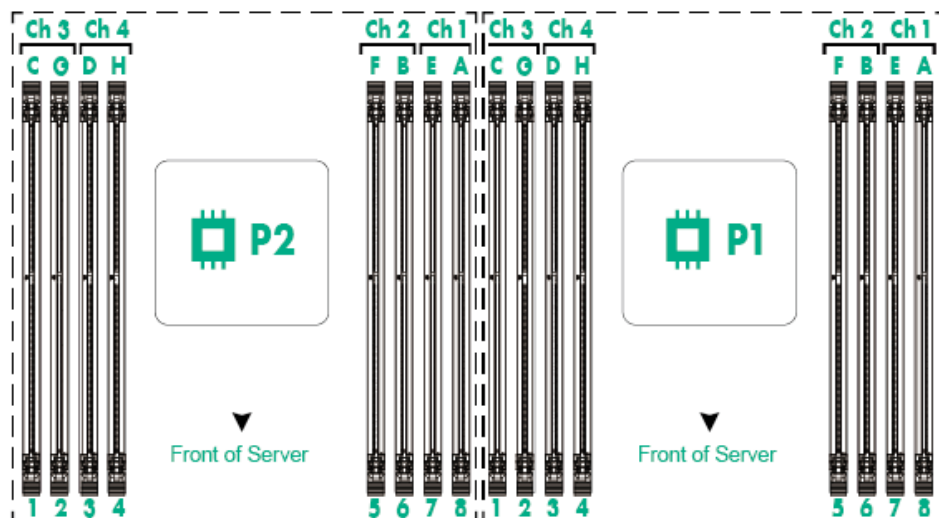
Additional Options

HPE 3 year Proactive Care 24x7 with CDMR DL160 Gen9 Service	U7BA2E
<b>Installation &amp; Start-up Services</b>	
HPE Installation ProLiant DL160/DL360e Service	U6E11E
HPE Installation and Startup Entry ML DL Server Service	U6E13E



## Memory

### Memory Population guidelines



#### General Memory Population Rules and Guidelines:

- 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.
- To maximize performance, it is recommended to balance the total memory capacity between all installed processors and load the channels similarly whenever possible.
- When two processors are installed, balance the DIMMs across the two processors.
- Place the DIMMs with the highest number of ranks in the white slot when mixing DIMMs of different ranks on the same channel.
- Do not mix RDIMMs or LRDIMMs.
- Quad rank RDIMMs are not supported in HPE ProLiant DL160 Gen9 servers.
- Quad rank LRDIMMs are capable of up to two DIMMs per channel.
- DIMMs of different speeds may be mixed in any order; the server will select a common optimal speed.
- The maximum memory speed is a function of the memory type, memory configuration, and processor model.
- The maximum memory capacity is a function of the memory type and number of installed processors.
- To realize the performance memory capabilities listed in this document, HPE SmartMemory is required.

#### Intel Gen9 Supported Memory Bandwidth for HPE ProLiant Gen9 Intel® Xeon® E5-2600v4 Series Processor Family

Memory Bandwidth and Capacity						
[DIMM Type]	Registered DIMMs (RDIMMs)				Load Reduced (LRDIMMs)	
HPE SKU P/N	805347-B21	805349-B21	836220-B21	805351-B21	805353-B21	805358-B21
DIMM Rank	Single Rank	Single Rank	Dual Rank	Dual Rank	Dual Rank	Quad Rank
DIMM Capacity	8GB	16GB	16GB	32GB	32GB	64GB
Voltage	Std Voltage 1.2V	Std Voltage 1.2V	Std Voltage 1.2V	Std Voltage 1.2V	Std Voltage 1.2V	Std Voltage 1.2V

## QuickSpecs

## HPE ProLiant DL160 Generation9 (Gen9)

### Memory

DRAM Depth [bit]	1G	2G	1G	2G	2G	2G
DRAM Width [bit]	x8	x4	x4	x4	x4	x4
DRAM Density	8Gb	8Gb	4Gb	8Gb	8Gb	8Gb
CAS Latency	17-17-17	17-17-17	17-17-17	17-17-17	17-17-17	17-17-17
DIMM Native Speed (MT/s)	2400	2400	2400	2400	2400	2400
<b>SLOTS THAT CAN BE POPULATED</b>						
16 slot servers	16	16	16	16	16	16
<b>MAXIMUM CAPACITY (GB)</b>						
	128	256	256	512	512	1024
<b>POPULATED DIMM SPEED (MT/s)</b>						
1 DIMM Per Channel	2400	2400	2400	2400	2400	2400
2 DIMM Per Channel	2133	2133	2133	2133	2400	2400
3 DIMM Per Channel	n/a	n/a	n/a	n/a	n/a	n/a

**NOTE:** DL160 has 2 DIMMs per channel and hence 3 DIMMs per channel memory speeds are not applicable on DL160.

### Intel Gen9 Supported Memory Bandwidth for HPE ProLiant Gen9 Intel® Xeon® E5-2600v3 Series Processor Family

Memory Bandwidth and Capacity								
[DIMM Type]	Registered DIMMs (RDIMMs)					Load Reduced (LRDIMMs)		
HPE SKU P/N	726717-B21	726718-B21	759934-B21	726719-B21	728629-B21	726720-B21	726722-B21	726724-B21
DIMM Rank	Single Rank	Single Rank	Dual Rank	Dual Rank	Dual Rank	Dual Rank	Quad Rank	Quad Rank
DIMM Capacity	4GB	8GB	8GB	16GB	32GB	16GB	32GB	64GB
Voltage	Std Voltage 1.2V	Std Voltage 1.2V	Std Voltage 1.2V	Std Voltage 1.2V	Std Voltage 1.2V	Std Voltage 1.2V	Std Voltage 1.2V	Std Voltage 1.2V
DRAM Depth [bit]	512M	1G	512M	1G	1G	2G	2G	2G
DRAM Width [bit]	x8	x4	x8	x4	x4	x4	x4	x4
DRAM Density	4Gb	4Gb	4Gb	4Gb	4Gb	8Gb	8Gb	8Gb
CAS Latency	15-15-15	15-15-15	15-15-15	15-15-15	15-15-15	15-15-15	15-15-15	15-15-15
DIMM Native Speed (MT/s)	2133	2133	2133	2133	2133	2133	2133	2133
<b>SLOTS THAT CAN BE POPULATED</b>								
16 slot servers	16	16	16	16	16	16	16	16
<b>MAXIMUM CAPACITY (GB)</b>								
	64	128	128	256	512	256	512	1024
<b>POPULATED DIMM SPEED (MT/s)</b>								

## QuickSpecs

## HPE ProLiant DL160 Generation9 (Gen9)

### Memory

<b>1 DIMM Per Channel</b>	2133	2133	2133	2133	2133	2133	2133	2133
<b>2 DIMM Per Channel</b>	2133	2133	2133	2133	2133	2133	2133	2133
<b>3 DIMM Per Channel</b>	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

**NOTE:** DL160 has 2 DIMMs per channel and hence 3 DIMMs per channel memory speeds are not applicable on DL160.

#### DIMM slot and configuration diagram

#### DIMM slot and configuration diagrams

##### Basic memory slot & population diagram

- Population order; start with "A" first, "B" second, "C" third, etc.
- When one processor is installed, install DIMMs in sequential alphabetic order: A, B, C, D, E, F.
- When two processors are installed, install DIMMs in sequential alphabetic order: CPU1-A, CPU2-A, CPU1-B, CPU2-B, CPU1-C, CPU2-C.

CPU #1 IS PROCESSOR ON RIGHT - LOOKING FROM FRONT OF SERVER

CPU 1			CPU 2		
	Slot #	Population order	Slot #	Population order	
Chnl 3	1	C	1	C	Chnl3
	2	G	2	G	
CPU 1			CPU 2		
	Slot #	Population order	Slot #	Population order	
Chnl 4	3	D	4	D	Chnl 4
	4	H	5	H	
CPU 1			CPU 2		
	Slot #	Population order	Slot #	Population order	
Chnl 2	5	F	7	F	Chnl 2
	6	B	8	B	
CPU 1			CPU 2		
	Slot #	Population order	Slot #	Population order	
Chnl 1	7	E	10	E	Chnl 1
	8	A	11	A	

#### Memory Speed by Processor Model

Processor Models	Supported Memory Speeds
E5-2609v3, E5-2603v3	1600MT/s
E5-2640v3, E5-2630v3, E5-2620v3, E5-2630Lv3, E5-2623v3	1866MT/s
E5-2660v3, E5-2650v3, E5-2650Lv3	2133MT/s
E5-2609v4, E5-2603v4	1866MT/s
E5-2630Lv4, E5-2620v4, E5-2623v4, E5-2640v4, E5-2630v4	2133MT/s
E5-2650Lv4, E5-2660v4, E5-2650v4, E5-2680v4, E5-2695v4, E5-2683v4	2400MT/s

Memory

Standard and Maximum Memory Capacity (Pre-configured Models)	Pre Configured Models	Standard Memory	Maximum Memory Plus Optional Memory	Standard Memory Replaced with Optional Memory
	E5-2620v4	16GB (1x16GB)	496GB (15x32GB, 1x16GB)	1024GB (16x64GB)
	E5-2609v3	16GB (2x8GB)	464GB (14x32GB, 2x8GB)	1024GB (16x64GB)
	E5-2603v4, E5-2603v3	8GB (1x8GB)	488GB (15x32GB, 1x8GB)	1024GB (16x64GB)

DDR4 memory options part number decoder

**NOTE:** Capacity references are rounded to the common gigabyte (GB) values.

- 2GB = 2,048MB
- 4GB = 4,096MB
- 8GB = 8,192MB
- 16GB = 16,384MB
- 32GB = 32,768MB
- 64GB = 65,536MB



QuickSpecs

HPE ProLiant DL160 Generation9 (Gen9)

Storage



1-8 8 x SFF SATA/SAS/SSD Hot Pluggable Hard Drive Bays



1-4 4 x LFF SATA/SAS/SSD Hot Pluggable Hard Drives Bays

## Technical Specifications

<b>System Unit</b>	<b>Dimensions</b> (H x W x D)	8 SFF - 1.7 x 17.1 x 23.9 inches (4.29 x 43.46 x 60.76 cm) 4 LFF - 1.7 x 17.1 x 23.9 inches (4.29 x 43.46 x 60.76 cm)
	<b>Weight</b> (approximate)	Maximum: 33.04 lb (15kg) (all hard drives, power supply, and processor installed) Minimum: 22.03 lb (10kg) (one hard drive, power supply, and processor installed)
	<b>Input Requirements</b> (per power supply)	Rated Line Voltage 100 to 240 VAC
		Rated Input Current For 550W Power Supply: 6.7 A (at 100 VAC) 3.3 A (at 100 VAC)
		Rated Input Frequency 47 to 63 Hz
		Rated Input Power For 550 W Power Supply: < 670 W (at 100 VAC) < 660 W (at 200 VAC)
	<b>BTU Rating</b>	Maximum For 550 W Power Supply: 2201 BTU/hr (at 100 VAC) 2153 BTU/hr (at 200 VAC)
	<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.hpe.com/info/hppoweradvisor">http://www.hpe.com/info/hppoweradvisor</a> - Click on the system of interest. Example: DL160 Gen9- Follow the instructions of the next screens.
	<b>Power Supply Output</b>	Rated Steady-State Power For 550 W Power Supply: 550 W (at 100 VAC) 550 W (at 200 VAC)
		Maximum Peak Power For 550 W Power Supply: 550 W (at 100 VAC) 550 W (at 200 VAC)
<b>System Inlet Temperature</b>	Standard Operating Support	10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 305 m (1.8°F per every 1000 ft) above sea level to a maximum of 3050 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 20°C/hr (36°F/hr). The upper limit and rate of change may be limited by the type and number of options installed. System performance during standard operating support may be reduced if operating with a fan fault or above 30°C (86°F).
	Extended Ambient Operating Support	For approved hardware configurations, the supported system inlet range is extended to be: 5° to 10°C (41° to 50°F) and 35° to 40°C (95° to 104°F) at sea level with an altitude derating of 1.0°C per every 175 m (1.8°F per every 574 ft) above 900 m (2953 ft) to a maximum of 3050 m (10,000 ft). The approved hardware

## Technical Specifications

configurations for this system are listed at the URL:

<http://www.hpe.com/servers/ashrae>.

For approved hardware configurations, the supported system inlet range is extended to be: 40° to 45°C (104° to 113°F) at sea level with an altitude derating of 1.0°C per every 125 m (1.8°F per every 410 ft) above 900 m (2953 ft) to a maximum of 3050 m (10,000 ft). The approved hardware configurations for this system are listed at the URL:

<http://www.hpe.com/servers/ashrae>.

System performance may be reduced if operating in the extended ambient operating range or with a fan fault.

**NOTE:** Supports A3 and A4 extended ambient.

<b>Relative Humidity</b>	Non-operating	-30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).
	Operating	Minimum to be the higher (more moisture) of -12°C (10.4°F) dew point or 8% relative humidity. Maximum to be the lower (less moisture) of 24°C (75.2°F) dew point or 90% relative humidity.
	(non-condensing)	5% to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.
<b>Altitude</b>	Operating	3048 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
	Non-operating	9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
<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>Idle</b>	
	LWAd	Entry 5.1 B Base 5.2 B Performance 5.0 B
	LpAm	Entry 34.2 dBA Base 35.9 dBA Performance 34.9 dBA
	<b>Operating</b>	
	LWAd	Entry 5.3 B Base 5.3 B Performance 5.6 B



## Technical Specifications

	<b>Emissions Classification (EMC)</b>	LpAm	Entry 36.3 dBA Base 36.2 dBA Performance 39.7 dBA
		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
		<b>NOTE:</b> 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.	
<b>HPE Dynamic Smart Array B140i Controller</b>	<b>Number of PCI links</b>	Four	
	<b>PCI link rate</b>	4Gb/s	
	<b>Storage protocol support</b>	SATA	
	<b>SAS/SATA peak data transfer rate</b>	6Gb/s	
	<b>Number of SAS/SATA links</b>	10 links	
	<b>SAS/SATA connectivity</b>	2x4 connectors; 2x1 connectors	
	<b>Expander support</b>	No	
	<b>Drives supported (max)</b>	Up to 10 Internal Drives	
	<b>RAID support</b>	0, 1, 10, 5 SATA	
	<b>Software management</b>	HPE SSA, SMH, SIM	
	<b>Warranty</b>	Server warranty	
	<b>HPE Secure Encryption license</b>	Not Supported	
	<b>HPE SmartCache License</b>	Not Supported	
	<b>HPE Smart Storage Administrator</b>	Supported	
<b>HPE Embedded Dual Port 361i Adapter</b>	<b>Network Interface Compatibility</b>	10Base-T/100Base-TX/1000Base-TX	
		IEEE 802.3 10Base-T	
	<b>Data Transfer Method Controller</b>	IEEE 802.3ab 1000Base-T	
		IEEE 802.3u 100Base-TX	
		IEEE 1588, IEEE 802.1AS	
		IEEE 802.3az - Energy Efficient Ethernet (EEE)	
		PCI Express v 2.0, 5.0 GT/s, two lanes (x2)	
		Intel I350 Powerville	
	<b>Network Transfer Rate</b>	10Base-T (Half-Duplex)	10 Mb/s per port, 40 Mb/s combined
		10Base-T (Full-Duplex)	20 Mb/s per port, 80 Mb/s combined
		100Base-TX (Half-Duplex)	100 Mb/s per port, 400 Mb/s combined
		100Base-TX (Full-Duplex)	200 Mb/s per port, 800 Mb/s combined
		1000Base-TX (Half and Full-Duplex)	1000 Mb/s per port, 4000 Mb/s combined
	<b>Connector</b>	Two RJ-45	

Technical Specifications

	Cable Support	10 Base-T 10/100/1000 Base-TX	Categories 3, 4 or 5 UTP; up to 328 ft (100 m) Category 5 or higher UTP; up to 328 ft (100 m)
Environment-friendly Products and Approach	End-of-life Management and Recycling	<p>Hewlett Packard Enterprise offers end-of-life product return, trade-in, and recycling programs, in many geographic areas, for our products. Products returned to Hewlett Packard Enterprise will be recycled, recovered or disposed of in a responsible manner.</p> <p><a href="http://www.hpe.com/recycle">http://www.hpe.com/recycle</a></p> <p>The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard Enterprise web site. 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.</p> <p><a href="http://www.hpe.com/recycle">http://www.hpe.com/recycle</a></p>	

## Summary of Changes

Date	Version History	Action	Description of Change
25-Sep-2017	From Version 27 to 28	Added	Added new Solid State Drives offering to the HPE Drives section.
		Changed	Core Options and Additional Options were revised.
		Removed	Obsolete SKUs were removed from the QuickSpecs.
7-Aug-2017	From Version 26 to 27	Added	Added new Solid State Drives offering to the HPE Drives section.
11-Jul-2017	From Version 25 to 26	Changed	Operating Systems and Virtualization Software Support for ProLiant Servers section was revised.
5-Jun-2017	From Version 24 to 25	Added	Added new Solid State Drives offering to the HPE Drives section. New HPE Networking options were added.
8-May-2017	From Version 23 to 24	Added	Added support for ClearOS in Operating Systems and Virtualization Software Support for ProLiant Servers and Optional Features sections.
		Changed	HPE Drives was revised.
		Removed	Obsolete SKUs were removed from the QuickSpecs.
27-Mar-2017	From Version 22 to 23	Added	Added new Hard Drives.
17-Feb-2017	From Version 21 to 22	Changed	HPE Memory section under Core Options was revised.
13-Feb-2017	From Version 20 to 21	Added	Added new HDD and SSD offering to the HPE Drives section.
		Changed	HPE InfiniBand, HPE Converged Infrastructure Management Software, and HPE USB and SD Options were revised.
		Removed	SKUs 769503-B21, 769504-B21, and 769505-B21 were removed from the Pre-configured Models section.  Obsolete SKUs were removed from the HPE Processors section.
28-Nov-2016	From Version 19 to 20	Added	Added new Hard Drives offering.
		Changed	Maximum Internal Storage and HPE Tape Backup were revised.
		Removed	Obsolete SKUs were removed from the QuickSpecs.
28-Oct-2016	From Version 18 to 19	Removed	Obsolete Hard Drives were removed.
26-Sep-2016	From Version 17 to 18	Added	Added new 10TB SATA LFF hard drives offering.
		Changed	Maximum Internal Storage, HPE Storage Options, and HPE Disk Storage Systems were revised.
		Removed	Obsolete SKUs were removed from the QuickSpecs.
10-Jun-2016	From Version 16 to 17	Removed	HPE Dual 32GB microSD Enterprise Midline USB Kit was removed from the QuickSpecs.
6-Jun-2016	From Version 15 to 16	Added	Added new HDD offering to the HPE Drives section. Added new options to the HPE PCIe Workload Accelerator Options, HPE Disk Backup, and HPE Disk Storage Systems.
		Changed	Memory, Memory Protection, Interfaces, and HPE Converged Infrastructure Management Software were revised.
6-May-2016	From Version 14 to 15	Changed	Maximum Internal Storage, Upgradeability, Memory, and Technical Specifications sections were revised.
8-Apr-2016	From Version 13 to 14	Changed	HPE Processors section was revised.
31-Mar-2016	From Version 12 to 13	Added	Added new HPE Smart Memory 2400 MHz memory, Intel Xeon E5-2600v4 processor support, new HPE Trusted Platform Module (TPM) 2.0, new 900W AC/ 240VDC power supply, and new HDD offerings.
		Changed	Maximum Internal Storage, Power Supplies, Upgradeability, Embedded Management, Security, Service and Support, Pre-configured Models, and Memory sections were revised.

## Summary of Changes

		Removed	Obsolete SKUs were removed from the QuickSpecs.
16-Feb-2016	From Version 11 to 12	Added	New HDD offering was added to HPE Drives.
		Changed	HPE Power Supplies, HPE Data Center Racks, and HPE Power Distribution Units (PDUs) were revised.
		Removed	Obsolete SKUs were removed from the QuickSpecs.
17-Dec-2015	From Version 10 to 11	Added	Smart Buy models were added to the NA version.
1-Dec-2015	From Version 9 to 10	Added	New HDD offering was added to HPE Drives.  New options added to HPE PCIe Workload Accelerator Options, HPE Disk Backup, and HPE Disk Storage Systems.
		Changed	On System Management Chipset, Maximum Internal Storage, Embedded Management, and Server utilities were revised.  Product images were updated.
		Removed	Obsolete SKUs were removed from the QuickSpecs.
28-Sep-2015	From Version 8 to 9	Added	Added new 6Gb SATA Solid State Drives. Added new HP OneView management software.
		Removed	Obsolete SKUs were removed from the QuickSpecs.
17-Aug-2015	From Version 7 to 8	Added	New Solid Stated Drives offering was added to Core Options.
		Removed	Obsolete SKUs were removed from QuickSpecs.
1-Jun-2015	From Version 6 to 7	Added	New Hard Drives were added to Core Options. HP OneView LTUs were added to HP Converged Infrastructure Management Software. New RDX+ external backup options were added.
		Changed	Maximum Internal Storage was revised.
		Removed	Obsolete SKUs were removed from QuickSpecs.
30-Mar-2015	From Version 5 to 6	Added	New Hard Drives offering. Optional Software added to HP Storage Controllers.
		Changed	HP Memory, HP Power Supplies, HP Storage Controllers, and HP Disk Storage Systems were revised.
9-Feb-2015	From Version 4 to 5	Added	Added Network controller, new HP Drives, and new G4 UPS models.
		Changed	HP Drives, HP Tape Backup, HP Disk Backup, HP Rack Mount Consoles, KVM Switches, and Keyboards, HP Uninterruptible Power Systems (UPS), HP Networking, and HP Power Distribution Units (PDUs) sections were revised.
1-Dec-2014	From Version 3 to 4	Changed	Changes made throughout the entire QuickSpecs.
13-Oct-2014	From Version 2 to 3	Added	6G SATA Enterprise Value G1 Solid State Drives were added to the Core Option section.  HPE PCIe Workload Accelerator Options and HPE USB and SD options were added to the Additional Options section.
		Changed	Standard Features and Optional Features sections were revised.
19-Sep-2014	From Version 1 to 2	Changed	Changes made throughout the entire QuickSpecs.

## Summary of Changes



[hpe.com/qref/dll60gen9](http://hpe.com/qref/dll60gen9)



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

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