

Overview

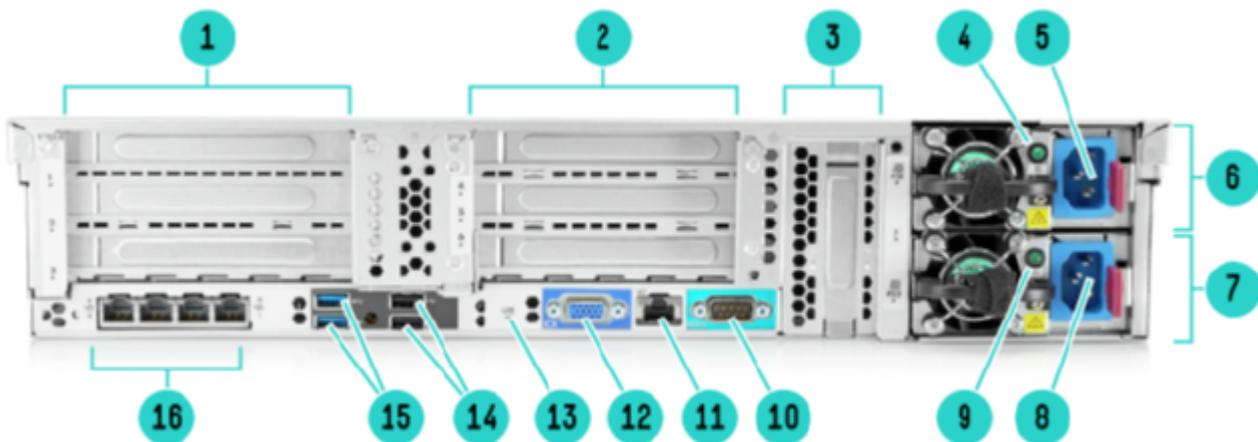
HPE ProLiant DL560 Generation9 (Gen9)

Business-critical workloads and virtualized environments require compact and powerful computing capacity. The HPE ProLiant DL560 Gen9 Server is designed for exactly that. To deliver performance, scalability, and expandability in a dense 2U footprint. Deploy the ideal high-density four-socket server for multi-workload compute with the latest technology. It's designed to help you achieve greater performance at the right price.



Front View

- | | |
|--|--|
| 1 Quick removal access panel | 2 Optional Optical drive. Requires Universal Media Bay |
| 3 Optional 2 SFF HDDs. Requires Universal Media bay. | 4 Power On/Standby button and system power LED button |
| 5 Health Status LED | 6 NIC Status LED |
| 7 UID button | 8 USB 3.0 connector |
| 9 Serial label pull tag | 10 Systems Insight Display (SID) (optional) |
| 11 Bay 3 - fixed 8 SFF Drive Bay | 12 Bay 2 - Optional 8 SFF Drive Bay |
| 13 Bay 1 - Optional 8 SFF Drive Bay or Universal Media Bay | |



Rear View

Overview

- | | | | |
|----|--------------------------------------|----|---|
| 1 | PCIe Slots (Slots 1-3 top to bottom) | 2 | PCIe Slots (Slots 4-6 top to bottom) |
| 3 | PCIe Slot (Slot 7) | 4 | Power supply power LED |
| 5 | Power supply power connection | 6 | HPE Common Slot Power Supply bay 1 |
| 7 | HPE Common Slot Power Supply bay 2 | 8 | Power supply power connection |
| 9 | Power supply power LED | 10 | Serial connector |
| 11 | Dedicated iLO connector | 12 | VGA (video) connector |
| 13 | Unit ID LED | 14 | USB 2.0 connectors (2) |
| 15 | USB 3.0 connectors (2) | 16 | HPE FlexibleLOM ports
(Shown: 4x1GbE/Optional: 2x10GbE);
port1 on right side. |

What's New

- The Intel® Xeon® E5-4600v4 processor family for demanding, foundational scale-up workload requirements.
- HPE DDR4 2400 MHz Memory modules for increased performance for data-intensive application workloads.
- HPE 25Gb Ethernet Adapters.
- HPE StoreFabric 84Q 4-port 8Gb FC HBA.

Standard Features

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

Processor One, Two or Four of the following depending on the server model configuration chosen	Model	CPU frequency	Cores	L3 Cache	Power	QPI	DDR4 Hz
	E5-4669v3	2.1GHz	18	45MB	135W	9.6GT/s	2133
	E5-4667v3	2.0GHz	16	40MB	135W	9.6GT/s	2133
	E5-4660v3	2.1GHz	14	35MB	120W	9.6GT/s	2133
	E5-4655v3	2.9GHz	6	30MB	135W	9.6GT/s	2133
	E5-4650v3	2.1GHz	12	30MB	105W	9.6GT/s	2133
	E5-4640v3	1.9GHz	12	30MB	105W	8.0GT/s	1866
	E5-4627v3	2.6GHz	10	25MB	135W	8.0GT/s	2133
	E5-4620v3	2.0GHz	10	25MB	105W	8.0GT/s	1866
	E5-4610v3	1.7GHz	10	25MB	105W	6.4GT/s	1600
	E5-4669v4	2.2GHz	22	55MB	135W	9.6GT/s	2400
	E5-4667v4	2.2GHz	18	45MB	135W	9.6GT/s	2400
	E5-4660v4	2.2GHz	16	40MB	120W	9.6GT/s	2400
	E5-4655v4	2.5GHz	8	30MB	135W	9.6GT/s	2400
	E5-4650v4	2.2GHz	14	35MB	105W	9.6GT/s	2400
	E5-4640v4	2.1GHz	12	30MB	105W	8.0GT/s	2133
	E5-4627v4	2.6GHz	10	25MB	135W	8.0GT/s	2400
	E5-4620v4	2.1GHz	10	25MB	105W	8.0GT/s	2133
	E5-4610v4	1.8GHz	10	25MB	105W	6.4GT/s	1866

NOTE: Intel® Hyper Threading supported on all processors except E5-4627 v3 and E5-4627 v4.

NOTE: Intel® Turbo Boost Technology supported on all processors except E5-4610 v3 and E5-4610 v4.

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

Cache Memory One of the following depending on model	55MB (1 x 55MB) Level 3 cache NOTE: With the E5-4669v4 processor.
	45MB (1 x 45MB) Level 3 cache NOTE: With the E5-4667v4 and E5-4669v3 processors.
	40MB (1 x 40MB) Level 3 cache NOTE: With the E5-4660v4 and E5-4667v3 processors.
	35MB (1 x 35MB) Level 3 cache NOTE: With the E5-4650v4 and E5-4660v3 processors.
	30MB (1 x 30MB) Level 3 cache NOTE: With the E5-4640v4, E5-4655v4, E5-4650v3, E5-4640v3, and E5-4655v3 processors.
	25MB (1 x 25MB) Level 3 cache NOTE: With the E5-4610v4, E5-4620v4, E5-4627v4, E5-4620v3, E5-4627v3, and E5-4610v3 processors.

Standard Features

Chipset Intel® C610 Series Chipset
 Intel® Xeon® E5-4600v4 Processor Family
 Intel® Xeon® E5-4600v3 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) 4GB NAND
NOTE: 1GB USB user space configurable via UEFI and accessible via iLO. 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 48 (12 DIMM slots per processor, 4 channels per processor, 3 DIMMs per channel)
 Maximum Capacity (LRDIMM) 3TB (48 x 64GB LRDIMM @2400MHz)
 Maximum Capacity (RDIMM) 1.5TB (48 x 32GB RDIMM @2400 MHz)

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. For additional information, please see the [HPE SmartMemory QuickSpecs](#).

NOTE: LRDIMM and RDIMM are distinct memory technologies and cannot be mixed within a server.

NOTE: Depending on the memory configuration (for instance: number of DIMMs and DIMMs per channel, type of memory) and processor model, the memory speed may run at 2400, 2133, 1866MHz, 1600MHz. Please see Memory Population Table below or the [Online Memory Configuration Tool](#).

Memory Protection	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.
	Demand and Patrol Scrubbing	Memory demand and patrol scrubbing prevent accumulation of correctable errors and reduces the likelihood of unplanned downtime.
	Failed DIMM Isolation	Failed DIMM isolation improves the service time thus improving the overall system availability.
	Data Bus ECC Protection	Data Bus ECC protection provides automatic correction from a single data bit error and detection of double data error bits. Often called single error correction/double error detection (SEC/DED).
	Memory Thermal Control	Memory thermal control is used to prevent DIMMs from overheating. Achieved by slowing down the memory access rate per the temperature monitored by DIMM sensor.

Standard Features

Memory Mirroring Inter-Socket	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.
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Network Controller The HPE ProLiant DL560 Gen9 servers offer a flexible network technology - FlexibleLOMs, which offers customers a choice of 1Gb, 10Gb, or 10Gb base-T Ethernet or converged networking in their embedded adapter. A range of NIC cards are also available to enhance networking capabilities.

NOTE: For additional details see the [Networking Section of this document](#).

Model	Adapter
Entry Model	HPE Ethernet 1Gb 4-port 331FLR Adapter
Base Model	HPE FlexFabric 10Gb 2P 533FLR-T Adapter
Performance Model	HPE FlexFabric 10Gb 2P 533FLR-T Adapter

Expansion Slots

Primary Riser (Standard)	Expansion Slots #	Expansion Technology	Bus Width	Connector Width	Bus Number	Form Factor	Notes
	1	PCIe 3.0	x8	x16	7	Half length/full height	Proc 1
	2	PCIe 3.0	x8	x16	10	Half length/full height	Proc 1
	3	PCIe 3.0	x8	x8	13	Half length/full height	Proc 1

NOTE: PCIe slot availability is dependent on the number of processors installed.

NOTE: Connector Width indicates default bus assignment. Inserting cards with PCI bridges may alter the actual bus assignment number.

NOTE: Bus Width indicates the number of physical electrical lanes running to the connector. Inserting cards with PCI bridges may alter the actual bus assignment number.

Primary Riser (Optional)	Expansion Slots #	Expansion Technology	Bus Width	Connector Width	Bus Number	Form Factor	Notes
793475-B21	2	PCIe 3.0	x16	x16	5	Half length/full height	Proc 1
	3	PCIe 3.0	x8	x8	8	Half length/full height	Proc 1

Secondary Riser (Optional)	Expansion Slots #	Expansion Technology	Bus Width	Connector Width	Bus Number	Form Factor	Notes
793474-B21	4	PCIe 3.0	x16	x16	16	Half length/full height	Proc 2
	5	PCIe 3.0	x8	x16	20	Half length/full height	Proc 2
	6	PCIe 3.0	x8	x8	23	Half length/full height	Proc 2

Expansion Slot	Expansion Slots #	Expansion Technology	Bus Width	Connector Width	Bus Number	Device Number	Form Factor	Notes
7	7	PCIe 3.0	x8	x16	26		Low profile	Proc 2

Standard Features

Storage Controller One of the following depending on model	Entry Models	HPE Dynamic Smart Array B140i Controller
	Base Models	HPE Flexible Smart Array P440ar/2GB Controller
	Performance Models	HPE Smart Array P840/4G Controller

The P440ar Flexible Smart Array controller is in the Adaptive RAID on Chip slot, enables SAS drives and has 2GB Flash Backed Write Cache for data retention.

The P840 Flexible Smart Array controller enables SAS drives and has 4GB Flash Backed Write Cache for enhanced data retention.

Internal Storage Devices One of the following depending on model	Hard Drives	None ship standard
	Hard Drive Bays	8 hot plug SFF SAS/SATA HDD Bays in Entry and Base Models 16 hot plug SFF SAS/SATA HDD Bays in Performance Models

NOTE: Upgradeable to a maximum of 24. If one of the two Optional Universal Media Bay Kits is chosen, a maximum of 18 SFF drives are available as versus 24. The standard Universal Media Bay Kit occupies an 8 SFF drive bay cage and can include an optional Optical Disk Drive; another version has an optional 2SFF drive bay as well.

Optional Optical Drive	Available via Universal Media Bay Kit
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NOTE: An optional optical drive can be added to either the Universal Media Bay Kit with 2SFF drive bay (793479-B21) or the Universal Media Bay Kit without 2SFF drive bay (795090-B21).

Maximum Internal Storage		CAPACITY	CONFIGURATION
Hot Plug SFF SATA		48TB	24 x 2TB
Hot Plug SFF SAS		48TB	24 x 2TB
Hot Plug SFF SATA SSD		92TB	24 x 3.84TB
Hot Plug SFF SAS SSD		92TB	24 x 3.84TB

Power Supply One of the following depending on model	HPE 1200W Common Slot Platinum Hot Plug Power Supply
	2 HPE 1200W Common Slot Platinum Plus Hot Plug Power Supplies

NOTE: Entry Models have a single HPE 1200W Common Slot Platinum Hot Plug Power Supply.

NOTE: Base and Performance Models have redundant HP1200W Common Slot Platinum Plus Hot Plug Power Supplies.

Standard Features

Common Slot Power Supplies One of the following depending on power requirements:

- HPE 1500W Common Slot Platinum Plus Hot Plug Power Supply
- HPE 1500W Common Slot 48VDC Hot Plug Power Supply
- HPE 1200W Common Slot Platinum Plus Hot Plug Power Supply
- HPE 1200W Common Slot Platinum Hot Plug Power Supply

NOTE: 1500W power supply supports high line voltage only.

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

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

Hewlett Packard Enterprise Common Slot (CS) power supplies allow for commonality of power supplies across a wide range of ProLiant and Integrity servers, as well as HPE Storage solutions, and are designed to provide the highest power supply efficiency without degrading system performance. HPE CS power supplies are tested by the Electric Power Research Institute (EPRI) and certified through the ECOS 80 Plus power supply program. HPE CS power supply options provide efficiency ratings of up to 94% (80 Plus Platinum) and are available in several power output options including - 1200W, 1500W - allowing the customer to "right-size" a power supply for their specific server configuration. All HPE Common Slot power sources are UL, CE Mark Compliant, hot-plug and support redundant configurations.

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

NOTE: Mixing of power supplies in the same server is not supported. All power supplies must be of the same output and efficiency rating. If non-matched power supplies are inserted you will get errors and operation will fail.

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.

System Fans

6 Hot Plug Fans (with N+1 redundancy)

Non-redundant

Redundant

Standard Features

Interfaces	Serial	1 rear
	Video	1 front (optional with Universal Media Bay kit); 1 rear
	iLO 4 Remote Management	1
	Micro SD Dual Slot	1
	NOTE: Requires the optional HP Dual Micro SD 8GB USB kit.	
	USB 2.0 Ports	5 total: 2 front (optional); 2 rear; 1 internal
USB 3.0 Ports	4 total: 1 front; 2 rear, 1 internal	

Operating Systems and Virtualization Software	<u>Microsoft Windows Server</u> <u>Red Hat Enterprise Linux (RHEL)</u> <u>SUSE Linux Enterprise Server (SLES)</u> <u>VMware</u>
Support for ProLiant Servers	NOTE: For more information on 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: http://www.hp.com/go/ossupport and our driver download page http://h20565.www2.hp.com/hpsc/swd/public/readIndex?sp4ts.oid=8255130 .

Upgradeability	Upgradeable to 4 processors Up to 48 DIMM slots 7 PCIe 3.0 I/O slots NOTE: PCIe slot availability is dependent on the number of processors installed. Please refer to the "Expansion Slots" section for more details. NOTE: The HPE ProLiant DL560 Gen9 server has a dedicated FlexibleLOM slot and an Adaptive Raid On Chip (AROC) slot for HPE Flexible Smart Array controllers in addition to the 7 PCI 3.0 I/O expansion slots. Embedded 10-Port SATA, B140i as standard HPE Flexible Smart Array, Smart Array or Smart HBA Controllers FlexibleLOM slot for 1GbE or 10GbE or QDR/FDR InfiniBand Networking Options Up to 24 SFF drives; or 18 SFF drives with optional Universal Media Bay Optional System Insight Display Redundant Power Supplies
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Industry Standard Compliance	PCIe 3.0 Compliant ACPI 2.0. Compliant PXE Support WOL Support Microsoft® Logo certifications USB 2.0 Support USB 3.0 Support Energy Star ASHRAE A3/A4 NOTE: For additional technical thermal details regarding ambient temperatures, humidity and features support please visit: http://www.hp.com/servers/ASHRAE .
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Standard Features

Graphics Integrated Matrox G200 video standard

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

HPE iLO 4 On System Management Memory

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

HPE Server
UEFI/Legacy
ROM

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.

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.

Form Factor 2U Rack Form Factor

Entry, Base and Performance pre-configured models ship with Gen9 Easy Install Rail Kits and Cable Management Assembly

3.44" (8.74 cm) Height x 17.54" (44.55 cm) Width x 29.5" (74.94 cm) Length

Standard Features

Embedded Management	HPE Integrated Lights-Out (HPE iLO)	Monitor your servers for ongoing management, service alerting, reporting and remote management with HPE iLO. Learn more at http://www.hpe.com/info/ilo .
	UEFI	Configure and boot your servers securely with industry standard Unified Extensible Firmware Interface (UEFI). Learn more at http://www.hpe.com/servers/uefi .
	RESTful API	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 http://www.hpe.com/info/restfulapi .
	Intelligent Provisioning	Hassle free server and OS provisioning for 1 or few servers with Intelligent Provisioning. Learn more at http://www.hpe.com/servers/intelligentprovisioning .
	Embedded Remote Support	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 http://www.hpe.com/info/insightonline/explore .
Server utilities	Smart Update	Optimize firmware and driver updates with Smart Update solutions including Smart Update Manager (SUM) and Service Pack for ProLiant (SPP). Learn more at http://www.hpe.com/servers/smartupdatemanager .
	HPE Systems Insight Manager (HPE SIM)	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 http://www.hpe.com/servers/hpsim .
	Scripting Tool Kit and Windows PowerShell	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 http://www.hpe.com/servers/proliant/stk or http://www.hpe.com/servers/powershell .
	RESTful Interface Tool	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 http://www.hpe.com/info/resttool .
	HPE iLO Mobile Application	Enables the ability to access, deploy, and manage your server anytime from anywhere from select smartphones and mobile devices. For additional information please visit: http://www.hpe.com/info/ilo/mobileapp .
	HPE Insight	HPE Insight Online, available at no additional cost as part of your

Standard Features

Online 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 <http://www.hpe.com/info/insightonline/explore>.

Security

Power-on password
Serial interface control
Administrator's password
Trusted Platform Module (TPM)
TPM 2.0

NOTE: HPE Trusted Platform Module 2.0 Option (745823-B21) works with Gen9 servers with UEFI Mode not Legacy Mode. It is not compatible with HPE ProLiant Gen8 servers or earlier generation variants. HPE Gen9 servers purchased earlier may need the latest firmware update to be compatible with the TPM 2.0 Option.

The earlier HPE Trusted Platform Module Option (488069-B21) is the TPM 1.2 version, which is also available on the DL560 Gen9 platform, however TPM 2.0 has newer technology standards incorporated. The TPM 1.2 compatible server platforms include Gen8 and Gen9 servers.

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

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 Care Pack services or customized service agreements. Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.

NOTE: Server Warranty includes 3-Year Parts, 3-Year Labor, 3-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 HPE replace Optional CSR parts at no charge. Additional information regarding worldwide limited warranty and technical support is available at:

<http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html>.

Optional Features

Embedded Management	iLO Advanced	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 http://www.hpe.com/servers/iloadvanced .
Server Management	HPE Insight Control	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 http://www.hpe.com/info/insightcontrol .
	HPE iLO Advanced	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 http://www.hpe.com/servers/iloadvanced .
	HPE OneView Advanced	HPE OneView Advanced is converged management that eliminates infrastructure complexity with automation simplicity. This modern architecture is designed to accelerate your IT operations across servers, storage, and network resources using software-defined approaches and automation, see http://www.hpe.com/info/oneview .
Rack and Power Infrastructure	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 HPE Rack and Power Infrastructure .	
High Performance Clusters	HPE Insight Cluster Management Utility	HPE Insight Cluster Management Utility is a Hyperscale management framework that includes software for the centralized provisioning, management and monitoring of nodes and infrastructure. Learn more at http://www.hpe.com/info/cmu .

Optional Features

HPC Interconnects

NOTE: 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:

<http://www.hp.com/techservers/clusters/ucp/index.html>.

Storage Software

Whether you need to solve a specific data protection, archiving, or storage command and control challenge, or deliver on strategic consolidation, compliance, or continuity initiatives, look no further than 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**
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 turn a set of heterogeneous and disconnected physical disk drives in your servers and storage devices into a single pool of logical storage capacity.

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

Optional Features

Solutions Factory Express Portfolio for Servers and Storage

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

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

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

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. <https://h22174.www2.hp.com/SimplifiedConfig/Index>.

Service and Support

HPE Support Services	<p>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.</p>
Connect your devices	<p>Unlock all of the benefits of your technology investment by connecting your products to Hewlett Packard Enterprise. Achieve up to 77%¹ reduction in down time, near 100%² 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.</p> <p>¹- IDC ² - HP CSC reports 2014 - 2015</p>
Recommended Support	<p>Standard: HPE Proactive Care* with 24x7 coverage, three year Support Service</p> <p>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.</p> <p>http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA3-8855ENW.pdf</p> <p>Optimized HPE Proactive Care* with 6 hour call-to-repair commitment, three year Support Service</p> <p>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 highest level of hardware support - Hewlett Packard Enterprise 24x7, six hour hardware call-to-repair. Hewlett Packard Enterprise is the only leading manufacturer who makes this level of coverage available as a standard service offering for your most valuable servers. This service also includes collaborative software support for Independent Software Vendors (ISVs), (Red Hat, VMWare, Microsoft, etc.) running on your HPE servers.</p> <p>http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA3-8855ENW.pdf</p>
Parts and Materials	<p>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.</p> <p>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.</p> <p>The defective media retention service feature option applies only to Disk or eligible SSD/Flash Drives replaced by Hewlett Packard Enterprise due to malfunction.</p>

Service and Support

Related Services HPE Server Hardware Installation

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

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

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.

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>

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.

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

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

QuickSpecs

HPE ProLiant DL560 Generation9 (Gen9)

Pre-configured Models

	Performance Models		Base Models	
[SKU Number]	830073-B21	741066-B21	830072-B21	741065-B21
Model Name	HPE ProLiant DL560 Gen9 E5-4640v4 4P 128GB-R P840/4GB 16SFF 2x1200W RPS Perf Server	HPE ProLiant DL560 Gen9 E5-4640v3 4P 128GB-R P840/4GB 16SFF 2x1200W RPS Perf Server	HPE ProLiant DL560 Gen9 E5-4620v4 2P 64GB-R P440ar/2GB 8SFF 2x1200W RPS Base Server	HPE ProLiant DL560 Gen9 E5-4620v3 2P 64GB-R P440ar/2GB 8SFF 2x1200W RPS Base Server
Processor	Intel® Xeon® E5-4640v4	Intel® Xeon® E5-4640v3	Intel® Xeon® E5-4620v4	Intel® Xeon® E5-4620v3
Number of Processors	Four		Two	
Memory	128GB (8x16GB Registered DIMMs, 2400 MHz)	128GB (8x16GB Registered DIMMs, 2133 MHz)	64GB (4x16GB Registered DIMMs, 2400 MHz) NOTE: 24 DIMM slots available with Base Model; 2 more processor slots and 24 more DIMMs available via optional HPE ProLiant DL560 Gen9 CPU Mezzanine Board Kit (795107-B21).	64GB (4x16GB Registered DIMMs, 2133 MHz) NOTE: 24 DIMM slots available with Base Model; 2 more processor slots and 24 more DIMMs available via optional HPE ProLiant DL560 Gen9 CPU Mezzanine Board Kit (795107-B21).
Network Controller	HPE FlexFabric 10Gb 2P 533FLR-T Adapter			
Storage Controller	HPE Flexible Smart Array P840/4G Controller NOTE: Additional stand up Storage controllers also available as options.		HPE Flexible Smart Array P440ar/2GB NOTE: Additional stand up Storage controllers with up to 4GB FBWC available as options.	
Hard Drive	None ship standard			
Internal Storage	16 SFF Drive bays NOTE: Can be expanded up to a max of 24 SFF drives, with optional HPE ProLiant DL560 Gen9 Bay1 8SFF Cage/Backplane Kit (795085-B21). Alternatively, optional Universal Media Bay Kits may be chosen - with 2SFF drive bay (793479-B21) or without (795090-B21).		8 SFF Drive Bays NOTE: Can be expanded up to a max of 24 SFF drives, with optional HPE ProLiant DL560 Gen9 Bay2 8SFF Cage/Backplane Kit (795084-B21) and HPE ProLiant DL560 Gen9 Bay1 8SFF Cage/Backplane Kit (795085-B21). Alternatively, optional Universal Media Bay Kits may also be chosen for Bay1 - with 2SFF drive bay (793479-B21) or without (795090-B21).	
Optical Drive Bay	Optional via Universal Media Bay			
Optical Drive	Optional DVD-ROM (726536-B21) or DVD-RW (726537-B21) via Universal Media Bay Kits (795090-B21 or 794379-B21)			
PCI-Express Slots	7 PCIe 3.0 slots available; Secondary riser kit (793474-B21) installed			
Power Supply	(2) HPE 1200W Common Slot Platinum Plus Hot Plug Power Supplies			
Fans	6 hot plug fans, redundant			



QuickSpecs

HPE ProLiant DL560 Generation9 (Gen9)

Pre-configured Models

Management	iLO Management (standard), Intelligent Provisioning (standard), iLO Advanced (standard), HPE OneView Advanced (standard)	iLO Management (standard), Intelligent Provisioning (standard), iLO Advanced (optional), Insight Control (optional), HPE OneView (optional)
Energy Star	Meets Energy Star requirements	
Form Factor	Rack (2U), HPE Easy Install Rails with CMA	
Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response	
	Entry Models	
[SKU Number]	830071-B21	741064-B21
Model Name	HPE ProLiant DL560 Gen9 E5-4610v4 2P 32GB-R B140i 8SFF SATA 1200W PS Entry Server	HPE ProLiant DL560 Gen9 E5-4610v3 2P 32GB-R B140i 8SFF SATA 1200W PS Entry Server
Processor	Intel® Xeon® E5-4610v4	Intel® Xeon® E5-4610v3
Number of Processors	Two	
Memory	32GB (2x16GB Registered DIMMs, 2400 MHz) NOTE: 24 DIMM slots available with Entry Model; 2 more processor slots and 24 more DIMMs available via optional HPE ProLiant DL560 Gen9 CPU Mezzanine Board Kit (795107-B21).	32GB (2x16GB Registered DIMMs, 2133 MHz) NOTE: 24 DIMM slots available with Entry Model; 2 more processor slots and 24 more DIMMs available via optional HPE ProLiant DL560 Gen9 CPU Mezzanine Board Kit (795107-B21).
Network Controller	HPE Ethernet 1Gb 4P 331FLR Adapter	
Storage Controller	HPE Dynamic Smart Array B140i NOTE: Additional Storage controllers including HPE Flexible Smart Array, HPE Smart Array and HPE Smart HBA also available as options, to enable both SAS capability as well as provide data retention with Flash Backed Write Cache (FBWC).	
Hard Drive	None ship standard	
Internal Storage	8 SFF Drive Bays NOTE: Can be expanded up to a max of 24 SFF drives, with optional HPE ProLiant DL560 Gen9 Bay2 8SFF Cage/Backplane Kit (795084-B21) and HPE ProLiant DL560 Gen9 Bay1 8SFF Cage/Backplane Kit (795085-B21). Alternatively, optional Universal Media Bay Kits may also be chosen for Bay1 - with 2SFF drive bay (793479-B21) or without (795090-B21).	
Optical Drive Bay	Optional via Universal Media Bay	
Optical Drive	Optional DVD-ROM (726536-B21) or DVD-RW (726537-B21) via Universal Media Bay Kits (795090-B21 or 794379-B21)	
PCI-Express Slots	4 PCIe 3.0 slots (3 additional PCIe slots available if secondary riser kit is installed)	
Power Supply	(1) HPE 1200W Common Slot Platinum Hot Plug Power Supply	
Fans	6 hot plug fans, redundant	
Management	iLO Management (standard), Intelligent Provisioning (standard), iLO Advanced (optional), Insight Control (optional), HPE OneView (optional)	
Energy Star	Meets Energy Star requirements	
Form Factor	Rack (2U), HPE Easy Install Rails with CMA	
Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response	

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



Pre-configured Models

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

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

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

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

Country Code	xx1 = B21	Worldwide
Key	xx1 = 291	Japan
	xx1 = AA1	PRC

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)

[Chassis]	HPE ProLiant DL560 Gen9 Configure-to-order Server
SKU Number	742657-B21
Processor	2U Server Chassis with 2 processor slots available; 4 processor configuration would require optional HPE ProLiant DL560 Gen9 CPU Mezzanine Board kit
DIMM Slots	24 DIMM slots for RDIMM, LRDIMM DDR4 Memory
Storage Controller	HPE Dynamic Smart Array B140i
PCIe	4 PCIe 3.0 slots (all 4 available if second processor is chosen, which also enables +3 PCI 3.0 slots with optional Secondary Riser Kit upgrade)
Drive Cage	8SFF Hot Plug (Upgrades possible with +16SFF optional or +10 optional with optional Universal Media Bay Kits)
Network Controller	FlexibleLOM slot (various options can be chosen for networking; NIC cards also available via expansion slots)
Fans	6 Hot Plug Fans (with N+1 redundancy)
Management	iLO Management (standard), Intelligent Provisioning (standard), iLO Advanced (optional), Insight Control (optional), HPE OneView (optional)
USB	7 USB ports total. 3 USB 2.0 Ports: 2 rear; 1 internal. 4 USB 3.0 Ports: 1 front; 2 rear, 1 internal

(Base Configuration Continued)

Intel® C610 Chipset

(2) video ports (1 front optional via the Universal Media Kit upgrade option, 1 rear)

(1) dual microSD card slot

(1) Trusted Platform Module (TPM) connector

BIOS Legacy mode (field configurable) or Unified Extensible Firmware Interface (UEFI) mode (default)

Easy Install rails and cable management arm are optional

NOTE: PCIe slot availability is dependent on the number of processors installed. Please refer to the "Expansion slots" section for more details.

NOTE: For the DL560 Gen9, the number of processors can be one, two or four installed. For four processors, the HP ProLiant DL560 Gen9 CPU Mezzanine Board kit is required.

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

Configuration Information - Factory Integrated Models

Select one or two processors from Core options-Processor section below,

- If one processor is desired, select one xxxxxx-L21
- If two processors are desired, select one xxxxxx-L21 and one xxxxxx-B21.
- Up to 2 processors supported. Mixing different processor models is not supported.
- DDR4 speed is the maximum memory speed of the processor. Actual memory speed may depend on the quantity and type of DIMMs installed.

For the Intel® C610 Chipset E5-4600 Series, the letter preceding the model number indicates the Product Line (E5); 4600x v#, 4 = 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.

Select one or more memory from Core options-Memory section below,

- LRDIMM, RDIMM are all distinct memory technologies and cannot be mixed within a server. The majority of ProLiant Gen9 servers support LRDIMM and RDIMM.
- 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.
- 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.
- Kits described as LP include Low Power DIMMs. For more information on ProLiant Energy Efficient Features, see: <http://www.hp.com/go/proliant-energy-efficient>.
- Depending on the memory configuration and processor model, the memory speed may run at 2400, 2133MHz, 1866MHz, 1600MHz or 1333MHz. Please see Memory Population Table or the Online Memory Configuration Tool at: <http://www.hp.com/go/ddr4config>.

Select one or more power supplies from Core Options-Power Supplies section below:

- 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.hp.com/go/hppoweradvisor>.
- 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.

Step 3: Choose Additional Factory Integratable Options

Select one or more Unique options from Core options section below.

- This section may contain FIO options, please see the Unique options section below.
- FIO indicates that this option is only available as a factory installable option.

Select one or more Riser Kit options from Core options section below.

- To take advantage of the additional PCI slot upgrade, the second processor must be installed.
- This section may contain FIO options, please see HPE I/O Expansion Options section below.
- FIO indicates that this option is only available as a factory installable option.

Select one or more drives from Core options-HPE Drives section below:

- The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components.
- Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.
- The HPE ProLiant Gen9 Smart Storage solutions are equipped with re-designed Small Form Factor (SFF 2.5 in) and Large Form Factor (LFF 3.5 in) hot plug carriers for HPE Qualified Hard Drives and Solid State Drives. These new carriers provide status and activity indicators as well as caution indicators for "Do Not Remove".

Configuration Information - Factory Integrated Models

Select a FlexibleLOM from Core options-Networking section below,

- Only one FlexibleLOM can be added to the server. These options are upgradeable and can be changed from the original configuration after the server is shipped.
- For 10Gb adapters, a minimum of two Gigabytes (2 GB) of server memory is required per each adapter.
- Please see the QuickSpecs for Technical Specifications and additional information: <http://www.hp.com/go/ProLiantNICs>.

Select a standup NIC adapter from Core options-Networking section below,

- Please see the QuickSpecs for Technical Specifications and additional information: <http://www.hp.com/go/ProLiantNICs>.
- These options are upgradeable and can be changed from the original configuration after the server is shipped.
- For 10Gb adapters, a minimum of two Gigabytes (2 GB) of server memory is required per each adapter.

Select one or more Storage options from Additional options section below.

- The embedded B140i controller will operate in UEFI only mode. For legacy support an additional controller will be needed, and for CTO orders please also select the Legacy mode settings part, 758959-B22
- This section may contain FIO options, please see HPE Storage Controllers section below.
- FIO indicates that this option is only available as a factory installable option.

Select one type of rail kit from Additional options section below.

- Please take a moment to review the installation documentation that comes with the server to help you with the installation of your Gen9 server.
- To assist in the installation of the server into the rack, an optional installation tool is available by contacting your local services representative (p/n 695539-001).
- See Hewlett Packard Enterprise Rack Options in Additional Options section of this QuickSpecs for more rack kit choices.

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.

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.

HPE Unique Options	<p>HP ProLiant DL560 Gen9 CPU Mezzanine Board Kit NOTE: This kit is required if configured with 4 processors.</p> <p>HP ProLiant DL560 Gen9 Bay2 8SFF Cage/Backplane Kit NOTE: This optional kit adds 8SFF drives for Bay2.</p> <p>HP ProLiant DL560 Gen9 Bay1 8SFF Cage/Backplane Kit NOTE: This optional kit adds 8SFF drives for Bay2.</p> <p>HP ProLiant DL560 Gen9 Primary 2 Slot Riser Kit</p> <p>HP ProLiant DL560 Gen9 Secondary 3 Slot Riser Kit NOTE: This is an optional kit which can be utilized when system is populated with at least two (2) processors.</p> <p>HP ProLiant DL560 Gen9 SAS Expander Card</p> <p>HP ProLiant DL560 Gen9 Bay3 to H240 Slot 7/ Bay 3 to P840/440 Riser1 and 2SFF-UMBay SAS Cable Kit NOTE: Required for connecting Bay1 UMB 2SFF to a P840/P440 controller, or if using controller H240 in slot7 attached to Bay3. Also needed if using controller P840/P440 in riser1 attached to Bay3.</p> <p>HP ProLiant DL 560 Gen9 Bay 1 to Riser1/AROC and Bay 2/3 to Riser2/Slot7 SAS Cable Kit NOTE: Required if controllers H240/P440ar/H240ar/B140i in riser1/AROC (Smart Array HBA Connector) need to be connected to Bay1, or if controllers P840/P440 in Riser2/slot7 need to be connected to Bay2/3. Also needed if controller P440 in slot7 needs to be connected to Bay2/3.</p> <p>HP ProLiant DL560 Gen9 Bay 2 to Riser1/AROC and Bay 2/3 to Riser1/2 SAS Cable Kit NOTE: Required if using controllers H240/P440ar/H240ar/B140i in riser1/AROC (Smart Array HBA Connector) which need to be connected to Bay2, or if using controllers P840/P440 in Riser1/2 which need to be connected to Bay2/3.</p> <p>HP ProLiant DL560 Gen9 2SFF Universal Media Bay Kit NOTE: Universal Media Bay kit with a 2SFF drive bay; an optional Optical Disk Drive can be added, either DVD-ROM (726536-B21) or DVD-RW (72653-B21).</p> <p>HP ProLiant DL560 Gen9 Universal Media Bay Kit NOTE: An optional Optical Disk Drive can be added, either DVD-ROM (726536-B21) or DVD-RW (72653-B21).</p> <p>HP DL560 Gen9 NVMe 6 Solid State Drive Express Bay Enablement Kit</p> <p>HP ProLiant DL560 Gen9 Power Module with System Insight Display Kit</p>	<p>795107-B21</p> <p>795084-B21</p> <p>795085-B21</p> <p>793475-B21</p> <p>793474-B21</p> <p>804228-B21</p> <p>797924-B21</p> <p>797945-B21</p> <p>797946-B21</p> <p>793479-B21</p> <p>795090-B21</p> <p>774743-B21</p> <p>795106-B21</p>
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HPE Processors	<p>Entry Processors - E5-4600v4 series Processors</p> <p>HPE DL560 Gen9 Intel® Xeon® E5-4610v4 (1.8GHz/10-core/25MB/105W) Processor Kit</p> <p>HPE DL560 Gen9 Intel® Xeon® E5-4610v4 (1.8GHz/10-core/25MB/105W) FIO Processor Kit</p> <p>Entry Processors - E5-4600v3 series Processors</p>	<p>830265-B21</p> <p>830265-L21</p>
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Core Options

HPE ProLiant DL560 Gen9 Intel® Xeon® E5-4610v3 (1.7GHz/10-core/25MB/105W) Processor Kit	742704-B21
HPE ProLiant DL560 Gen9 Intel® Xeon® E5-4610v3 (1.7GHz/10-core/25MB/105W) FIO Processor Kit	742704-L21
Base Processors - E5-4600v4 series Processors	
HPE DL560 Gen9 Intel® Xeon® E5-4620v4 (2.1GHz/10-core/25MB/105W) Processor Kit	830267-B21
HPE DL560 Gen9 Intel® Xeon® E5-4620v4 (2.1GHz/10-core/25MB/105W) FIO Processor Kit	830267-L21
HPE DL560 Gen9 Intel® Xeon® E5-4655v4 (2.5GHz/8-core/30MB/135W) Processor Kit	830287-B21
HPE DL560 Gen9 Intel® Xeon® E5-4655v4 (2.5GHz/8-core/30MB/135W) FIO Processor Kit	830287-L21
Base Processors - E5-4600v3 series Processors	
HPE ProLiant DL560 Gen9 Intel® Xeon® E5-4620v3 (2.0GHz/10-core/25MB/105W) Processor Kit	742702-B21
HPE ProLiant DL560 Gen9 Intel® Xeon® E5-4620v3 (2.0GHz/10-core/25MB/105W) FIO Processor Kit	742702-L21
Performance Processors - E5-4600v4 series Processors	
HPE DL560 Gen9 Intel® Xeon® E5-4640v4 (2.1GHz/12-core/30MB/105W) Processor Kit	830269-B21
HPE DL560 Gen9 Intel® Xeon® E5-4640v4 (2.1GHz/12-core/30MB/105W) FIO Processor Kit	830269-L21
HPE DL560 Gen9 Intel® Xeon® E5-4650v4 (2.2GHz/14-core/35MB/105W) Processor Kit	830274-B21
HPE DL560 Gen9 Intel® Xeon® E5-4650v4 (2.2GHz/14-core/35MB/105W) FIO Processor Kit	830274-L21
HPE DL560 Gen9 Intel® Xeon® E5-4660v4 (2.2GHz/16-core/40MB/120W) Processor Kit	830276-B21
HPE DL560 Gen9 Intel® Xeon® E5-4660v4 (2.2GHz/16-core/40MB/120W) FIO Processor Kit	830276-L21
HPE DL560 Gen9 Intel® Xeon® E5-4627v4 (2.6GHz/10-core/25MB/135W) Processor Kit	830278-B21
HPE DL560 Gen9 Intel® Xeon® E5-4627v4 (2.6GHz/10-core/25MB/135W) FIO Processor Kit	830278-L21
HPE DL560 Gen9 Intel® Xeon® E5-4667v4 (2.2GHz/18-core/45MB/135W) Processor Kit	830289-B21
HPE DL560 Gen9 Intel® Xeon® E5-4667v4 (2.2GHz/18-core/45MB/135W) FIO Processor Kit	830289-L21
HPE DL560 Gen9 Intel® Xeon® E5-4669v4 (2.2GHz/22-core/55MB/135W) Processor Kit	830291-B21
HPE DL560 Gen9 Intel® Xeon® E5-4669v4 (2.2GHz/22-core/55MB/135W) FIO Processor Kit	830291-L21
Performance Processors - E5-4600v3 series Processors	

Core Options

HPE ProLiant DL560 Gen9 Intel® Xeon® E5-4660v3 (2.1GHz/14-core/35MB/120W) Processor Kit	742696-B21
HPE ProLiant DL560 Gen9 Intel® Xeon® E5-4660v3 (2.1GHz/14-core/35MB/120W) FIO Processor Kit	742696-L21
HPE ProLiant DL560 Gen9 Intel® Xeon® E5-4650v3 (2.1GHz/12-core/30MB/105W) Processor Kit	742698-B21
HPE ProLiant DL560 Gen9 Intel® Xeon® E5-4650v3 (2.1GHz/12-core/30MB/105W) FIO Processor Kit	742698-L21
HPE ProLiant DL560 Gen9 Intel® Xeon® E5-4640v3 (1.9GHz/12-core/30MB/105W) Processor Kit	742700-B21
HPE ProLiant DL560 Gen9 Intel® Xeon® E5-4640v3 (1.9GHz/12-core/30MB/105W) FIO Processor Kit	742700-L21
HPE ProLiant DL560 Gen9 Intel® Xeon® E5-4627v3 (2.6GHz/10-core/25MB/135W) Processor Kit	742706-B21
HPE ProLiant DL560 Gen9 Intel® Xeon® E5-4627v3 (2.6GHz/10-core/25MB/135W) FIO Processor Kit	742706-L21
HPE ProLiant DL560 Gen9 Intel® Xeon® E5-4669v3 (2.1GHz/18-core/45MB/135W) Processor Kit	742708-B21
HPE ProLiant DL560 Gen9 Intel® Xeon® E5-4669v3 (2.1GHz/18-core/45MB/135W) FIO Processor Kit	742708-L21
HPE ProLiant DL560 Gen9 Intel® Xeon® E5-4655v3 (2.9GHz/6-core/30MB/135W) Processor Kit	742710-B21
HPE ProLiant DL560 Gen9 Intel® Xeon® E5-4655v3 (2.9GHz/6-core/30MB/135W) FIO Processor Kit	742710-L21
HPE ProLiant DL560 Gen9 Intel® Xeon® E5-4667v3 (2.0GHz/16-core/40MB/135W) Processor Kit	789024-B21
HPE ProLiant DL560 Gen9 Intel® Xeon® E5-4667v3 (2.0GHz/16-core/40MB/135W) FIO Processor Kit	789024-L21

HPE Memory

NOTE: Hewlett Packard Enterprise memory from previous generation servers is 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. For additional information, please see the [HPE SmartMemory QuickSpecs](#).

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

Core Options

Registered DIMMs (RDIMMs)		
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
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
Load Reduced DIMMs (LRDIMMs)		
HP 64GB (1x64GB) Quad Rank x4 DDR4-2400 CAS-17-17-17 Load Reduced Memory Kit		805358-B21
HP 32GB (1x32GB) Dual Rank x4 DDR4-2400 CAS-17-17-17 Load Reduced Memory Kit		805353-B21
HP 64GB (1x64GB) Quad Rank x4 DDR4-2133 CAS-15-15-15 Load Reduced Memory Kit		726724-B21
HP 32GB (1x32GB) Quad Rank x4 DDR4-2133 CAS-15-15-15 Load Reduced Memory Kit		726722-B21
HP 16GB (1x16GB) Dual Rank x4 DDR4-2133 CAS-15-15-15 Load Reduced Memory Kit		726720-B21

HPE Optical Drives	HP 9.5mm SATA DVD-ROM JackBlack Gen9 Optical Drive	726536-B21
	NOTE: The optional Universal Media Bay Kits are required for this option. (HPE ProLiant DL560 Gen9 Universal Media Bay kit: 795090-B21 or HPE ProLiant DL560 Gen9 2SFF Universal Media Bay kit: 793479-B21).	
	HP 9.5mm SATA DVD-RW JackBlack G9 Optical Drive	726537-B21
NOTE: The optional Universal Media Bay Kits are required for this option. (HPE ProLiant DL560 Gen9 Universal Media Bay kit: 795090-B21 or HPE ProLiant DL560 Gen9 2SFF Universal Media Bay kit: 793479-B21).		
	HP Mobile USB Non Leaded System DVD RW Drive	701498-B21
NOTE: External.		

HPE Drives	NOTE: The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components. NOTE: Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.	
	SAS Hot Plug SFF (2.5-inch) Enterprise (ENT) Drives	

Core Options

HP 600GB 12G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	759212-B21
HP 450GB 12G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	759210-B21
HP 300GB 12G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	759208-B21
12G SAS Hot Plug SFF (2.5-inch) Enterprise Drives	
HP 1.2TB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	781518-B21
HP 900GB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	785069-B21
HP 600GB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	781516-B21
HP 300GB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	785067-B21
12G SAS Hot Plug SFF(2.5-inch) Midline Drives	
HPE 1TB 12G SAS 7.2K rpm SFF (2.5in) SC Midline 1yr Warranty Hard Drive	832514-B21
12G SAS Value Endurance Hot Plug SFF (2.5-inch) Enterprise Value Solid State	
HP 1.6TB 12G SAS Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive	762263-B21
HP 800GB 12G SAS Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive	762261-B21
12G SAS Hot Plug SFF (2.5-inch) SC 512e Drives	
HP 2TB 12G SAS 7.2K rpm SFF (2.5-inch) SC 512e 1yr Warranty Hard Drive	765466-B21
HP 1.8TB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 512e 3yr Warranty Hard Drive	791034-B21
HP 1TB 12G SAS 7.2K rpm SFF (2.5-inch) SC 512e 1yr Warranty Hard Drive	765464-B21
HP 600GB 12G SAS 15K rpm SFF (2.5-inch) SC 512e Enterprise 3yr Warranty Hard Drive	748387-B21
12G SAS Hot Plug SFF (2.5-inch) SC Write Intensive Solid State Drives	
HP 800GB 12G SAS Write Intensive SFF 2.5-in SC 3yr Wty Solid State Drive	802586-B21
HP 400GB 12G SAS Write Intensive SFF 2.5-in SC 3yr Wty Solid State Drive	802582-B21
HP 200GB 12G SAS Write Intensive SFF 2.5-in SC 3yr Wty Solid State Drive	802578-B21
HPE 1.6TB 12G SAS Write Intensive-1 SFF (2.5in) SC 3yr Wty Solid State Drive	846432-B21
HPE 800GB 12G SAS Write Intensive-1 SFF (2.5in) SC 3yr Wty Solid State Drive	846430-B21
12G SAS Read Intensive Hot Plug SFF (2.5-inch) Solid State Drives	

Core Options

HP 1.92TB 12G SAS Read Intensive SFF 2.5-in SC 3yr Wty Solid State Drive	802891-B21
HPE 480GB 12G SAS Read Intensive-3 SFF 2.5-in SC 3yr Wty Solid State Drive	816562-B21
HPE 3.84TB 12G SAS Read Intensive-3 SFF 2.5-in SC 3yr Wty Solid State Drive	816576-B21
HPE 960GB 12G SAS Read Intensive-3 SFF 2.5-in SC 3yr Wty Solid State Drive	816568-B21
HPE 1.92TB 12G SAS Read Intensive-3 SFF 2.5-in SC 3yr Wty Solid State Drive	816572-B21
NOTE: These drives support Gen8 servers and beyond only.	
12G SAS Hot Plug SFF (2.5-inch) SC Mixed Use Solid State Drives	
HPE 1.6TB 12G SAS Mixed Use-1 SFF (2.5in) SC 3yr Wty Solid State Drive	846436-B21
HPE 800GB 12G SAS Mixed Use-1 SFF (2.5in) SC 3yr Wty Solid State Drive	846434-B21
HPE 3.2TB 12G SAS Mixed Use-3 SFF 2.5-in SC 3yr Wty Solid State Drive	822567-B21
HPE 1.6TB 12G SAS Mixed Use-3 SFF 2.5-in SC 3yr Wty Solid State Drive	822563-B21
HPE 800GB 12G SAS Mixed Use-3 SFF 2.5-in SC 3yr Wty Solid State Drive	822559-B21
HPE 400GB 12G SAS Mixed Use-3 SFF 2.5-in SC 3yr Wty Solid State Drive	822555-B21
6G SAS Hot Plug with SmartDrive SFF (2.5-inch) Enterprise Drives	
HP 1.2TB 6G SAS 10K rpm SFF (2.5-inch) SC Dual Port Enterprise 3yr Warranty Hard Drive	718162-B21
HP 900GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652589-B21
HP 600GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652583-B21
HP 450GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652572-B21
HP 300GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652564-B21
HP 146GB 6G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652605-B21
6G SAS Hot Plug SmartDrive SFF (2.5-inch) Midline Drives	
HP 1TB 6G SAS 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	652749-B21
HP 500GB 6G SAS 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	652745-B21
6G SAS ME Hot Plug SFF (2.5-inch) Enterprise Mainstream H2 Solid State Drives	
HP 1.6TB 12G SAS Mainstream Endurance SFF 2.5-in ENT Mainstream SC 3yr Wty H2 Solid State Drive	779176-B21
HP 800GB 12G SAS Mainstream Endurance SFF 2.5-in ENT Mainstream SC 3yr Wty H2 Solid State Drive	779172-B21
HP 400GB 12G SAS Mainstream Endurance SFF 2.5-in ENT Mainstream SC 3yr Wty H2 Solid State Drive	779168-B21
HP 200GB 12G SAS Mainstream Endurance SFF 2.5-in ENT Mainstream SC 3yr Wty H2 Solid State Drive	779164-B21

NOTE: Please see the [HPE SAS Hard Drives QuickSpecs](#) for Technical Specifications and additional information.

Core Options

6G SATA Hot Plug SFF (2.5 inch) SC Midline Hard Drives	
HP 1TB 6G SATA 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	655710-B21
HP 500GB 6G SATA 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	655708-B21
6G SATA Hot Plug SFF (2.5-inch) SC 512e Drives	
HP 2TB 6G SATA 7.2K rpm SFF (2.5-inch) SC 512e 1yr Warranty Hard Drive	765455-B21
HP 1TB 6G SATA 7.2K rpm SFF (2.5-inch) SC 512e 1yr Warranty Hard Drive	765453-B21
6G SATA Value Endurance Hot Plug SFF (2.5-inch) SC Enterprise Value M1 Solid State Drives	
HP 800GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty M1 Solid State Drive	764929-B21
HP 480GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty M1 Solid State Drive	764927-B21
HP 240GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty M1 Solid State Drive	764925-B21
HP 120GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty M1 Solid State Drive	764923-B21
6G SATA Hot Plug SFF (2.5-inch) SC Read Intensive Solid State Drives	
HP 480GB 6G SATA Read Intensive SFF 2.5-in SC 3yr Wty Solid State Drive	789145-B21
HP 1.6TB 6G SATA Read Intensive-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804605-B21
HP 800GB 6G SATA Read Intensive-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804599-B21
HP 480GB 6G SATA Read Intensive-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804593-B21
HP 240GB 6G SATA Read Intensive-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804587-B21
HP 120GB 6G SATA Read Intensive-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804581-B21
HP 80GB 6G SATA Read Intensive-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804575-B21
HP 3.84TB 6G SATA Read Intensive-3 SFF 2.5-in SC 3yr Wty Solid State Drive	816929-B21
HP 1.92TB 6G SATA Read Intensive-3 SFF 2.5-in SC 3yr Wty Solid State Drive	816919-B21
HP 960GB 6G SATA Read Intensive-3 SFF 2.5-in SC 3yr Wty Solid State Drive	816909-B21
HP 480GB 6G SATA Read Intensive-3 SFF 2.5-in SC 3yr Wty Solid State Drive	816899-B21
HP 120GB 6G SATA Read Intensive-3 SFF 2.5-in SC 3yr Wty Solid State Drive	816879-B21
HP 240GB 6G SATA Read Intensive-3 SFF 2.5-in SC 3yr Wty Solid State Drive	816889-B21
NOTE: Please see the HPE Solid State Drives QuickSpecs for Technical Specifications and additional information	
6G SATA Hot Plug SFF (2.5-inch) SC Mixed Use Solid State Drives	

Core Options

HP 1.6TB 6G SATA Mixed Use-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804631-B21
HP 800GB 6G SATA Mixed Use-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804625-B21
HP 480GB 6G SATA Mixed Use-2 SFF 2.5-in SC 3yr Wty Solid State Drive	832414-B21
HP 200GB 6G SATA Mixed Use-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804613-B21
HP 1.92TB 6G SATA Mixed Use-3 SFF 2.5-in SC 3yr Wty Solid State Drive	817011-B21
HP 960GB 6G SATA Mixed Use-3 SFF 2.5-in SC 3yr Wty Solid State Drive	816995-B21
HP 480GB 6G SATA Mixed Use-3 SFF 2.5-in SC 3yr Wty Solid State Drive	816985-B21
HP 240GB 6G SATA Mixed Use-3 SFF 2.5-in SC 3yr Wty Solid State Drive	816975-B21
HP 120GB 6G SATA Mixed Use-3 SFF 2.5-in SC 3yr Wty Solid State Drive	816965-B21
6G SATA Hot Plug SFF (2.5-inch) SC Write Intensive Solid State Drives	
HP 1.2TB 6G SATA Write Intensive-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804677-B21
HP 800GB 6G SATA Write Intensive-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804671-B21
HP 400GB 6G SATA Write Intensive-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804665-B21
HP 200GB 6G SATA Write Intensive-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804639-B21
HPE NVMe PCIe Read Intensive SFF (2.5 inch) Solid State Drives	
HP 1.2TB NVMe PCIe Read Intensive SFF 2.5-in SC2 3yr Wty Solid State Drive	764906-B21
HP 400GB NVMe PCIe Read Intensive SFF 2.5-in SC2 3yr Wty Solid State Drive	764904-B21
HPE NVMe PCIe Mixed Use SFF(2.5-inch) Solid State Drives	
HP 1.6TB NVMe PCIe Mixed Use SFF 2.5-in SC2 3yr Wty Solid State Drive	765038-B21
HP 800GB NVMe PCIe Mixed Use SFF 2.5-in SC2 3yr Wty Solid State Drive	765036-B21
HP 400GB NVMe PCIe Mixed Use SFF 2.5-in SC2 3yr Wty Solid State Drive	765034-B21
HPE NVMe PCIe Write Intensive SFF (2.5-inch) Solid State Drives	
HP 1.6TB NVMe PCIe Write Intensive SFF 2.5-in SC2 3yr Wty Solid State Drive	764892-B21
HP 800GB NVMe PCIe Write Intensive SFF 2.5-in SC2 3yr Wty Solid State Drive	736939-B21
HP 400GB NVMe PCIe Write Intensive SFF 2.5-in SC2 3yr Wty Solid State Drive	736936-B21
M.2 SSD	
HPE 340GB Read Intensive-2 Solid State M.2 Enablement Kit for ProLiant ML/DL Servers	835563-B21
HP 120GB Value Endurance Solid State M.2 Enablement Kit for ProLiant ML/DL Servers	788028-B21

NOTE: M.2 drives go in PCIe slots and use the B140i SATA controller only.

Core Options

Hard Drive Blank Kits	
HP Small Form Factor Hard Drive Blank Kit	666987-B21
Hard Drive Kits	
HP ProLiant DL560 Gen9 Bay2 8SFF Cage/Backplane Kit	795084-B21
HP ProLiant DL560 Gen9 Bay1 8SFF Cage/Backplane Kit	795085-B21
NVMe Kit	
HP DL560 Gen9 NVMe 6 Solid State Drive Express Bay Enablement Kit	774743-B21
Media Bay Kits	
HP ProLiant DL560 Gen9 Universal Media Bay Kit	795090-B21
HP ProLiant DL560 Gen9 2SFF Universal Media Bay Kit	793479-B21

NOTE: It includes a 2SFF Drive Bay.

HPE Networking

1 Gigabit Ethernet adapters	
HP Ethernet 1Gb 4-port 331T Adapter	647594-B21
HP Ethernet 1Gb 2-port 361T Adapter	652497-B21
HP Ethernet 1Gb 2-port 332T Adapter	615732-B21
HP Ethernet 1Gb 4-port 366T Adapter	811546-B21
10 Gigabit Ethernet adapters	
HP Ethernet 10Gb 2-port 530SFP Adapter	652503-B21
HP Ethernet 10Gb 2-port 546SFP+ Adapter	779793-B21
HP Ethernet 10Gb 2-port 557SFP+ Adapter	788995-B21
HP Ethernet 10Gb 2-port 560SFP+ Adapter	665249-B21
HP Ethernet 10Gb 2-port 530T Adapter	656596-B21
HP 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. Please see the related NIC QuickSpecs for Technical Specifications and additional information:

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

25 Gigabit Ethernet adapters	
HPE Ethernet 10/25Gb 2-port 640SFP28 Adapter	817753-B21
FlexibleLOM Adapters	
HP Ethernet 1Gb 4-port 331FLR Adapter	629135-B22
HP Ethernet 1Gb 4-port 366FLR Adapter	665240-B21
HP FlexFabric 10Gb 2-port 533FLR-T Adapter	700759-B21
HP FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter	700751-B21
HP Ethernet 10Gb 2-port 560FLR-SFP+ Adapter	665243-B21
HP Ethernet 10Gb 2-port 561FLR-T Adapter	700699-B21
HP Ethernet 10Gb 2-port 546FLR-SFP+ Adapter	779799-B21
HP FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter	727060-B21
HPE FlexFabric 10Gb 2-port 556FLR-T Adapter	794525-B21
HPE Ethernet 10Gb 2-port 562FLR-SFP+ Adapter	727054-B21
HPE Ethernet 10/25Gb 2-port 640FLR-SFP28 Adapter	817749-B21

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

Core Options

HPE InfiniBand	HP InfiniBand FDR 2-port 545QSFP Adapter	702211-B21
	HP InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+QSFP Adapter	764284-B21
	HP InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+FLR-QSFP Adapter	764285-B21
	HP InfiniBand QDR/Ethernet 10Gb 2-port 544+FLR-QSFP Adapter	764286-B21

NOTE: Please see the [HPE InfiniBand Options for HPE ProLiant and Integrity Servers QuickSpecs](#) for additional information.

HPE I/O Expansion Options	HP ProLiant DL560 Gen9 Secondary 3 Slot Riser Kit	793474-B21
	HP ProLiant DL560 Gen9 Primary 2 Slot Riser Kit	793475-B21

NOTE: This is an optional kit which can be utilized when system is populated with at least two (2) processors.

HPE Power Supplies	HPE Common Slot Power Supply Kits	
	HPE 1500W Common Slot Platinum Plus Power Supply Kit	684532-B21
	HPE 1500W Common Slot 48VDC Hot Plug Power Supply Kit	746708-B21
	HPE 1200W Common Slot Platinum Plus Hot Plug Power Supply Kit	656364-B21
	HPE 1200W Common Slot Platinum Hot Plug Power Supply Kit	748287-B21

NOTE: 94% efficiency with support for HPE Power Discovery Services.

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

NOTE: All power supplies in a server should match. Mixing Power Supplies is not supported.

NOTE: Option Kits contain the specified power supply and a PDU IEC cable.

NOTE: 1500W Power Supplies only support High Line Voltage.

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

HPE Computation and Graphics Accelerators	HP NVIDIA Quadro K2200 Graphics Accelerator	J0G89A
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Additional Options

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

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 for ProLiant DL Server including 3yr 24x7 Support FIO Bundle Physical 1-server LTU	E5Y43A
	HPE OneView Physical Media Kit LTU	E5Y37A
	HPE Operations Analytics for HPE OneView LTU	K8G29A
	HPE Operations Analytics for HPE OneView E-LTU	K8G29AAE
	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 Flexible Quantity E-LTU	P8B26AAE
	HPE OneView w/o iLO including 3yr 24x7 Support Track 1-server LTU	P8B25A
	HPE OneView w/o iLO including 3yr 24x7 Support 1-server FIO LTU	P8B31A

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 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/oneview>.

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

Please see the [HPE OneView QuickSpecs](#) for Technical Specifications and additional information.

High Performance Clusters	SUSE Linux Enterprise Server HPC Compute Node 1-2 Sockets 3 Year Subscription Flx LTU	M6K35A
	SUSE Linux Enterprise Server HPC Compute Node 1-2 Sockets 3 Year Subscription E-LTU	M6K35AAE
	SUSE Linux Enterprise Server HPC Head Node 1-2 Sockets 3 Year Subscription 24x7 Support Flx LTU	M6K36A
	SUSE Linux Enterprise Server HPC Head Node 1-2 Sockets 3 Year Subscription 24x7 Support E-LTU	M6K36AAE

Additional Options

HPE PCIe Workload Accelerator Options	Value Endurance (VE) PCIe Workload Accelerators	
	HP 6.4TB FH/HL Value Endurance (VE) PCIe Workload Accelerator	763840-B21
	HP 3.2TB HH/HL Value Endurance (VE) PCIe Workload Accelerator	763838-B21
	HP 1.6TB HH/HL Value Endurance (VE) PCIe Workload Accelerator	763836-B21
	HP 1.3TB HH/HL Value Endurance (VE) PCIe Workload Accelerator	763834-B21
	Light Endurance (LE) PCIe Workload Accelerators	
	HP 5.2TB FH/HL Light Endurance (LE) PCIe Workload Accelerator	775672-B21
	HP 2.6TB HH/HL Light Endurance (LE) PCIe Workload Accelerator	775670-B21
	HP 1.3TB HH/HL Light Endurance (LE) PCIe Workload Accelerator	775668-B21
	HP 1.0TB HH/HL Light Endurance (LE) PCIe Workload Accelerator	775666-B21
	NVME PCIe Workload Accelerators	
	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
	HP 1.6TB NVMe Mixed Use HH/HL PCIe Workload Accelerator	803202-B21
	HP 1.6TB NVMe Write Intensive HH/HL PCIe Workload Accelerator	803197-B21
	HP 2.0TB NVMe Mixed Use HH/HL PCIe Workload Accelerator	803204-B21
	HP 800GB NVMe Mixed Use HH/HL PCIe Workload Accelerator	803200-B21
	HP 800GB NVMe Write Intensive HH/HL PCIe Workload Accelerator	803195-B21

HPE Security	HP Trusted Platform Module 2.0 Kit	745823-B21
<p>NOTE: HPE Trusted Platform Module 2.0 Option (745823-B21) works with Gen9 servers with UEFI Mode not Legacy Mode. It is not compatible with HPE ProLiant Gen8 servers or earlier generation variants. HPE Gen9 servers purchased earlier may need the latest firmware update to be compatible with the TPM 2.0 Option. The earlier HPE Trusted Platform Module Option (488069-B21) is the TPM 1.2 version, which is also available however TPM 2.0 has newer technology standards incorporated. The TPM 1.2 compatible server platforms include Gen8 and Gen9 servers. HPE server systems can have a TPM module (of any type) installed only once. It cannot be replaced with any other TPM module.</p>		

Additional Options

HPE Storage Controllers	SAS Controllers	
	HPE Smart Array Controllers	
	HP Smart Array P440/4GB FBWC 12Gb 1-port Int SAS Controller	726821-B21
	HP Smart Array P440/4GB FBWC 12Gb 1-port Int FIO SAS Controller	761872-B21
	HP Smart Array P840/4GB FBWC 12Gb 2-ports Int SAS Controller	726897-B21
	HP Smart Array P840/4GB FBWC 12Gb 2-ports Int FIO SAS Controller	761874-B21
	HP Smart Array P441/4GB FBWC 12Gb 2-ports Ext SAS Controller	726825-B21
	HP Smart Array P841/4GB FBWC 12Gb 4-ports Ext SAS Controller	726903-B21
	HPE Flexible Smart Array Controllers	
	HP Smart Array P440ar/2GB FBWC 12Gb 2-ports Int SAS Controller	726736-B21
	HP Smart Array P440ar/2GB FBWC 12Gb 2-ports Int FIO SAS Controller	749974-B21
	HPE Host Bus Adapter	
	HP H240ar 12Gb 2-ports Int Smart Host Bus Adapter	726757-B21
	HP H240ar 12Gb 2-ports Int FIO Smart Host Bus Adapter	749976-B21
	HP H240 12Gb 2-ports Int Smart Host Bus Adapter	726907-B21
	HP H240 12Gb 2-ports Int FIO Smart Host Bus Adapter	761873-B21
	HP H241 12Gb 2-ports Ext Smart Host Bus Adapter	726911-B21
	HP StoreFabric 84E 4-port 8Gb Fibre Channel Host Bus Adapter	E7Y63A
	HPE StoreFabric SN1100Q 16Gb Single Port Fibre Channel Host Bus Adapter	P9D93A
	HPE StoreFabric SN1100Q 16Gb Dual Port Fibre Channel Host Bus Adapter	P9D94A
	HPE StoreFabric 84Q 4-port 8Gb Fibre Channel Host Bus Adapter	P9D91A
	Optional Upgrades	
	HP 96W Smart Storage Battery with 145mm Cable for DL/ML/SL Servers	727258-B21
	HP ProLiant DL560 Gen9 SAS Expander Card	804228-B21
	HP ProLiant DL560 Gen9 Bay3 to H240 Slot 7/ Bay 3 to P840/440 Riser1 and 2SFF-UMBay SAS Cable Kit	797924-B21
	HP ProLiant DL 560 Gen9 Bay 1 to Riser1/AROC and Bay 2/3 to Riser2/Slot7 SAS Cable Kit	797945-B21
	HP ProLiant DL560 Gen9 Bay 2 to Riser1/AROC and Bay 2/3 to Riser1/2 SAS Cable Kit	797946-B21

Additional Options

HPE Tape Backup	<p>NOTE: For the complete range of tape drives, autoloaders, libraries and media see: http://www.hp.com/go/tape. For hardware and software compatibility of HPE tape backup products see: http://www.hp.com/storage/SPOCK and http://www.hp.com/go/ebs. NOTE: For Internal drives to be connected to DL servers please make sure that you order rack mount kits as well.</p>	
	Tape Autoloaders	
	HPE 1/8 G2 Tape Autoloader	
	HPE StoreEver 1/8 G2 LTO-6 Ultrium 6250 Fibre Channel Tape Autoloader	C0H19A
	HPE StoreEver 1U SAS Rack Mount Kit	AE459B
	HPE MSL2024 Tape Library	
	HPE StoreEver MSL2024 0-drive Tape Library	AK379A
	HPE MSL4048 Tape Library	
	HPE StoreEver MSL4048 0-drive Tape Library	AK381A
	HPE StoreEver Mini-SAS High Density to 4-lane Mini-SAS External Fanout 2m Cable	K2R09A
	HPE StoreEver Mini-SAS High Density to 4-lane Mini-SAS External Fanout 4m Cable	K2R10A
	HPE StoreEver MSL6480	
	HPE StoreEver MSL6480 Scaleable Expansion Module	QU626A
	HPE StoreEver MSL6480 Scalable Base Module	QU625A
	Tape Drives	
	HPE StoreEver LTO-3 Ultrium 920 SAS External Tape Drive	EH848B
	HPE StoreEver LTO-5 Ultrium 3280 SAS External Tape Drive	EH900B
	HPE StoreEver LTO-4 Ultrium 1760 SAS External Tape Drive	EH920B
	HPE StoreEver LTO-5 Ultrium 3000 SAS External Tape Drive	EH958B
	HPE StoreEver LTO-5 Ultrium 3000 SAS Tape Drive in a 1U Rack Mount Kit	EJ014B
	HPE StoreEver LTO-4 Ultrium 1760 SAS (1) in a 1U Rack Mount Kit	EH946C
	HPE StoreEver LTO-6 Ultrium 6250 Tape Drive in a 1U Rack Mount Kit	C0L99A
	HPE StoreEver LTO-6 Ultrium 6650 SAS External Tape Drive	EH964A
	HPE StoreEver LTO-6 Ultrium 6250 External Tape Drive	EH970A
	HPE StoreEver LTO-7 Ultrium 15000 Internal Tape Drive	BB873A
	HPE StoreEver LTO-7 Ultrium 15000 External Tape Drive	BB874A

HPE Disk Backup	<p>HPE RDX Removable Disk Backup System</p>	
	HP D3700 Enclosure	QW967A
	HP D3600 Enclosure	QW968A
	HPE RDX 3TB USB 3.0 Internal Disk Backup System	P9L71A
	HPE RDX+ 3TB USB 3.0 External Disk Backup System	P9L72A
	HPE StoreOnce Backup systems	
	HPE StoreOnce 5100 48TB System	BB915A
	HPE StoreOnce 3540 24TB System	BB914A
	HPE StoreOnce 3520 12TB System	BB922A
	HPE StoreOnce 3100 8TB System	BB913A
	<p>NOTE: For the complete range of RDX drives and media see: http://www.hp.com/go/rdx. For hardware and software compatibility of HPE disk backup products see: http://www.hp.com/storage/SPOCK. NOTE: For Internal drives to be connected to DL servers please make sure that you order rack mount kit as well.</p>	

Additional Options

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

HPE Disk Storage Systems	Disk Enclosures	
	HP D6000 w/35 4TB 6G SAS 7.2K LFF Dual Port MDL HDD 140TB Bundle	E7W30A
	HP D6000 w/70 4TB 6G SAS 7.2K LFF Dual Port MDL HDD 280TB Bundle	E7W31A
	HP D6000 Dual I/O Module Disk Enclosure	QQ695A
	HP D6000 w/35 2TB 6G SAS 7.2K LFF Dual port MDL HDD 70TB Bundle	QQ697A
	HP D6000 w/70 2TB 6G SAS 7.2K LFF Dual port MDL HDD 140TB Bundle	QQ698A
	HP D6000 w/35 3TB 6G SAS 7.2K LFF Dual port MDL HDD 105TB Bundle	QQ699A
	HP D6000 w/70 3TB 6G SAS 7.2K LFF Dual port MDL HDD 210TB Bundle	QQ700A
	HP D6000 w/70 8TB 12G SAS 7.2K LFF (3.5in) Dual Port MDL HDD 560TB Bundle	M0T59A
	HP D6000 w/70 6TB 12G SAS 7.2K LFF (3.5in) Dual Port MDL HDD 420TB Bundle	M0T57A
	HP D6000 w/35 8TB 12G SAS 7.2K LFF (3.5in) Dual Port MDL HDD 280TB Bundle	M0T58A

NOTE: Please see the [HPE D6000 Disk Enclosure QuickSpecs](#) for Technical Specifications and additional information.

Additional Options

HPE Data Center Racks	HPE Advanced Series Racks	
	HPE 11648 1075mm Pallet Universal Rack	H6J87A
	HPE 11648 1075mm Shock Universal Rack	H6J88A
	HPE 11642 1075mm Pallet Universal Rack	H6J65A
	HPE 11642 1075mm Shock Universal Rack	H6J66A
	HPE 11642 1200mm Pallet Universal Rack	H6J67A
	HPE 11642 1200mm Shock Universal Rack	H6J68A
	HPE 11636 1075mm Pallet Universal Rack	H6J77A
	HPE 11636 1075mm Shock Universal Rack	H6J78A
	HPE 11622 G2 1075mm Pallet Universal Rack	H6J83A
	HPE 11622 G2 1075mm Shock Universal Rack	H6J84A
	HPE 11614 1075mm Shock Universal Rack	H6J82A

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

HPE Enterprise Series Racks

HPE 647 1075mm Pallet Intelligent Series Rack	BW911A
HPE 647 1075mm Shock Intelligent Series Rack	BW912A
HPE 647 1200mm Pallet Intelligent Series Rack	BW913A
HPE 647 1200mm Shock Intelligent Series Rack	BW914A
HPE 642 1075mm Pallet Intelligent Series Rack	BW903A
HPE 642 1075mm Shock Intelligent Series Rack	BW904A
HPE 642 1200mm Pallet Intelligent Series Rack	BW907A
HPE 642 1200mm Shock Intelligent Series Rack	BW908A
HPE 636 1075mm Pallet Intelligent Series Rack	BW895A
HPE 636 1075mm Shock Intelligent Series Rack	BW896A
HPE 842 1075mm Pallet Intelligent Series Rack	BW917A
HPE 842 1075mm Shock Intelligent Series Rack	BW918A

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

HPE Standard Series Rack

HPE V142 1075mm deep Pallet 100 series Rack	AF046A
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NOTE: Please see the [HPE Standard Series Racks QuickSpecs](#) for information on additional racks options and rack specifications.

HPE Power	HPE Basic Power Distribution Units (PDU)
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Additional Options

Distribution Units (PDUs)	HPE Basic 1.9kVA/L5-20P 16A/120V Outlets (12) 5-20R/Horizontal NA/JP PDU	H5M54A
	HPE Basic 3.6kVA/60320 C20 Detachable 16A/230V Outlets (12) C13/Horizontal WW PDU	H5M56A
	HPE Basic Modular 2.8kVA/L5-30P 24A/120V Outlets (4) C19/Horizontal NA/JP PDU	252663-D71
	HPE Basic Modular 4.9kVA/L6-30P 24A/208V Outlets (4) C19/Horizontal NA/JP Core Only PDU	252663-D74
	HPE Basic Modular 8.3kVA/CS8265C 40A/208V Outlets (4) C19/Horizontal NA/JP PDU	252663-D75
	HPE Basic Modular 7.3kVA/60309 3-wire 32A/230V Outlets (4) C19/Horizontal INTL Core Only PDU	252663-B33
	HPE Basic Modular 9.2kVA/60309 63A 3-wire 40A/230V Outlets (4) C19/Horizontal INTL PDU	252663-B34
	HPE Basic Modular 3Ph 8.6kVA/L15-30P 24A/208V Outlets (6) C19/Horizontal NA/JP PDU	AF512A
	HPE Basic Modular 3Ph 11kVA/60309 5-wire 16A/230V Outlets (6) C19/Horizontal INTL PDU	AF513A
	HPE Basic Modular 3Ph 14.4kVA/CS8365C 40A/208V Outlets (6) C19/Horizontal NA/JP PDU	AF519A
	HPE Basic Modular 3Ph 17.3kVA/60309 60A 4-wire 48A/208V Outlets (6) C19/Horizontal NA/JP PDU	AF511A
	HPE Basic Modular 3Ph 22kVA/60309 5-wire 32A/230V Outlets (6) C19/Horizontal INTL PDU	AF518A
	HPE Basic 2.8kVA/L5-30P 24A/120V Outlets (18) 5-20R/Vertical NA/JP PDU	H5M55A
	HPE Basic 4.9kVA/60320 C20 Detachable 16A/230V Outlets (20) C13/Vertical WW PDU	H5M57A
	HPE Basic 4.9kVA/L6-30P 24A/208V Outlets (20) C13/Vertical NA/JP PDU	H5M58A
	HPE Basic 7.3kVA/60309 5-wire 32A/230V Outlets (20) C13/Vertical INTL PDU	H5M68A
	HPE Basic 3Ph 8.6kVA/L15-30P 24A/208V Outlets (18) C13/Vertical NA/JP PDU	H5M61A
	HP 800VA - 277V Input / 230V Output NA Rack Mount Transformer	H3X09A
	HPE Basic 4.9kVA/L6-30P 24A/208V Outlets (24) C13 (6) C19/Vertical NA/JP PDU	H5M59A
	HPE Basic 7.3kVA/60309 3-wire 32A/230V Outlets (24) C13 (6) C19/Vertical INTL PDU	H5M70A
	HPE Basic 8.3kVA/CS8265C 40A/208V Outlets (30) C13 (6) C19/Vertical NA PDU	H5M60A
	HPE Basic 11kVA/60309 63A 3-wire 48A/230V Outlets (30) C13 (6) C19/Vertical INTL PDU	H5M71A
	HPE Basic 9.2kVA/50A Terminal Block 40A/230V Outlets (30) C13 (6) C19/Vertical WW PDU	H5M75A
	HPE Basic 3Ph 5.7kVA/ L21-20P 16A/120-208V Outlets (24) C13 (3) 5-20R/Vertical NA/JP PDU	H5M63A
	HPE Basic 3Ph 8.6kVA/L21-30P 24A/120-208V Outlets (24) C13 (3) C19 (3) 5-20R/Vertical NA/JP PDU	H5M64A
	HPE Basic 3Ph 8.6kVA/L15-30P 24A/208V Outlets (24) C13 (6) C19/Vertical NA/JP PDU	H5M62A
	HPE Basic 3Ph 11kVA/60309 5-wire 16A/230V Outlets (24) C13 (6) C19/Vertical INTL PDU	H5M72A

Additional Options

HPE Basic 3Ph 11kVA/60309 5-wire 16A/230V Outlets (36) C13 (6) C19/Vertical INTL PDU	H5M73A
HPE Basic 3Ph 11kVA/60309 16A/240V Outlets (36) C13 (6) C19/Vertical NA PDU	H5M67A
NOTE: Please see the HPE Basic Power Distribution Units (PDU) QuickSpecs for information on additional options and product specifications.	
NOTE: To learn more about HPE Basic Power Distribution Units (PDU), please visit the HPE website at http://www.hp.com/go/pdu .	
NOTE: Additional HPE Power Distribution Units are available. For a complete list of all HPE PDUs and additional information please visit: http://www.hp.com/go/rackandpower .	
HPE Metered Power Distribution Units (PDU)	
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 4.9kVA/L6-30P 24A/208V Outlets (12) C13/Vertical NA/JP PDU	G9Z05A
HPE Metered 7.3kVA/60309 3-wire 32A/230V Outlets (12) C13/Vertical INTL PDU	G9Z06A
HPE Metered 3Ph 17.3kVA/60309 60A 4-wire 48A/208V Outlets (12) C13 (12) C19/Vertical NA/JP PDU	G9Z07A
HPE Metered 3Ph 22kVA/60309 5-wire WT 32A/230V Outlets (12) C13 (12) C19/Vertical INTL PDU	G9Z08A
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 (20) C13 (4) C19/Vertical NA/JP PDU	D9N47A
HPE Metered 7.3kVA/60309 32A 3-wire/230V Outlets (20) C13 (4) C19/Vertical INTL PDU	D9N48A
HPE Metered 3Ph 8.6kVA/L15-30P 24A/208V Outlets (18) C13 (3) C19/Vertical NA/JP PDU	D9N51A
HPE Metered 3Ph 5.7kVA/L21-20P 16A/120-208V Outlets (13) C13 (3)5-20R/Vertical NA/JP PDU	D9N52A
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 3Ph 11kVA/60309 5-wire 16A/230V Outlets (18) C13 (3) C19/Vertical INTL PDU	D9N55A

Additional Options

HPE Metered 8.3kVA/CS8265C 40A/208V Outlets (30) C13 (3) C19/Vertical NA PDU	D9N49A
HPE Metered 7.3kVA/60309 32A 3-wire/230V Outlets (32) C13 (4) C19/Vertical INTL PDU	D9N50A
HPE Metered 3Ph 11kVA/60309 5-wire 16A/230V Outlets (30) C13 (3) C19/Vertical INTL PDU	D9N57A
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 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 22kVA/60309 5-wire 32A/230V Outlets (12) C13 (12) C19/Vertical INTL PDU	D9N60A
HPE Metered 3Ph 22kVA/60309 5-wire 32A/230V Outlets (30) C13 (3) C19/Vertical INTL PDU	D9N56A
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 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
NOTE: Please see the HPE Metered Power Distribution Units (PDU) QuickSpecs for information on additional options and product specifications.	
HPE Intelligent Power Distribution Unit (PDU)	
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 14.4kVA/CS8365C 40A/208V Outlets (6) C19/Horizontal NA/JP PDU	AF533A
HPE Intelligent Modular 3Ph 17.3kVA/60309 60A 4-wire 48A/208V (6) C19/Horizontal NA/JP PDU	AF523A
HPE Intelligent Modular 7.3kVA/60309 3-wire 32A/230V Outlets (6) C19/Horizontal INTL PDU	AF525A
HPE Intelligent Modular 3Ph 11kVA/60309 5-wire 16A/230V Outlets (6) C19/Horizontal INTL PDU	AF526A
HPE Intelligent Modular 3Ph 22kVA/60309 5-wire 32A/230V Outlets (6) C19/Horizontal INTL PDU	AF527A
HPE Intelligent Modular 3Ph 11kVA/L22-20P 16A/240V Outlets (6) C19/Horizontal NA/JP PDU	AF900A
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) C19/Horizontal NA/JP PDU	AF535A
HPE Intelligent Modular 3Ph 17.3kVA/IEC 60309 30A 5-wire 24A/240V (12) C19/Horizontal NA/JP PDU	AF537A
HPE Intelligent Modular 3Ph 22kVA/60309 5-wire 32A/230V Outlets (12) C19/Horizontal INTL PDU	AF538A

Additional Options

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 7.3kVA/60309 3-wire 32A/230V Outlets (20) C13 (4) C19/Vertical INTL PDU	H8B51A
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/L2190-30P 24A/208V Outlets (23) C13 C19 (1) 520R/Vertical NA/JP PDU	H8B53A
HPE Metered Switched 3Ph 11kVA/60309 5-wire 16A/230V Outlets (21) C13 (3) C19/Vertical INTL PDU	H8B54A
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.

iPDU Kits with Standard Extension Bars	
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 7.3kVA/60309 3-wire 32A/230V Outlets (6) C19/Horizontal INTL PDU Kit	AF534A
iPDU Extension Bars	
HP 5xC13 Intelligent PDU Extension Bar G2 Kit	AF547A
HP 5xC13 Outlets Power and UID LEDs Pair Standard Extension Bar	AF528A

NOTE: 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	
	HP Location Discovery Services LCD8500 Kit	TL052A
	HPE Rack Mount Consoles	
	HP LCD8500 1U US Rackmount Console Kit	AF630A
	HP LCD8500 1U UK Rackmount Console Kit	AF631A
	HP LCD8500 1U DE Rackmount Console Kit	AF632A
	HP LCD8500 1U FR Rackmount Console Kit	AF633A
	HP LCD8500 1U JP Rackmount Console Kit	AF642A
	HP LCD8500 1U RU Rackmount Console Kit	AF643A
	HP LCD8500 1U INTL Rackmount Console Kit	AF644A
	HP LCD8500 1U US TAA Rackmount Console Kit	AF645A

Additional Options

HPE KVM Switches	
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 KVM Console USB 2.0 Virtual Media CAC Interface Adapter	AF629A
HPE USB Keyboard and Mouse	
HP USB BFR with PVC Free US Keyboard/Mouse Kit	631341-B21
HP USB BFR with PVC Free UK Keyboard/Mouse Kit	631344-B21
HP USB BFR with PVC Free FR Keyboard/Mouse Kit	631346-B21
HP USB BFR with PVC Free ES Keyboard/Mouse Kit	631348-B21
HP USB BFR with PVC Free DE Keyboard/Mouse Kit	631358-B21
HP USB BFR with PVC Free JP Keyboard/Mouse Kit	631360-B21
HP USB BFR with PVC Free IT Keyboard/Mouse Kit	631362-B21
HP USB BFR with PVC Free CN Keyboard/Mouse Kit	631364-B21
HP USB BFR with PVC Free AE Keyboard/Mouse Kit	638212-B21
HP USB BFR with PVC Free RU Keyboard/Mouse Kit	638214-B21
HP USB BFR with PVC Free IN Keyboard/Mouse Kit	672097-D63
HP USB BFR with PVC Free AP-Intl Keyboard/Mouse Kit	672097-373
HP USB BFR with PVC Free Intl Keyboard/Mouse Kit	672097-B33
HP USB BFR with PVC Free PT Keyboard/Mouse Kit	672097-133
HP USB BFR with PVC Free TR Keyboard/Mouse Kit	672097-143
HP USB BFR with PVC Free CZ Keyboard/Mouse Kit	672097-223
HP USB BFR with PVC Free FI Keyboard/Mouse Kit	672097-353
HP USB BFR with PVC Free SE Keyboard/Mouse Kit	672097-103
HP USB BFR with PVC Free CH Keyboard/Mouse Kit	672097-113
HP USB BFR with PVC Free KR Keyboard/Mouse Kit	672097-KD3

NOTE: Please see the [HPE USB Keyboard and Mouse QuickSpecs for Technical Specifications and additional information.](#)

HPE Server Console Switches	
HP 0x1x8 G3 KVM Console Switch	AF651A
HP 0x2x16 G3 KVM Console Switch	AF652A
HPE Server Console Switch G2 with Virtual Media & CAC	
HP 0x2x16 KVM Server Console Switch G2 with Virtual Media CAC Software	AF618A
HP 0x2x32 KVM Server Console Switch G2 with Virtual Media CAC Software	AF619A
HPE IP Console Switch G2 with Virtual Media & CAC	
HP 1x4 USB/PS2 KVM Console Switch	AF611A
HP 1x1Ex8 KVM IP Console Switch G2 with Virtual Media CAC Software	AF620A
HP 2x1Ex16 KVM IP Console Switch G2 with Virtual Media CAC Software	AF621A
HP 4x1Ex32 KVM IP Console Switch G2 with Virtual Media CAC Software	AF622A

NOTE: Please see the [HPE IP KVM Console Switch G2 with Virtual Media & CAC QuickSpecs for Technical Specifications and additional information.](#)

Rail Kits

NOTE: Gen9 rail kits have changed significantly from prior generation rail kits. Please take a moment to review the installation documentation that comes with the server to help you with the installation of your Gen9 server.

NOTE: Rail kits are optional for DL560 Gen9 and are no longer included standard with the

Additional Options

server. Customers have the option to purchase their server without a rail kit.

NOTE: Ball bearing and Easy Install rail kits contain telescoping rails which allow for in-rack serviceability.

NOTE: To assist in the installation of the server into the rack an optional installation tool is available by contacting your local services representative (p/n 695539-001).

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.

HP 2U Large Form Factor Easy Install Rail Kit	733662-B21
NOTE: Does not include CMA (733664-B21).	
HP 2U Cable Management Arm for Easy Install Rail Kit	733664-B21
HP 2U Large Form Factor Ball Bearing Rail Kit	720864-B21
NOTE: Does not include CMA (720865-B21).	
HP 2U Cable Management Arm for Ball Bearing Rail Kit	720865-B21
HPE Other Options	
HP Rack LED Light Kit	BW939A
HP Kit LCD 1.83m Latch Display Port Cable	G7T29A
HP Advanced Power Manager Kit	741192-B21
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)	
	HP R12000 DirectFlow - 1U Rackmount Uninterruptible Power System	G9Y75A
	HP R12000 DirectFlow - POD 1U Rackmount Uninterruptible Power System	AF478A
	Input/Output Module Options for 1U UPS	
	HP 32A 400-415 Volt Three Phase INTL R12000 DirectFlow UPS IEC309 Input/Output Module	AF488A
	HP 30A 400-415 Volt Three Phase NA R10000 DirectFlow UPS IEC309 Input/Output Module	AF489A
	HP 32A 380 Volt Three Phase China R12000 DirectFlow UPS Unterminated Input/Output Module	AF490A
	HP 30A 480 Volt Three Phase NA R12000 DirectFlow UPS L22-30 Input/Output Module	AF491A
	HP 30A 480 Volt Three Phase NA R12000 DirectFlow UPS IEC309 Input/Output Module	AF492A
	HP 30A 400-415 Volt Three Phase NA R12000 DirectFlow UPS IEC309 Input/Output Module	G9Y76A
	HP DirectFlow UPS Management Card	AF493A
	Power Unit (2U UPS)	
	HP R18000 DirectFlow - 2U Rackmount Uninterruptible Power System	AF479A
	Input/Output Module Options for 2U UPS	

Additional Options

HP 32A 400-415 Volt Three Phase INTL R18000 DirectFlow UPS IEC309 Input/Output Module	AF483A
HP 30A 380 Volt Three Phase China R18000 DirectFlow UPS Unterminated Input/Output Module	AF485A
HP 30A 480 Volt Three Phase NA R18000 DirectFlow UPS IEC309 Input/Output Module	AF486A
HP 30A 480 Volt Three Phase NA R18000 DirectFlow UPS IEC309 Input/Output Module	AF487A
HP 30A 400 Volt Three Phase NA R18000 DirectFlow UPS IEC309 Input/Output Module	D9Q02A
HP 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	
HP DirectFlow UPS - 1U Rackmount Lithium-ion Battery Pack	AF480A
HP DirectFlow UPS - 3U Rackmount VRLA Battery Pack	AF482A
HP 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	
HP T750 G4 NA/JP Uninterruptible Power System	J2P85A
HP T750 G4 INTL Uninterruptible Power System	J2P88A
HPE T1000 G4 UPS Models	
HP T1000 G4 NA/JP Uninterruptible Power System	J2P86A
HP T1000 G4 INTL Uninterruptible Power System	J2P89A
HPE T1500 G4 UPS Models	
HP T1500 G4 NA/JP Uninterruptible Power System	J2P87A
HP T1500 G4 INTL Uninterruptible Power System	J2P90A
HPE Rack/Tower UPS	
HPE R/T2200 G4 UPS Models	
HP R/T2200 G4 NA/JP Uninterruptible Power System	J2R00A
HPE R/T3000 G4 UPS Models	
HP R/T3000 G4 Low Voltage NA/JP Uninterruptible Power System	J2R01A
HP R/T3000 G4 High Voltage NA/JP Uninterruptible Power System	J2R02A
HP R/T3000 G4 High Voltage INTL Uninterruptible Power System	J2R04A
R1500 G4 Models	
HP R1500 G4 NA Uninterruptible Power System	J2Q99A
HP R1500 G4 JP/TWN Uninterruptible Power System	J2R05A
HP R1500 G4 INTL Uninterruptible Power System	J2R03A
R7000 Uninterruptible Power System (UPS)	
HP R7000 4U 50A High Voltage NA/JP Uninterruptible Power System	AF462A
HP R7000 4U IEC-32A High Voltage INTL Uninterruptible Power System	AF463A
R5000 Uninterruptible Power System (UPS)	
HP R5000 3U L630 High Voltage NA/JP Uninterruptible Power System	AF460A
HP R5000 3U IEC309-32A High Voltage INTL Uninterruptible Power System	AF461A

Additional Options

Expansion modules for RP36000/3 UPS	
HP RP12000/3 12000VA Three Phase INTL 6U Rackmount Uninterruptible Power System	AF437A
HPE UPS Options	
HP R/T2200 G4 Extended Runtime Module	J2R09A
HP R/T3000 G4 Extended Runtime Module	J2R10A
HP 2U Rack/Tower UPS Shipping Kit	L4Q11A

NOTE: Please see the [HPE Line Interactive Single Phase UPS QuickSpecs](#) for information on additional options and product specifications.

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

HPE Power Cords	HP C13 - SEV 1011 CH 250V 10Amp 1.83m Power Cord	AF565A
	HP C13 - DK-2.5A DK 250V 10Amp 1.83m Power Cord	AF566A
	HP C13 - SABS-164 ZA 250V 10Amp 2.5m Power Cord	AF567A
	HP C13 - CEE-VII EU 250V 10Amp 1.83m Power Cord	AF568A
	HP C13 - BS-1363A UK/HK/SG 250V 10Amp 1.83m Power Cord	AF570A
	HP C13 - CEI-23-50 IT/CL 250V 10Amp 1.83m Power Cord	AF571A
	HP C13 - Nema 6-15P US 250V 15A JP 3.6m Power Cord	A0N33A
	HP C13 - Nema 5-15P US/CA 110V 10Amp 1.83m Power Cord	AF556A
	HP 8AWG W/Ground Lug 48V DC 3.0m Power Cord	J6X42A

HPE USB and SD Options	HPE Enterprise Mainstream Flash Media Kits for Memory Cards	
	HP 32GB microSD Enterprise Mainstream Flash Media Kit	700139-B21
	HP 8GB microSD Enterprise Mainstream Flash Media Kit	726116-B21
	HP Dual 8GB microSD Enterprise Midline USB Kit	741279-B21
NOTE: Please see the HPE Flash Media Kits QuickSpecs for additional information.		

HPE Support Services	Proactive Care	
	HPE 3 year Proactive Care 24x7 DL560 Gen9 Service	U8QM3E
	HPE 3 year Proactive Care 24x7 with DMR DL560 Gen9 Service	U8QM4E
	HPE 3 year Proactive Care Call to Repair DL560 Gen9 Service	U8QM9E
	HPE 3 year Proactive Care Call to Repair 24x7 with DMR DL560 Gen9 Service	U8QN0E
	HPE 3 year Proactive Care 24x7 with CDMR DL560 Gen9 Service	U8QS3E
	HPE 3 year Proactive Care Call to Repair with CDMR DL560 Gen9 Service	U8QS6E
	HPE 3 year Proactive Care 24x7 DL560 Gen9 with OneView Service	U8QW0E
	HPE 3 year Proactive Care 24x7 with DMR DL560 Gen9 with OneView Service	U8QW1E
	HPE 3 year Proactive Care Call to Repair DL560 Gen9 with OneView Service	U8QW6E
	HPE 3 year Proactive Care Call to Repair 24x7 with DMR DL560 Gen9 with OneView Service	U8QW7E
	HPE 3 year Proactive Care 24x7 with CDMR DL560 Gen9 w/OneView Service	U8RB0E
	HPE 3 year Proactive Care Call to Repair with CDMR DL560 Gen9 w OV Service	U8RB3E
	Installation & Start-up Services	

Additional Options

HPE Install ProLiant DL560 Service

U6H58E

HPE Startup ProLiant DL560 Service

U6H60E

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

NOTE: For more information, customer/resellers can contact:

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

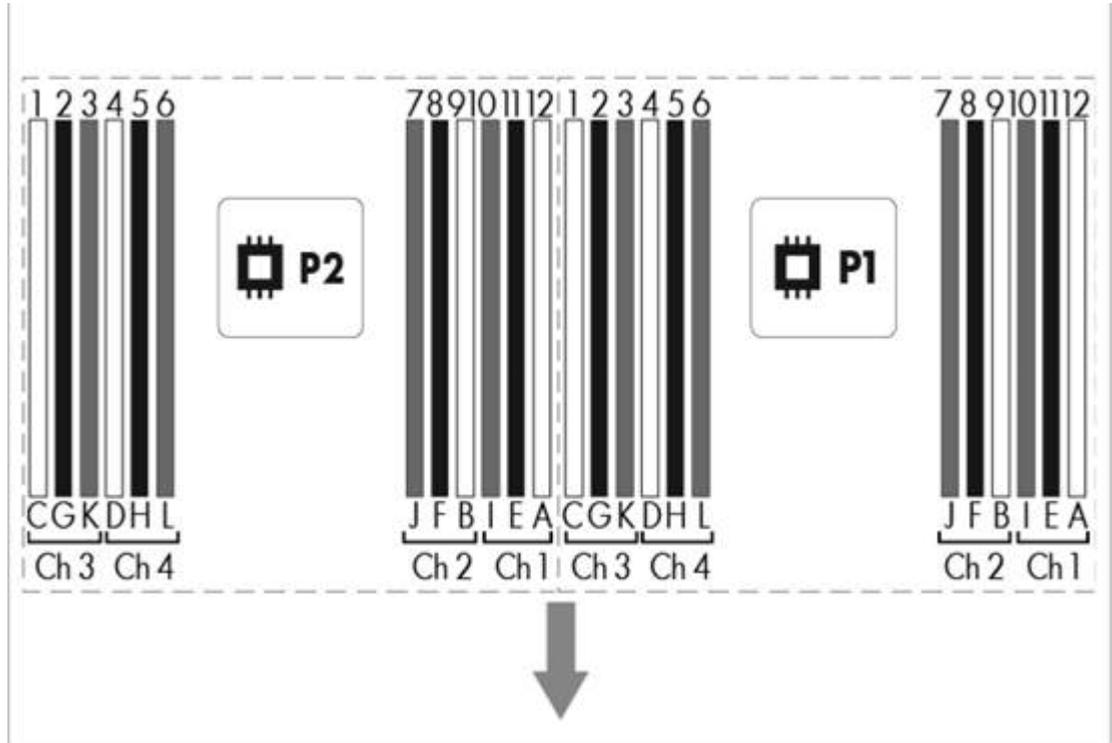
Memory

HPE SmartMemory

New HPE SmartMemory now provides additional protection for your servers. With Hewlett Packard Enterprise Auth ProLiant Gen9 server. With HPE SmartMemory your new HPE ProLiant server can take advantage of additional G through HPE Active Health System.

For detailed memory configuration rules and guidelines, please use the [Online DDR4 Memory Configuration Tool](#).

Memory Population guidelines



DIMM population order												
	1st slot of channel			2nd slot of channel			3rd slot of channel					
	A	B	C	D	E	F	G	H	I	J	K	L
Number of DIMMs to install	4											
	8											
	12											

General Memory Population Rules and Guidelines:

Memory

- To maximize performance, install two memory cartridges per processor and balance the total memory capacity between all installed processors.
- When multiple processors are installed, HPE recommends installing the DIMMs in sequential alphabetical order: 4A, 9B, 1C, 12D, and so on.
- LRDIMMs support higher densities than single- and dual-rank RDIMMs, and higher speeds than quad-rank RDIMMs. This support enables you to install more high capacity DIMMs, resulting in higher system capacities and higher bandwidth.
- Do not mix LRDIMMs with any other DIMM type (RDIMM, LVDIMM).
- RDIMM population is limited to a maximum of eight logical ranks per channel. Therefore, only two quad rank RDIMMs are supported per channel. If there are more than eight physical ranks per channel, LRDIMMs rank multiplication provides support for three DIMMs per channel.
- Lockstep mode requires specific population requirements. See lock-step configuration below for more information.

NOTE: UDIMMs are not supported. This server does not support mixing LRDIMMs, RDIMMs, or UDIMMs. Attempting to mix any combination of these DIMMs can cause the server to halt during BIOS initialization. For detailed memory configuration rules and guidelines, use the Online DDR4 Memory Configuration Tool on the Hewlett Packard Enterprise website (<http://www.hp.com/go/ddr4config>).

Intel Gen9 Supported Memory Bandwidth for HPE ProLiant Gen9 Intel® Xeon® E5-4600v3 Series Processor Family

Memory Bandwidth and Capacity				
[DIMM Type]	Registered DIMMs (RDIMMs)			
HPE SKU P/N	726718-B21	759934-B21	726719-B21	728629
DIMM Rank	Single Rank	Dual Rank	Dual Rank	Dual R
DIMM Capacity	8GB	8GB	16GB	32G
Voltage	Std Voltage 1.2V	Std Voltage 1.2V	Std Voltage 1.2V	Std Voltag
DIMM Native Speed (MT/s)	2133	2133	2133	213:
SLOTS THAT CAN BE POPULATED				
48 slot servers	48	48	48	48
MAXIMUM CAPACITY (GB)				
	384	384	768	153:
POPULATED DIMM SPEED (MT/s)				
1 DIMM Per Channel	2133	2133	2133	213:
2 DIMM Per Channel	2133	2133	2133	213:
3 DIMM Per Channel	1600	1600	1600	160:

Intel Gen9 Supported Memory Bandwidth for HPE ProLiant Gen9 Intel® Xeon® E5-4600v4 Series Processor Famil

Memory

Memory Bandwidth and Capacity

[DIMM Type]	Registered DIMMs (RDIMMs)		
HPE SKU P/N	805347-B21	805349-B21	836220-B21
DIMM Rank	Single Rank	Single Rank	Dual Rank
DIMM Capacity	8GB	16GB	16GB
Voltage	Std Voltage 1.2V	Std Voltage 1.2V	Std Voltage 1.2V
DIMM Native Speed (MT/s)	2400	2400	2400
SLOTS THAT CAN BE POPULATED			
48 slot servers	48	48	48
MAXIMUM CAPACITY (GB)			
	384	768	768
POPULATED DIMM SPEED (MT/s)			
1 DIMM Per Channel	2400	2400	2400
2 DIMM Per Channel	2133	2133	2400
3 DIMM Per Channel	1866	1866	1600

Memory Speed by Processor Model	Processor Models	Supported Memory Speeds
	E5-4660v3, E5-4650v3, E5-4627v3, E5-4669v3, E5-4655v3, E5-4667v3	2133/1866/1600MT/s
	E5-4620v3, E5-4640v3	1866/1600MT/s
	E5-4610v3	1600MT/s
	E5-4655v4, E5-4650v4, E5-4660v4, E5-4627v4, E5-4667v4, E5-4669v4	2400/2133/1866MT/s
	E5-4620v4, E5-4640v4	2133/1866MT/s
	E5-4610v4	1866MT/s

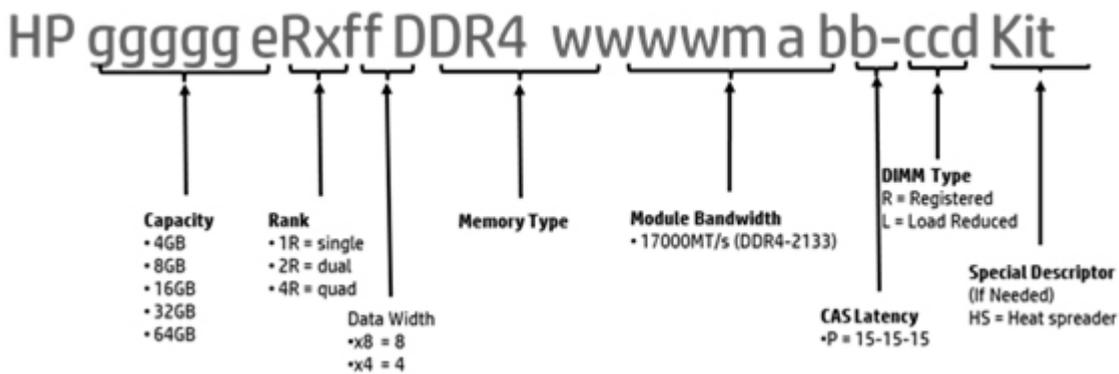
Standard and Maximum Memory Capacity (Pre-configured Models)	Pre Configured Models	Standard Memory	Maximum Memory Plus Optional Memory	Standard Memory Replaced with Optional Memory
	E5-4640v4	128GB (8x16GB)	1408GB (40x32GB, 8x16GB)	3072GB (48x64GB)
	E5-4640v3	128GB (8x16GB)	2688GB (40x64GB, 8x16GB)	3072GB (48x64GB)
	E5-4620v4	64GB (4x16GB)	1472GB (44x32GB, 4x16GB)	3072GB (48x64GB)
	E5-4620v3	64GB (4x16GB)	2880GB (44x64GB, 4x16GB)	3072GB (48x64GB)
	E5-4610v4	32GB (2x16GB)	1504GB (46x32GB, 2x16GB)	3072GB (48x64GB)
	E5-4610v3	32GB (2x16GB)	2976GB (46x64GB, 2x16GB)	3072GB (48x64GB)

Memory

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



Storage

8 SFF (+2 SFF) hot-plug drive model with Universal Media Bay

1-8

8 x SFF SATA/SAS/SDD Hot Pluggable Hard drive bays



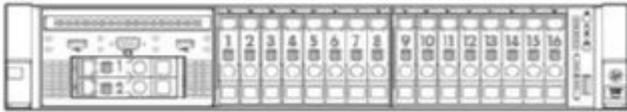
1-2

2 x SFF SATA/SAS/SSD Hot Pluggable Hard Drive Bays
Universal Media Bay Kit with 2xSFF drives

16 SFF (+2 SFF) hot-plug drive model with Universal Media Bay

1-16

16 x SFF SATA/SAS/SDD Hot Pluggable Hard drive bays



1-2

NOTE: If Universal Media Bay Kit is not chosen, even Bay 1 can be populated with 8xSFF drives to give a maximum of 24xSFF drives.

2 x SFF SATA/SAS/SSD Hot Pluggable Hard Drive Bays
Universal Media Bay Kit with 2xSFF drives

Technical Specifications

System Unit	Dimensions (H x W x D) (with bezel)	3.44" x 17.54" x 29.5" (8.73cm x 44.54cm x 74.93cm)	
	Weight (approximate)	Maximum:	61 lb (27.66 kg)
		(all hard drives, power supplies, DIMMs and processors installed)	
		Minimum:	41.00 lb (18.59 kg)
		(one hard drive, two power supplies, four DIMMs, and two processors installed)	
Input Requirements (per power supply)	Range	Line Voltage	100 - 120 VAC (1200W PS only) 200 - 240 VAC (1200W & 1500W PS)
	Rated Input	Current	9.2A (100 VAC), 6.6A (200 VAC) - 1200W PS 8.3A (200 VAC) - 1500W PS
	Rated Input	Frequency	50 to 60 Hz
	Rated Input	Power	1000 W (120 VAC), 1320 W (230VAC)- 1200W PS 1652 W (at 230 VAC) - 1500W PS
BTU Rating	Maximum	3408 BTU/hr (120 VAC), 4500 BTU/hr (at 230 VAC) - 1200W PS 5637 BTU/hr (230 VAC) - 1500W PS 3112 BTU/hr (at 240 VAC) for China Only	
Power Supply Output (per power supply)	Rated Steady-State Power	For 1400W Power Supply: 1400W (at 100 VAC), 1400W (at 240 VAC), 1400W (at 240 VAC) For 800W Power Supply: 800W (at 100 VAC), 800W (at 240 VAC), 800W (at 240 VAC) input for China only For 500W Power Supply: 500W (at 100 VAC), 500W (at 240 VAC), 500W (at 240 VAC) input for China only	
	Maximum Peak Power	For 1400W Power Supply: 1400W (at 100 to 127 VAC), 1400W (at 200 to 240 1VAC), 1400W (at 240 VAC) input for China only For 800W Power Supply: 800W (at 100 to 127 VAC), 800W (at 200 to 240 1VAC), 800W (at 240 VAC) input for China only For 500W Power Supply: 500W (at 100 to 127 VAC), 500W (at 200 to 240 VAC), 500W (at 240 VAC) input for China only	
<p>NOTE: To review typical system power ratings use the HPE Power Advisor which is available online located at url: http://www.hp.com/go/proliant-energy-efficient or http://www.hp.com/go/hppoweradvisor.</p>			

Technical Specifications

System Inlet Temperature	Standard Operating Support	<p>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).</p>
	Extended Ambient Operating Support	<p>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 configurations for this system are listed at the URL: http://www.hp.com/servers/Ashrae</p> <p>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.hp.com/servers/Ashrae</p> <p>System performance may be reduced if operating in the extended ambient operating range or with a fan fault.</p>
Relative Humidity (non-condensing)	Non-operating	-30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).
	Operating	10% to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing.
	Non-operating	5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.
Altitude	Operating	3048 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
	Non-operating	9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
Acoustic Noise		Listed are the declared A-Weighted sound power levels (LWAd) and declared average bystander position A-Weighted sound pressure levels (LpAm) when the product is operating in a 23°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109).
	Idle	
	L WAd	6.8 B
	L pAm	51.2

Technical Specifications

Operating
L WAd 6.9 B
L pAm 51.2

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

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

HPE Dynamic Smart Array B140i Controller	Number of PCI links	Four
	PCI link rate	4 Gb/s
	Storage protocol support	SATA
	SAS/SATA peak data transfer rate	6 Gb/s
	Number of SAS/SATA links	10 links
	SAS/SATA connectivity	2x4 connectors; 2x1 connectors
	Expander support	No
	Drives supported (max)	Up to 10 Internal Drives
	RAID support	0, 1, 10, 5 SATA
	Software management	HPE SSA, SMH, SIM
	Warranty	Server warranty
	HPE Secure Encryption license	Not Supported
	HPE SmartCache License	Not Supported
	HPE Smart Storage Administrator	Supported

HPE Ethernet 1Gb 4-port	Network Interface	10Base-T/100Base-TX/1000Base-TX
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Technical Specifications

331FLR Adapter	Compatibility	IEEE 802.3 10Base-T IEEE 802.3ab 1000Base-T IEEE 802.3u 100Base-TX IEEE 802.3x IEEE 802.3ad 1000Base-TX IEEE 802.3az IEEE 1588 IEEE 802.1as
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Ports

Data Transfer Method

Controller

Network

Transfer Rate

Connector

Cable Support

Environment-friendly Products and Approach	End-of-life Management and Recycling	Hewlett-Packard offers end-of-life Hewlett Packard Enterprise product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to: http://www.hp.com/go/green . To recycle your product, please go to: http://www.hp.com/go/green or contact your nearest Hewlett Packard Enterprise sales office. Products returned to Hewlett Packard Enterprise will be recycled, recovered or disposed of in a responsible manner.
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The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard Enterprise web site at: <http://www.hp.com/go/green>. These instructions may be used by recyclers and other WEEE treatment facilities as well as Hewlett Packard Enterprise OEM customers who integrate and re-sell Hewlett Packard Enterprise equipment.

Summary of Changes

Date	Version History	Action	Description of Change
20-Jun-2016	From Version 9 to 10	Added	Added new Intel® Xeon® E5-2600v4 processor family and new HPE DDR4 2400 MHz Memory modules. Added new options to the HPE Unique Options, HPE Memory, and HPE Converged Infrastructure Management Software sections.
		Changed	Cache Memory, Chipset, Memory, Internal Storage Devices, Security, Pre-configured Models, and Technical Specifications were revised.
6-Jun-2016	From Version 8 to 9	Added	New options added to the HPE Storage Controllers, HPE Disk Backup, and HPE Storage Options.
		Changed	Memory, Expansion Slots, and HPE Unique Options were revised.
8-Apr-2016	From Version 7 to 8	Changed	HPE Processors section was revised.
31-Mar-2016	From Version 6 to 7	Added	New Security TPM option and new HDD offering were added.
		Changed	Embedded Management, Security, Service and Support, and Pre-configured Models sections were revised.
		Removed	Obsolete SKUs were removed from the QuickSpecs.
16-Feb-2016	From Version 5 to 6	Added	New HDD offering was added to HPE Drives. New options were added to the HPE PCIe Workload Accelerator Options and HPE Disk Backup sections.
		Changed	Memory, Expansion Slots, Maximum Internal Storage, Interfaces, HPE Data Center Racks, and HPE Power Distribution Units (PDUs).
		Removed	Obsolete SKUs were removed from the QuickSpecs.
1-Dec-2015	From Version 4 to 5	Added	New HDD offering was added to HPE Drives. New option added to 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.

Summary of Changes

28-Sep-2015	From Version 3 to 4	Added	Added new 6Gb SATA Solid State Drives. Added new HPE OneView management software.
		Changed	Maximum Internal Storage, Interfaces, and HP Memory were revised.
17-Aug-2015	From Version 2 to 3	Added	New Hard Drives offering was added to Core Options. HPE Computation and Graphics Accelerators was added to Core Options.
		Changed	Memory and Expansion Slots under Standard Features section were revised. Core Options, Memory, and Storage sections were revised.
26-Jun-2015	From Version 1 to 2	Changed	Interfaces entry under Standard Features section was revised. Base configuration under Configuration Information - Factory Integrated Models section (Step 1) was revised.



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

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