QuickSpecs

Overview

HPE Apollo 6500

The HPE Apollo 6500 System provides the tools and the confidence to deliver high performance computing (HPC) innovation. The system consists of three key elements: The HPE ProLiant XL270 Gen9 Accelerator tray, the HPE Apollo 6500 Chassis, and the HPE Apollo 6000 Power Shelf.

The HPE Apollo 6500 chassis can accommodate two 2U, full-width HPE ProLiant XL270d Accelerator Trays, each individually front serviceable. With full HPE Advanced Power Manager support to automatically discover hardware components and enable bay level power on and off, server metering, aggregate dynamic power capping, configurable power-up dependencies and sequencing, consolidated Ethernet access to all resident iLOs, and asset management capabilities.

The HPE ProLiant XL270d Gen9 Accelerator Tray provides up to 56 Tflops of single precision performance per server with eight NVIDIA® Tesla M40, and up to 15 Tflops of double precision performance with the NVIDIA® Tesla K80 GPUs and two Intel® Xeon® E5-2600 v4 processors in a 2U server. With a configurable internal PCIe Gen3 fabric, choose to optimize the GPU topology to match your specific needs. High-bandwidth, low-latency networking is tightly coupled to the accelerators allowing you to take full advantage of your network. Two x16 PCIe Gen3 slots for your choice of high speed fabrics.

The HPE Apollo 6000 Power Shelf offers pooled power for rack level efficiency as well as provides N+N redundancy to support your datacenter needs. Depending on the power configurations of the trays within a chassis, the power shelf can support 2 to 4 fully populated HPE Apollo a6000 Chassis with max DC power up to 15.9 kW. The HPE Apollo 6000 Power Shelf with its redundant hot-plug power supplies can also be configured for single- or three-phase input.

The Apollo 6500 System: Your next accelerated computing solution.

Overview

Chassis and Accelerator Trays
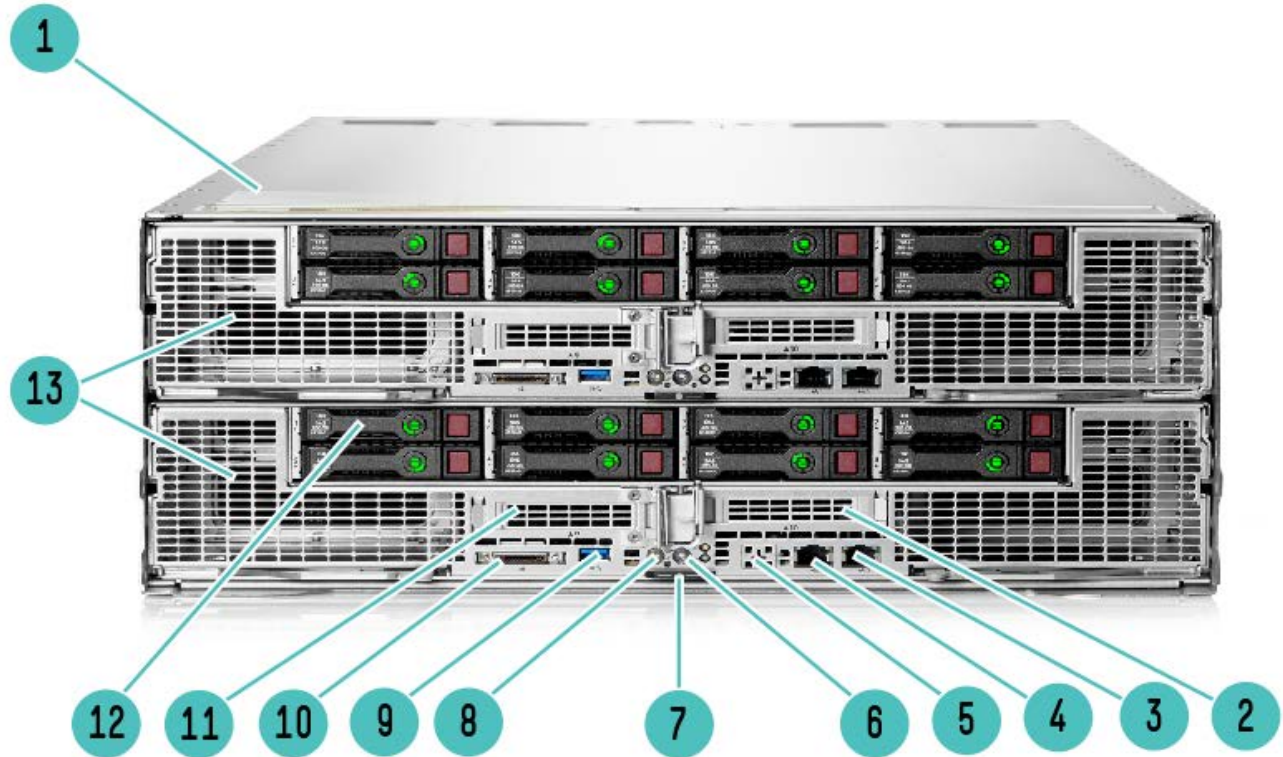
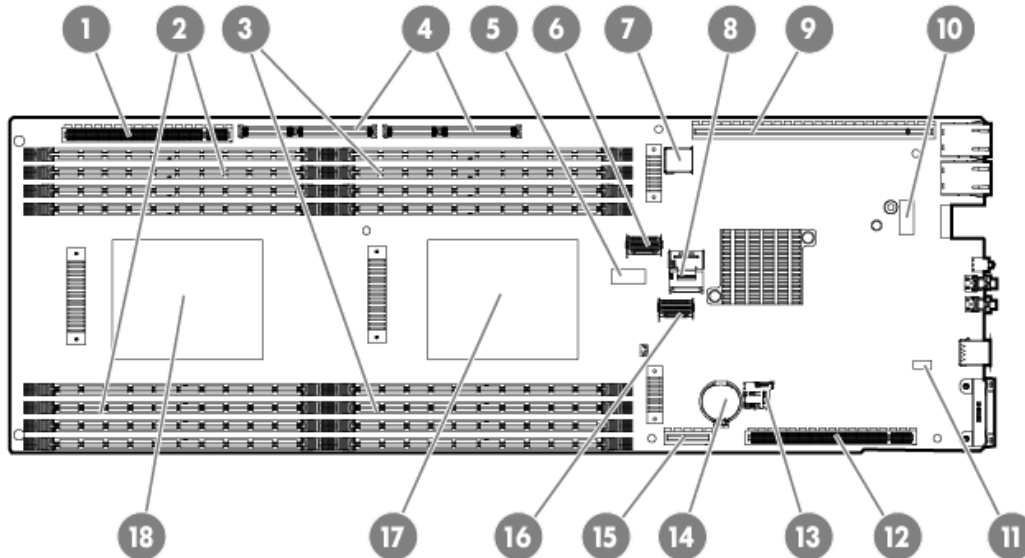| Item	Description
1	HPE Apollo 6500 Chassis (4U)
2	Low profile PCIe Gen3 x16 slot
3	Embedded 1Gb NIC 2
4	Embedded 1Gb NIC 1
5	Dedicated iLO Port (Optional) Low profile PCIe Gen3 x16 slot
6	Unit Identification (UID) LED/button
7	Server serial label pull tab
8	Power Button
9	USB 3.0 Connector
10	SUV(Serial/USB/Video) Connector
11	Low profile PCIe Gen3 x16 slot
12	8 SFF SAS/SATA Drive Bays
13	HPE ProLiant XL270d Accelerator Trays (2U/tray)

Overview

Back of the Chassis
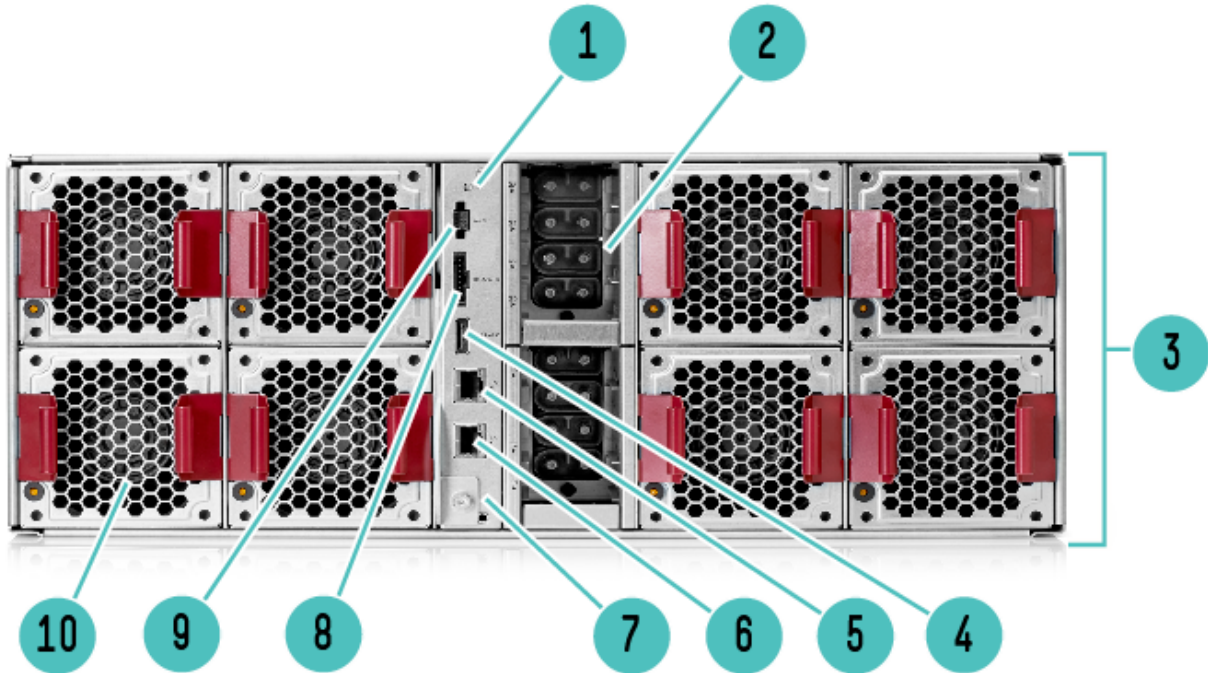
Item	Description
1	Unit Identification (UID) LED
2	Pass through power connections to Accelerator Tray
3	HPE Apollo 6500 Chassis
4	Power Shelf Data Connection
5	ILO connector
6	ILO connector
7	HPE Advanced Power Module ILO connector
8	HPE APMI 1.0 connector
9	Power Shelf Data Connection
10	Fan- 4 per Accelerator tray (required), 8 total per 6500 chassis with two Accelerator Trays

Overview

Front View

Item	Description		Item	Description
1	Bayonet board slot		10	Dedicated iLO port connector
2	DIMMs for processor 2		11	NMI header
3	DIMMs for processor 1		12	PCIe x16 riser board connector*
4	PCIe x40 riser board connector*		13	microSD slot
5	System maintenance switch		14	System battery
6	Mini-SAS connector 1 (SATA x4)		15	M.2 SSD riser connector
7	Internal USB 3.0 connector		16	TPM connector
8	Mini-SAS connector 2 (SATA x4)		17	Processor 1
9	PCIe x24 riser board connector*		18	Processor 2

Standard Features

Processor **One of the** **following** **depending on** **Model**	**E5-2600 v4 series Processors (Please follow product offering to fill out processor SKU)** **NOTE:** For more information regarding Intel Xeon processors, please refer to **http://www.intel.com/xeon**	

Model	CPU frequency	Cores	L3 Cache	Power	QPI	DDR4 Hz
E5-2643V4	3.4GHz	6	20MB	135W	9.6GT/s	2400
E5-2650V4	2.2GHz	12	30MB	105W	9.6GT/s	2400
E5-2660V4	2.0GHz	14	35MB	105W	9.6GT/s	2400
E5-2667V4	3.2GHz	8	25MB	135W	9.6GT/s	2400
E5-2680V4	2.4GHz	14	35MB	120W	9.6GT/s	2400
E5-2683V4	2.1GHz	16	40MB	120W	9.6GT/s	2400
E5-2690V4	2.6GHz	14	35MB	135W	9.6GT/s	2400
E5-2695V4	2.1GHz	18	45MB	120W	9.6GT/s	2400
E5-2698V4	2.2GHz	20	50MB	135W	9.6GT/s	2400

Chipset	Intel® C610 Series Chipset
	NOTE: For more information regarding Intel® chipsets, please see the following URL: **http://www.intel.com/products/server/chipsets/**.
On System **Management** **Processor**	HPE iLO (Firmware: HPE iLO 4)
	NOTE: For more information, visit: **http://www.hp.com/go/ilo**
Memory Protection	Advanced ECC (multi-bit error protection) Memory Online Spare Mode (Rank Spare Mode)

Memory

Type	HPE SmartMemory
	DDR4 Load Reduced (LRDIMM), or Registered (RDIMM)
DIMM Slots Available	16 DIMM Slots available
Maximum (LRDIMM) (per server tray)	1024GB (16 x 64GB)

NOTE: HPE memory from previous generation servers are not fully compatible with the HPE ProLiant XL270d Gen9 Server.

NOTE: To realize the performance memory capabilities listed in this document, HPE SmartMemory is required. For additional information, please see the HPE SmartMemory QuickSpecs at: **https://www.hpe.com/h20195/v2/gethtml.aspx?docname=c04111535**

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

NOTE: Depending on the memory configuration and processor model, the memory speed may run at 2133MHz, or 2400MHz. Please see Memory Population Table or the Online Memory Configuration Tool at: **http://h22195.www2.hpe.com/MemoryTool/Home/Legal**

Network Controller **Ethernet Options**

HPE Ethernet 10Gb 2P 530SFP+ Adptr
HPE Ethernet 10Gb 2P 560SFP+ Adptr
HPE Ethernet 10Gb 2P 561T Adptr
HPE Ethernet 10Gb 2-port 562SFP+ Adptr
HPE Ethernet 1Gb 4-port 366T Adapter

Standard Features

HPE Ethernet 10G 2-port 546SFP + Adptr

HPE XL170r/190r Dedicated NIC IM Board Ki

HPE Ethernet 1Gb 4-port 331T Adapter

HPE Ethernet 10Gb 2-port 572SFP+ Adptr

HPE Ethernet 10Gb 2P 530T Adptr

HPE Ethernet 1Gb 2P 361T Adptr

HPE Ethernet 1Gb 2P 332T Adptr

InfiniBand Options

HPE IB FDR/EN 40Gb 2P 544+QSFP Adptr

HPE IB EDR/EN 100Gb 1P 840QSFP28 Adptr

HPE IB EDR/EN 100Gb 2P 840QSFP28 Adptr

Expansion Slots (EE)

Expansion Slot #	Technology	Bus Width*	Source	Connector Width	Form Factor
1	PCIe 3.0	x16	CPU1	x16	Low profile
Expansion Slot #	Technology	Bus Width*	Source	Connector Width	Form Factor
2	PCIe 3.0	X16	Dependent on GPU Riser Selection	x16	Low profile

GPGPU Slots

| Expansion Slot #	Technology	Bus Width*	Source	Connector Width	Form Factor
1	PCIe 3.0	x16	CPU1	x16	Low profile
Expansion Slot #	Technology	Bus Width*	Source	Connector Width	Form Factor
2	PCIe 3.0	X16	Dependent on GPU Riser Selection	x16	Low profile

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

| Expansion Slot #	Technology	Bus Width*	Source	Connector Width
1-4	PCIe 3.0	x16	Dependent on GPU Riser Selection	x16
Expansion Slot #	Technology	Bus Width*	Source	Connector Width
5-8	PCIe 3.0	X16	Dependent on GPU Riser Selection	x16

NOTE: The XL270d supports two different GPGPU riser options. The first option HPE XL270d Gen9 8:1 Module Riser Kit (850500-B21) supports all GPGPUs and both low profile PCI slots on CPU1. The second option HPE XL270d Gen9 4:1 Module Riser Kit (850508-B21) supports the connection of GPGPU slot 5-8 and low profile slot 2 to CPU 2.
HPE XL270d Gen9 8:1 Module Riser Kit (850500-B21) Topology

HPE XL270d Gen9 4:1 Module Riser Kit (850508-B21) Topology

Standard Features
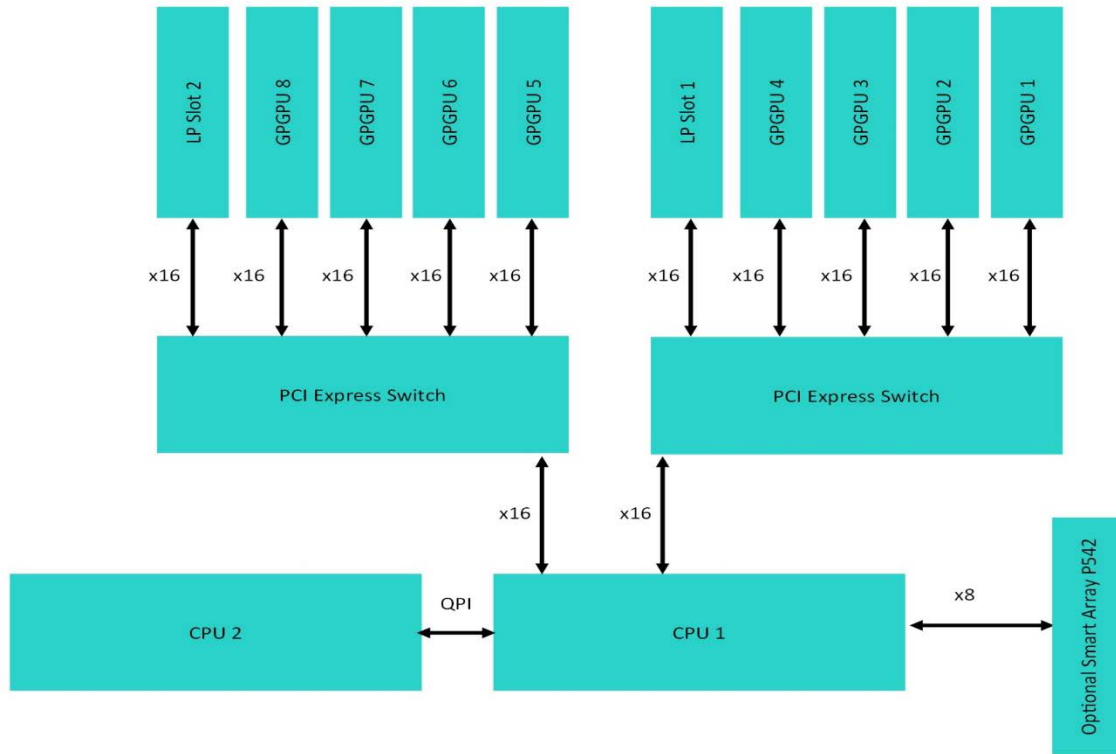
HPE XL270d Gen9 4:1 Module Riser Kit (850508-B21) Topology
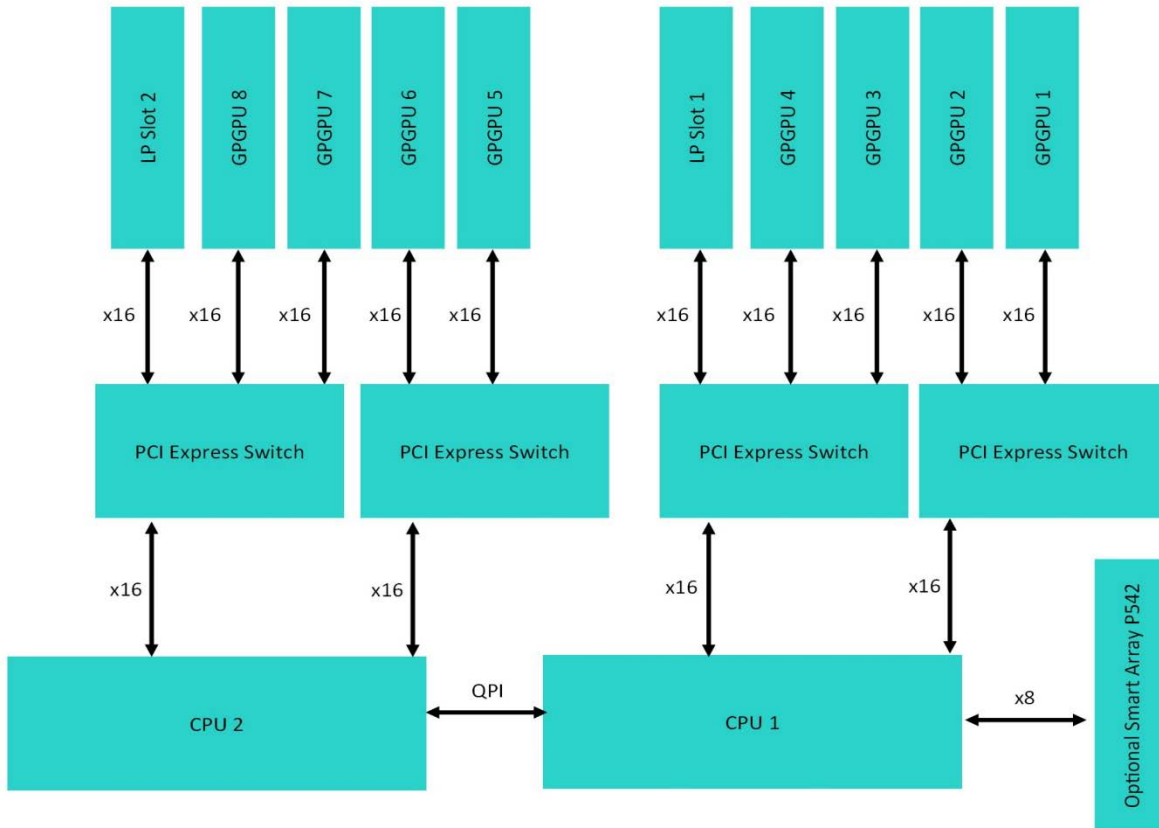
HPE Server ROM   HPE ROM (Read Only Memory) is now digitally signed using the Hewlett Packard Enterprise Corporate Signing Service. This signature is verified before the flash process starts, reducing accidental programming and preventing malicious efforts to corrupt system ROM.

Standard Features

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

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

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

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

HPE Server Unified Extensible Firmware Interface (UEFI) or Legacy Mode	The HPE ProLiant System BIOS is an EDK2 UEFI solution, and adheres to the latest revisions of UEFI Class 2 specifications which supports both legacy boot and UEFI boot operation. The HPE ProLiant XL270d Gen9 defaults to UEFI boot operation and can be factory or field configured for Legacy boot operation.

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

NOTE: For more information on the Hewlett Packard Enterprise ProLiant System BIOS and UEFI, see the UEFI Information Library: **http://www.hp.com/go/uefi/docs**

NOTE: HPE Legacy FIO Mode Setting (758959-B22) can be selected to configure the system in UEFI mode in the factory.

To modify the server configuration ROM default settings, press F9 in the HPE ProLiant POST screen to enter the UEFI System Utilities screen. By default, the System Utilities menus are in the English language.

UEFI enables numerous new capabilities, including both industry standard functionality and features specific to HPE ProLiant servers. Following are some of the features that UEFI enables and that the HPE ProLiant XL270d Gen9 can support when configured for UEFI boot operation:

- Secure Boot - A new feature in which the system firmware, option card firmware, operating systems, and software collaborate to greatly enhance platform security.
- Operating system specific functionality - Microsoft Windows 2012 supports several features only when installed in UEFI mode.
- Support for > 2.2 TB (using GPT) boot drives - Such drives could previously only be used for boot drives when using RAID solutions such as HPE Smart Array.
- UEFI Shell - Provides a pre-boot environment for running scripts and tools. The HPE ProLiant UEFI Shell provides both standard capabilities as well as numerous enhancements.
- PXE boot support for IPv6 networks.
- PXE Multicast Boot allowing for faster PXE deployments for large numbers of servers.
- Boot support for option cards that only support a UEFI option ROM.

NOTE: When the server is configured for UEFI Boot Mode, PXE servers must be configured with a UEFI boot image. When the server boots in UEFI mode, it does not boot media with a legacy OS installation. This includes DOS targets and Windows or Linux systems installed in Legacy mode. The reverse is also true for servers that boot in Legacy mode. If Microsoft Windows 2008 or Windows 2008 R2 is used in UEFI Boot Mode, UEFI Optimized Mode must be disabled (this option is enabled by default). This is required to work around an issue in Windows 2008 / 2008 R2 that requires legacy BIOS components

Standard Features

necessary for video operations in Windows.

Storage Controller	**NOTE:** For optional array, the HPE Smart Array P542D- XL270d Gen9 Svr is the primary solution. A unique PCIe connection has been designed into the XL270d for this RAID controller. Use of any other RAID controllers will use one of the Low Profile PCIe slots that are typically used for fabric interconnects	
	Embedded Software RAID	HPE Dynamic Smart Array B140i Controller (SATA Only)
	RAID Controller	HPE Smart Array P542D - XL270d Gen9 Svr (SAS/SATA)
		NOTE: This is the recommended RAID controller choice.
		HPE Smart Array P440/4G Controller (SAS/SATA)
		HPE Smart Array P441/4G Controller (SAS/SATA)
	Host Bus Adapter	HPE H240 Smart Host Bus Adapter (SAS/SATA)
		HPE H241 Smart HBA (SAS/SATA)
	Storage Controller Cable Kits	HPE XL270D B140i Cbl FIO Kit
		HPE XL270D Gen9 Mini-SAS H240 Cbl Kit
		HPE XL270D Gen9 Mini-SAS P440 Cbl Kit
		NOTE: The embedded B140i will operate in UEFI mode only. For legacy support, AHCI mode is required.
Internal Storage Devices	Internal MicroSD slot	
Maximum Internal Storage	Hot Plug SFF SAS 7.2k	8TB	8x 1.0TB
	Hot Plug SFF SAS 10k	14.4TB	8x1.8TB
	Hot Plug SFF SAS 15k	4.8TB	8x600GB
	Hot Plug SFF SATA	8TB	8x1TB
	Hot Plug SFF SATA SSD	30.7TB	8x3.84TB
	Hot Plug SFF SAS SSD	15.4TB	8x1.92TB
Interfaces	KVM	Serial USB Video Port (SUV)
	MicroSD	1 (internal)
	USB Ports	2 (external via SUV); 1 USB 3.0 (external); 1 (USB 3.0 internal)
	HPE iLO Remote Management Network Port	Aggregated via HPE Apollo 6500d Chassis; Option for dedicated NIC IM Board Kit
	Health LED	1
	Power	1
	UID	1
	Do not remove LED	1
Industry Standard Compliance	ACPI 2.0b Compliant	
	PCIe 3.0 Compliant	
	WOL Support	
	Microsoft® Logo certifications	
	PXE Support	
	USB 1.1,2.0 and 3.0 Compliant	
	SMBIOS 2.6.1	
Power	To review typical system power ratings use the HPE Power Advisor which is available via the online tool	

Standard Features

Specifications	located at URL: **http://www.hp.com/go/proliant-energy-efficient** or **http://www.hp.com/go/hppoweradvisor.** **NOTE:** Power Specification and Technical Content for supported power supplies can be found at **https://www.hpe.com/h20195/v2/gethtml.aspx?docname=c04111541**

Operating Systems and Virtualization Software Support for ProLiant Servers	Microsoft Windows Server 2012 R2 Red Hat Enterprise Linux (RHEL) 6.7, 7.2 SUSE Linux Enterprise Server (SLES) 11 SP4, 12 **NOTE:** Only 64-bit versions of these operating systems are supported. **NOTE:** For more information on the Hewlett Packard Enterprise Certified and Supported ProLiant Servers for OS and Virtualization Software and latest listing of software drivers available for your server including how to purchase from Hewlett Packard Enterprise , please visit our OS Support Site at: **http://www.hp.com/go/ossupport** and our driver download page: **http://www.hp.com/support**
Graphics	Integrated Matrox G200 video standard 1280 x 1024 (32 bpp) 1920 x 1200 (16 bpp) - HPE iLO 4 On System Management Memory 16 MB Flash 256 MB DDR 3 with ECC (112 MB after ECC and video)
Form Factor	The ProLiant XL270d Gen9 Server is a single-slot tray for the HPE Apollo 6500d Chassis.
Embedded Management	HPE Integrated Lights Out — Monitor your servers for ongoing management, service alerting, reporting and remote management with iLO. Learn more at **http://www.hp.com/go/ilo**
	UEFI — Configure and boot your servers securely with industry standard Unified Extensible Firmware Interface (UEFI). Learn more at **http://www.hp.com/go/ProLiant/uefi**
	HPE RESTful API — RESTful API is an application programming interface. RESTful Web Service API served by iLO's web server **http://www.hp.com/go/restfulapi**
	Intelligent Provisioning — Provision servers by discovering and deploying 1 to few servers with Intelligent Provisioning. Learn more at **http://www.hp.com/go/intelligentprovisioning.**
Server Utilities	HPE Smart Update — Optimize firmware and driver updates with HPE Smart Update solutions. Learn more at **http://www.hp.com/go/smartupdate.**
	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-Hewlett Packard Enterprise servers. HPE SIM also integrates with HPE SUM to provide quick and seamless firmware updates. Learn more at **http://www.hp.com/go/sim**
	Scripting Tool Kit and Windows PowerShell — Provision 1 to many servers using your own scripts to discover and deploy them with HPE Scripting Tool Kit for Windows and Linux or HPE Scripting Tools for Windows PowerShell. Learn more at **http://www.hp.com/go/ProLiantSTK** or **http://www.hp.com/go/powershell**
	HPE RESTful Interface Tool — HPE RESTful API tool is a scripting tool to provision servers using RESTful API Interface to discover and deploy servers at scale. Learn more at **http://www.hp.com/go/restfulapi**

Optional Features

	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.hp.com/go/ilo/mobileapp**
	HPE Insight Online	HPE Insight Online, available at no additional cost as part of your Hewlett Packard Enterprise warranty, Care Pack 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.hp.com/go/insightonline/info.**
Embedded Management	HPE Integrated Lights Out	Monitor your servers for ongoing management, service alerting, reporting and remote management with iLO. Learn more at **http://www.hp.com/go/ilo.**
HPE Insight management software	HPE Service Pack for ProLiant (SPP)	HPE Service Pack for ProLiant (SPP) and HPE Smart Update Manager (HPE SUM) provide a comprehensive approach to firmware and system software maintenance. Together they provide better operating stability and ensure maximum uptime. The SPP will be updated at a predictable cadence, typically coinciding with new Hewlett Packard Enterprise server hardware launches. By enabling firmware to be updated online and integrating firmware and system software updates in one operation, HPE SUM and the SPP offer faster updates of individual servers and dramatically faster updates of entire HPE Apollo 6500 Chassis. Further improving system uptime and stability is the fact that Hewlett Packard Enterprise provides 12 months of support for each Service Pack for ProLiant release (may vary by region). The user experience around HPE SUM and the SPP has been improved in several ways, starting with the web download. A single web page provides access to a single download containing both the latest version of HPE SUM and the latest SPP. Optional smaller subsets with only specific types of servers or specific operating systems are offered to save on download time. The HPE SUM application provides a straightforward, intuitive user interface that guides the user through the steps of discovery, analyses and update, providing comprehensive information on available updates, criticality and interdependencies. This information is also available in reports. By providing the option of multiple local or shared repositories which can be easily updated from hp.com, HPE SUM provides the tools to optimize stability and consistency throughout the company. While HPE SUM and the SPP recommend the combinations of firmware and system software that Hewlett Packard Enterprise has found to be the best practice, the application gives customers the flexibility to set their own specific baseline. The Service Pack for ProLiant has been rigorously tested with specific attention for interaction between firmware, drivers and agents both within the server as well as in interaction with the HPE Apollo 6500 chassis. This testing ensures the highest quality as well as providing the input for HPE SUM to deploy updates taking into account all interdependencies, when determining the correct updates and order of update deployment. **NOTE:** The Service Pack for ProLiant (which includes HPE SUM) can be downloaded from **http://www.hp.com/go/spp/download** More information can be found: **http://www.hp.com/go/SmartUpdate** **http://www.hp.com/go/spp** and **http://www.hp.com/go/hpsum**

Optional Features

Security   Power-on password

Keyboard password

Serial interface control

Administrator's password

iLO 4 (Integrated Lights-Out 4) has 12 customizable user accounts and SSL encryption

iLO 4 can be disabled via a Global Setting

iLO Advanced supports directory services integration

TPM (Trusted Platform Module) 2.0 option

Chassis   **Each HPE Apollo 6500 Chassis is built with the following:**

- **Two 2U slots for an Accelerator Tray**
- **HPE Advanced Power Manager Module**
- **Four (4) dual rotor 80x80x86mm fans per tray required**

Server Tray Blank Kit   A chassis requires that the two (2) server tray slots be populated with either an HPE ProLiant XL270d, server or an HPE Apollo 6500 Server Node Blank Kit (850887-B21).

Rack Airflow Requirements   HPE Apollo 6500 Chassis
The increasing power of new high-performance processor technology requires increased cooling efficiency for rack-mounted servers. For maximum cooling, HPE racks are recommended to allow these racks to be fully loaded with servers using the latest processors.
CAUTION: Always use blanking panels to fill all remaining empty front panel U-spaces in the rack. This arrangement ensures proper airflow. Using a rack without blanking panels will result in improper cooling that can lead to thermal damage

HPE Insight Management software   Insight Management   Managing the growing number of servers can be complex and expensive for your organization. IT managers need to address changing business needs with tools that meet the challenges of managing today's complex Datacenters.

HPE Insight Management lowers the cost of running your HPE ProLiant servers by providing you with best-in-class management tools, including HPE Insight Control, HPE Virtual Connect Enterprise Manager (VCEM), and HPE Insight Dynamics/Matrix Operating Environment. Insight Management increases your productivity and reduces your operating costs to get you higher value from your HPE ProLiant servers.

Electronic download of Insight Management Media
Insight Management software media is available for free download (not including license entitlement certificates) at this website:
http://www.hp.com/go/insightupdates

Software media available for download includes:

- HPE Insight Control
- HPE Insight Control for Microsoft® System Center
- HPE Insight Control for VMware vCenter Server

Optional Features

- HPE Virtual Connect Enterprise Manager (VCEM)
- HPE Insight Dynamics / Matrix Operating Environment

Customers will receive an Insight Control or Insight Dynamics license entitlement certificate via physical shipment or email. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s).

One year of 24x7 Software Technical Support and Updates are included with your purchased licenses.

Hewlett Packard Enterprise provides a complete range of installation and support services to
ensure the successful deployment and operations of your server infrastructure. For more information about support services and licensing options, see the following website:
http://www.hp.com/go/insightsoftware
Insight Software Media Kit (DVDs)
Physical media (DVDs) are also available for purchase from Hewlett Packard Enterprise or from your authorized reseller

Service Pack for ProLiant

Customers should use the HPE Service Pack for ProLiant (SPP) to perform firmware, driver, and related software updates.

- SPP main webpage: **http://www.hp.com/go/spp**
- SPP downloads webpage:
  http://www.hp.com/go/spp/download

HPE Integrated Lights-Out (iLO)

HPE Integrated Lights-Out (iLO) simplifies server setup, health monitoring, power and thermal control, and lights-out remote administration of ProLiant SL, XL, ML, DL, and BL servers. HPE iLO functions without additional software and can be accessed from any location via a web browser. HPE iLO works hand-in-hand with HPE Systems Insight Manager, Insight Control and Insight Dynamics for ProLiant, helping customers unleash the value of the ProLiant platform and deliver the highest possible quality of IT service. For more information, visit:
http://www.hp.com/go/iLO.

HPE Insight Control

HPE Insight Control, a product option, delivers essential infrastructure management that can help save time and money by making it easy to deploy, monitor, remote control, and optimize your IT infrastructure through a single, simple management console. For more information, see
http://www.hp.com/go/insightcontrol

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

HPE Advanced   The HPE Advanced Power Manager (HPE APM) is an optional rack level solution. HPE APM will

Optional Features

Power Manager   automatically discover hardware components and enable server level power on and off, server metering, aggregate dynamic power capping, configurable power-up dependencies and sequencing, consolidated Ethernet access to all resident iLOs, and asset management capabilities.
HPE APM features rack level event logging, RADIUS authentication, integrated serial concentrator, up to 11 local user accounts, read only service port, and supports SNMP, SSH, Syslogd, telnet.
NOTE: use either the HPE APM port or an iLO port to connect to a network.

Warranty

Warranty   This product is covered by a global limited warranty and supported by Hewlett Packard Enterprise Services and a worldwide network of Hewlett Packard Enterprise Authorized Channel Partners. Hardware diagnostic support and repair is available for three year from date of purchase. Support for software and initial setup is available for 90 days from date of purchase. Enhancements to warranty services are available through HPE Care Pack services or customized service agreements. Hard drives have either a one year or three year warranty

NOTE: Server Warranty includes 3 year Parts, 3 year Labor, 3-year on-site support with next business day response. Warranty repairs may be accomplished through the use of Customer Self Repair (CSR) parts. These parts fall into two categories: 1) Mandatory CSR parts are designed for easy replacement. A travel and labor charge will result when customers decline to replace a Mandatory CSR part; 2) Optional CSR parts are also designed for easy replacement but may involve added complexity. Customers may choose to have Hewlett Packard Enterprise replace Optional CSR parts at no charge. Additional information regarding worldwide limited warranty and technical support is available at:
http://h18004.www1.hpe.com/products/servers/platforms/warranty/index.html
NOTE: In Asia Pacific, Japan and China, Server Warranty includes 3 years Parts, 3 year Labor, 3-year Onsite support with next business day response

Service and Support

Protect your business beyond warranty with HPE Support Services	HPE Technology Services delivers confidence, reduces risk and helps customers realize agility and stability. Connect to Hewlett Packard Enterprise to help prevent problems and solve issues faster. HPE Support Services enable you to choose the right service level, length of coverage and response time as you purchase your new server, giving you full entitlement to the support for need for your IT and business. Protect your product, beyond warranty.
	Connect your devices: 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 24x7monitoring, pre-failure alerts, automatic call logging, and automatic parts dispatch. HPE Proactive Care Service and HPE Datacenter Care Service customers will also benefit from proactive activities to help prevent issues and increase optimization. All of these benefits are already available to you with your server storage and networking products, securely connected to Hewlett Packard Enterprise support.
	1-IDC 2015
	2-HPE CSC reports 2014 – 2015
	Learn more about getting connected at **http://www.hpe.com/services/getconnected**
HPE Proactive Care* with 24x7 coverage, three year Support Service (H2DW0E)	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 Hewlett Packard Enterprise servers. **https://www.hpe.com/h20195/v2/GetPDF.aspx/4AA3-8855ENW.pdf**
HPE Foundation Care 24x7, three-year Support Service (H2DV7E)	HPE Foundation Care 24x7 gives you access to Hewlett Packard Enterprise 24 hours a day, seven days a week for assistance on resolving issues. This service includes need based Hardware onsite response within four hours. In addition, collaborative software support is included in this service that provides troubleshooting assistance on industry leading software running on your HPE server. Simplify your support experience and make Hewlett Packard Enterprise your first call to help resolve hardware or software problems. **https://www.hpe.com/h20195/V2/GetDocument.aspx?docname=4AA4-8876ENW&cc=us&lc=en**
HPE Foundation Care NBD, three-year Support Service (H2DU8E)	HPE Foundation Care Next Business Day connects you to Hewlett Packard Enterprise during business hours for assistance on resolving issues – This service features need based next business day hardware onsite response and software call back within two hours. In addition, Collaborative software support and provides troubleshooting assistance on industry leading software running on your HPE server. Simplify your support experience and make Hewlett Packard Enterprise your first call to help resolve hardware or software problems. **https://www.hpe.com/h20195/V2/GetDocument.aspx?docname=4AA4-8876ENW&cc=us&lc=en**
Parts and Materials	Hewlett Packard Enterprise will provide HPE-supported replacement parts and materials necessary to maintain the covered hardware product in operating condition, including parts and materials for available and recommended engineering improvements.
	Parts and components that have reached their maximum supported lifetime and/or the maximum usage limitations as set forth in the manufacturer's operating manual, product QuickSpecs, or the technical product data sheet will not be provided, repaired, or replaced as part of these services.
	The defective media retention service feature option applies only to Disk or eligible SSD/Flash Drives replaced by Hewlett Packard Enterprise due to malfunction.

Service and Support

HPE Server Hardware Installation (U5V60E Installation, U5V62E Installation and Startup)

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.

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

HPE Factory Express for Servers and storage

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

Factory Express offers service packages for simple configuration, racking, installation, complex configuration and design services as well as individual factory services, such as image loading, asset tagging, and custom packaging. Hewlett Packard Enterprise products supported through Factory Express include a wide array of servers and storage: HPE Integrity, HPE ProLiant, HPE Apollo, HPE ProLiant Server Blades, HPE BladeSystem, HPE 9000 servers as well as the MSAxxxx3PAR suite, XP, rackable tape libraries and configurable network switches.

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 Datacenter Care service

HPE Datacenter Care helps improve IT stability and security, increase the value of IT, and enable agility and innovation. It is a structured framework of repeatable, tested, and globally available services "building blocks." You can deploy, operate, and evolve your datacenter wherever you are on your IT journey. With HPE Datacenter Care, you benefit from a personalized relationship with Hewlett Packard Enterprise via a single point of accountability for Hewlett Packard Enterprise and others' products. For more information, visit **http://www.hpe.com/services/datacentercare**

HPE Flexibly Capacity, a building block of HPE Datacenter Care is a pay per use model for on premise infrastructure, giving you the technology you want, the ability to manage capacity when you need it, with no upfront payment. Flexible Capacity provides the needed room to grow your environment, but only pay for actual metered use. Technology transitions with refresh can be built in, and infrastructure and services are billed monthly, enabling you to align costs to business use.

Configuration Information - Factory Integrated Models

NOTE: This section lists some of the steps required to configure a Factory Integrated Model. To ensure only valid configurations are ordered, Hewlett Packard Enterprise recommends the use of a Hewlett Packard Enterprise approved configurator. Contact your local sales representative for information on configurable product offerings and requirements.
NOTE: FIO indicates that this option is only available as a factory installable option.
NOTE: The HPE Apollo 6500 Chassis is required to support the server.

Step 1a: Choose a Chassis

HPE Chassis	HPE Apollo d6500 CTO Chassis	845627-B21

Step 1b: Choose cooling options (up to two Fan module kits may be selected; one is required)

HPE Cooling Options	HPE Apollo 6500 FAN module kit (4 fans/Kit)	852155-B21
	NOTE: One fan kit required per Accelerator Tray	
	HPE Apollo 6500 Server Node Blank Kit	850887-B21
	NOTE: Required for any non-populated slots in the chassis to prevent thermal related issues and required for Advanced Power Manager (APM) 1.2 or APM 2.0	

Step 1c: Choose the following HPE Rack Options and Security per chassis

HPE Rack Options	HPE Apollo 6500 Chassis Rail Kit	599109-B21
	NOTE: If HPE Apollo d6500 CTO Chassis is ordered factory integrated to a rack one is required.	
	HPE s6500 4U 3rd Party Rail Kit	601946-B21
	NOTE: Hewlett Packard Enterprise recommends that a minimum of two people are required for all rack installations. Please refer to your installation instructions for proper tools and number of people to use for any installation.	
HPE Security	HPE s6500 Chassis Handles Kit	608477 B21
	NOTE: If HPE Apollo d6500 CTO Chassis is ordered standalone or without a rack one is required.	

Step 2a: Choose Base Accelerator Tray configuration

Server Tray	HPE ProLiant XL270d Gen9 Node CTO Svr	845628-B21
	NOTE: Up to 2 full width server trays (XL270d Gen9) can be added to the HPE Apollo d6500 CTO Chassis.	

Step 2b: Choose Required Tray Options (only one from each category unless otherwise noted)

HPE Processors	**E5-2600v4 series Processors**	
	HPE XL270d Gen9 E5-2643v4 (3.4GHz/6-core/20MB/135W) FIO Processor Kit	853926-L21
	HPE XL270d Gen9 E5-2650v4 (2.2GHz/12-core/30MB/105W) FIO Processor Kit	853930-L21
	HPE XL270d Gen9 E5-2660v4 (2.0GHz/14-core/35MB/105W) FIO Processor Kit	853932-L21
	HPE XL270d Gen9 E5-2667v4 (3.2GHz/8-core/25MB/135W) FIO Processor Kit	853934-L21
	HPE XL270d Gen9 E5-2680v4 (2.4GHz/14-core/35MB/120W) FIO Processor Kit	853938-L21
	HPE XL270d Gen9 E5-2683v4 (2.1GHz/16-core/40MB/120W) FIO Processor Kit	853940-L21
	HPE XL270d Gen9 E5-2690v4 (2.6GHz/14-core/35MB/135W) FIO Processor Kit	853942-L21

Configuration Information - Factory Integrated Models

	HPE XL270d Gen9 E5-2695v4 (2.1GHz/18-core/45MB/120W) FIO Processor Kit	853944-L21
	HPE XL270d Gen9 E5-2698v4 (2.2GHz/20-core/50MB/135W) FIO Processor Kit	853948-L21

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

NOTE: in the 8:1 GPU to CPU topology CPU 2 (xxxxxx-B21) is optional

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HPE Memory

NOTE: If two processors are selected, a minimum of two memory kits are required.

Registered DIMMs (RDIMMs) for E5-2600v4 Series

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

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

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

HPE Riser Kit

HPE XL270d Gen9 8:1 Module Riser Kit	850500-B21
HPE XL270d Gen9 4:1 Module Riser Kit	850508-B21

NOTE: Solid black lines in diagrams below represent PCIe Gen3

NOTE: Only one riser kit per server. Riser kits can be ordered and installed by customers to allow testing alternative configurations. Please see Administrator and User Guide for installation instructions.

NOTE: For NVIDIA Tesla K80, the HPE XL270d Gen9 4:1 Module Riser Kit is recommended. GPUDirect is not supported for more than 8 logical GPU per CPU, and as the K80 contains two logical GPU per card, the 8:1 configuration will not support GPUDirect.

Topology options

NOTE: Solid black lines in diagrams below represent PCIe Gen3

NOTE: Only one riser kit per server. Riser kits can be ordered and installed by customers to allow testing alternative configurations. Please see Administrator and User Guide for installation instructions.

NOTE: For NVIDIA Tesla K80, the HPE XL270d Gen9 4:1 Module Riser Kit is recommended. GPUDirect is not supported for more than 8 logical GPU per CPU, and as the K80 contains two logical GPU per card, the 8:1 configuration will not support GPUDirect.
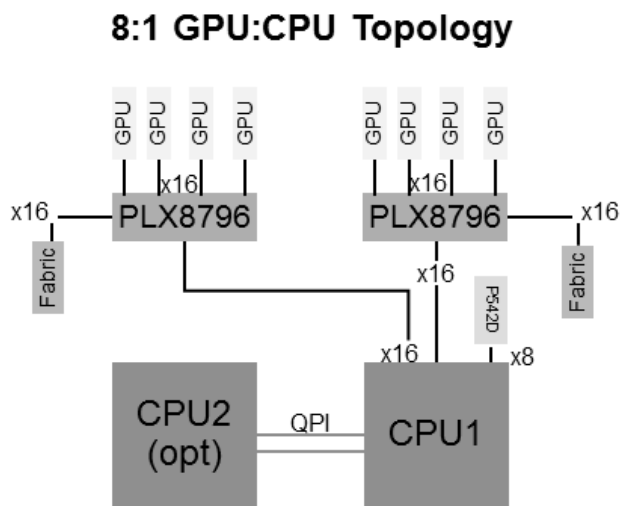
Configuration Information - Factory Integrated Models

8:1 GPU:CPU Topology

4:1 GPU:CPU Topology
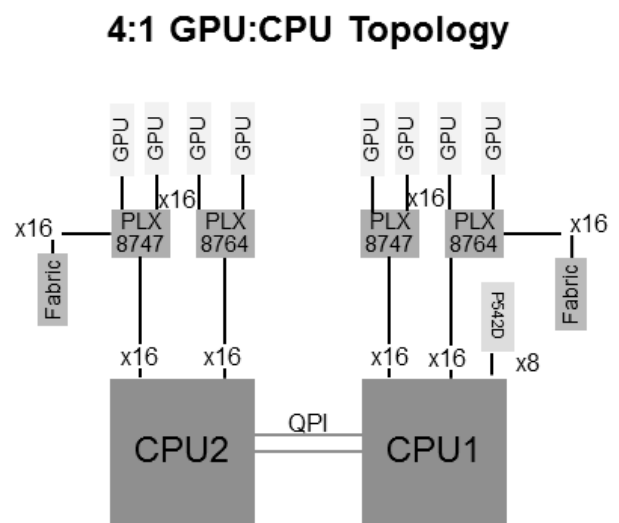
Step 2c: Choose Additional Factory Integrated Options (only one from each category unless otherwise noted)

BIOS Mode	HP Legacy FIO Mode Setting	758959-B22
	NOTE: Cannot be selected with HPE Dual 8GB MicroSD EM USB Kit (741279-B21).	

Controller State	HP AHCI-Enable FIO Setting	801845-B21
	HP Mfg FIO Enable HBA Mode Setting	792962-B21
	NOTE: Can only be selected with H240 Controller.	

HPE Insight Control Software	HPE Insight Control ML/DL/BL FIO Bundle License	C6N36A
	HPE Insight Control ML/DL/BL FIO E-LTU	C6N36ABE

Step 2d: Choose Additional items to factory integrate from XL270d Core Options section below.

Step 3a: Choose Power Shelf and Required Options (one from each category unless otherwise noted)

HPE Apollo 6000 Power Shelf	HPE Apollo 6000 Power Shelf	735131-B21
	NOTE: To determine how many power shelves are needed at a rack level (based on server and chassis configuration, please use the HPE Power Advisor as a guidance (power values may vary up to 15%).	
	NOTE: Do not power one chassis from two power shelves (Power one tray from one shelf, the other tray from a second shelf.) The trays in any given chassis can only be powered from a single power shelf.	

Power Shelf Rails	HPE Apollo 6000 Pwr Shelf Rail Kit	765439-B21
	NOTE: This kit only supports HPE racks.	
	HPE Apollo 6000 3PO Power Shelf Rail Kit	775167-B21

Configuration Information - Factory Integrated Models

NOTE: This kit supports some HPE Pods and some 3rd Party racks.

AC Input Power Modules	**NOTE:** If Three Phase Power Module is selected, a minimum of 3 Power Supply Option Kits are needed. For full redundancy 6 Power Supply Option Kits are required	
	HPE BLc7000 1 PH FIO Power Module Option	413379-B21
	NOTE: This power module is for single phase, high-line 200-240VAC applications and has six IEC-320 C20 power connectors that accept IEC C19-C20 power cables. One WW 250W C19-C20 2.0m (non-iPDU) cable is included per supported power supply. Supported power supplies are listed here.	
	HPE BLc7000 3 PH NA/JP FIO Power Module Option	413380-B21
	NOTE: This power module is for three phase, high-line 200-208VAC and has two 3.05m (10 ft) power cables with NEMA L15-30p connectors.	
	HPE BLc High Voltage FIO Power Input Module **NOTE:** Only supports SDGRD Power Cords.	753623-B21

HPE Power Supplies	**NOTE:** Mixing of Power Supplies is not supported on HPE Apollo 6000 Power Shelf.	
	NOTE: If Three-Phase Power is selected, a minimum of 3 Power Supply Option Kits are needed. For full redundancy, 6 Power Supply Option Kits are required.	
	HPE 2650W Plat Ht Plg Pwr Supply Kit	733459-B21
	HPE 2650W Unvrsl Ht Plg Pwr Supply Kit	753618-B21
	NOTE: The HPE power supplies meet multiple Energy Efficiency Initiatives: 94% Climate Savers Computing, PLATINUM and ECOS Consulting 80 Plus Platinum.	

Step 3b: Choose Additional Options from Additional Power Shelf Options Section below.

Core XL270d Options

HPE Processors	**E5-2600v4 Series Processors**	
	HPE XL270d Gen9 E5-2643v4 (3.4GHz/6-core/20MB/135W) Processor Kit	853926-B21
	HPE XL270d Gen9 E5-2650v4 (2.2GHz/12-core/30MB/105W) Processor Kit	853930-B21
	HPE XL270d Gen9 E5-2660v4 (2.0GHz/14-core/35MB/105W) Processor Kit	853932-B21
	HPE XL270d Gen9 E5-2667v4 (3.2GHz/8-core/25MB/135W) Processor Kit	853934-B21
	HPE XL270d Gen9 E5-2680v4 (2.4GHz/14-core/35MB/120W) Processor Kit	853938-B21
	HPE XL270d Gen9 E5-2683v4 (2.1GHz/16-core/40MB/120W) Processor Kit	853940-B21
	HPE XL270d Gen9 E5-2690v4 (2.6GHz/14-core/35MB/135W) Processor Kit	853942-B21
	HPE XL270d Gen9 E5-2695v4 (2.1GHz/18-core/45MB/120W) Processor Kit	853944-B21
	HPE XL270d Gen9 E5-2698v4 (2.2GHz/20-core/50MB/135W) Processor Kit	853948-B21

DDR4 SmartMemory	**Registered DIMMs (RDIMMs) for E5-2600v4 Series**	
	HPE 8GB (1x8GB) Single Rank x8 DDR4-2400 CAS-17-17-17 Registered Memory Kit	805347-B21
	HPE 16GB (1x16GB) Single Rank x4 DDR4-2400 CAS-17-17-17 Registered Memory Kit	805349-B21
	HPE 32GB (1x32GB) Dual Rank x4 DDR4-2400 CAS-17-17-17 Registered Memory Kit	805351-B21
	Load Reduced DIMMs (LRDIMMs) for E5-2600v4 Series	
	HPE 32GB (1x32GB) Dual Rank x4 DDR4-2400 CAS-17-17-17 Load-reduced Memory Kit	805353-B21
	HPE 64GB (1x64GB) Quad Rank x4 DDR4-2400 CAS-17-17-17 Load-reduced Memory Kit	805358-B21

HPE Storage Controllers

NOTE: HPE Smart Array P542D - XL270d Gen9 Svr is the primary storage controller solution. A unique PCIe connection has been designed into the XL270d for this RAID controller. Use of any other controllers will use one of the Low Profile PCIe slots that are typically used for fabric interconnects.

NOTE: Each controller requires a matching cable kit.

HPE Smart Array P542D - XL270d Gen9 Svr (SAS/SATA)	851508-B21

NOTE: The P542D is the recommended array choice.

NOTE: Requires HPE XL2xx 12W w/plg Smart Storage Battery (782961-B21)

RAID Controller Choices

HPE Smart Array P440/4G Controller (SAS/SATA)	726821-B21

NOTE: Requires HPE XL2xx 12W w/plg Smart Storage Battery (782961-B21)

Smart Array Upgrades

HPE XL2xx 12W w/plg Smart Storage Battery	782961-B21

NOTE: HPE Smart Array controller kits do not include the HPE XL2xx 12W w/plg Smart Storage Battery, the backup power source necessary to protect the data on the Flash-backed Write Cache and should be purchased separately.

Host Bus Adapter

HPE H240 Host Bus Adapter (SAS/SATA)	726907-B21

Storage Controller Cable Kits

Core XL270d Options

	HPE XL270D B140i Cbl FIO Kit	852063-B21
	NOTE: Required if no Smart Array or HBA is selected in order to support B140i embedded SATA Controller.	
	HPE XL270D Gen9 Mini-SAS H240 Cbl Kit	
	NOTE: Required if H240 HBA is selected as primary controller	
	HPE XL270D Gen9 Mini-SAS P440 Cbl Kit	852060-B21
	NOTE: Required if Smart Array P440 is selected as primary controller	
	NOTE: The embedded B140i will operate in UEFI mode only. For legacy support, AHCI mode is required.	

HPE Hard Drives	**NOTE: Each HPE ProLiant XL270d Gen9 Accelerator Tray supports up to eight (8) 2.5" drives. Add Hard drive blank kit to fill drive bays not used for storage.**	
	HPE Small Form Factor Hard Drive Blank Kit	666987-B21
	SAS Hot Plug SFF (2.5-inch) Enterprise (ENT) Drives	
	HPE 600GB 12G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	759212-B21
	HPE 450GB 12G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	759210-B21
	HPE 1.8TB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 512e 3yr Warranty Hard Drive	791034-B21
	HPE 1.2TB 6G SAS 10K rpm SFF (2.5-inch) SC Dual Port Enterprise 3yr Warranty Hard Drive	718162-B21
	HPE 600GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652583-B21
	HPE 300GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652564-B21
	SAS Hot Plug SFF (2.5-inch) Midline (MDL) Drives	
	HPE 1TB 12G SAS 7.2K rpm SFF (2.5in) SC Midline 1yr Warranty Hard Drive	832514-B21
	NOTE: Each HPE ProLiant XL270d Gen9 Accelerator Tray supports up to eight (8) 2.5" drives. Add Hard drive blank kit to fill drive bays not used for storage.	
	12G SAS Mixed Use Hot Plug SFF (2.5-inch) 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 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
	12G SAS Hot Plug SFF (2.5-inch) Enterprise Mainstream Solid State Drives	
	HPE 400GB 12G SAS Mainstream Endurance SFF 2.5-in ENT Mainstream SC 3yr Wty H2 Solid State Drive	779168-B21
	12G SAS Hot Plug SFF (2.5-inch) Enterprise Mainstream Solid State Drives	
	HPE 400GB 12G SAS Mainstream Endurance SFF 2.5-in ENT Mainstream SC 3yr Wty H2 Solid State Drive	779168-B21
	12G SATA Hot Plug Read Intensive SFF (2.5-inch) SC Solid State Drives	
	HPE 1.92TB 12G SAS Read Intensive-3 SFF 2.5-in SC 3yr Wty Solid State Drive	816572-B21
	HPE 960GB 12G SAS Read Intensive-3 SFF 2.5-in SC 3yr Wty Solid State Drive	816568-B21
	HPE 480GB 12G SAS Read Intensive-3 SFF 2.5-in SC 3yr Wty Solid State Drive	816562-B21
	6G SATA Hot Plug SFF (2.5-inch) SC Mixed Use Solid State Drives	

Core XL270d Options

HPE 1.92TB 6G SATA Mixed Use-3 SFF 2.5-in SC 3yr Wty Solid State Drive	817011-B21
HPE 1.6TB 6G SATA Mixed Use-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804631-B21
HPE 960GB 6G SATA Mixed Use-3 SFF 2.5-in SC 3yr Wty Solid State Drive	816995-B21
HPE 800GB 6G SATA Mixed Use-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804625-B21
HPE 480GB 6G SATA Mixed Use-2 SFF 2.5-in SC 3yr Wty Solid State Drive	832414-B21
HPE 480GB 6G SATA Mixed Use-3 SFF 2.5-in SC 3yr Wty Solid State Drive	816985-B21
HPE 200GB 6G SATA Mixed Use-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804613-B21
HPE 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

HPE 1.2TB 6G SATA Write Intensive-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804677-B21
HPE 800GB 6G SATA Write Intensive-2 SFF 2.5-in SC 3yr Wty Solid State DriveHP	804671-B21
200GB 6G SATA Write Intensive-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804639-B21

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

HPE 3.84TB 6G SATA Read Intensive-3 SFF 2.5-in SC 3yr Wty Solid State Drive	816929-B21
HPE 1.92TB 6G SATA Read Intensive-3 SFF 2.5-in SC 3yr Wty Solid State Drive	816919-B21
HPE 1.6TB 6G SATA Read Intensive-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804605-B21
HPE 800GB 6G SATA Read Intensive-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804599-B21
HPE 480GB 6G SATA Read Intensive-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804593-B21
HPE 480GB 6G SATA Read Intensive-3 SFF 2.5-in SC 3yr Wty Solid State Drive	816899-B21
HPE 240GB 6G SATA Read Intensive-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804587-B21
HPE 240GB 6G SATA Read Intensive-3 SFF 2.5-in SC 3yr Wty Solid State Drive	816889-B21
HPE 120GB 6G SATA Read Intensive-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804581-B21
HPE 120GB 6G SATA Read Intensive-3 SFF 2.5-in SC 3yr Wty Solid State Drive	816879-B21
HPE 80GB 6G SATA Read Intensive-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804575-B21
HPE 3.84TB 6G SATA Read Intensive-3 SFF 2.5-in SC 3yr Wty Solid State Drive	816929-B21

InfiniBand Options

NOTE: The HPE ProLiant XL270d Gen9 Accelerator Tray supports three total x8 PCIe Gen3 options. Two low profile slots primary intended for the networking, and a third dedicated connection designed to support the HPE Smart Array P542D - XL270d Gen9 Svr (SAS/SATA).

NOTE: Use of the HPE Smart Array P542D controller will leave two low profile PCIe for the fabric. Any other RAID controller or HBA choice leaves only one remaining low profile PCIe slot for fabric.

HPE IB FDR/EN 40Gb 2P 544+QSFP Adptr	764284-B21
HPE IB EDR/EN 100Gb 1P 840QSFP28 Adptr	825110-B21
HPE IB EDR/EN 100Gb 2P 840QSFP28 Adptr	825111-B21

Ethernet Options

HPE Ethernet 10Gb 2P 530SFP+ Adptr	652503-B21
HPE Ethernet 10Gb 2P 560SFP+ Adptr	665249-B21
HPE Ethernet 10Gb 2P 561T Adptr	716591-B21
HPE Ethernet 10Gb 2-port 562SFP+ Adptr	727055-B21
HPE Ethernet 1Gb 4-port 366T Adapter	811546-B21

Core XL270d Options

HPE Ethernet 10G 2-port 546SFP+ Adptr	779793-B21
HPE XL170r/190r Dedicated NIC IM Board Ki	798192-B21
HPE Ethernet 1Gb 4-port 331T Adapter	647594-B21
HPE Ethernet 10Gb 2-port 572SFP+ Adptr	789003-B21
HPE Ethernet 10Gb 2P 530T Adptr	656596-B21
HPE Ethernet 1Gb 2P 361T Adptr	652497-B21
HPE Ethernet 1Gb 2P 332T Adptr	615732-B21

HPE Graphics Options

NOTE: Appropriate enablement kit must be purchased to support accelerator choices. Each enablement kit supports up to eight (8) GPU.

HPE NVIDIA Tesla M40 24GB Module	P8Y46A
HPE NVIDIA Tesla K80 Dual GPU Module	J0G95A
HPE XL270d Gen9 K40 12GB Module	F1R08A
HPE AMD FirePro S9150 Accelerator Kit	J0H11A

Graphics Enablement Kits

HPE XL270d Gen9 K80/M40 GPU Enablement Kit	852162-B21
HPE XL270d Gen9 K40 GPU Enablement Kit	853651-B21
HPE XL270d Gen9 S9150 GPU Enablement Kit	853164-B21

HPE Security and USB and SD Options

HPE Trusted Platform Module 2.0 Kit	745823-B21

NOTE: HPE Trusted Platform Module 2.0 Option works with Gen9 servers with UEFI Mode not Legacy Mode.

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

HPE 36pin SUV Dongle Cord Kit	676277-B21
HPE Dual 8GB microSD Enterprise Midline USB Kit	741279-B21
HPE 32GB microSD Enterprise Mainstream Flash Media Kit	700139-B21
HPE 8GB USB Enterprise Mainstream Flash Media Drive Key Kit	737953-B21
HPE 8GB microSD Enterprise Mainstream Flash Media Kit	726116-B21

Additional Power Shelf Options

Choose Output Power Cables

NOTE: Each power shelf can support up to twelve 12V DC cables

NOTE: Depending on the number of chassis to be supported, the cable length varies.

NOTE: For 300W GPU (ex: NVIDIA Tesla K80), use four (4) cables per power tray.

NOTE: For 200-275W GPU (ex: NVIDIA Tesla M40, K40, AMD S9150,) use three (3) cables per accelerator tray

HPE 6500 power shelf 863.3mm Pwr Cbl with Holder	857488-B21
HPE 6500 power shelf 984mm Pwr Cbl with Holder	857492-B21
HPE 6500 power shelf 1168mm Pwr Cbl with Holder	857495-B21

Choose HPE Power Cords

HPE 2.0m 250V 16A C19-C20 Sgl IPD Jpr Crd	TK738A
HPE 2.0m 250V 16A C19-C20 3PC IPD Jpr Crd	TK739A
HPE 2.5m 250V 16A C19-C20 Sgl IPD Jpr Crd	TK740A
HPE 2.5m 250V 16A C19-C20 3PC IPD Jpr Crd	TK741A
HPE 3.0m 250V 16A C19-C20 Sgl IPD Jpr Crd	TK742A
HPE 3.0m 250V 16A C19-C20 3PC IPD Jpr Crd	TK743A
HPE 1.37m 250V16A C19-C20 Sgl IPD Jpr Crd	TK744A
HPE 1.37m 250V16A C19-C20 3PC IPD Jpr Crd	TK745A
HPE SDGRD-SDGRD 277AC/380DC 0.76m Jpr Crd	J6W98A
HPE SDGRD-SDGRD 277AC/380DC 1.37m Jpr Crd	J6W99A
HPE SDGRD-SDGRD 277AC/380DC 2.0m Jpr Crd	J6X00A
HPE SDGRD-LS25 277V 15A AC 0.76m Jpr Crd	J6X01A
HPE SDGRD-LS25 277V 15A AC 1.37m Jpr Crd	J6X02A
HPE SDGRD-LS25 277V 15A AC 2.0m Jpr Crd	J6X03A
HPE RDNT 2m,16A, C19-C20 JMPR CORD	AF574A
HPE RDNT 1.2m 16A C19-C20 JMPR CORD	AF575A
HPE 3.6m 16A C19 IEC309 Pwr Cord	AF581A
HPE 3.6m C19 Nema L6-20P NA/JP Pwr Crd	AF593A

Memory

Memory Population Guidelines
- **http://h18000.www1.hpe.com/products/QuickSpecs/14225/14225.html.**

Technical Specifications

HPE Apollo 6500 / HPE Apollo 6500 Chassis and two HPE ProLiant XL270d Accelerator trays	Dimensions	Height	6.97 in(17.70cm)
		Width	6.97in(17.70cm)
		Depth	37.79in(96.00cm)
	Shipping Dimensions	Height	11.72in (29.7cm)
		Width	23.51in (59.7cm)
		Depth	42.80in (108.7cm)
	Chassis Weight	Empty	32.89 lb (14.92 kg)
	Max Chassis Weight	Approximate	Approximate 161.42 lb (73.22 kg)
	Temperature Range	Operating	50° to 95° F (10° to 35° C)
		Non-Operating	-22° to 140° F (-30° to 60° C)
	Relative Humidity	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.

NOTE: Operating temperature has an altitude derating of 1.8° F (1° C) per 1,000 ft (304.8 m). No direct sunlight. Upper operating limit is 10,000 ft (3,048 m) or 70Kpa/10.1 psia. Upper non-operating limit is 30,000 ft (9,144 m) or 30.3 KPa/4.4 psia. Storage maximum humidity of 95% is based on a maximum temperature of 113° F (45° C). Altitude maximum for storage is 70 KPa.

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
LWAd	not determined at time of publish
LpAm	not determined at time of publish
	Operating
LWAd	not determined at time of publish
LpAm	not determined at time of publish

Environmental-friendly Products and Approach	End-of-life Management and Recycling	Hewlett Packard Enterprise offers end-of-life Hewlett Packard Enterprise product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to: **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.
		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
15-Aug-2016	Version 1	Created	Create QuickSpecs for HPE Apollo 6500

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