## Overview

HPE Apollo 6500 Gen10 System

The ability of computers to autonomously learn, predict, and adapt using massive datasets is driving innovation and competitive advantage across many industries and applications. The HPE Apollo 6500 Gen10 System is an ideal HPC and Deep Learning platform providing unprecedented performance with industry leading GPUs, fast GPU interconnect, high bandwidth fabric and a configurable GPU topology to match your workloads. The system with rock-solid RAS features (reliable, available, secure) includes up to eight high power GPUs per server tray (node), NVLink 2.0 for fast GPU-to-GPU communication, Intel® Xeon® Scalable Processors support, choice of up to four high-speed / low latency fabric adapters, and the ability to optimize your configurations to match your workload and choice of GPU. And while the HPE Apollo 6500 Gen10 System is ideal for deep learning workloads, the system is suitable for complex high performance computing workloads such as simulation and modeling.
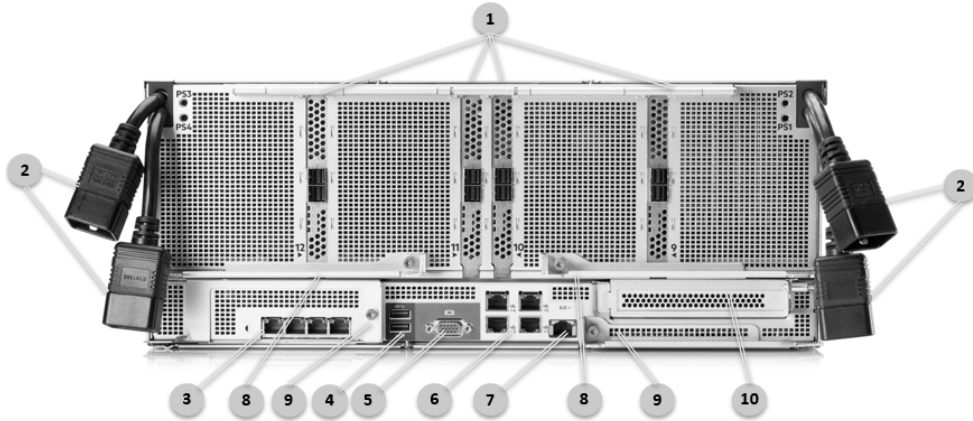
Eight GPU per server for faster and more economical deep learning system training compared to more servers with fewer GPU each. Keep your researchers productive as they iterate on a model more rapidly for a better solution, in less time. Now available with NVLink 2.0 to connect GPUs at up to 300 GB/s for the world's most powerful computing servers. HPC and AI models that would consume days or weeks can now be trained in a few hours or minutes.
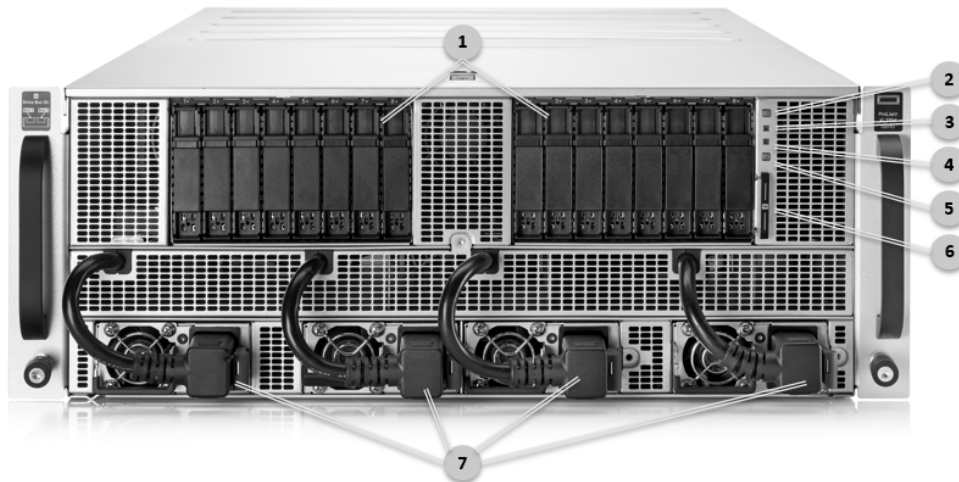
Front View –with two HPE DL38X Gen10 Premium 6 SFF SAS/SATA + 2 NVMe drive cages shown
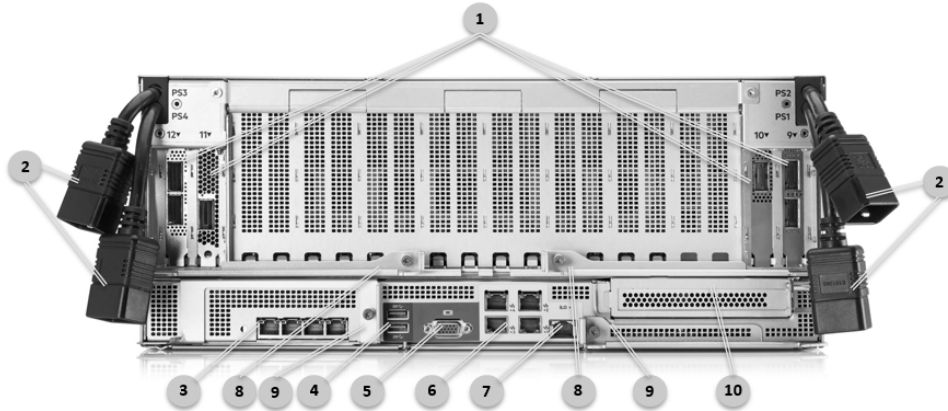
1. Drive Bay (2 optional 6SFF+2NVMe cages shown)
2. Power On/Standby button and system power LED button
3. Health LED
4. NIC status
5. UID button Drive
6. Serial label pull tag
7. 4 HPE 2200W Platinum Hot Plug Power Supply (2 standard)

Overview

Rear View – with HPE XL270d Gen10 8 SXM2 GPU Module

1. Four Full Height Half Length PCIe Gen3 (shown with optional adapters)
2. Pass through power cords
3. Optional FlexibleLOM ports (Shown: 4 x 1GbE)
4. USB connectors 3.0 (2)
5. VGA connector
6. Embedded 4 x 1GbE Network Adapter
7. Dedicated iLO management port
8. GPU Module latches
9. System board module latches
10. Full Height Half Length PCIe Gen3

Rear View – with HPE XL270d Gen10 8 PCIe GPU Module

1. Four Low Profile PCIe Gen3 (shown with optional adapters)
2. Pass through power cords
3. Optional FlexibleLOM ports (Shown: 4 x 1GbE)
4. USB connectors 3.0 (2)
5. VGA connector
6. Embedded 4 x 1GbE Network Adapter
7. Dedicated iLO management port
8. GPU Module latches
9. System board module latches
10. Full Height Half Length PCIe Gen3

Overview
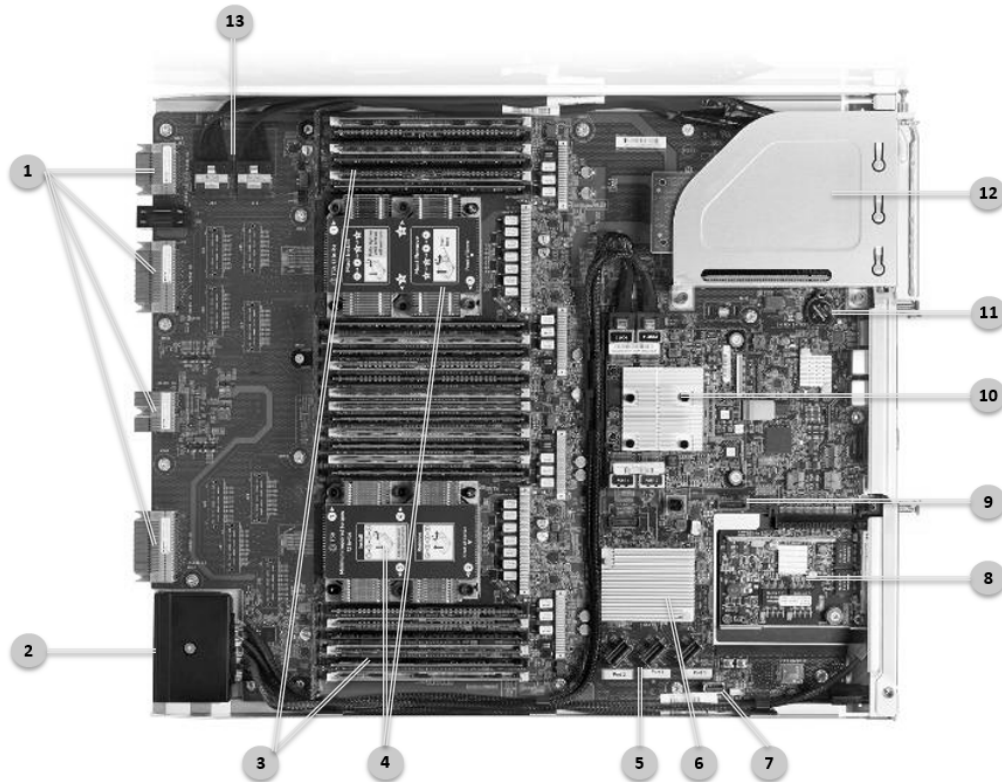
System Board Module view – with optional 2nd CPU, FlexLOM, Smart array[1] shown

1. Midplane connections
2. Storage connector
3. DDR4 DIMM slots. Shown fully populated in 24 slots (12 per processor)
4. Processors
5. X4 SATA ports (1, 2 and 3)
6. Platform Controller Hub
7. Internal USB 3.0
8. Optional FlexibleLOM adapter
9. m.2 riser connector
10. Optional type-a modular Smart Array controller [1]
11. System Battery
12. Full Height Half Length PCIe Gen3 x16 (shown with Optional NVME card)
13. NVME drive ports

NOTE[1] Embedded SATA or m.2 for boot and NVME for high speed cache enabled for initial release. Smart Array for SAS and SATA SSD will be enabled in later release. Please contact your Hewlett Packard Enterprise representative for more details.

Overview

What's New:
- Support for NVLink 2.0 with the latest NVIDIA GPU
- Choose 4:1 or 8:1 topology in BIOS (PCIe GPU Module only)
- Up to 4 high speed fabric adapters
- Traditional rack mount server design fits in standard racks
- Broad storage options, with up to 16 front-accessible storage devices—SAS or SATA solid-state drives (SSDs)—with up to 4 NVMe drives
- Up to 165W processors for higher frequency options or larger core count
- New NVIDIA Graphics card options
- Tested with the NVIDIA GPU Cloud containers, which were successfully installed on the server
- Support for HPE FlexibleLOM and HPE Modular Smart Arrays

Platform Information

Form Factor   4U rack

Chassis Types   HPE ProLiant XL270d Gen10 Configure to order Server
Standard features:
2 HPE 2200W Platinum Hot Plug Power Supply
HPE XL270d Gen10 Rail Kit
NOTE: Comes with the S100i Smart Array Controller with embedded software RAID support for 12 drives. The S100i uses 14 embedded SATA ports, but only 12 ports are accessible as 2 are leveraged to support the 2 M.2 options. Please see Array controller section for full details.

System Fans   Standard – Five hot plug fan modules per server. Each module includes one 80mm dual rotor fan on top, one 60mm single rotor fan on bottom.
NOTE: hot plug fan functionality requires the use of the Cable Management feature of the rail kit, which will require the use of 1200mm deep racks.

Standard Features

Processors – Up to 2 of the following depending on model.
NOTE: For more information regarding Intel Xeon processors, please see the following **http://www.intel.com/xeon**.
NOTE: This table covers the public Intel offering only.

Intel Xeon Models	CPU Frequency	Cores	L3 Cache	Power	UPI	DDR4	Memory per socket
Platinum Processors							
Platinum 8176 Processor	2.1 GHz	28	38.50 MB	165W	3 @ 10.4 GT/s	2666 MT/s	768GB
Gold Processors							
Gold 6152 Processor	2.1 GHz	22	30.25 MB	140W	3 @ 10.4 GT/s	2666 MT/s	768GB
Gold 6150 Processor	2.7 GHz	18	24.75 MB	165W	3 @ 10.4 GT/s	2666 MT/s	768GB
Gold 6148 Processor	2.4 GHz	20	27.50 MB	150W	3 @ 10.4 GT/s	2666 MT/s	768GB
Gold 6142M Processor	2.6 GHz	16	22.00 MB	150W	3 @ 10.4 GT/s	2666 MT/s	1.5TB
Gold 6142 Processor	2.6 GHz	16	22.00 MB	150W	3 @ 10.4 GT/s	2666 MT/s	768GB
Gold 6140M Processor	2.3 GHz	18	24.75 MB	140W	3 @ 10.4 GT/s	2666 MT/s	1.5TB
Gold 6140 Processor	2.3 GHz	18	24.75 MB	140W	3 @ 10.4 GT/s	2666 MT/s	768GB
Gold 6136 Processor	3.0 GHz	12	24.75 MB	150W	3 @ 10.4 GT/s	2666 MT/s	768GB
Gold 6134 Processor	3.2 GHz	8	24.75 MB	130W	3 @ 10.4 GT/s	2666 MT/s	768GB
Gold 6126 Processor	2.6 GHz	12	19.25 MB	125W	3 @ 10.4 GT/s	2666 MT/s	768GB

Chipset

Intel C621 Chipset

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 5 ASIC

NOTE: Read and learn more in the **iLO QuickSpecs**.

Memory

One of the following depending on model

Type:		HPE DDR4 SmartMemory, Registered (RDIMM), Load Reduced (LRDIMM)
DIMM Slots Available	24	12 DIMM slots per processor, 6 channels per processor, 2 DIMMs per channel
Maximum capacity (LRDIMM)	3.0 TB	24 x 128 GB LRDIMM @ 2666 MHz
Maximum capacity (RDIMM)	768 GB	24 x 32 GB RDIMM @ 2666 MHz

NOTE: Maximum memory per socket is dependent on processor selection. Processors supporting 1.5 TB per CPU are indicated by the "M" in the processor model names (i.e. 6140M).
NOTE: Mixing of RDIMM and LRDIMM memory is not supported.
NOTE: For General Server Memory Population Rules and Guidelines for Gen10 see details
here: **http://www.hpe.com/docs/memory-population-rules**

Memory Protection

For details on the HPE Server Memory Options RAS feature, visit: **http://www.hpe.com/docs/memory-ras-feature**.

Expansion Slots- System board

Slots #	Technology	Bus Width	Connector Width	Slot Form Factor	Notes

Standard Features

21	PCIe 3.0	X16	X16	Full-height, half-length slot	Proc 2

NOTE: Bus Width Indicates the number of physical electrical lanes running to the connector.

Expansion Slots- SXM-2 GPU Module

Slots #	Technology	Bus Width	Connector Width	Slot Form Factor	Notes
11	PCIe 3.0	X16	X16	Full-height, half-length slot	Proc 1
12	PCIe 3.0	X16	X16	Full-height, half-length slot	Proc 1
9	PCIe 3.0	X16	X16	Full-height, half-length slot	Proc 2
10	PCIe 3.0	X16	X16	Full-height, half-length slot	Proc 2

NOTE: Bus Width Indicates the number of physical electrical lanes running to the connector.

Expansion Slots- PCIe GPU Module

Slots #	Technology	Bus Width	Connector Width	Slot Form Factor	Notes
11	PCIe 3.0	X16	X16	Low Profile slot	Dependent on topology selected in BIOS. See User and Adminstrator Guide for full details
12	PCIe 3.0	X16	X16	Low Profile slot	
9	PCIe 3.0	X16	X16	Low Profile slot	
10	PCIe 3.0	X16	X16	Low Profile slot	

NOTE: Bus Width Indicates the number of physical electrical lanes running to the connector.

Standard Features

GPU Topologies
NVLink Hybrid Cube Mesh
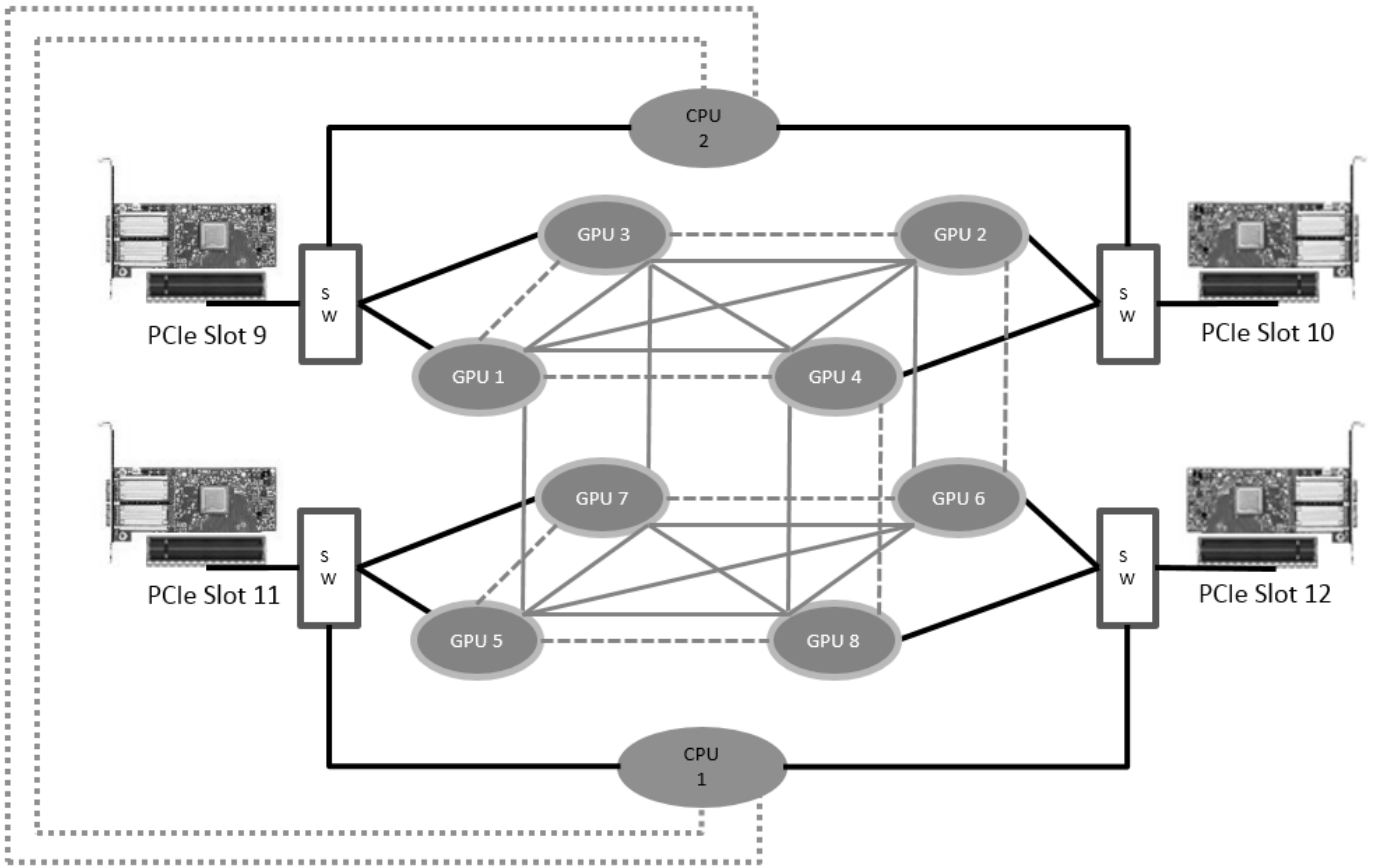
Intel UPI (up to two, CPU dependent)

PCIe Gen3 x16

NVLINK (Pascal and Volta)
up to 25GBps

NVLINK for Volta @ 25GB/s

PCIe Gen3 switch
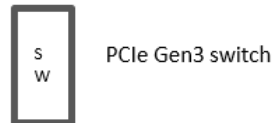
Standard Features

GPU Topologies

PCIe 4:1 (up to 4 GPU per CPU PCIe root complex)
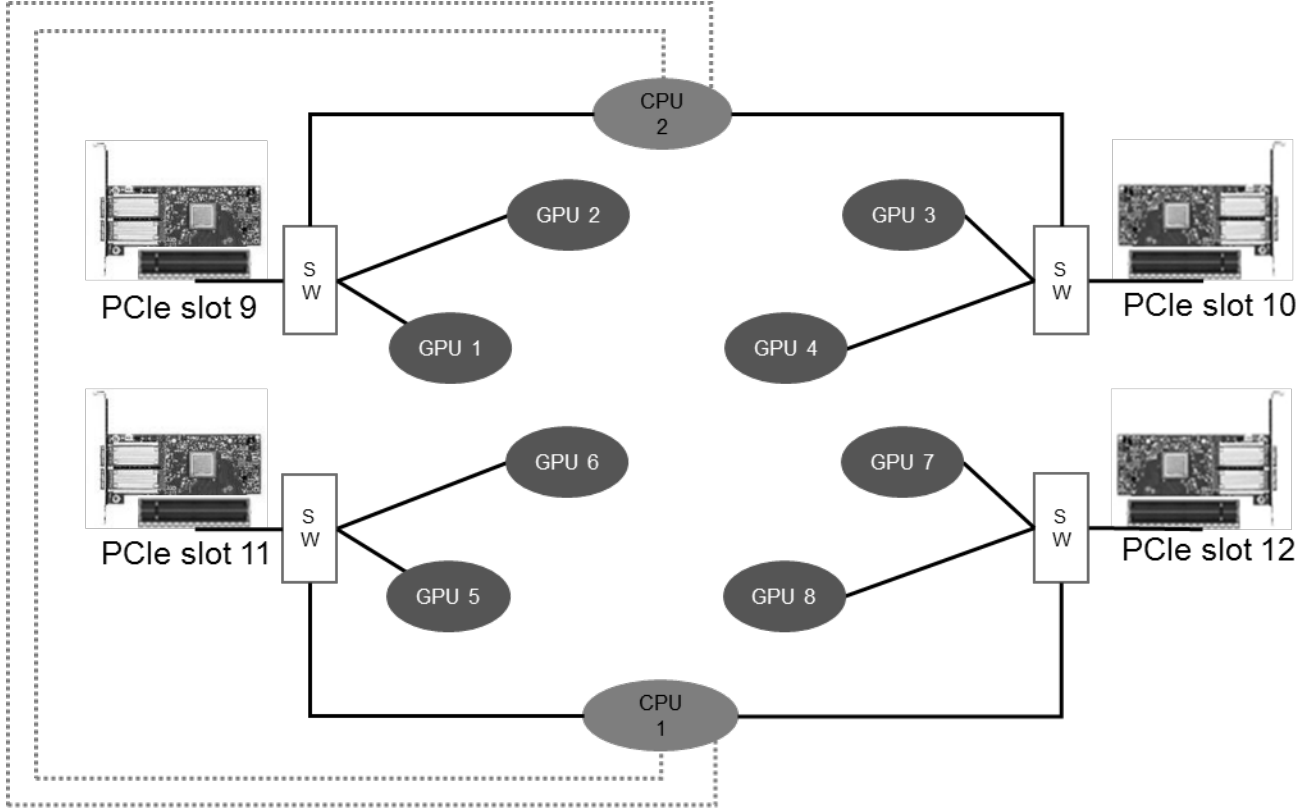
········ Intel UPI (up to two, CPU dependent)

——————— PCIe Gen3 x16

Standard Features

GPU Topologies

PCIe 8:1 (up to 8 GPU per CPU PCIe root complex)

.... Intel UPI (up to two, CPU dependent)

———— PCIe Gen3 x16
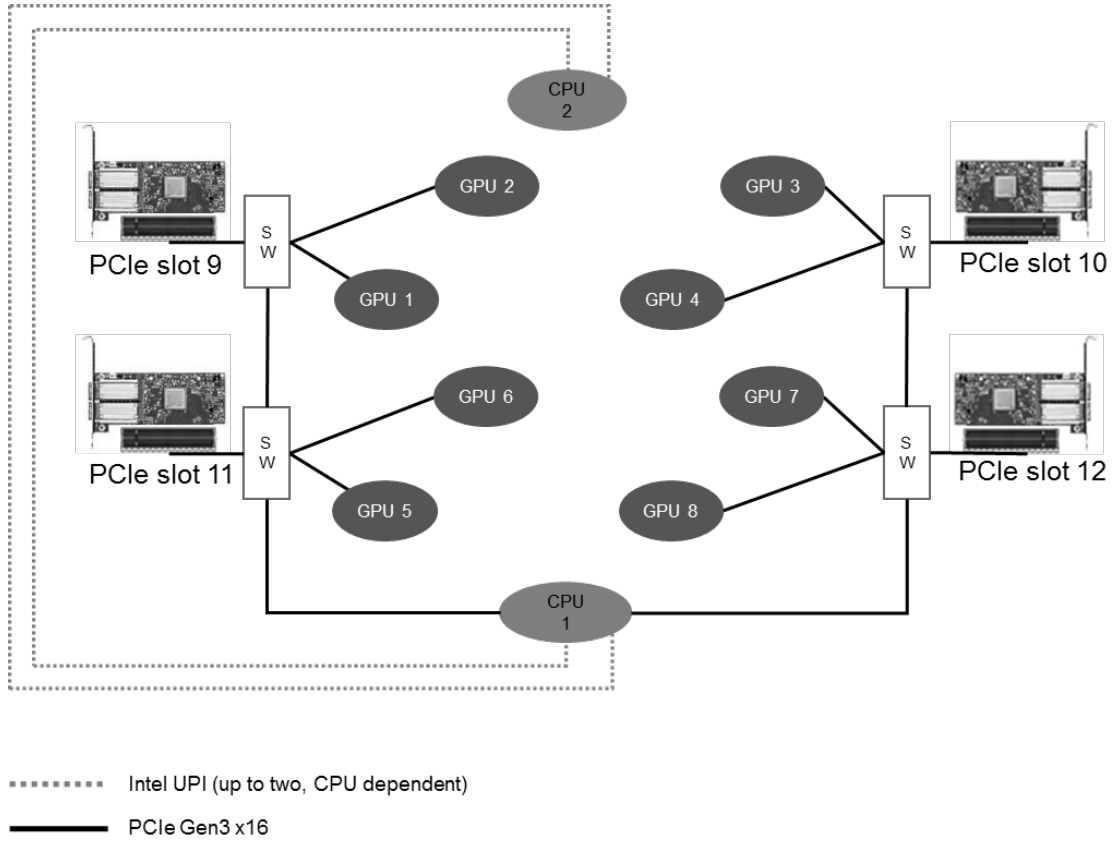
Standard Features

Storage Controllers

The Gen10 controller naming framework has been updated to simplify identification as depicted below. For a more detailed breakout of the available Gen10 Smart Array controllers visit the **HPE Smart Array Gen10 Controllers Data Sheet**. For optimum performance in the Apollo 6500 Gen10 System we highly recommend use of a performance RAID Controller.

Embedded SATA   Embedded AHCI controller for SATA or m.2

NOTE: For Linux users, HPE offers a solution that uses in-distro open-source software to create a two-disk RAID 1 boot volume. For more information visit: **https://downloads.linux.hpe.com/SDR/project/lsrrb/**

Performance RAID Controller   A performance array is recommended for the Apollo 6500 Gen10

                                         HPE Smart Array P408i-a SR Gen10 Controller

                                         HPE Smart Array P408i-p SR Gen10 Controller

                                         HPE Smart Array P816i-a SR Gen10 Controller

NOTE: Performance RAID Controllers require the HPE Smart Storage Battery (P01367-B21) which is sold separately.

Internal Storage Devices

Hard Drives   None ship standard, up to 16 max using two HPE DL38X Gen10 Premium 6 SFF SAS/SATA + 2 NVMe drive cages

M.2   None ship standard

Maximum Internal Storage

	CAPACITY	CONFIGURATION
Hot Plug SFF SATA SSD	30.7 TB	16 x 1.92 TB
Hot Plug SFF NVMe PCIe SSD	12.8 TB NVMe	4x3.2 TB NVMe

NOTE: 2x m.2 drives are supported

Power Supply

HPE 2200W Platinum Hot Plug Power Supply Kit

NOTE: 80plus Platinum efficiency

Interfaces

VGA	1
Network Ports	4 x 1 Gb ports shipping standard with optional FlexibleLOM or stand up card
HPE iLO Remote Management Network Port	1 Gb Dedicated
USB 3.0	2 rear, 1 internal

Operating Systems and Virtualization Software Support for ProLiant Servers

Red Hat Enterprise Linux (RHEL) (64 bit) (includes KVM)- 7.3 w/ Errata 3.10.0-514.6.1, 7.4

SUSE Linux Enterprise Server (SLES) (64bit) (includes KVM)- 12SP3, 15

Canonical Ubuntu 16.04.3 - HWE kernel 4.10

CentOS 7.4

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.
NOTE: Window Server support will be available in future releases. Please check link below for latest support matrix.
http://www.hpe.com/info/ossupport

Industry Standard Compliance

ACPI 6.1 Compliant

PCIe 3.0 Compliant

WOL Support

PXE Support

Standard Features

VGA

USB 3.0 Compliant (external / internal)

SMBIOS 3.1

UEFI 2.6

Redfish API

IPMI 2.0

Secure Digital 2.0

Advanced Encryption Standard (AES)

Triple Data Encrytion Standard (3DES)

SNMP v3

TLS 1.2

DMTF Systems Management Architecture for Server Hardware Command Line Protocol (SMASH CLP)

Active Directory v1.0

ASHRAE A3

NOTE: For additional technical thermal details regarding ambient temperatures, humidity and features support please visit: **http://www.hpe.com/servers/ashrae**.

UEFI (Unified Extensible Firmware Interface Forum)

NOTE: UEFI is the default for the Apollo 6500 Gen10. Legacy mode can be selected in the field or as a CTO option (758959-B22).

Graphics

Integrated Video Standard

- Video modes up to 1920 x 1200@60Hz (32 bpp)
- 16MB Video Memory

HPE iLO 5 on system management memory

- 32 MB Flash
- 4 Gbit DDR 3 with ECC protection

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 Gen10 servers have a UEFI Class 2 implementation and support both UEFI Mode (default) and Legacy BIOS Mode.

NOTE: The UEFI System Utilities tool 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 and Secure Start enable for enhanced security
- 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 iLO RESTful API that is Redfish API Conformant
- PXE boot support for IPv6 networks
- Workload Profiles for simple performance optimization

UEFI Boot Mode only:
- NVMe Boot Support
- Platform Trust Technology (PTT) can be enabled.
- iSCSI Software Initiator Support.
- HTTP/HTTPs Boot support as a PXE alternative.

Standard Features

- Boot support for option cards that only support a UEFI option ROM

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 Gen10 Server. A Performance RAID controller will be required for Legacy mode.

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**.
iLO RESTful API	iLO RESTful API is Redfish API conformance and offers simplified server management automation such as configuration and maintenance tasks based on modern industry standards. Learn more at **http://www.hpe.com/info/restfulapi**.

Server Utilities

Active Health System	The HPE Active Health System (AHS) is an essential component of the iLO management portfolio that provides continuous, proactive health monitoring of HPE servers. Learn more at **http://www.hpe.com/servers/ahs**.
Active Health System Viewer	Use the Active Health System Viewer, a web-based portal, to easily read AHS logs and speed problem resolution with HPE self-repair recommendations, to learn more visit: **http://www.hpe.com/servers/ahsv** .
Smart Update	Keep your servers up to date with the HPE Smart Update solution by using Smart Update Manager (SUM) to optimize the firmware and driver updates of the Service Pack for ProLiant (SPP). Learn more at **http://www.hpe.com/info/smartupdate**.
iLO Amplifier Pack	Designed for large enterprise and service provider environments with hundreds of HPE servers, the iLO Amplifier Pack is a free, downloadable open virtual application (OVA) that delivers the power to discover, inventory and update Gen8, Gen9 and Gen10 HPE servers at unmatched speed and scale. Use with an iLO Advanced License to unlock full capabilities. Learn more at **http://www.hpe.com/servers/iLOamplifierpack**.
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**.
RESTful Interface Tool	RESTful Interface tool (iLOREST) is a single scripting tool to provision using iLO RESTful API to discover and deploy servers at scale. Learn more at **http://www.hpe.com/info/resttool**.
Scripting Tools	Provision one to many servers using your own scripts to discover and deploy with Scripting Tool (STK) for Windows and Linux or Scripting Tools for Windows PowerShell. Learn more at **http://www.hpe.com/servers/stk** or **http://www.hpe.com/servers/powershell**.
HPE Systems Insight Manager (HPE SIM)	Ideal for environments already using HPE SIM, it allows you to monitor the health of your HPE ProLiant Servers and HPE Integrity Servers. 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/info/hpesim**.

Server Management

Standard Features

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 iLO Advanced Premium Security Edition	HPE iLO Advanced Premium Security Edition for iLO 5 includes iLO Advanced License plus high-end security modes, unique security capabilities, like Automatic FW recovery; Runtime FW verification, and Secure erase. Learn more about HPE iLO Advanced Premium Security Edition at: **http://www.hpe.com/servers/ilopremium**.
HPE Insight Cluster Management Utility (CMU)	HPE Insight Cluster Management Utility is a HPC 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**.

Security

UEFI Secure Boot and Secure Start support

Immutable Silicon Root of Trust

FIPS 140-2 validation (iLO 5 certification in progress)

Common Criteria certification (iLO 5 certification in progress)

Configurable for PCI DSS compliance

Advanced Encryption Standard (AES) and Triple Data Encryption Standard (3DES) on browser

Support for Commercial National Security Algorithms (CNSA)

Tamper-free updates – components digitally signed and verified

Secure Recovery – recover critical firmware to known good state on detection of compromised firmware

Ability to rollback firmware

Secure erase of NAND/User data

Warranty

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

NOTE: Server Warranty includes 3-Year Parts, 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 Hewlett Packard Enterprise replace Optional CSR parts at no charge. Additional information regarding worldwide limited warranty and technical support is available at: **http://h17007.www1.hpe.com/us/en/enterprise/servers/warranty/**.

Optional Features

Accelerator and GPGPU Information

Hewlett Packard Enterprise supports various accelerators on select HPE Proliant servers to support different workloads. The accelerators enable seamless integration of GPU computing with HPE ProLiant servers for high-performance computing, large data center graphics, deep learning and virtual desktop deployments. These accelerators deliver all of the standard benefits of GPU computing while enabling maximum reliability and tight integration with system monitoring and management tools such as HPE Insight Cluster Management Utility.

Rack and Power Infrastructure

The story may end with servers, but it starts with the foundation that makes compute go – and business grow. We've reinvented our entire portfolio of rack and power products to make IT infrastructure more secure, more practical, and more efficient. In other words, we've created a stronger, smarter, and simpler infrastructure to help you get the most out of your IT equipment. As an industry leader, Hewlett Packard Enterprise is uniquely positioned to address the key concerns of power, cooling, cable management and system access.

HPE G2 Advanced and Enterprise Racks are perfect for the server room or today's modern data center with enhanced airflow and thermal management, flexible cable management, and a 10 year Warranty to support higher density computing.

HPE G2 PDUs offer reliable power in flexible form factors that operate at temperatures up to 60°C, include color-coded outlets and load segments and a low-profile design for optimal access to the rack and support for dense rack environments.

HPE Uninterruptible Power Systems are cost-effective power protection for any type workload. Some UPSs include options for remote management and extended runtime modules so you're critical dense data center is covered in power outages.

HPE KVM Solutions include a console and switches designed to work with your server and IT equipment reliably. We've got a cost-effective KVM switch for your first rack and multiple connection IP switches with remote management and security capabilities to keep your data center rack up and running.

Learn more about HPE Racks, KVM, PDUs and UPSs at **HPE Rack and Power Infrastructure**.

Service and Support

HPE Pointnext - Service and Support

Protect your business beyond warranty with HPE Support Services

HPE Pointnext provides a comprehensive portfolio including Advisory and Transformational, Professional, and Operational Services to help accelerate your digital transformation. From the onset of your transformation journey, Advisory and Transformational Services focus on designing the transformation and creating a solution roadmap. Professional Services specializes in creative configurations with flawless and on-time implementation, and on-budget execution. If Artificial Intelligence is part of your digital transformation, HPE advisory and professional services for Artificial Intelligence include the workshop, proof-of-value services based on industry/ machine learning use cases, and full implementation services you will need to utilize AI. Finally, operational services provides innovative new approaches like Flexible Capacity and Datacenter Care, to keep your business at peak performance. HPE is ready to bring together all the pieces of the puzzle for you, with an eye on the future, and make the complex simple.

Connect your devices:

Unlock all of the benefits of your technology investment by connecting your products to Hewlett Packard Enterprise. Reduce down time and improve diagnostic accuracy with 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 HPE support. Learn more about getting connected at **http://www.hpe.com/services/getconnected**

Support Services available for Apollo 6500

HPE Proactive Care Advanced

This is the recommended support for Mission Critical and SAP HANA environments. It builds on HPE Proactive Care, providing additional benefits such as the assignment of a dedicated, local account support manager (ASM) for collaboration and best practices and critical event management that provides 24x7 response and IT service restoration with incident follow-up to prevent a repeat. All of this is designed to give you an incredibly personalized, high-touch support experience that keeps your system fully available and running at peak performance.

HPE Proactive Care

HPE Proactive Care begins with providing all of the benefits of proactive monitoring and reporting to put in place the fundamentals needed for stability and availability of the IT environment. Proactive Care helps in problem prevention, with predictive analytics, personalized analysis with recommendations and advice paired with rapid access to technical experts to help rapidly resolve any problem. You receive an enhanced call experience and a single point of contact for the support of all covered components. Customers can customize their Proactive Care reactive support level by selecting either 6-hour call-to-repair, 24x7 with 4-hour onsite response, or next-business day onsite response.

NOTE: *HPE Proactive Care and HPE Proactive Care Advanced require that the customer connect their devices to make the most of these services and receive all the deliverables.

HPE Foundation Care

Provides flexibility to customize your reactive support level by selecting either 6-hour call-to-repair, 24x7 with 4-hour onsite response, or Next Business Day onsite response. The HPE Foundation Care with 6-hour call-to-repair is the highest level commitment to repair hardware within six hours after the initial hardware service request has been received and respond to software questions within two hours.

Other 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.

Service and Support

HPE Installation and Startup of HPE Servers

Provides for the installation of your new server and operating system. This service will assist in bringing your new HPE server and operating system into operation in a timely and professional manner. This service provides a trained Hewlett Packard Enterprise service specialist to perform an installation that meets Hewlett Packard Enterprise quality standards. The service highlights include: planning, deployment on site, Installation verification tests, and customer orientation session.

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 HPE via a single point of accountability for HPE and others' products.

HPE Flexible Capacity

With Flexible Capacity, you get the speed, scalability, and economics of the public cloud in the privacy of your data center. Gain the advantages of the public cloud—consumption-based payment, rapid scalability without worrying about capacity constraints. Reduce the "heavy lifting" needed to operate a data center. And retain the advantages that IT provides the business (i.e., control, security). Deliver the right user experience, choose the right technology for the business, manage privacy and compliance, and manage the cost of IT. And, you have the option to use the public cloud when needed.

HPE 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.

Parts and Materials

HPE 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 quick-specs, 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 HPE due to malfunction

Other related Services

HPE Server Hardware Installation

Provides for the basic hardware installation of HPE branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner.
https://www.hpe.com/h20195/V2/GetPDF.aspx/5981-9356EN.pdf

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**

Parts and Materials

HPE 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 quick-specs, 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 HPE due to malfunction.

Service and Support

HPE Support Center
The HPE Support Center is a personalized online support portal with access to information, tools and experts to support HPE business products. Submit support cases online, chat with HPE experts, access support resources or collaborate with peers. Learn more **http://www.hpe.com/support/hpesc**

HPE's Support Center Mobile App* allows you to resolve issues yourself or quickly connect to an agent for live support. Now, you can get access to personalized IT support anywhere, anytime.
HPE Insight Remote Support and HPE Support Center are available at no additional cost with a HPE warranty, HPE Support Service or HPE contractual support agreement.
*HPE Support Center Mobile App is subject to local availability.
For more information: **http://www.hpe.com/services**

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**

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 quick-specs, 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.

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.

Please select one –L21 processor required below.

For second processor, please select the same processor model with –B21

For example: first processor, select P01276-L21 then for second processor, select P01276-B21.

NOTE: Maximum memory capacity per processor is dependent on processor models. All processors support up to 768 GB max memory per processor except "M" model processors will support up to 1.5 TB max memory per processor.
NOTE: Mixing of 2 different processor models are NOT allowed.
NOTE: DDR4 speed is the maximum memory speed of the processor. Actual memory speed may depend on the quantity and type of DIMMs installed.

Step 1: Choose your CTO Server

HPE ProLiant XL270d Gen10 Configure-to-order Server	P00392-B21
HPE s6500 Chassis Handles Kit	608477-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.

Step 2: For traditional PCIe GPU support

HPE XL270d Gen10 8 PCIe GPU FIO Module	P01788-B22
HPE XL270d Gen10 PCIe GPU FIO Enablement Kit	P03032-B22

NOTE: only one GPU Enablement kit required for 8 GPU.

HPE NVIDIA Tesla P100 PCIe 16GB Computational Accelerator	Q0E21A
HPE NVIDIA Tesla P40 24GB Computational Accelerator	Q0V80A
HPE NVIDIA Tesla V100 PCIe 16GB Computational Accelerator	Q2N68A
HPE NVIDIA Tesla V100 PCIe 32GB Computational Accelerator	Q9U36A

NOTE: only one version of GPU supported, mixed GPU configurations not supported. Maximum of 8 GPU per GPU Module.

HPE 4:1 GPU:CPU Topology Setting FIO Kit	P03826-B21
HPE 8:1 GPU:CPU Topology Setting FIO Kit	P03829-B21

NOTE: only one topology may be set at a time. This can be reset in the field via BIOS to best match your workload.

HPE ProLiant SL6500 Peer to Peer GPU Mode FIO Kit	782400-B21
HPE ProLiant SL6500 High Performance Computing GPU Mode FIO Kit	782402-B21

NOTE: The two HPE part numbers above allow customers to order card counts QTY (2, 4 & 6) with the correct slot population to optimize performance and thermals for their workloads. Both can be chosen with either the 4:1 or 8:1 topologies. For workloads that have a great deal of GPU to GPU communications, such as Deep Learning, the "HPE Peer to Peer GPU Mode FIO Kit" is recommended. Most traditional HPC workloads have little GPU to GPU communications and the "HPE High Performance GPU Mode FIO Kit" configuration will optimize bandwidth back to the CPU and system main memory.

Step 2a: For NVLink GPU support

HPE XL270d Gen10 8 SXM2 GPU FIO Module	P01786-B22

Configuration Information – Factory Integrated Models

HPE XL270d Gen10 SXM2 Heat Sink FIO Kit	P02939-B22

NOTE: SXM-2 Heatsink kit supports 4 NVLink enabled SXM-2 GPU per kit
NOTE: Configurations of 4 or 8 SXM-2 GPU supported.

HPE NVIDIA Tesla P100 SXM2 16GB Module	Q0C71A
HPE NVIDIA Tesla V100 SXM2 16GB Computational Accelerator	Q2N66A
HPE NVIDIA Tesla V100 SXM2 32GB Computational Accelerator	Q9U37A

NOTE: only one version of GPU supported, mixed GPU configurations not supported. Maximum of 8 GPU per GPU Module.

Step 3: Choose Processors

HPE XL270d Gen10 Intel Xeon-Platinum 8176 (2.1GHz/28-core/165W) Processor Kit	P01276-B21
HPE XL270d Gen10 Intel Xeon-Platinum 8176 (2.1GHz/28-core/165W) FIO Processor Kit	P01276-L21
HPE XL270d Gen10 Intel Xeon-Gold 6152 (2.1GHz/22-core/140W) Processor Kit	P01277-B21
HPE XL270d Gen10 Intel Xeon-Gold 6152 (2.1GHz/22-core/140W) FIO Processor Kit	P01277-L21
HPE XL270d Gen10 Intel Xeon-Gold 6150 (2.7GHz/18-core/165W) Processor Kit	P01278-B21
HPE XL270d Gen10 Intel Xeon-Gold 6150 (2.7GHz/18-core/165W) FIO Processor Kit	P01278-L21
HPE XL270d Gen10 Intel Xeon-Gold 6148 (2.4GHz/20-core/150W) Processor Kit	P01279-B21
HPE XL270d Gen10 Intel Xeon-Gold 6148 (2.4GHz/20-core/150W) FIO Processor Kit	P01279-L21
HPE XL270d Gen10 Intel Xeon-Gold 6142 (2.6GHz/16-core/150W) Processor Kit	P01280-B21
HPE XL270d Gen10 Intel Xeon-Gold 6142 (2.6GHz/16-core/150W) FIO Processor Kit	P01280-L21
HPE XL270d Gen10 Intel Xeon-Gold 6140 (2.3GHz/18-core/150W) Processor Kit	P01281-B21
HPE XL270d Gen10 Intel Xeon-Gold 6140 (2.3GHz/18-core/150W) FIO Processor Kit	P01281-L21
HPE XL270d Gen10 Intel Xeon-Gold 6136 (3.0GHz/12-core/150W) Processor Kit	P01282-B21
HPE XL270d Gen10 Intel Xeon-Gold 6136 (3.0GHz/12-core/150W) FIO Processor Kit	P01282-L21
HPE XL270d Gen10 Intel Xeon-Gold 6134 (3.2GHz/8-core/130W) Processor Kit	P01283-B21
HPE XL270d Gen10 Intel Xeon-Gold 6134 (3.2GHz/8-core/130W) FIO Processor Kit	P01283-L21
HPE XL270d Gen10 Intel Xeon-Gold 6126 (2.6GHz/12-core/120W) Processor Kit	P01284-B21
HPE XL270d Gen10 Intel Xeon-Gold 6126 (2.6GHz/12-core/120W) FIO Processor Kit	P01284-L21
HPE XL270d Gen10 Intel Xeon-Gold 6140M (2.3GHz/18-core/140W) Processor Kit	P02019-B21
HPE XL270d Gen10 Intel Xeon-Gold 6140M (2.3GHz/18-core/140W) FIO Processor Kit	P02019-L21
HPE XL270d Gen10 Intel Xeon-Gold 6142M (2.6GHz/16-core/150W) Processor Kit	P02020-B21
HPE XL270d Gen10 Intel Xeon-Gold 6142M (2.6GHz/16-core/150W) FIO Processor Kit	P02020-L21

Step 4: Choose Memory Options

Please select one or more memory from below.
For new Gen10 memory population rule whitepaper and optimal memory performance guidelines, please go
to: **https://www.hpe.com/docs/memory-population-rules**
For Gen10 memory speed table, please go to: **https://www.hpe.com/docs/memory-speed-table**
For memory Reliability, Accessibility, Serviceability (RAS) features whitepaper like Gen10 Fast Fault Tolerance and legacy mirrored memory feature etc. please go to: **http://www.hpe.com/docs/memory-ras-feature**
NOTE: Memory DIMM availability with a server platform is dependent upon completion of certification testing.
NOTE: The maximum memory speed is a function of the memory type, memory configuration, and processor model.

HPE 16GB (1x16GB) Dual Rank x8 DDR4-2666 CAS-19-19-19 Registered Smart Memory Kit	835955-B21
HPE 32GB (1x32GB) Dual Rank x4 DDR4-2666 CAS-19-19-19 Registered Smart Memory Kit	815100-B21
HPE 64GB (1x64GB) Quad Rank x4 DDR4-2666 CAS-19-19-19 Load Reduced Smart Memory Kit	815101-B21

Configuration Information – Factory Integrated Models

HPE 128GB (1x128GB) Octal Rank x4 DDR4-2666 CAS-22-19-19 3DS Load Reduced Memory Kit	815102-B21

Step 5: Choose Storage Options
Drive Bay

HPE DL38X Gen10 Premium 6 SFF SAS/SATA + 2 NVMe or 8 SFF SAS/SATA Bay Kit	826690-B21

NOTE: This kit provides support for up to 8 SFF SAS/SATA or 6 SAS/SATA + 2 NVMe drives per Box.

NOTE: With NVMe drives the HPE XL270d Gen10 NVMe FIO Enablement Kit (P01056-B22) is required.

NOTE: Up to two Premium bay kits supported per server.

NOTE: Embedded SATA or m.2 for boot and NVME for high speed cache enabled for initial release. Hardware Smart Array for SAS and SATA SSD will be enabled in later release. Please contact your Hewlett Packard Enterprise representative for more details.

HPE Smart Array Controllers- An HPE Performance RAID controller is recommended for the best experience

HPE Smart Array P816i-a SR Gen10 (16 Internal Lanes/4GB Cache/SmartCache) 12G SAS Modular Controller	804338-B21
HPE Smart Array P408i-a SR Gen10 (8 Internal Lanes/2GB Cache) 12G SAS Modular Controller	804331-B21
HPE Smart Array P408i-p SR Gen10 (8 Internal Lanes/2GB Cache) 12G SAS PCIe Plug-in Controller	830824-B21

NOTE: All performance RAID controllers are supported by the HPE Smart Storage Battery (P01367-B21), which supports multiple devices and is sold separately.

NOTE: Flexible Smart Array controllers do not consume a PCIe slot

NOTE: PCIe Smart Array and NVME both use the single PCIe slot on the system board. Only one can be supported at a time. HPE recommends the Flexible Smart Array in this case.

HPE Cable Options

HPE XL270d Gen10 Hardware RAID Smart Array FIO Enablement Kit	P01836-B22

NOTE: One kit supports up to two Premium drive cages (826690-B21)

NOTE: One kit required for use with any HPE Smart Array.

NOTE: For details on cabling options, additional information available here: **http://www.hpe.com/info/CablingMatrixGen10**.

HPE Smart Storage Battery

HPE 96W Smart Storage Battery (up to 20 Devices/260mm Cable) Kit	P01367-B21

NOTE: One kit supports up to two Premium drive cages (826690-B21)

NOTE: One kit required for use with any HPE Smart Array.

NOTE: For details on cabling options, additional information available here: **http://www.hpe.com/info/CablingMatrixGen10**.

HPE Cable Options

Embedded SATA

HPE XL270d Gen10 Embedded SATA Enablement Kit	P02007-B22

NOTE: For Linux users, HPE offers a solution that uses in-distro open-source software to create a two-disk RAID 1 boot volume. For more information visit: **https://downloads.linux.hpe.com/SDR/project/lsrrb/**

HPE Apollo PCIe/SATA M.2 Riser Kit	863661-B22
HPE Legacy FIO Mode Setting	758959-B22

NOTE: UEFI is the default, this FIO part can be used for CTO to enable Legacy mode.

HPE NVME Controller

HPE XL270d Gen10 NVMe FIO Enablement Kit	P01056-B22

HPE DL38X Gen10 Premium 6 SFF SAS/SATA + 2 NVMe or 8 SFF SAS/SATA Bay Kit (826690-B21)

NOTE: One kit required for use with any HPE NVME.

NOTE: NVME enablement kit both use the single PCIe slot on the system board. Only one can be supported at a time.

Configuration Information – Factory Integrated Models

HPE 6+2 NVMe Instr Spec FIO	878192-B21

NOTE: The above is a factory configuration rule indicating use of the drive with an NVMe connection.

Step 6: Choose Power Supplies and power options

Select up to two (2) power supplies from below.

NOTE: Two power supplies come standard in the HPE ProLiant XL270d Gen10 server. Additional power supplies can be selected to provide redundant power to a total of up to four power supplies per server for 2+2 redundancy.

HPE 2200W Platinum Hot Plug Power Supply FIO Kit	P01062-B22
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 RDNT 2m,16A, C19-C20 JMPR CORD	AF574A
HPE RDNT 1.2m 16A C19-C20 JMPR CORD	AF575A
HPE 3.6m 16A C19 EU PWR CORD	AF576A
HPE 3.6m 16A C19 AU/NZ PWR CORD	AF577A
HPE 3.6m 16A C19 ZA PWR CORD	AF579A
HPE 3.6m 16A C19 IT/CL PWR CORD	AF580A
HPE 3.6m 16A C19 IEC309 Pwr Cord	AF581A
HPE 2.5m 16A C19 IN PWR CORD	AF582A
HPE 2.5m 16A C19 IL PWR CORD	AF583A
HPE 2.5m 16A C19 CN PWR CORD	AF584A
HPE Pwr Crd 3.6m 16A C19 Th-Ph Kit	AF586A
HPE 2.5m 16A C19 NBR14136 Brazil Pwr Crd	AF592A
HPE 3.6m C19 Nema L6-20P NA/JP Pwr Crd	AF593A

Step 7: Choose additional options for Factory Integration from Core and Additional Options sections below
HPE Drives
SSD Selection

To streamline the configuration process for HPE ProLiant Gen10 servers and to provide the best product availability, HPE recommends SSDs from the list located here: **http://www.hpe.com/products/recommend**.

Mixed Use - 6G SATA - SFF - Solid State Drives

HPE 240GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	880295-B21
HPE 480GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	877776-B21
HPE 960GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	877782-B21
HPE 1.92TB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	877788-B21

Configuration Information – Factory Integrated Models

Read Intensive - NVMe - SFF - Solid State Drives

HPE 1TB NVMe x4 Lanes Read Intensive SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	877984-B21
HPE 2TB NVMe x4 Lanes Read Intensive SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	877986-B21

Mixed Use - NVMe - SFF - Solid State Drives

HPE 1.6TB NVMe x4 Lanes Mixed Use SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	877994-B21
HPE 3.2TB NVMe x4 Lanes Mixed Use SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	877998-B21

NOTE: A Premium (826690-B21) drive cage is required to support these drives in conjunction with a HPE XL270d Gen10 NVMe Enablement Kit (P01056-B22.)
NOTE: HPE has qualified the NVMe drive portfolio using the Operating System inbox drivers, full detail on the
HPE Solid State Drive QuickSpecs.

Mixed Use - 6G SATA - M.2 - Solid State Drives

HPE 240GB SATA 6G Mixed Use M.2 2280 3yr Wty Digitally Signed Firmware SSD	875488-B21
HPE 480GB SATA 6G Mixed Use M.2 2280 3yr Wty Digitally Signed Firmware SSD	875490-B21
HPE 960GB SATA 6G Mixed Use M.2 2280 3yr Wty Digitally Signed Firmware SSD	875492-B21

Read Intensive - 6G SATA - M.2 - Solid State Drives

HPE 150GB SATA 6G Read Intensive M.2 2280 3yr Wty Digitally Signed Firmware SSD	875317-B21
HPE 480GB SATA 6G Read Intensive M.2 2280 3yr Wty Digitally Signed Firmware SSD	875319-B21

NOTE: M.2 drives use S100i SATA controller only.
NOTE: M.2 supports Software RAID only.

HPE Networking

10 Gigabit Ethernet adapters

HPE Ethernet 10Gb 2-port 562T Adapter	817738-B21

25 Gigabit Ethernet adapters

HPE Ethernet 10/25Gb 2-port 621SFP28 Adapter	867328-B21
HPE Ethernet 10/25Gb 2-port 640SFP28 Adapter	817753-B21

100 Gigabit Ethernet adapters

HPE Ethernet 100Gb 1-port 842QSFP28 Adapter	874253-B21

NOTE: The 100Gb adapter (874253-B21) will be delayed availability
NOTE: The HPE Apollo 6500 Gen10 ships with 4x 1 Gb Embedded.
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 bepurchased separately. Please see the related NIC QuickSpecs for Technical Specifications and additional information:
http://www.hpe.com/us/en/product-catalog/servers/server-adapters.hits-12.html.

FlexibleLOM adapters

HPE Ethernet 10/25Gb 2-port 622FLR-SFP28 Converged Network Adapter	867334-B21
HPE Ethernet 10/25Gb 2-port 640FLR-SFP28 Adapter	817749-B21
HPE FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter	700751-B21
HPE Ethernet 10Gb 2-port 562FLR-SFP+ Adapter	727054-B21
HPE Ethernet 10Gb 2-port 562SFP+ Adapter	727055-B21

NOTE: The HPE Apollo 6500 Gen10 ships with 4x 1 Gb Embedded.
NOTE: 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.
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.hpe.com/us/en/product-catalog/servers/server-adapters.hits-12.html.

HPE InfiniBand

HPE InfiniBand EDR/Ethernet 100Gb 1-port 840QSFP28 Adapter	825110-B21
HPE InfiniBand EDR/Ethernet 100Gb 2-port 840QSFP28 Adapter	825111-B21
HPE InfiniBand EDR 100Gb 1-port 841QSFP28 Adapter	872725-B21

Configuration Information – Factory Integrated Models

HPE InfiniBand EDR/Ethernet 100Gb 2-port 841QSFP28 Adapter	872726-B21
HPE 100Gb 1-port OP101 QSFP28 x16 PCIe Gen3 with Intel Omni-Path Architecture Adapter	829335-B21

Embedded Management

HPE iLO Advanced

HPE iLO Advanced Electronic License with 1yr Support on iLO Licensed Features	E6U59ABE
HPE iLO Advanced 1-server License with 1yr Support on iLO Licensed Features	512485-B21
HPE iLO Advanced Flexible Quantity License with 1yr Support on iLO Licensed Features	512486-B21
HPE iLO Advanced AKA Tracking License with 1yr Support on iLO Licensed Features	512487-B21
HPE iLO Advanced Electronic License with 3yr Support on iLO Licensed Features	E6U64ABE
HPE iLO Advanced 1-server License with 3yr Support on iLO Licensed Features	BD505A
HPE iLO Advanced Flexible Quantity License with 3yr Support on iLO Licensed Features	BD506A
HPE iLO Advanced AKA Tracking License with 3yr Support on iLO Licensed Features	BD507A

NOTE: Licenses ship without media.

HPE Racks

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

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

NOTE: Please see the **HPE Standard Series Racks QuickSpecs** for information on additional racks options and rack specifications.

HPE Power Distribution Units (PDUs)

NOTE: Please see the **HPE Basic Power Distribution Units (PDU) QuickSpecs** for information on these products and their specifications.

NOTE: Please see the **HPE Metered Power Distribution Units (PDU) QuickSpecs** for information on these products and their specifications.

NOTE: Please see the **HPE Intelligent Power Distribution Unit (PDU) QuickSpecs** for information on these products and their specifications.

NOTE: Please see the **HPE Metered and Switched Power Distribution Units (PDU) QuickSpecs** for information on these products and their specifications.

HPE Uninterruptible Power Systems (UPS)

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

NOTE: Please see the **HPE DirectFlow Three Phase Uninterruptible Power System QuickSpecs** for information on these products and their specifications.

NOTE: Please see the **HPE Line Interactive Single Phase UPS QuickSpecs** for information on these products and their specifications.

HPE Rack Options

NOTE: Please see the **HPE KVM Switches web page** for information on these products and their specifications.

Rail Kits

NOTE: Rail kit contains telescoping rails which allow for in-rack serviceability.
NOTE: hot plug fan functionality requires the use of the Cable Management feature of the rail kit, which will require the use of 1200mm deep racks.
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.

HPE XL270d Gen10 Rail Kit	P02008-B21

NOTE: Server comes standard from our factory with rack kit, this kit is intended for additional bench support/test lab support.

HPE Support Services

Installation & Startup Services

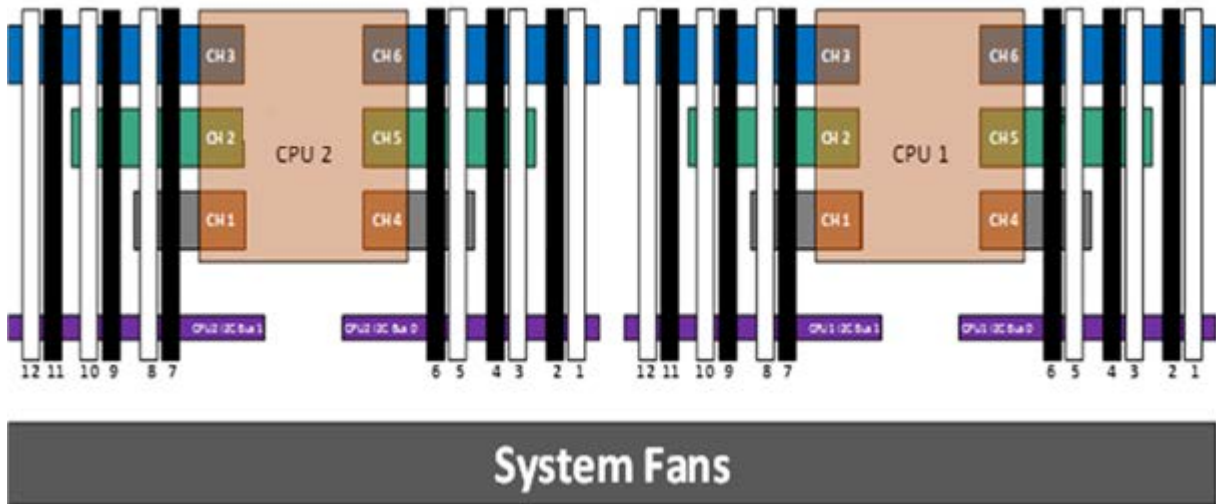## Configuration Information – Factory Integrated Models

HPE Install Apollo 6500 Gen 10 Service	HA113A1#5VW
HPE Installation and Startup Apollo 6500 Gen 10 Service	HA114A1#5VW

Proactive Care

HPE 3 Year Proactive Care 24x7 Apollo 6500 Gen 10 Service	H1K92A3#Y41
HPE 3 Year Proactive Care 24x7 with DMR Apollo 6500 Gen 10 Service	H1K93A3#Y41
HPE 3 Year Proactive Care Call-To-Repair Apollo 6500 Gen 10 Service	H1K94A3#Y41
HPE 3 Year Proactive Care Call-To-Repair 24x7 with DMR Apollo 6500 Gen 10 Service	H1K95A3#Y41

Memory

Memory Population guidelines

General Memory Population Rules and Guidelines:

Install DIMMs only if the corresponding processor is installed.

If only one processor is installed in a two-processor system, only half of the DIMM slots are available.

To maximize performance, it is recommended to balance the total memory capacity between all installed processors.

When two processors are installed, balance the DIMMs across the two processors.

White DIMM slots denote the first slot to be populated in a channel.

Mixing of DIMM types (UDIMM, RDIMM, and LRDIMM) is not supported.

The maximum memory speed is a function of the memory type, memory configuration, and processor model.

The maximum memory capacity is a function of the number of DIMM slots on the platform, the largest DIMM capacity qualified on the platform, the number and model of installed processors qualified on the platform.

For details on the HPE Server Memory Options Population Rules, visit: **http://www.hpe.com/docs/memory-population-rules**

Memory

To realize the performance memory capabilities listed in this document, HPE DDR4 SmartMemory is required. For additional information, please see the **HPE DDR4 SmartMemory QuickSpecs**.

DIMM Type	Register DIMM (RDIMM)	
HPE SKU P/N	835955-B21	815100-B21
SKU Description	HPE 16GB (1x16GB) Dual Rank x8 DDR4-2666 CAS-19-19-19 Registered Smart Memory Kit	HPE 32GB (1x32GB) Dual Rank x4 DDR4-2666 CAS-19-19-19 Registered Smart Memory Kit
DIMM Rank ->	Dual Rank (2R)	Dual Rank (2R)
DIMM Capacity ->	16GB	32GB
Voltage	1.2V	1.2V
DRAM depth [bit]	1G	2G
DRAM Width [bit]	x8	x4
DRAM Density	8Gb	8Gb
CAS Latency	19-19-19	19-19-19
DIMM Native Speed (MT/s)	2666 MT/s	2666 MT/s
Intel Xeon®Platinum/Gold 81xx/61xx Processors Officially Supported Memory Speed (MT/s)		
1 DIMM Per Channel	2666 MT/s	2666 MT/s
2 DIMM Per Channel	2666 MT/s	2666 MT/s
HPE Server Memory Speed (MT/s): Intel Xeon®Platinum/Gold 81xx/61xx Processors *		
1 DIMM Per Channel	2666 MT/s	2666 MT/s
2 DIMM Per Channel	2666 MT/s	2666 MT/s

NOTE: The maximum memory speed is a function of the memory type, memory configuration, and processor model.

For details on the HPE Server Memory speed, visit: **https://www.hpe.com/docs/memory-speed-table**

Memory

DIMM Type	Load Reduced (LRDIMM)	
HPE SKU P/N	815101-B21	815102-B21
SKU Description	HPE 64GB (1x64GB) Quad Rank x4 DDR4-2666 CAS-19-19-19 Load Reduced Smart Memory Kit	HPE 128GB (1x128GB) Octal Rank x4 DDR4-2666 CAS-22-19-19 3DS Load Reduced Memory Kit
DIMM Rank ->	Quad Rank (4R)	Octal Rank (8R)
DIMM Capacity ->	64GB	128GB
Voltage	1.2V	1.2V
DRAM depth [bit]	2G	2G
DRAM Width [bit]	x4	x4
DRAM Density	8Gb	8Gb
CAS Latency	19-19-19	22-19-19
DIMM Native Speed (MT/s)	2666	2666
Intel Xeon® Platinum/Gold 81xx/61xx Processors Officially Supported Memory Speed (MT/s)		
1 DIMM Per Channel	2666 MT/s	2666 MT/s
2 DIMM Per Channel	2666 MT/s	2666 MT/s
HPE Server Memory Speed (MT/s): Intel Xeon® Platinum/Gold 81xx/61xx Processors *		
1 DIMM Per Channel	2666 MT/s	2666 MT/s
2 DIMM Per Channel	2666 MT/s	2666 MT/s
NOTE: The maximum memory speed is a function of the memory type, memory configuration, and processor model. For details on the HPE Server Memory speed, visit: **https://www.hpe.com/docs/memory-speed-table**		

DDR4 memory options part number decoder

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

- 8GB = 8,192 MB
- 16GB = 16,384 MB
- 32GB = 32,768 MB
- 64GB = 65,536 MB

For more information on memory, please see the Memory Quickspecs: **HPE DDR4 SmartMemory**

Option kits- these versions of the products are available for purchase for in field installation or upgrades

HPE XL270d Gen10 NVMe Enablement Kit	P01056-B21
HPE 2200W Platinum Hot Plug Power Supply Kit	P01062-B21
HPE XL270d Gen10 8 SXM2 GPU Module	P01786-B21
HPE XL270d Gen10 8 PCIe GPU Module	P01788-B21
HPE XL270d Gen10 Software RAID S100i Enablement Kit	P02007-B21
HPE XL270d Gen10 Rail Kit	P02008-B21
HPE XL270d Gen10 SXM2 Heat Sink Kit	P02939-B21
HPE XL270d Gen10 PCIe GPU Enablement Kit	P03032-B21
HPE Apollo PCIe/SATA M.2 Riser Kit	863661-B21

Technical Specifications

System Unit			
Dimensions	17.5 x 43.9 x 85.1 cm 6.9 x 17.3 x 33.5 in	4U	
Weight (approximate)	Maximum:	59.0 kg 130.0 lbs	
	Minimum:	25 kg 55 lbs	
Input Requirements (per power supply)	Rated Line Voltage	200 to 240 VAC	
Power Supply Output (per power supply)	Rated Steady-State Power	For 2200W Power Supply: 2200W (at 230VAC / 240VDC)	
BTU Rating	Maximum	For 2200W Power Supply: 7507 BTU/hr (at 200VAC – 240VAC)	
System Inlet Temperature	Standard Operating Temperature	10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 305 m (1.8°F per every 1000 ft) above sea level to a maximum of 3050 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 20°C/hr (36°F/hr). The upper limit and rate of change may be limited by the type and number of options installed. System performance during standard operating support may be reduced if operating with a fan fault or above 30°C (86°F).	
	Extended Ambient Operating Temperature	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.hpe.com/servers/ashrae** For approved hardware configurations, the supported system inlet range is extended to be: 40° to 45°C (104° to 113°F) at sea level with an altitude derating of 1.0°C per every 125 m (1.8°F per every 410 ft) above 900 m (2953 ft) to a maximum of 3050 m (10,000 ft). The approved hardware configurations for this system are listed at the URL: **http://www.hpe.com/servers/ashrae** System performance may be reduced if operating in the extended ambient operating range or with a fan fault.	
	Non-operating	-30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).	
Relative Humidity	Operating	8% to 90% - Relative humidity (Rh), 28°C maximum wet bulb temperature, non-condensing.	
(non-condensing)	Non-operating	5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing..	
Altitude	Operating	3050 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).	

Technical Specifications

Emissions Classification (EMC) – Regulatory Information
To view the regulatory information for your product, view the Safety and Compliance Information for Server, Storage, Power, Networking, and Rack Products, available at the Hewlett Packard Enterprise Support Center:
http://www.hpe.com/support/Safety-Compliance-EnterpriseProducts

Environment-friendly Products and Approach - End-of-life Management and Recycling
Hewlett Packard Enterprise offers **end-of-life product return, trade-in, and recycling programs**, in many geographic areas, for our products. Products returned to Hewlett Packard Enterprise will be recycled, recovered or disposed of in a responsible manner.

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

Summary of Changes

Date	Version History	Action	Description of Change
4-Jun-2018	Version 3	Changed	Update several sections troughout the document
07-May-2018	Version 2	Updated	Update several sections throughout the document
02-Apr-2018	Version 1	New	New QuickSpecs

Sign up for updates

Hewlett Packard Enterprise