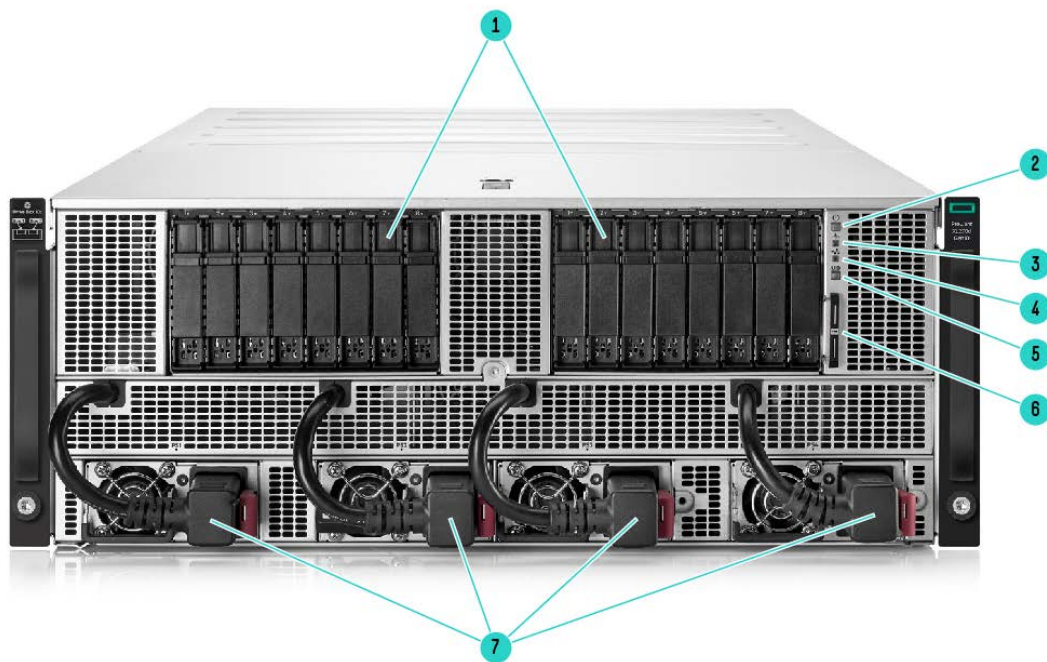


Overview

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.

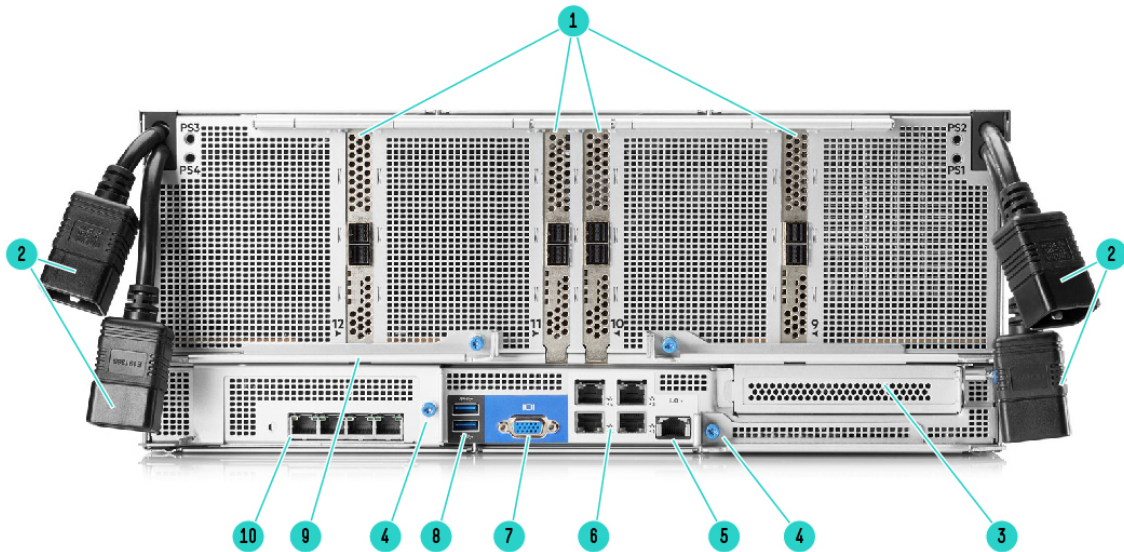
Eight GPU per server for faster and more economical deep learning system training compared to more servers with fewer GPU each. Keep your researchers productive as they iterate on a model more rapidly for a better solution, in less time. Now available with NVLink 2.0 to connect GPUs at up to 300 GB/s 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

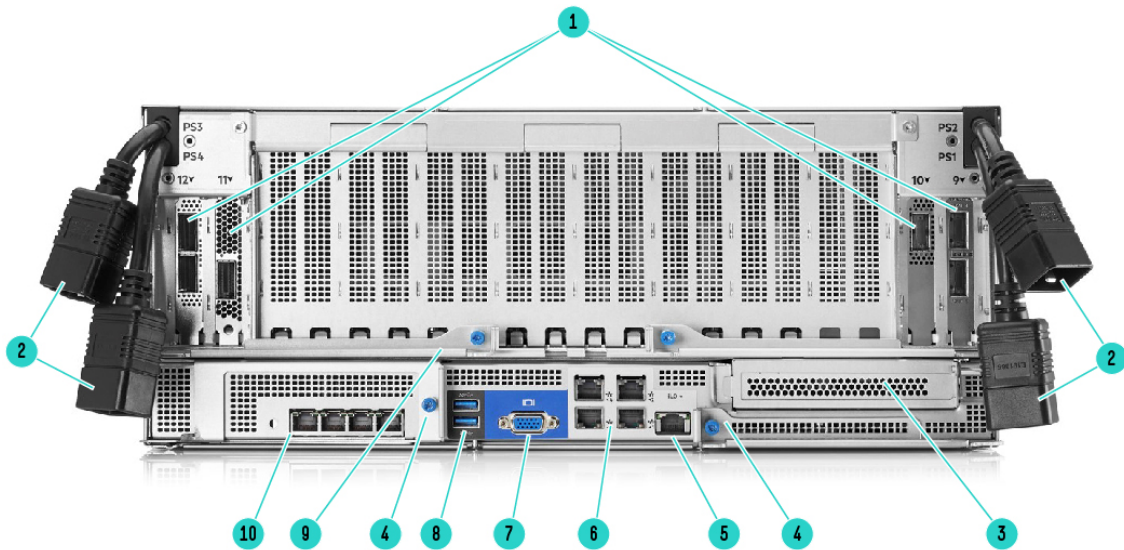
1. Drive Bay (2 optional 6SFF+2NVMe cages shown)
2. Power On/Standby button and system power LED button
3. Health LED
4. NIC status
5. UID button Drive
6. Serial label pull tag
7. 4 HPE 2200W Platinum Hot Plug Power Supply (2 standard)

Overview



Rear View – with HPE XL270d Gen10 8 SXM2 GPU Module

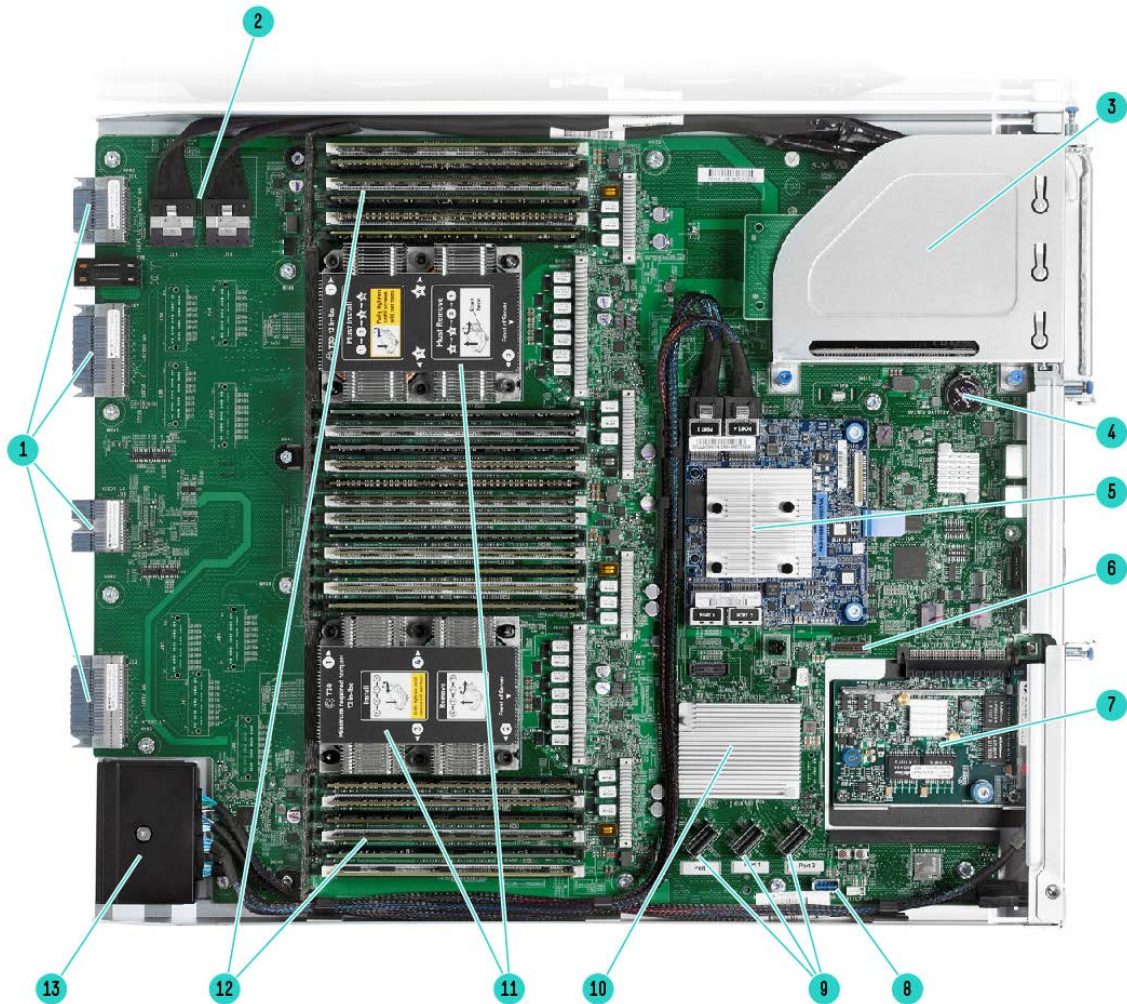
- | | |
|--|--|
| 1. Four Full Height Half Length PCIe Gen3 (shown with optional adapters) | 6. Embedded 4 x 1GbE Network Adapter |
| 2. Pass through power cords | 7. VGA connector |
| 3. Full Height Half Length PCIe Gen3 | 8. USB connectors 3.0 (2) |
| 4. System board module latches | 9. GPU Module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



Rear View – with HPE XL270d Gen10 8 PCIe GPU Module

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

Overview



System Board Module view – with optional 2nd CPU, FlexLOM, Smart Array¹ shown

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

NOTE¹ 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>

Standard Features

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
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

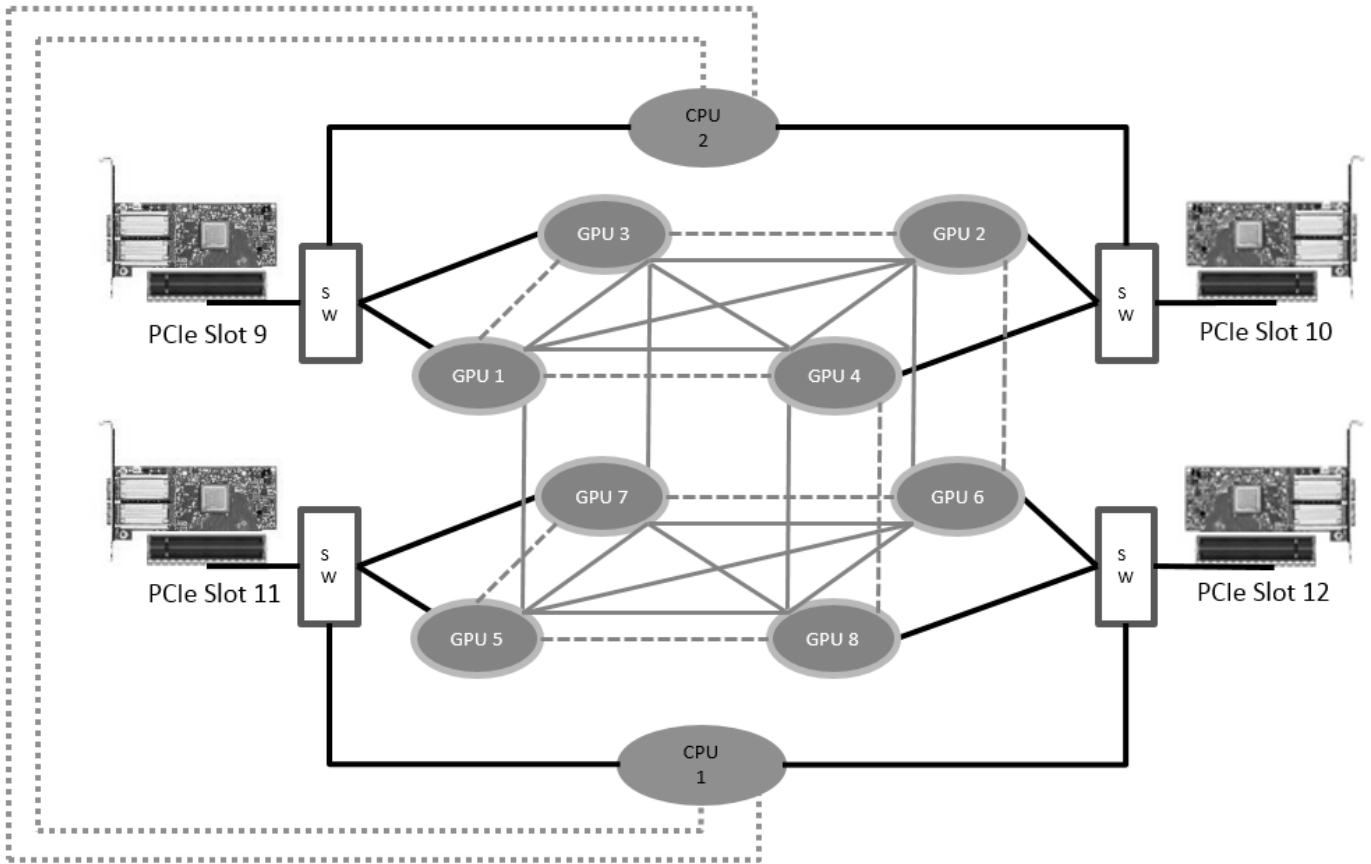
Slots #	Technology	Bus Width	Connector Width	Slot Form Factor	Notes
11	PCIe 3.0	X16	X16	Low Profile slot	Dependent on topology selected in BIOS. See User and Administrator Guide for full details
12	PCIe 3.0	X16	X16	Low Profile slot	
9	PCIe 3.0	X16	X16	Low Profile slot	
10	PCIe 3.0	X16	X16	Low Profile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

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

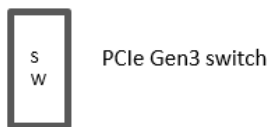
Standard Features

GPU Topologies

NVLink Hybrid Cube Mesh



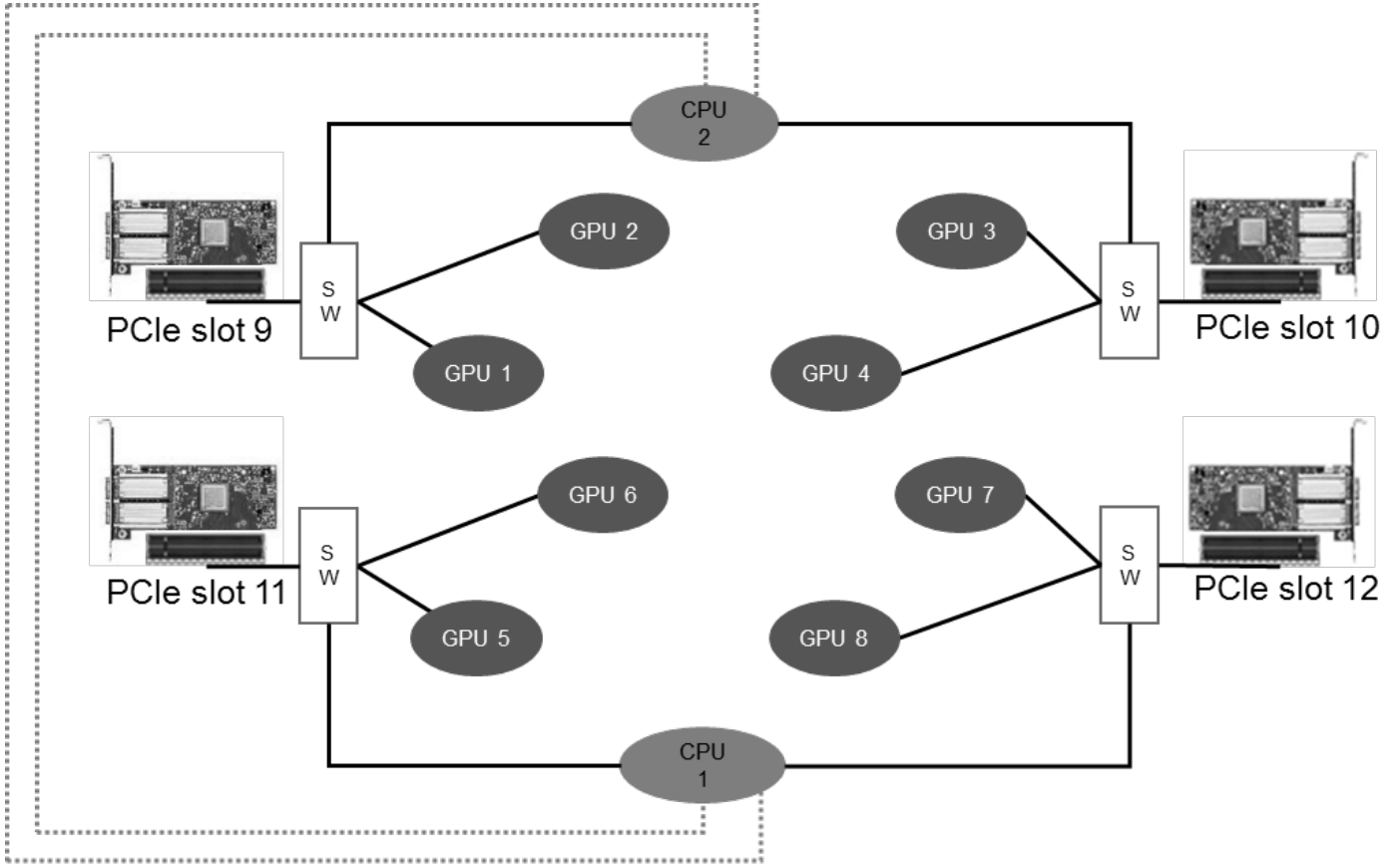
- Intel UPI (up to two, CPU dependent)
- PCIe Gen3 x16
- NVLINK (Pascal and Volta) up to 25GBps
- - - - NVLINK for Volta @ 25GB/s



Standard Features

GPU Topologies

PCIe 4:1 (up to 4 GPU per CPU PCIe root complex)



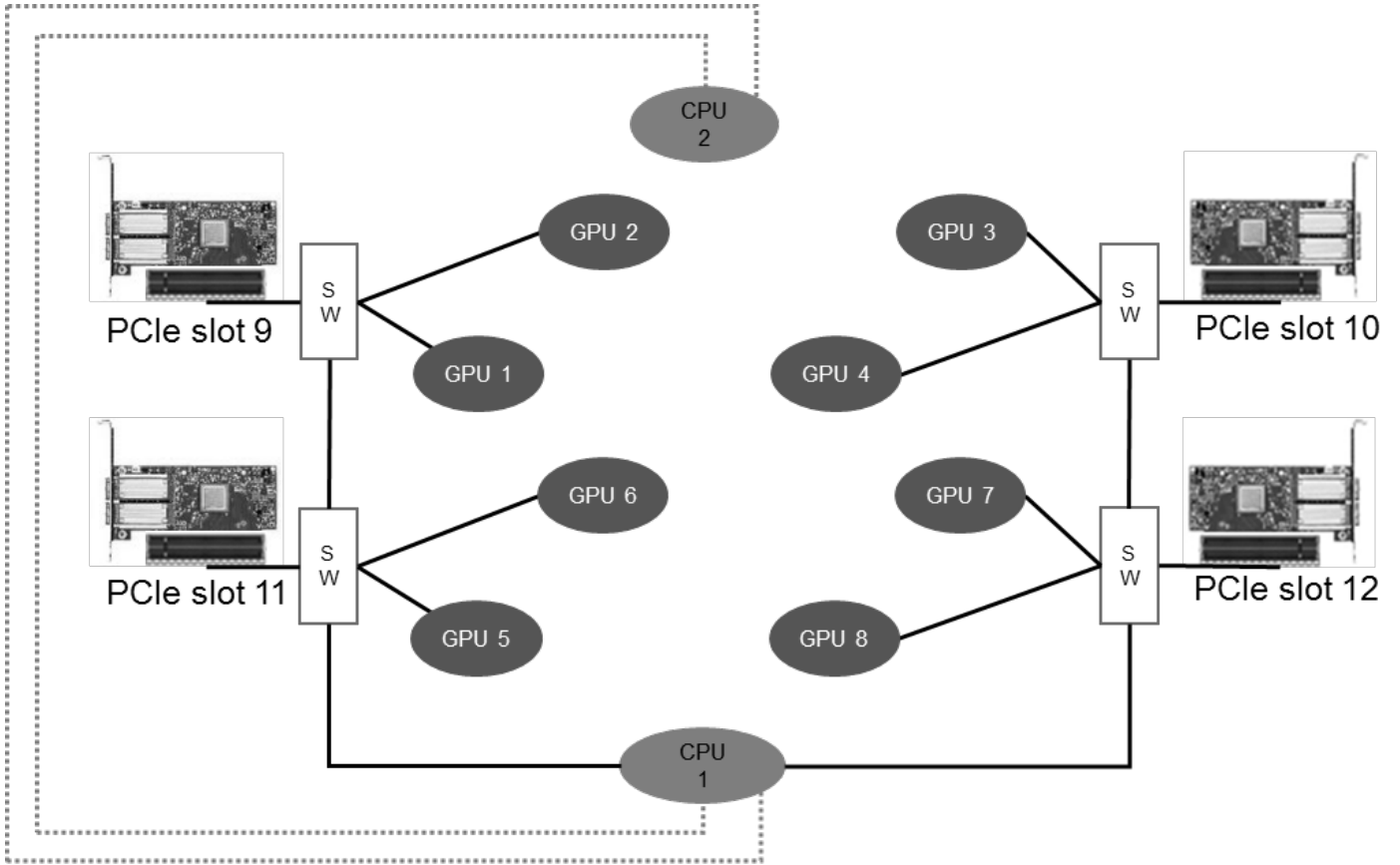
..... Intel UPI (up to two, CPU dependent)

———— 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

Standard Features

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

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 Encryption 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
-

Standard Features

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.
- 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 iLO management portfolio that provides continuous, proactive health monitoring of HPE servers. Learn more at:

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

Standard Features

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. Learn more at <http://www.hpe.com/servers/ahsv>

Smart Update

Keep your servers up to date with HPE's Smart Update solution by using Smart Update Manager (SUM) to optimize the firmware and driver updates of the Service Pack for ProLiant (SPP) <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.

<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. <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. <http://www.hpe.com/info/resttool>

Scripting tools

Provision 1 to many servers using your own scripts to discover and deploy with Scripting Toolkit (STK) for Windows and Linux or Scripting Tools for Windows PowerShell. <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. www.hpe.com/info/hpesim

Server Management

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

HPE Insight Cluster Management Utility (CMU)

HPE Insight Cluster Management Utility (CMU) is an integrated, easy-to-use tool for provisioning, managing, and monitoring Linux® clusters of any scale. The utility's scale-out architecture supports clusters ranging from two to thousands of nodes.

<http://www.hpe.com/info/cmu>

Standard Features

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 your 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 24x7 monitoring, pre-failure alerts, automatic call logging, and automatic parts dispatch. HPE Proactive Care Service and HPE Datacenter Care Service customers will also benefit from proactive activities to help prevent issues and increase optimization. All of these benefits are already available to you with your server storage and networking products, securely connected to 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.

Service and Support

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.

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.

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>

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>

Service and Support

HPE Education Services

Keep your IT staff trained making sure they have the right skills to deliver on your business outcomes. Book on a class today and learn how to get the most from your technology investment. <http://www.hpe.com/ww/learn>

HPE Support Center

The HPE Support Center is a personalized online support portal with access to information, tools and experts to support HPE business products. Submit support cases online, chat with Hewlett Packard Enterprise experts, access support resources or collaborate with peers. Learn more at <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 personalize 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.

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

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

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

HPE Recommended Options have the best performance, value and availability.

Recommended Options have been selected by Hewlett Packard Enterprise experts to provide the right technology for a range of workloads and market segments. Fully integrated into the ProLiant management and security experience, Recommended Options provide the best fit with timely availability. **[View the list for your region.](#)**

Extended Options provide an extended catalog of products tailored for customers in specific markets or with specific workloads, requiring the utmost in performance or value. Fully integrated into the ProLiant management and security experience, Extended Options represent great value and performance but typically have a longer lead-time.

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 (Recommended)	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

PCIe GPU support- Recommended

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

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

HPE NVIDIA Tesla P100 PCIe 16GB Computational Accelerator (Recommended)	Q0E21A
HPE NVIDIA Tesla P40 24GB Computational Accelerator (Recommended)	Q0V80A
HPE NVIDIA Tesla V100 PCIe 16GB Computational Accelerator (Recommended)	Q2N68A
HPE NVIDIA Tesla V100 PCIe 32GB Computational Accelerator (Recommended)	Q9U36A
HPE AMD Radeon Instinct MI25 Graphics Accelerator (Recommended)	Q1K38A

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 (Recommended)	P03826-B21
HPE 8:1 GPU:CPU Topology Setting FIO Kit (Recommended)	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 (Recommended)	782400-B21
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Configuration Information – Factory Integrated Models

HPE ProLiant SL6500 High Performance Computing GPU Mode FIO Kit (Recommended) 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

SXM2 Recommended

HPE XL270d Gen10 8 SXM2 GPU FIO Module (Recommended) P01786-B22

HPE XL270d Gen10 SXM2 Heat Sink FIO Kit (Recommended) 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 (Recommended) Q0C71A

HPE NVIDIA Tesla V100 SXM2 16GB Computational Accelerator (Recommended) Q2N66A

HPE NVIDIA Tesla V100 SXM2 32GB Computational Accelerator (Recommended) Q9U37A

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

Step 3: Choose Processors

Intel-Platinum Processors - Recommended

HPE XL270d Gen10 Intel Xeon-Platinum 8176 (2.1GHz/28-core/165W) Processor Kit (Recommended) P01276-B21

HPE XL270d Gen10 Intel Xeon-Platinum 8176 (2.1GHz/28-core/165W) FIO Processor Kit (Recommended) P01276-L21

Intel-Gold Processors - Recommended

HPE XL270d Gen10 Intel Xeon-Gold 6152 (2.1GHz/22-core/140W) Processor Kit (Recommended) P01277-B21

HPE XL270d Gen10 Intel Xeon-Gold 6152 (2.1GHz/22-core/140W) FIO Processor Kit (Recommended) P01277-L21

HPE XL270d Gen10 Intel Xeon-Gold 6150 (2.7GHz/18-core/165W) Processor Kit (Recommended) P01278-B21

HPE XL270d Gen10 Intel Xeon-Gold 6150 (2.7GHz/18-core/165W) FIO Processor Kit (Recommended) P01278-L21

HPE XL270d Gen10 Intel Xeon-Gold 6148 (2.4GHz/20-core/150W) Processor Kit (Recommended) P01279-B21

HPE XL270d Gen10 Intel Xeon-Gold 6148 (2.4GHz/20-core/150W) FIO Processor Kit (Recommended) P01279-L21

HPE XL270d Gen10 Intel Xeon-Gold 6142 (2.6GHz/16-core/150W) Processor Kit (Recommended) P01280-B21

HPE XL270d Gen10 Intel Xeon-Gold 6142 (2.6GHz/16-core/150W) FIO Processor Kit (Recommended) P01280-L21

HPE XL270d Gen10 Intel Xeon-Gold 6140 (2.3GHz/18-core/150W) Processor Kit (Recommended) P01281-B21

HPE XL270d Gen10 Intel Xeon-Gold 6140 (2.3GHz/18-core/150W) FIO Processor Kit (Recommended) P01281-L21

HPE XL270d Gen10 Intel Xeon-Gold 6136 (3.0GHz/12-core/150W) Processor Kit (Recommended) P01282-B21

HPE XL270d Gen10 Intel Xeon-Gold 6136 (3.0GHz/12-core/150W) FIO Processor Kit (Recommended) P01282-L21

HPE XL270d Gen10 Intel Xeon-Gold 6126 (2.6GHz/12-core/120W) Processor Kit (Recommended) P01284-B21

HPE XL270d Gen10 Intel Xeon-Gold 6126 (2.6GHz/12-core/120W) FIO Processor Kit (Recommended) P01284-L21

Intel-Gold Processors - Extended

HPE XL270d Gen10 Intel Xeon-Gold 6134 (3.2GHz/8-core/130W) Processor Kit (Extended) P01283-B21

HPE XL270d Gen10 Intel Xeon-Gold 6134 (3.2GHz/8-core/130W) FIO Processor Kit (Extended) P01283-L21

HPE XL270d Gen10 Intel Xeon-Gold 6140M (2.3GHz/18-core/140W) Processor Kit (Extended) P02019-B21

HPE XL270d Gen10 Intel Xeon-Gold 6140M (2.3GHz/18-core/140W) FIO Processor Kit (Extended) P02019-L21

HPE XL270d Gen10 Intel Xeon-Gold 6142M (2.6GHz/16-core/150W) Processor Kit (Extended) P02020-B21

HPE XL270d Gen10 Intel Xeon-Gold 6142M (2.6GHz/16-core/150W) FIO Processor Kit (Extended) P02020-L21

Configuration Information – Factory Integrated Models

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.

Memory - Recommended

HPE 16GB (1x16GB) Dual Rank x8 DDR4-2666 CAS-19-19-19 Registered Smart Memory Kit (Recommended)	835955-B21
HPE 32GB (1x32GB) Dual Rank x4 DDR4-2666 CAS-19-19-19 Registered Smart Memory Kit (Recommended)	815100-B21
HPE 64GB (1x64GB) Quad Rank x4 DDR4-2666 CAS-19-19-19 Load Reduced Smart Memory Kit (Recommended)	815101-B21
HPE 128GB (1x128GB) Octal Rank x4 DDR4-2666 CAS-22-19-19 3DS Load Reduced Memory Kit (Recommended)	815102-B21

Step 5: Choose Storage Options Drive Bay

Drive Bay - Recommended

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

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

HPE XL270d Gen10 Hardware RAID Smart Array FIO Enablement Kit (Recommended)	P01836-B22
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HPE DL38X Gen10 Premium 6 SFF SAS/SATA + 2 NVMe or 8 SFF SAS/SATA Bay Kit (Recommended) (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>.

Configuration Information – Factory Integrated Models

HPE Smart Storage Battery - Recommended

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

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

HPE XL270d Gen10 Software RAID S100i FIO Enablement Kit (Recommended) 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/lr/b/>

HPE Apollo PCIe/SATA M.2 FIO Riser Kit (Recommended) 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 -Recommended

HPE XL270d Gen10 NVMe FIO Enablement Kit (Recommended) P01056-B22

HPE DL38X Gen10 Premium 6 SFF SAS/SATA + 2 NVMe or 8 SFF SAS/SATA Bay Kit (Recommended) (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.

HPE Special Enablement Kits 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.

Power Supplies and power options - Recommended

HPE 2200W Platinum Hot Plug Power Supply FIO Kit (Recommended) P01062-B22

HPE C19 - Nema L6-20P NA/JP 250V 20Amp High Voltage 3.6m Power Cord (Recommended) AF593A

HPE C19 - C20 WW 250V 16Amp Flint Gray 2.0m Jumper Cord (Recommended) AF574A

HPE C19 - C20 WW 250V 16Amp Flint Gray 1.20m Jumper Cord (Recommended) AF575A

HPE C19 - C20 WW 250V 16Amp 2m Black Locking Power Cord (Recommended) Q0P72A

HPE C19 - C20 WW 250V 16Amp 1.2m Black Locking Power Cord (Recommended) Q0P71A

HPE C19 - C20 WW 250V 16Amp 2.5m Black Locking Power Cord (Recommended) Q0P73A

HPE C19 - C20 WW 250V 16Amp 0.7m 6-pack Black Locking Power Cord (Recommended) Q0R15A

HPE C19 - C20 WW 250V 16Amp 1.2m 6-pack Black Locking Power Cord (Recommended) Q0R16A

HPE C19 - C20 WW 250V 16Amp 2m 6-pack Black Locking Power Cord (Recommended) Q0R17A

HPE C19 - C20 WW 250V 16Amp 2.5m 6-pack Black Locking Power Cord (Recommended) Q0R18A

HPE C19 - C20 WW 250V 16Amp 0.7m Black Locking Power Cord (Recommended) Q0R19A

Configuration Information – Factory Integrated Models

Power Supplies and power options - Extended

HPE 2.0m 250V 16A C19-C20 WW Single IPD Enabled Jumper Cord (Extended)	TK738A
HPE C19 - CEE-VII EU 250V 16Amp 3.6m Power Cord (Extended)	AF576A
HPE C19 - CEI-23-50 IT/CL 250V 16Amp 3.6m Power Cord (Extended)	AF580A
HPE C19 - GB-1002 CN 250V 16Amp 2.5m Power Cord (Extended)	AF584A

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

Core Options

HPE Recommended Options have the best performance, value and availability.

Recommended Options have been selected by Hewlett Packard Enterprise experts to provide the right technology for a range of workloads and market segments. Fully integrated into the ProLiant management and security experience, Recommended Options provide the best fit with timely availability. [View the list for your region.](#)

Extended Options provide an extended catalog of products tailored for customers in specific markets or with specific workloads, requiring the utmost in performance or value. Fully integrated into the ProLiant management and security experience, Extended Options represent great value and performance but typically have a longer lead-time.

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 - Extended

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

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

HPE 480GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD (Recommended)	875470-B21
HPE 960GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD (Recommended)	875474-B21
HPE 1.92TB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD (Recommended)	875478-B21

Read Intensive - NVMe - SFF - Solid State Drives - Extended

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

Mixed Use - NVMe - SFF - Solid State Drives - Extended

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

HPE 240GB SATA 6G Mixed Use M.2 2280 3yr Wty Digitally Signed Firmware SSD (Recommended)	875488-B21
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Mixed Use - 6G SATA - M.2 - Solid State Drives - Extended

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

NOTE: M.2 drives use S100i SATA controller only.

NOTE: M.2 supports Software RAID only.

Core Options

HPE Networking

10 Gigabit Ethernet adapters - Recommended

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

25 Gigabit Ethernet adapters - Recommended

HPE Ethernet 10/25Gb 2-port 621SFP28 Adapter (Recommended) 867328-B21

HPE Ethernet 10/25Gb 2-port 640SFP28 Adapter (Recommended) 817753-B21

100 Gigabit Ethernet adapters - Recommended

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

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 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>

FlexibleLOM adapters - Recommended

HPE Ethernet 10/25Gb 2-port 622FLR-SFP28 Converged Network Adapter (Recommended) 867334-B21

HPE Ethernet 10/25Gb 2-port 640FLR-SFP28 Adapter (Recommended) 817749-B21

HPE FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter (Recommended) 700751-B21

HPE Ethernet 10Gb 2-port 562FLR-SFP+ Adapter (Recommended) 727054-B21

HPE Ethernet 10Gb 2-port 562SFP+ Adapter (Recommended) 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 - Recommended

HPE InfiniBand EDR/Ethernet 100Gb 1-port 840QSFP28 Adapter (Recommended) 825110-B21

HPE InfiniBand EDR/Ethernet 100Gb 2-port 840QSFP28 Adapter (Recommended) 825111-B21

HPE InfiniBand EDR 100Gb 1-port 841QSFP28 Adapter (Recommended) 872725-B21

HPE InfiniBand EDR/Ethernet 100Gb 2-port 841QSFP28 Adapter (Recommended) 872726-B21

HPE 100Gb 1-port OP101 QSFP28 x16 PCIe Gen3 with Intel Omni-Path Architecture Adapter (Recommended) 829335-B21

Additional Options

HPE Recommended Options have the best performance, value and availability.

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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.

Additional Options

HPE Rack Options

NOTE: Please see the [HPE KVM Switches web page](#) for information on these products and their specifications.

Rail Kits - Recommended

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 (Recommended)

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

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

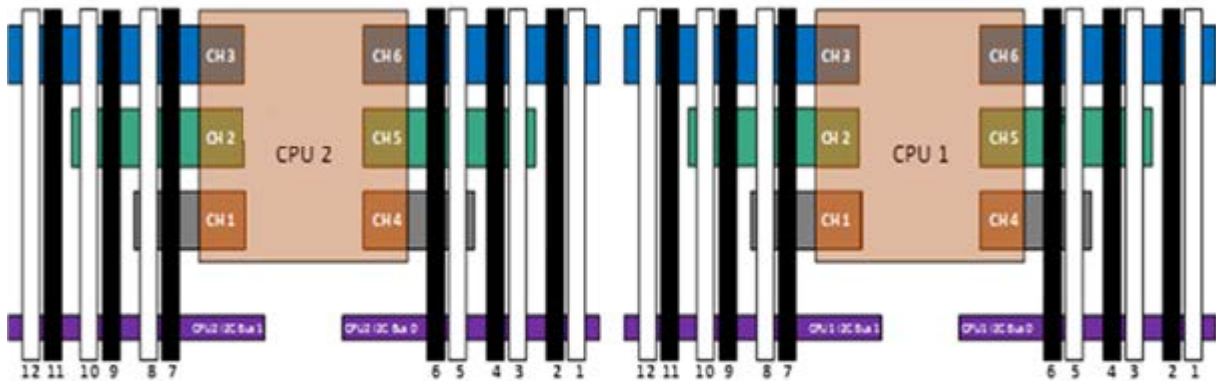
H1K94A3#Y41

HPE 3 Year Proactive Care Call-To-Repair 24x7 with DMR Apollo 6500 Gen 10 Service

H1K95A3#Y41

Memory

Memory Population guidelines



System Fans

HPE ProLiant Gen10 12 slot per CPU DIMM Population Order											
1 DIMM							8				
2 DIMMs							8	10			
3 DIMMs							8	10	12		
4 DIMMs			3		5		8	10			
5 DIMMs *			3		5		8	10	12		
6 DIMMs	1		3		5		8	10	12		
7 DIMMs *	1		3		5		7	8	10	12	
8 DIMMs			3	4	5	6	7	8	9	10	
9 DIMMs *	1		3		5		7	8	9	10	11
10 DIMMs *	1		3	4	5	6	7	8	9	10	12
11 DIMMs *	1		3	4	5	6	7	8	9	10	11
12 DIMMs	1	2	3	4	5	6	7	8	9	10	11

* Unbalanced, not recommended

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>

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](#).

Memory

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 (Recommended)	HPE 32GB (1x32GB) Dual Rank x4 DDR4-2666 CAS-19-19-19 Registered Smart Memory Kit (Recommended)
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		

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

Memory

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

Technical Specifications

System Unit Specifications

Server Dimensions (L x W x D)	6.9 x 17.3 x 33.5 in (17.5 x 43.9 x 85.1 cm) 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 (1,800 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.
	Extended Ambient Operating Temperature	System performance during standard operating support may be reduced if operating with a fan fault or above 30°C (86°F). 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 (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
Relative Humidity (non-condensing)	Non-operating	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 (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
	Operating	System performance may be reduced if operating in the extended ambient operating range or with a fan fault.
Altitude	Non-operating	-30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).
	Operating	8% to 90% - Relative humidity (Rh), 28°C maximum wet bulb temperature, non-condensing.
Altitude	Non-operating	5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing..
	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
06-Aug-2018	Version 4	Changed	SKUs and description were updated
04-Jun-2018	Version 3	Changed	Update several sections throughout the document
07-May-2018	Version 2	Updated	Update several sections throughout the document
02-Apr-2018	Version 1	New	New QuickSpecs



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

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