## Overview

HPE ProLiant DL560 Gen11

The HPE ProLiant DL560 Gen11 Server is a high-density, four-socket (4S) server with high performance, scalability, and reliability, all in a 2U chassis. Supporting the latest 4th generation Intel® Xeon® Scalable processors, the HPE ProLiant DL560 Gen11 Server offers greater processing power, up to 16 TB of DDR5 memory, IO up to six PCIe Gen 5 slots, 2 OCP slots, plus the intelligence and simplicity of automated management with HPE OneView and HPE iLO 6.

The HPE ProLiant DL560 Gen11 Server is the ideal server for business-critical workloads, in-memory database, data analytics, virtualization, server consolidation, business processing, and general 4S data-intensive applications where data center space and the right performance are paramount.
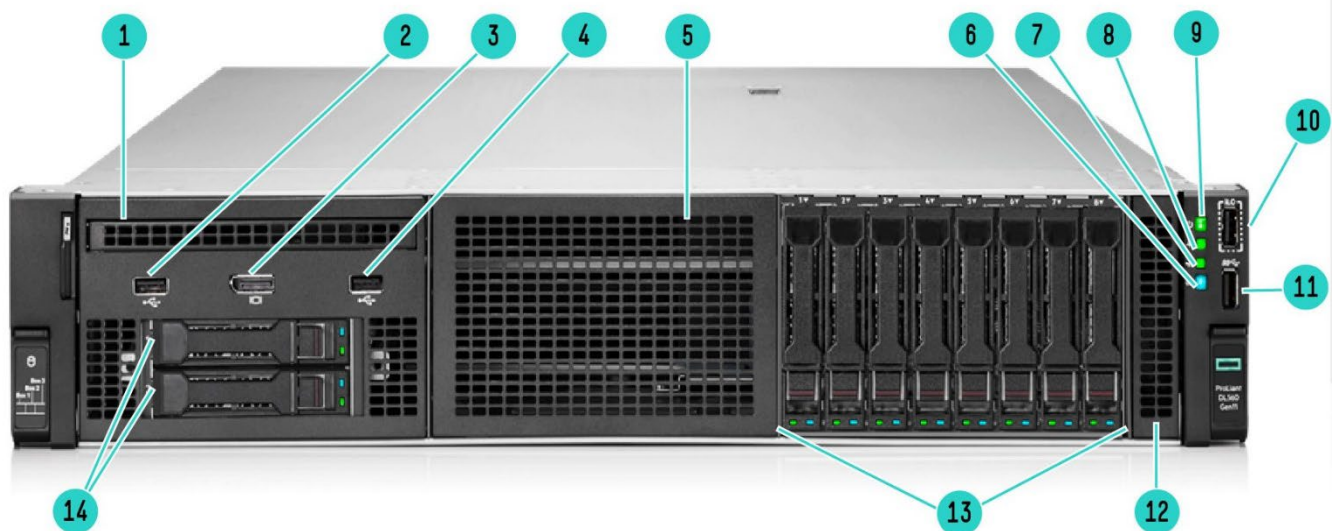
Front View – SFF chassis with optional Universal Media bay shown

1. DVD ROM (Optional) (or Box 1 can switch to 8SFF cage)
2. USB 2.0 port
3. Display port
4. USB 2.0 port
5. 8 SFF HDD/SSD/NVMe
6. UID button LED
7. NIC status LED
8. Health LED
9. Power On/Standby button/LED
10. iLO Service Port
11. USB 3.2 port
12. SID (Optional)
13. 8 SFF HDD/SSD/NVMe
14. 2 SFF HDD/SSD/NVMe

Overview
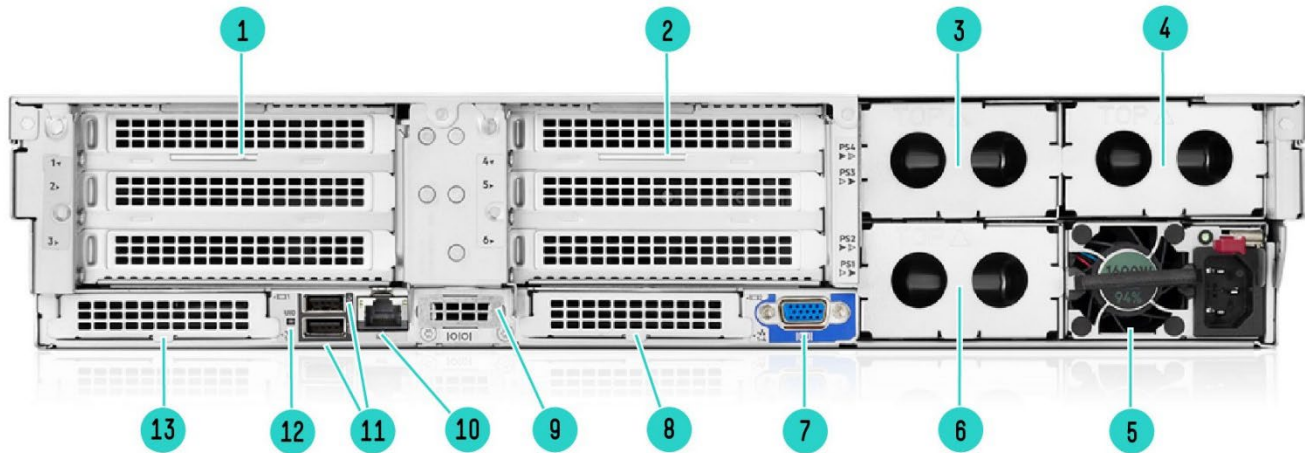
Rear View – Standard for all DL560 Gen11

1.   3 PCIe slots (Primary riser) (Slot 1-3)
2.   3 PCIe slots (Secondary riser) (Slot 4-6)
3.   Power supply 4
4.   Power supply 3
5.   Power supply 1
6.   Power supply 2
7.   Video (VGA) port

8.   OCP 2 (Slot 15)
9.   Serial port (optional)
10.   iLO Management Port
11.   USB 3..2 ports (2)
12.   UID
13.   OCP 1 (Slot 14)

Overview
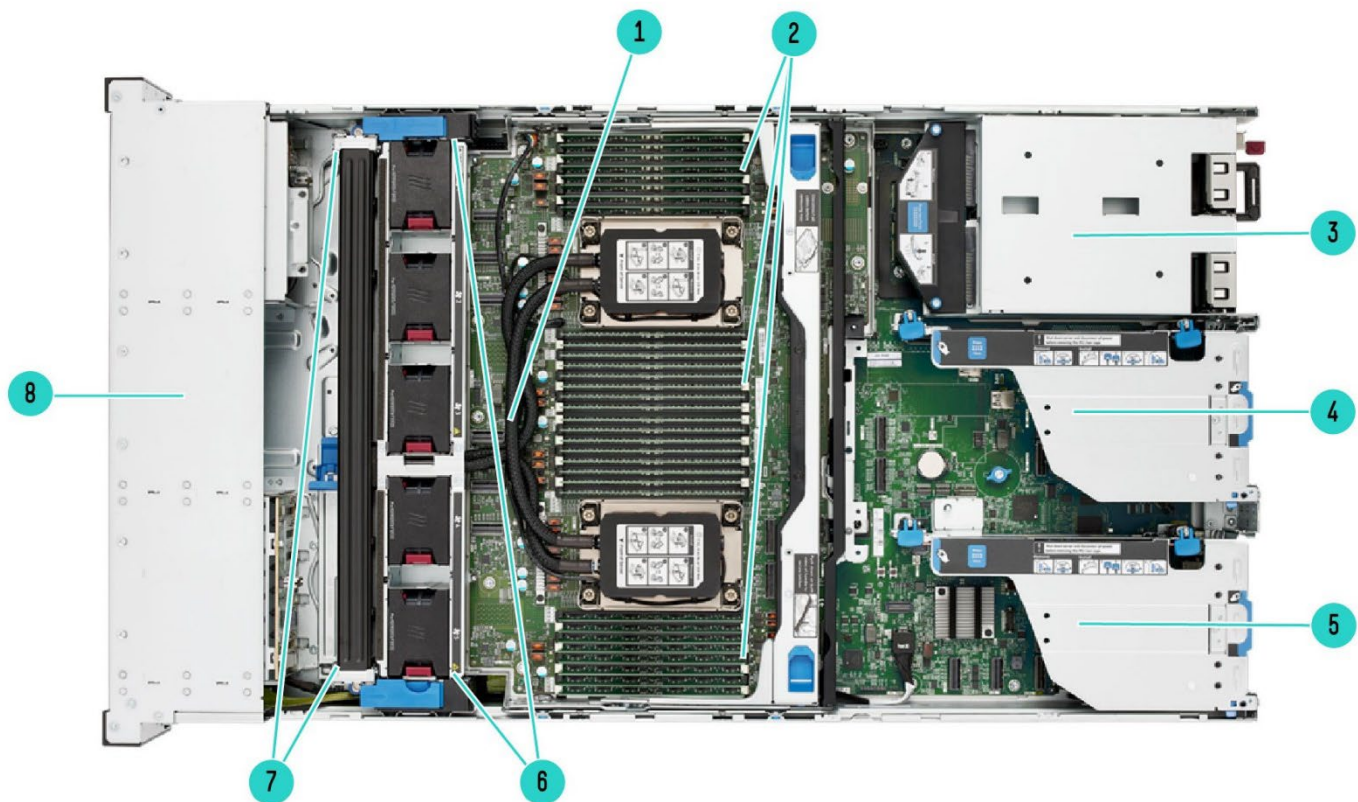
Internal View Liquid Cooling Chassis

1. Liquid cooling tube
2. DDR5 DIMMs
3. Power supplies
4. 3 PCIe slots (Secondary riser)

5. 3 PCIe slots (Primary riser)
6. Redundant Fans
7. Liquid Cooling radiator
8. Drive cages

What's New

- All new DL560 Gen11
- Smart Closed-loop Liquid Cooling system design
- New 4th Generation Intel Scalable Processors
- New PCIe 5.0 support
- New DDR5 Smart Memory – 4800MT/s
- New Storage Controllers
- New NS204i-u Boot Device
- New SSDs and HDDs

Overview

Platform Information

Form Factor
- 2U rack

Chassis Types
- 8SFF (SAS/SATA/NVMe) option up to 24 SFF (SAS/SATA/NVMe) with optional SFF Universal Media Bay.
- EDSFF (direct attach) support, up to 16 (2P) or 24 (4P)

Notes:
- The 8SFF chassis can be upgraded to up to 24SFF (front) with a variety of 8SFF Drive Cages to select from, including
- 8SFF U.3 x1 and x4 SAS/SATA/NVMe or EDSFF (x4 Direct Attach). See "Drive Cages" section within this document for options.
- The Universal Media Bay is only available as an option and can only be populated in Box 1.
- Refer to CPU/Memory/Storage support matrix for validated system configuration

System Fans
- High Performance Fan Kit

Notes:
- On 8SFF Air-cooled CTO server model ships with 6 high performance fan kit.
- On 8SFF Liquid-cooled CTO server model ships with 5 performance fan kit.

Standard Features

Processors – Up to 4 of the following depending on model.
The 2nd digit of the processor model number "x4xx" is used to denote the processor generation (i.e. 4=4th generation Intel Scalable Series Processors)

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

This table covers the public Intel offering only.

Processor Suffix	Description	Offering
H	DB and Analytics	Highest core counts. Database and Analytics usages benefit from DSA and IAA accelerators.
M	Media Transcode	Optimized around AVX frequencies to deliver better performance/watt around Media, AI, and HPC workloads.
N	Network/5G/Edge (High TPT / Low Latency)	Designed for NFV and networking workloads, such as: L3 fwding, 5G UPF, OVS DPDK, VPP FIB router, VPP IPsec, web server/NGINX, vEPC, vBNG, and vCMTS.
S	Storage and HCI	Optimized for Storage UMA use cases with increased UPI Bandwidth for vs Mainline SKUs.
P	Cloud - IAAS	Designed for cloud IaaS environments to deliver higher frequencies at constrained TDPs.
Q	Liquid Cooling	Liquid cooled processors with higher frequency and performance at same TDP.
U	1 Socket Optimized	Optimized for targeted platforms adequately served by the cores, memory bandwidth and IO capacity available from a single processor
V	Cloud - SAAS	Optimized for orchestration efficiency that delivers higher core counts and VMs per rack.
Y	Speed Select	Intel® SST-PP increases base frequency when fewer cores are enabled. Allows greater flexibility, deployment options and platform longevity.

4th Generation Intel® Xeon® Scalable Processor Family (Platinum)							
Intel Xeon Models	CPU Frequency	Cores	L3 Cache (MB)	Power	UPI Links (2P/4P)	DDR5	SGX Enclave size (GB)
Platinum 8490H Processor	1.9GHz	60	112.5	350W	4/3	4800 MT/s	512
Platinum 8468HProcessor	2.1GHz	48	105	330W	4/3	4800 MT/s	512
Platinum 8460H Processor	2.2GHz	40	105	330W	4/3	4800 MT/s	512
Platinum 8450H Processor	2.0GHz	28	75	250W	4/3	4800 MT/s	512
Platinum 8444H Processor	2.9GHz	16	45	270W	4/3	4800 MT/s	512

Standard Features

4ᵗʰ Generation Intel® Xeon® Scalable Processor Family (Gold)							
Intel Xeon Models	**CPU Frequency**	**Cores**	**L3 Cache (MB)**	**Power**	**UPI Links (2P/4P)**	**DDR4**	**SGX Enclave size**
Gold 6448H Processor	2.4GHz	32	60	250W	4/3	4800 MT/s	512
Gold 6434H Processor	3.7GHz	8	22.5	195W	4/3	4800 MT/s	512
Gold 6418H Processor	2.1GHz	24	60	185W	4/3	4800 MT/s	512
Gold 6416H Processor[1]	2.2GHz	18	45	165W	4/3	4800 MT/s	512

Notes:

– 8-Channel DDR5 @ 1DPC 4800 MT/s/ 2DPC 4400 MT/s

– 2 socket capable, 4 UPI @ 16 GT/s.

– 4 socket capable, 3 UPI @ 16 GT/s

Model	HPE Option Kit	Long Name	TDP	Die	Socket	Thermal solution	
						2 Processor SKU	**4 Processor SKU**
6416H	P49620-B21	Intel Xeon-G 6416H 2.2GHz 18-core 165W	165	MCC	4S	AC	AC
6418H	P49621-B21	Intel Xeon-G 6418H 2.1GHz 24-core 185W	185	MCC	4S	AC	AC
6448H	P49622-B21	Intel Xeon-G 6448H 2.4GHz 32-core 250W	250	MCC	4S	AC	AC
6434H	P49623-B21	Intel Xeon-G 6434H 3.7GHz 8-core 195W	195	MCC	4S	AC	LC
8444H	P49625-B21	Intel Xeon-P 8444H 2.9GHz 16-core 270W	270	XCC	4S	AC	LC
8450H	P49626-B21	Intel Xeon-P 8450H 2.0GHz 28-core 250W	250	XCC	4S	AC	AC
8460H	P49628-B21	Intel Xeon-P 8460H 2.2GHz 40-core 330W	330	XCC	4S	AC	LC
8468H	P49629-B21	Intel Xeon-P 8468H 2.1GHz 48-core 330W	330	XCC	4S	AC	LC
8490H	P49630-B21	Intel Xeon-P 8490H 1.9GHz 60-core 350W	350	XCC	4S	AC	LC

Notes:

– AC: Air cooling solution CTO

– LC: Liquid cooling solution CTO

– MCC: Xeon Gold

– XCC: Xeon Platinum

– Air cooling can't be upgraded to Liquid cooling, please choose Liquid cooling CTO at step 1 as needed.

Chipset

Intel C741 Chipset

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

https://www.intel.com/content/www/us/en/products/chipsets/server-chipsets.html

Standard Features

On System Management Chipset
HPE iLO 6 ASIC
Read and learn more in the **iLO QuickSpecs**.

Memory
One of the following depending on model.

Type	HPE DDR5 Smart Memory, Registered (RDIMM)
DIMM Slots Available	64 16 DIMM slots per processor, 8 channels per processor, 2 DIMMs per channel
Maximum capacity	16.0 TB 64 x 256 GB RDIMM @ 4800 MT/s **Notes:** – Total capacity, refer to CPU/Storage/Memory support matrix.

Notes: The maximum memory speed is limited by the processor selection. Total memory capacity support is CPU/Storage/Memory configuration dependent. Please refer to CPU/Storage/Memory support matrix.

Expansion Slots

Notes:
– There are 2 expansion slot riser cards, both can be used as primary or secondary.
– When 1 riser is selected, factory will install in primary slot.
– When 2 risers are selected, factory will install 3x16 riser in primary slot.

Primary/Secondary Riser1 (P54779-B21 HPE ProLiant DL560 Gen11 x8/x16/x8 Riser Kit)					
Slots #	Technology	Bus Width	Connector Width	Slot Form Factor	Notes (primary/second riser)
1	PCIe 5.0	X8	X16	Full-height, 3/4-length slot	Proc 1/2
2	PCIe 5.0	X16	X16	Full-height, 3/4-length slot	Proc 1/2
3	PCIe 5.0	X8	X16	Full-height, 3/4-length slot	Proc 1/2

Primary/Secondary Riser2 (P54780-B21 HPE ProLiant DL560 Gen11 x16/x16/x16 Riser Kit)					
Slots #	Technology	Bus Width	Connector Width	Slot Form Factor	Notes (primary/second riser)
1	PCIe 5.0	X16	X16	Full-height, 3/4-length slot	By cable routing 2P: Proc 1/2 4P: Proc 3/4
2	PCIe 5.0	X16	X16	Full-height, 3/4-length slot	Proc 1/2
3	PCIe 5.0	X16	X16	Full-height, 3/4-length slot	Proc 1/2

Notes:
– When 3x16 riser is selected, cable kit to connect with motherboard (for 2P) or mezzanine card (for 4P) must be selected.
– For DW GPU accelerator cards can only be populated in primary riser (slot 2) and secondary riser (slot 5).
– For GPU installation, must select the enable kit (P54816-B21)
– GPU Supports up to 10.5" length in slot 2and 5.

Standard Features

Graphics

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

Maximum Internal Storage

Drive	Capacity	Configuration
Hot Plug SFF SAS HDD	57.6 TB	24 x 2.4TB
Hot Plug SFF SAS SSD	368.64 TB	24 x15.36TB
Hot Plug SFF SATA HDD	48 TB	24 x 2 TB
Hot Plug SFF SATA SSD	184.32 TB	24 x 7.68 TB
Hot Plug SFF NVMe PCIe SSD	368.64 TB	24 x 15.36TB

Notes: Storage capacity please refer to CPU/Storage/Memory support matrix

Internal Storage Devices
- **Optical Drive**
  Optional: DVD-ROM, DVD-RW

- **Hard Drives**
  None ship standard

Power Supply
- HPE 1800W-2200W Flex Slot Titanium Hot Plug Power Supply Kit
  Notes: available in 96% efficiency.
  Notes: Output capped at 1600W maximum on Gen10 & Gen10 Plus servers, greater than 1600W only feasible on Gen11." Similar to the one currently stated on FlexSlot PSUs
- HPE 1600W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit
  Notes: available in 94% efficiency.
- HPE 1000W Flex Slot Titanium Hot Plug Low Halogen Power Supply Kit
  Notes: available in 96% efficiency.
- HPE 800W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit
  Notes: available in 94% efficiency.
- HPE 1600W FS 48VDC Hot Plug LH Power Supply Kit
  Notes: available in 94% efficiency

HPE Flexible Slot (Flex Slot) Power Supplies share a common electrical and physical design that allows for hot plug, tool-less installation into HPE ProLiant Gen11 Performance Servers. Flex Slot power supplies are certified for high-efficiency operation and offer multiple power output options, allowing users to "right-size" a power supply for specific server configurations. This flexibility helps to reduce power waste, lower overall energy costs, and avoid "trapped" power capacity in the data center.

The standard 6-foot IEC C-13/C-14 jumper cord (A0K02A) is included with each standard AC power supply option kit. If a different power cord is required, please check the **ProLiant Power Cables** web page to review the power requirements for your selected system, please use the **HPE Power Advisor Tool**.

For information on power specifications and technical content visit **HPE Server power supplies**.

European Union Erp Lot 9 Regulation
Beginning on January 1st, 2024, units sold into the European Union (EU), European Economic Area (EEA), the United Kingdom, or Switzerland must include more efficient AC power supplies: 94% for multi-output and 96% for single-output. HPE Flexible Slot power supplies are single-output, and part numbers 865438-B21, P03178-B21, and P44712-B21 are 96% efficient, thus meeting requirements.

Standard Features

HPE is on target to fulfil compliant systems ahead of time and will begin enforcing these requirements in advance to satisfy requests with the current power supplies by the set deadline.

Storage Controllers
The available Gen11 controllers are depicted below.

Essential RAID Controller
- HPE Smart Array E208e-p SR Gen10 Controller

Tri-Mode Controller
- HPE MR216i-p Gen11 Controller
- HPE MR216i-o Gen11 Controller
- HPE MR408i-o Gen11 Controller
- HPE MR416i-p Gen11 Controller
- HPE MR416i-o Gen11 Controller
- HPE SR932i-p Gen11 Controller[1]

Notes:
- PE80xx NVMe drives are not supported.
- [1]Requires x16 physical and electrical riser slot
- Controllers with cache require either HPE 96W Smart Storage Battery 260mm Cable (P01367-B21) or HPE Smart Hybrid Capacitor w/ 260mm Cable (P02381-B21)

Software RAID
- Intel® Virtual RAID on CPU (Intel® VROC) Premium FIO Software for HPE
- Intel® Virtual RAID on CPU (Intel® VROC) Standard Software FIO for HPE

Notes: In HPE ProLiant Gen11 servers, when secure boot is enabled, Intel® Virtual RAID on CPU (Intel® VROC) 8.0 Out-of-Band (OOB) management does not function with Linux kernel version 5.4 (or later). Intel® VROC OOB will not respond to any PLDM (over-MCTP-over-PCIe) requests from iLO (BMC). Intel® VROC Redfish resources will not function (e.g., Redfish actions); therefore, Intel® VROC over Redfish management is not available. This is due to a new security feature in Linux kernel version 5.4 (or later).
For more information, pls visit Customer Advisory Document ID: a00128934en_us, at HPE Support Center.

Interfaces

Serial	Optional, rear
Display Port	1 optional front display port via Universal Media Bay
VGA Port	1 standard, rear for all chassis. 1 Optional front display port (Via Universal Media Bay) **Notes:** Both ports are not active simultaneously.
Network Ports	None standard. Choice of OCP networking card or stand-up networking card required. BTO models will come pre-selected with a primary networking card.
HPE iLO Remote Management Network Port	1 Gb Dedicated, rear
Front iLO Service Port	1 standard (Not available when System Insight Display Kit is ordered)
USB	Up to 7 total: Front 1 USB 3.2 2 optional USB 2.0 via Universal Media Bay; Rear: 2 USB 3.2 Internal 1 USB 32; 1 USB 2.0

Standard Features

Systems Insight Display (SID)	Optional **Notes:** None shipping as standard. Available as a CTO option or as a field upgrade

Operating Systems and Virtualization Software Support for ProLiant Servers

See **HPE Servers Support & Certification Matrices**

- **Microsoft Windows Server**
- **VMware ESXi**
- **Red Hat Enterprise Linux (RHEL)**
- **SUSE Linux Enterprise Server (SLES)**
- **Canonical Ubuntu**
- **Oracle Linux and Oracle VM**
- **Citrix**

HPE Server UEFI

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 Gen11 servers have a UEFI Class 3 implementation to support UEFI Mode.

Notes: 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
- Embedded UEFI Shell
- Operating system specific functionality
- Mass Configuration Deployment Tool using iLO RESTful API that is Redfish API Conformant
- Support for > 2.2 TB (using GPT) boot drives
- PXE boot support for IPv6 networks
- USB 3.2 Stack
- Workload Profiles for simple performance optimization

UEFI Boot Mode only:

- TPM 2.0 Support
- iSCSI Software Initiator Support.
- NVMe Boot Support
- HTTP/HTTPs Boot support as a PXE alternative.
- Platform Trust Technology (PTT) can be enabled.
- Boot support for option cards that only support a UEFI option ROM

Notes: For UEFI Boot Mode, boot environment and OS image installations should be configured properly to support UEFI
Notes: Enabling TPM 2.0 no longer requires TPM module option kit for Gen11 is an embedded feature.

Industry Standard Compliance

- ACPI 6.3 Compliant
- PCIe 5.0 Compliant
- WOL Support
- Microsoft® Logo certifications
- PXE Support
- VGA

Standard Features

- Display Port
  Notes: This support is on the optional Universal Media Bay.
- USB 3.2 Compliant
- USB 2.0 Compliant (vía Universal Media Bay)
  Notes: This support is on the optional Universal Media Bay.
- Energy Star 4.0
- SMBIOS 3.2
- Redfish API
- IPMI 2.0
- Secure Digital 4.0
- TPM 1.20 and 2.0 Support
  Notes: Enabling TPM 2.0 no longer requires TPM module option kit for Gen11 is an embedded feature.
- 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/A4
  Notes: For additional technical, thermal details regarding ambient temperature, humidity, and feature support, please visit **http://www.hpe.com/servers/ashrae**
- EU Lot9
  Notes: Please visit: **https://www.hpe.com/us/en/about/environment/msds-specs-more.html** for more information regarding HPE Lot 9 conformance.
- UEFI (Unified Extensible Firmware Interface Forum) 2.7

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).

Intelligent Provisioning
Hassle free server and OS provisioning for 1 or more servers with Intelligent Provisioning.

Learn more at **https://support.hpe.com/hpesc/public/docDisplay?docId=c04465280&docLocale=en_US**

iLO RESTful API
iLO RESTful API is DMTF Redfish API implementation 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**.

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**.

Standard Features

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).

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. Use with an iLO Advanced License to unlock full capabilities.

Learn more at **http://www.hpe.com/servers/iLOamplifierpack**.

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/powershell**.

HPE OneView Standard
HPE OneView is an on premise, multi-generational server monitoring and management solution. HPE OneView Standard can be used for inventory, health monitoring, alerting, and reporting without additional fees. Customers can upgrade their management experience with an HPE OneView Advanced license all provided by the same tool. Learn more at **http://www.hpe.com/info/oneview**.

HPE GreenLake for Compute Ops Management
HPE is intelligently transforming compute management with an intuitive cloud operating experience through HPE GreenLake cloud platform to streamline and secure operations from edge-to-cloud. Automated key lifecycle tasks, for onboarding, updating, managing, and monitoring HPE servers, brings agility and greater efficiencies to wherever compute devices reside via a unified single browser-based interface. Manage single locations or multiple, distributed sites. Keep tens to thousands of servers secure with batch policy controls and automated updates.

Compute Ops Management is cloud-native software that is continually updated with new services, features, patches, and fixes. The management application resides in the HPE GreenLake cloud platform (access via **https://console.greenlake.hpe.com**) and leverages the HPE GreenLake architecture, security, and unified operations.

A 3-year subscription to HPE GreenLake for Compute Ops Management is added by default when ordering an HPE ProLiant Gen11 rack, tower, or micro server.

For more information, visit the HPE GreenLake for Compute Ops Management QuickSpecs:
https://www.hpe.com/psnow/doc/a50004263enw

Security
- UEFI Secure Boot and Secure Start support
- Tamper-free updates – components digitally signed and verified
- Immutable Silicon Root of Trust
- Ability to rollback firmware
- FIPS 140-2 validation
- Secure erase of NAND/User data
- Common Criteria certification
- TPM (Trusted Platform Module) 1.2 option
- Configurable for PCI DSS compliance
- TPM (Trusted Platform Module) 2.0 option

Standard Features

Notes: Enabling TPM 2.0 no longer requires TPM module option kit for Gen11 is an embedded feature.
- Advanced Encryption Standard (AES) and Triple Data Encryption Standard (3DES) on browser
- Bezel Locking Kit option
- Support for Commercial National Security Algorithms (CNSA)
- Chassis Intrusion detection option
- Secure Recovery – recover critical firmware to known good state on detection of compromised firmware

Warranty

This product is covered by a global limited warranty and supported by HPE Services and a worldwide network of Hewlett Packard Enterprise Authorized Channel Partners resellers. Hardware diagnostic support and repair is available for three years from date of purchase. Support for software and initial setup is available for 90 days from date of purchase. Enhancements to warranty services are available through HPE Services 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.

Notes: 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:
https://www.hpe.com/us/en/search-results.html?page=1&q=servers%20warranty&autocomplete=0

Optional Features

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.

HPE OneView Advanced
HPE OneView Advanced offers a sophisticated level of automation to infrastructure management by taking a template driven approach to provisioning, updating, and integrating compute, storage, and networking infrastructure. It builds upon the base features of HPE OpenView Standard, provides full-featured licenses which can be purchased for managing multiple HPE server generations.
To learn more visit **http://www.hpe.com/info/oneview**.

HPE InfoSight for Servers
HPE InfoSight for Servers combines the cloud-based machine learning of InfoSight with the health and performance monitoring of Active Health System (AHS) and iLO to optimize performance and predict and prevent problems. The end result is an intelligent environment that modernizes IT operations and enhances the support experience by predicting and preventing the infrastructure issues that lead to application disruptions, wasted IT staff time and missed business opportunities.
Learn more at **https://www.hpe.com/servers/infosight**

HPE Insight Cluster Management Utility (CMU)
HPE Insight Cluster Management Utility is a HyperScale management framework that includes software for the centralized provisioning, management and monitoring of nodes and infrastructure. Learn more at **http://www.hpe.com/info/cmu**.

One Config Simple (OCS/SCE)
OCS/SCE is a guided self-service tool to help sales and non-technical people provide customers with initial configurations in 3 to 5 minutes. You may then send the configuration on for configuration help, or use in your existing ordering processes. If you require "custom" rack configuration or configuration for products not available in SCE, please contact Hewlett Packard Enterprise Customer Business Center or an Authorized Partner for assistance.
https://h22174.www2.hpe.com/SimplifiedConfig/Welcome#

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 of 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 Services
No matter where you are in your digital transformation journey, you can count on HPE Services to deliver the expertise you need when, where and how you need it. From planning to deployment, ongoing operations and beyond, our experts can help you realize your digital ambitions.
https://www.hpe.com/services

Consulting Services
No matter where you are in your journey to hybrid cloud, experts can help you map out your next steps. From determining what workloads should live where, to handling governance and compliance, to managing costs, our experts can help you optimize your operations.
https://www.hpe.com/services/consulting

HPE Managed Services
HPE runs your IT operations, providing services that monitor, operate, and optimize your infrastructure and applications, delivered consistently and globally to give you unified control and let you focus on innovation.
HPE Managed Services | HPE

Operational services
Optimize your entire IT environment and drive innovation. Manage day-to-day IT operational tasks while freeing up valuable time and resources. Meet service-level targets and business objectives with features designed to drive better business outcomes.
https://www.hpe.com/services/operational

HPE Complete Care Service
HPE Complete Care Service is a modular, edge-to-cloud IT environment service designed to help optimize your entire IT environment and achieve agreed upon IT outcomes and business goals through a personalized experience. All delivered by an assigned team of HPE Services experts. HPE Complete Care Service provides:
- A complete coverage approach -- edge to cloud
- An assigned HPE team
- Modular and fully personalized engagement
- Enhanced Incident Management experience with priority access
- Digitally enabled and AI driven customer experience

https://www.hpe.com/services/completecare

HPE Tech Care Service
HPE Tech Care Service is the operational support service experience for HPE products. The service goes beyond traditional support by providing access to product specific experts, an AI driven digital experience, and general technical guidance to not only reduce risk but constantly search for ways to do things better. HPE Tech Care Service delivers a customer-centric, AI driven, and digitally enabled customer experience to move your business forward. HPE Tech Care Service is available in three response levels. Basic, which provides 9x5 business hour availability and a 2-hour response time. Essential which provides a 15-minute response time 24x7 for most enterprise level customers, and Critical which includes a 6-hour repair commitment where available and outage management response for severity 1 incidents.
https://www.hpe.com/services/techcare

Service and Support

HPE Lifecycle Services
HPE Lifecycle Services provide a variety of options to help maintain your HPE systems and solutions at all stages of the product lifecycle. A few popular examples include:
- Lifecycle Install and Startup Services: Various levels for physical installation and power on, remote access setup, installation and startup, and enhanced installation services with the operating system.
- HPE Firmware Update Analysis Service: Recommendations for firmware revision levels for selected HPE products, taking into account the relevant revision dependencies within your IT environment.
- HPE Firmware Update Implementation Service: Implementation of firmware updates for selected HPE server, storage, and solution products, taking into account the relevant revision dependencies within your IT environment.
- Implementation assistance services: Highly trained technical service specialists to assist you with a variety of activities, ranging from design, implementation, and platform deployment to consolidation, migration, project management, and onsite technical forums.
- HPE Service Credits: Access to prepaid services for flexibility to choose from a variety of specialized service activities, including assessments, performance maintenance reviews, firmware management, professional services, and operational best practices.

Notes: To review the list of Lifecycle Services available for your product go to:
https://www.hpe.com/services/lifecycle

For a list of the most frequently purchased services using service credits, see the **HPE Service Credits Menu**

Other Related Services from HPE Services:
HPE Education Services
Training and certification designed for IT and business professionals across all industries. Broad catalogue of course offerings to expand skills and proficiencies in topics ranging from cloud and cybersecurity to AI and DevOps. Create learning paths to expand proficiency in a specific subject. Schedule training in a way that works best for your business with flexible continuous learning options.
https://www.hpe.com/services/training

Defective Media Retention
An option available with HPE Complete Care Service and HPE Tech Care Service and applies only to Disk or eligible SSD/Flash Drives replaced by HPE due to malfunction.

Consult your HPE Sales Representative or Authorized Channel Partner of choice for any additional questions and services options.

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.

How to Purchase Services
Services are sold by Hewlett Packard Enterprise and Hewlett Packard Enterprise Authorized Service Partners:
- Services for customers purchasing from HPE or an enterprise reseller are quoted using HPE order configuration tools.
- Customers purchasing from a commercial reseller can find services at **https://ssc.hpe.com/portal/site/ssc/**

Service and Support

AI Powered and Digitally Enabled Support Experience
Achieve faster time to resolution with access to product-specific resources and expertise through a digital and data driven customer experience

Sign into the HPE Support Center experience, featuring streamlined self-serve case creation and management capabilities with inline knowledge recommendations. You will also find personalized task alerts and powerful troubleshooting support through an intelligent virtual agent with seamless transition when needed to a live support agent.
https://support.hpe.com/hpesc/public/home/signin

Consume IT On Your Terms
HPE GreenLake edge-to-cloud platform brings the cloud experience directly to your apps and data wherever they are—the edge, colocations, or your data center. It delivers cloud services for on-premises IT infrastructure specifically tailored to your most demanding workloads. With a pay-per-use, scalable, point-and-click self-service experience that is managed for you, HPE GreenLake edge-to-cloud platform accelerates digital transformation in a distributed, edge-to-cloud world.
- Get faster time to market
- Save on TCO, align costs to business
- Scale quickly, meet unpredictable demand
- Simplify IT operations across your data centers and clouds

To learn more about HPE Services, please contact your Hewlett Packard Enterprise sales representative or Hewlett Packard Enterprise Authorized Channel Partner. Contact information for a representative in your area can be found at "Contact HPE"
https://www.hpe.com/us/en/contact-hpe.html

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

Configuration Information

Smart Templates from HPE

HPE is releasing new Smart Template technology in the One Config Advanced (OCA) configurator. These Templates represent the CTO equivalents of the top-selling BTO configurations. They are intended to provide simple starting points to assist you in easily creating and customizing your desired Server solutions. HPE Servers that have Platform Templates, developed by HPE Product Managers, will have a separate tab in the HPE OCA configurator.

Workload Solutions Templates from HPE

The Workload Solutions Templates build on the Smart Templates technology to easily develop working configurations of the most compelling Workload Solutions. The templates complement the Reference Builds developed by HPE. Workload Solutions templates preconfigure some of the key architecture decisions and make it easier for Sellers to get started and complete a differentiated server solution for your customer's specific workload.

Mainstream SKUs

HPE launched the Mainstream SKU initiative as a market-driven approach to Demand Steering. It is a simplified portfolio of our top selling options that meet the current and future market trends. HPE has committed to provide a more predictable and faster experience for these options. Mainstream SKUs enjoy higher safety stock levels and have higher fulfilment service levels than non-Mainstream SKUs. Mainstream orders are fulfilled +30% faster than non-Mainstream orders, have fewer shortages and better recovery dates. This platform has Mainstream SKUs in the options portfolio, and is eligible for the improved Mainstream experience. Mainstream SKUs are designated with a Mainstream symbol in our configurators.

Mainstream Configurations

HPE is using the new Smart Templates technology to present Mainstream configurations. All the options in a Mainstream configuration are pre-selected Mainstream SKUs to optimize the performance, predictability and fulfilment experience. Check the Template section in our configurators for eligible Mainstream configurations.

Configuration Information

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.
- Factory Integrated Models must start with a CTO Server.
- FIO indicates that this option is only available as a factory installable option.

All Factory Integrated Models will be populated with sufficient hard drive blanks based on the number of initial hard drives ordered with the server.
- Some options may not be integrated at the factory. Contact your local sales representative for additional information

Configuration Information

Step 1: Base Configuration (choose one (1) of the following configurable server models from the tables below)
The below (2) CTO server models, , provide flexibility in the networking choice and require a network adapter from the "HPE Networking" section be selected.

Networking Choice CTO Server Models	HPE ProLiant DL560 Gen11 Air Cooling Configure-to-order Server	HPE ProLiant DL560 Gen11 Liquid Cooling Configure-to-order Server
SKU Number	P55181-B21	P55182-B21
TAA SKU*	P55181-B21#GTA	P55182-B21#GTA
Processor	Not included as standard	Not included as standard
DIMM Slots	64-DIMM slots (16 DIMMs per processor)	64-DIMM slots (16 DIMMs per processor)
Storage Controller	Embedded SW RAID with 8 SATA ports , choice of HPE modular Smart Array and PCIe/OCP plug-in controller.	
PCIe	None riser included	
Drive Cage	None Optional x1/x4 cage	None Optional x1/x4 cage
Network Controller	Choice of either OCP 3.0 or select stand-up network adapters for primary networking selection plus additional/optional stand-up network adapters **Notes:** No embedded networking	
Fans	6-high performance hot plug	5-Performance hot plug
Management	HPE iLO with Intelligent Provisioning (standard), Advanced iLO and OneView (optional)	
USB	3x 3.2 standard plus iLo front service port	3x 3.0 standard plus iLo front service port

Notes:

– Air cooling CTO can't be upgraded to Liquid cooling CTO. Please choose Liquid cooling from step 1.
– For 2P configuration, HPE ProLiant DL560 Gen11 2P FIO Air Baffle Kit (P55550-B21) and HPE ProLiant DL560 Gen11 2P UPI Pass-Through FIO Enablement Kit (P54806-B21 must be selected.
– For 4P liquid cool configuration, HPE ProLiant DL560 Gen11 Liquid Cooling FIO Heat Sink Kit (P54791-B21) must be selected.
– HPE offers multiple Trade Agreement Act (TAA) compliant configurations to meet the needs of US Federal Government customers. These products are either manufactured or substantially transformed in a designated country. TAA compliance is only provided when HPE options are included as part of factory integrated orders (CTO).
– All CTO servers are Energy Star 3.0 or later compliant.
– If need to configure the system without any drives, a x4 cage kit and a Direct attach cable must be selected. This will not require any controller selection.

Configuration Information

Step 2: Choose Required Options
Please select up to four processors required below.
Notes:
- Maximum memory capacity per processor is dependent on processor models and storage configuration.
- Mixing of 2 different processors models are NOT allowed.
- DDR5 speed is the maximum memory speed of the processor. Actual memory speed may depend on the quantity and type of DIMMs installed.

Step 2a: Choose Processors
Processor Option Kits (Required Processor)
4th Generation Intel Xeon-Platinum
Notes: All SKUs below ship with processor only. Adequate heatsinks must be selected.

Intel Xeon-Platinum 8490H 1.9GHz 60-core 350W Processor for HPE   P49630-B21
Notes:
- 4P configuration requires HPE ProLiant DL560 Gen11 Liquid Cooling FIO Heat Sink Kit (P54791-B21) for Liquid-cooling CTO
- 2P configuration requires HPE ProLiant DL380/DL560 Gen11 2U High Performance Heat Sink Kit (P48818-B21) for Air-cooling CTO

Intel Xeon-Platinum 8468H 2.1GHz 48-core 330W Processor for HPE   P49629-B21
Notes:
- 4P configuration requires HPE ProLiant DL560 Gen11 Liquid Cooling FIO Heat Sink Kit (P54791-B21) for Liquid-cooling CTO
- 2P configuration requires HPE ProLiant DL380/DL560 Gen11 2U High Performance Heat Sink Kit (P48818-B21) for Air-cooling CTO

Intel Xeon-Platinum 8460H 2.2GHz 40-core 330W Processor for HPE   P49628-B21
Notes:
- 4P configuration requires HPE ProLiant DL560 Gen11 Liquid Cooling FIO Heat Sink Kit (P54791-B21) for Liquid-cooling CTO
- 2P configuration requires HPE ProLiant DL380/DL560 Gen11 2U High Performance Heat Sink Kit (P48818-B21) for Air-cooling CTO

Intel Xeon-Platinum 8450H 2.0GHz 28-core 250W Processor for HPE   P49626-B21
Notes:
- 4P configuration requires HPE ProLiant DL3XX/560 Gen11 High Performance Heat Sink Kit (P48905-B21 for Air-cooling CTO
- 2P configuration requires HPE ProLiant DL380/DL560 Gen11 2U High Performance Heat Sink Kit (P48818-B21) for Air-cooling CTO

Intel Xeon-Platinum 8444H 2.9GHz 16-core 270W Processor for HPE   P49625-B21
Notes:
- 4P configuration requires HPE ProLiant DL560 Gen11 Liquid Cooling FIO Heat Sink Kit (P54791-B21) for Liquid-cooling CTO
- 2P configuration requires HPE ProLiant DL380/DL560 Gen11 2U High Performance Heat Sink Kit (P48818-B21) for Air-cooling CTO

Configuration Information

4th Generation Intel Xeon-Gold

Intel Xeon-Gold 6448H 2.4GHz 32-core 250W Processor for HPE   P49622-B21

Notes:

– 4P configuration requires HPE ProLiant DL3XX/560 Gen11 High Performance Heat Sink Kit (P48905-B21 for Air-cooling CTO

– 2P configuration requires HPE ProLiant DL380/DL560 Gen11 2U High Performance Heat Sink Kit (P48818-B21) for Air-cooling CTO

Intel Xeon-Gold 6434H 3.7GHz 8-core 195W Processor for HPE   P49623-B21

Notes:

– 4P configuration requires HPE ProLiant DL560 Gen11 Liquid Cooling FIO Heat Sink Kit (P54791-B21) for Liquid-cooling CTO

– 2P configuration requires HPE ProLiant DL380/DL560 Gen11 2U High Performance Heat Sink Kit (P48818-B21) for Air-cooling CTO

Intel Xeon-Gold 6418H 2.1GHz 24-core 185W Processor for HPE   P49621-B21

Notes:

– 4P configuration requires HPE ProLiant DL3XX/560 Gen11 High Performance Heat Sink Kit (P48905-B21 for Air-cooling CTO

– 2P configuration requires HPE ProLiant DL380/DL560 Gen11 2U High Performance Heat Sink Kit (P48818-B21) for Air-cooling CTO

Intel Xeon-Gold 6416H 2.2GHz 18-core 165W Processor for HPE   P49620-B21

Notes:

– 4P configuration requires HPE ProLiant DL3XX/560 Gen11 High Performance Heat Sink Kit (P48905-B21 for Air-cooling CTO

– 2P configuration requires HPE ProLiant DL380/DL560 Gen11 2U High Performance Heat Sink Kit (P48818-B21) for Air-cooling CTO

HPE ProLiant DL560 Gen11 Liquid Cooling FIO Heat Sink Kit   P54791-B21

Notes:

– For 4P Liquid cooling configuration

– The HPE ProLiant DL560 Gen11 Liquid Cooling FIO Heat Sink Kit is subject to a Maximum Usage Limitation of not exceeding five (5) years of operation and is required to be replaced when reaching limitation. Parts and components that Hewlett Packard Enterprise determines have reached or exceeded their Maximum Usage limitations will not be provided, repaired, or replaced under warranty or service contract. Contact your local sales representative for additional information

HPE ProLiant DL380/DL560 Gen11 High Performance 2U Heat Sink Kit   P48818-B21

Notes: For 2P Air cooling configuration

HPE ProLiant DL3XX/560 Gen11 High Performance Heat Sink Kit   P48905-B21

Notes:

– For 4P Air cooling configuration:

– Air cooling can't be upgraded to Liquid cooling, please choose Liquid cooling CTO at step 1 as needed.

Configuration Information

Step 2b: Choose Memory Options

Please select one or more memory from below.

For new Gen11 memory population rule whitepaper and optimal memory performance guidelines, please go to:

HPE Memory Population Rules

For details on the HPE Server Memory Options Population Rules, please go to:

Memory population rules for HPE Gen11 servers with 4th Generation Intel Scalable Processors

Notes:

— HPE Server Memory compatibility for a specific server platform may vary or be limited within a server platform depending upon the specific configuration being requested. Because each server environment and requirements can vary, memory compatibility is based not only upon the server family, but may also be affected by the amount and type of additional hardware options installed within a specific server configuration. For this reason, some HPE memory DIMMs may be qualified for an HPE server model or family and yet occasionally not be supported with some configurations within that server family.

— Memory should be installed in even quantity of DIMMs.

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

— DDR5-4800 Memory Kits are only supported with 4th Generation Intel Xeon Scalable Series Processors.

— Memory compatibility may vary or be limited within a specific server family depending upon the specific configuration being requested. Because each server environment and requirements can vary, memory compatibility is based not only upon the server family, but may also be affected by the amount and type of additional hardware options installed within a specific server configuration. For this reason, some HPE memory DIMMs may be qualified for a server model or family and yet occasionally not be supported with limited configurations within that server family.

— Please consult with the HPE server Quickspecs or your HPE representative if you have any questions regarding memory compatibility with a specific HPE server configuration.

Registered DIMMs DDR5 (RDIMMs)

HPE 16GB (1x16GB) Single Rank x8 DDR5-4800 CAS-40-39-39 EC8 Registered Smart Memory Kit	P43322-B21
HPE 32GB (1x32GB) Dual Rank x8 DDR5-4800 CAS-40-39-39 EC8 Registered Smart Memory Kit	P43328-B21
HPE 64GB (1x64GB) Dual Rank x4 DDR5-4800 CAS-40-39-39 EC8 Registered Smart Memory Kit	P43331-B21
HPE 128GB (1x128GB) Quad Rank x4 DDR5-4800 CAS-46-39-39 EC8 Registered 3DS Smart Memory Kit	P43334-B21
HPE 128GB (1x128GB) Quad Rank x4 DDR5-4800 CAS-46-39-39 EC8 Registered 3DS Smart Memory Kit	P63345-B21
HPE 256GB (1x256GB) Octal Rank x4 DDR5-4800 CAS-46-39-39 EC8 Registered 3DS Smart Memory Kit	P43337-B21

Notes:

— 4800 MT/s memory SKUs offer a transfer rate of 4800 MT/s at 1 DIMM per channel and 4400 MT/s at 2 DIMMs per channel.

— Mixing of 3DS memory and non-3DS memory is not supported.

— Please refer to CPU/Storage/Memory support matrix for memory support capacity

— If 128GB is desired, the 128GB (1x128GB) Quad Rank x4 DDR5-4800 (P63345-B21) must be selected for configuring Liquid Cooling CTO Server

Configuration Information

CPU/Storage/Memory Support Matrix

DIMM Support Matrix

SKU	CPU		HDD configuration				Maximum Support Ambient Temperature		
	CPU TDP	CPU list	Storage configuration	Box 1	Box 2	Box 3	64GB and Lower Capacity DDR5 DIMM	128GB DDR5 DIMM (P43334-B21)	256GB DDR5 DIMM (P43337-B21)
Air cooling 2 processor SKU	Up to 350W	6416H(165W) 6418H(185W) 6448H(250W) 6434H(195W) 8444H(270W) 8450H(250W) 8460H(330W) 8468H(330W) 8490H(350W)	8 SFF	Venting blank	Venting blank	8 SFF	35C	35C	25C
			12 EDSFF	Venting blank	12 EDSFF	Venting blank	35C	35C	
			Media bay + 8 SFF	Media BAY	Venting blank	8 SFF	35C	35C	
			Media bay + 12 EDSFF	Media BAY	12 EDSFF	Venting blank	35C	35C	
			8 SFF x2	8 SFF	Venting blank	8 SFF	35C	30C	
			8 SFF x2 (Direct Attach)	Venting blank	8 SFF	8 SFF	35C	30C	
			12 EDSFF x2	Venting blank	12 EDSFF	12 EDSFF	35C	25C	
			Media bay + 8 SFF x2	Media BAY	8 SFF	8 SFF	35C	30C	
			Media bay + 12 EDSFF x2	Media BAY	12 EDSFF	12 EDSFF	35C	30C	
			8 SFF x3	8 SFF	8 SFF	8 SFF	35C	25C	

Configuration Information

SKU	CPU		HDD configuration				Maximum Support Ambient Temperature		
	CPU TDP	CPU list	Storage configuration	Box 1	Box 2	Box 3	64GB and Lower Capacity DDR5 DIMM	128GB DDR5 DIMM (P43334-B21)	256GB DDR5 DIMM (P43337-B21)
Air cooling 4 processor SKU	Up to 185W	6416H(165W) 6418H(185W)	8 SFF	Venting Blank	8 SFF	Venting Blank	35C	35C	25C
			12 EDSFF	Venting Blank	12 EDSFF	Venting Blank	35C	30C	Not supported
			Media bay + 8 SFF	Media BAY	8 SFF	Venting Blank	35C	30C	Not supported
			Media bay + 12 EDSFF	Media BAY	12 EDSFF	Venting Blank	35C	30C	Not supported
			8 SFF x2	8 SFF	Venting Blank	8 SFF	35C	25C	Not supported
			12 EDSFF x2	Venting Blank	12 EDSFF	12 EDSFF	30C	Not supported	Not supported
			Media bay + 8 SFF x2	Media BAY	8 SFF	8 SFF	35C	Not supported	Not supported
			Media bay + 12 EDSFF x2	Media BAY	12 EDSFF	12 EDSFF	30C	Not supported	Not supported
			8 SFF x3	8 SFF	8 SFF	8 SFF	35C	Not supported	Not supported

Configuration Information

SKU	CPU		HDD configuration				Maximum Support Ambient Temperature		
	CPU TDP	CPU list	Storage configuration	Box 1	Box 2	Box 3	64GB and Lower Capacity DDR5 DIMM	128GB DDR5 DIMM (P43334-B21)	256GB DDR5 DIMM (P43337-B21)
Air cooling 4 processor SKU	Up to 250W	6448H(250W) 8450H(250W)	8 SFF	Venting blank	8 SFF	Venting blank	35C	35C	25C
			12 EDSFF	Venting blank	12 EDSFF	Venting blank	35C	30C	Not supported
			Media bay + 8 SFF	Media BAY	8 SFF	Venting blank	35C	30C	Not supported
			Media bay + 12 EDSFF	Media BAY	12 EDSFF	Venting blank	35C	30C	Not supported
			8 SFF x2	8 SFF	Venting blank	8 SFF	30C	25C	Not supported
			12 EDSFF x2	Venting blank	12 EDSFF	12 EDSFF	30C	Not supported	Not supported
			Media bay + 8 SFF x2	Media BAY	8 SFF	8 SFF	30C	Not supported	Not supported
			Media bay + 12 EDSFF x2	Media BAY	12 EDSFF	12 EDSFF	25C	Not supported	Not supported
			8 SFF x3	8 SFF	8 SFF	8 SFF	Not supported	Not supported	Not supported

Notes: For listed as 'not supported' configuration, please check with Sales representative for special support if needed except 8SFFx3 configuration.

Configuration Information

SKU	CPU		HDD configuration				Maximum Support Ambient Temperature		
	CPU TDP	CPU list	Storage configuration	Box 1	Box 2	Box 3	64GB and Lower Capacity DDR5 DIMM	128GB DDR5 DIMM (P63345-B21)	256GB DDR5 DIMM (P43337-B21)
Liquid cooling 4 processor SKU	Up to 350W	6434H(195W) 8444H(270W) 8460H(330W) 8468H(330W) 8490H(350W)	8 SFF	Venting blank	8 SFF	Venting blank	35C	30C	Contact local Sales Representative
			12 EDSFF	Venting blank	12 EDSFF	Venting blank	30C	30C	
			Media bay + 8 SFF	Media BAY	8 SFF	Venting blank	30C	30C	
			Media bay + 12 EDSFF	Media BAY	12 EDSFF	Venting blank	25C	25C	
			8 SFF x2	8 SFF	Venting blank	8 SFF	25C	25C	
			12 EDSFF x2	Venting blank	12 EDSFF	12 EDSFF	25C	25C	
			Media bay + 8 SFF x2	Media BAY	8 SFF	8 SFF	25C	25C	
			Media bay + 12 EDSFF x2	Media BAY	12 EDSFF	12 EDSFF	Not supported	Not supported	
			8 SFF x3	8 SFF	8 SFF	8 SFF	Not supported	Not supported	

Notes: For Liquid cooling CTO server, if 128GB Memory module is required, the P63345-B21 must be selected.

Configuration Information

Memory Blank Kit

HPE DDR4 DIMM Blank Kit   P07818-B21

Step 2c: Choose Power Supplies
Select two or four power supplies from below.

HPE Flex Slot Power Supplies

HPE 1800W-2200W Flex Slot Titanium Hot Plug Power Supply Kit   P44712-B21
Notes: Output capped at 1600W maximum on Gen10 & Gen10 Plus servers, greater than 1600W only feasible
on Gen11." Similar to the one currently stated on FlexSlot PSUs

HPE 1600W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit   P38997-B21

HPE 1000W Flex Slot Titanium Hot Plug Power Supply Kit   P03178-B21

HPE 800W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit   P38995-B21

HPE 1600W Flex Slot -48VDC Hot Plug Power Supply Kit   P17023-B21

Notes:
- Select a minimum (2), maximum (4) power supplies.
- Support Redundancy 1+1, 2+2, 3+1
- 1600W Power supplies only support high line voltage (200VAC to 240VAC).
- Prior to making a power supply selection it is highly recommended that the HPE Power Advisor is run to determine the right size power supply for your server configuration. The HPE Power Advisor is located at:
  http://www.hpe.com/info/hppoweradvisor.
- All power supplies in a server should match. Mixing Power Supplies is not supported.
- HPE ProLiant servers ship with an IEC-IEC power cord used for rack mounting with Power Distribution Units (PDUs). Visit **HPE power cords** for a full list of optional power cords.
- Beginning on January 1st, 2024, units sold into the European Union (EU), European Economic Area (EEA), the United Kingdom, or Switzerland must include more efficient AC power supplies: 94% for multi-output and 96% for single-output. HPE Flexible Slot power supplies are single-output, and part numbers 865438-B21, P03178-B21, and P44712-B21 are 96% efficient, thus meeting requirements. HPE is on target to fulfil compliant systems ahead of time and will begin enforcing these requirements in advance to satisfy requests with the current power supplies by the set deadline.

Step 3: Choose Additional Factory Integratable Options
One of the following from each list may be selected if desired at time of factory integration

HPE Security Options

HPE iLO Common Password FIO Setting   P08040-B21

Notes:
- Replaces iLO default randomized password by an HPE defined common password. HPE highly recommends changing this password immediately after the initial onboarding process.
- Customers who want to choose their own custom iLO default password should use the HPE Factory Express Integration Services

HPE Bezel Lock Kit   875519-B21

Notes: This option can be selected only if HPE Gen11 2U Bezel Kit (P50400-B21) is selected.

HPE ProLiant DL3XX Gen11 Intrusion Cable Kit   P48922-B21

HPE Gen11 2U Bezel Kit   P50400-B21

Factory Instructions and Server Settings

HPE ProLiant DL560 Gen11 Liquid Cooling FIO Heat Sink Kit   P54791-B21

Notes:
- Required for 4P Liquid cooling configuration

Configuration Information

- The HPE DL560 Gen11 Closed-loop Liquid Cooling Heat Sink kit is designed as Factory Installation only & is not designated as a Customer Self-Repair (CSR) part to prevent damage to CPUs when customer is conducting the field upgrade on the Liquid Cooling modular itself or CPUs.
- The cooling liquid used in the liquid cooling heatsink is a mixture of purified water and ethylene with additional additives for corrosion resistance. The cooling liquid is not corrosive for human body, but to avoid the risk of connection or damages in a longer term, it is recommended to use hand protection in the form of chemically resistant gloves and to wash hands with plenty of water after contact. Be sure to avoid any eye contact. If eye contact occurs accidentally, immediately flush eye with planty of water or seek for medical attention of any discomfort persists.
- There is no leak detection capability, yet the pumps inside of the system are redundant. If a pump or any of the components inside the solution fail, the CPU temperature or internal server temperature may increase leading to a iLO alert message.
- The HPE DL560 Gen11 Closed-loop Liquid Cooling Heat Sink FIO kit is offered with Standard (3/3/3) Warranty support along with the server. Customers are able to purchase extended support for years (4) and (5).
- This Closed-loop Liquid Cooling Solution is subject to a maximum usage (operational) limitation not to exceed (5) years and required to be replaced when this time limit has been reached. Parts and components that Hewlett Packard Enterprise determines have surpassed the standard (3) years warranty* will not be provided, repaired, or replaced under warranty coverage. Contact your local HPE sales representative for additional information.In addition:
- *Or to the extended (4) or (5) years if warranty contract purchased, and subject to the maximum usage (operation) limitation of (5) years. For more details, please refer to the warranty terms for other options available from Hewlett Packard Enterprise.

HPE ProLiant DL560 Gen11 2P FIO Air Baffle Kit	P55550-B21

Notes: Required for 2P Air cooling configuration

HPE ProLiant DL560 Gen11 2P UPI Pass-Through FIO Enablement Kit	P54806-B21
HPE ProLiant DL560 Gen11 2SFF Removal Trigger FIO Direct Attach Cable Kit	P63143-B21

Notes: Required when configure 2SFF to connect with Tri-mode controller

HPE iLO Common Password FIO Setting	P08040-B21

Notes: Sets common iLO password, instead of randomly generated password for each server during Factory Diagnostics.

HPE ProLiant Platform Certificate and IDevID iLO FIO Setting	P42104-B21

Notes:

- Initial Device Identity (IDevID) certificates are part of a Zero Trust Architecture. This SKU intructs factory to provision IdevID on HPE iLO.
- Directs HPE manufacturing site to create, digitally sign and store a platform certificate on the server.
- Requires HPE Trusted Platform Module (TPM).

HPE Converged Infrastructure Management Software

HPE OneView w/o iLO including 3yr 24x7 Support Flexible Quantity E-LTU	P8B26AAE
HPE OneView including 3yr 24x7 Support Flexible Quantity E-LTU	E5Y35AAE

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

Core Options

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

Software as a Service Management

HPE GreenLake for Compute Ops Management

Base SKU
HPE GreenLake for Compute Ops Management Enhanced 3-year Upfront ProLiant SaaS	R7A11AAE

Upgrade SKUS
HPE GreenLake for Compute Ops Management Enhanced 1-year Upfront ProLiant SaaS	R7A10AAE
HPE GreenLake for Compute Ops Management Enhanced 5-year Upfront ProLiant SaaS	R7A12AAE

HPE OneView
HPE OneView including 3yr 24x7 Support Flexible Quantity E-LTU	E5Y35AAE
HPE OneView w/o iLO including 3yr 24x7 Support Flexible Quantity E-LTU	P8B26AAE

Notes: For customers purchasing HPE GreenLake for Compute Ops Management, without a hardware purchase or a BTO purchase, use this base SKU within ASQ order:

HPE GreenLake for Compute Ops Management Base SaaS	R6Z73AAE

For more information, visit the HPE GreenLake for Compute Ops Management QuickSpecs:
https://www.hpe.com/psnow/doc/a50004263enw
Supported Servers – CTO only. No OEM. – Complete list can be found here: Latest Supported Server List:
https://www.hpe.com/info/com-supported-servers

Cage kit Options
HPE ProLiant DL560 Gen11 8SFF x1 Tri-Mode U.3 Drive Cage Kit	P54798-B21
Notes: Mix of x1 cage kit and x4 cage kit is not supported	-
HPE ProLiant DL560 Gen11 8SFF x4 U.3 NVMe Drive Cage Kit	P54799-B21
Notes: Mix of x1 cage kit and x4 cage kit is not supported	
HPE ProLiant DL560 Gen11 2SFF U.3 Drive Cage Kit	P54801-B21
HPE ProLiant DL560 Gen11 12EDSFF Drive Cage Kit	P54802-B21

Notes: Mix of x1, x4Trimode or EDSFF drive cage kit is not supported

Cage Cable kit Options
HPE ProLiant DL560 Gen11 Tri-Mode Box 1/2 Cable Kit	P55320-B21

Notes: 4P system storage configurations start with box 2. Upgradable to box 3 and then box 1.

HPE ProLiant DL560 Gen11 Tri-Mode Box 3 Cable Kit	P59144-B21

Notes: 2P system storage configurations start with Box3, upgradable to box 2 and then box 1.

Direct Attach Cable kit Options

Notes: Mix up with direct attach drives and Trimode storage controller drives is not supported.

HPE ProLiant DL560 Gen11 Air Cooling 8SFF x4 NVMe Box 1 for 4P Direct Attach Cable Kit	P55321-B21
HPE ProLiant DL560 Gen11 Liquid Cooling 8SFF x4 NVMe Box 1 for 4P Direct Attach Cable Kit	P61767-B21
HPE ProLiant DL560 Gen11 Air Cooling 8SFF x4 NVMe Box 2 for 2P Direct Attach Cable Kit	P60005-B21
HPE ProLiant DL560 Gen11 Air Cooling 8SFF x4 NVMe Box 2 for 4P Direct Attach Cable Kit	P55316-B21
HPE ProLiant DL560 Gen11 Liquid Cooling 8SFF x4 NVMe Box 2 for 4P Direct Attach Cable Kit	P61770-B21
HPE ProLiant DL560 Gen11 Air Cooling 8SFF x4 NVMe Box 2 for 4P 24SFF Direct Attach Cable Kit	P58338-B21
HPE ProLiant DL560 Gen11 Air Cooling 8SFF x4 NVMe Box 3 for 2P Direct Attach Cable Kit	P60007-B21
HPE ProLiant DL560 Gen11 Air/Liquid Cooling 8SFF x4 NVMe Box 3 for 4P Direct Attach Cable Kit	P58339-B21
HPE ProLiant DL560 Gen11 Air/Liquid Cooling 8SFF SATA Box 3 SFF Direct Attach Cable Kit	P59141-B21
HPE ProLiant DL560 Gen11 Air Cooling 12EDSFF x4 Box 2 for 4P Direct Attach Cable Kit	P55325-B21

Core Options

HPE ProLiant DL560 Gen11 Liquid Cooling 12EDSFF x4 Box 2 for 4P Direct Attach Cable Kit   P55328-B21
HPE ProLiant DL560 Gen11 Air Cooling 12EDSFF x4 Box 2 for 2P Direct Attach Cable Kit   P60011-B21
Notes: 2P configurations support up to total 16 EDSFF
HPE ProLiant DL560 Gen11 Air/Liquid Cooling 12EDSFF x4 Box 3 for 4P Direct Attach Cable Kit   P55326-B21
HPE ProLiant DL560 Gen11 Air Cooling 12EDSFF x4 Box 3 for 2P Direct Attach Cable Kit   P60013-B21
Notes: 2P configurations support up to total 16 EDSFF

OCP Cable kit Options

HPE ProLiant DL560 Gen11 OCP1/2 to Box 2/1 x1 Backplane Cable Kit   P60009-B21
HPE ProLiant DL560 Gen11 OCP2 to Box 1/2 x2 Backplane Cable Kit   P61602-B21
Notes: Required x4 Tri-Mode U.3 Drive Cage Kit
HPE ProLiant DL560 Gen11 OCP1 to Box 3 x2 Backplane Cable Kit   P61603-B21
Notes: Required x4 Tri-Mode U.3 Drive Cage Kit , support also OCP1 to Box3 x1 configuration
HPE ProLiant DL560 Gen11 OCP2 to Box 2 x4 Backplane Cable Kit   P59142-B21
HPE ProLiant DL560 Gen11 OCP1 to Box 3 x1/x4 Backplane Cable Kit   P55318-B21
HPE ProLiant DL560 Gen11 OCP x16 to Motherboard Enablement Kit   P55322-B21
Notes: Required for 2P configuration
HPE ProLiant DL560 Gen11 OCP x16 to Mezzanine Board Enablement Kit   P55324-B21
Notes: Required for 4P configuration

Other Key Options:

HPE ProLiant DL560 Gen11 4P CPU Mezzanine Kit   P54803-B21
HPE ProLiant DL560 Gen11 4x Power Supply Enablement Kit   P54812-B21
HPE ProLiant DL380/DL560 Gen11 2U Rear Serial Port Cable Kit   P48824-B21
Notes: Required for serial port support on the rear side
HPE ProLiant DL560 Gen11 Ball Bearing Rail 8 Kit   P61501-B21
HPE ProLiant DL560 Gen11 System Insight Display Kit   P54810-B21
HPE ProLiant DL560 Gen11 NS204i-u Front Enablement Kit   P55549-B21
HPE ProLiant DL380a/DL560 Gen11 NS204i-u Rear Enablement Kit   P55710-B21
HPE Apollo 4200 Gen10 Plus Cable Management Arm   P28726-B21

HPE Processors

Processor Option Kits

4th Generation Intel Xeon-Platinum
Notes: All SKUs below ship with processor only. Adequate fans and heatsinks must be selected.
Intel Xeon-Platinum 8490H 1.9GHz 60-core 350W Processor for HPE   P49630-B21
Intel Xeon-Platinum 8468H 2.1GHz 48-core 330W Processor for HPE   P49629-B21
Intel Xeon-Platinum 8460H 2.2GHz 40-core 330W Processor for HPE   P49628-B21
Intel Xeon-Platinum 8450H 2.0GHz 28-core 250W Processor for HPE   P49626-B21
Intel Xeon-Platinum 8444H 2.9GHz 16-core 270W Processor for HPE   P49625-B21

4th Generation Intel Xeon-Gold
Notes: All SKUs below ship with processor only. Adequate fans and heatsinks must be selected.
Intel Xeon-Gold 6448H 2.4GHz 32-core 250W Processor for HPE   P49622-B21
Intel Xeon-Gold 6434H 3.7GHz 8-core 195W Processor for HPE   P49623-B21
Intel Xeon-Gold 6418H 2.1GHz 24-core 185W Processor for HPE   P49621-B21
Intel Xeon-Gold 6416H 2.2GHz 18-core 165W Processor for HPE   P49620-B21

Core Options

Heat Sink Kit

HPE ProLiant DL560 Gen11 Liquid Cooling FIO Heat Sink Kit P54791-B21

Notes:

- For 4P Liquid cooling configuration
- The HPE DL560 Gen11 Closed-loop Liquid Cooling Heat Sink kit is designed as Factory Installation only & is not designated as a Customer Self-Repair (CSR) part to prevent damage to CPUs when customer is conducting the field upgrade on the Liquid Cooling modular itself or CPUs.
- The cooling liquid used in the liquid cooling heatsink is a mixture of purified water and ethylene with additional additives for corrosion resistance. The cooling liquid is not corrosive for human body, but to avoid the risk of connection or damages in a longer term, it is recommended to use hand protection in the form of chemically resistant gloves and to wash hands with plenty of water after contact. Be sure to avoid any eye contact. If eye contact occurs accidentally, immediately flush eye with planty of water or seek for medical attention of any discomfort persists.
- There is no leak detection capability, yet the pumps inside of the system are redundant. If a pump or any of the components inside the solution fail, the CPU temperature or internal server temperature may increase leading to a iLO alert message.
- The HPE DL560 Gen11 Closed-loop Liquid Cooling Heat Sink FIO kit is offered with Standard (3/3/3) Warranty support along with the server. Customers are able to purchase extended support for years (4) and (5).
- This Closed-loop Liquid Cooling Solution is subject to a maximum usage (operational) limitation not to exceed (5) years and required to be replaced when this time limit has been reached. Parts and components that Hewlett Packard Enterprise determines have surpassed the standard (3) years warranty* will not be provided, repaired, or replaced under warranty coverage. Contact your local HPE sales representative for additional information.In addition:

  *Or to the extended (4) or (5) years if warranty contract purchased, and subject to the maximum usage (operation) limitation of (5) years. For more details, please refer to the warranty terms for other options available from Hewlett Packard Enterprise.

HPE ProLiant DL380/DL560 Gen11 High Performance 2U Heat Sink Kit P48818-B21

Notes: For 2P Air Cooling CTO

HPE ProLiant DL3XX/560 Gen11 High Performance Heat Sink Kit P48905-B21

Notes: For 4P Air Cooling CTO

Memory Selection

To streamline the configuration process for HPE ProLiant Gen11 servers and to provide the best product availability, HPE recommends memory from the list located here: **http://www.hpe.com/products/recommend**.

Best product availability is limited to US, Canada, and Latin America at this time.

Notes:

- HPE Server Memory compatibility for a specific server platform may vary or be limited within a server platform depending upon the specific configuration being requested. Because each server environment and requirements can vary, memory compatibility is based not only upon the server family, but may also be affected by the amount and type of additional hardware options installed within a specific server configuration. For this reason, some HPE memory DIMMs may be qualified for an HPE server model or family and yet occasionally not be supported with some configurations within that server family
- Maximum memory capacity and speed per processor is dependent on processor model selection or limitation.

HPE DDR5 Memory

Registered DIMMs (RDIMMs)

HPE 16GB (1x16GB) Single Rank x8 DDR5-4800 CAS-40-39-39 EC8 Registered Smart Memory Kit P43322-B21

HPE 32GB (1x32GB) Dual Rank x8 DDR5-4800 CAS-40-39-39 EC8 Registered Smart Memory Kit P43328-B21

HPE 64GB (1x64GB) Dual Rank x4 DDR5-4800 CAS-40-39-39 EC8 Registered Smart Memory Kit P43331-B21

Core Options

HPE 128GB (1x128GB) Quad Rank x4 DDR5-4800 CAS-46-39-39 EC8 Registered 3DS Smart Memory Kit	P43334-B21
HPE 128GB (1x128GB) Quad Rank x4 DDR5-4800 CAS-46-39-39 EC8 Registered 3DS Smart Memory Kit	P63345-B21
HPE 256GB (1x256GB) Octal Rank x4 DDR5-4800 CAS-46-39-39 EC8 Registered 3DS Smart Memory Kit	P43337-B21

Notes:
- Memory should be installed in even quantity of DIMMs
- 4800 MT/s memory SKUs offer a transfer rate of 4800 MT/s at 1 DIMM per channel and 4400 MT/s at 2 DIMMs per channel
- Mixing of 3DS memory and non-3DS memory is not supported
- Memory capacity please refer to CPU/Memory/Storage support matrix
- If 128GB memory module is desired, in a Liquid cooling CTO server, 128GB (1x128GB) Quad Rank x4 DDR5-4800 (P63345-B21) must be selected

HPE DDR Blank Kit

HPE DDR4 DIMM Blank Kit	P07818-B21

HPE Optical Drives

HPE 9.5mm SATA DVD-ROM Optical Drive	726536-B21

Notes: HPE ProLiant DL560 Gen11 SFF Universal Media Bay Kit (P60500-B21) is required for this option on a SFF model. No support in 12 LFF or 24 SFF models.

HPE 9.5mm SATA DVD-RW Optical Drive	726537-B21

Notes: HPE ProLiant DL560 Gen11 SFF Universal Media Bay Kit (P60500-B21) is required for this option on a SFF model.

HPE Mobile USB DVD-RW Optical Drive	701498-B21

Media Bay Kits

HPE ProLiant DL560 Gen11 SFF Universal Media Bay Kit	P60500-B21

Notes:
- The Universal Media bay provides front Display Port and 2xUSB 2.0; plus 2x SFF front drives or 2 NVME front drives and ODD support (not included); and can only be located in Box1 with either a 8 SFF or 8+8 SFF model. Please refer to CPU/Memory/Storage matrix.
- This is a SFF model option only.

HPE Hard Disk Drives

Notes: If need to configure the system without any drives, a x4 cage kit and a Direct attach cable must be selected. This will not require any controller selection.

Mission Critical – 12G SAS – SFF Drives

HPE 2.4TB SAS 12G Mission Critical 10K SFF BC 3-year Warranty 512e Self-encrypting FIPS HDD	P28618-B21
HPE 1.2TB SAS 12G Mission Critical 10K SFF BC 3-year Warranty Self-encrypting FIPS HDD	P28622-B21

Enterprise – 12G SAS – SFF Drives

HPE 2.4TB SAS 12G Mission Critical 10K SFF BC 3-year Warranty 512e Multi Vendor HDD	P28352-B21
HPE 1.8TB SAS 12G Mission Critical 10K SFF BC 3-year Warranty 512e Multi Vendor HDD	P53562-B21
HPE 1.2TB SAS 12G Mission Critical 10K SFF BC 3-year Warranty Multi Vendor HDD	P28586-B21
HPE 1TB SAS 12G Business Critical 7.2K SFF BC 1-year Warranty HDD	P53563-B21
HPE 900GB SAS 12G Mission Critical 15K SFF BC 3-year Warranty Multi Vendor HDD	P40432-B21
HPE 600GB SAS 12G Mission Critical 15K SFF BC 3-year Warranty Multi Vendor HDD	P53560-B21
HPE 600GB SAS 12G Mission Critical 10K SFF BC 3-year Warranty Multi Vendor HDD	P53561-B21
HPE 300GB SAS 12G Mission Critical 15K SFF BC 3-year Warranty Multi Vendor HDD	P28028-B21
HPE 300GB SAS 12G Mission Critical 10K SFF BC 3-year Warranty Multi Vendor HDD	P40430-B21

Midline – 12G SAS – SFF Drives

HPE 2TB SAS 12G Business Critical 7.2K SFF BC 1-year Warranty 512e HDD	P28505-B21

Core Options

Midline – 6G SATA – SFF Drives

HPE 2TB SATA 6G Business Critical 7.2K SFF BC 1-year Warranty 512e HDD	P28500-B21
HPE 1TB SATA 6G Business Critical 7.2K SFF BC 1-year Warranty HDD	P28610-B21

SSD Selection

For SSD selection guidance, please visit **https://ssd.hpe.com/**

Read Intensive – 12G SAS – SFF – Solid State Drives

HPE 15.36TB SAS 24G Read Intensive SFF BC Multi Vendor SSD	P49045-B21
HPE 7.68TB SAS 12G Read Intensive SFF BC Value SAS Multi Vendor SSD	P40509-B21
HPE 7.68TB SAS 24G Read Intensive SFF BC Multi Vendor SSD	P49041-B21
HPE 3.84TB SAS 12G Read Intensive SFF BC Value SAS Multi Vendor SSD	P40508-B21
HPE 3.84TB SAS 24G Read Intensive SFF BC Multi Vendor SSD	P49035-B21
HPE 1.92TB SAS 12G Read Intensive SFF BC Value SAS Multi Vendor SSD	P40507-B21
HPE 1.92TB SAS 24G Read Intensive SFF BC Multi Vendor SSD	P49031-B21
HPE 960GB SAS 12G Read Intensive SFF BC Value SAS Multi Vendor SSD	P40506-B21
HPE 960GB SAS 24G Read Intensive SFF BC Multi Vendor SSD	P49029-B21
HPE 3.84TB SAS 24G Read Intensive SFF BC Self-encrypting FIPS PM6 SSD	P41398-B21
HPE 7.68TB SAS 24G Read Intensive SFF BC Self-encrypting FIPS PM6 SSD	P41399-B21

Mixed Use – 12G SAS – SFF – Solid State Drives

HPE 6.4TB SAS 24G Mixed Use SFF BC Multi Vendor SSD	P49057-B21
HPE 3.84TB SAS 12G Mixed Use SFF BC Value SAS Multi Vendor SSD	P40512-B21
HPE 3.2TB SAS 24G Mixed Use SFF BC Multi Vendor SSD	P49053-B21
HPE 1.92TB SAS 12G Mixed Use SFF BC Value SAS Multi Vendor SSD	P40511-B21
HPE 1.6TB SAS 24G Mixed Use SFF BC Multi Vendor SSD	P49049-B21
HPE 960GB SAS 12G Mixed Use SFF BC Value SAS Multi Vendor SSD	P40510-B21
HPE 800GB SAS 24G Mixed Use SFF BC Multi Vendor SSD	P49047-B21
HPE 800GB SAS 24G Mixed Use SFF BC Self-encrypting FIPS PM6 SSD	P41400-B21
HPE 1.6TB SAS 24G Mixed Use SFF BC Self-encrypting FIPS PM6 SSD	P41401-B21

Read Intensive – 6G SATA – SFF – Solid State Drives

HPE 7.68TB SATA 6G Read Intensive SFF BC Multi Vendor SSD	P40501-B21
HPE 3.84TB SATA 6G Read Intensive SFF BC Multi Vendor SSD	P40500-B21
HPE 3.84TB SATA 6G Read Intensive SFF BC PM893 SSD	P44010-B21
HPE 1.92TB SATA 6G Read Intensive SFF BC Multi Vendor SSD	P40499-B21
HPE 1.92TB SATA 6G Read Intensive SFF BC PM893 SSD	P44009-B21
HPE 480GB SATA 6G Read Intensive SFF BC Multi Vendor SSD	P40497-B21
HPE 480GB SATA 6G Read Intensive SFF BC PM893 SSD	P44007-B21
HPE 960GB SATA 6G Read Intensive SFF BC Multi Vendor SSD	P40498-B21
HPE 960GB SATA 6G Read Intensive SFF BC PM893 SSD	P44008-B21
HPE 240GB SATA 6G Read Intensive SFF BC Multi Vendor SSD	P40496-B21
HPE 480GB SATA 6G Read Intensive SFF BC Self-encrypting 5400P SSD	P58236-B21
HPE 1.92TB SATA 6G Read Intensive SFF BC Self-encrypting 5400P SSD	P58240-B21

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

HPE 3.84TB SATA 6G Mixed Use SFF BC Multi Vendor SSD	P40505-B21
HPE 1.92TB SATA 6G Mixed Use SFF BC Multi Vendor SSD	P40504-B21
HPE 960GB SATA 6G Mixed Use SFF BC Multi Vendor SSD	P40503-B21
HPE 960GB SATA 6G Mixed Use SFF BC PM897 SSD	P44012-B21
HPE 480GB SATA 6G Mixed Use SFF BC Multi Vendor SSD	P40502-B21
HPE 480GB SATA 6G Mixed Use SFF BC PM897 SSD	P44011-B21

Core Options

HPE 960GB SATA 6G Mixed Use SFF BC Self-encrypting 5400M SSD	P58244-B21
HPE 1.92TB SATA 6G Mixed Use SFF BC Self-encrypting 5400M SSD	P58248-B21

Read Intensive – NVMe – SFF – Solid State Drives

HPE 15.36TB NVMe Gen4 High Performance Read Intensive SFF BC U.3 PM1733a SSD	P50224-B21
HPE 7.68TB NVMe Gen4 High Performance Read Intensive SFF BC U.3 PM1733a SSD	P50222-B21
HPE 7.68TB NVMe Gen4 Mainstream Performance Read Intensive SFF BC U.3 Static Multi Vendor SSD	P47847-B21
HPE 3.84TB NVMe Gen4 High Performance Read Intensive SFF BC U.3 PM1733a SSD	P50219-B21
HPE 3.84TB NVMe Gen4 Mainstream Performance Read Intensive SFF BC U.3 Static Multi Vendor SSD	P47846-B21
HPE 1.92TB NVMe Gen4 High Performance Read Intensive SFF BC U.3 PM1733a SSD	P50216-B21
HPE 1.9TB NVMe Gen4 Mainstream Performance Read Intensive SFF BC U.3 Static Multi Vendor SSD	P47845-B21
HPE 960GB NVMe Gen4 Mainstream Performance Read Intensive SFF BC U.3 Static Multi Vendor SSD	P47844-B21
HPE 960GB NVMe Gen4 Mainstream Performance Read Intensive SFF BC U.3 Static V2 Multi Vendor SSD	P64842-B21
HPE 1.92TB NVMe Gen4 High Performance Read Intensive SFF BC Self-encrypting FIPS U.3 CM6 SSD	P41402-B21
HPE 1.92TB NVMe Gen4 Mainstream Performance Read Intensive SFF BC U.3 Static V2 Multi Vendor SSD	P64844-B21
HPE 3.84TB NVMe Gen4 High Performance Read Intensive SFF BC Self-encrypting FIPS U.3 CM6 SSD	P41403-B21
HPE 3.84TB NVMe Gen4 Mainstream Performance Read Intensive SFF BC U.3 Static V2 Multi Vendor SSD	P64846-B21
HPE 7.68TB NVMe Gen4 Mainstream Performance Read Intensive SFF BC U.3 Static V2 Multi Vendor SSD	P64848-B21

Mixed Use – NVMe – SFF – Solid State Drives

HPE 6.4TB NVMe Gen4 High Performance Mixed Use SFF BC U.3 PM1735a SSD	P50233-B21
HPE 6.4TB NVMe Gen4 Mainstream Performance Mixed Use SFF BC U.3 Static Multi Vendor SSD	P47840-B21
HPE 3.2TB NVMe Gen4 High Performance Mixed Use SFF BC U.3 PM1735a SSD	P50230-B21
HPE 3.2TB NVMe Gen4 Mainstream Performance Mixed Use SFF BC U.3 Static Multi Vendor SSD	P47839-B21
HPE 1.6TB NVMe Gen4 High Performance Mixed Use SFF BC U.3 PM1735a SSD	P50227-B21
HPE 1.6TB NVMe Gen4 Mainstream Performance Mixed Use SFF BC U.3 Static Multi Vendor SSD	P47838-B21
HPE 800GB NVMe Gen4 Mainstream Performance Mixed Use SFF BC U.3 Static Multi Vendor SSD	P47837-B21
HPE 800GB NVMe Gen4 Mainstream Performance Mixed Use SFF BC U.3 Static V2 Multi Vendor SSD	P64999-B21
HPE 1.6TB NVMe Gen4 High Performance Mixed Use SFF BC Self-encrypting FIPS U.3 CM6 SSD	P41404-B21
HPE 1.6TB NVMe Gen4 Mainstream Performance Mixed Use SFF BC U.3 Static V2 Multi Vendor SSD	P65007-B21
HPE 3.2TB NVMe Gen4 High Performance Mixed Use SFF BC Self-encrypting FIPS U.3 CM6 SSD	P41405-B21
HPE 3.2TB NVMe Gen4 Mainstream Performance Mixed Use SFF BC U.3 Static V2 Multi Vendor SSD	P65015-B21
HPE 6.4TB NVMe Gen4 Mainstream Performance Mixed Use SFF BC U.3 Static V2 Multi Vendor SSD	P65023-B21

EDSFF Selection NVMe

For EDSFF selection guidance, please visit **https://ssd.hpe.com/**

NVMe High Performance Read Intensive – EDSFF E3.S - –olid State Drives

HPE 15.36TB NVMe Gen5 High Performance Read Intensive E3S EC1 EDSFF SPDM PM1743 SSD	P57807-B21
HPE 7.68TB NVMe Gen5 High Performance Read Intensive E3S EC1 EDSFF SPDM PM1743 SSD	P57803-B21
HPE 3.84TB NVMe Gen5 High Performance Read Intensive E3S EC1 EDSFF SPDM PM1743 SSD	P57799-B21
HPE 3.2TB NVMe Gen5 High Performance Mixed Use E3S EC1 EDSFF SPDM CM7 SSD	P61191-B21
HPE 3.84TB NVMe Gen5 High Performance Read Intensive E3S EC1 EDSFF SPDM CM7 SSD	P61179-B21
HPE 6.4TB NVMe Gen5 High Performance Mixed Use E3S EC1 EDSFF SPDM CM7 SSD	P61195-B21
HPE 7.68TB NVMe Gen5 High Performance Read Intensive E3S EC1 EDSFF SPDM CM7 SSD	P61183-B21
HPE 15.36TB NVMe Gen5 High Performance Read Intensive E3S EC1 EDSFF SPDM CM7 SSD	P61187-B21

Notes:
- For 2P configuration: support max. 8 EDSFF per box (only box 2 and 3 supported)
- For 4P configuration: support max. 12 EDSFF per fox (only box 2 and 3 supported)
- Selection of EDSFF PM1743 Drives require NS204i-u boot controller to run VMware

Core Options

Hard Drive Blank Kits
HPE Small Form Factor Hard Drive Blank Kit   666987-B21

HPE Networking

1 Gigabit Ethernet adapters
Broadcom BCM5719 Ethernet 1Gb 4-port BASE-T Adapter for HPE   P51178-B21
Intel I350-T4 Ethernet 1Gb 4-port BASE-T Adapter for HPE   P21106-B21

10 Gigabit Ethernet adapters
Notes: Unless otherwise noted, one of the below 10Gb networking adapters below can be selected as the primary networking choice.
Broadcom BCM57416 Ethernet 10Gb 2-port BASE-T Adapter for HPE   P26253-B21
Broadcom BCM57412 Ethernet 10Gb 2-port SFP+ Adapter for HPE   P26259-B21

25 Gigabit Ethernet adapters
Broadcom BCM57504 Ethernet 10/25Gb 4-port SFP28 Adapter for HPE   P26264-B21
Broadcom BCM57414 Ethernet 10/25Gb 2-port SFP28 Adapter for HPE   P26262-B21
Intel E810-XXVDA2 Ethernet 10/25Gb 2-port SFP28 Adapter for HPE   P08443-B21
Intel E810-XXVDA4 Ethernet 10/25Gb 4-port SFP28 Adapter for HPE   P08458-B21
Mellanox MCX631102AS-ADAT Ethernet 10/25Gb 2-port SFP28 Adapter for HPE   P42044-B21

100 Gigabit Ethernet Adapters
Mellanox MCX623106AS-CDAT Ethernet 100Gb 2-port QSFP56 Adapter for HPE   P25960-B21
HPE Ethernet 100Gb 1-port QSFP28 PCIe3 x16 MCX515A-CCAT Adapter   P31246-B21
HPE NV60100M 100Gb 2-port Storage Offload Adapter   R8M41A
Intel E810-CQDA2 Ethernet 100Gb 2-port QSFP28 Adapter for HPE   P21112-B21

200 Gigabit Ethernet Adapters
Mellanox MCX623105AS-VDAT Ethernet 200Gb 1-port QSFP56 Adapter for HPE   P10180-B21

- Broadcom 5719 Ethernet 1Gb 4-port BASE-T Adapter for HPE
- Intel I350-T4 Ethernet 1Gb 4-port BASE-T Adapter for HPE

Maximum System Ambient Temperature			
Storage Config	**2 Processor Air Cooling SKU**	**4 Processor Air Cooling SKU**	**4 Processor Liquid Cooling SKU**
8SFF	35C	35C	30C
12EDSFF	35C	35C	30C
Media bay + 8 SFF	35C	35C	25C
Media bay + 12 EDSFF	35C	35C	25C
16SFF	35C	35C	30C
24EDSFF	35C	30C	25C
Media bay + 8 SFF x2	35C	30C	25C
Media bay + 8 SFF x2	35C	25C	Not Supported
24SFF	35C	25C*	Not Supported

Notes: * Only can be supported with 6416H(165W) or 6418H(185W) CPU

Core Options

- Broadcom BCM57412 Ethernet 10Gb 2-port SFP+ Adapter for HPE
- Broadcom BCM57416 Ethernet 10Gb 2-port BASE-T Adapter for HPE

Maximum System Ambient Temperature			
Storage Config	**2 Processor Air Cooling SKU**	**4 Processor Air Cooling SKU**	**4 Processor Liquid Cooling SKU**
8SFF	35C	35C	30C
12EDSFF	35C	35C	30C
Media bay + 8 SFF	35C	35C	25C
Media bay + 12 EDSFF	35C	35C	25C
16SFF	35C	35C	30C
24EDSFF	35C	30C	25C
Media bay + 8 SFF x2	35C	30C	25C
Media bay + 8 SFF x2	35C	25C	Not Supported
24SFF	35C	25C*	Not Supported

Notes: * Only can be supported with 6416H(165W) or 6418H(185W) CPU

- Broadcom 57414 Ethernet 10/25Gb 2-port SFP28 Adapter for HPE

Maximum System Ambient Temperature			
Storage Config	**2 processor Air Cooling SKU**	**4 processor Air Cooling SKU**	**4 processor Liquid Cooling SKU**
8SFF	35C	35C	35C
12EDSFF	35C	35C	35C
Media bay + 8 SFF	35C	35C	30C
Media bay + 12 EDSFF	35C	35C	25C
16SFF	35C	35C	30C
24EDSFF	35C	30C	25C
Media bay + 8 SFF x2	35C	30C	25C
Media bay + 8 SFF x2	35C	25C	Not Supported
24SFF	35C	25C*	Not Supported

Notes: * Only can be supported with 6416H(165W) or 6418H(185W) CPU

Core Options

- Broadcom 57504 Ethernet 10/25Gb 4-port SFP28 Adapter for HPE
- Intel E810-XXVDA2 Ethernet 10/25Gb 2-port SFP28 Adapter for HPE
- Mellanox MCX631102AS-ADAT Ethernet 10/25Gb 2-port SFP28 Adapter for HPE

Maximum System Ambient Temperature			
Storage Config	**2 processor Air Cooling SKU**	**4 processor Air Cooling SKU**	**4 processor Liquid Cooling SKU**
8 SFF	35C	35C	35C*
12 EDSFF	35C	35C	30C*
Media bay + 8 SFF	35C	35C	30C*
Media bay + 12 EDSFF	35C	35C	25C*
8 SFF x2	35C	35C	30C*
12 EDSFF x2	30C	30C	25C*
Media bay + 8 SFF x2	30C	30C	25C*
Media bay + 12 EDSFF x2	30C	30C	Not Supported
8 SFF x3	30C	30C**	Not Supported

Remarks:

− *Is required to be installed in riser 1.
− ** Only can be supported with 6416H(165W) or 6418H(185W) CPU.

- Intel E810-XXVDA4 Ethernet 10/25Gb 4-port SFP28 Adapter for HPE

Maximum System Ambient Temperature			
Storage Config	**2 processor Air Cooling SKU**	**4 processor Air Cooling SKU**	**4 processor Liquid Cooling SKU**
8 SFF	35C	30C	30C*
12 EDSFF	35C	30C	30C*
Media bay + 8 SFF	35C	30C	30C*
Media bay + 12 EDSFF	35C	30C	25C*
8 SFF x2	35C*	25C*	25C*
12 EDSFF x2	35C*	30C*	25C*
Media bay + 8 SFF x2	35C*	30C*	25C*
Media bay + 12 EDSFF x2	30C*	25C*	Not Supported
8 SFF x3	35C*	25C**	Not Supported

Remarks:

− * It is required to install the card on PCI-E riser 1
− ** Only can be supported with 6416H(165W) or 6418H(185W) CPU

Core Options

- INT E810 100GbE 2p QSFP28 Adapter

Maximum System Ambient Temperature			
Storage Config	2 processor Air Cooling SKU	4 processor Air Cooling SKU	4 processor Liquid Cooling SKU
8 SFF	35C	35C	25C
12 EDSFF	35C	35C	25C
Media bay + 8 SFF	35C	35C	30C
Media bay + 12 EDSFF	35C	35C	25C*
8 SFF x2	35C	35C	25C
12 EDSFF x2	35C	30C	25C*
Media bay + 8 SFF x2	35C	30C	30C*
Media bay + 12 EDSFF x2	35C	25C	Not Supported
8 SFF x3	35C	25C**	Not Supported

Remarks:
− *It is required to be installed in riser 1.
− **Only can be supported with 6416H(165W) or 6418H(185W) CPU

- HPE 100GbE 1p QSFP28 MCX515A-CCAT Adapter

Maximum System Ambient Temperature			
Storage Config	2 processor Air Cooling SKU	4 processor Air Cooling SKU	4 processor Liquid Cooling SKU
8SFF	35C	35C	30C
12EDSFF	35C	35C	30C
Media bay + 8 SFF	35C	35C	25C
Media bay + 12 EDSFF	35C	35C	25C
16SFF	35C	35C	30C
24EDSFF	35C	30C	25C
Media bay + 8 SFF x2	35C	30C	25C
Media bay + 8 SFF x2	35C	25C	Not Supported
24SFF	35C	Not Supported	Not Supported

Core Options

- Mellanox MCX623106AS-CDAT Ethernet 100Gb 2-port QSFP56 Adapter for HPE
- HPE NV60100M 100Gb 2p Strg Offload Adapter
- Mellanox MCX623105AS VDAT Ethernet 200Gb 1-port QSFP56 Adapter for HPE

Maximum System Ambient Temperature			
Storage Config	2 processor Air Cooling SKU	4 processor Air Cooling SKU	4 processor Liquid Cooling SKU
8 SFF	35C	30C	25C*
12 EDSFF	35C	30C	25C*
Media bay + 8 SFF	35C	30C	25C*
Media bay + 12 EDSFF	35C	30C	25C*
8 SFF x2	35C*	Not Supported	30C*
12 EDSFF x2	35C*	30C*	Not Supported
Media bay + 8 SFF x2	35C*	30C*	Not Supported
Media bay + 12 EDSFF x2	30C*	25C*	Not Supported
8 SFF x3	35C*	Not Supported	Not Supported

Remarks: *. It is required to install the card on PCI-E riser 1

OCP 3.0 Adapters

Broadcom BCM5719 Ethernet 1Gb 4-port BASE-T OCP3 Adapter for HPE	P51181-B21
Intel I350-T4 Ethernet 1Gb 4-port BASE-T OCP3 Adapter for HPE	P08449-B21
Broadcom BCM57416 Ethernet 10Gb 2-port BASE-T OCP3 Adapter for HPE	P10097-B21
Broadcom BCM57412 Ethernet 10Gb 2-port SFP+ OCP3 Adapter for HPE	P26256-B21
Broadcom BCM57504 Ethernet 10/25Gb 4-port SFP28 OCP3 Adapter for HPE	P26269-B21
Broadcom BCM57414 Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE	P10115-B21
Intel E810-XXVDA2 Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE	P10106-B21
Mellanox MCX631432AS-ADAI Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE	P42041-B21
Intel E810-CQDA2 Ethernet 100Gb 2-port QSFP28 OCP3 Adapter for HPE	P22767-B21

Core Options

- Broadcom 57412 Ethernet 10Gb 2-port SFP+ OCP3 Adapter for HPE
- Broadcom 5719 Ethernet 1Gb 4-port BASE-T OCP3 Adapter for HPE
- Intel I350-T4 Ethernet 1Gb 4-port BASE-T OCP3 Adapter for HPE
- Broadcom 57414 Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE
- Broadcom 57416 Ethernet 10Gb 2-port BASE-T OCP3 Adapter for HPE

Maximum System Ambient Temperature			
Storage Config	**2 processor Air Cooling SKU**	**4 processor Air Cooling SKU**	**4 processor Liquid Cooling SKU**
8SFF	35C	35C	35C
12EDSFF	35C	35C	35C
Media bay + 8 SFF	35C	35C	30C
Media bay + 12 EDSFF	35C	35C	25C
16SFF	35C	35C	30C
24EDSFF	35C	30C	25C
Media bay + 8 SFF x2	35C	30C	25C
Media bay + 8 SFF x2	35C	25C	Not Supported
24SFF	35C	25C*	Not Supported

Remarks: * Only can be supported with 6416H(165W) or 6418H(185W) CPU

- Mellanox MCX631432AS-ADAI Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE

Maximum System Ambient Temperature			
Storage Config	**2 processor Air Cooling SKU**	**4 processor Air Cooling SKU**	**4 processor Liquid Cooling SKU**
8SFF	35C	35C	35C
12EDSFF	35C	35C	35C
Media bay + 8 SFF	35C	35C	30C
Media bay + 12 EDSFF	35C	35C	25C
16SFF	35C	35C	30C
24EDSFF	35C	30C	Not Supported
Media bay + 8 SFF x2	35C	30C	Not Supported
Media bay + 8 SFF x2	35C	25C	Not Supported
24SFF	35C	25C*	Not Supported

Remarks: * Only can be supported with 6416H(165W) or 6418H(185W) CPU

Core Options

- Intel E810-XXVDA2 Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE
- Intel E810-CQDA2 Ethernet 100Gb 2-port QSFP28 OCP3 Adapter for HPE

Maximum System Ambient Temperature			
Storage Config	**2 processor Air Cooling SKU**	**4 processor Air Cooling SKU**	**4 processor Liquid Cooling SKU**
8SFF	35C	35C	35C
12EDSFF	35C	35C	35C
Media bay + 8 SFF	35C	35C	30C
Media bay + 12 EDSFF	35C	35C	25C
16SFF	35C	35C	30C
24EDSFF	35C	30C	Not Supported
Media bay + 8 SFF x2	35C	30C	Not Supported
Media bay + 8 SFF x2	35C	25C	Not Supported
24SFF	35C	Not Supported	Not Supported

- Broadcom 57504 Ethernet 10/25Gb 4-port SFP28 OCP3 Adapter for HPE

Maximum System Ambient Temperature			
Storage Config	**2 processor Air Cooling SKU**	**4 processor Air Cooling SKU**	**4 processor Liquid Cooling SKU**
8SFF	35C	25C	25C
12EDSFF	35C	25C	25C
Media bay + 8 SFF	35C	25C	Not Supported
Media bay + 12 EDSFF	35C	25C	Not Supported
16SFF	35C	25C	Not Supported
24EDSFF	35C	25C	Not Supported
Media bay + 8 SFF x2	35C	25C	Not Supported
Media bay + 8 SFF x2	35C	25C	Not Supported
24SFF	35C	Not Supported*	Not Supported

Remarks: * Only can be supported with 6416H(165W) or 6418H(185W) CPU

Core Options

HPE InfiniBand

HPE InfiniBand NDR 1-port OSFP PCIe5 x16 MCX75310AAS-NEAT Adapter	P45641-B21
HPE InfiniBand NDR200 1-port OSFP PCIe5 x16 MCX75310AAS-HEAT Adapter	P45642-B21
HPE InfiniBand HDR/Ethernet 200Gb 1-port QSFP56 PCIe4 x16 OCP3 MCX653435A-HDAI Adapter	P31323-B21
HPE InfiniBand HDR/Ethernet 200Gb 2-port QSFP56 PCIe4 x16 OCP3 MCX653436A-HDAI Adapter	P31348-B21
HPE InfiniBand HDR/Ethernet 200Gb 1-port QSFP56 PCIe4 x16 MCX653105A-HDAT Adapter	P23664-B21
HPE InfiniBand HDR/Ethernet 200Gb 2-port QSFP56 PCIe4 x16 MCX653106A-HDAT Adapter	P31324-B21
HPE 100Gb 1-port OP101 QSFP28 x16 PCIe Gen3 with Intel Omni-Path Architecture Adapter	829335-B21

Notes: Must be populated in x16 physical and electrical slot.

HPE InfiniBand HDR100/Ethernet 100Gb 1-port QSFP56 PCIe4 x16 MCX653105A-ECAT Adapter	P23665-B21
HPE InfiniBand HDR100/Ethernet 100Gb 2-port QSFP56 PCIe4 x16 MCX653106A-ECAT Adapter	P23666-B21

- HPE InfiniBand NDR 1-port OSFP PCIe5 x16 MCX75310AAS NEAT Adapter
- HPE InfiniBand HDR/Ethernet 200Gb 2-port QSFP56 PCIe4 x16 MCX653106A-HDAT Adapter

Maximum System Ambient Temperature			
Storage Config	**2 processor Air Cooling SKU**	**4 processor Air Cooling SKU**	**4 processor Liquid Cooling SKU**
8 SFF	35C	30C	30C*
12 EDSFF	35C	30C	30C*
Media bay + 8 SFF	35C	30C	30C*
Media bay + 12 EDSFF	35C	30C	25C*
8 SFF x2	35C*	35C*	30C*
12 EDSFF x2	35C*	30C*	25C*
Media bay + 8 SFF x2	35C*	30C*	25C*
Media bay + 12 EDSFF x2	35C*	25C*	Not Supported
8 SFF x3	35C*	Not Supported	Not Supported

Remarks: *. It is required to install the card on PCI-E riser 1

Core Options

- HPE 100Gb 1-port OP101 QSFP28 x16 PCIe Gen3 with Intel Omni-Path Architecture Adapter

Maximum System Ambient Temperature			
Storage Config	**2 processor Air Cooling SKU**	**4 processor Air Cooling SKU**	**4 processor Liquid Cooling SKU**
8 SFF	35C	35C	30C
12 EDSFF	35C	35C	30C
Media bay + 8 SFF	35C	35C	25C
Media bay + 12 EDSFF	35C	35C	25C
8 SFF x2	35C	35C	30C
12 EDSFF x2	35C	30C	25C
Media bay + 8 SFF x2	35C	30C	25C
Media bay + 12 EDSFF x2	35C	25C	Not Supported
8 SFF x3	35C	Not Supported	Not Supported

- HPE InfiniBand NDR200 1p OSFP MCX75310AAS Adapter
- HPE InfiniBand HDR100/Ethernet 100Gb 1-port QSFP56 PCIe4 x16 MCX653105A-ECAT Adapter

Maximum System Ambient Temperature			
Storage Config	**2 processor Air Cooling SKU**	**4 processor Air Cooling SKU**	**4 processor Liquid Cooling SKU**
8 SFF	35C	35C	35C*
12 EDSFF	35C	35C	30C*
Media bay + 8 SFF	35C	35C	30C*
Media bay + 12 EDSFF	35C	35C	25C*
8 SFF x2	35C	35C	30C*
12 EDSFF x2	35C	30C	25C*
Media bay + 8 SFF x2	35C	30C	25C*
Media bay + 12 EDSFF x2	35C	25C	Not Supported
8 SFF x3	35C	Not Supported	Not Supported

Remarks: *It is required to install the card on PCI-E riser 1.

Core Options

- HPE InfiniBand HDR100/Ethernet 100Gb 2-port QSFP56 PCIe4 x16 MCX653106A-ECAT Adapter
- HPE IB HDR/EN 200Gb 1p QSFP56 Adapter

Maximum System Ambient Temperature			
Storage Config	**2 processor Air Cooling SKU**	**4 processor Air Cooling SKU**	**4 processor Liquid Cooling SKU**
8 SFF	35C	30C	30C*
12 EDSFF	35C	30C	30C*
Media bay + 8 SFF	35C	30C	30C*
Media bay + 12 EDSFF	35C	30C	25C*
8 SFF x2	35C	35C*	25C*
12 EDSFF x2	35C	30C	25C*
Media bay + 8 SFF x2	35C	30C	25C*
Media bay + 12 EDSFF x2	30C	25C	Not Supported
8 SFF x3	25C	Not Supported	Not Supported

Remarks: *. It is required to install the card on PCI-E riser 1

- HPE InfiniBand HDR/Ethernet 200Gb 1-port QSFP56 PCIe4 x16 OCP3 MCX653435A-HDAI Adapter
- HPE InfiniBand HDR/Ethernet 200Gb 2-port QSFP56 PCIe4 x16 OCP3 MCX653436A-HDAI Adapter

Maximum System Ambient Temperature			
Storage Config	**2 processor Air Cooling SKU**	**4 processor Air Cooling SKU**	**4 processor Liquid Cooling SKU**
8 SFF	30C	25C	25C*
12 EDSFF	30C	Not Supported	Not Supported
Media bay + 8 SFF	30C	Not Supported	25C*
Media bay + 12 EDSFF	30C	Not Supported	Not Supported
8 SFF x2	25C	Not Supported	Not Supported
12 EDSFF x2	Not Supported	Not Supported	Not Supported
Media bay + 8 SFF x2	Not Supported	Not Supported	Not Supported
Media bay + 12 EDSFF x2	Not Supported	Not Supported	Not Supported
8 SFF x3	Not Supported	Not Supported	Not Supported

Remarks: * The card is required to be installed on OCP2. The OCP card can only be supported with TDP 270W or lower power

Core Options

HPE I/O Expansion Options

Notes:

x16 cards installed on x8 slots could observe sub-optimal performance.

HPE ProLiant DL560 Gen11 x8/x16/x8 Riser Kit   P54779-B21

Notes:

–   Slot 1 - –PCIe 5.0 x8 Full height and ¾ length

–   Slot 2 - –PCIe 5.0 x16 Full Height and ¾ length

–   Slot 3 - –PCIe 5.0 x8 Full Height and ¾ length

–

HPE ProLiant DL560 Gen11 x16/x16/x16 Riser Kit   P54780-B21

Notes:

–   Slot 1 - –PCIe 5.0 x16 Full Height and ¾ length

–   Slot 2 - –PCIe 5.0 x16 Full Height and ¾ length

–   Slot 3 - –PCIe 5.0 x16 Full Height and ¾ length

–   When 3x16 riser is selected, required to have either cable (P55315-B21 or P55319-B21) to connect with
      Motherboard (for 2P) or Mezzanine board (for 4P)

HPE ProLiant DL560 Gen11 3x16 Riser to Motherboard Cable Kit   P55315-B21

Notes: Required when configure 2P system to connect to motherboard with HPE ProLiant DL560 Gen11
x16/x16/x16 Riser Kit (P54780-B21)

HPE ProLiant DL560 Gen11 3x16 Riser to Mezzanine Board Cable Kit   P55319-B21

Notes: Required when configure 4P system to connect to Mezzanine board with HPE ProLiant DL560 Gen11
x16/x16/x16 Riser Kit (P54780-B21)

HPE Power Supplies

HPE 800W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit   P38995-B21

Notes: Flex Slot Platinum power supplies support power efficiency of up to 94% and include a standard C-14
power inlet connector.

HPE 1000W Flex Slot Titanium Hot Plug Power Supply Kit   P03178-B21

Notes: Flex Slot Titanium power supplies support power efficiency of up to 96% and include a standard C-14
power inlet connector.

HPE 1600W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit   P38997-B21

Notes: Flex Slot Platinum Plus power supplies support power efficiency of up to 94% and include a C-14
power inlet connector.

HPE 1600W Flex Slot -48VDC Hot Plug Power Supply Kit   P17023-B21

HPE 1800W-2200W Flex Slot Titanium Hot Plug Power Supply Kit   P44712-B21

Notes: Flex Slot Titanium power supplies support power efficiency of up to 96% and include a standard C-14
power inlet connector

Notes: Output capped at 1600W maximum on Gen10 & Gen10 Plus servers, greater than 1600W only
feasible on Gen11." Similar to the one currently stated on FlexSlot PSUs

Notes: Beginning on January 1st, 2024, units sold into the European Union (EU), European Economic Area
(EEA), the United Kingdom, or Switzerland must include more efficient AC power supplies: 94% for multi-
output and 96% for single-output. HPE Flexible Slot power supplies are single-output, and part numbers
865438-B21, P03178-B21, and P44712-B21 are 96% efficient, thus meeting requirements. HPE is on target
to fulfil compliant systems ahead of time and will begin enforcing these requirements in advance to satisfy
requests with the current power supplies by the set deadline.

Core Options

HPE Cooling Options

HPE ProLiant DL560 Gen11 Liquid Cooling FIO Heat Sink Kit   P54791-B21

Notes:

– For 4P Liquid cooling system configuration

– The HPE ProLiant DL560 Gen11 Liquid Cooling FIO Heat Sink Kit is subject to a Maximum Usage Limitation of not exceeding five (5) years of operation and is required to be replaced when reaching limitation. Parts and components that Hewlett Packard Enterprise determines have reached or exceeded their Maximum Usage limitations will not be provided, repaired, or replaced under warranty or service contract. Contact your local sales representative for additional information.

HPE ProLiant DL380/DL560 Gen11 High Performance 2U Heat Sink Kit   P48818-B21

Notes: For 2P Air Cooling system configuration

HPE ProLiant DL3XX/560 Gen11 High Performance Heat Sink Kit   P48905-B21

Notes: For 4P Air Cooling system configuration

Additional Options

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

Embedded Management

HPE iLO Common Password FIO Setting

HPE iLO Common Password FIO Setting	P08040-B21

Notes:
- Replaces iLO default randomized password by an HPE defined common password. HPE highly recommends changing this password immediately after the initial onboarding process.
- Customers who want to choose their own custom iLO default password should use the HPE Factory Express Integration Services

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

HPE Converged Infrastructure Management Software

HPE OneView including 3yr 24x7 Support Flexible Quantity E-LTU	E5Y35AAE
HPE OneView w/o iLO including 3yr 24x7 Support Flexible Quantity E-LTU	P8B26AAE

Notes: Licenses ship without media. The HPE OneView Media Kit can be ordered separately, or can be **downloaded**.

HPE NS204i-u Gen11 NVMe Hot Plug Boot Optimized Storage Device	P48183-B21

Notes:
- Max = 1
- When NS204i-u is selected, a second riser card must be selected to locate in secondary riser slot for rear side.
- NS204i-u Boot device can only be installed in the 1st ˢlot of secondary riser kit (slot 4) in for rear side.
- For liquid cooling solution, with NS204i-u in front location, system does not support Media Bay.

HPE ProLiant DL560 Gen11 NS204i-u Front Enablement Kit	P55549-B21
HPE ProLiant DL380a/DL560 Gen11 NS204i-u Rear Enablement Kit	P55710-B21

Additional Options

HPE NS204i-u Gen11 Hot Plug Boot Option Dev (Installation location: Front: Between Fan cage and storage box)
Notes: None hot pluggable

Maximum System Ambient Temperature			
Storage Config	**2 Processor Air Cooling SKU**	**4 Processor Air Cooling SKU**	**4 Processor Liquid Cooling SKU**
8 SFF	35C	35C	35C
12 EDSFF	35C	35C	35C*
Media bay + 8 SFF	35C	35C	Not Supported
Media bay + 12 EDSFF	35C	35C	Not Supported
8 SFF x2	35C	35C	35C
12 EDSFF x2	35C	30C	Not Supported
Media bay + 8 SFF x2	35C	30C	Not Supported
Media bay + 12 EDSFF x2	35C	25C	Not Supported
8 SFF x3	35C	Not Supported	Not Supported

Remarks: * One 12 EDSFF box has to be located in Box3

HPE NS204i-u Gen11 Ht Plg Boot Opt Dev (Installation location: Rear: PCI-E Riser 2 slot 4)
Notes: Hot pluggable

Maximum System Ambient Temperature			
Storage Config	**2 Processor Air Cooling SKU**	**4 Processor Air Cooling SKU**	**4 Processor Liquid Cooling SKU**
8 SFF	35C	35C	25C*
12 EDSFF	35C	35C	25C*
Media bay + 8 SFF	35C	35C	25C*
Media bay + 12 EDSFF	35C	35C	25C*
8 SFF x2	35C	35C	25C*
12 EDSFF x2	35C	30C	Not Supported
Media bay + 8 SFF x2	35C	30C	Not Supported
Media bay + 12 EDSFF x2	35C	25C	Not Supported
8 SFF x3	35C	Not Supported	Not Supported

Remarks: * The boot device is required on slot4, the slot 5 must be kept empty

Additional Options

HPE Storage Controllers

The Gen11 storage controller portfolio has been updated to include new technology like OCP3.0 as well as PCIe adapters.. For a more detailed breakout of the available Gen11 controllers visit the storage controllers QuickSpecs site

HPE Tri-Mode Controllers

HPE MR216i-p Gen11 x16 Lanes without Cache PCI SPDM Plug-in Storage Controller	P47785-B21
HPE MR216i-o Gen11 x16 Lanes without Cache OCP SPDM Storage Controller	P47789-B21
HPE MR408i-o Gen11 x8 Lanes 4GB Cache OCP SPDM Storage Controller	P58335-B21
HPE MR416i-p Gen11 x16 Lanes 8GB Cache PCI SPDM Plug-in Storage Controller	P47777-B21
HPE MR416i-o Gen11 x16 Lanes 8GB Cache OCP SPDM Storage Controller	P47781-B21
HPE SR932i-p Gen11 x32 Lanes 8GB Wide Cache PCI SPDM Plug-in Storage Controller	P47184-B21

Notes: Requires x16 riser slot

Essential RAID Controllers

HPE Smart Array E208e-p SR Gen10 (8 External Lanes/No Cache) 12G SAS PCIe Plug-in Controller	804398-B21

Optional Upgrades

HPE Smart Storage Hybrid Capacitor with 260mm Cable Kit	P02381-B21
HPE 96W Smart Storage Lithium-ion Battery with 260mm Cable Kit	P01367-B21

Notes: Provides backup power for multiple HPE storage controllers or other devices.

Software RAID

Intel Virtual RAID on CPU Premium FIO Software for HPE	R7J57A

Notes:
— Requires UEFI, not supported on Legacy Mode.
— For NVMe SSDs only, no PCIe card support.
— Supports RAID 0/1/5/10

Intel Virtual RAID on CPU Premium E-RTU for HPE	R7J59AAE

Notes:
— Requires UEFI, not supported on Legacy Mode.
— For NVMe SSDs only, no PCIe card support.
— Supports RAID 0/1/5/10
— For Pre-configured sku (BTO) upgrade

Intel Virtual RAID on CPU Standard FIO Software for HPE	S0E37A

Notes:
— Requires UEFI, not supported on Legacy Mode.
— For NVMe SSDs only, no PCIe card support.
— Supports RAID 0/1/10

Intel Virtual RAID on CPU Standard E-RTU for HPE	S0E38AAE

Notes:
— Requires UEFI, not supported on Legacy Mode.
— For NVMe SSDs only, no PCIe card support.
— Supports RAID 0/1/10
— For Pre-configured sku (BTO) upgrade

Additional Options

HPE Graphics Accelerators

HPE ProLiant DL560 Gen11 GPU Enablement Kit   P54816-B21
NVIDIA H100 80GB PCIe Accelerator for HPE   R9S41C
NVIDIA L40 48GB PCIe Accelerator for HPE   S0K90C

Notes: while selecting Accelerator card, the GPU enablement kit is required.

H100 80GB Accelerator Card

Maximum System Ambient Temperature			
System Config	2 Processor Air Cooling SKU	4 Processor Air Cooling SKU	4 Processor Liquid Cooling SKU
8 SFF	25C	25C	Not Supported
12 EDSFF	25C	Not Supported	Not Supported
Media bay + 8 SFF	25C	Not Supported	Not Supported
Media bay + 12 EDSFF	25C	Not Supported	Not Supported
8 SFF x2	25C	Not Supported	Not Supported
12 EDSFF x2	Not Supported	Not Supported	Not Supported
Media bay + 8 SFF x2	Not Supported	Not Supported	Not Supported
Media bay + 12 EDSFF x2	Not Supported	Not Supported	Not Supported
8 SFF x3	Not Supported	Not Supported	Not Supported

L40 48GB Accelerator card

Maximum System Ambient Temperature			
System Config	2 Processor Air Cooling SKU	4 Processor Air Cooling SKU	4 Processor Liquid Cooling SKU
8 SFF	30C	30C	Not Supported
12 EDSFF	30C	30C	Not Supported
Media bay + 8 SFF	30C	30C	Not Supported
Media bay + 12 EDSFF	30C	30C	Not Supported
8 SFF x2	30C*	25C	Not Supported
12 EDSFF x2	25C	Not Supported	Not Supported
Media bay + 8 SFF x2	25C	Not Supported	Not Supported
Media bay + 12 EDSFF x2	25C	Not Supported	Not Supported
8 SFF x3	Not Supported	Not Supported	Not Supported

Notes: (*) The maximum support ambient temperature is 25C when the 8SFF boxes are placed in box 2 and 3 (Direct Attach).

Additional Options

HPE Tape Backup
For the complete range of tape drives, autoloaders, libraries and media see:
https://www.hpe.com/us/en/storage/storeever-tape-storage.html For hardware and software compatibility of Hewlett Packard Enterprise tape backup products **http://www.hpe.com/storage/BURAcompatibility**

Tape Drives
HPE StoreEver LTO-8 Ultrium 30750 External Tape Drive	BC023A
HPE StoreEver MSL2024 0-drive Tape Library	AK379A
HPE StoreEver MSL LTO-7 Ultrium 15000 FC Drive Upgrade Kit	N7P36A
HPE StoreEver MSL LTO-7 Ultrium 15000 SAS Drive Upgrade Kit	N7P37A
HPE StoreEver Mini-SAS High Density to 4-lane Mini-SAS External Fanout 2m Cable	K2R09A
HPE StoreEver Mini-SAS High Density to 4-lane Mini-SAS External Fanout 4m Cable	K2R10A
HPE StoreEver MSL LTO-8 Ultrium 30750 FC Drive Upgrade Kit	Q6Q67A
HPE StoreEver MSL LTO-8 Ultrium 30750 SAS Drive Upgrade Kit	Q6Q68A
HPE StoreEver LTO-5 Ultrium 3000 SAS External Tape Drive	EH958B
HPE StoreEver MSL LTO-6 Ultrium 6250 Fibre Channel Drive Upgrade Kit	C0H28A
HPE StoreEver LTO-7 Ultrium 15000 External Tape Drive	BB874A
HPE StoreEver LTO-9 Ultrium 45000 External Tape Drive	BC042A
HPE StoreEver MSL LTO-9 Ultrium 45000 Fibre Channel Drive Upgrade Kit	R6Q74A
HPE StoreEver MSL LTO-9 Ultrium 45000 SAS Drive Upgrade Kit	R6Q75A

Disk-Based Backup
HPE RDX External Docking Station	C8S07B
HPE RDX 4TB Removable Disk Cartridge	Q2048A
HPE RDX 2TB Removable Disk Cartridge	Q2046A
HPE RDX 500GB Removable Disk Cartridge	Q2042A
HPE RDX 1TB Removable Disk Cartridge	Q2044A

HPE Storage Options

Emulex Fiber Channel HBAs
HPE SN1610E 32Gb 1-port Fibre Channel Host Bus Adapter	R2J62A
HPE SN1610E 32Gb 2-port Fibre Channel Host Bus Adapter	R2J63A
HPE SN1700E 64Gb 1-port Fibre Channel Host Bus Adapter	R7N77A
HPE SN1700E 64Gb 2-port Fibre Channel Host Bus Adapter	R7N78A

QLogic Fiber Channel HBAs
HPE SN1610Q 32Gb 1-port Fibre Channel Host Bus Adapter	R2E08A
HPE SN1610Q 32Gb 2-port Fibre Channel Host Bus Adapter	R2E09A

HPE Racks
- Please see the **HPE Advanced Series Racks** QuickSpecs for information on additional racks options and rack specifications.
- Please see the **HPE Enterprise Series Racks QuickSpecs** for information on additional racks options and rack specifications.
- Please see the **HPE Standard Series Racks QuickSpecs** for information on additional racks options and rack specifications.

Additional Options

HPE Power Distribution Units (PDUs)
- Please see the **HPE Basic Power Distribution Units (PDU) QuickSpecs** for information on these products and their specifications.
- Please see the **HPE Metered Power Distribution Units (PDU) QuickSpecs** for information on these products and their specifications. Please see the **HPE Intelligent Power Distribution Unit (PDU)** QuickSpecs for information on these products and their specifications.
- 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)
- To learn more, please visit the **HPE Uninterruptible Power Systems (UPS)** web page.
- Please see the **HPE DirectFlow Three Phase Uninterruptible Power System QuickSpecs** for information on these products and their specifications.
- Please see the **HPE Line Interactive Single Phase UPS QuickSpecs** for information on these products and their specifications.

HPE T750 Gen5 NA/JP UPS with Management Card Slot	Q1F47A
HPE T750 Gen5 INTL UPS with Management Card Slot	Q1F48A
HPE T1000 Gen5 NA/JP UPS with Management Card Slot	Q1F49A
HPE T1000 Gen5 INTL UPS with Management Card Slot	Q1F50A
HPE T1500 Gen5 NA/JP UPS with Management Card Slot	Q1F51A
HPE T1500 Gen5 INTL UPS with Management Card Slot	Q1F52A
HPE R/T2200 Gen5 NA/JP UPS	Q1L84A
HPE R/T3000 Gen5 Low Voltage NA/JP UPS	Q1L85A
HPE R/T3000 Gen5 High Voltage NA/JP UPS	Q1L86A
HPE R/T3000 Gen5 High Voltage INTL UPS	Q1L87A

Rail Kits
The rail kits contain telescoping rails which allow for in-rack serviceability.
To assist in the installation of the server into the rack an optional installation tool is available by contacting your local services representative.
Notes: 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 ProLiant DL560 Gen11 Ball Bearing Rail 8 Kit	P61501-B21

Notes: Does not include Cable Management Arm (CMA)

HPE Apollo 4200 Gen10 Plus Cable Management Arm	P28726-B21

Additional Options

HPE Support Services

Installation & Startup Services

HPE Install ProLiant DL560 Service	U6H58E
HPE Startup ProLiant DL560 Service	U6H60E

Tech Care Services

|	
HPE 5 Year Tech Care Essential DL560 Gen11 Service	H79X8E
HPE 5 Year Tech Care Essential wDMR DL560 Gen11 Service	H79X9E
HPE 4 Year Tech Care Telco 24x7 Remote Technical Support wDMR DL110 Gen11 Service	H79V4E
HPE 5 Year Tech Care Telco 24x7 Remote Technical Support wDMR DL110 Gen11 Service	H79V5E

Notes: For a full listing of support services available for this server, please visit **http://www.hpe.com/services**

Memory

Memory Population guidelines
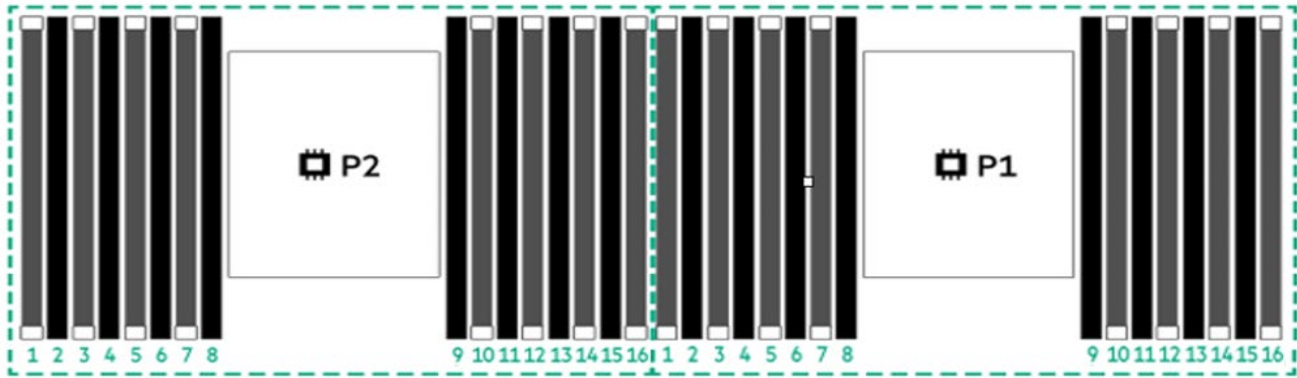
HPE ProLiant DL560 Gen11

HPE ProLiant Gen11 16 slot per CPU DIMM population order															
DIMM population order															
DIMM slot	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
1 DIMM										10						
2 DIMMs[2]			3							10						
4 DIMMs[2]			3				7			10				14		
6 DIMMs			3		5		7			10				14		16
8 DIMMs[1,2]	1		3		5		7			10		12		14		16
12 DIMMs	1	2	3		5	6	7			10	11	12		14	15	16
16 DIMMs[1,2]	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Notes:
- Ommited DIMM counts/socket not qualified by Intel.
- [1] Supports SGX (Software Guard Extensions)
- [2] Support Hemi (hemisphere mode).

General Memory Population Rules and Guidelines:
- DIMMs should be installed in quantities of even numbers.
- 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, and the number and model of installed processors qualified on the platform.
- For details on the HPE Server Memory Options Population Rules, visit:
  Server memory populations rules for HPE Gen11 servers with 4th Gen Intel Xeon Scalable processors
- To realize the performance memory capabilities listed in this document, HPE DDR4 Smart Memory is required.
- For additional information, please see the **HPE DDR5 Smart Memory QuickSpecs**.

Memory

HPE SKU P/N	P43322-B21	P43328-B21	P43331-B21
SKU Description	HPE 16GB (1x16GB) Single Rank x8 DDR5-4800 CAS-40-39-39 EC8 Registered Smart Memory Kit	HPE 32GB (1x32GB) Dual Rank x8 DDR5-4800 CAS-40-39-39 EC8 Registered Smart Memory Kit	HPE 64GB (1x64GB) Dual Rank x4 DDR5-4800 CAS-40-39-39 EC8 Registered Smart Memory Kit
DIMM Capacity	16GB	32GB	64GB
DIMM Rank	Single Rank (1R)	Dual Rank (2R)	Dual Rank (2R)
Voltage	1.1 V	1.1 V	1.1 V
DRAM Depth [bit]	2G	2G	4G
DRAM Width [bit]	x8	x8	x4
DRAM Density	16Gb	16Gb	16Gb
CAS Latency	40-39-39	40-39-39	40-39-39
DIMM Native Speed	4800 MT/s	4800 MT/s	4800 MT/s

HPE SKU P/N	P43334-B21	P63345-B21	P43337-B21
SKU Description	HPE 128GB (1x128GB) Quad Rank x4 DDR5-4800 CAS-46-39-39 EC8 Registered 3DS Smart Memory Kit	HPE 128GB (1x128GB) Quad Rank x4 DDR5-4800 CAS-46-39-39 EC8 Registered 3DS Smart Memory Kit	HPE 256GB (1x256GB) Octal Rank x4 DDR5-4800 CAS-46-39-39 EC8 Registered 3DS Smart Memory Kit
DIMM Capacity	128GB	128GB	256GB
DIMM Rank	Quad Rank (4R)	Quad Rank (4R)	Octal Rank (8R)
Voltage	1.1 V	1.1 V	1.1 V
DRAM Depth [bit]	4G	4G	4G
DRAM Width [bit]	x4	x4	x4
DRAM Density	16Gb	16Gb	16Gb
CAS Latency	40-39-39	40-39-39	40-39-39
DIMM Native Speed	4800 MT/s	4800 MT/s	4800 MT/s

Notes: 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**

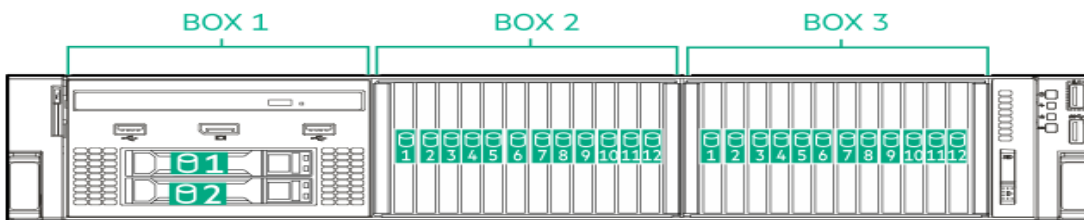## DDR5 memory options part number decoder
Notes:
− Capacity references are rounded to the common gigabyte (GB) values.
   - ο 8GB = 8,192 MB
   - ο 16GB = 16,384 MB
   - ο 32GB = 32,768 MB
   - ο 64GB = 65,536 MB
   - ο 128GB = 131072 MB
   - ο 256GB = 262144 MB

For more information on memory, please see the Memory Quickspecs: **HPE DDR5 Smart Memory**

Storage
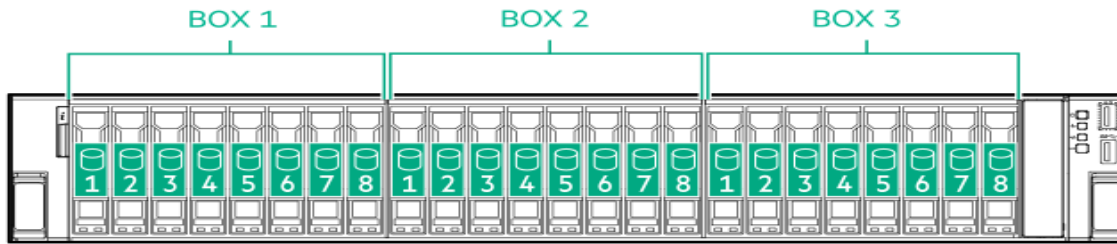
DL560 Gen11 24SFF Front View

DL560 Gen11 12 EDSFF + Media Bay Front View

Technical Specifications

System Unit

Dimensions
- **SFF CTO servers:**
  - 8.75 x 43.3 x 80.6. cm / 3.4 x 17.05 x 31.75 in

Weight (approximate)
- **Air Cooling solution**:
  - Maximum: 38.02 kg
  - Minimum: 21.08 kg
- **Liquid Cooling solution:**
  - **Maximum:** 36.93kg
  - **Minimum:** 26.83kg

Input Requirements (per power supply)

Rated Line Voltage
- For 1800W-2200W (Titanium) Power Supply: 200-240 VAC
- For 1600W (Platinum) Power Supply: 200-240 VAC
- For 1000W (Titanium) Power Supply: 100-240 VAC
- For 800W (Platinum) Power Supply: 100-240 VAC
- For 1600W (-48VDC) Power Supply: -40 Vdc to -72 Vdc

BTU Rating

Maximum
- For 1800W-2200W (Titanium) Power Supply: 6497 BTU/hr (at 200 VAC), 7230 BTU/hr (at 220 VAC), 7962 BTU/hr (at 240 VAC)
- For 1600W Power Supply: 5918 BTU/hr (at 200 VAC), 5888 BTU/hr (at 220 VAC), 5884 BTU/hr (at 240 VAC)
- For 1000W (Titanium) Power Supply: 3741 BTU/hr (at 100 VAC), 2589 BTU/hr (at 220 VAC), 3582 BTU/hr (at 240 VAC)
- For 800W (Platinum) Power Supply: 3067 BTU/hr (at 100 VAC), 2958 BTU/hr (at 200 VAC), 2949 BTU/hr (at 240 VAC)
- For 1600W-(48Vdc) Power Supply: 2983 BTU/hr (at -40 Vdc), 2951 BTU/hr (at -48Vdc), 2912 BTU/hr (at -72Vdc)

Relative Humidity (non-condensing)

- **Operating**
  8% to 90% - Relative humidity (Rh), 28°C maximum wet bulb temperature, non-condensing.
- **Non-operating**
  5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.

Technical Specifications

Power Supply Output
(per power supply)

Rated Steady-State Power
- For 1800W-2200W (Titanium) Power Supply: 1800W-2200W (at 200-240 VAC), 2200W (at 240 VDC) for China only
- For 1600W Power Supply: 1600W (at 240 VAC), 1600W (at 240 VDC) for China only
- For 1000W (Titanium) Power Supply: 1000W (at 100 VAC), 1000W (at 240 VAC), 1000W (at 240 VDC) for China only
- For 800W (Platinum) Power Supply: 800W (at 100 VAC), 800W (at 240 VAC), 800W (at 240 VDC) input for China only
- For 1600W (-48VDC) Power Supply: 800W (at -40 Vdc), 800W (at -72Vdc)

Maximum Peak Power
- For 1800W-2200W (Titanium) Power Supply: 1800W-2200W (at 200-240 VAC), 2200W (at 240 VDC) for China only
- For 1600W Power Supply: 1600W (at 240 VAC), 1600W (at 240 VDC) for China only
- For 800W (Titanium) Power Supply: 800W (at 200 VAC), 800W (at 240 VAC), 800W (at 240 VDC) for China only
- For 800W (Platinum) Power Supply: 800W (at 100 VAC), 800W (at 240 VAC), 800W (at 240 VDC) input for China only
- For 1600W (-48VDC) Power Supply: 800W (at -40 Vdc), 800W (at -72Vdc)

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).

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

Acoustic Noise

Listed are the declared A-Weighted sound power levels (LwA,m) and declared average bystander position A-Weighted sound pressure levels (LpA,m) when the product is operating in a 23°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109). The listed sound levels apply to standard shipping configurations. Additional options may result in increased sound levels. Please have your HPE representative provide information from the HPE EMESC website for further technical details regarding the configurations listed below.

Acoustic Noise	
Idle	
LwA,m	5.6 B Entry 5.2 B Performance
LpAm	44 dBA Entry 39 dBA Performance
Kv	0.4 B Entry 0.4 B Performance
Operating	
LwA,m	5.6 B Entry 6.1 B Performance
LpAm	44 dBA Entry 49 dBA Performance
Kv	0.4 B Entry 0.4 B Performance

Notes:
- The declared mean A-weighted sound power level, LwA,m, is computed as the arithmetic average of the measured.
- A-weighted sound power levels for a randomly selected sample, rounded to the nearest 0,1 B.
- The declared mean A-weighted emission sound pressure level, LpA,m, is computed as the arithmetic average of the measured A-weighted emission sound pressure levels at the bystander positions for a randomly selected sample, rounded to the nearest 1 dB.
- The statistical adder for verification, Kv, is a quantity to be added to the declared mean A-weighted sound power level, LwA,m, such that there will be a 95 % probability of acceptance, when using the verification procedures of ISO 9296, if no more than 6,5 % of the batch of new equipment, has A-weighted sound power levels greater than (LwA,m + Kv).
- The quantity, LwA,c (formerly called LwAd), can be computed from the sum of LWA,m and Kv.
- All measurements made to conform to ISO 7779 / ECMA-74 and declared to conform to ISO 9296 / ECMA-109.
- B, dB, abbreviations for bels and decibels, respectively, where 1 B = 10 dB.
- The results in this declaration apply only to the model numbers listed above when operating and tested according to the indicated modes and standards. A system with additional configuration components or increased operating functionality may increase the noise emission values.
- System under abnormal conditions may increase the noise level, persons in the vicinity of the product [cabinet] for extended periods of time should consider wearing hearing protection or using other means to reduce noise exposure.

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
04-Dec-2023	Version 6	Changed	Standard Features and Core Options sections were updated.
18-Sep-2023	Version 5	Changed	Standard Features, Configuration Information and Core Options sections were updated.
05-Sep-2023	Version 4	Changed	Standard Features, Configuration Information and Core Options sections were updated.
07-Aug-2023	Version 3	Changed	Standard Features, Configuration Information sections were updated.
05-Jun-2023	Version 2	Changed	Configuration Information section was updated.
01-May-2023	Version 1	New	New QuickSpecs

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