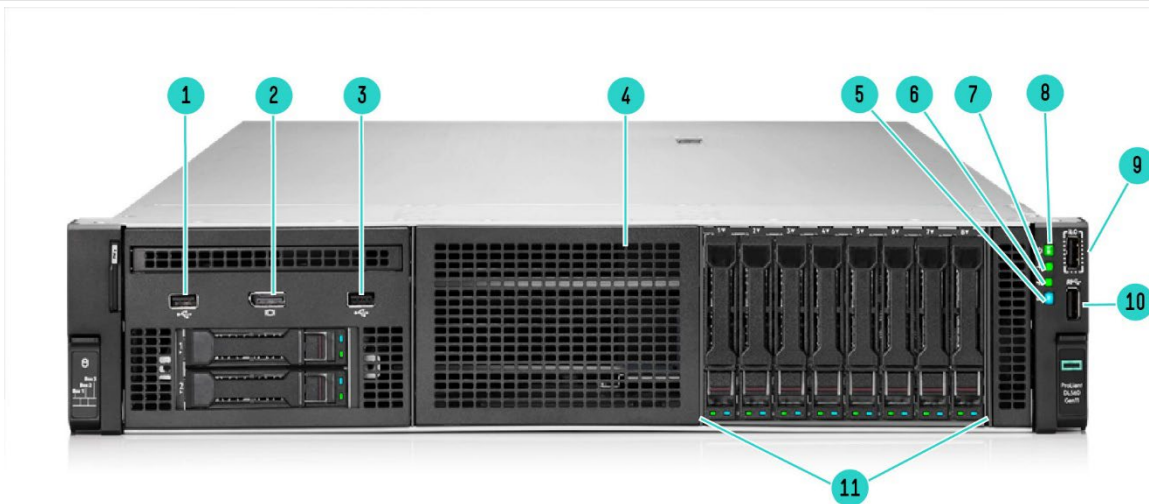


Overview

HPE ProLiant DX560 Gen11

The HPE ProLiant DX560 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 DX560 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 iLO 6.

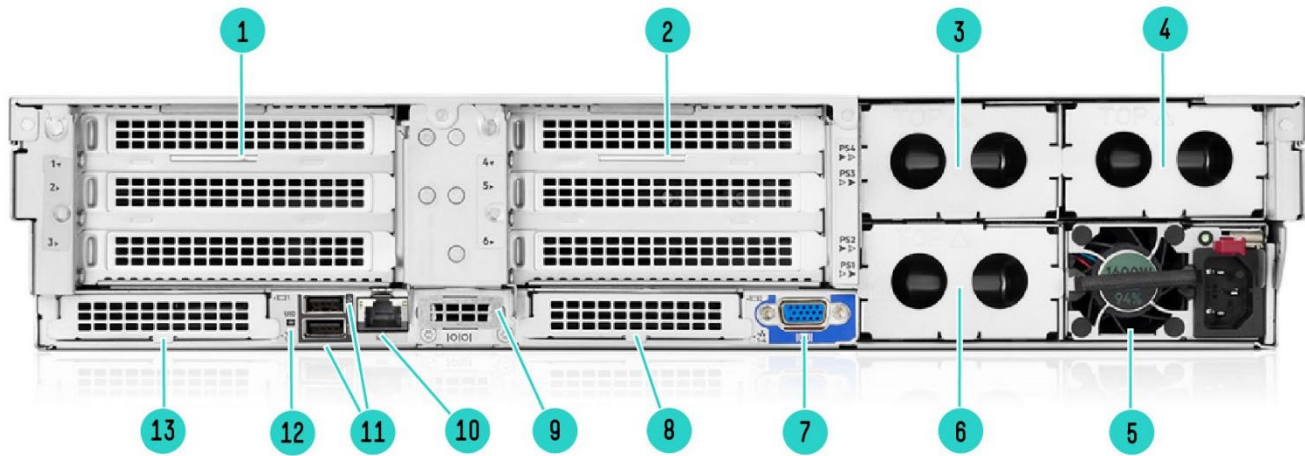
The HPE ProLiant DX560 Gen11 Server is the ideal server for business-critical workloads, in-memory database, data analytics, virtualization, server consolidation, business processing, and general 4S data-intensive applications where data center space and the right performance are paramount.



Front View – SFF chassis with optional Universal Media bay shown

- | | |
|-------------------|--------------------------------|
| 1. USB 2.0 port | 8. Power On/Standby button/LED |
| 2. Display port | 9. iLO Service Port |
| 3. USB 2.0 port | 10. USB 3.2 port |
| 4. 8 SFF NVMe | 11. 8 SFF NVMe |
| 5. UID button LED | |
| 6. NIC status LED | |
| 7. Health LED | |

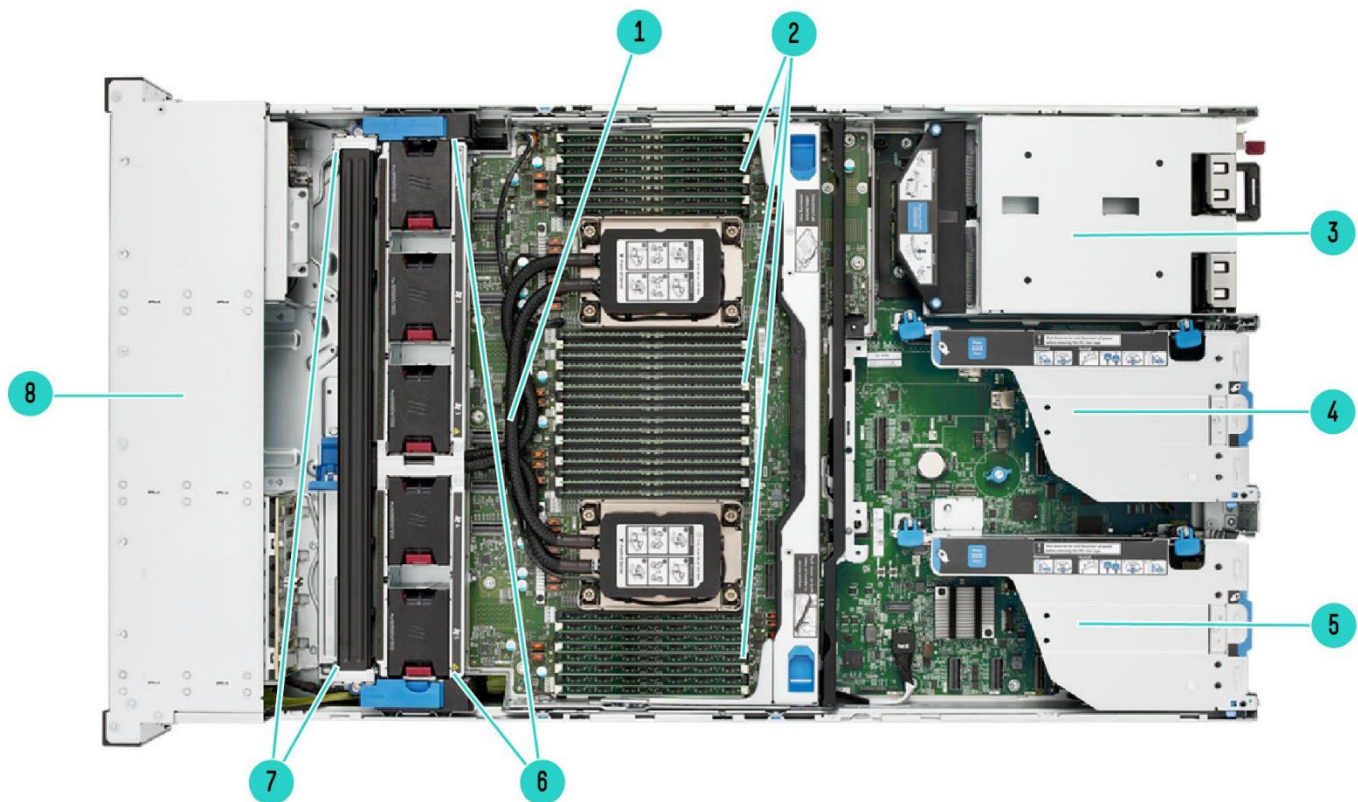
Overview



Rear View – Standard for all DL560 Gen11

- | | | | |
|----|---|-----|------------------------|
| 1. | 3 PCIe slots (Primary riser) (Slot 1-3) | 8. | OCP 2 (Slot 15) |
| 2. | 3 PCIe slots (Secondary riser) (Slot 4-6) | 9. | Serial port (optional) |
| 3. | Power supply 4 | 10. | iLO Management Port |
| 4. | Power supply 3 | 11. | USB 3.2 ports (2) |
| 5. | Power supply 1 | 12. | UID |
| 6. | Power supply 2 | 13. | OCP 1 (Slot 14) |
| 7. | Video (VGA) port | | |

Overview



Internal View Liquid Cooling Chassis

- | | |
|-----------------------------------|---------------------------------|
| 1. Liquid cooling tube | 5. 3 PCIe slots (Primary riser) |
| 2. DDR5 DIMMs | 6. Redundant Fans |
| 3. Power supplies | 7. Liquid Cooling radiator |
| 4. 3 PCIe slots (Secondary riser) | 8. Drive cages |

What's New

- All new DX560 16 SFF NVMe Gen11
- Air cooling system design
- Liquid Cooling system design
- New 4th Generation Intel Scalable Processors
- New PCIe 5.0 support
- New DDR5 Smart Memory – 4800MT/s
- New NS204i-u Boot Device (Standard)
- New SFF NVMe Drives



Overview

Platform Information

Form Factor

- 2U rack

Chassis Types

- 16 SFF NVMe)

System Fans

- High Performance Fan Kit
- Performance Fan Kit

Notes:

- 16 SFF Air-cooled CTO server model ships with 6 high performance fan kit.
 - 16 SFF 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 8468H Processor	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	8.0 TB 64 x 128 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 2 and 5.

Graphics

Integrated Video Standard

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



Standard Features

Maximum Internal Storage

Drive	Capacity	Configuration
Hot Plug SFF NVMe	245.76 TB	16 x 15.36TB

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

Internal Storage Devices

- **Hard Drives**
None ship standard

Power Supply

- HPE 1800W-2200W Flex Slot Titanium Hot Plug Power Supply Kit
Notes:
 - Available in 96% efficiency.
 - 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.

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.



Standard Features

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, please 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 3.2; 1 USB 2.0

Operating Systems and Virtualization Software Support for ProLiant Servers

HPE servers are designed for seamless integration with partner Operating Systems and Virtualization Software. By collaborating closely with our partners, we ensure that their products are optimized, certified, and fully supported within your HPE server environment. Access the certified and supported servers for each of the OS and Virtualization software: [HPE Servers Support & Certification Matrices](#)

- Nutanix Acropolis: (AHV)

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



Standard Features

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.
- 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
- Display Port
- **Notes:** This support is on the optional Universal Media Bay.
- USB 3.2 Compliant
- USB 2.0 Compliant (via Universal Media Bay)
- **Notes:** This support is on the optional Universal Media Bay.
- 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>.



Standard Features

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>.

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
 - 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/support/ProLiantServers-Warranties>

Optional Features

Server Management

HPE iLO Advanced Standard

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.



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/completecure>

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

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 DX560 Gen11 Air Cooling Configure-to-order Server	HPE ProLiant DX560 Gen11 Liquid Cooling Configure-to-order Server
SKU Number	P72858-B21	P72878-B21
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	N/A	
PCIe	None riser included	
Drive Cage	x2/x4 cage (standard)	x2/x4 cage (standard)
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 (standard)	
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 4P liquid cool configuration, HPE ProLiant DX560 Gen11 Liquid Cooling FIO Heat Sink Kit (P54791-B21) must be selected.
HPE DX ProLiant platforms are a Server Appliance: and Energy Star except.
- Server Appliance:
- A computer server that is bundled with a pre-installed OS and application
- software that is used to perform a dedicated function or set of tightly coupled functions.
- Server appliances deliver services through one or more networks (e.g., IP or SAN), and are
- typically managed through a web or command line interface. Server appliance hardware and
- software configurations are customized by the vendor to perform a specific task (e.g., name
- services, firewall services, authentication services, encryption services, and voice-over-IP
- (VoIP) services), and are not intended to execute user-supplied software.



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 DX560 Gen11 Liquid Cooling FIO Heat Sink Kit (P54791-B21) for Liquid-cooling CTO

Intel Xeon-Platinum 8468H 2.1GHz 48-core 330W Processor for HPE P49629-B21

Notes: 4P configuration requires HPE ProLiant DX560 Gen11 Liquid Cooling FIO Heat Sink Kit (P54791-B21) for Liquid-cooling CTO

Intel Xeon-Platinum 8460H 2.2GHz 40-core 330W Processor for HPE P49628-B21

Notes: 4P configuration requires HPE ProLiant DX560 Gen11 Liquid Cooling FIO Heat Sink Kit (P54791-B21) for Liquid-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

Intel Xeon-Platinum 8444H 2.9GHz 16-core 270W Processor for HPE P49625-B21

Notes: 4P configuration requires HPE ProLiant DX560 Gen11 Liquid Cooling FIO Heat Sink Kit (P54791-B21) for Liquid-cooling CTO

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

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

Notes: 4P configuration requires HPE ProLiant DX560 Gen11 Liquid Cooling FIO Heat Sink Kit (P54791-B21) for Liquid-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

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

HPE ProLiant DX560 Gen11 Liquid Cooling FIO Heat Sink Kit P54791-B21

Notes:

- For 4P Liquid cooling configuration
- The HPE ProLiant DX560 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 DL560 Gen11 LC FIO Heat Sink Kit P54791-B21

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

Configuration Information

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.

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 DX 16GB (1x16GB) Single Rank x8 DDR5-4800 CAS-40-39-39 EC8 Registered Smart FIO Memory Kit	P62601-B21
HPE DX 32GB (1x32GB) Dual Rank x8 DDR5-4800 CAS-40-39-39 EC8 Registered Smart FIO Memory Kit	P62603-B21
HPE DX 64GB (1x64GB) Dual Rank x4 DDR5-4800 CAS-40-39-39 EC8 Registered Smart FIO Memory Kit	P62604-B21
HPE 96GB (1x96GB) Dual Rank x4 DDR5-4800 CAS-46-45-45 EC8 Registered Smart Memory Kit	P66675-B21
HPE DX 128GB (1x128GB) Quad Rank x4 DDR5-4800 CAS-40-39-39 EC8 Registered 3DS Smart FIO Memory Kit	P62605-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 (P62605-B21) must be selected for configuring Liquid Cooling CTO Server
- For 96 GB Smart Kit, it must be populated in half quantity or full quantity each CPU. (each CPU needs memory populated)
- 96GB Smart kit cannot mixed up with any other capacity memory module.



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	96GB P66675-B21 128GB DDR5 DIMM (P43334-B21)	256GB DDR5 DIMM (P43337-B21)
Air cooling 4 processor SKU	Up to 185W	6416H(165W) 6418H(185W)	8 SFF x2	8 SFF	Venting Blank	8 SFF	35C	25C	-

Notes: It is the responsibility of customers to ensure the datacenter inlet temperature meets the requirements above.

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	96GB P66675-B21 128GB DDR5 DIMM (P43334-B21)	
Air cooling 4 processor SKU	Up to 250W	6448H(250W) 8450H(250W)	8 SFF x2	8 SFF	Venting blank	8 SFF	30C	25C	

Notes: It is the responsibility of customers to ensure the datacenter inlet temperature meets the requirements above.

SKU	CPU		HDD configuration					
	CPU TDP	CPU list	Storage configuration	Box 1	Box 2	Box 3	64GB and Lower Capacity DDR5 DIMM	96GB P66675-B21 128GB DDR5 DIMM (P63345-B21)
Liquid cooling 4 processor SKU	Up to 350W	6434H(195W) 8444H(270W) 8460H(330W) 8468H(330W) 8490H(350W)	8 SFF x2	8 SFF	Venting blank	8 SFF	25C-30C*	25C

Notes:

- For Liquid cooling CTO server, if 128GB Memory module is required, the P62605-B21 must be selected.
- * CPU dependency
- It is the responsibility of customers to ensure the datacenter inlet temperature meets the requirements above.



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 DX 1800W-2200W Flex Slot Titanium Hot Plug Power Supply Kit

P56724-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 DX 1600W Flex Slot Platinum Hot Plug Low Halogen FIO Power Supply Kit

P18222-B21

HPE DX 1000W Flex Slot Titanium Hot Plug FIO Power Supply Kit

P44807-B21

HPE DX 800W Flex Slot Platinum Hot Plug Low Halogen FIO Power Supply Kit

P18223-B21

HPE DX 1600W Flex Slot -48VDC Hot Plug FIO Power Supply Kit

P60246-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).
- If 1600W DC Power supply is selected, then either "HPE DX 1600W DC PSU Pwr Lug Opt Kit" or "HPE DX 1600W DC PSU power cable kit" must be selected and Vice Versa. Quantity of Power supply and Power cord/Power Lug option must match.
- 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:
<https://poweradvisor.ext.it.hpe.com/?Page=Index>.
- 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



Configuration Information

Factory Instructions and Server Settings

HPE ProLiant DX560 Gen11 Liquid Cooling FIO Heat Sink Kit

P54791-B21

Notes:

- Required for 4P Liquid cooling configuration
- The HPE DX560 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 plenty 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 iLO Common Password FIO Setting

P08040-B21

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

Notes:

- Initial Device Identity (IDevID) certificates are part of a Zero Trust Architecture. This SKU instructs 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).

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.

Notes: 2P configurations support up to total 16 EDSFF

OCP Cable kit Options

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 DL560 Gen11 Ball Bearing Rail 8 Kit

P61501-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

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 plenty of water or seek for medical attention if 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

Core Options

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 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
HPE 96GB (1x96GB) Dual Rank x4 DDR5-4800 CAS-46-45-45 EC8 Registered Smart Memory Kit	P66675-B21
HPE 128GB (1x128GB) Quad Rank x4 DDR5-4800 CAS-46-39-39 EC8 Registered 3DS Smart Memory Kit	P43334-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 (P62605-B21) must be selected

SSD Selection

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

Read Intensive – NVMe – SFF – Solid State Drives

HPE DX 15.36TB NVMe Gen4 High Performance Read Intensive SFF BC U.3 PM1733a FIO SSD	P57771-B21
HPE DX 1.9TB NVMe Gen4 Mainstream Performance Read Intensive SFF BC U.3 Static Multi Vendor FIO SSD	P57757-B21
HPE DX 3.84TB NVMe Gen4 Mainstream Performance Read Intensive SFF BC U.3 Static Multi Vendor FIO SSD	P57758-B21
HPE DX 7.68TB NVMe Gen4 Mainstream Performance Read Intensive SFF BC U.3 Static Multi Vendor FIO SSD	P57759-B21

Mixed Use – NVMe – SFF – Solid State Drives

HPE DX 6.4TB NVMe Gen4 High Performance Mixed Use SFF BC U.3 PM1735a FIO SSD	P57764-B21
HPE DX 3.2TB NVMe Gen4 High Performance Mixed Use SFF BC U.3 PM1735a FIO SSD	P57762-B21

HPE Networking

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 FIO Adapter for HPE DX

P43271-B21



Core Options

25 Gigabit Ethernet adapters

Broadcom BCM57414 Ethernet 10/25Gb 2-port SFP28 Adapter for HPE DX	P53862-B21
Intel E810-XXVDA4 Ethernet 10/25Gb 4-port SFP28 FIO Adapter for HPE DX	P60341-B21
Mellanox MCX631102AS-ADAT Ethernet 10/25Gb 2-port SFP28 FIO Adapter for HPE DX	P60340-B21
Intel E810-XXVDA2 Ethernet 10/25Gb 2-port SFP28 Adapter for HPE	P08443-B21

100 Gigabit Ethernet Adapters

Mellanox MCX623106AS-CDAT Ethernet 100Gb 2-port QSFP56 FIO Adapter for HPE DX	P43273-B21
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Maximum System Ambient Temperature		
Storage Config	4 Processor Air Cooling SKU	4 Processor Liquid Cooling SKU
16SFF	35C	30C

Broadcom BCM57416 Ethernet 10Gb 2-port BASE-T Adapter for HPE DX

Maximum System Ambient Temperature		
Storage Config	4 Processor Air Cooling SKU	4 Processor Liquid Cooling SKU
16SFF	35C	30C

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

Maximum System Ambient Temperature		
Storage Config	4 processor Air Cooling SKU	4 processor Liquid Cooling SKU
16SFF	35C	30C



Core Options

- Mellanox MCX631102AS-ADAT Ethernet 10/25Gb 2-port SFP28 Adapter for HPE DX

Maximum System Ambient Temperature

Storage Config	4 processor Air Cooling SKU	4 processor Liquid Cooling SKU
8 SFF x2	35C	30C*

Notes: * Is required to be installed in riser 1.

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

Maximum System Ambient Temperature

Storage Config	4 processor Air Cooling SKU	4 processor Liquid Cooling SKU
16SFF	35C	30C

- Mellanox MCX623106AS-CDAT Ethernet 100Gb 2-port QSFP56 Adapter for HPE

-

Maximum System Ambient Temperature

Storage Config	4 processor Air Cooling SKU	4 processor Liquid Cooling SKU
8 SFF x2	Not Supported	30C*

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

OCP 3.0 Adapters

Broadcom BCM57416 Ethernet 10Gb 2-port BASE-T OCP3 FIO Adapter for HPE DX

P43272-B21

Broadcom BCM57414 Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE DX

P53861-B21

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

P60339-B21

- 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	4 processor Air Cooling SKU	4 processor Liquid Cooling SKU
16SFF	35C	30C

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

Maximum System Ambient Temperature

Storage Config	4 processor Air Cooling SKU	4 processor Liquid Cooling SKU
16SFF	35C	30C



Core Options

HPE I/O Expansion Options

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 DX 800W Flex Slot Platinum Hot Plug Low Halogen FIO Power Supply Kit

P18223-B21

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

HPE DX 1000W Flex Slot Titanium Hot Plug FIO Power Supply Kit

P44807-B21

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

HPE DX 1600W Flex Slot Platinum Hot Plug Low Halogen FIO Power Supply Kit

P18222-B21

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

HPE DX 1600W Flex Slot -48VDC Hot Plug FIO Power Supply Kit

P60246-B21

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

P56724-B21

HPE DX 1600W -48VDC Power Cable Kit

P60743-B21

HPE DX 1600W -48VDC Power Lug Option Kit

P60247-B21

Notes:

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

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 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 DX NS204i-u Gen11 NVMe Hot Plug Boot Optimized FIO Storage Device

P60454-B21

Software Skus

Nutanix AOS Pre-installed FIO Software for HPE

R6T15A

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.

HPE ProLiant DL560 Gen11 NS204i-u Front Enablement Kit

P55549-B21

HPE ProLiant DL380a/DL560 Gen11 NS204i-u Rear Enablement Kit

P55710-B21

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	4 Processor Air Cooling SKU	4 Processor Liquid Cooling SKU
8 SFF x2	35C	35C

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

Notes: Hot pluggable

Maximum System Ambient Temperature		
Storage Config	4 Processor Air Cooling SKU	4 Processor Liquid Cooling SKU
8 SFF x2	35C	25C*

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



Additional Options

HPE Graphics Accelerators

DX NVIDIA L40 48GB PCIe FIO Accelerator for HPE

P61598-B21

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

L40 48GB Accelerator card

Maximum System Ambient Temperature		
System Config	4 Processor Air Cooling SKU	4 Processor Liquid Cooling SKU
8 SFF x2	25C	Not Supported

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

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 rail kits are designed to work with HPE racks in compliance with industry standard EIA-310-E. In the event a customer elects to purchase a third-party rack for use with an HPE rail kit, any such use is at customer's own risk. HPE makes no express or implied warranties with respect to such third-party racks and specifically disclaims any implied warranties of merchantability and fitness for a particular purpose. Furthermore, HPE has no obligation and assumes no liability for the materials, design, specifications, installation, safety, and compatibility of any such third-party racks with any rail kits, including HPE rail kits.

HPE ProLiant DL560 Gen11 Ball Bearing Rail 8 Kit

P61501-B21

Notes:

- Does not include Cable Management Arm (CMA)
- Rail kit to be defaulted in the configurator. However, customers can deselect the Rail kit.

HPE Apollo 4200 Gen10 Plus Cable Management Arm

P28726-B21

HPE Support Services

Tech Care Services

HPE 7 Year Tech Care Basic DL380 Gen10/+ Smart Choice Service

H79X8E

HPE 7 Year Tech Care Essential DL380 Gen10/+ Smart Choice Service

H79X9E

HPE 7 Year Tech Care Essential DL380 Gen11 Smart Choice Service

H79Y1E

HPE 7 Year Tech Care Basic DL325/DL345 Gen11 Smart Choice Service

H79Y2E

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

HPE Installation & Startup Services

HPE ProLiant DL/ML Install Service

U4554E

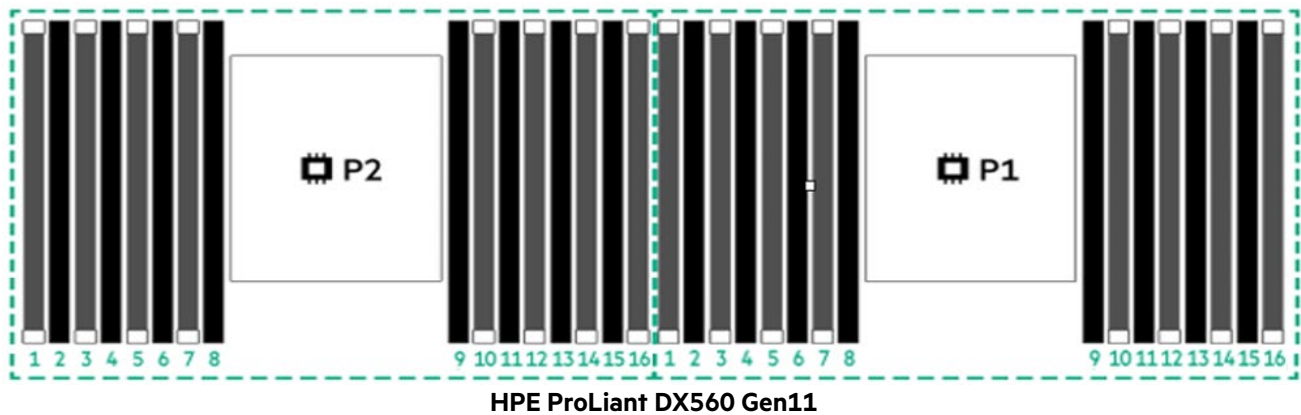
HPE ProLiant DL/ML Startup Service

U4555E



Memory

Memory Population guidelines



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	P62601-B21	P62603-B21	P62604-B21
SKU Description	HPE DX 16GB (1x16GB) Single Rank x8 DDR5-4800 CAS-40-39-39 EC8 Registered Smart Memory Kit	HPE DX 32GB (1x32GB) Dual Rank x8 DDR5-4800 CAS-40-39-39 EC8 Registered Smart Memory Kit	HPE DX 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	P62605-B21	-	-
SKU Description	HPE DX 128GB (1x128GB) Quad Rank x4 DDR5-4800 CAS-46-39-39 EC8 Registered 3DS Smart Memory Kit	-	-
DIMM Capacity	128GB	-	-
DIMM Rank	Quad Rank (4R)	-	-
Voltage	1.1 V	-	-
DRAM Depth [bit]	4G	-	-
DRAM Width [bit]	x4	-	-
DRAM Density	16Gb	-	-
CAS Latency	40-39-39	-	-
DIMM Native Speed	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/server-memory>

DDR5 memory options part number decoder

Notes:

- Capacity references are rounded to the common gigabyte (GB) values.
 - o 8GB = 8,192 MB
 - o 16GB = 16,384 MB
 - o 32GB = 32,768 MB
 - o 64GB = 65,536 MB
 - o 128GB = 131072 MB

For more information on memory, please see the Memory QuickSpecs: [HPE DDR5 Smart Memory](#)



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.



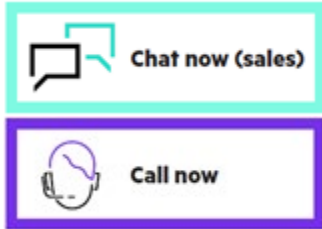
Summary of Changes

Date	Version History	Action	Description of Change
27-May-2025	Version 4	Changed	Core Options and Additional Options sections were updated. Added: 25 Gigabit Ethernet adapters SKU and Nutanix AOS Pre-installed FIO Software for HPE SKU.
02-Dec-2024	Version 3	Changed	Additional Options section was updated. (SKUs and configuration rule were added).
21-Oct-2024	Version 2	Changed	Standard Features and Configuration Information sections were updated.
03-Sep-2024	Version 1	New	New QuickSpecs



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

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