

Overview

HPE Alletra Storage Server 4110

Are you looking for server-based data infrastructure with exceptional performance to accelerate data-driven initiatives?

The HPE Alletra Storage Server 4110 is specifically designed to run your most performance demanding data storage-intensive workloads to power your data-driven initiatives to success. From data stores for machine learning (ML) and analytics to distributed and NoSQL databases, performance sensitive Software-Defined Storage, and data heavy hyperconverged infrastructure, it delivers the capabilities you need at ideal economics with trusted security and a cloud operating experience. This includes the option to consume as-a-service via HPE GreenLake enabling you to shift from owning and maintaining to simply utilizing it. HPE Alletra Storage Server 4000 systems provide the data infrastructure for any successful data driven organization.



HPE Alletra Storage Server 4110 20EDSFF Configure-to-order System



HPE Alletra Storage Server 4110 20SFF Configure-to-order System

Overview

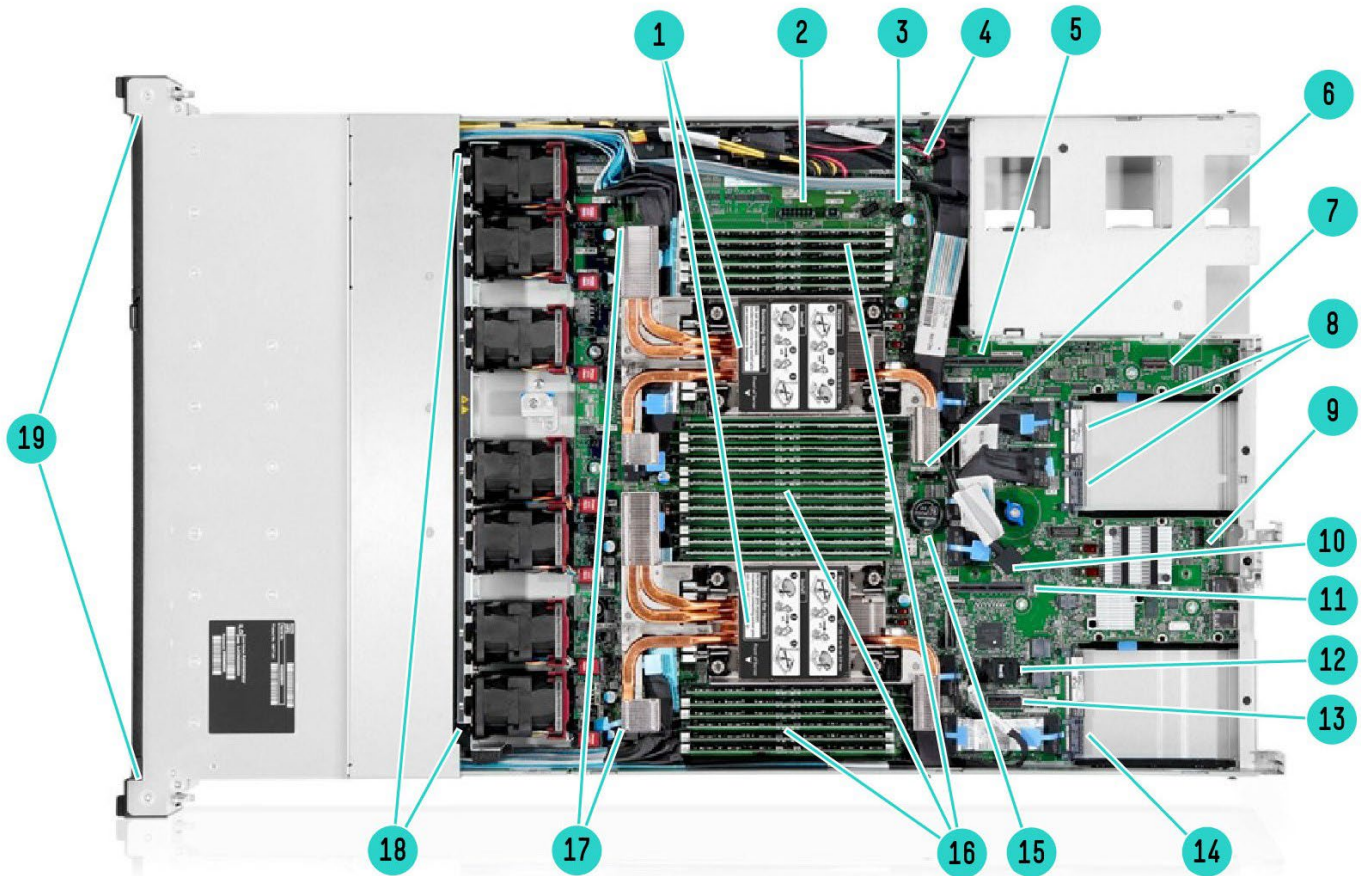


HPE Alletra Storage Server 4110 Configure-to-order System Front View (20EDSFF SKU shown)

- | | |
|---|-------------------|
| 1. Serial number/iLO information pull tab | 5. NIC status LED |
| 2. iLO service port | 6. UID button/LED |
| 3. Power On/Standby button and system power LED | 7. USB 3.0 port |
| 4. Health LED | |



Overview

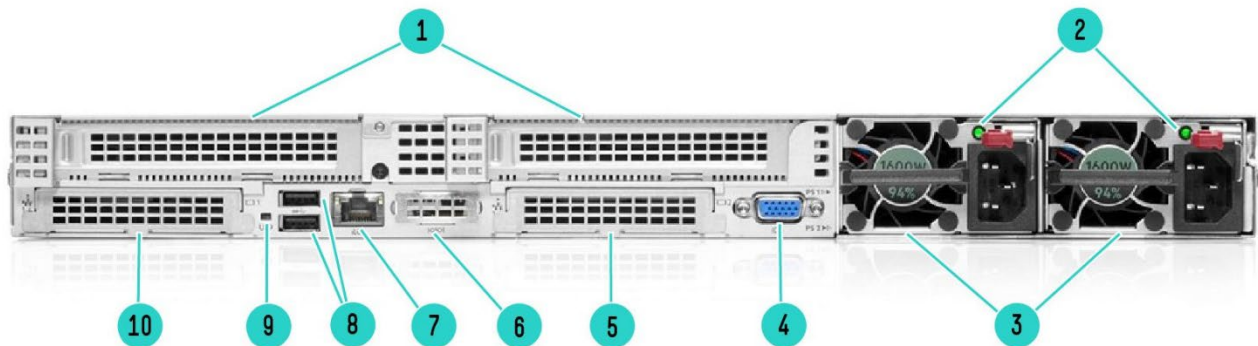


HPE Alletra Storage Server 4110 Configure-to-order System Internal View (20EDSFF SKU shown)

- | | |
|---|---|
| <ul style="list-style-type: none"> 1. Up to 2 processors (2 processors installed with performance heat sink shown) 2. Energy pack connector 3. Drive cage 2 power connector 4. Drive cage 1 power connector 5. Secondary riser connector 6. Processor Smart Cooling Module connector 7. System maintenance switch 8. OCP2 A & B connector 9. Serial port connector 10. Internal USB connector | <ul style="list-style-type: none"> 11. Primary riser connector 12. Front I/O connector 13. PCIe Gen3 connector 14. OCP1 connector 15. System battery 16. DDR5 DIMM slots (Fully populated 24 DIMMs shown) 17. MCIO Connectors 18. System fans 19. Drive Cage 1 |
|---|---|



Overview



HPE Alletra Storage Server 4110 Configure-to-order System Rear View – Standard for all HPE Alletra Storage Server 4110

- | | | | |
|----|---|-----|------------------------|
| 1. | PCIe slot 1 & 2 | 6. | Serial port (optional) |
| 2. | Power supply LED (bay 1 & 2) | 7. | iLO management port |
| 3. | Hot-plug power supply bay 1 (standard) & 2 (optional) | 8. | USB 3.0 ports |
| 4. | Video port | 9. | UID LED |
| 5. | OCP slot (OCP2) | 10. | OCP slot (OCP1) |

What's New

- 20 direct connect Enterprise and Data Center Standard Form Factor (EDSFF) All-NVMe design with up to 315 GB/s of PCIe Gen5 bandwidth (or 20 SFF) in a dense, 1U standard rack depth form factor.
- Dual 4th generation Intel® Xeon® Scalable processors delivering more performance plus DDR5 memory with up to 75%¹ more bandwidth for demanding data processing workloads.
- Zero trust security from silicon to software and factory to cloud with HPE Integrated Lights Out 6, DMTF Security Protection Data Model support, and FIPS140-2 Self-Encrypting Drives.
- HPE Greenlake for Compute Ops Management offers cloud-native control and redhats for simplified and automated lifecycle management including dramatically easier firmware management.
- New 5th Generation Intel® Xeon® Scalable Processors support
- New HPE DDR5 SmartMemory options – Registered (RDIMM), 5600MT/s support
- NVIDIA L4 and A2 GPU accelerators support
- New HPE NVMe EDSFF E3.s 1T MU and RI SSD SKUs support

Notes:¹ 5600 MT/s versus 3200 MT/s for the 3rd generation Intel® Xeon® Scalable processors.

Platform Information

Form Factor

- 1U rack

Chassis Types

- 20 EDSFF E3.S 1T PCIe Gen5 x4 connected
- 20 SFF NVMe PCIe Gen4 x4 connected

System Fans

- 7 hot-pluggable system fan modules shipped as standard
Notes: Choice of High Performance Fan Kit or Smart Cooling Fan Kit based on the processor selection



Standard Features

Processors – always 2 of the following, depending on model.

Notes:

- The 2nd digit of the processor model number “x4xx” is used to denote the processor generation (i.e. 4 = 4th generation)
- This table covers the public Intel offering only.
- For more information regarding Intel Xeon processors, please see the following <http://www.intel.com/xeon>.

Platinum Processors

| Intel Xeon Models | CPU Frequency | Cores | L3 Cache | Power | UPI | DDR5 | SGX Enclave size |
|---------------------------|---------------|-------|----------|-------|-------------|-----------|------------------|
| Platinum 9468 Processor | 2.1 GHz | 48 | 105 MB | 350 W | 4 @ 16 GT/s | 4800 MT/s | 512GB |
| Platinum 9462 Processor | 2.7 GHz | 32 | 75 MB | 350 W | 3 @ 16 GT/s | 4800 MT/s | 128GB |
| Platinum 9460 Processor | 2.2 GHz | 40 | 97.5 MB | 350 W | 3 @ 16 GT/s | 4800 MT/s | 128GB |
| Platinum 8568Y+ Processor | 2.3 GHz | 48 | 300 MB | 350 W | 4 @ 20 GT/s | 5600 MT/s | 512GB |
| Platinum 8562Y+ Processor | 2.8 GHz | 32 | 60 MB | 300 W | 3 @ 20 GT/s | 5600 MT/s | 512GB |
| Platinum 8558 Processor | 2.1 GHz | 48 | 260 MB | 330 W | 4 @ 20 GT/s | 5200 MT/s | 512GB |
| Platinum 8468 Processor | 2.1 GHz | 48 | 105 MB | 350 W | 4 @ 16 GT/s | 4800 MT/s | 512GB |
| Platinum 8462+ Processor | 2.8 GHz | 32 | 60 MB | 300 W | 3 @ 16 GT/s | 4800 MT/s | 128GB |
| Platinum 8460Y+ Processor | 2.0 GHz | 40 | 105 MB | 300 W | 4 @ 16 GT/s | 4800 MT/s | 128GB |
| Platinum 8452Y Processor | 2.0 GHz | 36 | 67.5 MB | 300 W | 4 @ 16 GT/s | 4800 MT/s | 128GB |

Notes:

- 2 socket capable, 2S - 4 or 3 UPI @ 20 or 16 GT/s.
- 4th and 5th Generation: 8-Channel DDR5 1DPC @ 5600 - 4800 MT/s.
- 80 lanes PCIe 5.0, advanced RAS.
- Y Supports Intel Speed Select Technology – Performance Profile 2.0 (Intel SST-PP).
- +: Feature Plus: Support AMX, DLB, DSA, IAA and QAT additionally

Gold Processors

| Intel Xeon Models | CPU Frequency | Cores | L3 Cache | Power | UPI | DDR5 | SGX Enclave size |
|-----------------------|---------------|-------|----------|-------|-------------|-----------|------------------|
| Gold 6554S Processor | 2.2 GHz | 36 | 180 MB | 270 W | 3 @ 20 GT/s | 5200 MT/s | 128GB |
| Gold 6548N Processor | 2.8 GHz | 32 | 60 MB | 250 W | 3 @ 20 GT/s | 5200 MT/s | 128GB |
| Gold 6548Y+ Processor | 2.5 GHz | 32 | 60 MB | 250 W | 3 @ 20 GT/s | 5200 MT/s | 128GB |
| Gold 6544Y Processor | 3.6 GHz | 16 | 45 MB | 270 W | 3 @ 20 GT/s | 5200 MT/s | 128GB |
| Gold 6542Y Processor | 2.9 GHz | 24 | 60 MB | 250 W | 3 @ 20 GT/s | 5200 MT/s | 128GB |
| Gold 6538Y+ Processor | 2.2 GHz | 32 | 60 MB | 225 W | 3 @ 20 GT/s | 5200 MT/s | 128GB |
| Gold 6538N Processor | 2.1 GHz | 32 | 60 MB | 205 W | 3 @ 20 GT/s | 5200 MT/s | 128GB |
| Gold 6534 Processor | 3.9 GHz | 8 | 22.5 MB | 195 W | 3 @ 20 GT/s | 4800 MT/s | 128GB |
| Gold 6530 Processor | 2.1 GHz | 32 | 160 MB | 270 W | 3 @ 20 GT/s | 4800 MT/s | 128GB |
| Gold 6526 Processor | 2.8 GHz | 16 | 37.5 MB | 195 W | 3 @ 20 GT/s | 5200 MT/s | 128GB |
| Gold 6454S Processor | 2.2 GHz | 32 | 60 MB | 270 W | 4 @ 16 GT/s | 4800 MT/s | 128GB |
| Gold 6448Y Processor | 2.1 GHz | 32 | 60 MB | 225 W | 3 @ 16 GT/s | 4800 MT/s | 128Gb |
| Gold 6444Y Processor | 3.6 GHz | 16 | 45 MB | 270 W | 3 @ 16 GT/s | 4800 MT/s | 128Gb |
| Gold 6442Y Processor | 2.6 GHz | 24 | 60 MB | 225 W | 3 @ 16 GT/s | 4800 MT/s | 128Gb |
| Gold 6438Y+ Processor | 2.0 GHz | 32 | 60 MB | 205 W | 3 @ 16 GT/s | 4800 MT/s | 128Gb |
| Gold 6434 Processor | 3.7 GHz | 8 | 22.5 MB | 195 W | 3 @ 16 GT/s | 4800 MT/s | 128Gb |



Standard Features

| Intel Xeon Models | CPU Frequency | Cores | L3 Cache | Power | UPI | DDR5 | SGX Enclave size |
|----------------------|---------------|-------|----------|-------|-------------|-----------|------------------|
| Gold 6430 Processor | 2.1 GHz | 32 | 60 MB | 270 W | 3 @ 16 GT/s | 4400 MT/s | 128Gb |
| Gold 6426Y Processor | 2.5 GHz | 16 | 37.5 MB | 185 W | 3 @ 16 GT/s | 4800 MT/s | 128Gb |
| Gold 5520+ Processor | 2.2 GHz | 28 | 52.5 MB | 205 W | 3 @ 20 GT/s | 4800 MT/s | 128GB |
| Gold 5515+ Processor | 3.2 GHz | 8 | 22.5 MB | 165 W | 3 @ 20 GT/s | 4800 MT/s | 128GB |
| Gold 5420+ Processor | 2.0 GHz | 28 | 52.5 MB | 205 W | 3 @ 16 GT/s | 4400 MT/s | 128Gb |
| Gold 5418Y Processor | 2.0 GHz | 24 | 45 MB | 185 W | 3 @ 16 GT/s | 4400 MT/s | 128Gb |
| Gold 5418N Processor | 1.8 GHz | 24 | 45 MB | 165 W | 3 @ 16 GT/s | 4000 MT/s | 128GB |
| Gold 5416S Processor | 2.0 GHz | 16 | 30 MB | 150 W | 3 @ 16 GT/s | 4400 MT/s | 128Gb |
| Gold 5415+ Processor | 2.9 GHz | 8 | 22.5 MB | 150 W | 3 @ 16 GT/s | 4400 MT/s | 128Gb |

Notes:

- 2 socket capable, 2S - 4 or 3 UPI @ 20 or 16 GT/s.
- 4th and 5th Generation: 8-Channel DDR5 1DPC @ 5200 - 4000 MT/s
- 80 lanes PCIe 5.0, advanced RAS.
- Y Supports Intel Speed Select Technology – Performance Profile 2.0 (Intel SST-PP).
- S SKUs are storage & hyperconverged infrastructure (HCI) optimized SKUs
- +: Feature Plus: Support AMX, DLB, DSA, IAA and QAT additionally

Silver Processors

| Intel Xeon Models | CPU Frequency | Cores | L3 Cache | Power | UPI | DDR5 | SGX Enclave size |
|-------------------------|---------------|-------|----------|-------|-------------|-----------|------------------|
| Silver 4516Y+ Processor | 2.2 GHz | 24 | 45 MB | 185 W | 2 @ 16 GT/s | 4400 MT/s | 64GB |
| Silver 4514Y Processor | 2.0 GHz | 16 | 30 MB | 150 W | 2 @ 16 GT/s | 4400 MT/s | 64GB |
| Silver 4510 Processor | 2.4 GHz | 12 | 30 MB | 150 W | 2 @ 16 GT/s | 4400 MT/s | 64GB |
| Silver 4509Y Processor | 2.6 GHz | 8 | 22.5 MB | 125 W | 2 @ 16 GT/s | 4400 MT/s | 64GB |
| Silver 4416+ Processor | 2.0 GHz | 20 | 37.5 MB | 165 W | 2 @ 16 GT/s | 4000 MT/s | 64GB |
| Silver 4410Y Processor | 2.0 GHz | 12 | 30 MB | 150 W | 2 @ 16 GT/s | 4000 MT/s | 64Gb |

Notes:

- 2 socket capable, 2S - 2 UPI @ 16 GT/s
- 4th and 5th Generation: 8-Channel DDR5 1DPC @ 4400 - 4000 MT/s
- 80 lanes PCIe 5.0, advanced RAS.
- Y Supports Intel Speed Select Technology – Performance Profile 2.0 (Intel SST-PP).
- +: Feature Plus: Support AMX, DLB, DSA, IAA and QAT additionally

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>

System Management Chipset

HPE iLO 6 ASIC

Notes: Read and learn more in the [iLO QuickSpecs](#).



Standard Features

Memory

| | |
|---------------------------------|---|
| Type | HPE DDR5 Smart Memory Registered (RDIMM) |
| DIMM Slots Available | 24 12 DIMM slots per processor, 8 channels per processor, 2-2-1-1 deployment |
| Maximum capacity (RDIMM) | 6 TB 24 x 256 GB RDIMM @ 4800 MT/s 3TB 24 x 128 GB RDIMM @ 5600 MT/s |

Notes:

- The maximum memory speed is limited by the processor selection.
- The maximum capacity per system is limited by the overall configuration selection due to thermal capacity.

Memory Protection

Advanced ECC

Advanced ECC uses single device data correction to detect and correct single and all multibit error that occurs within a single DRAM chip.

Expansion Slots

| Primary Riser | | | | | |
|-------------------|------------|-----------|-----------------|-----------|--------------------------|
| Expansion Slots # | Technology | Bus Width | Connector Width | Processor | Slot Form Factor |
| 1 | PCIe 5.0 | x16 | x16 | CPU 1 | Full-height, half-length |
| Secondary Riser | | | | | |
| Expansion Slots # | Technology | Bus Width | Connector Width | Processor | Slot Form Factor |
| 2 | PCIe 5.0 | x16 | x16 | CPU 2 | Full-height, half-length |

Internal Storage Devices

- **Hard Drives**
None ship standard

Storage Controllers

NVMe Boot Devices

- **Optional HPE NS204i-u Gen11 NVMe Hot Plug Boot Optimized Storage Device**

Notes:

- NS204i-u does not occupy a PCIe slot and internal only for Alletra Storage Server 4110.
- 2pcs of 480GB M.2 NVMe SSD are included in the NS204i-u Hot Plug Boot Device
- RAID 1 supported on the NS204i-u Hot Plug Boot Device.



Standard Features

Maximum Storage

| Storage | Capacity | Configuration |
|------------------------------|----------|---------------|
| Hot Plug SFF NVMe PCIe SSD | 307.2 TB | 20 x 15.36 TB |
| Hot Plug EDSFF NVMe PCIe SSD | 307.2 TB | 20 x 15.36 TB |
| NVMe M.2 SSD | 3.84 TB | 2 x 1.92 TB |

Graphics

- Integrated video standard
 - Video modes up to 1920 x 1200 @ 60 Hz (32 bpp)
 - 16 MB Video Memory
- HPE iLO 6 on system management memory
 - 32 MB Flash
 - 4 Gbit DDR3 with ECC protection

Power Supply

- HPE 800W 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 1600W Flex Slot -48VDC Hot Plug Power Supply Kit
- HPE 1600W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit
Notes:
 - Available in 94% efficiency.
 - 1600W Power supplies only support high line voltage (200 VAC to 240 VAC).
- HPE 1800-2200W Flex Slot Titanium Hot Plug Low Halogen Power Supply Kit
Notes:
 - Available in 96% efficiency.
 - 1800-2200W Power supplies only support high line voltage (200 VAC to 240 VAC).
 - HPE 1600W ~48VDC Power Supply Kit

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 Gen10 Plus 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.

All pre-configured servers ship with a standard 6-foot IEC C-13/C-14 jumper cord (A0K02A). This jumper cord is also 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](#).



Standard Features

Interfaces

| | |
|---|---|
| Serial | 1 port – Optional, rear |
| VGA Port | 1 port – Standard, rear |
| Network Ports | None. Choice of OCP or stand up card, supporting a wide range of NIC adapters |
| HPE iLO Remote Management Network Port | 1 GbE Dedicated |
| Front iLO Service Port | 1 standard |
| USB 3.0 | 4 standard on all models: 1 front, 2 rear, 1 internal |

Operating Systems and Virtualization Software

- [Windows Server 2019](#)
- [Windows Server 2022](#)
- [Red Hat Enterprise Linux \(RHEL\) 8.6](#)
- [Red Hat Enterprise Linux \(RHEL\) 9.0](#)
- [SUSE Linux Enterprise Server \(SLES\) 15 SP4](#)
- [VMware 7.0 U3](#)
- [VMware 8.0](#)
- [Canonical Ubuntu 20.04 and 22.04](#)

Notes: For more information on Hewlett Packard Enterprise Certified and Supported ProLiant Servers for OS and Virtualization Software and latest listing of software drivers available for your server visit <http://www.hpe.com/info/ossupport>

Industry Standard Compliance

- ACPI 6.4 Compliant
- PCIe 5.0 Compliant
- WOL Support
- Microsoft® Logo certifications
- PXE Support
- USB 3.2 Gen1 Compliant
- SMBIOS 3.4
- Redfish API
- IPMI 2.0
- Secure Digital 4.0
- TPM 2.0 support
- Advanced Encryption Standard (AES)
- Triple Data Encryption Standard (3DES)
- SNMP v3
- TLS 1.2
- DMTF Systems Management Architecture for Server Hardware Command Line (SMASH CLP)
- One Button Secure Erase Enhancements
- UEFI (Unified Extensible Firmware Interface Forum) 2.7



Standard Features

Embedded Management

HPE Integrated Lights-Out (HPE iLO)

Monitor your servers for ongoing management, service alerting, reporting and remote management with HPE iLO.

Learn more at <http://www.hpe.com/info/ilo>.

UEFI

Configure and boot your servers securely with industry standard Unified Extensible Firmware Interface (UEFI).

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

Intelligent Provisioning

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

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

iLO RESTful API

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

Server Utilities

Active Health System

The HPE Active Health System (AHS) is an essential component of the iLO management portfolio that provides continuous, proactive health monitoring of HPE servers. Learn more at <http://www.hpe.com/servers/ahs>.

Active Health System Viewer

Use the Active Health System Viewer, a web-based portal, to easily read AHS logs and speed problem resolution with HPE self-repair recommendations, to learn more visit: <http://www.hpe.com/servers/ahsv>.

Smart Update

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

Learn more at <https://www.hpe.com/us/en/servers/smart-update.html>.

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, Gen10 and Gen10 Plus HPE servers at unmatched speed and scale. Use with an iLO Advanced License to unlock full capabilities.

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

HPE iLO Mobile Application

Enables the ability to access, deploy, and manage your server anytime from anywhere from select smartphones and mobile devices. For additional information please visit: <http://www.hpe.com/info/ilo/mobileapp>.

RESTful Interface Tool

RESTful Interface tool (iLOREST) is a single scripting tool to provision using iLO RESTful API to discover and deploy servers at scale. Learn more at <http://www.hpe.com/info/resttool>.



Standard Features

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 Standard can be used for inventory, health monitoring, alerting, and reporting without additional fees. It can monitor multiple HPE server generations. The user interface is similar to the HPE OneView Advanced version, but the software-defined functionality is not available. Learn more at <http://www.hpe.com/info/oneview>.

HPE GreenLake for Compute Ops Management

HPE is intelligently transforming compute management with a completely new As a Service experience that delivers greater security, simplicity, and efficiency. Discover a completely modernized compute management experience delivered through HPE GreenLake that securely streamlines operations from edge-to-cloud, and automates key lifecycle tasks (onboard, update, manage and monitor HPE servers), bringing the agility and greater efficiencies to wherever compute devices reside via a unified single browser-based interface.

Compute Ops Management is built on a unique cloud-native architecture that abstracts, manages and controls HPE servers regardless of physical location. 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.

Security

- UEFI Secure Boot and Secure Start support
- Immutable Silicon Root of Trust
- FIPS 140-2 validation
- Common Criteria certification
- Configurable for PCI DSS compliance
- Advanced Encryption Standard (AES) and Triple Data Encryption Standard (3DES) on browser
- Support for Commercial National Security Algorithms (CNSA)
- iLO Security Modes
- Granular control over iLO interfaces
- Smart card (PIV/CAC) and Kerberos based 2-factor Authentication
- Tamper-free updates – components digitally signed and verified
- Secure Recovery – recover critical firmware to known good state on detection of compromised FW
- Ability to rollback firmware
- Secure erase of NAND
- TPM (Trusted Platform Module)
- Bezel Locking Kit
- Chassis Intrusion detection

HPE Trusted Platform Module

HPE Trusted Platform Module 2.0 is included on Pre-Configured models and can be enabled and disabled using the BIOS.

Notes: The TPM (Trusted Platform Module) is a microcontroller chip that can securely store artifacts used to authenticate the server platform. These artifacts can include passwords, certificates and encryption keys.



Standard Features

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 brings a new level of automation to infrastructure management by taking a template driven approach to provisioning, updating, and integrating compute, storage, and networking infrastructure. It provides full-featured licenses which can be purchased for managing Gen8, Gen9, Gen10 and Gen10 Plus servers. To learn more visit <http://www.hpe.com/info/oneview>.

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>.

Accelerator and GPGPU Information

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

Rack and Power Infrastructure

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

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

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

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

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

Learn more about HPE Racks, KVM, PDUs and UPSs at [HPE Rack and Power Infrastructure](#).

One Config Simple (SCE)

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#>



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/complecare>

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 Server Hardware Installation

Provides for the basic hardware installation of HPE branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner.

<https://h20195.www2.hpe.com/v2/Getdocument.aspx?docname=5981-9356enw>

HPE Installation and Startup Service

Provides for the installation of your HPE hardware according to product specifications including options. The HPE service delivery technician will connect the product to a LAN as appropriate and enable remote support to allow for automatic case creation for hardware failures. Installation and start up services also includes the installation of one supported operating system type (Windows® or Linux).

DC for Hyperscale

Complete Care for Hyperscale is available for Service Providers and HPC customers who use a scale out approach to computing with a high volume homogenous infrastructure and resilient architecture can take advantage of this environment support tailored to their operating model.

HPE Factory Express for Servers and storage

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

Factory Express offers service packages for simple configuration, racking, installation, complex configuration and design services as well as individual factory services, such as image loading, asset tagging, and custom packaging. HPE products supported through Factory Express include a wide array of servers and storage: HPE Integrity, HPE ProLiant, HPE Apollo, HPE ProLiant Server Blades, HPE BladeSystem, HPE 9000 servers as well as the MSAxxx3PAR suite, XP, rackable tape libraries and configurable network switches.



Service and Support

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 QuickSpecs, 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/>

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

This section lists some of the steps required to configure a Factory Integrated Model.

To ensure 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.
- Some options may not be integrated at the factory. Contact your local sales representative for additional information

Step 1: Base Configuration (choose one of the following configurable models)

Network Choice (NC) Models

Network Choice models do not include embedded LOM. To enable networking capability please select a validated alternative NIC- OCP or PCIe- from the Core Options section.

| CTO Server | HPE Alletra Storage Server 4110 20EDSFF Configure-to-order System | HPE Alletra Storage Server 4110 20SFF Configure-to-order System |
|------------------------------|---|--|
| SKU Number | P51168-B21 | P64587-B21 |
| TAA SKU* | P51168-B21#GTA | P64587-B21#GTA |
| Processor | Not included as standard | |
| DIMM Slots | 24-DIMM slots | |
| PCIe | PCIe 5.0: 2 slots (2 x16 FHHL) | |
| Drive Cage - included | 20 EDSFF E3.S 1T NVMe PCIe x5 connected | 20 SFF NVMe PCIe x4 connected Basic carrier (BC) drive support |
| Network Controller | Choice of OCP or stand up cards Notes: No embedded networking. | |
| Fans** | 7 Standard Fans Choice of High Performance Fans or Smart Cooling Fan Kit based on the processor selection | |
| Management | Default: HPE iLO Standard with Intelligent Provisioning, HPE OneView Standard (requires download), HPE GreenLake for Compute Ops Management (subscription included) | |
| USB | Front: 1 USB 3.0 + iLO service port Rear: 2 USB 3.0 Internal: 1 USB 3.0 | |
| Form Factor | 1U Rack | |
| Warranty | 3-year parts, 3-year labor, 3-year onsite support with next business day response. | |

Notes:

- *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.
- **Fans should be selected separately depending on the configuration.

Step 1a: Operating Tracking SKUs (required to choose one of each category)

The OCA options and configuration rules will be different based on the operating tracking SKUs selected.

Inlet Ambient Operating Temperature Configuration Tracking SKUs

Description

HPE Alletra Storage Server 4XXX 30C Inlet Ambient Operating Temperature Configuration Tracking

SKU
S2V38AAE

Notes: for customers' data center with 30C or lower Inlet Ambient Operating Temperature

HPE Alletra Storage Server 4XXX 25C Inlet Ambient Operating Temperature Configuration Tracking

S2V33AAE

Notes: for customers' data center with 25C or lower Inlet Ambient Operating Temperature



Configuration Information

Networking Operating Configuration Tracking SKUs

Description

HPE Alletra Storage Server 4XXX DAC Networking Operating Configuration Tracking **SKU** S2V32AAE

Notes: for customers using [Direct Attach Copper \(DAC\)](#) for the server networking connection

HPE Alletra Storage Server 4XXX AOC Networking Operating Configuration Tracking **SKU** S2V37AAE

Notes: for customers using [Active Optical Cables \(AOC\)](#) for the server networking connection

Step 2: Choose Required Options

Please select two matching processors.

Notes:

- Mixing of 2 different processor models is not supported.
- Processors with TDP equal to or greater than 270W require Smart Cooling Module Kit (P51171-B21).
- Processors with TDP equal to or greater than 270W require Smart Cooling Fan Kit (P51675-B21).
- Processors with TDP lower than 270W require High Performance Heat Sink Kit (P51169-B21).
- Processors with TDP lower than 270W require High Performance Fan Kit (P51673-B21).

Step 2a: Choose Processor Options

Processor Option Kits

5th Generation Intel Xeon-Platinum

Description

Intel Xeon-Platinum 8568Y+ 2.3GHz 48-core 350W Processor Kit for HPE Alletra Storage Server 41X0 **SKU** P67405-B21

Intel Xeon-Platinum 8562Y+ 2.8GHz 32-core 300W Processor Kit for HPE Alletra Storage Server 41X0 **SKU** P67408-B21

Intel Xeon-Platinum 8558 2.1GHz 48-core 330W Processor Kit for HPE Alletra Storage Server 41X0 **SKU** P67406-B21

5th Generation Intel Xeon-Gold

Description

Intel Xeon-Gold 6554S 2.2GHz 36-core 270W Processor Kit for HPE Alletra Storage Server 41X0 **SKU** P67407-B21

Intel Xeon-Gold 6548N 2.8GHz 32-core 250W Processor for HPE Alletra Storage Server 41X0 **SKU** P75664-B21

Intel Xeon-Gold 6548Y+ 2.5GHz 32-core 250W Processor Kit for HPE Alletra Storage Server 41X0 **SKU** P67410-B21

Intel Xeon-Gold 6544Y 3.6GHz 16-core 270W Processor Kit for HPE Alletra Storage Server 41X0 **SKU** P67417-B21

Intel Xeon-Gold 6542Y 2.9GHz 24-core 250W Processor Kit for HPE Alletra Storage Server 41X0 **SKU** P67415-B21

Intel Xeon-Gold 6538Y+ 2.2GHz 32-core 225W Processor Kit for HPE Alletra Storage Server 41X0 **SKU** P67409-B21

Intel Xeon-Gold 6538N 2.1GHz 32-core 205W Processor Kit for HPE Alletra Storage Server 41X0 **SKU** P67412-B21

Intel Xeon-Gold 6534 3.9GHz 8-core 195W Processor Kit for HPE Alletra Storage Server 41X0 **SKU** P67401-B21

Intel Xeon-Gold 6530 2.1GHz 32-core 270W Processor Kit for HPE Alletra Storage Server 41X0 **SKU** P67411-B21

Intel Xeon-Gold 6526Y 2.8GHz 16-core 195W Processor Kit for HPE Alletra Storage Server 41X0 **SKU** P67418-B21

Intel Xeon-Gold 5520+ 2.2GHz 28-core 205W Processor Kit for HPE Alletra Storage Server 41X0 **SKU** P67413-B21

Intel Xeon-Gold 5515+ 3.2GHz 8-core 165W Processor Kit for HPE Alletra Storage Server 41X0 **SKU** P67402-B21

Intel Xeon-Gold 5512U 2.1GHz 28-core 185W Processor Kit for HPE Alletra Storage Server 41X0 **SKU** P67414-B21



Configuration Information

5th Generation Intel Xeon-Silver

Description

| | SKU |
|--|------------|
| Intel Xeon-Silver 4516Y+ 2.2GHz 24-core 185W Processor Kit for HPE Alletra Storage Server 41X0 | P67416-B21 |
| Intel Xeon-Silver 4514Y 2.0GHz 16-core 150W Processor Kit for HPE Alletra Storage Server 41X0 | P67419-B21 |
| Intel Xeon-Silver 4510 2.4GHz 12-core 150W Processor Kit for HPE Alletra Storage Server 41X0 | P67420-B21 |
| Intel Xeon-Silver 4509Y 2.6GHz 8-core 125W Processor Kit for HPE Alletra Storage Server 41X0 | P67403-B21 |

4th Generation Intel Xeon-Platinum

Description

| | SKU |
|--|------------|
| Intel Xeon-Platinum 9468 2.1GHz 48-core 350W Processor Kit for HPE Alletra Storage Server 41X0 | P50810-B21 |
| Intel Xeon-Platinum 9462 2.7GHz 32-core 350W Processor Kit for HPE Alletra Storage Server 41X0 | P50814-B21 |
| Intel Xeon-Platinum 9460 2.2GHz 40-core 350W Processor Kit for HPE Alletra Storage Server 41X0 | P50815-B21 |
| Intel Xeon-Platinum 8468 2.1GHz 48-core 350W Processor Kit for HPE Alletra Storage Server 41X0 | P51959-B21 |
| Intel Xeon-Platinum 8462Y+ 2.8GHz 32-core 300W Processor Kit for HPE Alletra Storage Server 41X0 | P50799-B21 |
| Intel Xeon-Platinum 8460Y+ 2.0GHz 40-core 300W Processor Kit for HPE Alletra Storage Server 41X0 | P50800-B21 |
| Intel Xeon-Platinum 8452Y 2.0GHz 36-core 300W Processor Kit for HPE Alletra Storage Server 41X0 | P50807-B21 |

4th Generation Intel Xeon-Gold

Description

| | SKU |
|--|------------|
| Intel Xeon-Gold 6454S 2.2GHz 32-core 270W Processor Kit for HPE Alletra Storage Server 41X0 | P50809-B21 |
| Intel Xeon-Gold 6448Y 2.1GHz 32-core 225W Processor Kit for HPE Alletra Storage Server 41X0 | P50796-B21 |
| Intel Xeon-Gold 6444Y 3.6GHz 16-core 270W Processor Kit for HPE Alletra Storage Server 41X0 | P50798-B21 |
| Intel Xeon-Gold 6442Y 2.6GHz 24-core 225W Processor Kit for HPE Alletra Storage Server 41X0 | P50795-B21 |
| Intel Xeon-Gold 6438Y+ 2.0GHz 32-core 205W Processor Kit for HPE Alletra Storage Server 41X0 | P50806-B21 |
| Intel Xeon-Gold 6434 3.7GHz 8-core 205W Processor Kit for HPE Alletra Storage Server 41X0 | P50797-B21 |
| Intel Xeon-Gold 6430 2.1GHz 32-core 270W Processor Kit for HPE Alletra Storage Server 41X0 | P50805-B21 |
| Intel Xeon-Gold 6426Y 2.5GHz 16-core 185W Processor Kit for HPE Alletra Storage Server 41X0 | P50794-B21 |
| Intel Xeon-Gold 5420+ 2.0GHz 28-core 205W Processor Kit for HPE Alletra Storage Server 41X0 | P50804-B21 |
| Intel Xeon-Gold 5418Y 2.0GHz 24-core 185W Processor Kit for HPE Alletra Storage Server 41X0 | P50803-B21 |
| Intel Xeon-Gold 5418N 1.8GHz 24-core 165W Processor Kit for HPE Alletra Storage Server 41X0 | P50816-B21 |
| Intel Xeon-Gold 5416S 2.0GHz 16-core 150W Processor Kit for HPE Alletra Storage Server 41X0 | P50808-B21 |
| Intel Xeon-Gold 5415+ 2.9GHz 8-core 150W Processor Kit for HPE Alletra Storage Server 41X0 | P50793-B21 |

4th Generation Intel Xeon-Silver

Description

| | SKU |
|---|------------|
| Intel Xeon-Silver 4416+ 2.0GHz 20-core 165W Processor Kit for HPE Alletra Storage Server 41X0 | P50802-B21 |
| Intel Xeon-Silver 4410Y 2.0GHz 12-core 150W Processor Kit for HPE Alletra Storage Server 41X0 | P50801-B21 |

Step 2b: Choose Memory Options

Please select two or more memory DIMMs from below.

For additional information, please see the [HPE DDR5 Smart Memory QuickSpecs](#).

Notes:

- The maximum memory speed and capacity is a function of the memory type, memory configuration, and processor model.
- Quantity of memory DIMMs selected per socket must be 0, 1, 2, 4, 6, 8, or 12.



Configuration Information

- The 5600 MT/s Memory SKUs are supported for 5th Gen processors only
- The 4800 MT/s Memory SKUs are supported for 4th Gen processors only

Registered DIMMs (RDIMMs)

Notes:

- Mixing of 3DS and non-3DS DIMMs not allowed.
- Rank and capacity mixing of DIMMs is not supported

Description

| Description | SKU |
|---|------------|
| HPE 16GB (1x16GB) Single Rank x8 DDR5-5600 CAS-46-45-45 EC8 Registered Smart Memory Kit | P64705-K21 |
| HPE 32GB (1x32GB) Dual Rank x8 DDR5-5600 CAS-46-45-45 EC8 Registered Smart Memory Kit | P64706-K21 |
| HPE 64GB (1x64GB) Dual Rank x4 DDR5-5600 CAS-46-45-45 EC8 Registered Smart Memory Kit | P64707-K21 |
| HPE 96GB (1x96GB) Dual Rank x4 DDR5-5600 CAS-46-45-45 EC8 Registered Smart Memory Kit | P64708-K21 |
| Notes: Do not support SPR EE LCC SKUs. Do not support quantity 2 or 4 per CPU socket. | |
| HPE 128GB (1x128GB) Quad Rank x4 DDR5-5600 CAS-52-45-45 EC8 Registered 3DS Smart Memory Kit | P64709-K21 |
| Notes: This SKU cannot be selected if processors equal or greater than 270W or GPU are selected. | |
| HPE 128GB (1x128GB) Dual Rank x4 DDR5-5600 CAS-46-45-45 EC8 Registered Smart Memory Kit | P69976-K21 |
| Notes: This SKU cannot be selected if processors equal or greater than 270W or GPU are selected. | |
| HPE 16GB (1x16GB) Single Rank x8 DDR5-4800 CAS-40-39-39 EC8 Registered Smart Memory Kit | P43322-K21 |
| HPE 32GB (1x32GB) Dual Rank x8 DDR5-4800 CAS-40-39-39 EC8 Registered Smart Memory Kit | P43328-K21 |
| HPE 64GB (1x64GB) Dual Rank x4 DDR5-4800 CAS-40-39-39 EC8 Registered Smart Memory Kit | P43331-K21 |
| Notes: If this SKU and processors equal or greater than 270W are selected, the maximum drive quantity is 10. | |
| HPE 128GB (1x128GB) Quad Rank x4 DDR5-4800 CAS-46-39-39 EC8 Registered 3DS Smart Memory Kit | P43334-K21 |
| Notes: This SKU cannot be selected if processors equal or greater than 270W or GPU are selected. | |
| HPE 128GB (1x128GB) Dual Rank x4 DDR5-4800 CAS-40-39-39 EC8 Registered Smart Memory Kit | P69974-K21 |
| Notes: This SKU cannot be selected if processors equal or greater than 270W or GPU are selected. | |
| HPE 256GB (1x256GB) Octal Rank x4 DDR5-4800 CAS-46-39-39 EC8 Registered 3DS Smart Memory Kit | P43337-K21 |
| Notes: This SKU cannot be selected if processors equal or greater than 270W or GPU are selected. | |

Step 2c: Choose Power Supplies

Please select one or two power supplies from below.

Notes: Mixing of 2 different power supplies is NOT supported.

HPE Flex Slot Power Supplies

Description

| Description | SKU |
|---|------------|
| HPE 800W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit | P38995-B21 |
| HPE 1000W Flex Slot Titanium Hot Plug Power Supply Kit | P03178-B21 |
| HPE 1600W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit | P38997-B21 |
| Notes: Only supports high line voltage (200 VAC to 240 VAC). | |
| HPE 1800W-2200W Flex Slot Titanium Hot Plug Power Supply Kit | P44712-B21 |
| Notes: Only supports high line voltage (200 VAC to 240 VAC). | |
| HPE 1600W Flex Slot -48VDC Hot Plug Power Supply Kit | P17023-B21 |



Configuration Information

Step 3: Choose Additional (FIO) Factory Integratable Options

Each of the following may be selected if desired at time of factory integration

| Description | SKU |
|---|------------|
| HPE Smart Memory Fast Fault Tolerance FIO Setting | 875293-B21 |

Notes:

- Enables Fast Fault Tolerance mode, an HPE Memory RAS feature introduced in HPE Gen10 servers that survives up to two DRAM failures.
- This RAS feature combines Adaptive Double DRAM Device Correction (ADDC) with HPE Advanced Error Detection Technology, resultin in significantly better memory reliability and availability that what ADDDC provides on its own. For more information see our [Memory RAS feature technical whitepaper](#).

HPE Security Options

HPE Server Security Optimized Service for HPE ProLiant (R9S59A) is an optional security upgrade intended for agencies and regulated industries with enhanced security and compliance needs. Applying this option to a HPE Alletra Storage Server 41X0 CTO system ensures it is hardened by turning on advanced safeguards in place against cyber-exploits throughout the server lifecycle. An iLO Advanced License required for High Security Mode and compatible intrusion detection device option kits are prerequisites for the full optimization service.

Step 4: Management software

Select your choice of cloud-native management or on-premises management software.

HPE Greenlake for Compute Ops Management for cloud-native management

Notes: HPE Greenlake for Compute Ops Management for cloud-native management of Alletra Storage Servers, as well as ProLiant servers. The SKUs below are for Alletra Storage Servers specifically, and are billed upfront. If you want to be billed monthly or annually, please order R6Z73AAE standalone.

| Recommended SKU | SKU |
|--|----------|
| HPE GreenLake for Compute Ops Management Enhanced 5-year Upfront Alletra 4000 SaaS | S1E13AAE |

| Alternative SKUs | SKU |
|--|----------|
| HPE GreenLake for Compute Ops Management Enhanced 3-year Upfront Alletra 4000 SaaS | S1E12AAE |

| Required SKU when ordering through GreenLake Flex | SKU |
|--|----------|
| HPE GreenLake for Compute Ops Management Flex with Alletra 4000 Tracking | S4P39AAE |

Notes: Both the tracking SKU above as well as one of the COM SaaS SKUs (S1E12 AAE or S1E13AAE) are needed to allow COM to be included and transacted as part of a GL Flex solution and contracts.

HPE OneView

| Description | SKU |
|--|----------|
| 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 |



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 a Hewlett Packard Enterprise approved configurator. Contact your local sales representative for additional information.

HPE Unique Options

Cooling Options

| Description | SKU |
|--|------------|
| HPE Alletra Storage Server 4110 High Performance Heat Sink Kit | P51169-B21 |
| HPE Alletra Storage Server 4110 Smart Cooling FIO Module Kit | P51171-B21 |
| Notes: Required for processors with a TDP equal or greater than 270W. | |
| HPE Alletra Storage Server 4110 High Performance Fan Kit | P51673-B21 |
| HPE Alletra Storage Server 4110 Smart Cooling Fan Kit | P51675-B21 |
| Notes: Required for processors with a TDP equal or greater than 270W. | |

Optical Drive Options

| Description | SKU |
|--|------------|
| HPE Mobile USB DVD-RW Optical Drive | 701498-B21 |
| Notes: This kit is supported on USB 3.0 ports only. | |

Security

| Description | SKU |
|--|------------|
| HPE Gen11 1U Storage Bezel Kit | P52247-B21 |
| HPE Bezel Lock Kit | 875519-B21 |
| Notes: Requires Bezel Kit (P52247-B21). | |

HPE Memory

Please select two or more memory DIMMs from below.

For additional information, please see the [HPE DDR5 Smart Memory QuickSpecs](#).

Notes:

- The maximum memory speed and capacity is a function of the memory type, memory configuration, and processor model.
- Quantity of memory DIMMs selected per socket must be 0, 1, 2, 4, 6, 8, or 12.
- The 5600 MT/s Memory SKUs are supported for 5th Gen processors only
- The 4800 MT/s Memory SKUs are supported for 4th Gen processors only

HPE DDR5 Memory

Registered DIMMs (RDIMMs)

Notes:

- Mixing of 3DS and non-3DS DIMMs not allowed.
- Rank mixing and capacity mixing of DIMMs is not supported

Description

| Description | SKU |
|---|------------|
| HPE 16GB (1x16GB) Single Rank x8 DDR5-5600 CAS-46-45-45 EC8 Registered Smart Memory Kit | P64705-K21 |
| HPE 32GB (1x32GB) Dual Rank x8 DDR5-5600 CAS-46-45-45 EC8 Registered Smart Memory Kit | P64706-K21 |
| HPE 64GB (1x64GB) Dual Rank x4 DDR5-5600 CAS-46-45-45 EC8 Registered Smart Memory Kit | P64707-K21 |



Additional Options

| Description | SKU |
|--|------------|
| HPE 96GB (1x96GB) Dual Rank x4 DDR5-5600 CAS-46-45-45 EC8 Registered Smart Memory Kit Notes: Do not support SPR EE LCC SKUs. Do not support quantity 2 or 4 per CPU socket. | P64708-K21 |
| HPE 128GB (1x128GB) Quad Rank x4 DDR5-5600 CAS-52-45-45 EC8 Registered 3DS Smart Memory Kit Notes: This SKU cannot be selected if processors equal or greater than 270W or GPU are selected. | P64709-K21 |
| HPE 128GB (1x128GB) Quad Rank x4 DDR5-5600 CAS-52-45-45 EC8 Registered 3DS Smart Memory Kit Notes: This SKU cannot be selected if processors equal or greater than 270W or GPU are selected. | P64709-K21 |
| HPE 16GB (1x16GB) Single Rank x8 DDR5-4800 CAS-40-39-39 EC8 Registered Smart Memory Kit | P43322-K21 |
| HPE 32GB (1x32GB) Dual Rank x8 DDR5-4800 CAS-40-39-39 EC8 Registered Smart Memory Kit | P43328-K21 |
| HPE 64GB (1x64GB) Dual Rank x4 DDR5-4800 CAS-40-39-39 EC8 Registered Smart Memory Kit Notes: If this SKU and processors equal or greater than 270W are selected, the maximum drive quantity is 10. | P43331-K21 |
| HPE 128GB (1x128GB) Quad Rank x4 DDR5-4800 CAS-46-39-39 EC8 Registered 3DS Smart Memory Kit Notes: This SKU cannot be selected if processors equal or greater than 270W or GPU are selected. | P43334-K21 |
| HPE 128GB (1x128GB) Dual Rank x4 DDR5-4800 CAS-40-39-39 EC8 Registered Smart Memory Kit Notes: This SKU cannot be selected if processors equal or greater than 270W or GPU are selected. | P69974-K21 |
| HPE 256GB (1x256GB) Octal Rank x4 DDR5-4800 CAS-46-39-39 EC8 Registered 3DS Smart Memory Kit Notes: This SKU cannot be selected if processors equal or greater than 270W or GPU are selected. | P43337-K21 |

HPE Boot Device

| Description | SKU |
|--|------------|
| HPE NS204i-u Gen11 NVMe Hot Plug Boot Optimized Storage Device Notes: Supported when processors equal or less than 270W. | P48183-B21 |
| HPE Alletra Storage Server 41X0 Direct Attach NVMe M.2 OS Boot Device Notes: – No NVMe M.2 SSD included and requires at least one NVMe SSD. – Supported when processors equal or less than 270W. | P60350-B21 |
| HPE 480GB NVMe Gen3 Mainstream Performance Read Intensive M.2 Multi Vendor SSD | P40513-B21 |
| HPE 960GB NVMe Gen3 Mainstream Performance Read Intensive M.2 Multi Vendor SSD | P40514-B21 |
| HPE 1.92TB NVMe Gen3 Mainstream Performance Read Intensive M.2 Multi Vendor SSD | P40515-B21 |
| HPE 480GB NVMe Gen4 Mainstream Performance Read Intensive M.2 PM9A3 SSD | P69543-K21 |
| HPE Alletra Storage Server 4110 NVMe M.2 Enablement Kit Notes: Required when NVMe Boot Device is selected. | P51206-B21 |

HPE Solid State Drives

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

Mixed Use – PCIe/NVMe EDSFF - E3S EC1 EDSFF Solid State Drives

| Description | SKU |
|---|------------|
| HPE 3.2TB NVMe Gen5 High Performance Mixed Use E3S EC1 EDSFF SPDM CM7 SSD | P61191-K21 |
| HPE 6.4TB NVMe Gen5 High Performance Mixed Use E3S EC1 EDSFF SPDM CM7 SSD | P61195-K21 |
| HPE 1.6TB NVMe Gen5 Mainstream Performance Mixed Use E3S EC1 CD8P SSD | P69241-K21 |
| HPE 3.2TB NVMe Gen5 Mainstream Performance Mixed Use E3S EC1 CD8P SSD | P69243-K21 |
| HPE 6.4TB NVMe Gen5 Mainstream Performance Mixed Use E3S EC1 CD8P SSD | P69245-K21 |

Additional Options

SED (Self-Encryption Drive)

Description

| | |
|---|------------|
| HPE 3.2TB NVMe Gen5 High Performance Mixed Use E3S EC1 Self-encrypting FIPS 140-3 CM7 SSD | P70669-K21 |
| HPE 6.4TB NVMe Gen5 High Performance Mixed Use E3S EC1 Self-encrypting FIPS 140-3 CM7 SSD | P70672-K21 |
| HPE 7.68TB NVMe Gen5 High Performance Read Intensive E3S EC1 Self-encrypting FIPS 140-3 CM7 SSD | P70674-K21 |

Notes:

- For direct attach:
 - o Requires TPM 2.0 for Local Key encryption.
 - o iLO Advanced required for SED connectivity into customer's Remote Key Management environment.

Description

| | SKU |
|--|------------|
| HPE 3.2TB NVMe Gen5 High Performance Mixed Use E3S EC1 PS1030 SSD | P70399-K21 |
| HPE 6.4TB NVMe Gen5 High Performance Mixed Use E3S EC1 PS1030 SSD | P70401-K21 |
| HPE 12.8TB NVMe Gen5 High Performance Mixed Use E3S EC1 PS1030 SSD | P70403-K21 |
| HPE 1.6TB NVMe Gen5 Mainstream Performance Mixed Use E3S EC1 EDSFF SPDM PE1030 SSD | P77262-K21 |
| HPE 3.2TB NVMe Gen5 Mainstream Performance Mixed Use E3S EC1 EDSFF SPDM PE1030 SSD | P77265-K21 |
| HPE 6.4TB NVMe Gen5 Mainstream Performance Mixed Use E3S EC1 EDSFF SPDM PE1030 SSD | P77267-K21 |

Read Intensive – PCIe/NVMe EDSFF - E3S EC1 EDSFF Solid State Drives

| | |
|---|------------|
| HPE 3.84TB NVMe Gen5 High Performance Read Intensive E3S EC1 EDSFF SPDM PM1743 SSD | P57799-K21 |
| HPE 7.68TB NVMe Gen5 High Performance Read Intensive E3S EC1 EDSFF SPDM PM1743 SSD | P57803-K21 |
| HPE 15.36TB NVMe Gen5 High Performance Read Intensive E3S EC1 EDSFF SPDM PM1743 SSD | P57807-K21 |
| HPE 3.84TB NVMe Gen5 High Performance Read Intensive E3S EC1 EDSFF SPDM CM7 SSD | P61179-K21 |
| HPE 7.68TB NVMe Gen5 High Performance Read Intensive E3S EC1 EDSFF SPDM CM7 SSD | P61183-K21 |
| HPE 15.36TB NVMe Gen5 High Performance Read Intensive E3S EC1 EDSFF SPDM CM7 SSD | P61187-K21 |
| HPE 1.92TB NVMe Gen5 Mainstream Performance Read Intensive E3S EC1 CD8P SSD | P69234-K21 |
| HPE 3.84TB NVMe Gen5 Mainstream Performance Read Intensive E3S EC1 CD8P SSD | P69237-K21 |
| HPE 7.68TB NVMe Gen5 Mainstream Performance Read Intensive E3S EC1 CD8P SSD | P69239-K21 |
| HPE 15.36TB NVMe Gen5 Mainstream Performance Read Intensive E3S EC1 CD8P SSD | P69546-K21 |
| HPE 3.84TB NVMe Gen5 High Performance Read Intensive E3S EC1 PS1010 SSD | P70392-K21 |
| HPE 7.68TB NVMe Gen5 High Performance Read Intensive E3S EC1 PS1010 SSD | P70395-K21 |
| HPE 15.36TB NVMe Gen5 High Performance Read Intensive E3S EC1 PS1010 SSD | P70397-K21 |
| HPE 1.92TB NVMe Gen5 Mainstream Performance Read Intensive E3S EC1 EDSFF SPDM PE1010 SSD | P77269-K21 |
| HPE 3.84TB NVMe Gen5 Mainstream Performance Read Intensive E3S EC1 EDSFF SPDM PE1010 SSD | P77271-K21 |
| HPE 7.68TB NVMe Gen5 Mainstream Performance Read Intensive E3S EC1 EDSFF SPDM PE1010 SSD | P77273-K21 |
| HPE 15.36TB NVMe Gen5 Mainstream Performance Read Intensive E3S EC1 EDSFF SPDM PE1010 SSD | P77275-K21 |

Very Read Optimized – PCIe/NVMe EDSFF - E3S EC1 EDSFF Solid State Drives

| | |
|--|------------|
| HPE 3.84TB NVMe Gen4 Mainstream Performance Very Read Optimized E3S EC1 EDSFF P5430 SSD | P63930-K21 |
| HPE 7.68TB NVMe Gen4 Mainstream Performance Very Read Optimized E3S EC1 EDSFF P5430 SSD | P63934-K21 |
| HPE 15.36TB NVMe Gen4 Mainstream Performance Very Read Optimized E3S EC1 EDSFF P5430 SSD | P63938-K21 |



Additional Options

Read Intensive – PCIe/NVMe U.3 – SFF Basic Carrier Solid State Drives

| Description | SKU |
|---|------------|
| HPE 1.92TB NVMe Gen4 High Performance Read Intensive SFF BC U.3 PM1733a SSD | P50216-K21 |
| HPE 3.84TB NVMe Gen4 High Performance Read Intensive SFF BC U.3 PM1733a SSD | P50219-K21 |
| HPE 7.68TB NVMe Gen4 High Performance Read Intensive SFF BC U.3 PM1733a SSD | P50222-K21 |
| HPE 15.36TB NVMe Gen4 High Performance Read Intensive SFF BC U.3 PM1733a SSD | P50224-K21 |
| HPE 960GB NVMe Gen4 Mainstream Performance Read Intensive SFF BC U.3 Static V2 Multi Vendor SSD | P64842-K21 |
| HPE 1.92TB NVMe Gen4 Mainstream Performance Read Intensive SFF BC U.3 Static V2 Multi Vendor SSD | P64844-K21 |
| HPE 3.84TB NVMe Gen4 Mainstream Performance Read Intensive SFF BC U.3 Static V2 Multi Vendor SSD | P64846-K21 |
| HPE 7.68TB NVMe Gen4 Mainstream Performance Read Intensive SFF BC U.3 Static V2 Multi Vendor SSD | P64848-K21 |
| HPE 15.36TB NVMe Gen4 Mainstream Performance Read Intensive SFF BC U.3 Static SPDM Multi Vendor SSD | P69255-K21 |
| HPE 1.92TB NVMe Gen4 High Performance Read Intensive SFF BC U.3 CM7 SSD | P63829-K21 |
| HPE 3.84TB NVMe Gen4 High Performance Read Intensive SFF BC U.3 CM7 SSD | P63833-K21 |
| HPE 7.68TB NVMe Gen4 High Performance Read Intensive SFF BC U.3 CM7 SSD | P63837-K21 |
| HPE 15.36TB NVMe Gen4 High Performance Read Intensive SFF BC U.3 CM7 SSD | P63841-K21 |
| HPE 7.68TB NVMe Gen4 High Performance Read Intensive SFF BC U.3 PS1010 SSD | P70434-K21 |
| HPE 15.36TB NVMe Gen4 High Performance Read Intensive SFF BC U.3 PS1010 SSD | P70436-K21 |

Notes:

- For direct attach:
 - o Requires TPM 2.0 for Local Key encryption.
- iLO Advanced required for SED connectivity into customer's Remote Key Management environment.

SED (Self-Encryption Drive)

| Description | SKU |
|--|------------|
| HPE 1.92TB NVMe Gen4 High Performance Read Intensive SFF BC U.3 Self-encrypting FIPS 140-3 CM7 SSD | P61019-K21 |
| HPE 3.84TB NVMe Gen4 High Performance Read Intensive SFF BC U.3 Self-encrypting FIPS 140-3 CM7 SSD | P61027-K21 |
| HPE 7.68TB NVMe Gen4 High Performance Read Intensive SFF BC U.3 Self-encrypting FIPS 140-3 CM7 SSD | P61035-K21 |

Mixed Use – PCIe/NVMe U.3 – SFF Basic Carrier Solid State Drives

| | |
|--|------------|
| HPE 1.6TB NVMe Gen4 High Performance Mixed Use SFF BC U.3 PM1735a SSD | P50227-K21 |
| HPE 3.2TB NVMe Gen4 High Performance Mixed Use SFF BC U.3 PM1735a SSD | P50230-K21 |
| HPE 6.4TB NVMe Gen4 High Performance Mixed Use SFF BC U.3 PM1735a SSD | P50233-K21 |
| HPE 800GB NVMe Gen4 Mainstream Performance Mixed Use SFF BC U.3 Static V2 Multi Vendor SSD | P64999-K21 |
| HPE 1.6TB NVMe Gen4 Mainstream Performance Mixed Use SFF BC U.3 Static V2 Multi Vendor SSD | P65007-K21 |
| HPE 3.2TB NVMe Gen4 Mainstream Performance Mixed Use SFF BC U.3 Static V2 Multi Vendor SSD | P65015-K21 |
| HPE 6.4TB NVMe Gen4 Mainstream Performance Mixed Use SFF BC U.3 Static V2 Multi Vendor SSD | P65023-K21 |
| HPE 1.6TB NVMe Gen4 High Performance Mixed Use SFF BC U.3 CM7 SSD | P63845-K21 |
| HPE 3.2TB NVMe Gen4 High Performance Mixed Use SFF BC U.3 CM7 SSD | P63849-K21 |
| HPE 6.4TB NVMe Gen4 High Performance Mixed Use SFF BC U.3 CM7 SSD | P63853-K21 |
| HPE 3.2TB NVMe Gen4 High Performance Mixed Use SFF BC U.3 PS1030 SSD | P70426-K21 |



Additional Options

Description

HPE 6.4TB NVMe Gen4 High Performance Mixed Use SFF BC U.3 PS1030 SSD

SKU
P70428-K21

Notes:

- For direct attach:
 - o Requires TPM 2.0 for Local Key encryption.
- iLO Advanced required for SED connectivity into customer's Remote Key Management environment.

SED (Self-Encryption Drive)

HPE 1.6TB NVMe Gen4 High Performance Mixed Use SFF BC U.3 Self-encrypting FIPS 140-3 CM7 SSD

P61043-K21

HPE 3.2TB NVMe Gen4 High Performance Mixed Use SFF BC U.3 Self-encrypting FIPS 140-3 CM7 SSD

P61051-K21

HPE 6.4TB NVMe Gen4 High Performance Mixed Use SFF BC U.3 Self-encrypting FIPS 140-3 CM7 SSD

P61059-K21

Notes:

- For direct attach:
 - o Requires TPM 2.0 for Local Key encryption.
- iLO Advanced required for SED connectivity into customer's Remote Key Management environment.

HPE Smart IO

HPE Networking

1 Gigabit Ethernet adapters

Description

Broadcom BCM5719 Ethernet 1Gb 4-port BASE-T Adapter for HPE

SKU
P51178-B21

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

P21106-B21

10 Gigabit Ethernet adapters

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

HPE Ethernet 10/25Gb 2-port Secure Network Adapter

S2A69A

Intel E810-XXVDA2 Ethernet 10/25Gb 2-port SFP28 Adapter for HPE

P08443-B21

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

P42044-B21

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

P08458-B21

Notes:

- Cannot be selected when processors equal or greater than 270W or 3DS Smart Memory Kit are selected.
- Support limited to 25°C maximum inlet temperature.

100 Gigabit Ethernet adapters

Intel E810-CQDA2 Ethernet 100Gb 2-port QSFP28 Adapter for HPE

P21112-B21

Notes:

- Cannot be selected when processors equal or greater than 270W or 3DS Smart Memory Kit are selected.
- Support limited to 25°C maximum inlet temperature.



Additional Options

| Description | SKU |
|--|------------|
| Mellanox MCX623106AS-CDAT Ethernet 100Gb 2-port QSFP56 Adapter for HPE | P25960-B21 |
| Notes: | |
| <ul style="list-style-type: none"> – Cannot be selected when processors equal or greater than 270W or 3DS Smart Memory Kit are selected. – Support limited to 25°C maximum inlet temperature. | |
| 200 Gigabit Ethernet adapters | |
| Notes: | |
| <ul style="list-style-type: none"> – Cannot be selected when processors equal or greater than 270W or 3DS Smart Memory Kit are selected. – Support limited to 25°C maximum inlet temperature. | |
| OCP Adapters | |
| Broadcom BCM5719 Ethernet 1Gb 4-port BASE-T OCP3 Adapter for HPE | P51181-B21 |
| Notes: Cannot be selected when processors equal or greater than 270W are selected. | |
| Intel I350-T4 Ethernet 1Gb 4-port BASE-T OCP3 Adapter for HPE | P08449-B21 |
| Notes: Cannot be selected when processors equal or greater than 270W are selected. | |
| Broadcom BCM57416 Ethernet 10Gb 2-port BASE-T OCP3 Adapter for HPE | P10097-B21 |
| Notes: Cannot be selected when processors equal or greater than 270W are selected. | |
| Broadcom BCM57412 Ethernet 10Gb 2-port SFP+ OCP3 Adapter for HPE | P26256-B21 |
| Notes: | |
| <ul style="list-style-type: none"> – Must add x16 OCP enablement kit (P36661-B21) if NIC x16 connectivity desired. – Requires the High Performance Fan Kit (P26477-B21). | |
| Broadcom BCM57414 Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE | P10115-B21 |
| Notes: Cannot be selected when processors equal or greater than 270W are selected. | |
| Intel E810-CQDA2 Ethernet 100Gb 2-port QSFP28 OCP3 Adapter for HPE | P22767-B21 |
| Notes: | |
| <ul style="list-style-type: none"> – Cannot be selected when processors greater than 205W are selected. – Support limited to maximum 64GB capacity per DIMM – Support limited to 10 drives per system | |
| HPE InfiniBand HDR/Ethernet 200Gb 2-port QSFP56 PCIe4 x16 OCP3 MCX653436A-HDAI Adapter | P31348-B21 |
| Notes: Cannot be selected when processors equal or greater than 270W are selected. | |
| Mellanox MCX631432AS-ADAI Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE | P42041-B21 |
| Notes: Cannot be selected when processors equal or greater than 270W are selected. | |
| HPE OCP Thermal Enhancement Kit | P28727-B21 |

HPE InfiniBand

Notes: Cannot be selected when processors equal or greater than 270W are selected.

| Description | SKU |
|--|------------|
| 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 HDR/Ethernet 200Gb 2-port QSFP56 PCIe4 x16 MCX653106A-HDAT Adapter | P31324-B21 |
| HPE InfiniBand NDR 1-port OSFP PCIe5 x16 MCX75310AAS-NEAT Adapter | P45641-B21 |
| HPE InfiniBand NDR/Ethernet 400Gb 1-port OSFP PCIe5 x16 MCX75310AAS-NEAT Adapter | P45641-B23 |

Additional Options

Description

SKU

| | |
|---|------------|
| HPE InfiniBand NDR200/Ethernet 200Gb 1-port OSFP PCIe5 x16 MCX75310AAS-HEAT Adapter | P45642-B22 |
| HPE InfiniBand NDR200/Ethernet 200GbE 2-port QSFP112 PCIe5 x16 MCX755106AC-HEAT Adapter | P65333-B21 |

HPE Power Supplies

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 Gen10 Plus 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.

All pre-configured servers ship with a standard 6-foot IEC C-13/C-14 jumper cord (A0K02A). This jumper cord is also 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](#).

HPE Flex Slot Hot-plug Power supplies

Description

SKU

| | |
|---|------------|
| HPE 800W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit | P38995-B21 |
| HPE 1000W Flex Slot Titanium Hot Plug Power Supply Kit | P03178-B21 |
| HPE 1600W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit | P38997-B21 |
| Notes: Only supports high line voltage (200 VAC to 240 VAC). | |
| HPE 1800W-2200W Flex Slot Titanium Hot Plug Power Supply Kit | P44712-B21 |
| Notes: Only supports high line voltage (200 VAC to 240 VAC). | |
| HPE 1600W Flex Slot -48VDC Hot Plug Power Supply Kit | P17023-B21 |

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.

HPE Greenlake for Compute Ops Management

Notes: HPE Greenlake for Compute Ops Management for cloud-native management is available in two tiers: Standard, for managing systems individually, or Enhanced for management of multiple systems. Billing frequency is available as upfront, monthly, quarterly, or annual payments.

Description

SKU

| | |
|--|----------|
| HPE GreenLake for Compute Ops Management Enhanced 1-year Upfront Alletra 4000 SaaS | S1E11AAE |
| HPE GreenLake for Compute Ops Management Enhanced 3-year Upfront Alletra 4000 SaaS | S1E12AAE |
| HPE GreenLake for Compute Ops Management Enhanced 5-year Upfront Alletra 4000 SaaS | S1E13AAE |

Embedded Management

HPE iLO Advanced

Description

SKU

| | |
|---|------------|
| HPE iLO Advanced 1-server License with 1yr Support on iLO Licensed Features | 512485-B21 |
| HPE iLO Advanced AKA Tracking License with 1yr Support on iLO Licensed Features | 512487-B21 |



Additional Options

Description

SKU

| | |
|---|----------|
| HPE iLO Advanced 1-server License with 3yr Support on iLO Licensed Features | BD505A |
| HPE iLO Advanced AKA Tracking License with 3yr Support on iLO Licensed Features | BD507A |
| HPE iLO Advanced Electronic License with 1yr Support on iLO Licensed Features | E6U59ABE |
| HPE iLO Advanced Electronic License with 3yr Support on iLO Licensed Features | E6U64ABE |

HPE iLO Common Password Setting

Description

SKU

| | |
|-------------------------------------|------------|
| 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 Converged Infrastructure Management Software

HPE OneView Advanced (with HPE iLO Advanced)

Description

SKU

| | |
|--|----------|
| HPE OneView including 3yr 24x7 Support Physical 1-server LTU | E5Y34A |
| HPE OneView including 3yr 24x7 Support Flexible Quantity E-LTU | E5Y35AAE |

HPE OneView Advanced (without HPE iLO Advanced)

| | |
|--|----------|
| HPE OneView w/o iLO including 3yr 24x7 Support 1-server LTU | P8B24A |
| HPE OneView w/o iLO including 3yr 24x7 Support Track 1-server LTU | P8B25A |
| 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 at: <https://www.hpe.com/us/en/integrated-systems/software.html>
- Electronic and Flexible-Quantity licenses can be used to purchase multiple licenses with a single activation key.
- Licenses ship without media. The HPE OneView Media Kit can be ordered separately, or can be downloaded at: <https://www.hpe.com/us/en/integrated-systems/software.html>

HPE Security

Description

SKU

| | |
|--------------------------------|------------|
| HPE Gen11 1U Storage Bezel Kit | P52247-B21 |
| HPE Bezel Lock Kit | 875519-B21 |



Additional Options

Software RAID

Description

Intel Virtual RAID on CPU Premium FIO Software for HPE

SKU

R7J57A

Notes:

- The Intel® VROC Premium is available for RAID support 0, 1, 5, 10 at the field.
- If Intel® VROC Premium is the primary controller, then the following RAID levels are allowed: 0, 1, 5 (available from RAID FIO settings at HPE factory). Requires selection of NVMe Drives through Direct Attach supported only.
- If Intel® RAID is being selected in a configuration with VROC and internal controller, then Customer Defined RAID Setting (389692-B21) must be selected.

Intel Virtual RAID on CPU Premium E-RTU for HPE

R7J59AAE

Notes: Same as Intel Virtual RAID on CPU Premium FIO Software for HPE (R7J57A), but intended for field deployments.

Notes:

- Intel® VROC Standard
- The Intel® VROC Standard is available for RAID support 0, 1, 5 at the field. If Intel® VROC Standard is the primary controller, then only following RAID levels are allowed: 0, 1 (available from RAID FIO settings at HPE factory). Requires selection of NVMe Drives through Direct Attach Supported only.
- If Intel® RAID is being selected in a configuration with VROC and internal controller, then Customer Defined RAID Setting (389692-B21) must be selected.

Intel Virtual RAID on CPU Standard E-RTU for HPE

SOE38AAE

Notes: Same as Intel Virtual RAID on CPU Standard FIO Software for HPE (SOE37A), but intended for field deployments.

Essential RAID Controllers

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

804398-B21

Notes: For more information on the HPE Smart Array E208i-p SR Gen10 Controller, please refer to the [QuickSpecs](#)

GPGPU

Notes:

- There is no Energy Star 3.0 certification with Graphic cards.
- Please contact your HPE representative for the system thermal details

Description

NVIDIA A2 16GB PCIe Non-CEC Accelerator for HPE

SKU

R9H23C

Notes: PCIe 4.0

NVIDIA L4 24GB PCIe Accelerator for HPE

SOE38AAE



Additional Options

HPE Storage Options

Emulex Fibre Channel HBAs

Description

| | SKU |
|---|------------|
| HPE SN1200E 16Gb Single Port Fibre Channel Host Bus Adapter | Q0L13A |
| HPE SN1200E 16Gb Dual Port Fibre Channel Host Bus Adapter | Q0L14A |
| 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 Fibre Channel HBAs

| | |
|---|--------|
| HPE SN1100Q 16Gb Single Port Fibre Channel Host Bus Adapter | P9D93A |
| HPE SN1100Q 16Gb Dual Port Fibre Channel Host Bus Adapter | P9D94A |
| HPE SN1610Q 32Gb 1-port Fibre Channel Host Bus Adapter | R2E08A |
| HPE SN1610Q 32Gb 2-port Fibre Channel Host Bus Adapter | R2E09A |
| HPE SN1700Q 64Gb 1-port Fibre Channel Host Bus Adapter | R7N86A |
| HPE SN1700Q 64Gb 2-port Fibre Channel Host Bus Adapter | R7N87A |

HPE Rack Options

Rail Kits

Notes:

- [HPE rail kits contain telescoping rails which allow for in-rack serviceability.](#)
- [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.](#)

Description

| | SKU |
|---|------------|
| HPE Easy Install Rail 7 Kit | P52339-B21 |
| Notes: Used with 20 SFF model. | |
| HPE DL325 Gen10 Plus Cable Management Arm | P18546-B21 |
| Notes: Used with HPE Easy Install Rail 7 Kit (P52339-B21) | |
| HPE ProLiant DL3XX Gen11 Easy Install Rail 3 Kit | P52341-B21 |
| Notes: Used with 20 EDSFF model. | |
| HPE ProLiant DL300 Gen10 Plus 1U Cable Management Arm for Rail Kit | P26489-B21 |
| Notes: Used with HPE ProLiant DL3XX Gen11 Easy Install Rail 3 Kit (P52341-B21) | |

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.



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 USB and SD Options

Notes: In vSphere 7.0, VMware made changes that impact the use of an SD Card/USB media as a standalone boot device and will be removing support for them after version 7.x.

SD Card/USB media can still be used as a standalone boot option through all 7.x releases via published [Customer Advisory Usage of SD Card/USB Devices As Standalone Boot Devices Has Changed Due to System Storage Changes For VMware ESXi 7.0 \(Or Later\)](#).

For any major release beyond VMware ESXi 7.x, VMware will require M.2 or another local persistent device as the standalone boot option.

HPE Enterprise Mainstream Flash Media Kits for Memory Cards

Description

HPE 32GB microSD RAID 1 USB Boot Drive

SKU

P21868-B21

HPE Support Services

Installation & Start-up Services

Tech Care

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



Technical Specifications

System Unit

Dimensions (Height x Width x Depth)

20 SFF Drives SKU

- 4.29 x 43.46 x 84.22 cm
- 1.69 x 17.11 x 33.16 in

20 EDSFF Drives SKU

- 4.29 x 43.46 x 73.27 cm
- 1.69 x 17.11 x 28.85 in

Weight (approximate)

20 SFF Drives SKU

- Minimum: 11.62 kg (25.62 lb)
- Maximum: 24.01 kg (52.93 lb)

20 EDSFF Drives SKU

- Minimum: 8.84 kg (19.49 lb)
- Maximum: 19.94 kg (43.96 lb)

Input Requirements (per power supply)

Rated Line Voltage

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

System Inlet Temperature

- **Standard Operating Support**

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 10°C/hr (18°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).

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>

- **Extended Ambient Operating Support**

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 require the High Performance Fan Kit (P26477-B21) and 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).



Technical Specifications

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.

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).

Emissions Classification (EMC)

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>

Acoustic Noise

Listed are the declared A-Weighted sound power levels (LWAd) and declared average bystander position A-Weighted sound pressure levels (LpAm) when the product is operating in a 23°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109). 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.

| Test case | 1 | 3 | 4 | 5 | 6 |
|------------------|--------|--------|--------|--------|--------|
| Idle | | | | | |
| LWAd | 5.1 B | 5.4 B | 5.4 B | 5.1 B | 5.1 B |
| LpAm | 35 dBA | 38 dBA | 39 dBA | 36 dBA | 35 dBA |
| Operating | | | | | |
| LWAd | 5.9 B | 5.6 B | 6.2 B | 5.1 B | 5.6 B |
| LpAm | 45 dBA | 41 dBA | 47 dBA | 34 dBA | 40 dBA |

Notes: Acoustics levels presented here are generated by the test configuration only. Acoustics levels will vary depending on system configuration. Values are subject to change without notification and are for reference only.

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.

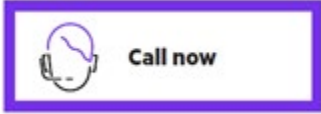
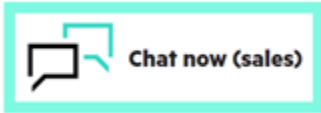


Summary of Changes

| Date | Version History | Action | Description of Change |
|-------------|-----------------|---------|--|
| 03-Feb-2025 | Version 20 | Changed | Additional Options section was updated |
| 06-Jan-2025 | Version 19 | Changed | Additional Options section was updated Obsolete SKU removed – 7 SKUs |
| 04-Nov-2024 | Version 18 | Changed | Obsolete SKU removed - P56585-K21 |
| 07-Oct-2024 | Version 17 | Changed | Standard Features, Configuration Information and Additional Options sections were updated. |
| 03-Sep-2024 | Version 16 | Changed | Standard Features, Configuration Information and Additional Options sections were updated. |
| 15-Jul-2024 | Version 15 | Changed | Configuration Information and Additional Options sections were updated. |
| 01-Jul-2024 | Version 14 | Changed | Additional Options section was updated |
| 03-Jun-2024 | Version 13 | Changed | Additional Options section was updated |
| 06-May-2024 | Version 12 | Changed | Configuration Information and Additional Options sections were updated. |
| 04-Mar-2024 | Version 11 | Changed | Configuration Information and Additional Options sections were updated. |
| 05-Feb-2024 | Version 10 | Changed | Configuration Information section was updated |
| 08-Jan-2024 | Version 9 | Changed | Configuration Information and Additional Options sections were updated. |
| 14-Dec-2023 | Version 8 | Changed | Overview, Standard Features, Service and Support, Configuration Information and Additional Options sections were updated. HPE Services Rebranding |
| 06-Nov-2023 | Version 7 | Changed | Overview, Standard Features, Configuration Information and Additional Options sections were updated. |
| 07-Aug-2023 | Version 6 | Changed | Standard Features and Configuration Information sections were updated |
| 10-Jul-2023 | Version 5 | Changed | Overview, Standard Features and Configuration Information sections were updated |
| 03-Apr-2023 | Version 4 | Changed | Overview, Standard Features, Configuration Information, Additional Options and Technical Specifications sections were updated. |
| 06-Mar-2023 | Version 3 | Changed | Configuration Information and Additional Options sections were updated. Add SKU - P44712-B21 |
| 06-Feb-2023 | Version 2 | Changed | Additional Options section was updated Add SKUs - R7N86A and R7N87A |
| 10-Jan-2023 | Version 1 | New | New QuickSpecs. |

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