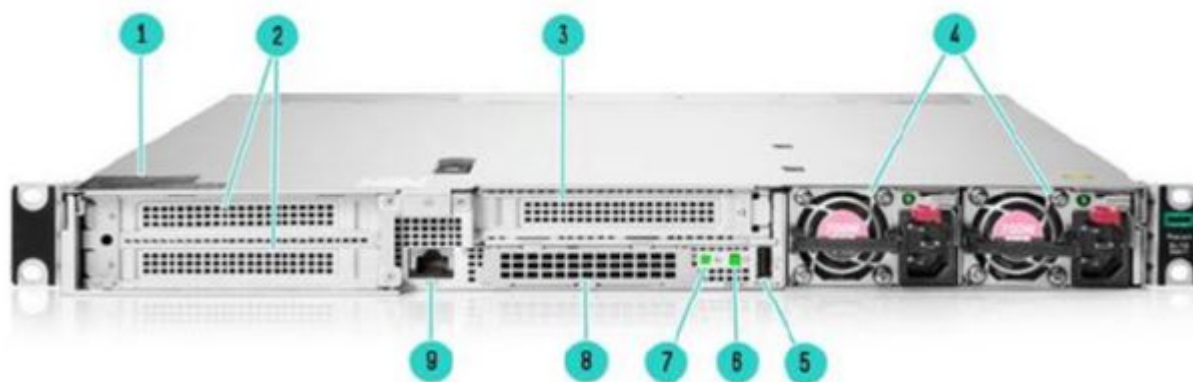


Overview

HPE ProLiant DL110 Gen11

Are you ready for 5G? Customized for edge applications requiring high bandwidth and low latency such as 5G cellular processing (vRAN), the HPE ProLiant DL110 Gen11 is based on open, standards-compliant infrastructure and offers dense I/O capabilities with PCIe Gen5 speed, acceleration, and powerful compute driven by 4th Generation Intel® Xeon® Scalable Processors and 4th Generation Intel® Xeon® Scalable Processors with Intel® vRAN Boost. The HPE ProLiant DL110 Gen11 provides a reduced footprint with a compact, short depth, 1U/1P front accessible chassis and ruggedized with NEBS Level 3 compliance* for harsh environments. Delivering the trusted HPE ProLiant experience with embedded HPE Integrated Lights-Out (iLO) management and security via HPE Silicon Root of Trust, the HPE ProLiant DL110 Gen11 is ready for Communication Service Provider's 5G deployments.

Notes: *Typical NEBS certification is 90 days post-production manufacture



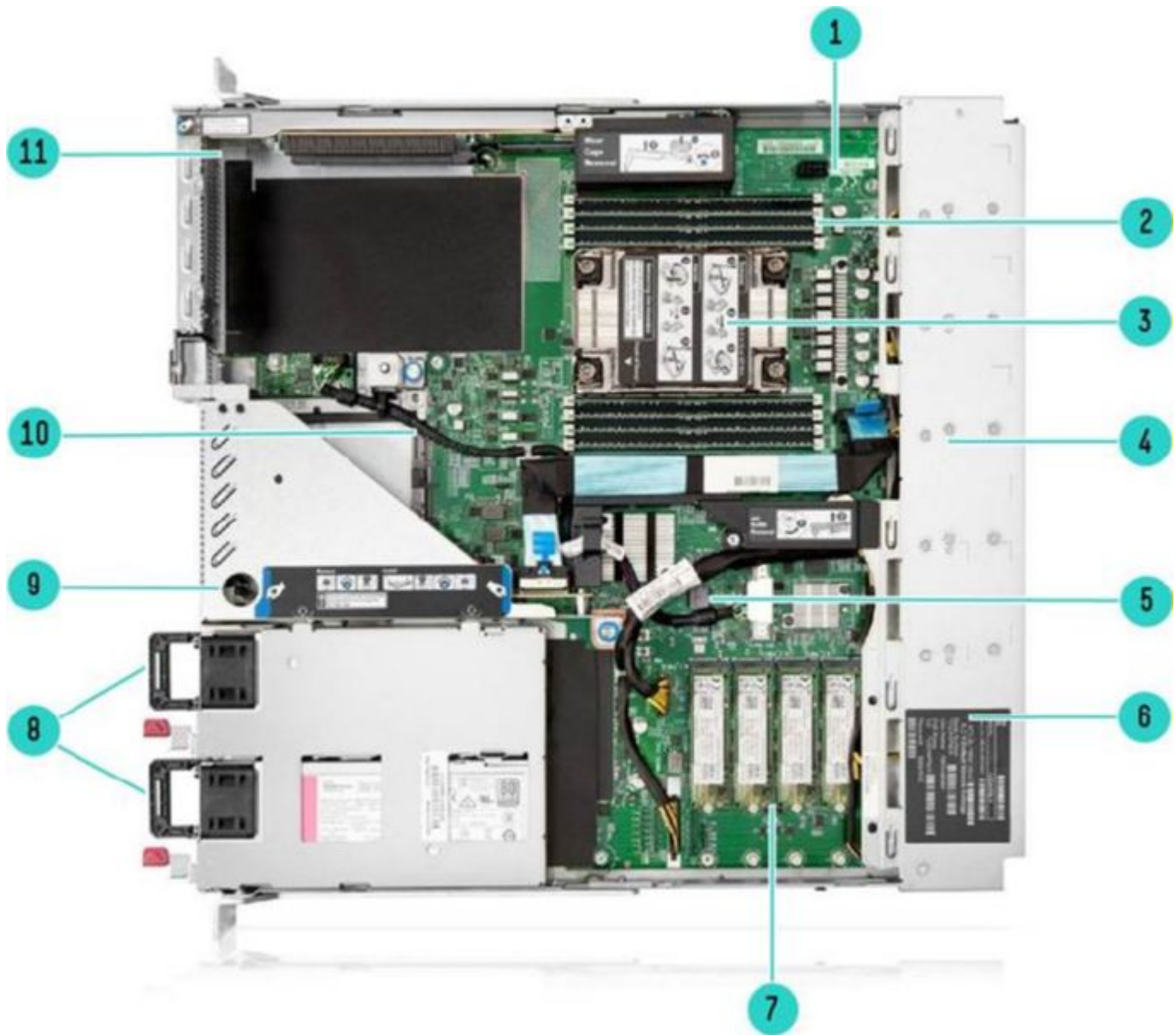
Front View

- | | |
|--|---|
| 1 Quick removal access panel | 6. Power On/Standby button and system power LED |
| 2 Slot 1 and 2 PCIe 5.0 x16 FHHL | 7. Health LED |
| 3 Slot 3 PCIe 5.0 x16 FHHL (optional) ¹ | 8. OCP 3.0 slot |
| 4 Flex Slot Power Supply 1 and 2 | 9. iLO Management Port |
| 5. iLO Service Port | |

Notes:

- ¹Enabled with x16 FHHL Secondary Riser (P54288-B21)
- Default "L" shaped bracket ears shown. Optional HPE DL110 Gen11 Rail Compatible Ear Kit (P58197-B21) available for use with HPE 1U Short Friction Rail Kit (775612-B21)

Overview



Internal View

- | | |
|--|--|
| 1. GPU auxiliary power connector | 7. M.2 SSD slots (4) ¹ |
| 2. DDR5 DIMM slots (Fully populated 8 DIMMs shown) | 8. Power Supplies ² |
| 3. Processor (4 th Gen Intel Xeon Scalable) | 9. Secondary x16 FHHL PCIe 5.0 riser (optional) |
| 4. Hot plug dual rotor fans (7) | 10. x16 OCP connector ³ |
| 5. Embedded TPM 2.0 | 11. Primary x16/x16 FHHL PCIe 5.0 riser (standard) |
| 6. Serial number label | |

Notes:

- ¹Supports 2280 and 22110 form factor
- ²Up to 2 for redundant power
- ³Supports various NICs up to 200GbE

Overview



Rear View

(7 fans, dual rotor hot plug)

What's New

- HPE ProLiant DL110 Gen11 Front Cabled CTO Server
 - 4th Generation Intel® Xeon® Scalable Processors and 4th Generation Intel® Xeon® Scalable Processors with Intel® vRAN Boost up to 32 Cores/205W
 - DDR5 Memory
 - Dense I/O with 3x PCIe 5.0 slots + 1x OCP 3.0 slot
 - Security features: iLO6 (Silicon Root of Trust)
-

Platform Information

Form Factor

- 1U rack

Chassis Types

- Front cabled chassis

System Fans

- 7 dual rotor, hot plug fans included
-

Standard Features

Processors - Up to 1 of the following

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.

Intel Xeon processors		
Processor Suffix	Description	Offering
N	Network/5G/Edge (High TPT/Low latency)	SKUs specifically designed for 5G RANL3FWD, 5G User plane function (UPF), VPP Forwarding Information base, Network Security Gateway (VPP IPsec, NGINX TLS), Content delivery network, Virtual Broadband Network Gateway (vBNG), Virtual Cable Modem Termination System (vCMTS) and dynamic load balancing (NGINX) SKUs have higher base frequency with lower TDPs to enable best performance/Watt
U	1 Socket Optimized	Optimized for single socket (1P) configurations, delivering competitive system perf/\$. Does not support two socket (2P) arrangements.
Y	Speed Select	Intel® SST-PP (performance profile) provides the ability to set a guaranteed base frequency for a specific number of cores, and assign this performance profile to a specific application/workload to guarantee performance requirements. Also enables configuration of settings during runtime and provides additional frequency profile configuration opportunities.

4th Generation Intel® Xeon® Scalable Processor with Intel® vRAN Boost

Intel Xeon Models	CPU Frequency	Cores	L3 Cache (MB)	Power	UPI	DDR5
Gold 5423N Processor	2.1GHz	20	37.5	145W	N/A	4000 MT/s
Gold 6403N Processor	1.9GHz	24	45	185W	N/A	4000 MT/s
Gold 6423N Processor	2.0GHz	28	52.5	195W	N/A	4400 MT/s
Gold 6433N Processor	2.0GHz	32	60	205W	N/A	4400 MT/s
Gold 6443N Processor	2.0GHz	32	60	195W	N/A	4400 MT/s

Notes: If 5423N Processor is selected then secondary riser cannot be selected

4th Generation Intel® Xeon® Scalable Processor Family

Intel Xeon Models	CPU Frequency	Cores	L3 Cache (MB)	Power	UPI	DDR5
Gold 6434 Processor	3.7GHz	8	22.5	195W	3	4800 MT/s
Gold 6426Y Processor	2.5GHz	16	37.5	185W	3	4800 MT/s
Gold 6421N Processor	1.8GHz	32	60	185W	N/A	4800 MT/s
Gold 6438N Processor	2GHz	32	60	205W	3	4800 MT/s
Gold 6438Y+ Processor	2GHz	32	60	205W	3	4800 MT/s

Standard Features

4 th Generation Intel® Xeon® Scalable Processor Family						
Intel Xeon Models	CPU Frequency	Cores	L3 Cache (MB)	Power	UPI	DDR5
Gold 5415+ Processor	2.9GHz	8	22.5	150W	3 @ 16 GT/s	4400 MTs
Gold 5418N Processor	1.8GHz	24	45	165W	3 @ 16 GT/s	4400 MTs
Gold 5411N Processor	1.9GHz	24	45	165W	N/A	4400 MTs
Gold 5412U Processor	2.1GHz	24	36	150W	N/A	4400 MTs
Gold 5420+ Processor	2GHz	28	52.5	205W	3 @ 16 GT/s	4400 MTs

4 th Generation Intel® Xeon® Scalable Processor Family						
Intel Xeon Models	CPU Frequency	Cores	L3 Cache (MB)	Power	UPI	DDR5
Silver 4410Y Processor	2GHz	12	30	150W	2 @ 16 GT/s	4000 MTs
Silver 4416+ Processor	2GHz	20	37.5	165W	2 @ 16 GT/s	4000 MTs

4 th Generation Intel® Xeon® Scalable Processor Family						
Intel Xeon Models	CPU Frequency	Cores	L3 Cache (MB)	Power	UPI	DDR5
Bronze 3408U Processor	1.8GHz	8	22.5	125W	N/A	4000 MTs

Chipset

- Intel C741 Chipset

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

<http://www.intel.com/products/server/chipsets/>

On System Management Chipset

- HPE iLO 6 ASIC

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

Memory

One of the following depending on the model.

Type	HPE DDR5 Smart Memory	HPE DDR5 Smart Memory, Registered (RDIMM)
DIMM Slots Available	8	8 DIMM slots, 8 channels, 1 DIMM per channel
Maximum capacity (RDIMM)	1.0TB	8 x 128 GB RDIMM @ 4800 MT/s

Notes:

- For new Gen11 memory population rule whitepaper and optimal memory performance guidelines, please go to: <http://www.hpe.com/docs/memory-population-rules>
- To realize the performance memory capabilities listed in this document, HPE DDR5 Smart Memory is required.
- For additional information, please see the [HPE DDR5 Smart Memory QuickSpecs](#).

Standard Features

Memory Protection

For details on the HPE Server Memory Options RAS feature, visit: [Memory RAS technologies for HPE ProLiant Gen11](#)

Expansion Slots

Primary Riser - Ships standard with server				
Slots #	Technology	Bus Width	Connector Width	Slot Form Factor
1	PCIe 5.0	X16	X16	Full-height, half-length slot
2	PCIe 5.0	X16	X16	Full-height, half-length slot

Notes: The specifications above correspond with the default primary riser.

Secondary Riser				
Slots #	Technology	Bus Width	Connector Width	Slot Form Factor
3	PCIe 5.0	X16	X16	Full-height, half-length slot

HPE iLO 6 on system management memory

- 32 MB Flash
 - 8 Gbit DDR4 with ECC protection
-

Maximum Internal Storage

Drive	Capacity	Configuration
SATA M.2 SSD	1.92 TB	4 x 480 GB
NVMe M.2 SSD	7.68 TB	4 x 1.92 TB

Notes:

- 4x M.2 drives are supported on the Motherboard
 - 2280 or 22110 form factor supported
-

Internal Storage Devices

- M.2 SSDs
- None ship standard
-

Power Supply

- HPE ProLiant DL110 700W Flex Slot -48VDC Hot Plug Low Halogen Power Supply Kit
-

Standard Features

Notes: Available in 94%efficiency.

- HPE ProLiant DL110 700W Flex Slot Platinum Hot Plug Low Halogen AC Power Supply Kit

Notes: Available in 94%efficiency.

- HPE ProLiant DL110 900W-1000W Titanium Hot Plug AC Power Supply Kit

Notes:

- Available in 96% efficiency.
- All power supply kits have reverse airflow to support front cabled design of DL110

To review the power requirements for your selected system, please use the [HPE Power Advisor Tool](#), and to review the power cord requirements please check the [ProLiant Power Cables](#) web page.

Storage Controllers

One of the following offerings

Software RAID

- **Intel VROC NVMe for HPE ProLiant Gen11**

Notes:

- Intel® VROC for HPE ProLiant Gen11 is an enterprise, hybrid Software RAID solution specifically designed for NVMe SSDs connected directly to the CPU. Intel® VROC is a software-based solution utilizing Intel® CPU to RAID or HBA direct connected drives.
- Intel® Virtual RAID on CPU Standard for Premium SKU for RAID 0/1/5/10 (R7J57A/R7J59AAE) must be ordered to enable RAID support.
- RAID 0/1/5/10, Linux OS
- RIAD 1, Vmware OS
- Host Tools- Linux MDADM, VMware VMDRCLI.
- UEFI Support- HII Utility, OBSE.
- iLO Support- IML, Alert, SNMP, AHS.
- iLO Redfish- Redfish (RDE).
- Intel® VROC NVMe for HPE ProLiant Gen11 will operate in UEFI mode only.
- For NVMe SSDs only, no PCIe card support.
- Additional driver installation is required while using/enabling VROC.

- **Intel VROC SATA for HPE ProLiant Gen11**

Notes:

- Intel® VROC for HPE ProLiant Gen11 is an enterprise, hybrid Software RAID solution specifically designed for SSDs.
- Intel® VROC is a software-based solution utilizing Intel® CPU to RAID or HBA direct connected drives.
- RAID Support- 0/1/5/10.
- Linux OS support.
- Host Tools- Linux MDADM.
- UEFI Support- HII Utility, OBSE.

Standard Features

- iLO Support- IML, Alert, SNMP, AHS.
 - iLO Redfish- Redfish Read .
 - Intel® VROC SATA for HPE ProLiant Gen11 will operate in UEFI mode only.
 - Intel® VROC SATA is off by default and must be enabled.
 - Additional driver installation is required while using/enabling VROC.
- **Linux in-distro open-source software RAID**
Notes: For Linux users, HPE offers a solution that uses in-distro open-source software to create a two-disk RAID 1 boot volume. For more information visit: <https://downloads.linux.hpe.com/SDR/project/lrrib/>

Interfaces

HPE iLO Remote Management Network Port	1 Gb Dedicated
Front iLO Service Port	1 standard (Hewlett Packard Enterprise recommends the HPE USB to Ethernet Adapter part number Q7Y55A when using the iLO service port).

Notes: There is no VGA port on DL110 Gen11. For local management of the server, users should connect to DL110 via the iLO service port with a USB-Ethernet adapter (HPE recommends Q7Y55A).

Operating Systems and Virtualization Software Support for HPE ProLiant DL110 Gen11

See [HPE Servers Support & Certification Matrices](#)

- [VMware ESXi](#)
- [Red Hat Enterprise Linux \(RHEL\)](#)
- [SUSE Linux Enterprise Server \(SLES\)](#)
- [Canonical Ubuntu](#)
- [Wind River Studio Cloud Platform](#)

Notes:

- SLES, and Ubuntu will be certified at a later timeframe.
- 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 <http://www.hpe.com/info/ossupport>

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.

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 IPv4 and IPv6 networks

Standard Features

- Workload Profiles for simple performance optimization
- Embedded TPM support

UEFI Boot Mode only

- 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.

Industry Standard Compliance

- ACPI 6.4 Compliant
- PCIe 5.0 Compliant
- WOL Support
- PXE Support
- 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 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: [Extended Ambient Temperature Guidelines for HPE Gen11 Servers](#)

- EU Lot9

Notes: European Union (EU) eco-design regulations for server and storage products, known as Lot 9, went into effect on March 1st, 2020. Among other requirements, for servers this directive establishes power thresholds for idle state, as well as efficiency and performance in active state which vary among configurations. HPE ProLiant Gen11 servers are compliant with Lot9 requirements.

Please visit: <https://www.hpe.com/us/en/about/environment/msds-specs-more.html> for more information regarding HPE Lot 9 conformance.

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

Standard Features

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 1 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

The Active System Health Viewer (AHSV) is deprecated as of March 2022. Users are now recommended to use the InfoSight for Servers Portal for AHS viewing capabilities. In InfoSight for Servers portal, users will also be able to view hardware configuration details, firmware and driver information, warranty and support status of a server, wellness alerts, and create support cases for servers under a valid warranty or support contract.

HPE InfoSight provides the same security assurances as that of AHSV. Furthermore, InfoSight can be used as an AHSV replacement even if customers do not want to share AHSV logs and telemetry data on an ongoing basis.

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/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, Gen10 Plus, and Gen11 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 is an on premises, multi-generational server monitoring and management solution. HPE OneView Standard can be used for inventory, health monitoring, alerting, and reporting without additional fees. Customers can upgrade their management experience with an HPE OneView Advanced license, all provided by the same tool. Learn more at: <http://www.hpe.com/info/oneview>.

HPE Systems Insight Manager (HPE SIM)

Ideal for environments already using HPE SIM, it allows you to monitor the health of your HPE ProLiant Servers and HPE Integrity Servers. Also provides you with basic support for non-HPE servers. HPE SIM also integrates with Smart Update Manager to provide quick and seamless firmware updates. Learn more at <http://www.hpe.com/info/hpesim>.

HPE GreenLake for Compute Ops Management

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

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

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

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

Security

- UEFI Secure Boot and Secure Start support.
 - Tamper-free updates - components digitally signed and verified.
 - Immutable Silicon Root of Trust
 - Ability to rollback firmware
 - Secure erase of NAND/User data
 - Common Criteria certification
 - Configurable for PCI DSS compliance
 - Embedded TPM (Trusted Platform Module) 2.0
 - Advanced Encryption Standard (AES) and Triple Data Encryption Standard (3DES) on browser
 - Secure Recovery - recover critical firmware to known good state on detection of compromised firmware
-

Standard Features

HPE Trusted Platform Module

HPE Trusted Platform Module 2.0 is embedded on the server motherboard 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.

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/services>

Optional Features

Server Management

HPE iLO Advanced

HPE iLO Advanced licenses offer smart remote functionality without compromise, for all HPE ProLiant servers. The license includes the full integrated remote console, virtual keyboard, video, and mouse (KVM), multi-user collaboration, console record and replay, and GUI-based and scripted virtual media and virtual folders. You can also activate the enhanced security and power management functionality.

HPE OneView Advanced

HPE OneView Advanced offers a sophisticated level of automation to infrastructure management by taking a template driven approach to provisioning, updating, and integrating compute, storage, and networking infrastructure. It provides full-featured licenses which can be purchased for managing multiple HPE server generations.

To learn more visit <http://www.hpe.com/info/oneview>.

HPE InfoSight for Servers

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

Learn more at <https://www.hpe.com/servers/infosight>

HPE Insight Cluster Management Utility (CMU)

HPE Insight Cluster Management Utility is a HyperScale management framework that includes software for the centralized provisioning, management and monitoring of nodes and infrastructure. Learn more at:

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

One Config Simple (OCS/SCE)

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

Rack and Power Infrastructure

The story may end with servers, but it starts with the foundation that makes compute go - and business grow. We've reinvented our entire portfolio of rack and power products to make IT infrastructure more secure, more practical, and more efficient. In other words, we have created a stronger, smarter, and simpler infrastructure to help you get the most out of your IT equipment. As an industry leader, Hewlett Packard Enterprise is uniquely positioned to address the key concerns of power, cooling, cable management and system access. HPE G2 Advanced and Enterprise Racks are perfect for the server room or today's modern data center with enhanced airflow and thermal management, flexible cable management, and a 10-year Warranty to support higher density computing. HPE G2 PDUs offer reliable power in flexible form factors that operate at temperatures up to 60°C, include color-coded outlets and load segments and a low-profile design for optimal access to the rack and support for dense rack environments. HPE Uninterruptible Power Systems are cost-effective power protection for any type of workload. Some UPSs include options for remote management and extended runtime modules, so your critical dense data center is covered in power outages.

HPE KVM Solutions include a console and switches designed to work with your server and IT equipment

Optional Features

reliably. We've got a cost-effective KVM switch for your first rack and multiple connection IP switches with remote management and security capabilities to keep your data center rack up and running. Learn more about HPE Racks, KVM, PDUs and UPSs at [**HPE Rack and Power Infrastructure**](#).

Service and Support

HPE Services

Get the most from your HPE Products. Get the expertise you need at every step of your IT journey with **HPE Services**. We help you lower your risks and overall costs using automation and methodologies that have been tested and refined by HPE experts through thousands of deployments globally. HPE Services **Advisory Services**, focus on your business outcomes and goals, partnering with you to design your transformation and build a roadmap tuned to your unique challenges. Our **Professional** and **Operational Services** can be leveraged to speed up time-to-production, boost performance and accelerate your business. HPE Services specializes in flawless and on-time implementation, on-budget execution, and creative configurations that get the most out of software and hardware alike.

Consume IT on your terms

HPE GreenLake 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 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

Managed services to run your IT operations

HPE GreenLake Management Services provides 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 Tech Care Services

HPE Tech Care Services is the new operational service experience for HPE products. Tech Care 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 Services has been reimagined from the ground up to support a customer-centric, AI driven, and digitally enabled customer experience to move your business forward. HPE Tech Care Services 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>

HPE Complete Care Services

HPE Complete Care Services is a modular, edge-to-cloud IT environment service that provides a holistic approach to optimizing your entire IT environment and achieving agreed upon IT outcomes and business goals through a personalized and customer-centric experience. All delivered by an assigned team of HPE Services experts. HPE Complete Care Services 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 Lifecycle Services

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:

Service and Support

- **Installation 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 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.
- **HPE Implementation Assistance Service:** 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.

For a list of the most frequently purchased services using service credits, see the [Universal Service Credits Menu](#)

Other related Services

HPE Server Hardware Installation

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

<https://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 MSAxxxx3PAR suite, XP, rackable tape libraries and configurable network switches.

HPE Service Credits

HPE Service Credits offers flexible services and technical skills to meet your changing IT demands. With a menu of service that is tailored to suit your needs, you get additional resources and specialist skills to help you maintain peak performance of your IT. Offered as annual credits, you can plan your budgets while proactively responding to your dynamic business.

Service and Support

HPE Education Services

Keep your IT staff trained making sure they have the right skills to deliver on your business outcomes. Book on a class today and learn how to get the most from your technology investment.

<http://www.hpe.com/ww/learn>

HPE Support Center

The HPE Support Center is a personalized online support portal with access to information, tools and experts to support HPE business products. Submit support cases online, chat with HPE experts, access support resources or collaborate with peers.

Learn more <http://www.hpe.com/support/hpesc>.

The HPE Support Center Mobile App* allows you to resolve issues yourself or quickly connect to an agent for live support. Now, you can get access to personalized IT support anywhere, anytime.

HPE Insight Remote Support and HPE Support Center are available at no additional cost with a HPE warranty, HPE Support Service or HPE contractual support agreement.

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

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

Warranty and Support Services will extend to include HPE options configured with your server or storage device. The price of support service is not impacted by configuration details. HPE sourced options that are compatible with your product will be covered under your server support at the same level of coverage allowing you to upgrade freely. Installation for HPE options is available as needed. To keep support costs low for everyone, some high value options will require additional support. Additional support is only required on select high value workload accelerators, fibre switches, InfiniBand and UPS batteries over 12KVA. See the specific high value options that require additional support [here](#).

Parts and Materials

Hewlett Packard Enterprise will provide HPE-supported replacement parts and materials necessary to maintain the covered hardware product in operating condition, including parts and materials for available and recommended engineering improvements.

Parts and components that have reached their maximum supported lifetime and/or the maximum usage limitations as set forth in the manufacturer's operating manual, product QuickSpecs, or the technical product data sheet will not be provided, repaired, or replaced as part of these services.

The defective media retention service feature option applies only to Disk or eligible SSD/Flash Drives replaced by Hewlett Packard Enterprise due to malfunction.

HPE Support 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 HPE Support Services at <https://ssc.hpe.com/portal/site/ssc/>
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Configuration Information

This section lists some of the steps required to configure a Factory Integrated Model. To ensure only valid configurations are ordered, Hewlett Packard Enterprise recommends the use of an HPE approved configurator. Contact your local sales representative for information on configurable product offerings and requirements.

- Factory Integrated Models must start with a CTO Server.
- FIO indicates that this option is only available as a factory installable option.
- Some options may not be integrated at the factory. Contact your local sales representative for additional information.

Step 1: Base Configuration

CTO Server	HPE ProLiant DL110 Gen11 Front Cabled Configure-to-order Server
SKU Number	P54277-B21
Processor	Not included as standard; 1 supported
Heatsink	Included
DIMM Slots	8-DIMM slots
Storage Controller	Embedded SW RAID with Intel VROC SATA for HPE, choice of Intel VROC NVMe for HPE
PCIe	X16/x16 FHHL riser included
Fans	7- dual rotor hot plug
Management	HPE iLO with Intelligent Provisioning (standard), iLO Advanced and OneView (optional)
USB	iLO Front Service Port
Mounting	Default: "L" shaped bracket ears- recommended for 2-post rack mounting (includes cage nuts for mounting in square-hole rack Optional: Short Friction Rail Kit- recommended for 4-post rack mounting

Step 2: Choose Required Options

Step 2a: Choose Processors

Please select one processor required below.

Notes: Processors with 185W TDP or higher will require the DIMM Blank kit (P43725-B21) to be selected when all DIMM slots are not fully populated

Processor Options

4th Generation Intel Xeon-Gold

Notes: All SKUs below ship with processor only. Fans and heatsink are included in the CTO server.

Intel Xeon-Gold 5412U 2.1GHz 24-core 185W Processor for HPE	P49618-B21
Intel Xeon-Gold 5415+ 2.9GHz 8-core 150W Processor for HPE	P49597-B21
Intel Xeon-Gold 6426Y 2.5GHz 16-core 185W Processor for HPE	P49598-B21
Intel Xeon-Gold 6434 3.7GHz 8-core 195W Processor for HPE	P49601-B21
Intel Xeon-Gold 5420+ 2.0GHz 28-core 205W Processor for HPE	P49613-B21
Intel Xeon-Gold 6438Y+ 2.0GHz 32-core 205W Processor for HPE	P49615-B21
Intel Xeon-Gold 6438N 2.0GHz 32-core 205W Processor for HPE	P49638-B21
Intel Xeon-Gold 5411N 1.9GHz 24-core 165W Processor for HPE	P49639-B21
Intel Xeon-Gold 5418N 1.8GHz 24-core 165W Processor for HPE	P49640-B21
Intel Xeon-Gold 6421N 1.8GHz 32-core 185W Processor for HPE	P49641-B21

Configuration Information

Intel Xeon-Gold 5423N 2.1GHz 20-core 145W Processor for HPE	P66247-B21
Intel Xeon-Gold 6403N 1.9GHz 24-core 185W Processor for HPE	P66243-B21
Intel Xeon-Gold 6423N 2.0GHz 28-core 195W Processor for HPE	P66239-B21
Intel Xeon-Gold 6433N 2.0GHz 32-core 205W Processor for HPE	P66235-B21
Intel Xeon-Gold 6443N 2.0GHz 32-core 195W Processor for HPE	P66231-B21

Notes: If 5423N Processor is selected then secondary riser cannot be selected

4th Generation Intel Xeon-Silver

Notes: All SKUs below ship with processor only. Fans and heatsink are included in the CTO server.

Intel Xeon-Silver 4410Y 2.0GHz 12-core 150W Processor for HPE	P49610-B21
Intel Xeon-Silver 4416+ 2.0GHz 20-core 165W Processor for HPE	P49611-B21

4th Generation Intel Xeon-Bronze

Notes: All SKUs below ship with processor only. Fans and heatsink are included in the CTO server.

Intel Xeon-Bronze 3408U 1.8GHz 8-core 125W Processor for HPE	P49617-B21
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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:

<http://www.hpe.com/docs/memory-population-rules>

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

Notes:

- The maximum memory speed and capacity is a function of the memory type, memory configuration, and processor model.
- Quantity of memory DIMMs selected must be 1, 2, 4, 6, or 8
- Mixing of x4 / x8 / 3DS memory is not allowed
- Mixing of Single Rank and Dual Rank DIMM is allowed only when total qty of DIMM selected is 8
- If Single Rank and Dual Rank DIMMs are mixed then the Qty of Single Rank DIMM selected must be equal to quantity of Dual Rank DIMM
- For more detailed information regarding memory population rules, please refer to - <http://www.hpe.com/docs/server-memory>
- For additional information, please see the [HPE DDR5 Smart Memory QuickSpecs](#)

Step 2c: Choose Power Supplies

Select one or two power supplies from below.

HPE Flex Slot Power Supplies

Configuration Information

HPE ProLiant DL110 700W Flex Slot -48VDC Hot Plug Low Halogen Power Supply Kit P43150-B21

Notes: Available in 94% efficiency.

HPE ProLiant DL110 700W Flex Slot Platinum Hot Plug Low Halogen AC Power Supply Kit P44975-B21

Notes: Available in 94% efficiency.

HPE ProLiant DL110 900W-1000W Titanium Hot Plug Low Halogen AC Power Supply Kit P54290-B21

Notes:

– Available in 96% efficiency.

– All power supply kits have reverse airflow to support front cabled design of DL110

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 power supply P54290-B21 is single-output & 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 2d: Choose GPU Options

HPE ProLiant DL110 Gen11 1-port/3-port Auxiliary Power Cable Kit P64070-B21

Notes: Only one power cable kit required per server

Step 3: Choose Additional Options

Rail/Ear Kits

HPE 1U Short Friction Rail Kit 775612-B21

Notes: Requires selection of Rail Compatible Ear Kit

HPE ProLiant DL110 Gen11 Rail Compatible Ear Kit P58197-B21

Notes: Rail kit and Ear kit must be selected when the server is selected with Racks

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

Core Options

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

Software as a Service Management HPE GreenLake for Compute Ops Management

Base SKU

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

Upgrade SKU

HPE GreenLake for Compute Ops Management Enhanced 1-year Upfront ProLiant SaaS R7A10AAE

HPE GreenLake for Compute Ops Management Enhanced 5-year Upfront ProLiant SaaS R7A12AAE

HPE Unique Options

Risers

HPE ProLiant DL110 G11 x16 FHHL PCIe Secondary Riser Kit P54288-B21

DDR4 DIMM Blank

HPE ProLiant DL110 Gen10 Plus DDR4 DIMM FIO Blank Kit P43725-B21

Notes: Required when processor with 185W or greater TDP is selected, and all DIMM slots are not fully populated. DIMM blank kit cannot be selected if Qty=8 of memory is selected.

Software RAID Controllers

Intel Virtual RAID on CPU Premium FIO Software for HPE R7J57A

Notes: Requires selection of NVMe M.2 SSD

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

Notes: Similar to Intel VROC NVMe FIO SW for HPE (R7J57A), but intended for field deployments

HPE Solid State Drives

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

Read Intensive - 6G SATA - M.2 - Solid State Media (2280 type)

HPE 480GB SATA 6G Read Intensive M.2 Multi Vendor SSD P47818-B21

Read Intensive-PCIe/NVMe-M.2- Solid State Media (22110 and 2280 type)

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

Factory Configuration Setting

NEBS-Compliant Setting

HPE NEBS-compliant FIO Trigger System Setting P40010-B21

iLO Common Password

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.

Core Options

- Customers who want to choose their own custom iLO default password should use the HPE Factory Express Integration Services

BIOS MODE

HPE ProLiant DL300 Gen10 Plus Platform RAS OS Control FIO Setting P27078-B21

Notes: OS First - RAS Setting Trigger.

RAID Settings

Notes	Description	SKU
1	HPE RAID 0 Drive 1 FIO Setting	339777-B21
1	HPE RAID 1 Drive 1 FIO Setting	339778-B21
1	HPE RAID 5 Drive 1 FIO Setting	339779-B21
1	HPE Raid 5 w/SP Drive 1 FIO Setting	339780-B21
2	HPE Customer Defined RAID Setting Service	389692-B21

Notes:

– 1 General RAID rules:

- o (i) Only a single set of RAID will be offered and will only be applied to all applicable drives installed in a server.

- o (ii) RAID requires selection of VROC and a specific number of matching NVMe M.2 drives. (i.e same part number)

- o (iii) RAID must be selected if both Factory Installed OS and VROC is present.

- o (vi) RAID 0 requires at least 1 drive.

- o (v) RAID 1 requires at least 2 or even number of drives.

- o (vi) RAID 1 with Spare requires at least 3 drives

- o (vii) RAID 5 requires at least 3 drives.

- o (viii) RAID 5 with Spare requires at least 4 drives.

- o -If VROC Premium is the primary controller, then the following RAID levels are allowed: 0, 1, 5

- o -Warning Message:

- o HPE Recommends to use below standard RAID Settings,

- 339777-B21 - HPE RAID 0 Drive 1 FIO Setting
- 339778-B21 - HPE RAID 1 Drive 1 FIO Setting
- 339779-B21 - HPE RAID 5 Drive 1 FIO Setting
- 339780-B21 - HPE RAID 5 w/SP Drive 1 FIO Setting
- 339781-B21 - HPE Raid Adv Data Guarding FIO

– 2

- o (i) If this part number is selected then the following RAID rules do not apply:

- Max of 1 RAID level per server.

Core Options

- All integrated hard drives must match.
- Minimum drive quantity requirement for each RAID level.
- RAID level must be selected if Factory Installed OS is present and VROC is the primary controller.

o (ii) If this part number is selected, then at least 1 NVMe M.2 Drive must be on the order.

o (iii) If this part number is selected, then preinstalled OS must be on the order.

HPE Networking

Notes: The DL110 Gen11 CTO chassis does not come with embedded networking. A PCIe or OCP networking adapter must be selected.

1 Gigabit Ethernet Adapters

Intel I350-T4 Ethernet 1Gb 4-port BASE-T Adapter for HPE P21106-B21

Broadcom BCM5719 Ethernet 1Gb 4-port BASE-T Adapter for HPE P51178-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

10/25 Gigabit Ethernet Adapters

Mellanox MCX631102AS-ADAT Ethernet 10/25Gb 2-port SFP28 Adapter for HPE P42044-B21

Intel E810-XXVDA4T Ethernet 10/25Gb 4-port SFP28 MCLK Adapter for HPE P41636-B21

Broadcom BCM57504 Ethernet 10/25Gb 4-port SFP28 Adapter for HPE P26264-B21

Notes: Includes GNSS module which provides 1pps signal without the need for an external GNSS appliance. Integrated support for frequency, phase, and time-of-day synchronization with Global Navigation Satellite Systems, including GPS, Galileo, GLONASS, BeiDou, and QZSS.

Intel E810-XXVDA4 Ethernet 10/25Gb 4-port SFP28 Adapter for HPE P08458-B21

Intel E810-XXVDA2 Ethernet 10/25Gb 2-port SFP28 Adapter for HPE P08443-B21

Broadcom BCM57414 Ethernet 10/25Gb 2-port SFP28 Adapter for HPE P26262-B21

Notes: BCM 57414 10/25GbE 2p SFP28 Adapter cannot be installed in Slot 1, Consider this restriction during the total selection of PCIe Cards.

100 Gigabit Ethernet Adapters

Intel E810-2CQDA2 Ethernet 100Gb 2-port QSFP28 Adapter for HPE P41611-B21

Intel E810-CQDA2 Ethernet 100Gb 2-port QSFP28 Adapter for HPE P21112-B21

Mellanox MCX623106AS-CDAT Ethernet 100Gb 2-port QSFP56 Adapter for HPE P25960-B21

200 Gigabit Ethernet Adapters

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

Notes: If 200GbE Networking adapter is selected, then customer must select one more networking adapter or OCP adapter that is below 200GbE.

1 Gigabit Ethernet OCP Adapters

Intel I350-T4 Ethernet 1Gb 4-port BASE-T OCP3 Adapter for HPE P08449-B21

Broadcom BCM5719 Ethernet 1Gb 4-port BASE-T OCP3 Adapter for HPE P51181-B21

10 Gigabit Ethernet OCP Adapters

Broadcom BCM57416 Ethernet 10Gb 2-port BASE-T OCP3 Adapter for HPE P10097-B21

Broadcom BCM57412 Ethernet 10Gb 2-port SFP+ OCP3 Adapter for HPE P26256-B21

Core Options

10/25 Gigabit Ethernet OCP Adapters

Intel E810-XXVDA2 Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE	P10106-B21
Intel E810-XXVDA4 Ethernet 10/25Gb 4-port SFP28 OCP3 Adapter for HPE	P41614-B21
Mellanox MCX631432AS-ADAI Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE	P42041-B21
Broadcom BCM57414 Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE	P10115-B21
Broadcom BCM57504 Ethernet 10/25Gb 4-port SFP28 OCP3 Adapter for HPE	P26269-B21

100 Gigabit Ethernet OCP Adapters

Intel E810-CQDA2 Ethernet 100Gb 2-port QSFP28 OCP3 Adapter for HPE	P22767-B21
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Notes:

- Max=1 OCP card can be selected. This is inclusive of all OCP categories and sub-categories.
 - Does not consume PCIe slot
-

Additional Options

Embedded Management

HPE iLO Advanced

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

HPE Converged Infrastructure Management Software

HPE OneView Advanced (with HPE iLO Advanced)

HPE OneView including 3yr 24x7 Support Flexible Quantity E-LTU	E5Y35AAE
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HPE OneView Advanced (without HPE iLO Advanced)

HPE OneView w/o iLO including 3yr 24x7 Support Flexible Quantity E-LTU	P8B26AAE
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Notes: Licenses ship without media. The HPE OneView Media Kit can be ordered separately or can be [downloaded](#).

HPE Tech Care

HPE 3 Year Tech Care Essential DL110 Gen11 HW Service	H10RXE
HPE 3 Year Tech Care Essential wDMR DL110 Gen11 HW Service	H10RYE
HPE 5 Year Tech Care Essential DL110 Gen11 HW Service	H10TBE
HPE 5 Year Tech Care Essential wDMR DL110 Gen11 HW Service	H10TCE

HPE Racks

- Please see the [HPE Advanced Series Racks QuickSpecs](#) for information on additional racks options and rack specifications.
- Please see the [HPE Enterprise Series Racks QuickSpecs](#) for information on additional racks options and rack specifications.
- Please see the [HPE Standard Series Racks QuickSpecs](#) for information on additional racks options and rack specifications.

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.

Additional Options

HPE Uninterruptible Power Systems (UPS)

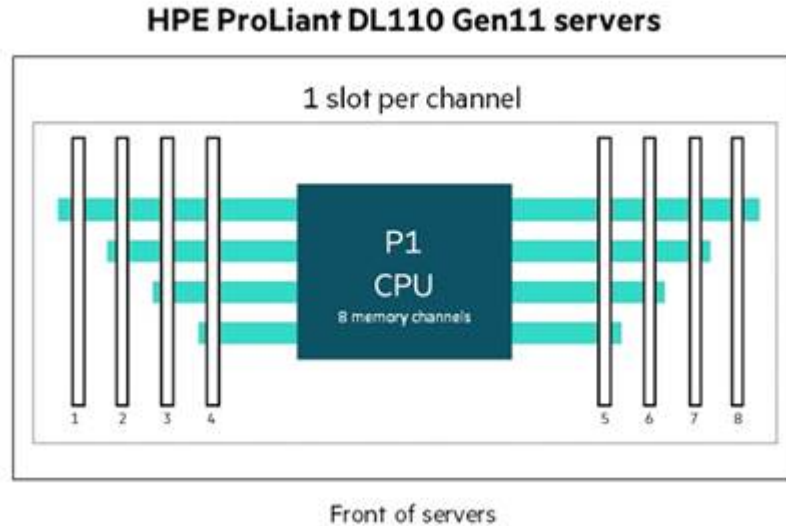
- To learn more, please visit the [HPE Uninterruptible Power Systems \(UPS\)](#) web page.
 - Please see the [HPE DirectFlow Three Phase Uninterruptible Power System QuickSpecs](#) for information on these products and their specifications.
 - Please see the [HPE Line Interactive Single Phase UPS QuickSpecs](#) for information on these products and their specifications.
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HPE Rack Options

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

Memory

Memory Population guidelines



**DL110 Gen11 CPU
DIMM population order**

1 DIMM		2						
2 DIMMs¹		2			5			
4 DIMMs¹		2		4	5		7	
6 DIMMs		2	3	4	5		7	8
8 DIMMs^{1,2}	1	2	3	4	5	6	7	8

Notes:

-Configurations not listed are not supported and if populated, the server may result in non-optimal memory performance or other unexpected behavior

- ¹ Support Hemi (hemisphere mode).

- ² Support Software Guard Extensions (SGX).

General Memory Population Rules and Guidelines:

- Install DIMMs only if the corresponding processor is installed.
- If only one processor is installed in a two-processor system, only half of the DIMM slots are available.
- To maximize performance, it is recommended to balance the total memory capacity between all installed processors.
- When two processors are installed, balance the DIMMs across the two processors.
- White DIMM slots denote the first slot to be populated in a channel.
- Mixing of DIMM types (UDIMM, RDIMM, and LRDIMM) is not supported.

Memory

- 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:
<https://www.hpe.com/psnow/doc/a50007437enw>
 - To realize the performance memory capabilities listed in this document, HPE DDR5 SmartMemory is required.
For additional information, please see the [HPE DDR5 Smart Memory QuickSpecs](#)
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Technical Specifications

System Unit

- **Dimensions (Height x Width x Depth)**

- 4.29 x 44.16 x 43.18 cm

- 1.69 x 17.39 x 17 in

Weight (approximate)

- **Minimum:** CTO server with 1x processor, 1x primary riser, 1x Memory DIMM, 1x M.2 SSD, and 1x Power Supply

- 9.62 kg / 21.21 lbs

- **Maximum:** CTO server with all components installed: 1x processor, 2x risers, 8x Memory DIMMs, 4x M.2 SSDs, and 2x Power Supplies

- 11.4 kg / 25.4 lbs

Input Requirements (per power supply)

Rated Line Voltage

- For 700W (-48VDC): -40 Vdc to -72 Vdc
- For 700W (Platinum): 100-240 VAC
- For 900W-1000W (Titanium): 100-240 VAC

BTU Rating

Maximum

- For 700W (-48VDC) Power Supply: 2593 BTU/hr at -40VDC, 2537 BTU/hr at -72VDC
- For 700W (Platinum) Power Supply: 2660 BTU/hr at 100VAC, 2570 BTU/hr at 200VAC, 2570 BTU/hr at 240VAC
- For 900W-1000W (Titanium) Power Supply: 3368 BTU/hr at 100VAC, 3640 BTU/hr at 200VAC, 3625 BTU/hr at 240 VAC

Power Supply Output (per power supply)

Rated Steady-State Power

- For 700W (-48VDC) Power Supply: 700W at -40VDC, 700W at -72VDC
- For 700W (Platinum) Power Supply: 700W at 100VAC, 700W at 200VAC, 700W at 240VAC
- For 900W-1000W (Titanium) Power Supply: 900W at 100VAC, 1000W at 200VAC, 1000W at 240 VAC

Maximum Peak Power

- For 700W (-48VDC) Power Supply: 700W at -40VDC, 700W at -72VDC
- For 700W (Platinum) Power Supply: 700W at 100VAC, 700W at 200VAC, 700W at 240VAC
- For 900W-1000W (Titanium) Power Supply: 900W at 100VAC, 1000W at 200VAC, 1000W at 240 VAC

Relative Humidity (non-condensing)

- **Operating**

- 8% to 90% - Relative humidity (Rh), 28°C maximum wet bulb temperature, non-condensing.

Technical Specifications

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

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>

For NEBS Level 3 and ETSI Certified DL110 configurations please see the **Carrier Grade Supplement**

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).
-

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:

Technical Specifications

https://support.hpe.com/hpesc/public/docDisplay?docLocale=en_US&docId=c03471072

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.

Acoustic Noise

Listed are the declared mean A-Weighted sound power levels (LWA,m), declared average bystander position A-Weighted sound pressure levels (LpA,m), and the statistical adder for verification (Kv) is a quantity to be added to the declared mean A-weighted sound power level. LWA,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 mentioned 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.

	Entry	Typical	Heavy
Idle			
LwA,m	5.1 B	5.2 B	5.2 B
LpA,m	38 dB	38 dB	38 dB
Kv	0.4 B	0.4 B	0.4 B
Operating			
LwA,m	5.3 B	5.8 B	6.1 B
LpA,m	39 dB	44 dB	48 dB
Kv	0.4 B	0.4 B	0.4 B

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.
- B, dB, abbreviations for bels and decibels, respectively, where 1 B = 10 dB.
- The results in this declaration apply only to the configurations 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.
- All measurements made to conform to ISO 7779 / ECMA-74 and declared to conform to ISO 9296 / ECMA-109
- The quantity, LWA,c (formerly called LWAd), can be computed from the sum of LWA,m and Kv.
- The statistical adder for verification, Kv, is a quantity to be added to the declared mean A-weighted sound

Technical Specifications

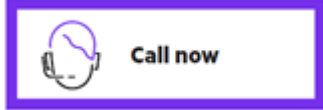
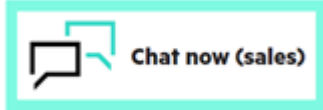
power level, LWA,m, such that there will be a 95 % probability of acceptance, when using the verification procedures of ISO 9296, if no more than 6,5 % of the batch of new equipment, has A-weighted sound power levels greater than (LWA,m + Kv).

Summary of Changes

Date	Version History	Action	Description of Change
09-Oct-2023	Version 2	Changed	Overview, Standard Features and Configuration Information sections were updated.
18-Sep-2023	Version 1	New	New Quick Specs

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

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