# QuickSpecs

Overview

HPE ProLiant DL20 Gen11

The dense and compact HPE ProLiant DL20 Gen11 server powered by Intel® Xeon® E and Pentium® Processors provides a unique blend of enterprise class capabilities & value. It offers mobility, easy deployment and outstanding configuration flexibility to cater to a wide variety of business requirements at an affordable price point. Deploy this dense platform for diverse workloads in space constrained environments and maintain it with ease by automating the most essential server lifecycle management tasks with HPE iLO 6.
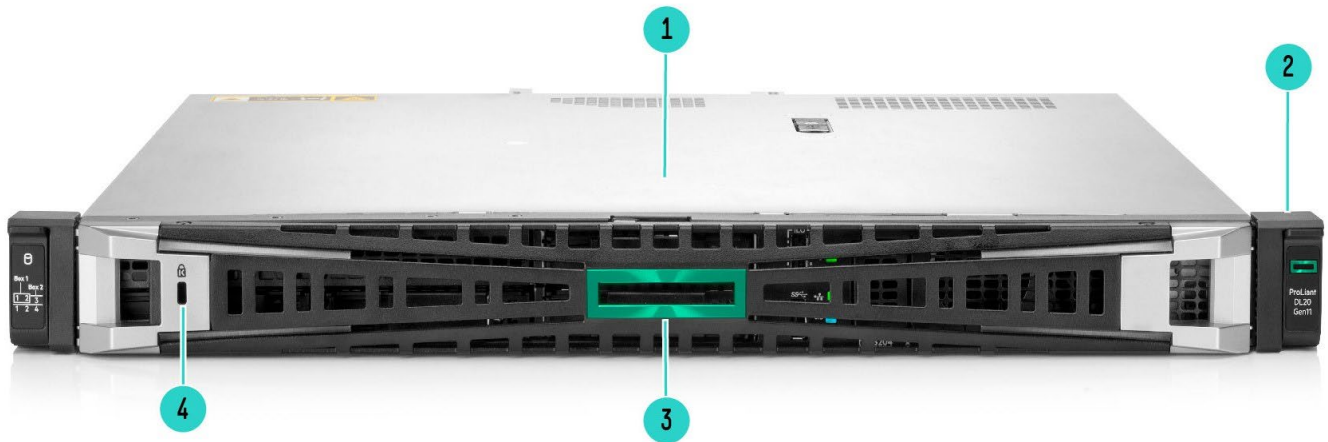
4SFF + 2SFFView Gen11

1. Access Panel
2. Ear Tab
3. Bezel
4. Kensington Lock
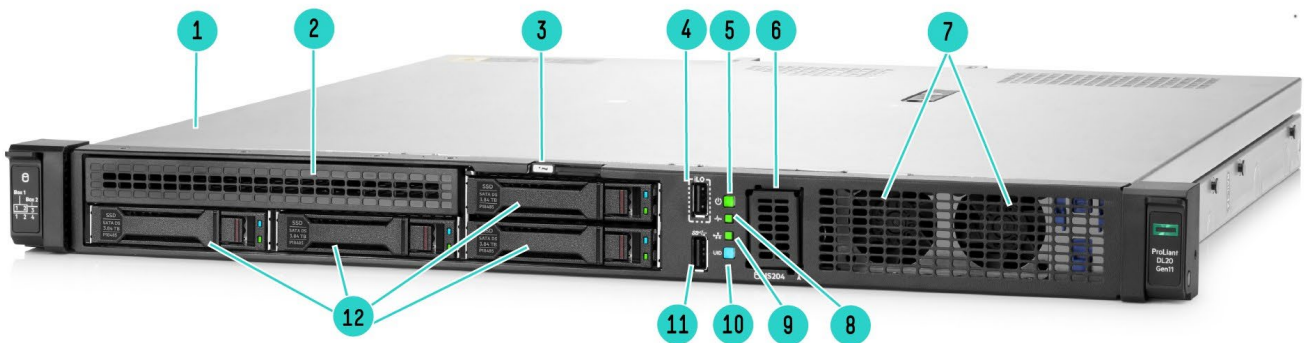
4 SFF Front View Gen11

1. Access Panel
2. Optical drive bay
3. Serial number/iLO information pull tab
4. ILo Service Port (USB)
5. System Power button/LED
6. NS204i-u device bay (optional)
7. Front Fan Assembly
8. Health LED
9. NIC Status LED
10. UID button/LED
11. USB 3.2 Gen 1 Port
12. Four-bay SFF hot-plug drive bays

Hewlett Packard Enterprise

Overview
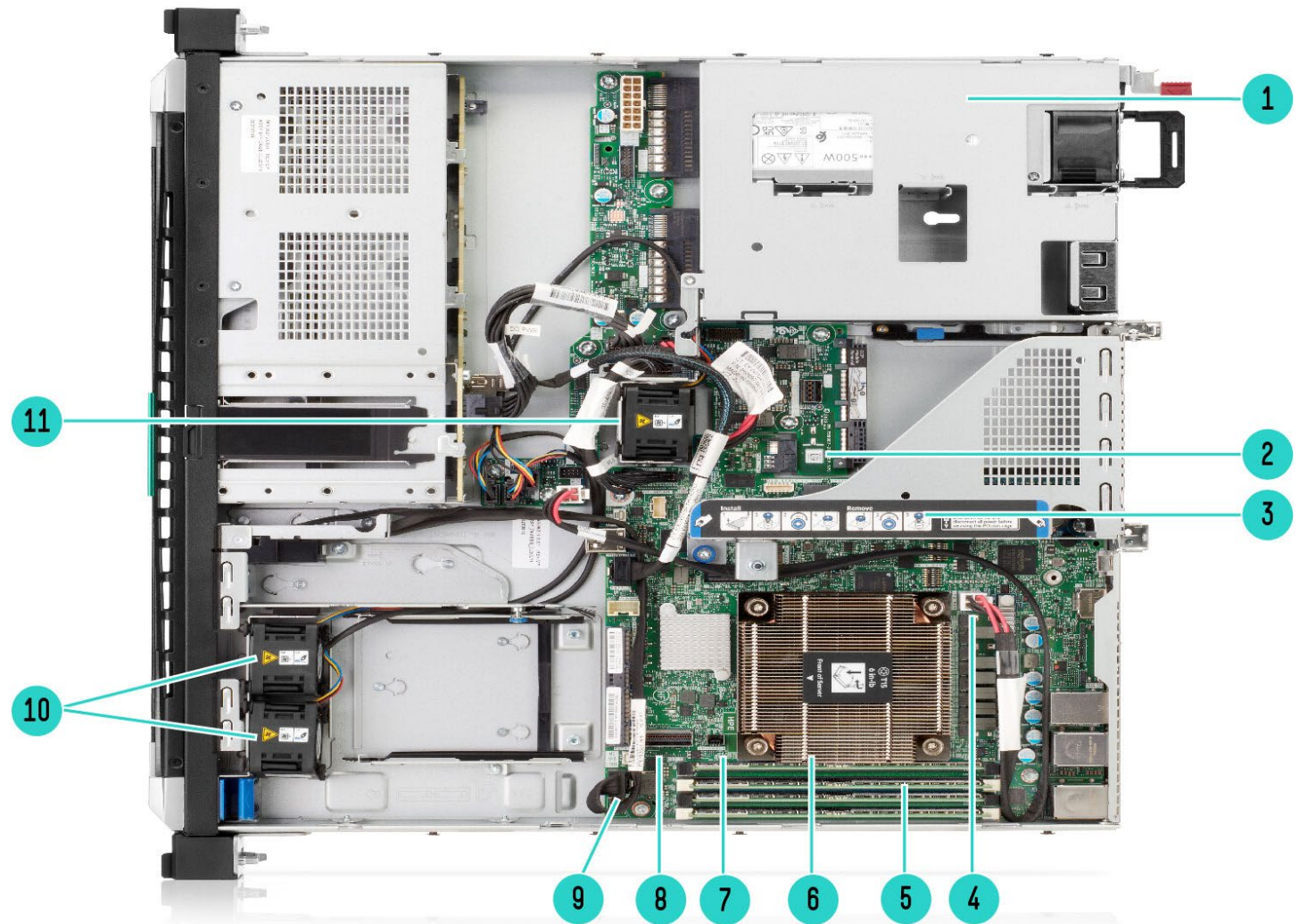
Internal View - Standard for all 4SFF DL20 Gen11

1. Power Supply (1x500W shown)
2. M.2 Slot (Supports the iLO/M.2 Enablement Kit option)
3. PCIe Riser
4. 4-pin processor power connector
5. 4 DDR5 DIMM slots
6. Processor shown with heatsink
7. Chassis intrusion detection switch connector
8. SlimSAS x8 port
9. Front I/O & USB 3.2 Gen 1 & iLO service port connector
10. Fan cage shown with 2 fans
11. Central fan assembly (3rd fan)

Overview
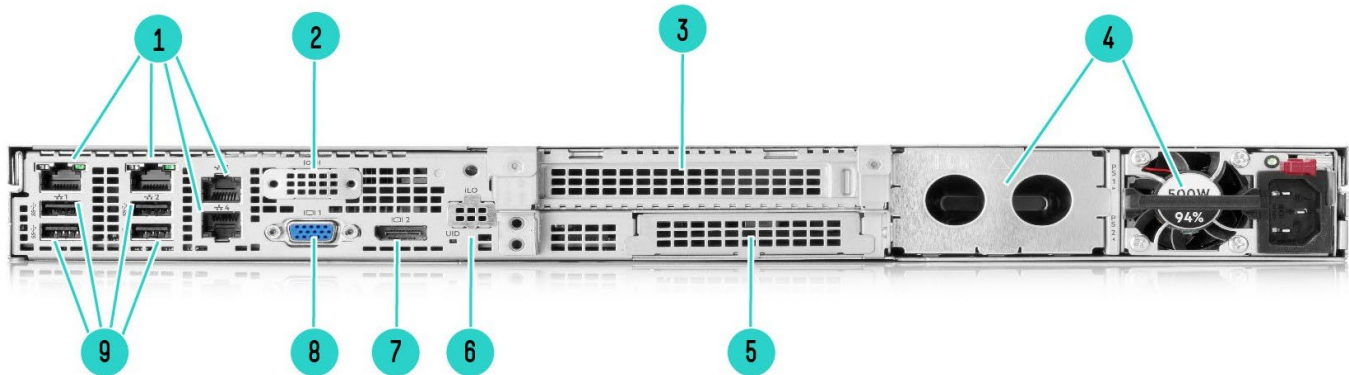
Rear View – Standard for all DL20 Gen11

1. NIC ports (1Gb)
2. Serial Port (optional)
3. Slot 1 PCIe 5.0
4. Redundant Power Supplies (2nd power supply not shown)
5. OCP 3.0 Slot
6. iLO dedicated network port (optional)
7. Display Port
8. VGA Port
9. USB 3.2 Gen1 ports

What's New

- Supports latest Intel® Xeon® E-2400 and Pentium® processors up to 8 cores 95W TDP
- New PCIe 5.0 support
- New HPE DDR5 Standard Memory (UDIMM), 4800MT/s maximum speed offering in 16GB and 32GB. Max 128GB memory capacity.
- Embedded 1GbE 4-port NIC with support of PCIe and OCP NICs
- New HPE Gen11 Storage Controllers
- New HPE NS204i-u Gen11 NVMe Hot Plug Boot Optimized Storage Device
- New HPE Storage SSD and HDD support
- New HPE iLO 6 support
- HPE 1000W Flex Slot Titanium Hot Plug Power Supply Kit

Platform Information

Form Factor

- 1P 1U rack

Chassis Types

- 4 SFF with options supporting: +2 SFF
- 2 LFF Hot Plug
- 2 LFF Non-Hot Plug

System Fans

- Includes 3 performance single rotor non-hot plug and non-redundant fans

Notes: This applies for all three chassis: 2LFF NHP, 2LFF HP and 4SFF HP

Standard Features

Naming Framework

The Gen11 server naming framework is illustrated below to help simplify server component identification.

Description Format for HPE ProLiant DL20 Gen11 CTO Servers (Long Name)

HPE ProLiant DL20 Gen11 2LFF Non-hot Plug Configure-to-order Server

Master Brand	Platform	Server Generation	Form Factor Type / Form Factor Size	Hard Drive Interface	Business Model	Description Noun
HPE – Hewlett Packard Enterprise	ProLiant DL20	Gen10 Plus Gen11	2LFF 4SFF	Hot Plug Non-Hot Plug	Configure-to-order	Compute Module Server

Description Format for HPE ProLiant DL20 Gen11 BTO Servers (Long Name)

HPE ProLiant DL20 Gen11 E-2414 2.6GHz 4-core 1P 16GB-U 2LFF Non-Hot Plug 290W PS Server

Master Brand	Platform	Server Generation	Processor Code	Processor Speed	Processor Core	Number of Processors	Total Memory and Type	Form Factor Type / Form Factor Size	Hard Drive Interface	Power Supply Installed	Description Noun
HPE – Hewlett Packard Enterprise	ProLiant DL20	Gen10 plus Gen11	Intel Xeon E-2414 Intel Xeon E-2434 Intel Xeon E-2436	2.6GHz 3.4GHz 2.9GHz	4-Core	1P	16GB-U (Unbuffered Memory)	2LFF 4SFF	Hot Plug Non-Hot Plug	290W PS 800W PS 500W PS	Compute Model Server

Processors

Intel® Xeon® E Processors are designed to deliver the best combination of performance, built-in capabilities, and cost-effectiveness. Choose one of the following processors based on the model.

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

Intel Models	CPU Base Frequency	Cores	L3 Cache	Power	DDR5
Xeon E-2488	3.2 GHz	8	16 MB	95W	4400 MT/s
Xeon E-2478	2.8 GHz	8	16 MB	80W	4400 MT/s
Xeon E-2468	2.6 GHz	8	16 MB	65W	4400 MT/s
Xeon E-2486	3.5 GHz	6	12 MB	95W	4400 MT/s
Xeon E-2456	3.3 GHz	6	12 MB	80W	4400 MT/s
Xeon E-2436	2.9 GHz	6	12 MB	65W	4400 MT/s
Xeon E-2434	3.4 GHz	4	8 MB	55W	4400 MT/s
Xeon E-2414	2.6 GHz	4	8 MB	55W	4400 MT/s
Pentium G7400	3.7 GHz	2	4 MB	46W	4400 MT/s

Notes: Pentium G7400 does not comply with Energy Star 4.0

Chipset

Intel® C262 Chipset
Notes: For more information regarding Intel® chipsets, please see the following URL:
http://www.intel.com/products/server/chipsets/.

Standard Features

On System Management Chipset

HPE iLO 6 ASIC
Notes: Read and learn more in the **iLO QuickSpecs**.

Memory

Type	HPE DDR5 Standard Memory, Unbuffered (UDIMM)
DIMM Slots Available	4 (4 DIMM slots per processor, 2 channels per processor, 2 DIMMs per channel)
Maximum Capacity (UDIMM)	128GB (4 x 32GB UDIMM @ 4400 MT/s)

Notes:

– The maximum memory speed depends on the processor model.
– The maximum speed capability of the memory system is governed by the combination of the CPU and any other DIMMs installed in the server. If higher speed DIMMs are installed with a CPU that only supports a lower memory speed, the DIMMs will only run at the (lower) memory speed supported by the processor. Likewise, if memory DIMMs are mixed with slower DIMMs within a server, all DIMMs will run at the slower memory speed. For further information please refer to the Memory Population Rules for your specific server.
– For Server Memory Population Rules for HPE ProLiant Gen11 Servers with Intel® Xeon® E-2400 Processors see details here: **http://www.hpe.com/docs/server-memory.**

Memory Protection

- ECC

Internal Storage Devices

Optical Drive

- Available on 4 SFF and 2 LFF CTO Servers as an option (DVD-ROM or DVD-RW)

Hard Drives

- None ship standard

Network Controller

Embedded Broadcom BCM5719 Ethernet 1Gb 4-port BASE-T Adapter

The HPE ProLiant DL20 Gen11 offers the customer a quad-port NIC standard with the option to upgrade with a variety of networking options.
Notes:

– Support document and downloads including firmware and drivers for the Broadcom BCM5719 Ethernet 1Gb 4-port BASE-T LOM Adapter can be downloaded from the **supplier's support and services webpage** .
– ProLiant DL20 Gen11 system does not support Networking SR-IOV.

Expansion Slots

Expansion Slots #	Technology	Bus Width	Connector Width	Processor	Slot Form Factor
1	PCIe 5.0	x16	x16	CPU1	Full height half length
2	External OCP 3.0	x4	x4	PCH	OCP 3.0
3	Internal OROC 3.0 (Internal OCP)	x4	x4	PCH	OROC

Notes:

– Bus Width indicates the number of physical electrical lanes running to the connector.
– External OCP 3.0 is for networking (NIC) controller OCP form factor options.
– Internal OROC is for storage controller OCP form factor options.
– Internal OROC and External OCP 3.0 options can be selected together.

Standard Features

Storage Controllers

Software RAID
Intel® VROC SATA SW RAID
Notes:
− Intel Virtual RAID on CPU (Intel VROC) is the SATA software RAID controller supported in this server.
− All server models support Intel VROC SATA RAID.
− BIOS Default is SATA AHCI. Intel VROC SATA RAID is disabled by default. Intel VROC SATA RAID can be enabled in BIOS/Platform Configuration (RBSU) or iLO Redfish API.
− Intel VROC SATA RAID OS drivers are not included in the HPE Support Pack for ProLiant (SPP) and must be downloaded from **support.hpe.com.**
− Intel VROC SATA RAID supports RAID 0,1,5,10.
− Intel VROC SATA RAID cannot be factory ordered/ as Intel VROC SATA RAID must be enabled in BIOS by the customer.
− Intel VROC SATA RAID does not support different form factors of drives (e.g., SFF + M.2)
− Intel VROC SATA RAID supports Windows Server and Linux but does not support VMware.
− Required to install HPE Agentless Management (AMS) in OS for supporting drives thermal sensor reading for thermal fan control, otherwise may experience acoustic noise impact.
− Both Intel® Xeon® E processors and Intel® Pentium® processors support Intel® VROC SATA RAID.
− See HPE Support Center for additional information regarding installation of Intel® VROC (SATA RAID): Enabling Intel VROC (SATA RAID) for SATA or SATA on BIOS/Platform configuration (RBSU)
  o **Windows Edition**
  o **Linux Edition**
− Intel VROC SATA RAID volumes cannot be created in Intelligent Provisioning. Volumes must be created manually.
− Intel VROC SATA RAID requires the server boot mode to be set to UEFI Mode.
− Obtain the Intel VROC downloads (drivers, GUI) specific for your system OS. For direct download links, see the OS-specific VROC guide: **https://hpe.com/support/VROC-Gen11-UG**
− Intel VROC supports RAID management though the following tools:
  o Non-OS specific: UEFI System Utilities
  o Windows: Intel VROC GUI, Intel VROC CLI.
  o Linux: mdadm CLI

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

Performance RAID Controllers
- HPE MR216i-p Gen11 SPDM Storage Controller
- HPE MR216i-o Gen11 SPDM Storage Controller
- HPE MR408i-o Gen11 SPDM Storage Controller

Notes: For additional details, please visit:
− HPE Compute **MR Gen11 Controllers QuickSpecs**
− HPE Compute **SR Gen11 Controllers QuickSpecs**

Standard Features

Maximum Storage

Drive	Capacity	Configuration
Non-Hot Plug	8TB	2 x 4TB
Hot Plug SFF SAS HDD	14.4 TB	4 x 2.4 TB + 2 x 2.4 TB (with optional +2 drive option)
Hot Plug SFF SATA HDD	12 TB	4 x 2.0 TB +2 x 2.0 TB (with optional + 2 drive option)
Hot Plug SFF SAS SSD	92.16 TB	4 x 15.36 TB +2 x 15.36 TB (with optional + 2 drive option)
Hot Plug SFF SATA SSD	46.08 TB	4 x 7.68 TB +2 x 7.68 TB (with optional + 2 drive option)
Hot Plug SFF SAS + NVMe SSD	92.16 TB	4 x 15.36 TB +2 x 15.36 TB (with optional + 2 drive option)
Hot Plug SFF SATA + NVMe SSD	46.08 TB	4 x 7.68 TB +2 x 15.36 TB (with optional + 2 drive option)
Hot Plug LFF SAS HDD	40 TB	2 x 20 TB
Hot Plug LFF SATA HDD	40 TB	2 x 20 TB
Hot Plug LFF SAS SSD	15.36 TB	2 x 7.68 TB
Hot Plug LFF SATA SSD	15.36 TB	2 x 7.68 TB
M.2 NVMe SSD	8TB	2 x 4TB

Power Supply

- HPE 290W Non-redundant FIO Power Supplies
  - **P21649-B21**, HPE DL20 Gen10 Plat 290W FIO Power Supply Kit
  - **P45476-B21**, HPE ProLiant DL20 Gen10 Plus290W FIO Power Supply Kit
    Notes:
    - Both 290W Power Supplies support both Pre-Configured Models and Configured Factory Integrated Models
    - P21649-B21, Power efficiency at 92% single output
    - P45476-B21, Power efficiency at 94% multi-output, currently available in EMEA only
    - P65409-B21, HPE DL20 Gen11 ATX PSU FIO Enable Kit required and must be added when using ATX power supplies
- HPE Redundant Power Supplies
  - **865408-B21**, HPE 500W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit
    Notes: Power efficiency at 94% single output
  - **865438-B21,** HPE 800W Flex Slot -48VDC Platinum Hot Plug Low Halogen Power Supply Kit
    Notes: Power efficiency at 96% single output
  - **P03178-B21,** HPE 1000W Flex Slot Titanium Hot Plug Power Supply Kit
    Notes: Power efficiency at 96% single output

HPE Entry-Level Power Supplies provide lower-cost options for customers trying to balance their need for enterprise class efficiency and reliability while maintaining the lowest possible hardware costs. The above-mentioned Entry-Level power supply options have been designed specifically for HPE ProLiant DL20 Gen11.

The HPE 290W Non-redundant Power Supply is the standard, non-redundant AC power supply and is optimized for the DL20 Gen11 rack server.

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

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)
Video	1 Rear - VGA port (standard on all chassis types) 1 Rear - Display port
Network Ports (RJ-45)	4x 1GbE embedded NIC (standard on all chassis types)
iLO Remote Management Port	1 Gb Dedicated NIC (Optional RJ45 Connector)
USB	8 USB ports (standard) Front : 2x USB Type-A ports with 1 xUSB 3.2 Gen1x1 and 1x USB 2.0 (iLO service port) Rear: 4x USB Type-A Ports, 3.2 Gen 1x1 Internal: 2x USB 3.2 Gen 2x1

Operating Systems and Virtualization Software

- See **HPE Servers Support & Certification Matrices**
    - **Microsoft Windows Server**
    - **VMware ESXi**
    - **Red Hat Enterprise Linux (RHEL)**
    - **SUSE Linux Enterprise Server (SLES)**
    - **Canonical Ubuntu**

Notes:

- VMware is supported only with Intel® Xeon® E processors, not supported with Intel® Pentium Gold® processors. No Legacy Mode Support on VMWare. **https://kb.vmware.com/s/article/84233**
- 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 **https://www.hpe.com/us/en/servers/server-operating-systems.html.**

Upgradeability

One of the following depending on model

- Up to 4 DIMM slots available for higher memory capacity
- Up to 4SFF (+2SFF optional) Drive bays or 2LFF Drive bays.
- HPE Smart Array or Smart HBA Controller
- Redundant Power Supply
- Optional iLO Management Port
- M.2 NVMe SSDs or NS204i-u for boot

Graphic

Integrated Matrox G200 video standard

- Video modes up to 1920 x 1200 @ 85 Hz (16 bpp)
- 16 MB Video Memory

HPE iLO 6 on system management memory

- 32 MB Flash
- 8 Gbit DDR4

Standard Features

Industry Standard Compliance

- ACPI 6.3 Compliant
- PCIe 5.0 Compliant
- WOL Support
- Microsoft® Logo certifications
- PXE Support
- USB 3.2 Compliant
- SMBIOS 3.2
- UEFI 2.9 (Unified Extensible Firmware Interface Forum)
- Redfish API
- IPMI 2.0
- Secure Digital 4.0
- TPM 2.0 Gen11 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)
- Active Directory v1.0
- ASHRAE A3/A4
  Notes: For additional technical thermal details regarding ambient temperatures, humidity and features support please visit: **http://www.hpe.com/servers/ashrae**
- Energy Star 4.0
  Notes: Pentium G7400 does not comply with Energy Star 4.0
- European Union (EU) Lot 9
  Notes: Beginning on January 1st, 2024, the EU's Lot 9 eco-design regulations for servers and storage products will enforce minimum efficiency for AC power supplies: 94% for multi-output and 96% for single output. HPE power supplies that meet Lot 9 requirements are: 865438-B21 (single-output & 96% efficient) and P45476-B21 (multi-output and 94% efficient).

  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. For more information regarding HPE Lot 9 conformance, please visit: **https://www.hpe.com/us/en/about/environment/msds-specs-more.html**

HPE Server UEFI/ROM

Unified Extensible Firmware Interface (UEFI) is an industry standard that provides better manageability and more secured configuration than the legacy ROM while interacting with your server at boot time. HPE ProLiant Gen11 servers have a UEFI Class 2 implementation and support UEFI Mode (default).
Notes: The UEFI System Utilities function is analogous to the HPE ROM-Based Setup Utility (RBSU) of legacy BIOS. For more information, please visit **http://www.hpe.com/servers/uefi**.

UEFI enables numerous new capabilities specific to HPE ProLiant servers such as:

- Secure Boot and Secure Start enabled enhanced security.
- Operating system specific functionality
- Support for > 2.2 TB (using GPT) boot drives.
- USB 3.0 Stack
- Embedded UEFI Shell
- Mass Configuration Deployment Tool using "RESTful API that is Redfish API Conformant
- PXE boot support for IPv6 networks
- Workload Profiles for simple performance optimization

Standard Features

UEFI Boot Mode only
- TPM 2.0 Support
- iSCSI Software Initiator Support.
- HTTP/HTTPs Boot support as a PXE alternative.
- Boot support for option cards that only support an UEFI option ROM.

Notes: For UEFI Boot Mode, boot environment and OS image installations should be configured properly to support UEFI.

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 **http://www.hpe.com/info/smartupdate**

iLO Amplifier Pack
Designed for large enterprise and service provider environments with hundreds of HPE servers, the iLO Amplifier Pack is a free, downloadable open virtual application (OVA) that delivers the power to discover, inventory and update Gen8, Gen9, Gen10, Gen10 plus and Gen11 HPE servers at unmatched speed and scale. Use it 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**

Standard Features

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

Scripting Tools
Provision one to many servers using your own scripts to discover and deploy with Scripting Tool (STK) for Windows and Linux or Scripting Tools for Windows PowerShell. Learn more at **http://www.hpe.com/servers/powershell**

HPE OneView Standard
HPE OneView 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 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**

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) 2.0
  Notes: Enabling TPM 2.0 no longer requires TPM module option kit for Gen11. It is an embedded feature yet disabled for shipments to China.
- Bezel Locking Kit
- Chassis Intrusion detection option

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 using 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 iLO Advanced Premium Security Edition
HPE iLO Advanced Premium Security Edition for iLO6 includes iLO Advanced License plus high-end security modes, unique security capabilities, like Automatic FW recovery, Runtime FW verification, and Secure erase. Learn more about HPE iLO Advanced Premium Security Edition at: **http://www.hpe.com/servers/ilopremium**

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

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

For a complete list of software as-a-service subscription SKUs and more information, visit the HPE GreenLake for Compute Ops Management QuickSpecs: **https://www.hpe.com/psnow/doc/a50004263enw**

For information on supported HPE servers, the complete list can be found here:
https://www.hpe.com/info/com-supported-servers

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, Gen10 Plus and Gen 11 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**

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 of workload. Some UPSs include options for remote management and runtime modules, so your critical dense data center is covered in power outages.

Optional Features

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 - Service and Support

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 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

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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.

Recommended Services

HPE Services Tech Care
HPE Services Tech Care 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 Services Tech Care 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 Services Tech Care 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/h20195/v2/Getdocument.aspx?docname=a00108652enw

HPE Services Complete Care
HPE Services Complete Care 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 Services Complete Care provides:
- A complete coverage approach -- edge to cloud
- An assigned HPE team
- Modular and fully personalized engagement
- Enhanced Incident Management experience with priority access
- Digitally enabled and AI driven customer experience

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

Service and Support

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 include the installation of one supported operating system type (Windows® or Linux).

CC 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.

HPE Education Services
Keep your IT staff trained to make sure they have the right skills to deliver on your business outcomes. Book 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 an 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. HPE sourced options that are compatible with your product will be covered under your server support at the same level of coverage allowing

Service and Support

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 selecting high value workload accelerators, fibre switches, InfiniBand and UPS batteries over 12KVA.

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.

Pre-configured Models

The pre-configured BTO SKUs are right-sized for use with a single CPU and a single 8GB or 16GB DIMM, and an embedded 1Gb - Port network controller. The storage subsystem can support either 4SFF or 2LFF drives attached to a storage controller or SATA direct connected to motherboard. The pre-configured power supply unit is sufficient for these reasonable configurations. In cases where the final configuration will be increased by adding more memory, additional drives, or other components please refer to HPE Power Advisor for configuration guidance, as your desired configuration may require a second PSU or building the configuration as Configure to Order (CTO) may be best.

- Pre-configured models ship with the configurations below. Options can be selected from the Core or Additional options section of this QuickSpecs.
- Hewlett Packard Enterprise does not allow factory integration of options into pre-configured models. Any additional options purchased will be shipped separately.
- If you desire a custom configuration, please see "Configuration Information - Factory Integrated Models" section of this QuickSpecs.

	Entry	Base
SKU Numbers	P65393-B21	P65394-B21
	P65393-421	P65394-421
	P65393-291	P65394-291
	P65393-AA1	P65394-AA1
Model Name	HPE ProLiant DL20 Gen11 E-2414 2.6GHz 4-core 1P 16GB-U 2LFF-NHP 290W PS Server	HPE ProLiant DL20 Gen11 E-2434 3.4GHz 4-core 1P 16GB-U 2LFF 290W PS Server
Processor	Intel® Xeon® E-2414 (4-Core, 2.6 GHz, 55W)	Intel® Xeon® E-2434 (4-Core, 3.4 GHz, 55W)
Number of Processors	One processor	One processor
Memory	16 GB UDIMM DDR5 4800 MT/s (1x 16 GB) **Notes:** — Runs at 4400 MT/s per processor support — System maximum memory capacity – up to 64GB via field upgrade (4x 16GB)	16 GB UDIMM DDR5 4800 MT/s (1x 16 GB) **Notes:** — Runs at 4400 MT/s per processor support — System maximum memory capacity – up to 64GB via field upgrade (4x 16GB)
Network Controller	HPE embedded 1Gb 4-port BCM5719 network adapter	
Storage Controller	Embedded Intel® VROC SATA software RAID **Notes:** SATA only	
Hard Drive	None ship standard	None ship standard; includes 1 LFF hard drive blank
Internal Storage	2 LFF HDD Bays (Non-Hot Plug)	2 LFF HDD Bays (Hot Plug)
Optical Drive Bay	1; (Optional: DVD-ROM, DVD-RW)	
Optical Drive	None	
PCI-Express Slots	1 PCIe 5.0 CEM slot, 1 Internal OCP Storage Controller slot, 1 External OCP 3.0 Network Controller slot	
Power Supply	(1) 290W Non-Redundant Power Supply	
Fans	3 performance single rotor non-hot plug and non-redundant fans	
Management	iLO Management (standard), Intelligent Provisioning (standard), iLO Advanced (optional)	
Form Factor	Rack (1U), HPE Short Friction Rail Kit	
Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response	

Notes: *P65395-421 and P65396-421 offered with 800W power supplies only in EMEA for EU Lot 9 Compliance.

Pre-configured Models

	Performance	High Performance
SKU Numbers	P65395-B21	P65396-B21
	P65395-421*	P65396-421*
	P65395-291	P65396-291
Model Name	HPE ProLiant DL20 Gen11 E-2434 3.4GHz 4-core 1P 16GB-U 4SFF Server	HPE ProLiant DL20 Gen11 E-2436 2.9GHz 4-core 1P 16GB-U 4SFF Server
Processor	Intel® Xeon® E-2434 (4-Core, 3.4 GHz, 55W)	Intel® Xeon® E-2436 (6-Core, 2.9 GHz, 65W)
Number of Processors	One processor	One processor
Memory	16 GB UDIMM DDR5 4800 MT/s (1x 16 GB) **Notes:** — Runs at 4400 MT/s per processor support — System maximum memory capacity – up to 64GB via field upgrade (4x 16GB)	16 GB UDIMM DDR5 4800 MT/s (1x 16 GB) **Notes:** — Runs at 4400 MT/s per processor support — System maximum memory capacity – up to 64GB via field upgrade (4x 16GB)
Network Controller	HPE embedded 1Gb 4-port BCM5719 network adapter	
Storage Controller	Embedded Intel® VROC SATA software RAID **Notes:** SATA only	
Hard Drive	None ship standard; includes 3 SFF hard drive blanks	None ship standard; includes 3 SFF hard drive blanks
Internal Storage	4 SFF HDD Bays (Hot Plug)	4 SFF HDD Bays (Hot Plug)
Optical Drive Bay	1; (Optional: DVD-ROM, DVD-RW)	
Optical Drive	None	
PCI-Express Slots	1 PCIe 5.0 CEM slot, 1 Internal OCP Storage Controller slot, 1 External OCP 3.0 Network Controller slot	
Power Supply *	(1) 500W Redundant Power Supply or (1) 800W Redundant Power Supply* **Notes:** Add a second 500W or 800W Flex Slot Power Supply to get 1+1 power redundancy feature.	
Fans	3 performance single rotor non-hot plug and non-redundant fans	
Management	iLO Management (standard), Intelligent Provisioning (standard), iLO Advanced (optional)	
Form Factor	Rack (1U), HPE Short Friction Rail Kit	
Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response	

Country Code Key
XXX = B21 AMS, and APAC
XXX = 421 EMEA
XXX = 291 Japan
XXX = AA1 PRC

Notes: The -B21 WW SKU is to be ordered in all countries other than EMEA, Japan or PRC. Not all models are available in all regions. Check with your local country Hewlett Packard Enterprise offices for availability.

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.
- All Factory Integrated Models will be populated with sufficient hard drive blanks based on number of drives ordered with server.
- 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)

Chassis	HPE ProLiant DL20 Gen11 2LFF NHP CTO Svr	HPE ProLiant DL20 Gen11 2LFF Ht Plg CTO Svr	HPE ProLiant DL20 Gen11 4SFF Ht Plg CTO Svr
SKU Number	P65390-B21	P65391-B21	P65392-B21
Processor	1	1	1
DIMM Slots	4 DIMM slots for UDIMM DDR5 Memory		
Storage Controller	Embedded Intel® VROC SATA software RAID		
PCIe	1 PCIe 5.0 CEM slot, 1 Internal OCP Storage Controller slot, 1 External OCP 3.0 Network Controller slot		
Drive Cage	2LFF Non-Hot Plug	2LFF Hot Plug	4SFF Hot Plug
Network Controller	HPE embedded 1Gb 4-port BCM5719 network Adapter		
Fans	3 performance single rotor non-hot plug and non-redundant fans		
Management	iLO Management (standard), Intelligent Provisioning (standard)		
USB	8 standard: 2 front (1 optional for iLo Mgmt only), 4 rear, 2 internal		
Ears	HPE Thumbscrew Ears		

Step 2: Choose Required Options

Please select one processor required below.

Notes:

- Only one processor is supported.
- DDR5 speed is the maximum memory speed of the processor. Actual memory speed may depend on the quantity and type of DIMMs installed.
- DL20 Gen11 with new Intel Xeon E-2400 processors comes with BCM 5719 quad port 4Gb network controller on board and supports 4x 1Gb Ethernet ports.
- An additional CPU baffle will be integrated in server if 95W processor is selected.

Step 2a: Choose Processor Options

Processor Option Kits

Intel Xeon-E Processors

Intel Xeon E-2488 3.2GHz 8-core 95W FIO Processor for HPE	P65218-B21
Intel Xeon E-2478 2.8GHz 8-core 80W FIO Processor for HPE	P65219-B21
Intel Xeon E-2486 3.5GHz 6-core 95W FIO Processor for HPE	P65221-B21
Intel Xeon E-2468 2.6GHz 8-core 65W FIO Processor for HPE	P65220-B21
Intel Xeon E-2456 3.3GHz 6-core 80W FIO Processor for HPE	P65222-B21
Intel Xeon E-2436 2.9GHz 6-core 65W FIO Processor for HPE	P65223-B21
Intel Xeon E-2434 3.4GHz 4-core 55W FIO Processor for HPE	P65224-B21
Intel Xeon E-2414 2.6GHz 4-core 55W FIO Processor for HPE	P65225-B21

Configuration Information

Intel® Pentium® Processor G Series

Intel Pentium G7400 3.7GHz 2-core 46W FIO Processor for HPE   P65226-B21

Notes:

— HPE NS204i-u Gen11 NVMe Hot Plug Boot Optimized Storage Device (P48183-B21) is not supported with Intel Pentium® Processors
— Pentium G7400 does not comply with Energy Star 4.0

Step 2b: Choose Memory Options

Please select one or more memory from below.

Notes:

— HPE memory from previous generation servers is not qualified or warranted with this HPE ProLiant Server.
— HPE Standard Memory (UDIMM) is required to realize the memory performance improvements and enhanced functionality listed in this document for this HPE ProLiant Server.
— With one processor installed, four DIMMs slots are available, two slots per channel. Each channel can be populated with one DIMM (1DPC) or two DIMMs (2DPC).
— The quantity of memory DIMMS selected is recommended to be 1, 2 or 4 for balanced performance.
— Symmetric configurations are required within each channel (e.g., 1R/1R, 2R/2R), meaning the same DIMM capacity (16GB or 32GB) is required when populating within each channel.
— The maximum memory speed is a function of the memory type, memory configuration, and processor model.
— The maximum speed capability of the memory system is governed by the combination of the CPU and any other DIMMs installed in the server. If higher speed DIMMs are installed with a CPU that only supports a lower memory speed, the DIMMs will only run at the (lower) memory speed supported by the processor. Likewise, if memory DIMMs are mixed with slower DIMMs within a server, all DIMMs will run at the slower memory speed. For further information please refer to the Memory Population Rules for your specific server.
— For Server Memory Population Rules for HPE ProLiant Gen11 Servers with Intel® Xeon® E-2400 Processors see details here: **http://www.hpe.com/docs/server-memory**.

Unbuffered DIMMs (ECC UDIMMs)

HPE 16GB (1x16GB) Single Rank x8 DDR5-4800 CAS-40-39-39 Unbuffered Standard Memory Kit   P64336-B21
HPE 32GB (1x32GB) Dual Rank x8 DDR5-4800 CAS-40-39-39 Unbuffered Standard Memory Kit   P64339-B21

Notes:

— Running at up to 4400 MT/s with Intel® Xeon® processors when two dual-rank DIMMS are installed in different channels.
— HPE Server Memory compatibility for a specific server platform may vary or be limited within a server platform depending upon the specific configuration being requested. Because each server environment and requirements can vary, memory compatibility is based not only upon the server family but may also be affected by the amount and type of additional hardware options installed within a specific server configuration. For this reason, some HPE memory DIMMs may be qualified for an HPE server model or family and yet occasionally not be supported with some configurations within that server family.

Step 2c: Choose Power Supplies

Please select one or two power supplies from below.

Notes:

— Mixing of 2 different power supplies is NOT allowed.
— Selection of two HPE Flex Slot power supplies provide 1+1 power redundancy.
— To review the power requirements for your selected configuration, please use the **HPE Power Advisor Tool**

Configuration Information

HPE ProLiant Gen10 Plus Essential Server Power Supplies - Non-Redundant

HPE DL20 Gen10 290W Platinum Power Supply Kit																P21649-B21
- (92% efficiency, Platinum)

HPE ProLiant DL20 Gen10 Plus 290W FIO Power Supply Kit														P45476-B21
- (94% efficiency, Platinum, Available in EMEA only)

HPE DL20 Gen11 290W ATX FIO PS Kit																			P65409-B21

Notes:
- These ATX FIO options can only be bought integrated in the server. It cannot be ordered as a standalone option after server purchase.
- P45476-B21, available in EMEA only
- It is mandatory to choose the ATX enablement kit to support a non-redundant power supply.
- The 290W Platinum power supplies, 800W and 1000W Power Supplies all meet the EU Lot 9 regulation, which is essential in countries which mandatorily require CE marking, effective. For more information regarding EU Lot 9, please visit **HPE Lot 9 conformance https://www.hpe.com/us/en/about/environment/msds-specs-more.html**

HPE Flex Slot Power Supplies

HPE 500W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit											865408-B21
HPE 800W Flex Slot Titanium Hot Plug Low Halogen Power Supply Kit											865438-B21
HPE 1000W Flex Slot Titanium Hot Plug Power Supply Kit														P03178-B21

Notes: If a 2nd power supply is order for redundancy, it's part number must be the same as the 1st power supply. Mixing of power supplies is not supported.

Step 3: Choose Additional Options for Factory Integration from Core and Additional Option sections below

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 DL3XX Gen10/Gen10 Plus CTO server 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.

Core Options

Some options may only 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

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

HPE Legacy FIO Mode Setting   758959-B22

Notes: UEFI is the default, this FIO part can be used for CTO to enable Legacy mode.

HPE Security

HPE ProLiant DL20 Gen11 ships with embedded Trusted Platform Module (TPM) 2.0 enabled by default. For servers shipping to China, the TPM is disabled.

Risers

HPE ProLiant DL320 Gen11 x16 FHHL Riser Kit   P52753-B21

Notes: Mandatory to select at least one riser.

Part number	Description	Slot Bus width (Gen5 lanes)	
		#1	#2
P52753-B21	HPE DL320 Gen11 x16 FHHL Riser Kit	X16	X8

Optical Drive Options

HPE Mobile USB DVD-RW Optical Drive   701498-B21

Notes: This kit is only supported on USB 3.0 ports only.

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

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

HPE ProLiant DL20 Gen11 4SFF ODD Direct Attach Enablement Kit   P65417-B21

Notes: This option kit is required to support ODD on SFF chassis.

HPE ProLiant DL20 Gen11 ODD Controller Enablement Kit   P65418-B21

Notes: This option kit can only be selected if internal controller is selected.

SFF Drive Option Kit

HPE ProLiant DL20 Gen11 2SFF HDD Enablement Kit   P65406-B21

Notes:
- This option is required to upgrade the 4SFF chassis to support additional 2SFF drives.
- 2SFF HDD enable kit and optical drives cannot be selected together.

Core Options

Enablement & Cable Kits

HPE ProLiant DL20 Gen11 LP iLO/M.2 Enablement Kit	P65407-B21

Notes: This option is required to support M.2 SSD drives and/or to enable the optional iLo port.

HPE ProLiant DL20 Gen11 External OCP Cable Kit	P65411-B21

Notes: This option required to support OCP Networking adaptors.

HPE ProLiant DL20 Gen11 2LFF/4SFF OCP Cable Kit	P65412-B21

Notes: This option required to support OROC controllers and is not supported on the 2LFF NHP server model.

HPE ProLiant DL20 Gen11 2LFF/4SFF PCIe Cable Kit	P65413-B21

Notes: This option required to support PCIe controllers and is not supported on the 2LFF NHP server model.

HPE ProLiant DL20 Gen11 2SFF PCIe Cable Kit	P65414-B21

Notes: This cable is required to support PCIe controller (MR216i-p) with 2SFF drive cage on 4SFF CTO server. Not supported on 2LFF HP and 2LFF NHP server.

HPE ProLiant DL20 Gen11 2SFF OCP Cable Kit	P65415-B21

Notes: This cable is required to support OROC controller (MR216i-o) with 2SFF drive cage on 4SFF CTO server. Not supported on 2LFF HP and 2LFF NHP server

HPE ProLiant DL20 Gen11 4SFF/2SFF x1 OCP Cable Kit	P65416-B21

Notes: This cable kit is required to support select OROC controllers with 4SFF CTO server and 2SFF HDD enable kit. It is not allowed with other select controllers.

HPE Hard Disk Drives

Notes: For the most up to date HDD & SSDs options available Hewlett Packard Enterprise recommends the use of a Hewlett Packard Enterprise approved configurator.

Mission Critical (Enterprise) - 12G SAS - SFF Basic Carrier Drives

HPE 2.4TB SAS 12G Mission Critical 10K SFF BC 3-year Warranty 512e Self-encrypting FIPS HDD	P28618-B21
HPE 2.4TB SAS 12G Mission Critical 10K SFF BC 3-year Warranty 512e Multi Vendor HDD	P28352-B21
HPE 1.8TB SAS 12G Mission Critical 10K SFF BC 3-year Warranty 512e Multi Vendor HDD	P53562-B21
HPE 1.2TB SAS 12G Mission Critical 10K SFF BC 3-year Warranty Self-encrypting FIPS HDD	P28622-B21
HPE 1.2TB SAS 12G Mission Critical 10K SFF BC 3-year Warranty Multi Vendor HDD	P28586-B21
HPE 900GB SAS 12G Mission Critical 15K SFF BC 3-year Warranty Multi Vendor HDD	P40432-B21
HPE 600GB SAS 12G Mission Critical 15K SFF BC 3-year Warranty Multi Vendor HDD	P53560-B21
HPE 600GB SAS 12G Mission Critical 10K SFF BC 3-year Warranty Multi Vendor HDD	P53561-B21
HPE 300GB SAS 12G Mission Critical 10K SFF BC 3-year Warranty Multi Vendor HDD	P40430-B21

Business Critical (Midline) – 12G SAS – LFF Low Profile Carrier Drives

HPE 20TB SAS 12G Business Critical 7.2K LFF LP 1-year Warranty Helium 512e ISE Multi Vendor HDD	P53553-B21
HPE 16TB SAS 12G Business Critical 7.2K LFF LP 1-year Warranty Helium 512e ISE Multi Vendor HDD	P23608-B21
HPE 12TB SAS 12G Business Critical 7.2K LFF LP 1-year Warranty Helium 512e Multi Vendor HDD	881781-B21
HPE 8TB SAS 12G Business Critical 7.2K LFF LP 1-year Warranty 512e Multi Vendor HDD	834031-B21
HPE 6TB SAS 12G Business Critical 7.2K LFF LP 1-year Warranty 512e Multi Vendor HDD	861746-B21
HPE 4TB SAS 12G Business Critical 7.2K LFF LP 1-year Warranty Multi Vendor HDD	833928-B21
HPE 2TB SAS 12G Business Critical 7.2K LFF LP 1-year Warranty Multi Vendor HDD	833926-B21

Core Options

Business Critical (Midline) - 6G SATA - LFF Low Profile Carrier Drives

HPE 20TB SATA 6G Business Critical 7.2K LFF LP 1-year Warranty Helium 512e ISE Multi Vendor HDD	P53554-B21
HPE 18TB SATA 6G Business Critical 7.2K LFF LP 1-year Warranty Helium 512e ISE Multi Vendor HDD	P37678-B21
HPE 16TB SATA 6G Business Critical 7.2K LFF LP 1-year Warranty Helium 512e ISE Multi Vendor HDD	P23449-B21
HPE 12TB SATA 6G Business Critical 7.2K LFF LP 1-year Warranty Helium 512e Multi Vendor HDD	881787-B21
HPE 8TB SATA 6G Business Critical 7.2K LFF LP 1-year Warranty 512e Multi Vendor HDD	834028-B21
HPE 6TB SATA 6G Business Critical 7.2K LFF LP 1-year Warranty 512e Multi Vendor HDD	861742-B21
HPE 4TB SATA 6G Business Critical 7.2K LFF LP 1-year Warranty Multi Vendor HDD	861683-B21
HPE 2TB SATA 6G Business Critical 7.2K LFF LP 1-year Warranty Multi Vendor HDD	861681-B21
HPE 1TB SATA 6G Business Critical 7.2K LFF LP 1-year Warranty Multi Vendor HDD	861686-B21

Business Critical (Entry) 6G SATA - LFF NHP/Raw Drives

HPE 4TB SATA 6G Business Critical 7.2K LFF RW 1-year Warranty Multi Vendor HDD	801888-B21
HPE 1TB SATA 6G Business Critical 7.2K LFF RW 1-year Warranty Multi Vendor HDD	801882-B21

SSD Selection

To streamline the configuration process for HPE ProLiant Gen10 servers and to provide the best product availability, HPE recommends SSDs from the list located here: **http://www.hpe.com/products/recommend**
For SSD selection guidance, please visit **https://ssd.hpe.com/**.
Notes: For the most up to date HDD & SSDs options available Hewlett Packard Enterprise recommends the use of a Hewlett Packard Enterprise approved configurator.

Mixed Use - 24G SAS - SFF Basic Carrier - Solid State Drives

HPE 6.4TB SAS 24G Mixed Use SFF BC Multi Vendor SSD	P49057-B21
HPE 3.2TB SAS 24G Mixed Use SFF BC Multi Vendor SSD	P49053-B21
HPE 1.6TB SAS 24G Mixed Use SFF BC Multi Vendor SSD	P49049-B21
HPE 800GB SAS 24G Mixed Use SFF BC Multi Vendor SSD	P49047-B21

Notes: DL20 Gen11 2LFF HP & 2LFF NHP and 4SFF HP models support up to SAS 12G; performance downgrade to 12G is expected once SAS 24G drive is installed in DL20 Gen11 2LFF HP and 2LFF NHP and 4SFF HP models. DL20 Gen11 4SFF + 2SFF HP model can support up to SAS 24G with no performance downgrade on the 2SFF HP drive cage optional drive cage.

Mixed Use - 12G SAS - SFF Basic Carrier - Solid State Drives

HPE 3.84TB SAS 12G Mixed Use SFF BC Value SAS Multi Vendor SSD	P40512-B21
HPE 1.92TB SAS 12G Mixed Use SFF BC Value SAS Multi Vendor SSD	P40511-B21
HPE 960GB SAS 12G Mixed Use SFF BC Value SAS Multi Vendor SSD	P40510-B21

Read Intensive – 24G SAS – SFF Basic Carrier – Solid State Drives

HPE 15.36TB SAS 24G Read Intensive SFF BC Multi Vendor SSD	P49045-B21
HPE 7.68TB SAS 24G Read Intensive SFF BC Multi Vendor SSD	P49041-B21
HPE 3.84TB SAS 24G Read Intensive SFF BC Multi Vendor SSD	P49035-B21
HPE 1.92TB SAS 24G Read Intensive SFF BC Multi Vendor SSD	P49031-B21
HPE 960GB SAS 24G Read Intensive SFF BC Multi Vendor SSD	P49029-B21

Notes: DL20 Gen11 supports up to SAS 12G, performance downgrade to 12G is expected once SAS 24G drive is installed in DL20 Gen11 system

Core Options

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

HPE 7.68TB SAS 12G Read Intensive SFF BC Value SAS Multi Vendor SSD	P40509-B21
HPE 3.84TB SAS 12G Read Intensive SFF BC Value SAS Multi Vendor SSD	P40508-B21
HPE 1.92TB SAS 12G Read Intensive SFF BC Value SAS Multi Vendor SSD	P40507-B21
HPE 960GB SAS 12G Read Intensive SFF BC Value SAS Multi Vendor SSD	P40506-B21

Mixed Use – 6G SATA - SFF Basic Carrier - Solid State Drives

HPE 3.84TB SATA 6G Mixed Use SFF BC Multi Vendor SSD	P40505-B21
HPE 1.92TB SATA 6G Mixed Use SFF BC Multi Vendor SSD	P40504-B21
HPE 1.92TB SATA 6G Mixed Use SFF BC Self-encrypting 5400M SSD	P58248-B21
HPE 960GB SATA 6G Mixed Use SFF BC Self-encrypting 5400M SSD	P58244-B21
HPE 960GB SATA 6G Mixed Use SFF BC Multi Vendor SSD	P40503-B21
HPE 480GB SATA 6G Mixed Use SFF BC Multi Vendor SSD	P40502-B21

Read Intensive – 6G SATA – LFF Low Profile Carrier – Solid State Drive

HPE 960GB SATA 6G Read Intensive LFF LPC Multi Vendor SSD	P47808-B21

Read Intensive – 6G SATA – SFF Basic Carrier – Solid State Drive

HPE 7.68TB SATA 6G Read Intensive SFF BC Multi Vendor SSD	P40501-B21
HPE 3.84TB SATA 6G Read Intensive SFF BC PM893a SSD	P63910-B21
HPE 3.84TB SATA 6G Read Intensive SFF BC Multi Vendor SSD	P40500-B21
HPE 1.92TB SATA 6G Read Intensive SFF BC Self-encrypting 5400P SSD	P58240-B21
HPE 1.92TB SATA 6G Read Intensive SFF BC Multi Vendor SSD	P40499-B21
HPE 960GB SATA 6G Read Intensive SFF BC Multi Vendor SSD	P40498-B21
HPE 480GB SATA 6G Read Intensive SFF BC PM893a SSD	P63886-B21
HPE 480GB SATA 6G Read Intensive SFF BC Self-encrypting 5400P SSD	P58236-B21
HPE 480GB SATA 6G Read Intensive SFF BC Multi Vendor SSD	P40497-B21
HPE 240GB SATA 6G Read Intensive SFF BC Multi Vendor SSD	P40496-B21

Mixed Use – High Performance - NVMe - SFF - Solid State Drives

HPE 6.4TB NVMe Gen4 High Performance Mixed Use SFF BC U.3 PM1735a SSD	P50233-B21
HPE 3.2TB NVMe Gen4 High Performance Mixed Use SFF BC U.3 PM1735a SSD	P50230-B21
HPE 1.6TB NVMe Gen4 High Performance Mixed Use SFF BC U.3 PM1735a SSD	P50227-B21

Mixed Use – Mainstream - NVMe - SFF - Solid State Drives

HPE 6.4TB NVMe Gen4 Mainstream Performance Mixed Use SFF BC U.3 Static V2 Multi Vendor SSD	P65023-B21
HPE 3.2TB NVMe Gen4 Mainstream Performance Mixed Use SFF BC U.3 Static V2 Multi Vendor SSD	P65015-B21
HPE 1.6TB NVMe Gen4 Mainstream Performance Mixed Use SFF BC U.3 Static V2 Multi Vendor SSD	P65007-B21
HPE 800GB NVMe Gen4 Mainstream Performance Mixed Use SFF BC U.3 Static V2 Multi Vendor SSD	P64999-B21

Read Intensive – High Performance - NVMe - SFF - Solid State Drives

HPE 15.36TB NVMe Gen4 High Performance Read Intensive SFF BC U.3 PM1733a SSD	P50224-B21
HPE 7.68TB NVMe Gen4 High Performance Read Intensive SFF BC U.3 PM1733a SSD	P50222-B21
HPE 3.84TB NVMe Gen4 High Performance Read Intensive SFF BC U.3 PM1733a SSD	P50219-B21
HPE 1.92TB NVMe Gen4 High Performance Read Intensive SFF BC U.3 PM1733a SSD	P50216-B21

Read Intensive – Mainstream - NVMe - SFF - Solid State Drives

HPE 7.68TB NVMe Gen4 Mainstream Performance Read Intensive SFF BC U.3 Static V2 Multi Vendor SSD	P64848-B21
HPE 1.92TB NVMe Gen4 Mainstream Performance Read Intensive SFF BC U.3 Static V2 Multi Vendor SSD	P64844-B21

Core Options

HPE 3.84TB NVMe Gen4 Mainstream Performance Read Intensive SFF BC U.3 Static V2 Multi Vendor SSD   P64846-B21

HPE 960GB NVMe Gen4 Mainstream Performance Read Intensive SFF BC U.3 Static V2 Multi Vendor SSD   P64842-B21

Notes:

– Maximum of two NVMe U.3 is allowed per configuration.

– NVMe U.3 drives can be selected only if P65406-B21 – HPE ProLiant DL20 Gen11 2SFF HDD Enablement Kit is selected.

– NVMe U.3 drives should be restricted to <25degc/ 77degf ambient temperature environments only. Fan speed results of these drives in ambient temperature environment in excess of suggested levels may result in acoustic noise levels unsuitable for any environments outside of Data Center environments.

Read Intensive - NVMe - M.2 - Solid State Drives

HPE 1.92TB NVMe Gen3 Mainstream Performance Read Intensive M.2 Multi Vendor SSD   P40515-B21

HPE 960GB NVMe Gen3 Mainstream Performance Read Intensive M.2 Multi Vendor SSD   P40514-B21

HPE 480GB NVMe Gen3 Mainstream Performance Read Intensive M.2 Multi Vendor SSD   P40513-B21

Notes:

– Selection of P65407-B21 - HPE ProLiant DL20 Gen11 LP iLO/M.2 Enablement Kit is required to support M.2 SSD Drives.

– M.2s are not supported by HPE Smart Array controllers.

– It is suggested to operate M.2 SSDs at an ambient temperature of 25°C/77°F ambient temperature. At an ambient temperature of 35°C/95°F or higher there may be increased acoustic concern that will need to be taken into consideration.

Hard Drive Blank Kits

HPE Gen9 LFF HDD Spade Blank Kit   807878-B21

HPE Small Form Factor Hard Drive Blank Kit   666987-B21

Notes: For the most up to date HDD & SSDs options available Hewlett Packard Enterprise recommends the use of a Hewlett Packard Enterprise approved configurator. Contact your local sales representative for additional information and HDD and SSD QuickSpecs.

HPE Networking

PCIe Adaptors

25 Gigabit Ethernet adapters

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

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

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

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

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

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

1 Gigabit Ethernet adapters

Broadcom BCM5719 Ethernet 1Gb 4-port BASE-T Adapter for HPE   P51178-B21

Notes: Max of 1 PCIe Adaptor can be selected.

Core Options

OCP Adaptors

25 Gigabit Ethernet adapters

Intel E810-XXVDA2 Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE	P10106-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
Mellanox MCX631432AS-ADAI Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE	P42041-B21

10 Gigabit Ethernet 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

1 Gigabit Ethernet adapters

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

Notes: Max of 1 OCP Networking Adaptor can be selected.

Additional Options

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

Embedded Management

HPE iLO Advanced

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 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 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 Converged Infrastructure Management Software

HPE OneView Advanced (with HPE iLO Advanced)

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 FIO LTU	P8B31A
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**

Software as a Service Management

HPE GreenLake for Compute Ops Management

HPE GreenLake for Compute Ops Management Enhanced 3-year Upfront ProLiant SaaS	R7A11AAE
HPE GreenLake for Compute Ops Management Enhanced 5-year Upfront ProLiant SaaS	R7A12AAE
HPE GreenLake for Compute Ops Management Flex Solution Tracking	S2R34AAE

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

Additional Options

HPE Security

HPE Bezel Lock Kit	875519-B21
HPE ProLiant DL3XX Gen11 Intrusion Cable Kit	P48922-B21
HPE ProLiant Gen11 1U Common Bezel Kit	P50450-B21

Notes: 875519-B21 – HPE Bezel Lock Kit requires the selection of the P50450-B21 - HPE ProLiant Gen11 1U Common Bezel Kit

HPE Storage Controllers

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

HPE Essential RAID Controllers

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

Notes: To be used for external storage only.

HPE Tri-Mode Controllers

HPE MR408i-o Gen11 x8 Lanes 4GB Cache OCP SPDM Storage Controller	P58335-B21
HPE MR216i-p Gen11 x16 Lanes without Cache PCI SPDM Plug-in Storage Controller	P47785-B21
HPE MR216i-o Gen11 x16 Lanes without Cache OCP SPDM Storage Controller	P47789-B21

Notes: Tri-Mode controllers are not support on the 2LFF NHP Model Server

Storage Battery

HPE 96W Smart Storage Lithium-ion Battery with 145mm Cable Kit	P01366-B21

Notes:

- Provides backup power for multiple HPE storage controllers or other devices.
- Max storage battery qty to be one per DL20 Gen11 server.

HPE OS Boot Device

HPE NS204i-u Gen11 NVMe Hot Plug Boot Optimized Storage Device	P48183-B21
HPE ProLiant DL20 Gen11 NS204i-u Hot Plug Boot Optimized Storage Device Enablement Kit	P65410-B21

Notes:

- The N204i-u Boot device includes 2x 480GB M.2 NVMe SSDs, with preconfigured hardware RAID1. For additional information, please see the **HPE OS Boot Device QuickSpecs.**
- Selection of the HPE NS204i-u Gen11 NVMe Hot Plug Boot Optimized Storage Device requires selection of the HPE ProLiant DL20 Gen11 NS204i-u Hot Plug Boot Optimized Storage Device Enablement Kit. Both the device and the enablement kit are required to be selected together.
- It is suggested to operate the N204i-u Boot device at an ambient temperature of 25°C/77°F ambient temperature. At an ambient temperature of 35°C/95°F or higher there will be increased acoustic levels that will need to be taken into consideration.

HPE Rack Options

Rail Kits

HPE Easy Install Rail 12 Kit	P64576-B21

Additional Options

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.

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 Support Services

Installation & Start-up Services

HPE Installation ML/DL Series 10 Service	U7WZ5E
HPE Startup ML/DL Series 10 Service	U7WZ7E

Tech Care Services

HPE 5 Year Tech Care Essential DL20 Gen11 HW Service	H42PQE
HPE 5 Year Tech Care Essential wDMR DL20 Gen11 HW Service	H42PRE
HPE 3 Year Tech Care Essential DL20 Gen11 HW Service	H42NKE
HPE 3 Year Tech Care Essential wDMR DL20 Gen11 HW Service	H42NLE
HPE 3 Year Tech Care Basic DL20 Gen11 HW Service	H42NCE
HPE 3 Year Tech Care Basic wDMR DL20 Gen11 HW Service	H42NDE

Notes: For a full list of packaged support services, please visit **http://www.hpe.com/services/ssc**

Memory

HPE Standard Memory

HPE Standard Memory offers the best combination of pricing, quality, reliability and compatibility for HPE ProLiant servers; designed to help your business achieve powerful results with right-sized affordable solutions. It delivers the ideal value that small businesses require to smoothly run a small network server environment and provides entry-level businesses with affordable server memory that has been optimized for HPE entry-level servers. HPE Standard Memory is outstanding for businesses looking for memory with a low acquisition cost, exceptional performance, optimized compatibility, assured reliability, and comprehensive management.

HPE Standard Memory UDIMMs has passed the rigorous Hewlett Packard Enterprise qualification and testing processes. The memory subsystem in this server supports UDIMMs. The server supports single-rank and dual-rank DDR5 UDIMMs operating at up to 4400 MT/s DIMM speeds.

Memory Population guidelines
- The server supports two channels per processor with two DIMMs per channel for a total of four DIMMs per DL20 Gen11 Server.

General Memory Population Rules and Guidelines:
- Only UDIMMs are supported on DL20 Gen11. No support for RDIMMs and LRDIMMs.
- All the channels in a system run at the fastest common frequency.

DIMM Type	Unbuffered with ECC DIMMs (UDIMMs)	
HPE SKU P/N	P64336-B21	P64339-B21
SKU Description	HPE 16GB (1x16GB) Single Rank x8 DDR5-4800 CAS-40-39-39 Unbuffered Standard Memory Kit	HPE 32GB (1x32GB) Dual Rank x8 DDR5-4800 CAS-40-39-39 Unbuffered Standard Memory Kit
DIMM Rank	Single Rank (1R)	Dual Rank (2R)
DIMM Capacity	16GB	32GB
Voltage	Std Voltage 1.1V VDDQ, 1.8V VPP	Std Voltage 1.1V VDDQ, 1.8V VPP
CAS Latency	36-36-36	36-36-36
DIMM Native Speed (MT/S)	5600 MT/s	5600 MT/s
Slots That Can Be Populated	4	4
Maximum Capacity (Gb)	64 GB (4 x 16 GB)	128 GB (4 x 32 GB)
HPE Server Memory Speed: Intel® Xeon® E processors		
1 DIMM Per Channel	4400 MT/s	4400 MT/s
2 DIMM Per Channel	4000 MT/s	3600 MT/s
HPE Server Memory Speed: Intel® Pentium® G7400 processor		
1 DIMM Per Channel	4400 MT/s	4400 MT/s
2 DIMM Per Channel	4000 MT/s	3600 MT/s

DDR5 memory options part number decoder

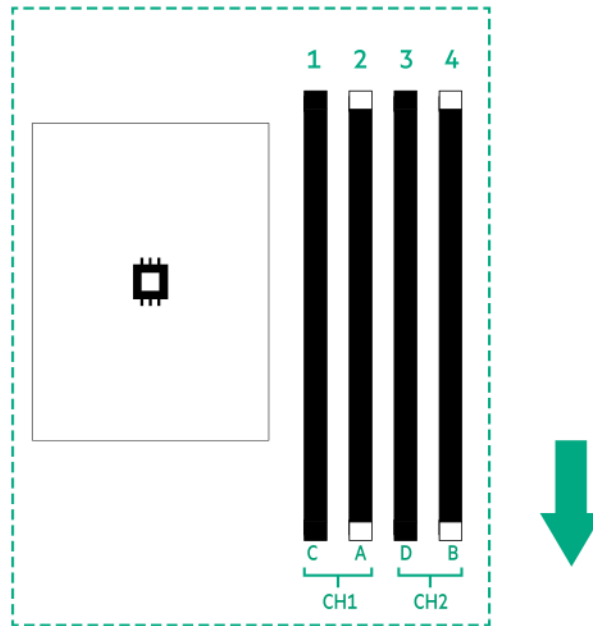Capacity references are rounded to the common gigabyte (GB) values.
- 16GB = 16,384 MB
- 32GB = 32,768 MB
- 64GB = 65,536 MB
- 128GB = 131,072 MB

For more information on memory, please visit the **HPE DDR5 Standard Memory web site.**

Memory

DIMM slot and configuration diagram

UDIMM maximum configuration (1 CPU model)
Population order; start with "A" first, "B" second, "C" third, etc.

CPU 1		
	Slot #	Population order
Chnl 2	4	B
	3	D
Chnl 1	2	A
	1	C

General Memory Population Rules and Guidelines

- The maximum memory speed is a function of the memory type, memory configuration, and processor model.
- The maximum memory capacity is a function of the number of DIMM slots on the platform, the largest DIMM capacity qualified on the platform, the number and model of installed processors qualified on the platform.
- The maximum speed capability of the memory system is governed by the combination of the CPU and any other DIMMs installed in the server. If higher speed DIMMs are installed with a CPU that only supports a lower memory speed, the DIMMs will only run at the (lower) memory speed supported by the processor. Likewise, if memory DIMMs are mixed with slower DIMMs within a server, all DIMMs will run at the slower memory speed. For further information please refer to the Memory Population Rules for your specific server.
- Only ECC UDIMMs are supported on DL20 Gen11. No support for non-ECC UDIMMs.
- There are two channels per processor with two DIMM slots per channel.
- Memory channel 1 consists of the two DIMMs that are closest to the processor.
- Memory channel 2 consists of the two DIMMs that are farthest from the processor.
- A white DIMM slot indicates the first slot of a channel (3-A, 1-B).
- The server supports up to 4400 MT/s ECC UDIMMs (Unbuffered DIMMs).
- The server supports up to 128 GB (4 x 32 GB) UDIMMs.

Memory

- The server does not support non-ECC UDIMMs, RDIMMs, and LRDIMMs
- Populate the DIMM on slots in this sequence: 3-A, 1-B, 4-C, 2-D.
- Always use HPE qualified DIMMs.
- **Cannot mix memory DIMMs of different capacities in the same channel.**
- **Mixing memory DIMMs of different capacities in the server is not recommended.**
- For Server Memory Population Rules for HPE ProLiant Servers with Intel® Xeon® E-2400 Processors see details here: **www.hpe.com/docs/server-memory**
- For details on the HPE Server Memory Options Population Rules, visit: **http://www.hpe.com/docs/memory-population-rules**
- To realize the performance memory capabilities listed in this document, HPE DDR5 Smart Memory is required. For additional information, please see the HPE DDR5 Smart Memory QuickSpecs.

Notes:

– The maximum memory speed is a function of the memory type, memory configuration, and processor model.
– For details on the HPE Server Memory speed, visit: **https://www.hpe.com/docs/memory-speed-table**
– HPE Server Memory compatibility for a specific server platform may vary or be limited within a server platform depending upon the specific configuration being requested. Because each server environment and requirements can vary, memory compatibility is based not only upon the server family but may also be affected by the amount and type of additional hardware options installed within a specific server configuration. For this reason, some HPE memory DIMMs may be qualified for an HPE server model or family and yet occasionally not be supported with some configurations within that server family.
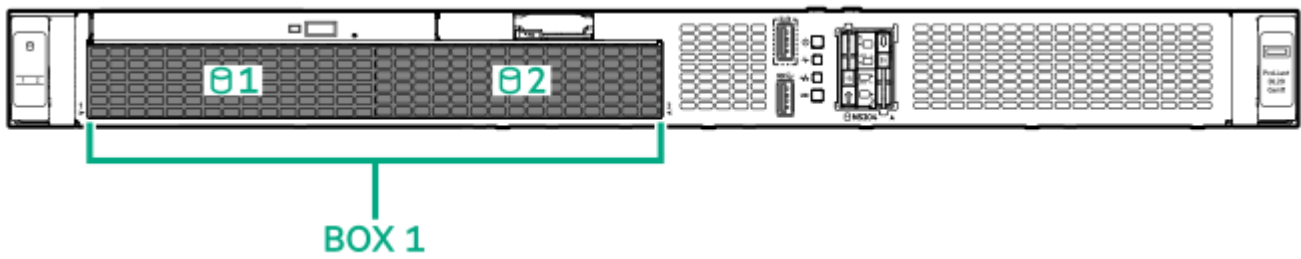
Storage
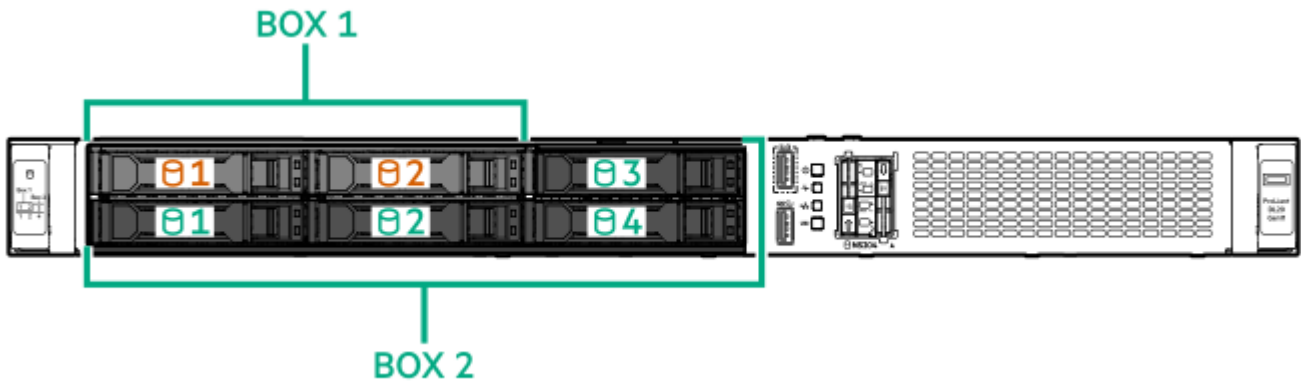
4 SFF + 2SFF device bay numbering
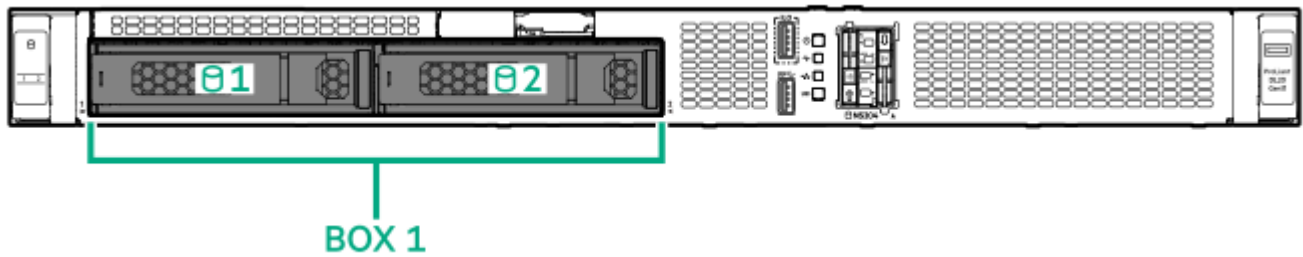
2LFF Hot Plug device bay numbering

2LFF Non-Hot Plug device bay numbering

Technical Specifications

System Unit

Dimensions (Height x Width x Depth)
- **SFF Drives**
  4.32 x 43.46 x 37.84 cm
  1.69 x 17.11 x 15.25in
- **LFF Drives**
  4.32 x 43.46 x 38.22 cm
  1.70 x 17.11 x 15.05 in

Weight (approximate)
- **Non hot Plug 2 LFF fully loaded** (all hard drives, power supplies, and processors installed)
  Min 9 kg to Max 12 kg (19.84 to 26.46 lb)
- **Hot Plug 2LFF fully loaded** (one hard drive, power supply, and processor installed)
  Min 9 kg to Max 12 kg (19.84 to 26.46 lb)
- **Hot Plug 4SFF fully loaded** (two hard drives, power supply, and processor installed)
  Min 9 kg to Max 12 kg (19.84 to 26.46 lb)

290W Non-hot Plug Power Supply

Input Requirements

- **Rated Line Voltage**
  100 to 120 VAC
  200 to 240 VAC
- **Rated Input Current**
  5.5 A max (at 100 VAC)
- **Rated Input Frequency**
  50 to 60 Hz
- **Rated Input Power**
  550 W (at 100 VAC)

BTU Rating
- **Maximum**
  1130 BTU per hr (at 115 VAC)
  1126 BTU per hr (at 230 VAC)

Power Specifications
To review typical system power ratings, use the Power Advisor which is available via the online tool located at:
http://www.hpe.com/info/hppoweradvisor

Click on the system of interest. Example: DL20 Gen11 - Follow the instructions of the next screens.

Power Supply Output (per power supply)
- **Rated Steady-State Power**
  290 W Max
- **Maximum Peak Power**
  366 W within 10 seconds

Technical Specifications

500W/800W/1000W Redundant Power Supply

Input Requirements (per power supply)

Rated Line Voltage
- 100 to 120 VAC
- 200 to 240 VAC

BTU Rating

Maximum
- For 1000W Power Supply: 3753 BTU/hr (at 100 VAC), 3685 BTU/hr (at 240 VAC), 3685 BTU/hr (at 240 VDC) for China Only
- For 800W Power Supply: 3071BTU/hr (at 200 VAC), 3112 BTU/hr (at 240 VDC) for China Only
- For 500W Power Supply: 1979 BTU/hr (at 100 VAC), 1911 BTU/hr (at 200 VAC), 1965 BTU/hr (at 240 VDC) for China Only

Power Supply Output (per power supply)

Rated Steady-State Power
- For 1000W Power Supply: 1000W (at 100 VAC), 1000W (at 240 VAC), 1000W (at 240 VDC) input for China only
- For 800W Power Supply: 800W (at 240 VAC), 800W (at 240 VDC) input for China only
- For 500W Power Supply: 500W (at 100 VAC), 500W (at 240 VAC), 500W (at 240 VDC) input for China only

Maximum Peak Power
- For 1000W Power Supply: 1000W (at 100 VAC), 1000W (at 240 VAC), 1000W (at 240 VDC) input for China only
- For 800W Power Supply: 800W (at 240 VAC), 800W (at 240 VDC) input for China only
- For 500W Power Supply: 500W (at 100 VAC), 500W (at 240 VAC), 500W (at 240 VDC) input for China only

System Inlet Temperature

- **Standard Operating Support**
  10° to 35°C (50° to 95°F) at sea level with an altitude derating 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. The 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 above 30°C (86°F).
- **Extended Ambient Operating Support**
  For approved hardware configurations, the supported system inlet range is 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 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**
- **Non-operating**
  -30°C to 60°C (-22°F to 140°F) Maximum rate of change is 20°C/hr (36°F/hr).

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

Technical Specifications

Altitude
- **Operating**
  3050 m (10,000 ft). This value may be limited by the type and number of options installed. The 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
For information on the HPE Smart Array Controller please refer to their **QuickSpecs**

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 (LpAm) 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 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.

	Entry	Base	Performance	High Performance
Idle				
LWA,m	3.9 B	3.9 B	3.9 B	3.9 B
LpAm	28 dBA	27 dBA	27 dBA	27 dBA
Kv	0.4 B	0.4 B	0.4 B	0.4 B
Operating				
LWA,m	3.9 B	3.9 B	3.9 B	3.9 B
LpAm	28 dBA	27 dBA	27 dBA	27 dBA
Kv	0.4 B	0.4 B	0.4 B	0.4 B

Notes:
- Acoustics levels presented here are generated by the test configurations (Entry, Base, Performance, and High Performance SKUs) only. Acoustics levels will vary depending on system configuration. Values are subject to change without notification and are for reference only. A system with additional configuration components or increased operating functionality may increase the noise emission values.
- 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.

Technical Specifications

- The statistical adder for verification, Kv, is a quantity to be added to the declared mean A-weighted sound power level, LWA,m, such that there will be a 95 % probability of acceptance, when using the verification procedures of ISO 9296, if no more than 6,5 % of the batch of new equipment, has A-weighted sound power levels greater than (LWA,m + Kv).
- The quantity, LWA,c (formerly called LWAd), can be computed from the sum of LWA,m and Kv.
- All measurements made to conform to ISO 7779 / ECMA-74 and declared to conform to ISO 9296 / ECMA-109.
- B, dB, abbreviations for bels and decibels, respectively, where 1 B = 10 dB.

Summary of Changes

Date	Version History	Action	Description of Change
05-Feb-2024	Version 2	Changed	Standard Features and Core Options sections were updated.
14-Dec-2023	Version 1	New	New QuickSpecs.

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