

Overview

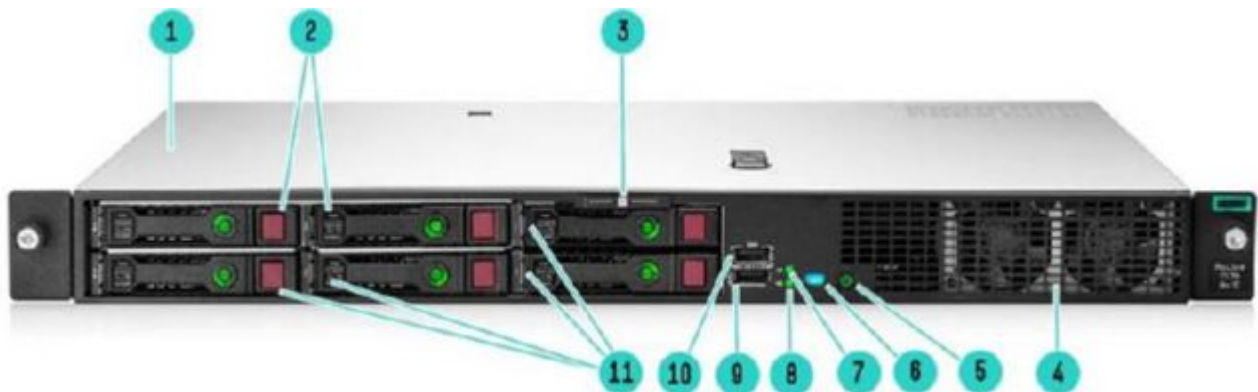
HPE ProLiant DL20 Gen10 Server

The dense and compact HPE ProLiant DL20 Gen10 Server powered by Intel® Xeon® E Processor, Pentium and Core i3 processors provides a unique blend of enterprise class capabilities & value. It offers 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 5.



2 LFF Front View

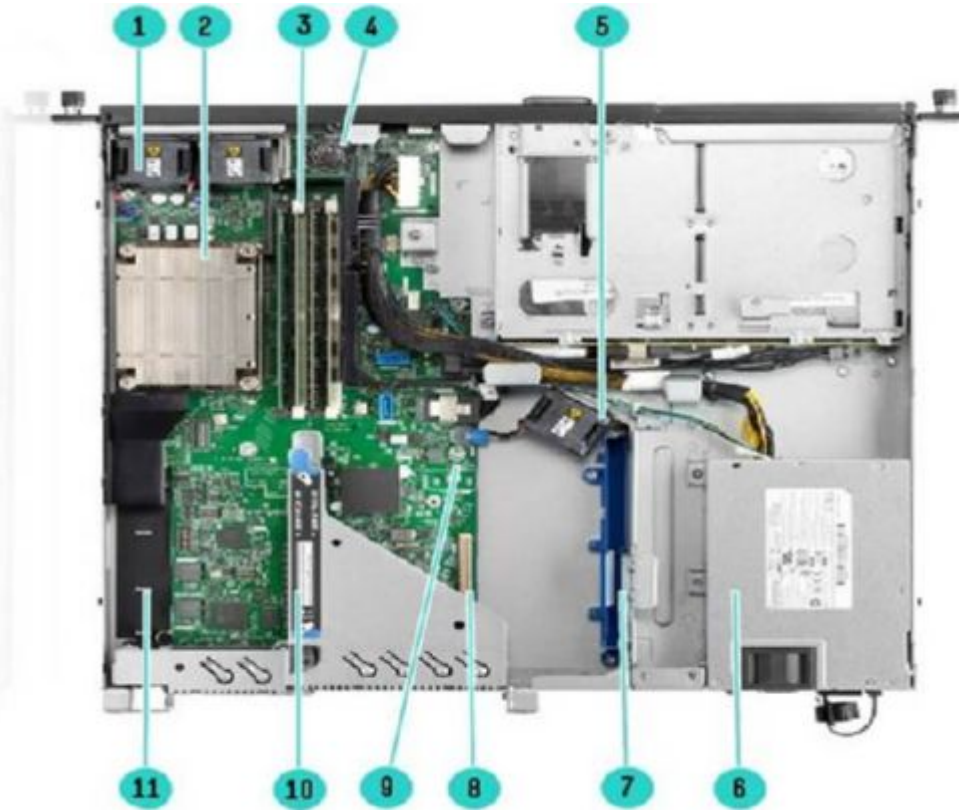
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|----|--|-----|---------------------------------|
| 1. | Access Panel | 7. | Health LED |
| 2. | Optical drive bay | 8. | NIC Status LED |
| 3. | Serial number/iLO information pull tab | 9. | USB 3.0 Port |
| 4. | Front Fan Assembly | 10. | iLO Service Port (USB) |
| 5. | System Power LED | 11. | Two-bay LFF hot-plug drive bays |
| 6. | UID LED | | |



4 (+2) SFF Front View

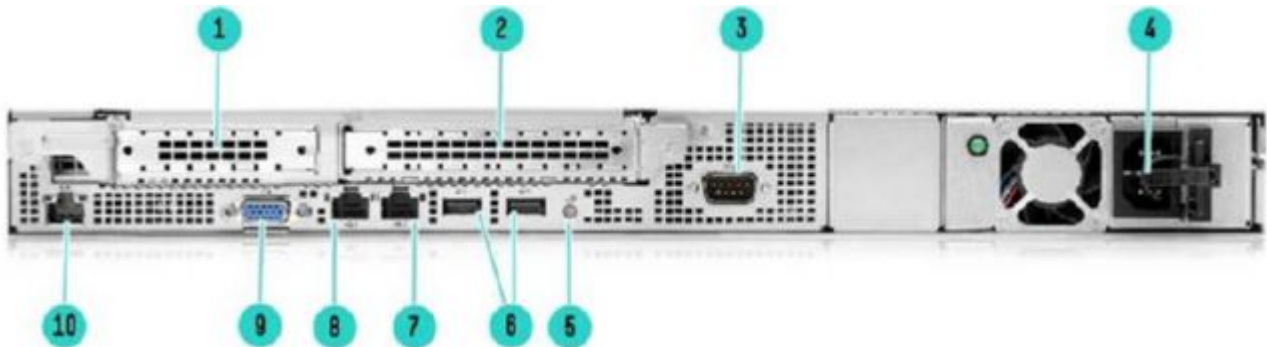
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|----|--|-----|---------------------------|
| 1. | Access Panel | 7. | Health LED |
| 2. | 2 SFF hot plug drive bays (optional) | 8. | NIC Status LED |
| 3. | Serial number/iLO information pull tab | 9. | USB 3.0 Port |
| 4. | Front Fan Assembly | 10. | iLO Service Port (USB) |
| 5. | System Power LED | 11. | 4 SFF hot plug drive bays |
| 6. | UID LED | | |

Overview



Internal View - Standard for all DL20 Gen10

- | | | | |
|----|--|-----|--------------------------------|
| 1. | Fan cage shown with 2 fans | 7. | Optional Smart Storage Battery |
| 2. | Processor shown with heat sink | 8. | Modular Smart Array connector |
| 3. | Four DDR4 DIMM Slots | 9. | Optional TPM 2.0 |
| 4. | System Battery | 10. | PCIe Riser |
| 5. | Central fan assembly (3 rd fan) | 11. | Option: Dedicated iLO/M.2 SSD |
| 6. | Power Supply (1x290W) | | |



Rear View - Standard for all DL20 Gen10

- | | | | |
|----|-------------------------------|-----|---------------------------------------|
| 1. | Slot 1 PCIe 3.0 | 6. | Two USB 3.0 Ports |
| 2. | Slot 2 PCIe 3.0 | 7. | NIC Port (1Gb) |
| 3. | Option: Serial Port | 8. | NIC port (1Gb) /iLo port |
| 4. | 290W Non hotplug Power Supply | 9. | VGA port |
| 5. | UID LED | 10. | Option: Dedicated iLO Management Port |

What's New

Overview

- Supports latest Intel® Xeon® E-2200 processors up to 8 cores and 9th Gen Core™ i3 and Pentium® G processors and 2666MHz UDIMM with support for Intel® Software Guard Extensions. Intel® SGX is an architecture extension designed to increase the security of application code and data.
 - HPE 361i 1Gb 2-Port network adapter on models with Intel Xeon E-2200, i3-9300 and G5420.
 - Storage enhancements in the form of increased capacity of up to 6 SFF drives & M.2 SSDs for boot
 - Dedicated iLO Management Port as an option kit for faster and more secure data transmission
 - New 480GB NVMe SSD support
 - From 01 March 2020, European Union (EU) Lot 9 regulation will take effect. Complying with Lot 9 is a necessary part of acquiring the CE marking. For more information please visit [HPE ERP Lot9 Declaration](#) and [HPE Lot 9 conformance](#).
 - 290W 92% power efficiency non-redundant power supply will continue to support Pre-Configured Models in regions where CE marking is NOT mandatorily required (rest of the globe, except EMEA).
 - In EMEA, orders starting from from 01 March 2020, to be compliant with EU Lot 9, new 290W non-redundant Platinum power supply with 94% power efficiency will be introduced and to replace the original 92% power supply, in support of both Pre-Configured Models and Configured Factory Integrated Models (CTO/FIO).
 - 290W 94% efficiency Platinum non-redundant power supply would also be available in rest of the globe, for orders starting from 01 Mar 2020, ONLY in Configured Factory Integrated Models (CTO/FIO). These models would be compliant with EU Lot 9 regulation.
 - To be compliant with EU Lot 9, more choice of Power Supplies with 500W 94% efficiency and 800W 48VDC 96% efficiency Flex Slot Redundant Power Supplies are available.
 - Warranty increased from 1yr to 3yrs (parts, labor & Onsite support)
-

Platform Information

Form Factor

- 1U rack

Chassis Types

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

System Fans

- Includes 3 standard 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

Processors

Intel® Xeon® E Processors are designed to deliver the best combination of performance, built-in capabilities, and cost-effectiveness. The product also supports Intel® Pentium® and Intel® Core™ i3 dual core processors. 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>.
- This table covers the public offering only.

| Intel Xeon E-2200 Family / 9 th Gen Core i3 and Pentium G | | | | | | |
|--|---------------|-------|----------|-------|------|------------|
| Intel Models | CPU Frequency | Cores | L3 Cache | Power | DDR4 | Intel® SGX |
| G5420 | 3.8GHz | 2 | 4MB | 54W | 2400 | No |
| i3-9100 | 3.6GHz | 4 | 8MB | 65W | 2400 | No |
| E-2224 | 3.4GHz | 4 | 8MB | 71W | 2666 | No |
| E-2234 | 3.6GHz | 4 | 8MB | 71W | 2666 | No |
| E-2236 | 3.4GHz | 6 | 12MB | 80W | 2666 | No |
| E-2226G | 3.4GHz | 6 | 12MB | 80W | 2666 | No |
| E-2244G | 3.8GHz | 4 | 8MB | 71W | 2666 | No |
| E-2274G | 4.0GHz | 4 | 8MB | 83W | 2666 | Yes |
| E-2276G | 3.8GHz | 6 | 12MB | 80W | 2666 | Yes |
| E-2286G | 4.0GHz | 6 | 12MB | 95W | 2666 | Yes |
| E-2278G | 3.4GHz | 8 | 16MB | 80W | 2666 | Yes |

Chipset

Intel® C242 Chipset

- Notes:** For more information regarding Intel® chipsets, please see the following URL: <http://www.intel.com/products/server/chipsets/>.

On System Management Chipset

HPE iLO 5 ASIC

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

Memory

- **Type**
HPE DDR4 Unbuffered Memory (UDIMM)
- **DIMM Slots Available**
4 (4 DIMM slots per processor, 2 channels per processor, 2 DIMMs per channel)
- **Maximum capacity (UDIMM)**
64 GB (4 x 16 GB UDIMM @ 2666 MT/s)

Notes:

- The maximum memory speed depends on processor model.

Standard Features

– For General Server Memory and DIMM Population Rules and Guidelines for Gen10 see details here: <http://www.hpe.com/docs/memory-population-rules>.

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

HPE Ethernet 1Gb 2-port 361i network Adapter (Intel i350)

The HPE ProLiant DL20 Gen10 server offers the customer a dual-port NIC standard with the option to upgrade with a variety of networking options.

Notes:

- ProLiant DL20 Gen10 with Intel Xeon E-2200, 9th Gen Core™ i3 and Pentium G processors comes with Intel i350 (LOM) on board.
- ProLiant DL20 Gen10 system do not support Networking SR-IOV.

Expansion Slots

| Primary FIO LP Riser | | | | | |
|----------------------|------------|-----------|-----------------|-----------|-------------------------|
| Expansion Slots # | Technology | Bus Width | Connector Width | Processor | Slot Form Factor |
| 1 | PCIe 3.0 | X8 | X8 | CPU1 | Low profile |
| 2 | PCIe 3.0 | x8 | X16 | CPU1 | Full height half length |

| Flexible LOM Riser | | | | | |
|--------------------|------------|-----------|-----------------|-----------|-------------------------|
| Expansion Slots # | Technology | Bus Width | Connector Width | Processor | Slot Form Factor |
| 1 | PCIe 3.0 | X8 | X8 | CPU 1 | Flexible LOM |
| 2 | PCIe 3.0 | X8 | x16 | CPU 1 | Full height half length |

Notes:

- This riser is mandatory for installing FlexibleLOMs.
- Bus Width indicates the number of physical electrical lanes running to the connector.

Storage Controllers

Standard Features

The Gen10 controller naming framework has been updated to simplify identification as depicted below. For a more detailed breakout of the available Gen10 Smart Array controllers visit the [HPE Smart Array Gen10 Controllers Data Sheet](#)

Software RAID

- HPE Smart Array S100i SR Gen10 SW RAID

Notes:

- HPE Smart Array S100i SR Gen10 SW RAID will operate in UEFI mode only. For legacy support an additional controller will be needed, and for CTO orders please also select the Legacy mode settings part, 758959-B22.
- HPE Smart Array S100i SR Gen10 SW RAID is off by default and must be enabled by selecting 784308-B21.
- The S100i is a 14-port SATA controller, but only 12 ports are accessible as 2 are leveraged to support the 2 M.2 options on the Primary Riser.
- The S100i supports windows only.
- 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/>

Essential RAID Controllers

- HPE Smart Array E208i-a SR G10 LH Controller
- HPE Smart Array E208e-p SR Gen10 Controller

Performance RAID Controllers

- HPE Smart Array P408i-a SR G10 LH Controller
- HPE Smart Array P408e-p SR Gen10 Controller

Notes: For additional details, please see [HPE Smart Array Gen10 Controllers Data Sheet](#).

Maximum Storage

| Drive | Capacity | Configuration |
|-----------------------|----------|---|
| 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 LFF SAS HDD | 32 TB | 2 x 16 TB |
| Hot Plug LFF SATA HDD | 32 TB | 2 x 16 TB |
| Hot Plug LFF SAS SSD | 3.2 TB | 2 x 1.6 TB |
| Hot Plug LFF SATA SSD | 15.36 TB | 2 x 7.68 TB |
| M.2 NVM3 SSD | 480 GB | 1 x 480 GB |

Power Supply

From 01 March 2020, European Union (EU) Lot 9 regulation will take effect. Complying with Lot 9 is a necessary part of acquiring the CE marking. For more information please visit [HPE Lot 9 conformance](#).

<https://www.hpe.com/us/en/about/environment/msds-specs-more.html>

- HPE 290W non-redundant FIO Power Supply
 - **P06731-B21**, 290W 92% power efficiency, will continue to support Pre-Configured Models in regions where

Standard Features

do not mandatory require CE mark (rest of the globe, except EMEA).

– **P21649-B21**, 290W 94% efficiency Platinum power supply, would also be available in below models.

Starting from March 1, 2020 in EMEA, to be compliant with EU Lot 9, to support both Pre-Configured Models and Configured Factory Integrated Models (CTO/FIO).

For rest of the globe, ONLY in Configured Factory Integrated Models (CTO/FIO). These models would be compliant with EU Lot 9 regulation.

- HPE 500W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit
Notes: Available in 94% efficiency.
- HPE 800W Flex Slot -48VDC Platinum Hot Plug Low Halogen Power Supply Kit

Notes: Flex Slot -48VDC power supplies support power efficiency of up to 94%.

HPE Entry-Level Power Supplies provide lower-cost options for customers trying to balance their need for enterprise class efficiency and reliability while maintaining lowest possible hardware costs. The above mentioned Entry-Level power supply options have been designed specifically for HPE ProLiant DL20 Gen10 Server.

The HPE 290W Non-redundant Power Supply is the standard, non-redundant AC power supply with 80Plus Silver Certification, which feature with 92% power efficiency and the other one is Platinum 94% efficiency (EU Lot 9 compliant). Both are optimized for the DL20 Gen10 rack server.

The European Union (EU) eco-design regulations for server and storage products, known as ErP Lot 9, will go into effect on 01 March 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 Gen10 servers are compliant with Lot 9 requirements.

For more information regarding EU Lot 9, please visit [HPE ERP Lot9 Declaration](#) and [HPE Lot 9 conformance](#).

HPE Flexible Slot (Flex Slot) Power Supplies share a common electrical and physical design that allows for hot plug, tool-less installation into HPE ProLiant Gen10 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](#).

Interfaces

Standard Features

| | |
|-----------------------------|---|
| Serial | 1 port - Optional |
| Video | 1 Rear - VGA port (standard on all chassis types) |
| Network Ports | 2x 1GbE embedded NIC (standard on all chassis types) |
| iLO Remote Mgmt Port | 1 Gb Dedicated - Optional |
| USB 3.0 | 5 USB ports (standard) Front: 1xUSB 3.0, 1xUSB iLO Service Port Rear: 2xUSB 3.0 Internal: 1x USB 3.0 |

Operating Systems and Virtualization Software

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

- Windows Server 2019
- **Windows Server 2016** (Most Recent Version)
- **VMware vSphere** 6.7, 6.5 U3 and 7.0
Notes: VMware supported only with Intel® Xeon® E processors, not supported with Intel® Core™ or Pentium® processors.
- **Red Hat Enterprise Linux (RHEL)** 8.0 and 7.6
- **SUSE Linux Enterprise Server (SLES)** 15 and 12 SP3
- **ClearOS/VM** 7.5

HPE and ClearCenter will help you lower the cost of building on-premise solutions without sacrificing security and ease of use. HPE ProLiant servers with ClearOS give you a simple, secure, and affordable operating system with an intuitive web-based graphical user interface that provides a cloud-like experience on-premise, and an Application Marketplace with over 100 apps and growing. Whether you're starting out or scaling, you decide what applications you need and pay as you grow.

Notes: ClearOS allows you to build a fully functional server that is just right for you at no upfront cost. For more information on ClearOS, please visit <http://www.hpe.com/servers/clearos>.

- **CentOS**

Notes: CentOS not directly supported / Community Supported (Based on RHEL so RHEL testing and enablement applicable to CentOS) CentOS 7.5 and 8.0

Upgradeability

One of the following depending on model

- Flexible LOM connector for 1 or 10 or 25 Gigabit networking options
- 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
- Dedicated iLO Management Port
- M.2 NVMe SSDs for boot

Standard Features

Graphic

Integrated Matrox G200 video standard

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

HPE iLO 5 on system management memory

- 32 MB Flash
 - 4 Gbit DDR3 with ECC protection
-

Industry Standard Compliance

- ACPI 6.1 Compliant
- PCIe 3.0 Compliant
- WOL Support
- Microsoft® Logo certifications
- PXE Support
- USB 3.0 Compliant
- USB 2.0 Compliant
- SMBIOS 3.1
- UEFI 2.6 (Unified Extensible Firmware Interface Forum)
- Redfish API
- IPMI 2.0
- Secure Digital 4.0
- TPM 1.2 and 2.0 support
- Advanced Encryption Standard (AES)
- Triple Data Encryption Standard (3DES)
- SNMP v3
- TLS 1.2
- DMTF Systems Management Architecture for Server Hardware Command Line (SMASH CLP)
- Active Directory v1.0
- ASHRAE A3/A4
- Energy Star

Notes: For additional technical thermal details regarding ambient temperatures, humidity and features support please visit: <http://www.hpe.com/servers/ashrae>.

- European Union (EU) Lot 9

Notes: Will go into effect on 01 March 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 Gen10 servers are compliant with Lot 9 requirements. 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/Legacy ROM

Standard Features

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 Gen10 servers have a UEFI Class 2 implementation and support both UEFI Mode (default) and Legacy BIOS Mode.

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 enable for 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 iLO RESTful API that is Redfish API Conformant
- PXE boot support for IPv6 networks
- Workload Profiles for simple performance optimization

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.
 - Legacy FIO Setting (758959-B22) can be selected to configure the system in Legacy mode in the factory for your HPE ProLiant Gen10 Server
-

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>.

Standard Features

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 and Gen10 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>.

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>.

Standard Features

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 including a New iLO Advanced Premium Security License
- 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) 1.2 option
- TPM (Trusted Platform Module) 2.0 option
- Bezel Locking Kit
- Chassis Intrusion detection option
- Intel® Software Guard Extensions (Intel® SGX)

Notes: Intel® SGX is supported in selective processors. Please refer to the Standard Features - Processor section.

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 Pointnext 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: <http://h17007.www1.hpe.com/us/en/enterprise/servers/warranty/>.
 - Warranty does not cover support for ClearOS. Support for ClearOS is provided by ClearCenter.
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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 iLO 5 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 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 and Gen10 servers. 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>.

Rack and Power Infrastructure

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

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

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

HPE Uninterruptible Power Systems are cost-effective power protection for any type workload. Some UPSs include options

Optional Features

for remote management and runtime modules so your critical dense data center is covered in power outages.

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

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

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 Pointnext - Service and Support

Protect your business beyond warranty with HPE Pointnext Operational Service

HPE Pointnext provides a comprehensive portfolio including Advisory and Transformational, Professional, and Operational Services to help accelerate your digital transformation. From the onset of your transformation journey, Advisory and Transformational Services focus on designing the transformation and creating a solution roadmap. Professional Services specializes in creative configurations with flawless and on-time implementation, and on-budget execution. Finally, operational services provides innovative new approaches like Flexible Capacity and Datacenter Care, to keep your business at peak performance. HPE is ready to bring together all the pieces of the puzzle for you, with an eye on the future, and make the complex simple.

Get the expertise you need at every step of your IT journey with **HPE Pointnext Services**. We help you lower your risks and costs using proven best practices, automation and methodologies that have been tested and refined by HPE experts through thousands of deployments globally. Our **Professional** and **Operational Services** can be leveraged to speed up time-to-production, boost performance and accelerate your business. HPE Pointnext specializes in flawless and on-time implementation, on-budget execution, and creative configurations that get the most out of software and hardware alike.

Connect your devices

Unlock all of the benefits of your technology investment by connecting your products to Hewlett Packard Enterprise. Achieve up to 77%¹ reduction in down time, near 100%² diagnostic accuracy and a single consolidated view of your environment. By connecting, you will receive 24x7 monitoring, pre-failure alerts, automatic call logging, and automatic parts dispatch. HPE Proactive Care Service and HPE Datacenter Care Service customers will also benefit from proactive activities to help prevent issues and increase optimization. All of these benefits are already available to you with your server storage and networking products, securely connected to HPE support.

Notes:¹. DC 2 - HP CSC reports 2014 - 2015

Learn more about getting connected at <http://www.hpe.com/services/getconnected>.

Recommended Services

HPE Proactive Care* with 6 hour call-to-repair commitment, three year Support Service

HPE Proactive Care gives customers an enhanced call experience. When your products are connected to HPE, Proactive Care helps prevent problems and maintains IT stability by utilizing personalized proactive reports with recommendations and advice. This Service combines three years' proactive reporting and advice with our highest level of hardware support - the HPE 24x7, six hour hardware call-to-repair. Hewlett Packard Enterprise is the only leading manufacturer who makes this level of coverage available as a standard service offering for your most valuable servers. This service also includes collaborative software support for Independent Software Vendors (ISVs), (Red Hat, VMWare, Microsoft, etc.) running on your HPE servers.

<https://www.hpe.com/h20195/v2/GetPDF.aspx/4AA3-8855ENW.pdf>

HPE Proactive Care* with 24x7 coverage, three year Support Service

HPE Proactive Care gives customers an enhanced call experience. When your products are connected to HPE, Proactive Care helps prevent problems and maintains IT stability by utilizing personalized proactive reports with recommendations and

Service and Support

advice This Service combines three years proactive reporting and advice with our 24x7 coverage, four hour hardware response time when there is a problem. This service also includes collaborative software support for Independent Software Vendors (ISVs), (Red Hat, VMWare, Microsoft, etc.) running on your HPE servers.

<https://www.hpe.com/h20195/v2/GetPDF.aspx/4AA3-8855ENW.pdf>

HPE Proactive Care* - Next Business Day service, three year Support Service

HPE Proactive Care gives customers an enhanced call experience. When your products are connected to HPE, Proactive Care helps prevent problems and maintains IT stability by utilizing personalized proactive reports with recommendations and advice. This service combines three years of Hardware Support where a Hewlett Packard Enterprise authorized representative will arrive at the Customer's site during the onsite coverage window to begin hardware maintenance service the next coverage day after the service request has been logged. This service also includes collaborative software support for Independent Software Vendors (ISVs), (Red Hat, VMWare, Microsoft, etc.) running on your HPE servers.

<https://www.hpe.com/h20195/v2/GetPDF.aspx/4AA3-8855ENW.pdf>

Notes:*HPE Proactive Care and HPE Proactive Care Advanced require that the customer connect their devices to make the most of these services and receive all the deliverables.

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).

HPE Datacenter Care service

HPE Datacenter Care helps improve IT stability and security, increase the value of IT, and enable agility and innovation. It is a structured framework of repeatable, tested, and globally available services "building blocks." You can deploy, operate, and evolve your datacenter wherever you are on your IT journey. With HPE Datacenter Care, you benefit from a personalized relationship with HPE via a single point of accountability for HPE and others' products. For more information, visit

<http://www.hpe.com/services/datacentercare>

HPE GreenLake Flex Capacity

With HPE GreenLake Flex Capacity, you get the speed, scalability, and economics of the public cloud in the privacy of your data center. Gain the advantages of the public cloud-consumption-based payment, rapid scalability without worrying about capacity constraints. Reduce the "heavy lifting" needed to operate a data center. And retain the advantages that IT provides the business (i.e., control, security). Deliver the right user experience, choose the right technology for the business, manage privacy and compliance, and manage the cost of IT. And, you have the option to use the public cloud when needed.

Service and Support

DC for Hyperscale

Datacenter 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 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 Hewlett Packard Enterprise 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. *HPE Support Center Mobile App is subject to local availability. For more information: <http://www.hpe.com/services>.

Notes:

- *HPE Support Center Mobile App is subject to local availability.
- HPE ProLiant DL20 Gen10 Server is covered under the HPE Service Contract applied to the HPE ProLiant Server. No separate HPE support services need to be purchased.

Warranty and Support Services will extend to include HPE options configured with your server or storage device. The price of

Service and Support

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 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

- 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.
- Starting from 01 March 2020, only the 290W Platinum power supply (P21649-B21) , 500W and 800W Power Supply meet the EU Lot 9 regulation requirement for CE marking.

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>

- For orders after 17 Feb 2020, the 290W pre-Config servers build from other regions of HPE (except EMEA), will keep the installation with P06731-B21 290W power supply, instead of 290W Platinum power supply (P21649-B21). These pre-configured servers would not be fully compliant with EU Lot 9, as CE marking are not mandatorily required in the regions. HPE DOES NOT responsible and recommend the transfer of DL20 Server unit from those non-CE marking mandatorily required regions to EMEA, after the purchase from HPE. Please contact your distributors if any special request.

| | Entry Models | | Performance Models | |
|-----------------------------|---|-------------------------------------|--|--|
| SKU Number | P17077-B21 | P17078-B21 | P17079-B21 | P17080-B21 |
| Model Name | HPE DL20 Gen10 G5420 1P 8G NHP Svr | HPE DL20 Gen10 E-2224 1P 8G NHP Svr | HPE DL20 Gen10 E-2224 1P 16G Svr | HPE DL20 Gen10 E-2224 1P 16G Svr |
| Processor | Intel® Pentium® G5420 | Intel® Xeon® E-2224 | Intel® Xeon® E-2244 | Intel® Xeon® E-2224 |
| Number of Processors | One | | | |
| Memory | 8GB (1x8GB UDIMM, 2666 MHz) | 8GB (1x8GB UDIMM, 2666 MHz) | 16GB (1x16GB UDIMM, 2666 MHz) | 16GB (1x16GB UDIMM, 2666 MHz) |
| Network Controller | HPE embedded 1Gb 2-port 361i network Adapter | | | |
| Storage Controller | Embedded 14-port S100i Notes: SATA only | | | |
| Hard Drive | None ship standard | | None ship standard; includes 1 LFF hard drive blanks | None ship standard; includes 3 SFF hard drive blanks |
| Internal Storage | 2 LFF HDD Bays (Non Hot Plug) | | 2 LFF 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 | 2 PCIe 3.0 slots | | | |
| Power Supply | (1) 290W Non-redundant Power Supply Notes: – For orders after 01 Mar 2020 – Non-EMEA regions: System will populate with HPE DL20 Gen10 290W FIO Power Supply Kit Unit (92% efficiency) / P06731-B21 – EMEA region: System will populate with HPE DL20 Gen10 Plat 290W FIO PSU Kit (94% efficiency) / P21649-B21 (EU Lot9 Compliance) | | | (1) HPE 500W Redundant Power Supply |
| Fans | 3 non hot plug, non-redundant | | | |
| Management | iLO Management (standard), Intelligent Provisioning (standard), iLO Scale-out (optional only for DL), iLO Advanced (optional) | | | |
| Form Factor | Rack (1U), HPE Short Friction Rail Kit | | | |

Pre-configured Models

| | |
|-----------------|--|
| Warranty | Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response |
|-----------------|--|

| | Performance Model |
|-----------------------------|---|
| [SKU Number] | P17081-B21 |
| Model Name | HPE DL20 Gen10 E-2236 1P 16G Svr |
| Processor | Intel® Xeon® E-2236 |
| Number of Processors | One |
| Memory | 16GB (1x16GB UDIMMs, 2666 MHz) |
| Network Controller | HPE embedded 1Gb 2-port 361i network Adapter |
| Storage Controller | Embedded 14-port S100i Notes: SATA only |
| Hard Drive | None ship standard; includes 3 SFF hard drive blanks |
| Internal Storage | 4 SFF HDD Bays |
| Optical Drive Bay | 1; (Optional: DVD-ROM, DVD-RW) |
| Optical Drive | None |
| PCI-Express Slots | 2 PCIe 3.0 slots |
| Power Supply | (1) HPE 500W Redundant Power Supply |
| Fans | 3 non hot plug, non-redundant |
| Management | iLO Management (standard), Intelligent Provisioning (standard), iLO Scale-out (optional only for DL), iLO Advanced (optional) |
| Energy Star | Meets Energy Star requirements |
| 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, EMEA and APAC

XXX = 291 Japan

XXX = AA1 PRC

Notes: 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 Gen10 Non-hot Plug 2LFF Configure-to-order Server | HPE ProLiant DL20 Gen10 2LFF Configure-to-order Server | HPE ProLiant DL20 Gen10 4SFF Configure-to-order Server |
| SKU Number | P06961-B21 | P06962-B21 | P06963-B21 |
| Processor | 1 | 1 | 1 |
| DIMM Slots | 4 DIMM slots for UDIMM DDR4 Memory | | |
| Storage Controller | Embedded 14-port S100i | | |
| PCIe | 2 PCIe 3.0 Slots | | |
| Drive Cage | 2LFF Non Hot Plug | 2LFF Hot Plug | 4SFF Hot Plug |
| Network Controller | HPE embedded 1Gb 2-port network Adapter | | |
| Fans | 3 non hot plug, non-redundant | | |
| Management | iLO Management (standard), Intelligent Provisioning (standard) | | |
| USB | 2 front, 1 internal, 2 rear | | |
| Ears | HPE Thumbscrew Ears | | |

Step 2: Choose Required Options

Please select one -L21 processor required below.

- Notes:**
- Only one processor supported.
 - DDR4 speed is the maximum memory speed of the processor. Actual memory speed may depend on the quantity and type of DIMMs installed.
 - DL20 Gen10 with new Intel Xeon E-2200 processors comes with HPE Ethernet 1Gb 2-port 361i network Adapter (Intel i350) on board.

Step 2a: Choose Processor Options

Processor Option Kits

Intel Xeon-E Proces

| | |
|--|------------|
| Intel Xeon E-2224 (3.4GHz/4-core/71W) FIO Processor Kit for HPE ProLiant DL20 Gen10 | P17102-L21 |
| Intel Xeon E-2234 (3.6GHz/4-core/71W) FIO Processor Kit for HPE ProLiant DL20 Gen10 | P17104-L21 |
| Intel Xeon E-2226G (3.4GHz/6-core/80W) FIO Processor Kit for HPE ProLiant DL20 Gen10 | P17105-L21 |
| Intel Xeon E-2244G (3.8GHz/4-core/71W) FIO Processor Kit for HPE ProLiant DL20 Gen10 | P17106-L21 |
| Intel Xeon E-2236 (3.4GHz/6-core/80W) FIO Processor Kit for HPE ProLiant DL20 Gen10 | P17107-L21 |

Configuration Information

| | |
|--|------------|
| Intel Xeon E-2274G (4.0GHz/4-core/83W) FIO Processor Kit for HPE ProLiant DL20 Gen10 | P17108-L21 |
| Intel Xeon E-2276G (3.8GHz/6-core/80W) FIO Processor Kit for HPE ProLiant DL20 Gen10 | P17110-L21 |
| Intel Xeon E-2278G (3.4GHz/8-core/80W) FIO Processor Kit for HPE ProLiant DL20 Gen10 | P17111-L21 |
| Intel Xeon E-2286G (4.0GHz/6-core/95W) FIO Processor Kit for HPE ProLiant DL20 Gen10 | P17112-L21 |

Intel® Core™ i3 Processors

| | |
|--|------------|
| Intel Core i3-9100 (3.6GHz/4-core/65W) FIO Processor Kit for HPE ProLiant DL20 Gen10 | P17099-L21 |
|--|------------|

Intel® Pentium® Processor G Series

| | |
|---|------------|
| Intel Pentium G5420 (3.8GHz/2-core/54W) FIO Processor Kit for HPE ProLiant DL20 Gen10 | P17096-L21 |
|---|------------|

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.

Unbuffered DIMMs (UDIMMs) - 2666 MHz

| | |
|--|------------|
| HPE 8GB (1x8GB) Single Rank x8 DDR4-2666 CAS-19-19-19 Unbuffered Standard Memory Kit | 879505-B21 |
|--|------------|

| | |
|--|------------|
| HPE 16GB (1x16GB) Dual Rank x8 DDR4-2666 CAS-19-19-19 Unbuffered Standard Memory Kit | 879507-B21 |
|--|------------|

Notes: Running at 2400 MT/s with Intel® Core™ i3 and Pentium® G Series due to processor limitation.

Step 2c: Choose Power Supplies

Please select one or two power supplies from below.

Notes:

- Mixing of 2 different power supplies are NOT allowed.
- To review the power requirements for your selected configuration, please use the [HPE Power Advisor Tool](#)

HPE ProLiant Gen10 Essential Server Power Supplies - Non-Redundant

| | |
|---|-------------------|
| HPE DL20 Gen10 290W FIO Power Supply Unit Kit | <u>P06731-B21</u> |
|---|-------------------|

- (92% efficiency). Unavailable in order system after 16 Feb 2020

| | |
|---|------------|
| HPE DL20 Gen10 290W Platinum Power Supply Kit | P21649-B21 |
|---|------------|

- (94% efficiency, Platinum). Available in order system in all regions after 01 Mar 2020

Notes:

- This FIO option can only be bought integrated in the server. It cannot be ordered as a standalone option after server purchase.
- The 290W Platinum power supply (P21649-B21), 500W and 800W Power Supply all meet the EU Lot 9 regulation, which is essential in countries which mandatorily require CE marking, effective from 01 March 2020.
- Do NOT order the 290W Power Supply (P06731-B21) in countries which mandatorily require CE marking, especially the EU countries, after Feb 17 2020.
- 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). <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 -48VDC Hot Plug Low Halogen Power Supply Kit | 865434-B21 |
|---|------------|

| | |
|---------------------------------------|------------|
| HPE DL20 Gen10 RPS Enablement FIO Kit | P06722-B21 |
|---------------------------------------|------------|

Configuration Information

Notes:

- It is mandatory to choose the RPS enablement kit to support redundant power supply.
 - This RPS FIO option can only be bought integrated in the server. It cannot be ordered as a standalone option after server purchase.
-

Step 3: Choose Additional (FIO) Factory Integratable Options

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

HPE Trusted Platform Module 2.0 Gen10 Option 864279-B21

Notes:

- HPE Trusted Platform Module 2.0 option works with Gen10 servers with UEFI Mode not Legacy Mode. It is not compatible with HPE ProLiant Gen8 servers or earlier generation variants.
- HPE server systems can have a TPM module (of any type) installed only once. It cannot be replaced with any other TPM module.

HPE Gen10 TPM 1.2 FIO Setting 872108-B21

Notes: TPM 2.0 is set as default, for 1.2 TPM setting instead, please select this option.

HPE Legacy FIO Mode Setting 758959-B22

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

Step 4: Choose Additional Options for Factory Integration from Core and Additional Option 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 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.

Risers

HPE DL20 Gen10 PCIe Low Profile Riser Kit

P09145-B21

HPE DL20 Gen10 x8x16 FlexibleLOM Riser Kit

P06667-B21

Notes: One of the riser from above has to be selected mandatorily.

| Riser Information | | | | |
|-------------------|--|----------|----------------|----|
| Part number | Description | Riser | Slot Bus width | |
| | | | (Gen3 lanes) | |
| | | | #1 | #2 |
| P09145-B21 | HPE DL20 Gen10 x16/x8 Low Profile Riser | Optional | X8 | X8 |
| P06667-B21 | HPE DL20 Gen10 x16/x8 Flexible LOM Riser Kit | Optional | X8 | 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 DL20 Gen10 LFF ODD Cable Kit

P06681-B21

Notes: This option kit is required for Optical Drive option (LFF model only).

HPE DL20 Gen10 SFF ODD Enablement Kit

P06677-B21

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

SFF Drive Option Kit

HPE DL20 Gen10 2SFF HDD Enablement Kit

P06671-B21

Notes: This option is required to upgrade 4SFF chassis to support additional 2SFF drives.

Core Options

Dedicated iLO Port / M.2 NVMe SSD / COM Port Upgrade Kit

HPE DL20/ML30 Gen10 M.2/Dedicated iLO and Serial Port Kit P06687-B21

Notes:

- This option is required to support M.2 NVMe drives, Dedicated iLO Port or Serial/COM Port.
 - This kit includes one dedicated iLO module and one serial port cable, with one M.2 slot on the module for M.2 SSD installation.
 - When installing NVMe x4 M.2 480 GB SSD module, the supporting ambient temperature should be under 30°C (86°F).
-

Security

HPE Trusted Platform Module 2.0 Gen10 Option 864279-B21

HPE DL20 Gen10 Latch Ear FIO Kit P06716-B21

Notes: This FIO option can only be bought integrated in the server. It cannot be ordered as a standalone option after server purchase. This Option is required either of the two options below.

HPE 1U Gen10 Bezel Kit 867998-B21

HPE Bezel Lock Kit 875519-B21

Notes: HPE DL20 Gen10 Latch Ear FIO Kit (P06716-B21) is required to support both the Bezel Kits above.

Cable Kits

HPE DL20 Gen10 M.2 SATA/LFF AROC Cbl Kit P06683-B21

Notes: This cable kit has two cables, one is required to support M.2 SATA option kit and the other for AROC and LFF drives.

HPE Drives

Midline - 12G SAS - SFF Drives

HPE 2TB SAS 12G Midline 7.2K SFF (2.5in) SC 1yr Wty 512e HDD 765466-B21

HPE 1TB SAS 12G Midline 7.2K SFF (2.5in) SC 1yr Wty Digitally Signed Firmware HDD 832514-B21

Enterprise - 12G SAS - SFF Drives

HPE 2.4TB SAS 12G Enterprise 10K SFF (2.5in) SC 3yr Wty 512e Digitally Signed Firmware HDD 881457-B21

HPE 1.8TB SAS 12G Enterprise 10K SFF (2.5in) SC 3yr Wty 512e Digitally Signed Firmware HDD 872481-B21

HPE 1.2TB SAS 12G Enterprise 10K SFF (2.5in) SC 3yr Wty Digitally Signed Firmware HDD 872479-B21

HPE 600GB SAS 12G Enterprise 10K SFF (2.5in) SC 3yr Wty Digitally Signed Firmware HDD 872477-B21

HPE 300GB SAS 12G Enterprise 10K SFF (2.5in) SC 3yr Wty Digitally Signed Firmware HDD 872475-B21

HPE 900GB SAS 12G Enterprise 15K SFF (2.5in) SC 3yr Wty Digitally Signed Firmware HDD 870759-B21

HPE 600GB SAS 12G Enterprise 15K SFF (2.5in) SC 3yr Wty Digitally Signed Firmware HDD 870757-B21

HPE 300GB SAS 12G Enterprise 15K SFF (2.5in) SC 3yr Wty Digitally Signed Firmware HDD 870753-B21

Business Critical - 6G SATA - LFF Drives

Core Options

HPE 16TB SATA 6G Business Critical 7.2K LFF (3.5in) LP 1yr Wty 512e ISE HDD P23449-B21

Midline - 6G SATA - LFF Drives

HPE 12TB SATA 6G Midline 7.2K LFF (3.5in) LP 1yr Wty Helium 512e Digitally Signed Firmware HDD 881787-B21

HPE 8TB SATA 6G Midline 7.2K LFF (3.5in) LP 1yr Wty 512e Digitally Signed Firmware HDD 834028-B21

HPE 6TB SATA 6G Midline 7.2K LFF (3.5in) LP 1yr Wty 512e HDD 861742-B21

HPE 4TB SATA 6G Midline 7.2K LFF (3.5in) LP 1yr Wty Digitally Signed Firmware HDD 861683-B21

HPE 2TB SATA 6G Midline 7.2K LFF (3.5in) LP 1yr Wty Digitally Signed Firmware HDD 861681-B21

HPE 1TB SATA 6G Midline 7.2K LFF (3.5in) LP 1yr Wty Digitally Signed Firmware HDD 861686-B21

6G SATA - LFF NHP/Raw Drives

HPE 4TB SATA 6G Midline 7.2K LFF (3.5in) RW 1yr Wty HDD 801888-B21

HPE 1TB SATA 6G Midline 7.2K LFF (3.5in) RW 1yr Wty HDD 801882-B21

Midline 6G SATA - SFF Drives

HPE 2TB SATA 6G Midline 7.2K SFF (2.5in) SC 1yr Wty 512e Digitally Signed Firmware HDD 765455-B21

HPE 1TB SATA 6G Midline 7.2K SFF (2.5in) SC 1yr Wty Digitally Signed Firmware HDD 655710-B21

Business Critical - 12G SAS - LFF Drives

HPE 16TB SAS 12G Business Critical 7.2K LFF (3.5in) LP 1yr Wty 512e ISE HDD P23608-B21

Midline - 12G SAS - LFF Drives

HPE 14TB SAS 12G Midline 7.2K LFF (3.5in) LP 1yr Wty Helium 512e Digitally Signed Firmware HDD P09155-B21

HPE 14TB SATA 6G Midline 7.2K LFF (3.5in) LP 1yr Wty Helium 512e Digitally Signed Firmware HDD P09165-B21

HPE 12TB SAS 12G Midline 7.2K LFF (3.5in) LP 1yr Wty Helium 512e Digitally Signed Firmware HDD 881781-B21

HPE 10TB SATA 6G Midline 7.2K LFF (3.5in) LP 1yr Wty Helium 512e Digitally Signed Firmware HDD P09161-B21

HPE 8TB SAS 12G Midline 7.2K LFF (3.5in) LP 1yr Wty 512e Digitally Signed Firmware HDD 834031-B21

HPE 6TB SAS 12G Midline 7.2K LFF (3.5in) LP 1yr Wty 512e HDD 861746-B21

HPE 4TB SAS 12G Midline 7.2K LFF (3.5in) LP 1yr Wty Digitally Signed Firmware HDD 833928-B21

HPE 2TB SAS 12G Midline 7.2K LFF (3.5in) LP 1yr Wty Digitally Signed Firmware HDD 833926-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>.

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

HPE 960GB SAS 12G Read Intensive SFF SC SS540 SSD P21139-B21

HPE 960GB SAS 12G Read Intensive SFF SC PM5 SSD P04517-B21

HPE 960GB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD P06584-B21

HPE 960GB SAS 12G Read Intensive SFF SC Value SAS RM5 SSD P10440-B21

HPE 960GB SAS 12G Read Intensive SFF SC PM1643a SSD P19903-B21

HPE 1.92TB SAS 12G Read Intensive SFF SC SS540 SSD P21141-B21

HPE 1.92TB SAS 12G Read Intensive SFF SC PM5 SSD P04519-B21

HPE 1.92TB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD P06586-B21

HPE 1.92TB SAS 12G Read Intensive SFF SC Value SAS RM5 SSD P10442-B21

HPE 1.92TB SAS 12G Read Intensive SFF SC PM1643a SSD P19905-B21

Core Options

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|--|------------|
| HPE 3.84TB SAS 12G Read Intensive SFF SC SS540 SSD | P21143-B21 |
| HPE 3.84TB SAS 12G Read Intensive SFF SC PM5 SSD | P04521-B21 |
| HPE 3.84TB SAS 12G Read Intensive SFF SC Value SAS RM5 SSD | P10444-B21 |
| HPE 3.84TB SAS 12G Read Intensive SFF SC PM1643a SSD | P19907-B21 |
| HPE 7.68TB SAS 12G Read Intensive SFF SC PM5 SSD | P04523-B21 |
| HPE 7.68TB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD | P06590-B21 |
| HPE 7.68TB SAS 12G Read Intensive SFF SC Value SAS RM5 SSD | P10446-B21 |
| HPE 7.68TB SAS 12G Read Intensive SFF SC PM1643a SSD | P19909-B21 |
| HPE 15.3TB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD | P06592-B21 |
| HPE 15.36TB SAS 12G Read Intensive SFF SC PM1643a SSD | P19911-B21 |

Write Intensive - 12G SAS - SFF - Solid State Drives

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|--|------------|
| HPE 3.2TB SAS 12G Write Intensive SFF SC PM5 SSD | P04547-B21 |
| HPE 1.6TB SAS 12G Write Intensive SFF SC SS540 SSD | P21129-B21 |
| HPE 1.6TB SAS 12G Write Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD | P09102-B21 |
| HPE 1.6TB SAS 12G Write Intensive SFF SC PM5 SSD | P04545-B21 |
| HPE 800GB SAS 12G Write Intensive SFF SC SS540 SSD | P21127-B21 |
| HPE 800GB SAS 12G Write Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD | P09100-B21 |
| HPE 800GB SAS 12G Write Intensive SFF SC PM5 SSD | P04543-B21 |
| HPE 400GB SAS 12G Write Intensive SFF SC SS540 SSD | P21125-B21 |
| HPE 400GB SAS 12G Write Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD | P09098-B21 |
| HPE 400GB SAS 12G Write Intensive SFF SC PM5 SSD | P04541-B21 |

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

| | |
|--|------------|
| HPE 6.4TB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD | P09096-B21 |
| HPE 6.4TB SAS 12G Mixed Use SFF SC PM5 SSD | P04539-B21 |
| HPE 6.4TB SAS 12G Mixed Use SFF SC PM1645a SSD | P19919-B21 |
| HPE 3.84TB SAS 12G Mixed Use SFF SC Value SAS RM5 SSD | P10460-B21 |
| HPE 3.2TB SAS 12G Mixed Use SFF SC SS540 SSD | P21135-B21 |
| HPE 3.2TB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD | P09094-B21 |
| HPE 3.2TB SAS 12G Mixed Use SFF SC PM5 SSD | P04537-B21 |
| HPE 3.2TB SAS 12G Mixed Use SFF SC PM1645a SSD | P19917-B21 |
| HPE 1.92TB SAS 12G Mixed Use SFF SC Value SAS RM5 SSD | P10454-B21 |
| HPE 1.6TB SAS 12G Mixed Use SFF SC SS540 SSD | P21133-B21 |
| HPE 1.6TB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD | P09092-B21 |
| HPE 1.6TB SAS 12G Mixed Use SFF SC PM5 SSD | P04533-B21 |
| HPE 1.6TB SAS 12G Mixed Use SFF SC PM1645a SSD | P19915-B21 |
| HPE 960GB SAS 12G Mixed Use SFF SC Value SAS RM5 SSD | P10448-B21 |
| HPE 800GB SAS 12G Mixed Use SFF SC SS540 SSD | P21131-B21 |
| HPE 800GB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD | P09090-B21 |
| HPE 800GB SAS 12G Mixed Use SFF SC PM5 SSD | P04527-B21 |
| HPE 800GB SAS 12G Mixed Use SFF SC PM1645a SSD | P19913-B21 |
| HPE 400GB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD | P09088-B21 |
| HPE 400GB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD | P04525-B21 |

Mixed Use - 12G SAS - LFF - Solid State Drives

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|---|------------|
| HPE 1.6TB SAS 12G Mixed Use LFF LPC PM5 SSD | P04535-B21 |
|---|------------|

Core Options

HPE 800GB SAS 12G Mixed Use LFF LPC PM5 SSD P04531-B21

Verry Read Optimized - 6G SATA - SFF - Solid State Drives

HPE 3.84TB SATA 6G Very Read Optimized SFF SC 5210 SSD P23489-B21

HPE 1.92TB SATA 6G Very Read Optimized SFF SC 5210 SSD P23487-B21

HPE 960GB SATA 6G Very Read Optimized SFF (2.5in) SC 3yr Wty SSD P23490-B21

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

HPE 3.84TB SATA 6G Read Intensive SFF SC PM883 SSD P04570-B21

HPE 3.84TB SATA 6G Read Intensive SFF SC SE4011 SSD P06200-B21

HPE 3.84TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD P04480-B21

HPE 1.92TB SATA 6G Read Intensive SFF SC SE4011 SSD P06198-B21

HPE 1.92TB SATA 6G Read Intensive SFF SC PM883 SSD P04566-B21

HPE 1.92TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD P04478-B21

HPE 960GB SATA 6G Read Intensive SFF SC SE4011 SSD P06196-B21

HPE 960GB SATA 6G Read Intensive SFF SC PM883 SSD P04564-B21

HPE 960GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD P04476-B21

HPE 480GB SATA 6G Read Intensive SFF SC SE4011 SSD P06194-B21

HPE 480GB SATA 6G Read Intensive SFF SC PM883 SSD P04560-B21

HPE 480GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD P04474-B21

HPE 240GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD 875503-B21

HPE 240GB SATA 6G Read Intensive SFF SC PM883 SSD P04556-B21

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

HPE 7.68TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Multi Vendor P18430-B21

HPE 7.68TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD P04482-B21

HPE 3.84TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Multi Vendor SSD P18428-B21

HPE 3.84TB SATA 6G Read Intensive SFF SC S4510 SSD P05946-B21

HPE 1.92TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Multi Vendor SSD P18426-B21

HPE 1.92TB SATA 6G Read Intensive SFF SC S4510 SSD P05938-B21

HPE 960GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Multi Vendor SSD P18424-B21

HPE 960GB SATA 6G Read Intensive SFF SC S4510 SSD P05932-B21

HPE 480GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Multi Vendor SSD P18422-B21

HPE 480GB SATA 6G Read Intensive SFF SC S4510 SSD P05928-B21

HPE 240GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Multi Vendor SSD P18420-B21

HPE 240GB SATA 6G Read Intensive SFF SC S4510 SSD P05924-B21

Read Intensive - 6G SATA - SFF - Solid State Drive

HPE 7.68TB SATA 6G Read Intensive SFF SC 5300P SSD P19945-B21

HPE 3.84TB SATA 6G Read Intensive SFF SC 5300P SSD P19943-B21

HPE 1.92TB SATA 6G Read Intensive SFF SC 5300P SSD P19941-B21

HPE 960GB SATA 6G Read Intensive SFF SC 5300P SSD P19939-B21

HPE 480GB SATA 6G Read Intensive SFF SC 5300P SSD P19937-B21

HPE 240GB SATA 6G Read Intensive SFF SC 5300P SSD P19935-B21

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

HPE 3.84TB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Multi Vendor SSD P18438-B21

HPE 3.84TB SATA 6G Mixed Use SFF SC SM883 SSD P21517-B21

HPE 3.84TB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD P00896-B21

Core Options

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|---|------------|
| HPE 3.84TB SATA 6G Mixed Use SFF SC S4610 SSD | P05994-B21 |
| HPE 3.84TB SATA 6G Mixed Use SFF RW SE5031 SSD | P13664-B21 |
| HPE 1.92TB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Multi Vendor SSD | P18436-B21 |
| HPE 1.92TB SATA 6G Mixed Use SFF SC SM883 SSD | P09722-B21 |
| HPE 1.92TB SATA 6G Mixed Use SFF SC S4610 SSD | P05986-B21 |
| HPE 1.92TB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD | P07930-B21 |
| HPE 1.92TB SATA 6G Mixed Use SFF SC SE5031 SSD | P13662-B21 |
| HPE 960GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Multi Vendor SSD | P18434-B21 |
| HPE 960GB SATA 6G Mixed Use SFF SC SM883 SSD | P09716-B21 |
| HPE 960GB SATA 6G Mixed Use SFF SC S4610 SSD | P05980-B21 |
| HPE 960GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD | P07926-B21 |
| HPE 960GB SATA 6G Mixed Use SFF SC SE5031 SSD | P13660-B21 |
| HPE 480GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Multi Vendor SSD | P18432-B21 |
| HPE 480GB SATA 6G Mixed Use SFF SC SM883 SSD | P09712-B21 |
| HPE 480GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD | P07922-B21 |
| HPE 480GB SATA 6G Mixed Use SFF SC S4610 SSD | P05976-B21 |
| HPE 480GB SATA 6G Mixed Use SFF SC SE5031 SSD | P13658-B21 |

Mix Use - 6G SATA - SFF - Solide State Drives

| | |
|---|------------|
| HPE 3.84TB SATA 6G Mixed Use SFF SC 5300M SSD | P19953-B21 |
| HPE 1.92TB SATA 6G Mixed Use SFF SC 5300M SSD | P19951-B21 |
| HPE 960GB SATA 6G Mixed Use SFF SC 5300M SSD | P19949-B21 |
| HPE 480GB SATA 6G Mixed Use SFF SC 5300M SSD | P19947-B21 |

Read Intensive - 6G SATA - LFF - Solid State Drives

| | |
|---|------------|
| HPE 1.92TB SATA 6G Read Intensive LFF (3.5in) LPC 3yr Wty Digitally Signed Firmware SSD | P04501-B21 |
| HPE 960GB SATA 6G Read Intensive LFF LPC PM883 SSD | P09691-B21 |
| HPE 480GB SATA 6G Read Intensive LFF (3.5in) LPC 3yr Wty Digitally Signed Firmware SSD | P04499-B21 |

Read Intensive - 6G SATA - LFF - Solid State Drive

| | |
|---|------------|
| HPE 1.92TB SATA 6G Read Intensive LFF LPC 5300P SSD | P19976-B21 |
| HPE 480GB SATA 6G Read Intensive LFF LPC 5300P SSD | P19974-B21 |

Very Read Optimized - 6G SATA - LFF - Solid State Drive

| | |
|---|------------|
| HPE 7.68TB SATA 6G Very Read Optimized LFF LPC 5210 SSD | P23495-B21 |
| HPE 3.84TB SATA 6G Very Read Optimized LFF LPC 5210 SSD | P23491-B21 |

Mixed Use - 6G SATA - LFF - Solid State Drive

| | |
|--|------------|
| HPE 1.92TB SATA 6G Mixed Use LFF LPC 5300M SSD | P19984-B21 |
| HPE 960GB SATA 6G Mixed Use LFF LPC 5300M SSD | P19980-B21 |

Mixed Use - 6G SATA - LFF - Solid State Drives

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|--|------------|
| HPE 1.92TB SATA 6G Mixed Use LFF LPC SM883 SSD | P09726-B21 |
| HPE 1.92TB SATA 6G Mixed Use LFF (3.5in) LPC 3yr Wty Digitally Signed Firmware SSD | P07934-B21 |

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

| | |
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| HPE 480GB NVMe x4 Lanes Read Intensive M.2 22110 3yr Wty Digitally Signed Firmware SSD | P24188-B21 |
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Notes:

– M.2 SSD can be installed either on system board or on dedicated iLO module ([HPE DL20/ML30 Gen10](#))

Core Options

- M.2/Dedicated iLO and Serial Port Kit - P06687-B21).
- Running at PCIe 3.0 x2 speed on DL20 Gen10.
- Not supported by HPE Smart Array controllers.
- When installing NVMe x4 M.2 480 GB SSD module, the supporting ambient temperature should be under 30°C (86°F).

Internal Dual M.2 Kit

HPE Universal SATA 6G AIC HHHH M.2 SSD Enablement Kit 878783-B21

Notes:

- The Universal SATA M.2 Kit above will require a PCIe slot and support up to two of the same M.2 cards below.
- M.2 SATA Cable kit (P06683-B21) is required to support this option.

Read Intensive - M.2.- Solid State Drives (2280 type)

HPE 960GB SATA 6G Read Intensive M.2 2280 5300B SSD P19892-B21

HPE 480GB SATA 6G Read Intensive M.2 2280 5300B SSD P19890-B21

HPE 240GB SATA 6G Read Intensive M.2 2280 5300B SSD P19888-B21

Read Intensive - M.2 - Solid State Drives (2280 type)

HPE 960GB SATA 6G Read Intensive M.2 2280 3yr Wty Digitally Signed Firmware SSD 875500-B21

Mixed Use - M.2 - Solid State Drives (2280 type)

HPE 240GB SATA 6G Mixed Use M.2 2280 3yr Wty Digitally Signed Firmware SSD 875488-B21

HPE 480GB SATA 6G Mixed Use M.2 2280 3yr Wty Digitally Signed Firmware SSD 875490-B21

HPE 960GB SATA 6G Mixed Use M.2 2280 3yr Wty Digitally Signed Firmware SSD 875492-B21

HPE Gen9 LFF HDD Spade Blank Kit 807878-B21

HPE Small Form Factor Hard Drive Blank Kit 666987-B21

HPE Networking

25 Gigabit Ethernet adapters

HPE Ethernet 10/25Gb 2-port FLR-SFP28 QL41401-A2G Converged Network Adapter 867334-B21

HPE Ethernet 10/25Gb 2-port SFP28 QL41401-A2G Adapter 867328-B21

Notes: For 867328-B21 and 867707-B21 adapters, a maximum of one adapter can be supported on DL20 Gen10. Either one HPE Ethernet 10/25Gb 2-port 621SFP28 Adapter or one HPE Ethernet 10Gb 2-port 521T Adapter can be supported.

HPE Ethernet 10/25Gb 2-port SFP28 MCX4121A-ACUT Adapter 817753-B21

10 Gigabit Ethernet adapters

HPE Ethernet 10Gb 2-port BASE-T X550-AT2 Adapter 817738-B21

HPE Ethernet 10Gb 2-port SFP+ X710-DA2 Adapter 727055-B21

HPE Ethernet 10Gb 2-port BASE-T BCM57416 Adapter 813661-B21

HPE Ethernet 10Gb 2-port SFP+ 57810S Adapter 652503-B21

HPE Ethernet 10Gb 2-port BASE-T 57810S Adapter 656596-B21

HPE Ethernet 10Gb 2-port BASE-T QL41401-A2G Adapter 867707-B21

Notes: For 867707-B21 and 867328-B21 adapters, a maximum of one adapter can be supported on DL20 Gen10. Either one HPE Ethernet 10Gb 2-port 521T Adapter or one HPE Ethernet 10/25Gb 2-port 621SFP28 Adapter can be supported.

1 Gigabit Ethernet adapters

Core Options

HPE Ethernet 1Gb 4-port BASE-T I350-T4V2 Adapter 811546-B21

Notes: A maximum of one 366T can be supported on DL20 Gen10

HPE Ethernet 1Gb 2-port BASE-T I350-T2V2 Adapter 652497-B21

FlexibleLOM Adapters

HPE Ethernet 10/25Gb 2-port FLR-SFP28 QL41401-A2G Converged Network Adapter 867334-B21

HPE Ethernet 10Gb 2-port FLR-SFP+ X710-DA2 Adapter 727054-B21

HPE Ethernet 10Gb 2-port FLR-T X550-AT2 Adapter 817745-B21

HPE FlexFabric 10Gb 4-port FLR-T 57840S Adapter 764302-B21

HPE Ethernet 10Gb 2-port FLR-T BCM57416 Adapter 817721-B21

HPE FlexFabric 10Gb 2-port FLR-SFP+ 57810S Adapter 700751-B21

HPE FlexFabric 10Gb 2-port FLR-T 57810S Adapter 700759-B21

HPE Ethernet 1Gb 4-port FLR-T I350-T4V2 Adapter 665240-B21

HPE Ethernet 1Gb 4-port FLR-T BCM5719 Adapter 629135-B22

Notes:

– FlexibleLOM riser kit (P06667-B21) is required for above.

– When a FlexibleLOM adapter is installed on a server with default iLO settings, the port 1 of FlexibleLOM adapter will be configured as shared iLO port.

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

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|--|------------|
| 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 LTU | P8B24A |
| HPE OneView w/o iLO including 3yr 24x7 Support Track 1-server LTU | P8B25A |
| HPE OneView w/o iLO including 3yr 24x7 Support Flexible Quantity E-LTU | P8B26AAE |
| HPE OneView Physical Media Kit LTU | E5Y37A |

Notes:

- Licenses ship without media. The HPE OneView Media Kit can be ordered separately, or can be downloaded at: <https://www.hpe.com/us/en/integrated-systems/software.html>.
- Electronic and Flexible-Quantity licenses can be used to purchase multiple licenses with a single activation key.
- Licenses ship without media. The HPE OneView Media Kit can be ordered separately, or can be downloaded at: <https://www.hpe.com/us/en/integrated-systems/software.html>.

HPE Security

| | |
|------------------------|------------|
| HPE 1U Gen10 Bezel Kit | 867998-B21 |
| HPE Bezel Lock Kit | 875519-B21 |

Notes: HPE DL20 Gen10 Latch Ear FIO Kit (P06716-B21) is required to support both the Bezel Kits above.

| | |
|--|------------|
| HPE 1U Gen10 Chassis Intrusion Detection Kit | 866473-B21 |
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Additional Options

Notes: This provides a physical connection from the chassis board and hood and detects any physical intrusion into the chassis, providing security during the entire supply chain process of shipping, receiving, distribution, and operation.

HPE Trusted Platform Module 2.0 Gen10 Option

864279-B21

Notes:

- HPE Trusted Platform Module 2.0 option works with Gen10 servers with UEFI Mode not Legacy Mode. It is not compatible with HPE ProLiant Gen8 servers or earlier generation variants.
- HPE server systems can have a TPM module (of any type) installed only once. It cannot be replaced with any other TPM module.

HPE Gen10 TPM 1.2 FIO Setting

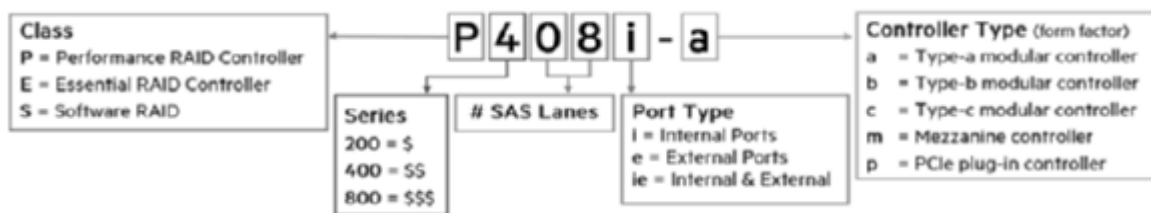
872108-B21

Notes: This is a FIO setting to allows the TPM 2.0 module to operate in a TPM 1.2 mode

HPE Storage Controllers

For additional details, please see HPE Smart Array Gen10 Controllers Data Sheet at:

<https://www.hpe.com/h20195/v2/Getdocument.aspx?docname=a00017196ENW>



HPE Flexible Smart Array Controllers -

HPE Smart Array P408i-a SR Gen10 (8 Internal Lanes/2GB Cache) 12G SAS Modular LH Controller

869081-B21

HPE Smart Array E208i-a SR Gen10 (8 Internal Lanes/No Cache) 12G SAS Modular LH Controller

869079-B21

Notes:

- To connect 869081-B21 or 869079-B21 to the 4SFF HDD backplane, leverage the 4SFF BP MiniSAS cable shipped within DL20 Gen10 4SFF system.
(HPE internal cable p/n P06077-001: 4SFF BP MiniSAS to AROC)
- To connect 869081-B21 or 869079-B21 to the 4+2SFF HDD backplane, leverage the 4SFF BP MiniSAS cable shipped within DL20 Gen10 4SFF system, and the 2SFF BP MiniSAS to AROC cable is bundled with HPE DL20 Gen10 2SFF HDD Enablement Kit (P06671-B21).
(HPE internal cable p/n P06077-001: 4SFF BP MiniSAS to AROC; HPE cable p/n P06069-B21: 2SFF BP MiniSAS to AROC)

HPE Smart Array Controllers -

HPE Smart Array P408e-p SR Gen10 (8 External Lanes/4GB Cache) 12G SAS PCIe Plug-in Controller

804405-B21

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

804398-B21

HPE Smart Array Controller Batteries

782961-B21

NOTES: If P408e-p or P408i-a controller is selected then HPE 12W Smart Storage Battery (782961-B21) must be selected. (Max storage battery q'ty to be one per DL20 Gen10 server)

HPE Cable Options -

HPE DL20 Gen10 M.2 SATA/LFF AROC Cbl Kit

P06683-B21

Additional Options

Notes: This cable kit has two cables, one is required to support M.2 SATA option kit and the other for AROC and LFF drives.

HPE DL20 Gen10 LFF ODD Cable Kit

P06681-B21

Notes: This option kit is required for Optical Drive option (LFF model only).

Optional Software

HPE Smart Array SR Secure Encryption (Data at Rest Encryption/per Server Entitlement) E-LTU Q2F26AAE

HPE Smart Array SR SmartCache (Single Key/Single Server) LTU D7S26A

HPE Smart Array SR SmartCache (Single Key/Multiple Servers) LTU D7S27A

HPE Smart Array SR SmartCache (Single Key/Multiple Servers) E-LTU D7S27AAE

Notes: SmartCache is offered on HPE Smart Array performance RAID controllers and comes standard (no licensing is required) if the HPE Smart Array P816i-a SR Gen10 Controller is installed in the server.

HPE Storage Options

Emulex Fibre Channel HBAs -

HPE SN1200E 16Gb Single Port Fibre Channel Host Bus Adapter Q0L13A

HPE SN1200E 16Gb Dual Port Fibre Channel Host Bus Adapter Q0L14A

HPE SN1600E 32Gb Single Port Fibre Channel Host Bus Adapter Q0L11A

HPE SN1600E 32Gb Dual Port Fibre Channel Host Bus Adapter Q0L12A

QLogic Fibre Channel HBAs -

HPE SN1100Q 16Gb Single Port Fibre Channel Host Bus Adapter P9D93A

HPE SN1100Q 16Gb Dual Port Fibre Channel Host Bus Adapter P9D94A

HPE SN1600Q 32Gb Single Port Fibre Channel Host Bus Adapter P9M75A

Converged Network Adapter -

HPE CN1100R Dual Port Converged Network Adapter QW990A

HPE CN1100R 10GBASE-T Dual Port Converged Network Adapter N3U52A

HPE CN1200E 10Gb Converged Network Adapter E7Y06A

HPE CN1200E 10GBASE-T Dual Port Converged Network Adapter N3U51A

HPE Rack Options

Rail Kits -

HPE 1U Short Friction Rail Kit

775612-B21

HPE Racks

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

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

Additional Options

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 USB and SD Options

HPE Enterprise Mainstream Flash Media Kits for Memory Cards -

| | |
|--|------------|
| HPE 8GB Dual microSD Flash USB Drive | 741279-B21 |
| HPE 32GB microSD RAID 1 USB Boot Drive | P21868-B21 |

HPE Support Services

Installation & Start-up Services

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

Proactive Care

| | |
|--|--------|
| HPE 3 Year Foundation Care Next Business Day DL20 Gen10 Service | HC5N8E |
| HPE 3 Year Foundation Care Next Business Day with DMR DL20 Gen10 Service | HC5N9E |
| HPE 3 Year Foundation Care 24x7 DL20 Gen10 Service | HC5P9E |
| HPE 3 Year Foundation Care 24x7 with DMR DL20 Gen10 Service | HC5Q0E |
| HPE 3 Year Proactive Care 24x7 DL20 Gen10 Service | HC5Q2E |

Additional Options

| | |
|---|--------|
| HPE 3 Year Proactive Care 24x7 with DMR DL20 Gen10 Service | HC5Q3E |
| HPE 3 Year Foundation Care Next Business Day with CDMR DL20 Gen10 Service | HC5P0E |
| HPE 3 Year Foundation Care 24x7 with CDMR DL20 Gen10 Service | HC5Q1E |
| HPE 3 Year Proactive Care 24x7 with CDMR DL20 Gen10 Service | HC5Q4E |

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

Memory

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 DDR4 UDIMMs operating at up to 2666 MHz 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 Gen10 Server.

General Memory Population Rules and Guidelines:

- Only UDIMMs are supported on DL20 Gen10. No support for RDIMMs and LRDIMMs.
- All the channels in a system run at the fastest common frequency.
- Both single DIMM per channel and dual DIMMs per channel are supported at 2666MHz.

Intel Gen10 Supported Memory Bandwidth for HPE ProLiant Gen10 Intel® Xeon® E Processor Family

| DIMM Type | Unbuffered with ECC DIMMs (UDIMMs) | |
|------------------------------------|------------------------------------|------------------|
| HPE SKU P/N | 879505-B21 | 879507-B21 |
| DIMM Rank | Single Rank | Dual Rank |
| DIMM Capacity | 8GB | 16GB |
| Voltage | Std Voltage 1.2V | Std Voltage 1.2V |
| DIMM Native Speed (MT/S) | 2666 | 2666 |
| Slots That Can Be Populated | 4 | 4 |
| Maximum Capacity (Gb) | 32 | 64 |
| Populated Dimm Speed (MT/S) | | |
| 1 DIMM Per Channel | 2666 | 2666 |
| 2 DIMM Per Channel | 2666 | 2666 |
| 3 DIMM Per Channel | n/a | n/a |

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 | 1 | B |
| | 2 | D |
| Chnl 1 | 3 | A |
| | 4 | C |

Memory

Memory Speed by Processor Model

| Processor Models | Supported Memory Speeds |
|--|-------------------------|
| E-2224, E-2234, E-2236, E-2226G, E-2244G, E-2274G, E-2276G, E-2286G, E-2278G | 2666MT/s |
| i3-9100, G5420 | 2400MT/s |

Standard and Maximum Memory Capacity (Pre-configured Models)

| Pre Configured Models | Standard Memory | Maximum Memory Plus Optional Memory | Standard Memory Replaced with Optional Memory |
|-----------------------|-----------------|--|--|
| P06476-B21 | 8GB (1x8GB) | 56GB (3x16GB, 1x8GB) | 64GB (4x16GB) |
| P08335-B21 | 8GB (1x8GB) | 56GB (3x16GB, 1x8GB) | 64GB (4x16GB) |

Storage



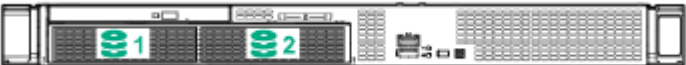
4 SFF device bay numbering



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 38.22 cm

1.70 x 17.11 x 15.05 in

- **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)

7.88 kg

17.37 lb

- **Hot Plug 2LFF fully loaded** (one hard drive, power supply, and processor installed)

Hot Plug 4SFF fully loaded (two hard drives, power supply, and processor installed)

7.9 kg

17.41 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

Technical Specifications

- **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 Gen10 - 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

500W/800W Redundant Power Supply

Input Requirements (per power supply)

Rated Line Voltage

- 100 to 120 VAC
- 200 to 240 VAC

BTU Rating

Maximum

- For 800W Power Supply: 3207 BTU/hr (at 100 VAC), 3071 BTU/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 800W Power Supply: 800W (at 100 VAC), 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 800W Power Supply: 800W (at 100 VAC), 800W (at 240 VAC), 800W (at 240 VDC) input for China only
-

Technical Specifications

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

System performance may be reduced if operating in the ambient operating range.

- **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.

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).

Technical Specifications

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

| Configuration SKU | P17077-B21 | P17078-B21 | P17079-B21 | P17080-B21 | P17081-B21 | P06476-B21 | P08335-B21 |
|-------------------|------------|------------|------------|------------|------------|------------|------------|
| Idle | | | | | | | |
| LWAd | 3.8 B | 3.8 B | 3.7 B | 3.8 B | 3.8 B | 3.8 B | 3.8 B |
| LpAm | 20 dBA | 21 dBA | 21 dBA | 21 dBA | 20 dBA | 21 dBA | 20 dBA |
| Operating | | | | | | | |
| LWAd | 3.8 B | 4.5 B | 4.5 B | 4.7 B | 4.8 B | 4.3 B | 4.5 B |
| LpAm | 21 dBA | 29 dBA | 29 dBA | 29 dBA | 30 dBA | 26 dBA | 28 dBA |

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

Summary of Changes

| Date | Version History | Action | Description of Change |
|-------------|-----------------|---------|---|
| 03-Aug-2020 | Version 12 | Changed | Standard Features, Pre-configured Models, Core Options, Memory and Additional Options sections were updated. Obsolete SKUs were removed. |
| 01-Jun-2020 | Version 11 | Changed | Standard features, Configuration Information, Core Options and Memory sections were updated. Obsolete SKUs were removed. |
| 06-Apr-2020 | Version 10 | Changed | Overview, Standard Features, Pre-Configured Models, Configuration Information, Core Options and Memory sections were updated. Obsolete SKUs were removed. |
| 24-Feb-2020 | Version 9 | Changed | Overview, Standard Features, Service and Support, Pre-configured Models, Configuration Information and Core Options sections were updated. Obsolete SKUs were removed |
| 06-Jan-2020 | Version 8 | Changed | Service and Support, Configuration Information, Core Options and Additional Options sections were updated. |
| 02-Dec-2019 | Version 7 | Changed | Standard Features, Configuration Information, Core Options and Additional Options sections were updated. Obsolete SKUs were removed |
| 18-Nov-2019 | Version 6 | Changed | Overview, Standard Features, Optional Features, Pre-configured Models, Configuration Information, Core Options, Memory and Technical Specifications sections were updated. |
| 07-Oct-2019 | Version 5 | Changed | Core Options section was updated |
| 05-Aug-2019 | Version 4 | Changed | Configuration Information - Factory Integrated Models section was modified. Obsoletes SKUs were removed. The U.S. version of QuickSpecs is no longer being updated, please reference the Worldwide QuickSpecs for latest information. |
| 02-Apr-2019 | Version 3 | Changed | Core Option section was updated |
| 04-Feb-2019 | Version 2 | Changed | Optional Features section was updated. |
| 05-Nov-2018 | Version 1 | New | New QuickSpecs. |

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