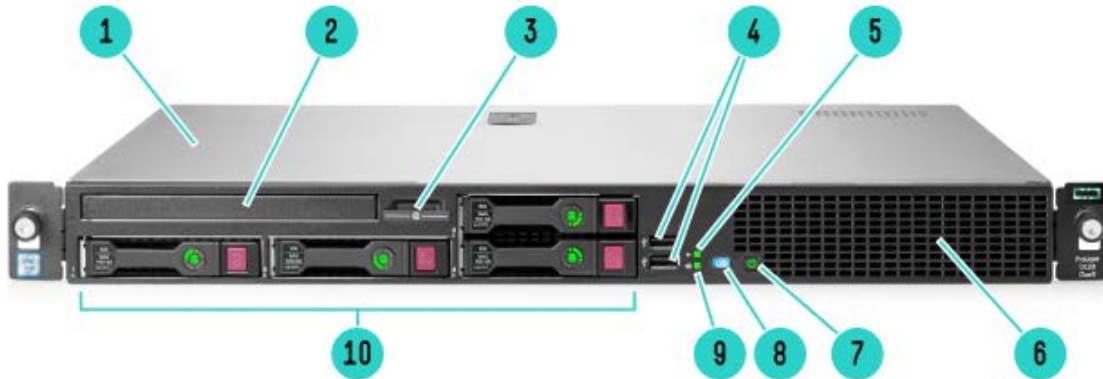


### Overview

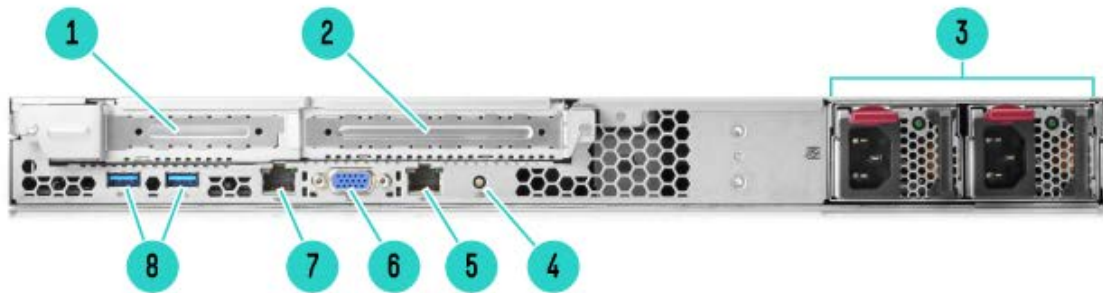
### HPE ProLiant DL20 Generation9 (Gen9)

The dense and compact HPE ProLiant DL20 Gen9 Server powered by Intel Pentium, Core i3 and E3-1200v5 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.



### Front View

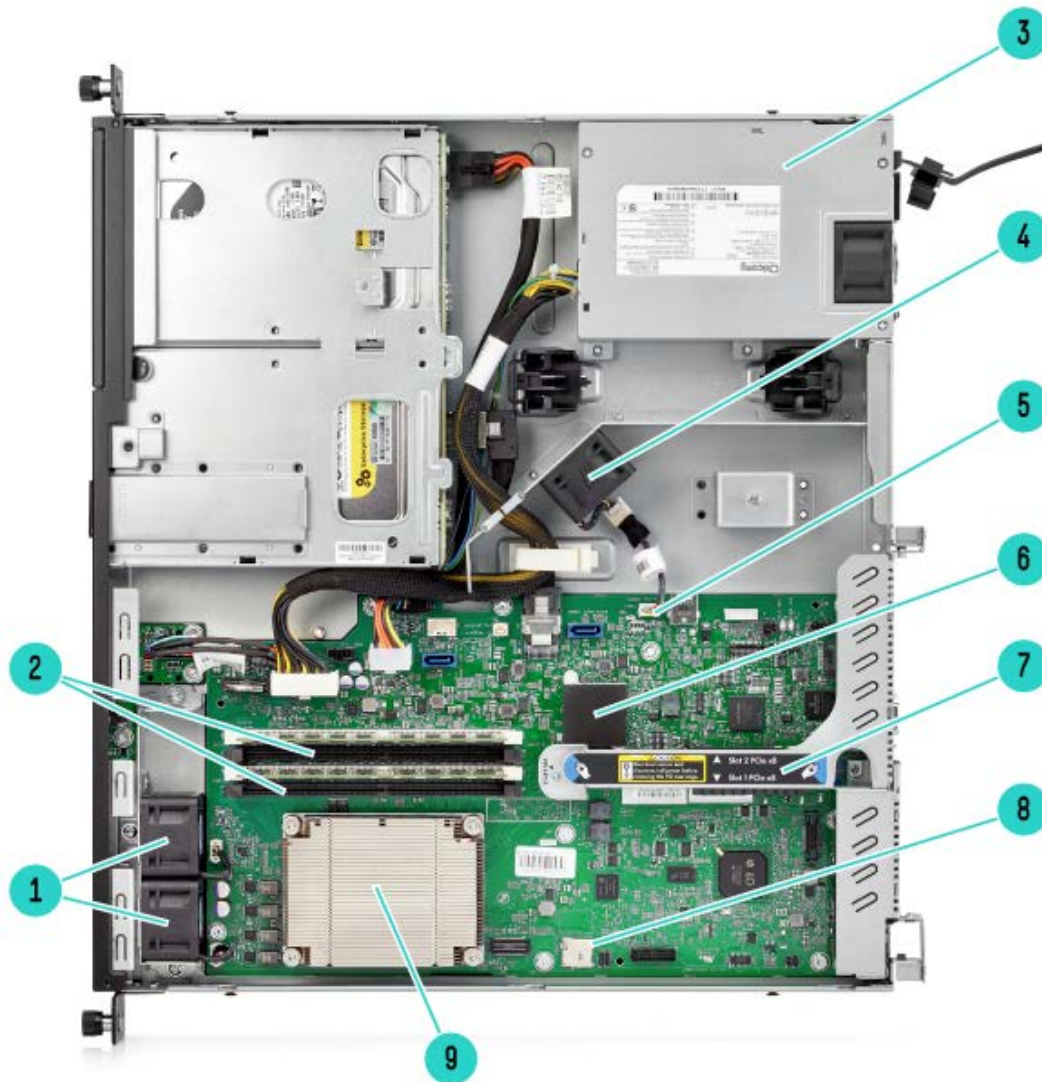
- |   |  |
|---|--|
| 1. Access Panel                           | 5. Health LED  |
| 3. Serial number/iLO information pull tab | 7. Power On/Standby button and system power LED button |
| 4. 2 USB 2.0 connectors                   | 9. NIC status LED                                      |
| 6. Front 2 Fan Assembly                   | 10. Hard Drive Bays                                    |
| 8. UID LED                                |  |
|   |  |
|   |  |



### Rear View

- |   |                      |
|---|----------------------|
| 1. Expansion Slot 1, PCIe x 8                   | 5. Video Connector   |
| 3. Redundant Power Supply (only on SFF Chassis) | 6. Video Connector   |
| 4. UID LED                                      | 8. USB 3.0 Connector |
| 7. NIC1/shared iLO connector                    |                      |
|   |                      |
|   |                      |

## Overview



### Internal View

- |   |  |
|---|--|
| <ol style="list-style-type: none"> <li>1. Fan cage shown with 2 fans</li> <li>3. (Under) Power supply (1x 290W power supply shown)</li> <li>5. Internal USB 3.0 connector</li> <li>7. PCIe Riser</li> <li>9. 1 Processor, heatsink showing, with HP Smart Socket Guide</li> </ol> | <ol style="list-style-type: none"> <li>2. DDR4 DIMM slots. 4 slots</li> <li>4. Central Fan Assembly</li> <li>6. Embedded HPE Smart Array B140i controller</li> <li>8. MicroSD card slot</li> </ol> |
|---|--|

### What's New

- New SMB SKU Offerings.
- New SSD offering.

## Standard Features

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

Intel® Xeon® processor E3-1200v5 quad core processor family is 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:

### Processor

One of the following depending on model

| Model     | CPU frequency | Cores | L3 Cache | Power | DDR4 Hz |
|-----------|---------------|-------|----------|-------|---------|
| G4400     | 3.3GHz        | 2     | 3MB      | 54W   | 2133    |
| G4500     | 3.5GHz        | 2     | 3MB      | 51W   | 2133    |
| i3-6100   | 3.7GHz        | 2     | 3MB      | 51W   | 2133    |
| E3-1220v5 | 3.0GHz        | 4     | 8MB      | 80W   | 2133    |
| E3-1225v5 | 3.3GHz        | 4     | 8MB      | 80W   | 2133    |
| E3-1230v5 | 3.4GHz        | 4     | 8MB      | 80W   | 2133    |
| E3-1240v5 | 3.5GHz        | 4     | 8MB      | 80W   | 2133    |
| E3-1270v5 | 3.6GHz        | 4     | 8MB      | 80W   | 2133    |
| E3-1280v5 | 3.7GHz        | 4     | 8MB      | 80W   | 2133    |
| G4560     | 3.5GHz        | 2     | 3MB      | 54W   | 2400    |
| i3-7300   | 4.0GHz        | 2     | 3MB      | 51W   | 2400    |
| E3-1220v6 | 3.0GHz        | 4     | 8MB      | 72W   | 2400    |
| E3-1225v6 | 3.3GHz        | 4     | 8MB      | 73W   | 2400    |
| E3-1230v6 | 3.5GHz        | 4     | 8MB      | 72W   | 2400    |
| E3-1240v6 | 3.7GHz        | 4     | 8MB      | 72W   | 2400    |
| E3-1270v6 | 3.8GHz        | 4     | 8MB      | 72W   | 2400    |
| E3-1280v6 | 3.9GHz        | 4     | 8MB      | 72W   | 2400    |

### Chipset

Intel® C232 Chipset

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

### On System

HPE iLO (Firmware HPE iLO4 2.3) 4GB NAND

### Management Chipset

**NOTE:** 1GB USB user space configurable via UEFI and accessible via iLO. Read and learn more in the [iLO QuickSpecs](#).

### Memory

One of the following depending on model

Type:

DDR4 Unbuffered (UDIMM)

Unbuffered (UDIMM)

DIMM Slots Available

4

4 DIMM slots per processor; 2 channels per processor, 2 DIMMs per channel

Maximum Capacity (UDIMM)

64GB

(4 x 16GB UDIMM @2400MHz)

### Memory Protection

ECC

### Network Controller

HPE Ethernet 1Gb 2-port 332i network Adapter or BCM5720.

## Standard Features

The HPE ProLiant DL20 Gen9 server offers the customer a dual-port NIC standard with the option to upgrade with a variety of networking options.

### Expansion Slots

Dual side Low profile riser

| Expansion Slots # | Technology | Bus Width | Connector Width | Bus Number | Form Factor             | Notes |
|-------------------|------------|-----------|-----------------|------------|-------------------------|-------|
| 1                 | PCIe 3.0   | X8        | X8              |            | Half length/half height |       |
| 2                 | PCIe 3.0   | X8        | X8              |            | Half length/full height |       |

**NOTE:** Bus Width data indicates the number of physical electrical lanes running to the connector.

FlexibleLOM Riser

| Expansion Slots # | Technology   | Bus Width | Connector Width | Bus Number | Form Factor             | Notes |
|-------------------|--------------|-----------|-----------------|------------|-------------------------|-------|
| 1                 | Flexible LOM | x8        | x8              |            | Half length/half height |       |
| 2                 | PCIe 3.0     | x8        | x8              |            | Half length/full height |       |

**NOTE:** This riser is mandatory for installing FlexibleLOMs.

GPU Riser

| Expansion Slots # | Technology | Bus Width | Connector Width | Bus Number | Form Factor             | Notes |
|-------------------|------------|-----------|-----------------|------------|-------------------------|-------|
| 1                 |            |           |                 |            |                         |       |
| 2                 | PCIe 3.0   | x16       | x16             |            | Half length/full height |       |

**NOTE:** It is mandatory to choose one of the above risers.

### Storage Controller

One of the following depending on model

|                    |  |
|--------------------|--|
| Entry Models       | HPE Dynamic Smart Array B140i Controller |
| Base Models        | HPE Dynamic Smart Array B140i Controller |
| Performance Models | HPE H240 FIO Smart Host Bus Adapter      |

**NOTE:** B140i provides support for up to 4 SATA drives, data transmission speeds up to 6Gb/s and supports RAID 0, 1 & 5 on DL20 Gen9.

**NOTE:** H240 provides support for up to 4 SAS/SATA drives, data transmission speeds up to 12Gb/s and supports RAID 0, 1 & 5 on DL20 Gen9.

**NOTE:** DL20 Gen9 also supports other controller options like P440; read additional option to know more.

## Standard Features

### Internal Storage Devices

One of the following depending on model

|                 |  |
|-----------------|--|
| Optical Drive   | Ships standard in Performance Models<br>Optional: DVD-ROM, DVD-RW                  |
| Optical Drives  | Optional: DVD-ROM, DVD-RW  |
| Hard Drives     | None ship standard   |
| Hard Drive Bays | 4 SFF drive bays total with Optical Bay<br>2 LFF drive bays total with Optical Bay |

**NOTE:** HPE ProLiant DL20 Gen9 server offers Hot plug LFF, Non hot plug LFF and SFF versions. The Optical Drive bay is available with all models.

**NOTE:** Drive cage changes are not supported.

**NOTE:** All Pre-configured Models come populated with some hard drive blanks installed. Should the customer need additional hard drive blanks, they can order more using either HPE SFF Gen9 Hard Drive Blank Kit (654961-B21), HPE LFF Gen9 Hard Drive Blank Kit (689745-B21) or NHP LFF Gen9 Hard Drive Blank kit (654963-B21). These part numbers for single HDD blanks below are also provided should the customer require replacement HDD blanks for their server.

### Maximum Internal Storage

|                       | CAPACITY | CONFIGURATION |
|-----------------------|----------|---------------|
| Hot Plug SFF SAS      | 8TB      | 4 x 2TB       |
| Hot Plug SFF SATA     | 8TB      | 4 x 2TB       |
| Hot Plug LFF SAS      | 20TB     | 2 x 10TB      |
| Hot Plug LFF SATA     | 20TB     | 2 x 10TB      |
| Hot Plug SFF SAS SSD  | 15.36TB  | 4 x 3.84TB    |
| Hot Plug SFF SATA SSD | 15.36TB  | 4 x 3.84TB    |
| Hot Plug LFF SATA SSD | 15.36TB  | 4 x 3.84TB    |
| Non Hot Plug LFF SATA | 8TB      | 2 x 4TB       |

### Power Supply

One of the following depending on model

|  |
|--|
| HPE 290W FIO Power Supply                  |
| HPE 900W AC 240V DC Redundant Power Supply |

**NOTE:** HPE 900W Redundant Power Supply supports 100VAC to 240VAC and also supports 240VDC.

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 Gen9 Server.

The HPE 290W FIO Power Supply is the standard, non-redundant AC power supply with 80Plus Silver Certification. It features 92% power efficiency with a set of features optimized for the DL20 Gen9 rack server.

The HPE 900W Gold (Redundant) AC/240V DC Power Input Module with Power Backplane can be configured to support power redundancy in ProLiant servers that offer only a single power supply bay, providing additional protection against power loss. With an 80 Plus Gold power efficiency rating (up to 92%), this power option helps to reduce operating expenses while protecting against trapped power capacity in the data center. The power backplane option can support up to two (2) hot-plug AC power input modules. This Redundant power supply option is only supported on DL20 Gen9 SFF chassis model.

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.

To review the power requirements for your selected system, please use the HPE Power Advisor Tool located at <http://www.hpe.com/info/hppoweradvisor>.

## Standard Features

|   |  | Non-redundant   | Redundant |
|---|--|---|-----------|
| <b>System Fans</b>  |  |   |           |
| One of the following depending on model   | 1P model   | 3 fans  | NA        |
|   | <b>NOTE:</b> DL20 has 3 fans, 2 front fan assemblies and 1 center fan assembly which ship standard, non-redundant.   |   |           |
| <b>Interfaces</b>   |  |   |           |
|   | Video  | 1 rear video connector  |           |
|   | USB  | 5 USB ports (standard)<br>Front: 2xUSB 2.0<br>Rear: 2xUSB 3.0<br>Internal: 1x USB 3.0 |           |
|   | Micro SD Slot  | 1 Micro SD  |           |
|   | <b>NOTE:</b> The SD slot is not a hot-pluggable device. Customers should not attempt to plug an SD card into the SD slot while the server is powered.  |   |           |
|   | LOM Network Ports  | 2x1GbE ports  |           |
|   | <b>NOTE:</b> Customers can upgrade to next generation network (10 GbE) by installing a FlexibleLOM riser.  |   |           |
| <b>Operating Systems and Virtualization Software Support for ProLiant Servers</b> | <p><b>Microsoft Windows Server</b></p> <p><b>Red Hat Enterprise Linux (RHEL)</b></p> <p><b>SUSE Linux Enterprise Server (SLES)</b></p> <p><b>VMware</b></p> <p><b>ClearOS</b></p> <p><b>NOTE:</b> VMWare availability is dependent on General availability from the vendor. DL20 supports VMWare 5.5U3 and 6.0 U1.</p> <p><b>NOTE:</b> ClearOS allows you to build a fully functional server that is just right for you at no upfront cost. It is available via CTO preload, Intelligent Provisioning or via download. For more information on ClearOS, please visit <a href="http://www.hpe.com/servers/clearos">http://www.hpe.com/servers/clearos</a>.</p> <p><b>NOTE:</b> For more information on the Hewlett Packard Enterprise Certified and Supported ProLiant Servers for OS and Virtualization Software and latest listing of software drivers available for your server, please visit our Support Matrix at: <a href="http://www.hpe.com/info/ossupport">http://www.hpe.com/info/ossupport</a> and our <a href="#">driver download page</a>.</p> |   |           |
| <b>Upgradeability</b>   |  |   |           |
| One of the following depending on model   | FlexibleLOM connector for 1 Gigabit or 10 Gigabit networking options   |   |           |
|   | Up to 4 DIMM slots available for higher memory capacity  |   |           |
|   | Up to 4SFF Drive bays or 2LFF Drive bays   |   |           |
|   | HPE Smart Array or Smart HBA Controller  |   |           |
|   | Redundant Power Supply   |   |           |
|   | <b>NOTE:</b> RPS is only compatible with DL20 SFF Model. Customer can upgrade from DL20 Gen9 on SFF model with 290W PSU to 900W redundant power supply.  |   |           |
| <b>Industry Standard Compliance</b>   | <p>UEFI (Unified Extensible Firmware Interface Forum)</p> <p>PCIe 3.0 Compliant</p> <p>PXE Support</p> <p>WOL Support</p> <p>Microsoft® Logo certifications</p> <p>USB 3.0 Support</p>   |   |           |

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## Standard Features

ASHRAE A3

**NOTE:** Refer to technical specifications section for more details.

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### Graphics

Integrated Matrox G200 video standard

On board graphics: Integrated Matrox G200 video standard

- 1280 x 1024 (32 bpp)
- 1920 x 1200 (16 bpp)

HP iLO 4 On System Management Memory

- 16 MB Flash
- 256 MB DDR 3 with ECC (112 MB after ECC and video)

HPE NVIDIA Quadro M2000 GPU Module

**NOTE:** Install GPU riser option to support GPU card. A GPU enablement kit 811271-B21 is mandatory to support GPU.

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### HPE Server UEFI/Legacy ROM

Unified Extensible Firmware Interface (UEFI) is an industry standard that provides better manageability and more secured configuration than the legacy ROM while interacting with your server at boot time. HPE ProLiant Gen9 platform defaults to UEFI and can be factory or field configured for Legacy BIOS Boot Mode.

**NOTE:** 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
- Operating system specific functionality
- Support for > 2.2 TB (using GPT) boot drives
- USB 3.0 Stack
- Embedded UEFI Shell
- Mass Configuration Deployment Tool using RESTful API for iLO 4
- PXE boot support for IPv6 networks
- Boot support for option cards that only support a UEFI option ROM
- Network Stack configurations

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

**NOTE:** UEFI FIO Setting (758959-B22) can be selected to configure the system in Legacy mode in the factory for your HPE ProLiant Gen9 Server.

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### Form Factor

One of the following depending on model

1U Rack form factor

4SFF and 2LFF version:

1.70" (4.32cm) Height x 15.05" (38.22cm) Depth x 17.11" (43.46cm) Length

**NOTE:** Depth of the chassis is measured from rear to ear at 15.05". Depth from rear to bezel is 15.5".

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## Standard Features

|                            |  |   |
|----------------------------|--|---|
| <b>Embedded Management</b> | <b>HPE Integrated Lights-Out (HPE iLO)</b> | Monitor your servers for ongoing management, service alerting, reporting and remote management with HPE iLO. Learn more at <a href="http://www.hpe.com/info/iLO">http://www.hpe.com/info/iLO</a> .  |
|                            | <b>UEFI</b>                                | Configure and boot your servers securely with industry standard Unified Extensible Firmware Interface (UEFI). Learn more at <a href="http://www.hpe.com/servers/uefi">http://www.hpe.com/servers/uefi</a> .   |
|                            | <b>RESTful API</b>                         | RESTful API for iLO 4 is Redfish 1.0 conformance for simplified server management such as configuration and maintenance tasks based on modern industry standards. Learn more at <a href="http://www.hpe.com/info/restfulapi">http://www.hpe.com/info/restfulapi</a> .   |
|                            | <b>Intelligent Provisioning</b>            | Hassle free server and OS provisioning for 1 or few servers with Intelligent Provisioning. Learn more at <a href="http://www.hpe.com/servers/intelligentprovisioning">http://www.hpe.com/servers/intelligentprovisioning</a> .  |
|                            | <b>Embedded Remote Support</b>             | The Hewlett Packard Enterprise embedded remote support, when used with Insight Online direct connect or HPE Insight Remote Support, allows HPE ProLiant servers to transmit hardware events directly to Hewlett Packard Enterprise or a Hewlett Packard Enterprise Authorized Partner for automated phone home support. Learn more at <a href="http://www.hpe.com/info/insightonline/explore">http://www.hpe.com/info/insightonline/explore</a> . |

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|                         |  |  |
|-------------------------|--|--|
| <b>Server utilities</b> | <b>Smart Update</b>                              | Optimize firmware and driver updates with Smart Update solutions including Smart Update Manager (SUM) and Service Pack for ProLiant (SPP). Learn more at <a href="http://www.hpe.com/servers/smartupdatemanager">http://www.hpe.com/servers/smartupdatemanager</a> .   |
|                         | <b>HPE Systems Insight Manager (HPE SIM)</b>     | HPE SIM allows you to monitor the health of your HPE ProLiant Servers and HPE Integrity Servers, and 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 <a href="http://www.hpe.com/servers/hpsim">http://www.hpe.com/servers/hpsim</a> .   |
|                         | <b>Scripting Tool Kit and Windows PowerShell</b> | Provision 1 to many servers using your own scripts to discover and deploy them with Scripting Tool Kit (STK) for Windows and Linux or Scripting Tools for Windows PowerShell. Learn more at <a href="http://www.hpe.com/servers/proliant/stk">http://www.hpe.com/servers/proliant/stk</a> or <a href="http://www.hpe.com/servers/powershell">http://www.hpe.com/servers/powershell</a> .                                 |
|                         | <b>RESTful Interface Tool</b>                    | RESTful Interface tool is a scripting tool to provision using RESTful API for iLO 4 to discover and deploy servers at scale. Learn more at <a href="http://www.hpe.com/info/resttool">http://www.hpe.com/info/resttool</a> .   |
|                         | <b>HPE iLO Mobile Application</b>                | Enables the ability to access, deploy, and manage your server anytime from anywhere from select smartphones and mobile devices. For additional information please visit: <a href="http://www.hpe.com/info/iLO/mobileapp">http://www.hpe.com/info/iLO/mobileapp</a> .   |
|                         | <b>HPE Insight Online</b>                        | HPE Insight Online, available at no additional cost as part of your Hewlett Packard Enterprise warranty or contractual support agreement with Hewlett Packard Enterprise, is a personalized dashboard for simplified tracking of IT operations and support information from anywhere, anytime. Learn more at <a href="http://www.hpe.com/info/insightonline/explore">http://www.hpe.com/info/insightonline/explore</a> . |

## Standard Features

|                 |                          |
|-----------------|--------------------------|
| <b>Security</b> | Serial interface control |
|                 | Administrator's password |
|                 | UEFI                     |
|                 | TPM 1.2                  |
|                 | TPM 2.0                  |
|                 | APCI 2.0b                |

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## Warranty

This product is covered by a global limited warranty and supported by HPE Services and a worldwide network of HPE 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.

**NOTE:** Server Warranty includes 1-Year Parts, 1-Year Labor, 1-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.hp.com/us/en/enterprise/servers/warranty/>.

## Optional Features

|                                      |  |  |
|--------------------------------------|--|--|
| <b>Embedded Management</b>           | <b>iLO Essentials</b>  | HPE iLO Essentials is the preferred license for small and medium business that offers full remote server management capabilities for small and medium business via the Integrated Remote Console (IRC), virtual media, and e-mail based alerts. Learn more about HPE iLO Essentials at <a href="http://www.hpe.com/servers/iLO/essentials">http://www.hpe.com/servers/iLO/essentials</a> .   |
|                                      | <b>iLO Scale-Out</b>   | HPE iLO Scale-Out is the preferred license built for web hosting, cloud service providers, and high performance computing data centers, managing massive scale out environments for the DL 100 and 10 series servers, not available for ML servers. This license offers sophisticated scripting tools that provides remote access through Text Console via SSH, Dynamic power capping, Email-based Alerting and proactive notifications. For more information, visit <a href="http://www.hpe.com/servers/iLO/scale-out">http://www.hpe.com/servers/iLO/scale-out</a> . |
|                                      | <b>iLO Advanced</b>  | 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. Learn more about HPE iLO Advanced at <a href="http://www.hpe.com/servers/ioloadvanced">http://www.hpe.com/servers/ioloadvanced</a> .                |
| <b>Server Management</b>             | <b>HPE Insight Control</b>   | HPE Insight Control, lets you deploy, migrate, monitor, remote control, and optimize your IT infrastructure through a single, simple management console. For more information, see <a href="http://www.hpe.com/info/insightcontrol">http://www.hpe.com/info/insightcontrol</a> .   |
| <b>Rack and Power Infrastructure</b> | HPE Rack and Power Infrastructure products and services create highly efficient and intelligent solutions for existing or new IT data centers. HPE Rack and Power infrastructure solutions – rack infrastructure, power protection and management, performance optimized data centers (PODs) – are the foundation you are looking for to help secure your long-term IT success. These products are designed to help you react to changes in the industry. They deliver efficient, easy-to-use capabilities to manage, monitor, deploy and provision infrastructure from entry to enterprise. As an industry leader, Hewlett Packard Enterprise is uniquely positioned to address the key concerns of power, cooling, cable management and system access. Learn more at <a href="#">HPE Rack and Power Infrastructure</a> . |  |
| <b>High Performance Clusters</b>     | HPE Cluster Platforms are specifically engineered, factory-integrated large-scale ProLiant clusters optimized for High Performance Computing, with a choice of servers, networks and software. Operating system options include specially priced offerings for Red Hat Enterprise Linux and SUSE Linux Enterprise Server, as well as Microsoft Windows HPEC Server. A Cluster Platform Configurator simplifies ordering. <a href="https://www.hpe.com/us/en/solutions/hpc-high-performance-computing/hpc-software.html">https://www.hpe.com/us/en/solutions/hpc-high-performance-computing/hpc-software.html</a>   |  |
| <b>HPC Interconnects</b>             | <b>NOTE:</b> High Performance Computing (HPC) interconnect technologies are available for this server under the HPE Cluster Platform product portfolio. These high-speed interconnects are fully supported by Hewlett Packard Enterprise when they are part of these configure to order clusters. Solutions can be defined with a lot of flexibility with the help of configuration tools. Please visit the following URL to configure HPEC Clusters with InfiniBand Interconnects: <a href="https://www.hpe.com/info/hpc/solutions">https://www.hpe.com/info/hpc/solutions</a> .  |  |
| <b>Storage Software</b>              | Whether you're a large enterprise or a smaller business, Hewlett Packard Enterprise data protection and recovery software will cost-effectively protect you against disaster and ensure business continuity.   |  |

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## Optional Features

### ClearOS

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.

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### 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. <http://ocs.ext.hpe.com/>.

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## Service and Support

### HPE Support Services

HPE Technology Services delivers confidence, reduces risk and helps customers realize agility and stability. Connect to Hewlett Packard Enterprise to help prevent problems and solve issues faster. HPE Support Services enable you to choose the right service level, length of coverage and response time as you purchase your new server, giving you full entitlement to the support for need for your IT and business.

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### Connect your devices

Unlock all of the benefits of your technology investment by connecting your products to Hewlett Packard Enterprise. Achieve up to 77%<sup>1</sup> reduction in down time, near 100%<sup>2</sup> 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 Hewlett Packard Enterprise support.

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### Recommended Support

#### **Basic: HPE Foundation Care NBD, three-year Support Service**

HPE Foundation Care Next Business Day connects you to Hewlett Packard Enterprise during business hours for assistance on resolving issues – This service features need based next business day hardware onsite response and software call back within two hours. In addition, Collaborative software support and provides troubleshooting assistance on industry leading software running on your HPE server. Simplify your support experience and make Hewlett Packard Enterprise your first call to help resolve hardware or software problems.

<https://www.hpe.com/h20195/V2/GetDocument.aspx?docname=4AA4-8876ENW&cc=us&lc=en>

#### **Standard: HPE Foundation Care 24x7, three-year Support Service**

HPE Foundation Care 24x7 gives you access to Hewlett Packard Enterprise 24 hours a day, seven days a week for assistance on resolving issues. This service includes need based Hardware onsite response within four hours. In addition, collaborative software support is included in this service that provides troubleshooting assistance on industry leading software running on your HPE server. Simplify your support experience and make Hewlett Packard Enterprise your first call to help resolve hardware or software problems.

<https://www.hpe.com/h20195/V2/GetDocument.aspx?docname=4AA4-8876ENW&cc=us&lc=en>

#### **Optimized: 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 Hewlett Packard Enterprise, 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 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.

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### Parts and Materials

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

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

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

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## Service and Support

### Related Services

#### HPE Server Hardware Installation

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

<https://www.hpe.com/h20195/V2/GetPDF.aspx/5981-9356EN.pdf>

#### HPE Installation and Startup Service

Provides for the installation and startup of Hewlett Packard Enterprise technology including BladeSystems, C-Class enclosure, HPE ProLiant c-Class and Integrity server blades, storage blades, SAN switch blades, HPE Virtual Connect modules (Ethernet and Fibre Channel), Ethernet network interconnects, and InfiniBand, as well as the installation of one supported operating system type (Windows® or Linux).

#### HPE Technology Services Support Credits

Offer 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.

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### 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>

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### HPE Support Center

The HPE Support Center is a personalized online support portal with access to information, tools and experts to support Hewlett Packard Enterprise 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 Hewlett Packard Enterprise 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 Hewlett Packard Enterprise warranty, HPE Support Service or Hewlett Packard Enterprise contractual support agreement.

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

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

## Pre-configured Models

For the Standard Features shipped in the "Factory Integrated Models", please see the "Configuration Information - Factory Integrated Models" section.

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

**NOTE:** All Pre-configured Models come populated with some hard drive blanks installed. Should the customer need additional hard drive blanks, they can order more using either HPE SFF Hard Drive Blank Kit (666987-B21) or HPE LFF Hard Drive Blank Kit (666986-B21).

**NOTE:** 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.

**CAUTION:** Hewlett Packard Enterprise recommends that a minimum of two people are required for all Rack Server installations. Please refer to your installation instructions for proper tools and number of people to use for any installation

|                             | Entry Models   | Base Models   |
|-----------------------------|--|---|
| <b>[SKU Number]</b>         | 871428-B21   | 871429-B21  |
| <b>Model Name</b>           | HPE ProLiant DL20 Gen9 G4560 8GB-U Non-hot Plug 2LFF 290W PS Entry Server  | HPE ProLiant DL20 Gen9 E3-1220v6 8GB-U B140i 2LFF 290W PS Base Server |
| <b>Processor</b>            | Intel® Pentium® G4560  | Intel® Xeon® E3-1220v6  |
| <b>Number of Processors</b> | One  |   |
| <b>Memory</b>               | 8GB (1x8GB UDIMM, 2400 MHz)  | 8GB (1x8GB UDIMM, 2400 MHz)   |
| <b>Network Controller</b>   | HPE embedded 1Gb 2-port 332i network Adapter   |   |
| <b>Storage Controller</b>   | HPE Dynamic Smart Array B140i  |   |
| <b>Hard Drive</b>           | None ship standard; includes 2 LFF hard drive blanks   | None ship standard  |
| <b>Internal Storage</b>     | 2 LFF HDD Bays (Non Hot Plug)  | 2 LFF HDD Bays (Hot Plug)   |
| <b>Optical Drive Bay</b>    | 1; (Optional: DVD-ROM, DVD-RW)   |   |
| <b>Optical Drive</b>        | None   |   |
| <b>PCI-Express Slots</b>    | 2 PCIe 3.0 slots   |   |
| <b>Power Supply</b>         | (1) 290W Non Hot Plug Power Supply   |   |
| <b>Fans</b>                 | 3 non hot plug, non-redundant  |   |
| <b>Management</b>           | iLO Management (standard), Intelligent Provisioning (standard), iLO Essentials (optional), iLO Scale-out (optional only for DL), iLO Advanced (optional) |   |
| <b>Form Factor</b>          | Rack (1U), HPE Short Friction Rail Kit   |   |
| <b>Warranty</b>             | Server Warranty includes 1-Year Parts, 1-Year Labor, 1-Year Onsite support with next business day response   |   |

## Pre-configured Models

|                             | Performance Models   |   |
|-----------------------------|--|---|
| <b>[SKU Number]</b>         | 871430-B21   | 871431-B21  |
| <b>Model Name</b>           | HPE ProLiant DL20 Gen9 E3-1240v6 16GB-U<br>H240 4SFF 290W PS Performance Server  | HPE ProLiant DL20 Gen9 E3-1240v6 8GB-U<br>H240 4SFF 900W RPS Performance Server |
| <b>Processor</b>            | Intel® Xeon® E3-1240v6   |   |
| <b>Number of Processors</b> | One  |   |
| <b>Memory</b>               | 16GB (1x16GB UDIMMs, 2400 MHz)   |   |
| <b>Network Controller</b>   | HPE embedded 1Gb 2-port 332i network Adapter   |   |
| <b>Storage Controller</b>   | HPE H240 Smart Host Bus Adapter  |   |
| <b>Hard Drive</b>           | None ship standard   |   |
| <b>Internal Storage</b>     | 4 SFF HDD Bays   |   |
| <b>Optical Drive Bay</b>    | 1; (Optional: DVD-ROM, DVD-RW)   |   |
| <b>Optical Drive</b>        | None   |   |
| <b>PCI-Express Slots</b>    | 2 PCIe 3.0 slots   |   |
| <b>Power Supply</b>         | (1) 290W Non Hot Plug Power Supply   | (1) HPE 900W Redundant Power Supply and<br>RPS Backplane kit                    |
| <b>Fans</b>                 | 3 non hot plug, non-redundant  |   |
| <b>Management</b>           | iLO Management (standard), Intelligent Provisioning (standard), iLO Essentials (optional), iLO Scale-out (optional only for DL), iLO Advanced (optional) |   |
| <b>Energy Star</b>          | Meets Energy Star requirements   |   |
| <b>Form Factor</b>          | Rack (1U), HPE Short Friction Rail Kit   |   |
| <b>Warranty</b>             | Server Warranty includes 1-Year Parts, 1-Year Labor, 1-Year Onsite support with next business day response   |   |

## SMB Models

1. New SMB focused offers regionally released as “Smart Buy Express”
2. SMB Models ship with the configurations below. Options can be selected from the Core or Additional options section of this QuickSpecs.
3. Hewlett Packard Enterprise does not provide factory integration of options into SMB Models. Any additional options purchased will be shipped separately and would need to be field integrated.
4. If you desire to custom configure an SMB Model please consult your preferred reseller.

|                             | <b>SMB Solution Models</b>   |
|-----------------------------|--|
| <b>SKU Number</b>           | P06049-B21   |
| <b>Model Name</b>           | HPE ProLiant DL20 Gen9 E3-1230v6 3.5GHz 4-core 1P 8GB-U H240 4SFF 900W PS Solution Server  |
| <b>Chassis</b>              | 4SFF   |
| <b>Processor</b>            | Intel® Xeon® E3-1230v6   |
| <b>Number of Processors</b> | One processor  |
| <b>Memory</b>               | 8GB (1x8GB UDIMMs, 2400 MHz)   |
| <b>Network Controller</b>   | HPE embedded 1Gb 2-port 332i network Adapter   |
| <b>Storage Controller</b>   | HPE H240 Smart Host Bus Adapter  |
| <b>Hard Drive</b>           | None ship standard   |
| <b>Optical Drive</b>        | None ship standard   |
| <b>PCIe Slots</b>           | 2 PCIe 3.0 slots   |
| <b>Power Supply</b>         | (2) HPE 900W Redundant Power Supply and RPS Backplane kit  |
| <b>Fans</b>                 | 3 non hot plug, non-redundant  |
| <b>Management</b>           | iLO Management (standard), Intelligent Provisioning (standard), iLO Essentials (optional), iLO Scale-out (optional only for DL), iLO Advanced (optional)   |
| <b>Energy Star</b>          | Meets Energy Star requirements   |
| <b>Form Factor</b>          | Rack (1U), HPE Short Friction Rail Kit   |
| <b>Operating System</b>     | ClearOS/VM Installer (USB)<br><b>NOTE: ClearOS, an easy to use OS with an application marketplace, allows you to build a fully functional server that is just right for you at no upfront cost. To learn more on what you can do, please visit <a href="http://www.hpe.com/servers/clearos">http://www.hpe.com/servers/clearos</a></b> |
| <b>Warranty</b>             | Server Warranty includes 1-Year Parts, 1-Year Labor, 1-Year Onsite support with next business day response   |

## Smart Buy Models

|                             | <b>E3-1200v6 Series Smart Buy Models</b>  |   |
|-----------------------------|---|---|
| <b>[SKU Number]</b>         | P02061-S01  | P02060-S01  |
| <b>Model Name</b>           | HPE ProLiant DL20 Gen9 E3-1230v6 LFF 1TB US Svr/S-Buy                             | HPE ProLiant DL20 Gen9 E3-1230v6 SFF US Svr/S-Buy |
| <b>Processor</b>            | Intel® Xeon® E3-1230v6  | Intel® Xeon® E3-1230v6                            |
| <b>Number of Processors</b> | One   |   |
| <b>Memory</b>               | 8GB (1x8GB UDIMMs, 2133 MHz)  |   |
| <b>Network Controller</b>   | HPE embedded 1Gb 2-port 332i network Adapter                                      |   |
| <b>Storage Controller</b>   | HPE Dynamic Smart Array B140i   |   |
| <b>Hard Drive</b>           | 1 x 1TB drive w/ClearOS 7 Image   | None ship standard                                |
| <b>Internal Storage</b>     | 2 LFF NHP HDD Bays  | 4 SFF HDD Bays                                    |
| <b>Optical Drive Bay</b>    | 1; (Optional: DVD-ROM, DVD-RW)  |   |
| <b>Optical Drive</b>        | None  |   |
| <b>PCI-Express Slots</b>    | 2 PCIe 3.0 slots  |   |
| <b>Power Supply</b>         | (1) 290W Non-Hot Plug Power Supply  | (1) HPE 900W Redundant Power Supply               |
| <b>Fans</b>                 | 3 non hot plug, non-redundant   |   |
| <b>Management</b>           | Integrated Lights-Out 4 (iLO 4) ships standard                                    |   |
| <b>Form Factor</b>          | Rack (1U), HPE Short Friction Rail kit  |   |
| <b>Warranty</b>             | 1-Year Parts, 1-Year Labor, 1-Year Onsite support with next business day response |   |

## Configuration Information - Factory Integrated Models

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

1. Factory Integrated Models must start with a CTO Server.
2. FIO indicates that this option is only available as a factory installable option.
3. All Factory Integrated Models will be populated with sufficient hard drive blanks based on the number of initial hard drives ordered with the server.
4. 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)

|                           |  |   |   |
|---------------------------|--|---|---|
| <b>CTO Server</b>         | HPE ProLiant DL20 Gen9 Non-hot Plug 2LFF Configure-to-order Server | HPE ProLiant DL20 Gen9 2LFF Configure-to-order Server | HPE ProLiant DL20 Gen9 4SFF Configure-to-order Server |
| <b>SKU Number</b>         | 819784-B21   | 819785-B21  | 819786-B21  |
| <b>Processor</b>          | 1  | 1   | 1   |
| <b>DIMM Slots</b>         | 4 DIMM slots for UDIMM DDR4 Memory                                 |   |   |
| <b>Storage Controller</b> | HPE Dynamic Smart Array B140i                                      |   |   |
| <b>PCIe</b>               | 2 PCIe 3.0 Slots   |   |   |
| <b>Drive Cage</b>         | 2LFF Non Hot Plug  | 2LFF Hot Plug   | 4SFF Hot Plug   |
| <b>Network Controller</b> | HPE embedded 1Gb 2-port 332i network Adapter                       |   |   |
| <b>Fans</b>               | 3 non hot plug, non-redundant                                      |   |   |
| <b>Management</b>         | iLO Management (standard), Intelligent Provisioning (standard)     |   |   |
| <b>USB</b>                | 2 front, 1 internal, 2 rear  |   |   |
| <b>Ears</b>               | HPE Thumbscrew Ears  |   |   |

### Step 2: Choose Required Options (only one of the following from each list unless otherwise noted)

#### HPE Processors

#### E3-1200v6 series Processors

HPE DL20 Gen9 E3-1220v6 (3.0GHz/4-core/8MB/72W) FIO Processor Kit 871049-L21

HPE DL20 Gen9 E3-1225v6 (3.3GHz/4-core/8MB/73W) FIO Processor Kit 872140-L21

**NOTE: On E3-1225v6 we do not support Intel's embedded graphics capability.**

HPE DL20 Gen9 E3-1230v6 (3.5GHz/4-core/8MB/72W) FIO Processor Kit 871051-L21

HPE DL20 Gen9 E3-1240v6 (3.7GHz/4-core/8MB/72W) FIO Processor Kit 871053-L21

HPE DL20 Gen9 E3-1270v6 (3.8GHz/4-core/8MB/72W) FIO Processor Kit 871055-L21

HPE DL20 Gen9 E3-1280v6 (3.9GHz/4-core/8MB/72W) FIO Processor Kit 871057-L21

#### Intel® Core i3-7000 series Processors

HPE ProLiant DL20 Gen9 Intel® Core™ i3-7100 (3.9GHz/2-core/3MB/51W) FIO Processor Kit 871059-L21

HPE ProLiant DL20 Gen9 Intel® Core™ i3-7300 (4.0GHz/2-core/3MB/51W) FIO Processor Kit 871061-L21

#### Intel® Pentium® G4000 series Processors

HPE ProLiant DL20 Gen9 Intel® Pentium® G4560 (3.5GHz/2-core/3MB/54W) FIO Processor Kit 871063-L21

## Configuration Information - Factory Integrated Models

|                                  |  |            |
|----------------------------------|--|------------|
|                                  | HPE ProLiant DL20 Gen9 Intel® Pentium® G4600 (3.6GHz/2-core/3MB/51W) FIO Processor Kit   | 871061-L21 |
|                                  | <p><b>NOTE:</b> DDR4 speed is the maximum memory speed of the processor. Actual memory speed may depend on the quantity and type of DIMMs installed.</p> <p><b>NOTE:</b> For the Intel® C232 Chipset E3-1200 Series, the letter preceding the model number indicates the Product Line (E3, E5, E7); 1200x v#, 1 is the number of the CPU, 2 is socket type/segment designation, 00=processor SKU, x=L for low power SKUs and v# (not yet designated) is the version number.</p>  |            |
| <b>HPE Memory</b>                | <p><b>NOTE:</b> Select one or more memory.</p> <p><b>NOTE:</b> HPE memory from previous generation servers are not qualified or warranted with this HPE ProLiant Server</p> <p><b>NOTE:</b> HPE Standard Memory (UDIMM) is required to realize the memory performance improvements and enhanced functionality listed in this document for this HPE ProLiant Server.</p> <p><b>NOTE:</b> With one processor installed, four DIMMs slots are available</p> <p><b>NOTE:</b> For more information on ProLiant Energy Efficient Features, see: <a href="http://www.hpe.com/go/proliant-energy-efficient">http://www.hpe.com/go/proliant-energy-efficient</a></p> <p><b>NOTE:</b> Depending on the memory configuration and processor model, the memory speed would run at 2133MHz. Please see Memory Population Table or the Online Memory Configuration Tool at: <a href="http://www.hpe.com/go/ddr4config">http://www.hpe.com/go/ddr4config</a></p> <p><b>Unbuffered DIMMs (UDIMMs) – 2400MHz</b></p> <p><b>NOTE:</b> The following memory is supported by the E3-1200v6, i3-7000 and G4560 and G4600 processors only</p> |            |
|                                  | HPE 8GB (1x8GB) Single Rank x8 DDR4-2400 CAS-17-17-17 Unbuffered Standard Memory Kit   | 862974-B21 |
|                                  | HPE 16GB (1x16GB) Dual Rank x8 DDR4-2400 CAS-17-17-17 Unbuffered Standard Memory Kit   | 862976-B21 |
|                                  | <p><b>Unbuffered DIMMs (UDIMMs) – 2133 MHz</b></p>   |            |
|                                  | HPE 16GB (1x16GB) Dual Rank x8 DDR4-2133 CAS-15-15-15 Unbuffered Standard Memory Kit   | 805671-B21 |
|                                  | HPE 8GB (1x8GB) Single Rank x8 DDR4-2133 CAS-15-15-15 Unbuffered Standard Memory Kit   | 819880-B21 |
|                                  | <p><b>NOTE:</b> Depending on the processor selected these memory will run at 2133MHz.</p>  |            |
| <b>HPE I/O Expansion Options</b> | HPE DL20 Gen9 PCIe Low Profile Riser FIO Kit   | 854846-B21 |
|                                  | HPE DL20 Gen9 Flexible LOM Riser Kit   | 811259-B21 |
|                                  | HPE DL20 Gen9 GPU Enablement Kit   | 811271-B21 |
| <b>HPE Power Supplies</b>        | <p><b>NOTE:</b> Prior to selecting a power supply option, it is highly recommended that you review your server configuration in the HPE Power Advisor tool to determine the right size power supply for your server configuration. The HPE Power Advisor is located at: <a href="http://www.hp.com/go/hppoweradvisor">http://www.hp.com/go/hppoweradvisor</a></p> <p><b>NOTE:</b> On RPS Enablement Kit power options, mixing of power supplies in the same RPS enablement kit is not supported. All power supplies must be of the same input voltage, output rating, and efficiency rating. If non-matching power supplies are installed, you may receive an error message and/or experience operational issues with your server</p> <p><b>HPE Entry-Level Power Supplies</b></p>   |            |
|                                  | HPE DL20 Gen9 290W FIO Power Supply Unit Kit   | 816283-B21 |
|                                  | HPE 900W AC 240VDC Power Input FIO Module  | 828734-B21 |
|                                  | <p><b>NOTE:</b> HP Server RPS FIO Backplane Kit (828735-B21) is required for this power supply.</p> <p><b>NOTE:</b> Up to two of these option kits can be installed in one system.</p>   |            |
|                                  | HPE 900W AC 240VDC Power Backplane FIO Kit   | 828735-B21 |

## Configuration Information - Factory Integrated Models

**NOTE:** One is required when one or two HPE 900W AC 240VDC Power Input FIO Modules (828734-B21) are ordered.

HPE DL20 Gen9 Redundant Power Supply Cable Kit 820306-B21

**NOTE:** This RPS backplane Cable kit is mandatory to be chosen along with 900W RPS Input Module (828734-B21).

### Step 3: Choose Additional Factory Integratable Options (only one of the following from each list unless otherwise noted)

#### HPE Storage Controllers

**NOTE:** All CTO Server models include mini-SAS cables required to connect drives to the embedded B140i SATA controller or H240 Smart Host Bus Adapter.

##### SAS Controllers

##### HPE Smart Array Controllers

HP Smart Array P440/4GB FBWC 12Gb 1-port Int FIO SAS Controller 761872-B21

**NOTE:** Includes 96W Smart Storage Battery.

**NOTE:** P440 needs to be populated in slot 2 (Full Height).

##### HPE Smart Host Bus Adapters

HP H240 12Gb 2-ports Int FIO Smart Host Bus Adapter 761873-B21

**NOTE:** H240 needs to be populated in slot 2 (Full Height).

##### HPE Cable Options

HPE DL20 Gen9 2LFF Mini SAS P440 Cable Kit 811279-B21

HPE DL20 Gen9 4SFF Mini SAS P440 Cable Kit 811282-B21

**NOTE:** One of the above cables is required to be selected depending on the combination of the server and storage controller. Cable option kit descriptions include the right server and storage controller names.

#### BIOS Mode

HP Legacy FIO Mode Setting 758959-B22

**NOTE:** If B140i is the only controller, then this option cannot be selected.

#### Controller State

HP Mfg FIO Enable HBA Mode Setting 792962-B21

**NOTE:** If H240 is the primary controller with this option then RAID is not allowed.

HP AHCI-Enable FIO Setting 801845-B21

**NOTE:** If B140i is the primary controller with this option then RAID is not allowed.

#### HPE Insight Software

HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle Single Server FIO License C6N36A

#### HPE Security Kit

HPE DL20 Gen9 Quick Release Ear FIO Kit 811254-B21

**NOTE:** HPE ProLiant DL20 Gen9 ships with thumbscrew ear attachments as standard. The Quick Release Ear kit needs to be purchased if you want to have a security bezel installed.

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

**CAUTION:** Please refer to your installation instructions for proper tools and number of people to use for any installation. Hewlett Packard Enterprise recommends that a minimum of two people are required for all Rack Server installations.

## Core Options

### Recommended

Offering the best combination of performance, value and availability, Recommended Options have been selected by HPE experts to provide the right technology for a range of workloads and market segments. Fully integrated into the ProLiant management and security experience, Recommended Options provide the best fit with timely availability.

### Extended

Extended Options provide an extended catalog of products tailored for customers in specific markets or with specific workloads, requiring the utmost in performance or value. Fully integrated into the ProLiant management and security experience, Extended Options represent great value and performance but typically have a longer lead-time.

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

### HPE Unique Options

#### Recommended

|  |            |
|--|------------|
| HPE DL20 Gen9 2LFF Mini SAS P440 Cable Kit (Recommended)   | 811279-B21 |
| <b>NOTE:</b> This cable kit is required to support P440 controller on 2LFF model.  |            |
| HPE DL20 Gen9 4SFF Mini SAS P440 Cable Kit (Recommended)   | 811282-B21 |
| <b>NOTE:</b> This cable kit is required to support P440 controller on 4SFF model.  |            |
| HPE DL20 Gen9 Smart Storage Battery Holder (Recommended)   | 822451-B21 |
| <b>NOTE:</b> This holder is required to install the HPE Smart Storage battery (727258-B21) on P440 controller with FBWC (820834-B21, 726821-B21).  |            |
| HPE DL20 Gen9 Redundant Power Supply Backplane Cable Kit (Recommended)   | 820306-B21 |
| <b>NOTE:</b> It is mandatory to choose this back plane cable kit to support 828734-B21, 775595-B21 Redundant Power Supply Input Module. This cable kit is required in instances of single or double 900W PSU unit. |            |
| HPE DL20 Gen9 M.2 RA and Optical Disk Drive Power Cable Kit (Recommended)  | 816284-B21 |
| <b>NOTE:</b> This cable kit is required to support M.2 and or ODD.   |            |
| HPE DL20 Gen9 Flexible LOM Riser Kit (Recommended)   | 811259-B21 |
| <b>NOTE:</b> This option is required to upgrade to next generation networking capabilities like 10GbE.   |            |
| HPE DL20 Gen9 GPU Enablement Kit (Recommended)   | 811271-B21 |
| <b>NOTE:</b> It is mandatory to choose the GPU enablement kit to support qualified GPU card.   |            |

### HPE Memory

#### Unbuffered DIMMs (UDIMMs) - Recommended

**NOTE:** The following memory is supported by the E3-1200v6, i3-7000 and G4560 and G4600 processors only

|  |            |
|--|------------|
| HPE 8GB (1x8GB) Single Rank x8 DDR4-2400 CAS-17-17-17 Unbuffered Standard Memory Kit (Recommended) | 862974-B21 |
| HPE 16GB (1x16GB) Dual Rank x8 DDR4-2400 CAS-17-17-17 Unbuffered Standard Memory Kit (Recommended) | 862976-B21 |

#### Unbuffered DIMMs (UDIMMs) - Extended

**NOTE:** The following memory is supported by the E3-1200v5, i3-6000 and G4500 and G4400 processors only

|   |            |
|---|------------|
| HPE 16GB (1x16GB) Dual Rank x8 DDR4-2133 CAS-15-15-15 Unbuffered Standard Memory Kit (Extended) | 805671-B21 |
|---|------------|

## Core Options

HPE 8GB (1x8GB) Single Rank x8 DDR4-2133 CAS-15-15-15 Unbuffered Standard Memory Kit (Extended) 819880-B21

**NOTE:** Depending on the processor selected these memory will run at 2133MHz.

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### HPE Optical Drives **Recommended**

HPE 9.5mm SATA DVD-ROM Optical Drive (Recommended) 726536-B21

HPE 9.5mm SATA DVD-RW Optical Drive (Recommended) 726537-B21

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### HPE Drives

#### **SATA Non-Hot Plug LFF (3.5-inch) Midline (MDL) Drives - Recommended**

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

#### **SATA Non-Hot Plug LFF (3.5-inch) Midline (MDL) Drives - Extended**

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

#### **SATA Non-Hot Plug LFF (3.5-inch) Entry (ETY) Drives - Recommended**

HPE 1TB SATA 6G Entry 7.2K LFF (3.5in) RW 1yr Wty HDD (Recommended) 843266-B21

**NOTE:** These Entry drives will have lower performance and workload rating in comparison to HPE enterprise drives.

#### **SATA Hot Plug LFF (3.5-inch) Midline (MDL) Drives - Recommended**

HPE 1TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty HDD (Recommended) 861691-B21

HPE 4TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty Digitally Signed Firmware HDD (Recommended) 872491-B21

HPE 6TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty 512e HDD (Recommended) 861750-B21

HPE 8TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty 512e Digitally Signed Firmware HDD (Recommended) 819203-B21

#### **SATA Hot Plug LFF (3.5-inch) Midline (MDL) Drives - Extended**

HPE 2TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty Digitally Signed Firmware HDD (Extended) 872489-B21

HPE 8TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty Helium 512e Digitally Signed Firmware HDD (Extended) 861594-B21

HPE 10TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty Helium 512e Digitally Signed Firmware HDD (Extended) 857648-B21

HPE 12TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty Helium 512e Digitally Signed Firmware HDD (Extended) 881785-B21

#### **SAS Hot Plug SFF (2.5-inch) Enterprise (ENT) Drives - Recommended**

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

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

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

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

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

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

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

## Core Options

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|---|------------|
| HPE 2.4TB SAS 12G Enterprise 10K SFF (2.5in) SC 3yr Wty 512e Digitally Signed Firmware HDD (Recommended)  | 881457-B21 |
| <b>SAS Hot Plug SFF (2.5-inch) Enterprise (ENT) Drives - Extended</b>   |            |
| HPE 900GB SAS 12G Enterprise 15K SFF (2.5in) SC 3yr Wty 512e Digitally Signed Firmware HDD (Extended)   | 870765-B21 |
| <b>SAS Hot Plug LFF (3.5-inch) Enterprise (ENT) Drives - Extended</b>   |            |
| HPE 300GB SAS 12G Enterprise 15K LFF (3.5in) SCC 3yr Wty HDD (Extended)   | 737261-B21 |
| HPE 600GB SAS 12G Enterprise 15K LFF (3.5in) SCC 3yr Wty HDD (Extended)   | 765424-B21 |
| <b>SAS Hot Plug LFF (3.5-inch) Midline (MDL) Drives - Recommended</b>   |            |
| HPE 2TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty Digitally Signed Firmware HDD (Recommended)   | 872485-B21 |
| HPE 4TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty Digitally Signed Firmware HDD (Recommended)   | 872487-B21 |
| HPE 8TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty 512e Digitally Signed Firmware HDD (Recommended)  | 819201-B21 |
| <b>SAS Hot Plug LFF (3.5-inch) Midline (MDL) Drives - Extended</b>  |            |
| HPE 1TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty Digitally Signed Firmware HDD (Extended)  | 846524-B21 |
| HPE 6TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty Digitally Signed Firmware HDD (Extended)  | 846514-B21 |
| HPE 8TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty Helium 512e Digitally Signed Firmware HDD (Extended)  | 861590-B21 |
| HPE 10TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty Helium 512e Digitally Signed Firmware HDD (Extended)   | 857644-B21 |
| HPE 12TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty Helium 512e Digitally Signed Firmware HDD (Extended)   | 881779-B21 |
| <b>SATA Hot Plug SFF (2.5-inch) Midline (MDL) Drives - Recommended</b>  |            |
| HPE 1TB SATA 6G Midline 7.2K SFF (2.5in) SC 1yr Wty Digitally Signed Firmware HDD (Recommended)   | 655710-B21 |
| <b>6G SATA Hot Plug SFF (2.5-inch) SC 512e Drives - Recommended</b>   |            |
| HPE 2TB SATA 6G Midline 7.2K SFF (2.5in) SC 1yr Wty 512e Digitally Signed Firmware HDD (Recommended)  | 765455-B21 |
| <b>SSD Selection</b>  |            |
| To streamline the configuration process for HPE ProLiant Gen9 servers and to provide the best product availability, HPE recommends SSDs from the list located here: <a href="https://ssd.hpe.com/recommend">https://ssd.hpe.com/recommend</a> . |            |
| <b>6G SATA Hot Plug SFF (2.5-inch) SC Mixed Use Solid State Drives - Recommended</b>  |            |
| HPE 240GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD (Recommended)  | 875483-B21 |
| HPE 480GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD (Recommended)  | 872344-B21 |
| HPE 480GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD (Recommended)  | 875470-B21 |
| HPE 960GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD (Recommended)  | 872348-B21 |
| HPE 960GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD (Recommended)  | 875474-B21 |
| HPE 1.92TB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD (Recommended)   | 872352-B21 |

## Core Options

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| HPE 1.92TB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD (Recommended)      | 875478-B21 |
| <b>6G SATA Hot Plug SFF (2.5-inch) SC Mixed Use Solid State Drives - Extended</b>                    |            |
| HPE 240GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD (Extended)          | 880295-B21 |
| HPE 480GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD (Extended)          | 877776-B21 |
| HPE 960GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD (Extended)          | 877782-B21 |
| HPE 1.92TB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD (Extended)         | 877788-B21 |
| <b>12G SAS Hot Plug SFF (2.5-inch) SC 512e Drives - Recommended</b>                                  |            |
| HPE 1TB SAS 12G Midline 7.2K SFF (2.5in) SC 1yr Wty 512e Digitally Signed Firmware HDD (Recommended) | 765464-B21 |
| HPE 1TB SAS 12G Midline 7.2K SFF (2.5in) SC 1yr Wty Digitally Signed Firmware HDD (Recommended)      | 832514-B21 |
| HPE 2TB SAS 12G Midline 7.2K SFF (2.5in) SC 1yr Wty 512e HDD (Recommended)                           | 765466-B21 |
| <b>12G SAS Hot Plug SFF (2.5-inch) SC Read Intensive Solid State Drives - Recommended</b>            |            |
| HPE 480GB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD (Recommended)  | 875311-B21 |
| HPE 960GB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD (Recommended)  | 872390-B21 |
| HPE 960GB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD (Recommended)  | 875313-B21 |
| HPE 1.92TB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD (Recommended) | 872392-B21 |
| HPE 1.92TB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD (Recommended) | 875326-B21 |
| HPE 3.84TB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD (Recommended) | 872394-B21 |
| <b>12G SAS Hot Plug SFF (2.5-inch) SC Read Intensive Solid State Drives - Extended</b>               |            |
| HPE 3.84TB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD (Extended)    | 875330-B21 |
| <b>12G SAS Hot Plug SFF (2.5-inch) SC Write Intensive Solid State Drives - Recommended</b>           |            |
| HPE 400GB SAS 12G Write Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD (Recommended) | 873351-B21 |
| HPE 800GB SAS 12G Write Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD (Recommended) | 873355-B21 |
| <b>12G SAS Hot Plug SFF (2.5-inch) SC Write Intensive Solid State Drives - Extended</b>              |            |
| HPE 1.6TB SAS 12G Write Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD (Extended)    | 873357-B21 |
| <b>12G SAS Hot Plug SFF (2.5-inch) SC Mixed Use Solid State Drives - Recommended</b>                 |            |
| HPE 400GB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD (Recommended)       | 873359-B21 |
| HPE 400GB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD (Recommended)       | 872374-B21 |
| HPE 800GB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD (Recommended)       | 873363-B21 |

## Core Options

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| HPE 800GB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD (Recommended)       | 872376-B21 |
| HPE 1.6TB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD (Recommended)       | 873365-B21 |
| HPE 1.6TB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD (Recommended)       | 872382-B21 |
| HPE 3.2TB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD (Recommended)       | 873367-B21 |
| <b>12G SAS Hot Plug SFF (2.5-inch) SC Mixed Use Solid State Drives - Extended</b>                    |            |
| HPE 3.2TB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD (Extended)          | 872386-B21 |
| <b>12G SAS Hot Plug SFF (3.5-inch) SC Mixed Use Solid State Drives - Extended</b>                    |            |
| HPE 800GB SAS 12G Mixed Use LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD (Extended)         | 872378-B21 |
| <b>6G SATA Hot Plug LFF (3.5-inch) Mixed Use SCC Solid State Drives - Recommended</b>                |            |
| HPE 960GB SATA 6G Mixed Use LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD (Recommended)      | 872350-B21 |
| HPE 1.92TB SATA 6G Mixed Use LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD (Recommended)     | 875480-B21 |
| <b>6G SATA Hot Plug LFF (3.5-inch) Mixed Use SCC Solid State Drives - Extended</b>                   |            |
| HPE 480GB SATA 6G Mixed Use LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD (Extended)         | 872346-B21 |
| HPE 960GB SATA 6G Mixed Use LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD (Extended)         | P03691-B21 |
| HPE 960GB SATA 6G Mixed Use LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD (Extended)         | 877784-B21 |
| HPE 1.92TB SATA 6G Mixed Use LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD (Extended)        | 877790-B21 |
| <b>Mixed Use - 6G SATA - M.2 - Solid State Drives - Recommended</b>                                  |            |
| HPE 240GB SATA 6G Mixed Use M.2 2280 3yr Wty Digitally Signed Firmware SSD (Recommended)             | 875488-B21 |
| <b>Mixed Use - 6G SATA - M.2 - Solid State Drives - Extended</b>                                     |            |
| HPE 480GB SATA 6G Mixed Use M.2 2280 3yr Wty Digitally Signed Firmware SSD (Extended)                | 875490-B21 |
| HPE 960GB SATA 6G Mixed Use M.2 2280 3yr Wty Digitally Signed Firmware SSD (Extended)                | 875492-B21 |
| <b>6G SATA Hot Plug SFF (2.5-inch) SC Read Intensive Solid State Drives - Recommended</b>            |            |
| HPE 240GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD (Recommended)  | 875503-B21 |
| HPE 480GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD (Recommended)  | 875509-B21 |
| HPE 960GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD (Recommended)  | 875511-B21 |
| HPE 1.92TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD (Recommended) | 875513-B21 |
| <b>6G SATA Hot Plug SFF (2.5-inch) SC Read Intensive Solid State Drives - Extended</b>               |            |
| HPE 240GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD (Extended)     | 877740-B21 |
| HPE 240GB SATA 6G RI SFF SC DS SSD (Extended)  | 868814-B21 |

## Core Options

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| HPE 480GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD (Extended)   | 877746-B21 |
| HPE 480GB SATA 6G RI SFF SC DS SSD (Extended)  | 868818-B21 |
| HPE 960GB SATA 6G RI SFF SC DS SSD (Extended)  | 868822-B21 |
| HPE 960GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD (Extended)   | 877752-B21 |
| HPE 1.92TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD (Extended)  | 877758-B21 |
| HPE 1.92TB SATA 6G RI SFF SC DS SSD (Extended)   | 868826-B21 |
| HPE 3.84TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD (Extended)  | 877764-B21 |
| HPE 3.8TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD (Extended)   | 868830-B21 |
| HPE 7.68TB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD (Extended)  | 870144-B21 |
| <b>6G SATA Hot Plug LFF (3.5-inch) SC Read Intensive Solid State Drives - Extended</b>             |            |
| HPE 480GB SATA 6G Read Intensive LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD (Extended)  | 877748-B21 |
| HPE 960GB SATA 6G Read Intensive LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD (Extended)  | 877754-B21 |
| HPE 1.92TB SATA 6G Read Intensive LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD (Extended) | 877760-B21 |
| <b>Read Intensive - 6G SATA - M.2 - Solid State Drives - Recommended</b>                           |            |
| HPE 480GB SATA 6G Read Intensive M.2 2280 3yr Wty Digitally Signed Firmware SSD (Recommended)      | 875498-B21 |
| <b>Read Intensive - 6G SATA - M.2 - Solid State Drives - Extended</b>                              |            |
| HPE 960GB SATA 6G Read Intensive M.2 2280 3yr Wty Digitally Signed Firmware SSD (Extended)         | 875500-B21 |
| <b>M.2 SSD - Recommended</b>   |            |
| HPE Universal SATA HHHL 3yr Wty M.2 Kit (Recommended)  | 878783-B21 |
| HPE DL20 Gen9 M.2 RA and Optical Disk Drive Power Cable Kit (Recommended)                          | 816284-B21 |
| <b>NOTE: 816284-B21 cable kit is a mandatory option required to support M.2 SSDs.</b>              |            |
| <b>NOTE: M.2 drives go in PCIe slot and use B140i SATA controller.</b>                             |            |
| <b>Hard Drive Blank Kits - Recommended</b>   |            |
| HPE Large Form Factor Hard Drive Blank Kit (Recommended)   | 666986-B21 |
| HPE Small Form Factor Hard Drive Blank Kit (Recommended)   | 666987-B21 |

## HPE Networking

### 1 Gigabit Ethernet adapters - Recommended

|  |            |
|--|------------|
| HPE Ethernet 1Gb 4-port 331T Adapter (Recommended)   | 647594-B21 |
| <b>NOTE: This networking card can NOT be selected with P440, H240, and P841. As an alternate solution the 4-port FlexibleLOM Adapter 629135-B21 can be chosen with P440, H240 or P841.</b> |            |
| HPE Ethernet 1Gb 4-port 366T Adapter (Recommended)   | 811546-B21 |
| <b>NOTE: This networking card can NOT be selected with P440, H240, and P841. As an alternate solution the 4-port FlexibleLOM Adapter 665240-B21 can be chosen with P440, H240 or P841.</b> |            |
| HPE PS1810-24G Switch  | J9834A     |

## Core Options

### 1 Gigabit Ethernet adapters - Extended

HPE Ethernet 1Gb 2-port 332T Adapter (Extended) 615732-B21

HPE Ethernet 1Gb 2-port 361T Adapter (Extended) 652497-B21

### 10 Gigabit Ethernet adapters - Recommended

HPE Ethernet 10Gb 2-port 530SFP Adapter (Recommended) 652503-B21

HPE Ethernet 10Gb 2-port 530T Adapter (Recommended) 656596-B21

### 10 Gigabit Ethernet adapters - Extended

HPE Ethernet 10Gb 2-port 546SFP+ Adapter (Extended) 779793-B21

HPE Ethernet 10Gb 2-port 560SFP+ Adapter (Extended) 665249-B21

HPE Ethernet 10Gb 2-port 561T Adapter (Extended) 716591-B21

**NOTE:** A minimum of two Gigabytes (2 GB) of server memory is required per each adapter.

**NOTE:** Direct Attach Cable (DAC) for copper environments or fiber transceivers and cables for fiber-optic environments must be purchased separately.

### FlexibleLOM Adapters - Recommended

HPE Ethernet 1Gb 4-port 331FLR Adapter (Recommended) 629135-B22

HPE Ethernet 1Gb 4-port 366FLR Adapter (Recommended) 665240-B21

HPE FlexFabric 10Gb 2-port 533FLR-T Adapter (Recommended) 700759-B21

HPE FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter (Recommended) 700751-B21

HPE FlexFabric 10Gb 4-port 536FLR-T Adapter (Recommended) 764302-B21

### FlexibleLOM Adapters - Extended

HPE Ethernet 10Gb 2-port 546FLR-SFP+ Adapter (Extended) 779799-B21

HPE FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter (Extended) 727060-B21

HPE Ethernet 10Gb 2-port 560FLR-SFP+ Adapter (Extended) 665243-B21

HPE Ethernet 10Gb 2-port 561FLR-T Adapter (Extended) 700699-B21

Please see the related NIC QuickSpecs for Technical Specifications and additional information: <http://www.hpe.com/servers/ProLiantNICs>.

## HPE I/O Expansion Options

### Recommended

HPE DL20 Gen9 Flexible LOM Riser Kit (Recommended) 811259-B21

HPE DL20 Gen9 GPU Enablement Kit (Recommended) 811271-B21

**NOTE:** All models must have one riser kit installed.

## HPE Power Supplies

### Power Supplies - Redundant

HPE 900W Standard AC 240VDC Power Input Module (Extended) 775595-B21

**NOTE:** This part number can only be bought standalone and is for field integration only.

**NOTE:** Supports Gold-level efficiency (92%) with a standard C14 inlet connector. No support for HPE Power Discovery Services. Only compatible with select HPE ProLiant Gen9 Essential servers.

**NOTE:** DL20 Gen9 Backplane cable kit is a mandatory option with the backplane for DL20 Gen9.

**NOTE:** Redundant AC Power Input Modules do not share power. Redundant AC Power Input Module #1 is the primary AC Power Input Module. Redundant AC Power Input Module #2 is the backup AC Power Input Module.

HPE DL20 Gen9 Redundant Power Supply Backplane Cable Kit (Recommended) 820306-B21

## Core Options

**NOTE:** This RPS backplane Cable kit is mandatory to be chosen along with 900W backplane.

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## Additional Options

### Recommended

Offering the best combination of performance, value and availability, Recommended Options have been selected by HPE experts to provide the right technology for a range of workloads and market segments. Fully integrated into the ProLiant management and security experience, Recommended Options provide the best fit with timely availability.

### Extended

Extended Options provide an extended catalog of products tailored for customers in specific markets or with specific workloads, requiring the utmost in performance or value. Fully integrated into the ProLiant management and security experience, Extended Options represent great value and performance but typically have a longer lead-time.

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

### HPE Insight Software

#### HPE Insight Control

HPE Insight Control including 1yr 24x7 Technical Support and Updates 1-server LTU C6N27A

**NOTE:** Electronic and Flexible-Quantity licenses can be used to purchase multiple licenses with a single activation key.

**NOTE:** Customer will receive a license entitlement certificate. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HPE Software Technical Support and Update Service.

**NOTE:** Licenses ship without media. The HPE Insight Control Media Kit can be ordered separately, or can be downloaded at: <https://www.hpe.com/info/insightmanagement>

**NOTE:** For additional license options please see the [HPE Insight Control QuickSpecs](#)

### Embedded Management

#### HPE iLO Advanced

HPE iLO Advanced 1-server License with 1yr Support on iLO Licensed Features 512485-B21

HPE iLO Advanced Flexible Quantity License with 1yr Support on iLO Licensed Features 512486-B21

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

HPE iLO Advanced 1-server License with 3yr Support on iLO Licensed Features BD505A

HPE iLO Advanced Flexible Quantity License with 3yr Support on iLO Licensed Features BD506A

HPE iLO Advanced AKA Tracking License with 3yr Support on iLO Licensed Features BD507A

HPE iLO Advanced Electronic License with 1yr Support on iLO Licensed Features E6U59ABE

HPE iLO Advanced Electronic License with 3yr Support on iLO Licensed Features E6U64ABE

#### HPE iLO Essentials

HPE iLO Essentials License with 3yr Support on iLO Licensed Features BD774A

HPE iLO Essentials License with 1yr Support on iLO Licensed Features BD775A

HPE iLO Essentials Electronic License with 3yr Support on iLO Licensed Features E6U61ABE

HPE iLO Essentials Electronic License with 1yr Support on iLO Licensed Features E6U62ABE

### HPE Converged Infrastructure Management Software

#### HPE OneView Advanced (without HPE iLO Advanced)

HPE OneView w/o iLO including 3yr 24x7 Support 1-server LTU P8B24A

## Additional Options

|   |   |            |
|---|---|------------|
| <b>High Performance Clusters</b>  | <b>HPE Cluster Management Utility</b>   |            |
|   | HPE Insight Cluster Management Utility 1yr 24x7 Flexible LTU  | QL803B     |
|   | HPE Insight Cluster Management Utility 3yr 24x7 Flexible LTU  | BD476A     |
|   | HPE Insight Cluster Management Utility Media  | BD477A     |
|   | <b>NOTE: For additional license kits please see the <a href="#">HPE Insight Cluster Management Utility QuickSpecs</a></b>   |            |
| <hr/>   |   |            |
| <b>HPE Security</b>   | <b>Recommended</b>  |            |
|   | HPE Trusted Platform Module 2.0 Kit (Recommended)   | 745823-B21 |
|   | HPE Trusted Platform Module Option (Recommended)  | 488069-B21 |
|   | HPE 1U Security Bezel Kit (Recommended)   | 664918-B21 |
|   | <b>NOTE: Quick Release Ear option kit (811254-B21) is mandatory for installing security bezel.</b>  |            |
| <hr/>   |   |            |
| <b>HPE Storage Controllers</b>  | <b>SAS Controllers</b>  |            |
|   | <b>HPE Smart Array Controllers - Recommended</b>  |            |
|   | HPE Smart Array P440/2GB FBWC 12Gb 1-port Int SAS Controller (Recommended)  | 820834-B21 |
|   | <b>NOTE: The above SKUs include 96W Smart Storage Battery.</b>  |            |
|   | HPE Smart Array P440/4GB FBWC 12Gb 1-port Int SAS Controller (Recommended)  | 726821-B21 |
|   | <b>NOTE: The option requires a 96W Smart Storage Battery p/n 727258-B21.</b>  |            |
|   | <b>HPE Smart Array Controllers - Extended</b>   |            |
|   | HPE Smart Array P441/4GB FBWC 12Gb 2-ports Ext SAS Controller (Extended)  | 726825-B21 |
|   | HPE Smart Array P841/4GB FBWC 12Gb 4-ports Ext SAS Controller (Extended)  | 726903-B21 |
|   | <b>NOTE: P440 needs to be populated in slot 2 (Full Height).</b>  |            |
|   | <b>HPE Smart Host Bus Adapters - Recommended</b>  |            |
|   | HPE H241 12Gb 2-ports Ext Smart Host Bus Adapter (Recommended)  | 726911-B21 |
|   | <b>HPE Smart Host Bus Adapters - Extended</b>   |            |
|   | HPE H240 12Gb 2-ports Int Smart Host Bus Adapter (Extended)   | 726907-B21 |
|   | <b>HPE Cable Options - Recommended</b>  |            |
|   | HPE DL20 Gen9 2LFF Mini SAS P440 Cable Kit (Recommended)  | 811279-B21 |
|   | HPE DL20 Gen9 4SFF Mini SAS P440 Cable Kit (Recommended)  | 811282-B21 |
|   | <b>NOTE: One of the above cables is required to be selected depending on the combination of server and storage controller. Cable option kit descriptions include the right server and storage controller names.</b> |            |
|   | <b>NOTE: All server models include min-SAS cables required to connect drives to embedded B140i SATA controller or HBA240 controller (HBA240 is optional).</b>   |            |
| <b>Optional Software</b>  |   |            |
| 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  |            |
| HPE Smart Array SR Secure Encryption (Data at Rest Encryption/per Server Entitlement) E-LTU | Q2F26AAE  |            |
| <b>Optional Upgrades - Recommended</b>  |   |            |
| HPE 96W Smart Storage Battery (up to 20 Devices) with 145mm Cable Kit (Recommended)         | P01366-B21  |            |

## Additional Options

### Battery Holder - Recommended

HPE DL20 Gen9 Smart Storage Battery Holder (Recommended)

822451-B21

**NOTE:** This holder is mandatorily required with Smart Storage Battery.

### HPE Tape Backup

**NOTE:** For the complete range of tape drives, autoloaders, libraries and media see: <http://www.hpe.com/storage/storeever>. For hardware and software compatibility of Hewlett Packard Enterprise tape backup products <http://www.hpe.com/storage/BURACompatibility>.  
**NOTE:** For Internal drives to be connected to DL servers please make sure that you order rack mount kit as well.

#### Tape Drives

##### SAS Rack-Mount Tape Solutions

|  |        |
|--|--------|
| HPE StoreEver LTO-8 Ultrium 30750 External Tape Drive                | BC023A |
| HPE StoreEver MSL LTO-8 Ultrium 30750 FC Drive Upgrade Kit           | Q6Q67A |
| HPE StoreEver MSL LTO-8 Ultrium 30750 SAS Drive Upgrade Kit          | Q6Q68A |
| HPE StoreEver LTO-7 Ultrium 15000 External Tape Drive                | BB874A |
| HPE StoreEver MSL LTO-7 Ultrium 15000 SAS Drive Upgrade Kit          | N7P37A |
| HPE StoreEver MSL LTO-7 Ultrium 15000 FC Drive Upgrade Kit           | N7P36A |
| HPE StoreEver MSL LTO-6 Ultrium 6250 SAS Drive Upgrade Kit           | COH27A |
| HPE StoreEver MSL LTO-6 Ultrium 6250 Fibre Channel Drive Upgrade Kit | COH28A |
| HPE StoreEver MSL LTO-5 Ultrium 3000 SAS Drive Upgrade Kit           | BL540B |

##### HPE DAT Autoloader

|  |        |
|--|--------|
| HPE StoreEver 1/8 G2 LTO-8 Ultrium 30750 FC Tape Autoloader  | Q6Q65A |
| HPE StoreEver 1/8 G2 LTO-8 Ultrium 30750 SAS Tape Autoloader | Q6Q66A |
| HPE StoreEver 1/8 G2 LTO-7 Ultrium 15000 SAS Tape Autoloader | N7P35A |
| HPE StoreEver 1/8 G2 LTO-7 Ultrium 15000 FC Tape Autoloader  | N7P34A |
| HPE StoreEver 1/8 G2 LTO-5 Ultrium 3000 SAS Tape Autoloader  | BL536B |

##### MSL3040

|   |        |
|---|--------|
| HPE StoreEver MSL3040 Scalable Library Base Module      | Q6Q62A |
| HPE StoreEver MSL3040 Scalable Library Expansion Module | Q6Q63A |

### HPE Disk Backup

#### HPE RDX Removable Disk Backup System

|  |        |
|--|--------|
| HPE RDX 4TB USB 3.0 External Disk Backup System  | Q2R33A |
| HPE RDX+ 3TB USB 3.0 External Disk Backup System | P9L72A |
| HPE RDX 3TB USB 3.0 Internal Disk Backup System  | P9L71A |
| HPE RDX 2TB USB3.0 External Disk Backup System   | E7X53B |
| HPE RDX+ 1TB External Backup System              | B7B69B |
| HPE RDX+ 500GB External Backup System            | B7B66B |
| HPE RDX+ External Docking System                 | C8S07B |

**NOTE:** For the complete range of RDX drives and media see: <https://www.hpe.com/us/en/product-catalog/storage/disk-based-backup-systems.html>. For hardware and software compatibility of Hewlett Packard Enterprise disk backup products see: <http://www.hpe.com/storage/spock>.

### HPE Storage Options

#### Emulex Fibre Channel HBAs - Recommended

HPE 82E 8Gb 2-port PCIe Fibre Channel Host Bus Adapter (Recommended)

AJ763B

## Additional Options

|   |  |            |
|---|--|------------|
|   | HPE StoreFabric SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter (Recommended)  | C8R39A     |
|   | <b>QLogic Fibre Channel HBAs - Recommended</b>   |            |
|   | HPE 82Q 8Gb 2-port PCIe Fibre Channel Host Bus Adapter (Recommended)   | AJ764A     |
|   | <b>QLogic Fibre Channel HBAs - Extended</b>  |            |
|   | HPE StoreFabric SN1000Q 16GB 2-port PCIe Fibre Channel Host Bus Adapter (Extended)   | QW972A     |
| <b>HPE Power Distribution Units (PDUs)</b>                  | <b>NOTE: Please see the <a href="#">HPE Basic Power Distribution Units (PDU) QuickSpecs</a> for information on additional options and product specifications.</b>      |            |
|   | <b>NOTE: Please see the <a href="#">HPE Intelligent Power Distribution Unit (PDU) QuickSpecs</a> for information on additional options and product specifications.</b> |            |
| <b>HPE Rack Mount Consoles, KVM Switches, and Keyboards</b> | <b>NOTE: To learn more, please visit the <a href="#">HPE KVM Switches web page</a></b>   |            |
|   | <b>HPE USB Keyboard and Mouse - Recommended</b>  |            |
|   | HPE USB US Keyboard/Mouse Kit (Recommended)  | 631341-B21 |
|   | <b>Rail Kits - Recommended</b>   |            |
|   | HPE 1U Short Friction Rail Kit (Recommended)   | 775612-B21 |
| <b>HPE Uninterruptible Power System (UPS)</b>               | <b>NOTE: To learn more, please visit the <a href="#">HPE Uninterruptible Power Systems (UPS) web page</a>.</b>   |            |
| <b>HPE USB and SD Options</b>                               | <b>HPE Enterprise Mainstream Flash Media Kits for Memory Cards - Recommended</b>   |            |
|   | HPE 32GB microSD Flash Memory Card (Recommended)   | 700139-B21 |
|   | HPE 8GB microSD Flash Memory Card (Recommended)  | 726116-B21 |
|   | HPE 8GB microSD Flash USB Drive (Recommended)  | 737953-B21 |
|   | HPE 8GB Dual microSD Flash USB Drive (Recommended)   | 741279-B21 |
| <b>HPE Support Services</b>                                 | <b>Installation &amp; Start-up Services</b>  |            |
|   | HPE Installation ML/DL Series 10 Service   | U7WZ5E     |
|   | HPE Startup ML/DL Series 10 Service  | U7WZ7E     |
|   | <b>Foundation Care</b>   |            |
|   | HPE 3 year Foundation Care Next business day DL20 Gen9 Service   | H1AH3E     |
|   | HPE 3 year Foundation Care Next business day with DMR DL20 Gen9 Service  | H1AH4E     |
|   | HPE 3 year Foundation Care 24x7 DL20 Gen9 Service  | H1AH9E     |
|   | HPE 3 year Foundation Care 24x7 with DMR DL20 Gen9 Service   | H1AJ0E     |
|   | HPE 3 year Foundation Care 24x7 with CDMR DL20 Gen9 Service  | H1AP0E     |
|   | HPE 3 year Foundation Care Next business day with CDMR DL20 Gen9 Service   | H1AN7E     |
|   | <b>Proactive Care</b>  |            |
|   | HPE 3 year Proactive Care 24x7 DL20 Gen9 Service   | H1AJ1E     |
|   | HPE 3 year Proactive Care 24x7 with DMR DL20 Gen9 Service  | H1AJ2E     |
|   | HPE 3 year Proactive Care 24x7 with CDMR DL20 Gen9 Service   | H1AP1E     |

## 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 2133 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 Gen9 Server.

**General Memory Population Rules and Guidelines:**

- . Only UDIMMs are supported on DL20 Gen9. 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 2133MHz.

### Intel Gen9 Supported Memory Bandwidth for HPE ProLiant Gen9 Intel® Xeon® E3-1200v5 Series Processor Family

| Memory Bandwidth and Capacity   |                                    |                  |                  |                  |
|---------------------------------|------------------------------------|------------------|------------------|------------------|
| [DIMM Type]                     | Unbuffered with ECC DIMMs (UDIMMs) |                  |                  |                  |
| <b>HPE SKU P/N</b>              | 805667-B21                         | 819880-B21       | 805669-B21       | 805671-B21       |
| <b>DIMM Rank</b>                | Single Rank                        | Single Rank      | Dual Rank        | Dual Rank        |
| <b>DIMM Capacity</b>            | 4GB                                | 8GB              | 8GB              | 16GB             |
| <b>Voltage</b>                  | Std Voltage 1.2V                   | Std Voltage 1.2V | Std Voltage 1.2V | Std Voltage 1.2V |
| <b>DIMM Native Speed (MT/s)</b> | 2133                               | 2133             | 2133             | 2133             |
| SLOTS THAT CAN BE POPULATED     |                                    |                  |                  |                  |
| 4 slot servers                  | 4                                  | 4                | 4                | 4                |
| MAXIMUM CAPACITY (GB)           |                                    |                  |                  |                  |
|                                 | 16                                 | 32               | 32               | 64               |
| POPULATED DIMM SPEED (MT/s)     |                                    |                  |                  |                  |
| <b>1 DIMM Per Channel</b>       | 2133                               | 2133             | 2133             | 2133             |
| <b>2 DIMM Per Channel</b>       | 2133                               | 2133             | 2133             | 2133             |
| <b>3 DIMM Per Channel</b>       |                                    | n/a              |                  |                  |

## Memory

### Intel Gen9 Supported Memory Bandwidth for HPE ProLiant Gen9 Intel® Xeon® E3-1200v6 Series Processor Family

| [DIMM Type]                        | Unbuffered with ECC DIMMs (UDIMMs) |                  |
|------------------------------------|------------------------------------|------------------|
| HPE SKU P/N                        | 862974-B21                         | 862976-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)           | 2400                               | 2400             |
| <b>SLOTS THAT CAN BE POPULATED</b> |                                    |                  |
| 4 slot servers                     | 4                                  | 4                |
| <b>MAXIMUM CAPACITY (GB)</b>       |                                    |                  |
|                                    | 32                                 | 64               |
| <b>POPULATED DIMM SPEED (MT/s)</b> |                                    |                  |
| 1 DIMM Per Channel                 | 2400                               | 2400             |
| 2 DIMM Per Channel                 | 2400                               | 2400             |
| 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                |
| CPU 1  |        |                  |
|        | Slot # | Population order |
| Chnl 1 | 3      | A                |
|        | 4      | C                |

## Memory

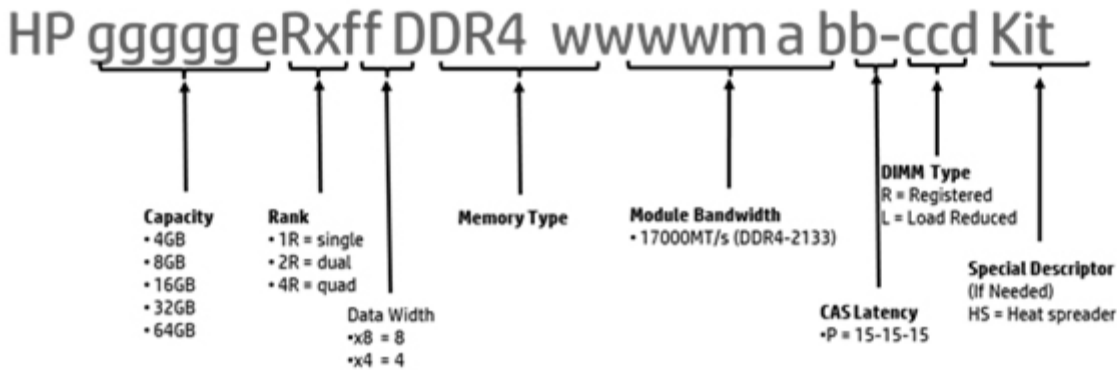
| Memory Speed by Processor Model | Processor Models   | Supported Memory Speeds |
|---------------------------------|--|-------------------------|
|                                 | E3-1220v5, E3-1225v5, E3-1230v5, E3-1240v5, E3-1270v5, E3-1280v5, E3-1260Lv5, E3-1240Lv5, i3-6100, i3-6300, G4500, G4400 | 2133MT/s                |
|                                 | E3-1220v6, E3-1225v6, E3-1230v6, E3-1240v6, E3-1270v6, E3-1280v6, i3-7100, i3-7300, G4560, G4600                         | 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 |
|--|-----------------------|-----------------|-------------------------------------|---|
|  | G4400                 | 4GB (1x4GB)     | 52GB (3x16GB, 1x4GB)                | 64GB (4x16GB)                                 |
|  | E3-1240v5             | 8GB (1x8GB)     | 56GB (3x16GB, 1x8GB)                | 64GB (4x16GB)                                 |
|  | E3-1220v5             | 8GB (1x8GB)     | 56GB (3x16GB, 1x8GB)                | 64GB (4x16GB)                                 |
|  | G4560                 | 8GB (1x8GB)     | 56GB (3x16GB, 1x8GB)                | 64GB (4x16GB)                                 |
|  | E3-1220v6             | 8GB (1x8GB)     | 56GB (3x16GB, 1x8GB)                | 64GB (4x16GB)                                 |
|  | E3-1240v6             | 16GB (1x16GB)   | 64GB (4x16GB)                       | 64GB (4x16GB)                                 |

### DDR4 memory options part number decoder

**NOTE:** Capacity references are rounded to the common gigabyte (GB) values.

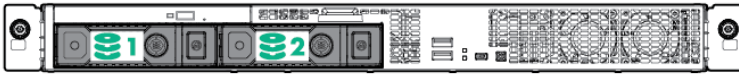
- 4GB = 4,096MB
- 8GB = 8,192MB
- 16GB = 16,384MB



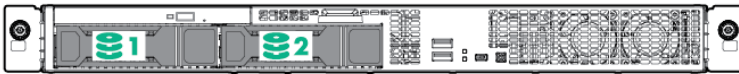
## Storage



1-4 4 x SFF SATA/SAS/SSD Hot Pluggable Hard Drive Bays



1-2 2 x LFF SATA/SAS/SSD Hot Pluggable and Non hot Pluggable Hard Drives Bays



1-2 2 x LFF SATA Non hot Pluggable Hard Drives Bays

## Technical Specifications

|                                       |   |   |
|---------------------------------------|---|---|
| <b>System Unit</b>                    | <b>Dimensions</b><br>(H x W x D)  | 4 SFF - 1.70 x 17.11 x 15.05 inches (4.32 x 43.46 x 38.22 cm)<br>2 LFF - 1.70 x 17.11 x 15.05 inches (4.32 x 43.46 x 38.22 cm)  |
|                                       | <b>Weight</b><br>(approximate)  | Non hot Plug 2 LFF fully loaded<br>(all hard drives, power supplies, and processors installed) 17.37lb (7.88kg)<br>Hot Plug 2LFF fully loaded<br>(one hard drive, power supply, and processor installed) 17.41lb (7.9kg)  |
| <b>290W Non-hot Plug Power Supply</b> |   |   |
| <b>Input Requirements</b>             | Range Input Voltage   | 100 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)  |
| <b>BTU Rating</b>                     | Maximum   | 1130 BTU per hr (at 115 VAC)<br>1126 BTU per hr (at 230 VAC)  |
| <b>Power Specifications</b>           | To review typical system power ratings use the Power Advisor which is available via the online tool located at: <a href="http://www.hpe.com/info/hppoweradvisor">http://www.hpe.com/info/hppoweradvisor</a> - Click on the system of interest. Example: DL20 Gen9- Follow the instructions of the next screens. |   |
| <b>Power Supply Output</b>            | Rated Steady-State Power  | 290 W Max   |
|                                       | Maximum Peak Power  | 366 W within 10 seconds   |
| <b>900W Redundant Power Supply</b>    |   |   |
| <b>Input Requirements</b>             | Rated Input Voltage   | 100 to 127 VAC<br>200 to 240VAC   |
|                                       | Rated Input Frequency   | 50 to 60 Hz   |
|                                       | Rated Input Current   | 6.3 A at 100 V AC<br>4.9 A at 200 V AC  |
|                                       | Maximum rated input power   | 619 W at 100 VAC<br>976 W at 200 VAC  |
|                                       | BTUs per hour non redundant   | 2112 at 100 VAC<br>3329 at 200 VAC  |
|                                       | <b>Power Specifications</b>   | To review typical system power ratings use the Power Advisor which is available via the online tool located at: <a href="http://www.hpe.com/info/hppoweradvisor">http://www.hpe.com/info/hppoweradvisor</a> - Click on the system of interest. Example: DL20 Gen9- Follow the instructions of the next screens. |
| <b>Power Supply Output</b>            | Rated Steady-State Power  | 550 W at 100 VAC to 127 VAC input<br>900 W at 200 VAC to 240 VAC input  |
|                                       | Maximum Peak Power  | 550 W at 100 VAC to 127 VAC input<br>900 W at 200 VAC to 240 VAC input  |
| <b>System Inlet Temperature</b>       | 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   |

## Technical Specifications

|                          |  |   |
|--------------------------|--|---|
|                          |  | change is 20°C/hr (36°F/hr). The upper limit and rate of change may be limited by the type and number of options installed. System performance during standard operating support may be reduced if operating with a fan fault or above 30°C (86°F).   |
|                          | Extended Ambient Operating Support   | For approved hardware configurations, the supported system inlet range is extended to be: 5° to 10°C (41° to 50°F) and 35° to 40°C (95° to 104°F) at sea level with an altitude derating of 1.0°C per every 175 m (1.8°F per every 574 ft) above 900 m (2953 ft) to a maximum of 3050 m (10,000 ft). The approved hardware configurations for this system are listed at the URL:<br><b><a href="http://www.hpe.com/servers/ashrae">http://www.hpe.com/servers/ashrae</a></b><br>System performance may be reduced if operating in the extended ambient operating range or with a fan fault.<br><b>NOTE: Supports A3 extended ambient.</b> |
| <b>Relative Humidity</b> | Non-operating  | -30°C to 65°C (-22°F to 149°F)  |
|                          | Operating  | Minimum to be the higher (more moisture) of -12°C (10.4°F) dew point or 8% relative humidity. Maximum to be the lower (less moisture) of 24°C (75.2°F) dew point or 90% relative humidity.  |
| (non-condensing)         | Non-operating  | 5% to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature.  |
| <b>Altitude</b>          | Operating  | 3050 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min).   |
|                          | Non-operating  | 9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min).  |
| <b>Acoustic Noise</b>    | 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). |   |
|                          | <b>Idle</b>  |   |
|                          | LWAd   | Entry 3.7 B<br>Base 3.8 B<br>Performance 3.4B   |
|                          | LpAm   | Entry 20.0 dBA<br>Base 20.0 dBA<br>Performance 18.0 dBA   |
|                          | <b>Operating</b>   |   |
|                          | LWAd   | Entry 3.7 B<br>Base 4.7 B<br>Performance 5.6 B  |

## Technical Specifications

|   |   |  |  |
|---|---|--|--|
|   |   | LpAm   | Entry 20.0 dBA<br>Base 30.0 dBA<br>Performance 34.0 dBA  |
| <b>Emissions Classification (EMC)</b>           | FCC Rating                              |  | Class A  |
|   | Normative Standards                     |  | CISPR 22; EN55022; EN55024; FCC CFR 47, Pt 15; ICES-003; CNS13438; GB9254; K22;K24; EN 61000-3-2; EN 61000-3-3; EN 60950-1; IEC 60950-1  |
|   |   |  | <b>NOTE:</b> Product conformance to cited product specifications is based on sample (type) testing, evaluation, or assessment. This product or family of products is eligible to bear the appropriate compliance logos and statements. |
|   |   |  | <b>NOTE:</b> The Listed sound levels apply to standard shipping configurations. Additional options may result in increased sound levels.   |
|   |   |  | <b>NOTE:</b> The above power supply also supports 240VDC.  |
| <b>HPE Dynamic Smart Array B140i Controller</b> | <b>Number of PCI links</b>              | Four   |  |
|   | <b>PCI link rate</b>                    | 4Gb/s  |  |
|   | <b>Storage protocol support</b>         | SATA   |  |
|   | <b>SAS/SATA peak data transfer rate</b> | 6Gb/s  |  |
|   | <b>Number of SAS/SATA links</b>         | 10 links   |  |
|   | <b>SAS/SATA connectivity</b>            | 2x4 connectors; 2x1 connectors   |  |
|   | <b>Expander support</b>                 | No   |  |
|   | <b>Drives supported (max)</b>           | Up to 10 Internal Drives   |  |
|   | <b>RAID support</b>                     | 0, 1, 10, 5 SATA   |  |
|   | <b>Software management</b>              | HPE SSA, SMH, SIM  |  |
|   | <b>Warranty</b>                         | Server warranty  |  |
|   | <b>HPE Secure Encryption license</b>    | Not Supported  |  |
|   | <b>HPE SmartCache License</b>           | Not Supported  |  |
|   | <b>HPE Smart Storage Administrator</b>  | Supported  |  |
| <b>HPE Ethernet 1Gb 2-port 332i Adapter</b>     | <b>Network Interface Compatibility</b>  | 10Base-T/100Base-TX/1000Base-TX<br>IEEE 802.3 10Base-T<br>IEEE 802.3ab 1000Base-T<br>IEEE 802.3u 100Base-TX<br>Energy Efficient Ethernet (EEE) compliant with IEEE Std 802.3az (default is disabled) |  |
|   | <b>Data Transfer Method Controller</b>  | PCI Express, two lanes (x2)<br>BCM5720   |  |
|   | <b>Network Transfer Rate</b>            | 10Base-T (Half-Duplex)<br>10Base-T (Full-Duplex)<br>100Base-TX (Half-Duplex)<br>100Base-TX (Full-Duplex)   | 10 Mb/s per port, 20 Mb/s Combined<br>20 Mb/s per port, 40 Mb/s Combined<br>100 Mb/s per port, 200 Mb/s Combined<br>200 Mb/s per port, 400 Mb/s Combined   |

## Technical Specifications

|                      |                           |  |
|----------------------|---------------------------|--|
|                      | 1000Base-TX (Half-Duplex) | 1000 Mb/s per port, 2000 Mb/s Combined         |
|                      | 1000Base-TX (Full-Duplex) | 2000 Mb/s per port, 4000 Mb/s Combined         |
| <b>Connector</b>     | Four RJ-45                |  |
| <b>Cable Support</b> | 10 Base-T                 | Categories 3, 4 or 5 UTP; up to 328 ft (100 m) |
|                      | 10/100/1000 Base-TX       | Category 5 or higher UTP; up to 328 ft (100 m) |

### 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.

<http://www.hpe.com/recycle>

The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard Enterprise web site. These instructions may be used by recyclers and other WEEE treatment facilities as well as Hewlett Packard Enterprise OEM customers who integrate and re-sell Hewlett Packard Enterprise equipment.

<http://www.hpe.com/recycle>

## Summary of Changes

| Date        | Version History | Action  | Description of Change   |
|-------------|-----------------|---------|---|
| 6-Aug-2018  | Version 30      | Changed | Core Options and Additional Options were updated.   |
| 2-Jul-2018  | Version 29      | Changed | The Smart Buy models section was updated for the NA version.  |
| 7-May-2018  | Version 28      | Added   | Added new SMB SKU Offering.   |
|             |                 | Removed | Obsolete SKUs were removed from the QuickSpecs.   |
| 2-Apr-2018  | Version 27      | Changed | SKU description were updated.   |
|             |                 | Removed | Obsolete SKUs were removed from the QuickSpecs.   |
| 4-Dec-2017  | Version 26      | Added   | Added new HPE 12TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty Helium 512e Digitally Signed Firmware HDD.   |
| 16-Oct-2017 | Version 25      | Changed | Smart Buy models section was revised (NA version only).   |
| 25-Sep-2017 | Version 24      | Added   | New SSD offering was added to the HPE Drives section.<br>Added new Storage options.   |
|             |                 | Changed | Core Options and Additional Options were revised.   |
|             |                 | Removed | Obsolete SKUs were removed from the QuickSpecs.   |
| 4-Sep-2017  | Version 23      | Changed | Product descriptions were updated throughout the QuickSpecs.  |
| 7-Aug-2017  | Version 22      | Added   | Added new Solid State Drives to the HPE Drives section.   |
| 11-Jul-2017 | Version 21      | Changed | Operating Systems and Virtualization Software Support for ProLiant Servers section was revised.   |
| 5-Jun-2017  | Version 20      | Added   | Added new Solid State Drives to the HPE Drives section.   |
| 8-May-2017  | Version 19      | Added   | New Intel Pentium Core i3 and E3-1200v6 processors were added.<br>Added new 2400 MT/s UDIMMs.<br>Added support for ClearOS.<br>Added new Pre-Configured Models.   |
|             |                 | Changed | Processor, Memory, Operating Systems and Virtualization Software Support for ProLiant Servers, and Graphics under Standard Features were revised.<br>HPE Processors, HPE Memory, HPE Drives, HPE Computation and Graphics Accelerators, HPE Data Center Racks, and Memory were revised. |
|             |                 | Removed | Obsolete SKUs were removed from the QuickSpecs.   |
| 3-Apr-2017  | Version 18      | Changed | HPE Processors section was revised.   |
| 27-Mar-2017 | Version 17      | Added   | Added new Hard Drives.  |
| 17-Feb-2017 | Version 16      | Changed | HPE Memory section under Core Options was revised.  |
| 13-Feb-2017 | Version 15      | Added   | Added new HDD and SSD offering to the HPE Drives section.   |
| 09-Dec-2016 | Version 14      | Changed | Smart Buy models section in the NA version was revised.   |
| 28-Nov-2016 | Version 13      | Added   | Added new Hard Drives offering.<br>Added new M2000 GPU option.  |
|             |                 | Changed | Maximum Internal Storage, Graphics, HPE Computation and Graphics Accelerators, and HPE Disk Backup were revised.  |
|             |                 | Removed | Obsolete SKUs were removed from the QuickSpecs.   |
| 28-Oct-2016 | Version 12      | Removed | Obsolete Hard Drives were removed from the QuickSpecs.  |
| 26-Sep-2016 | Version 11      | Added   | Added new LFF 10TB SATA drives offering.  |
|             |                 | Changed | Maximum Internal Storage and Pre-configured Models were revised.  |
|             |                 | Removed | Obsolete SKUs were removed from the QuickSpecs.   |
| 15-Aug-2016 | Version 10      | Changed | HPE Networking section was revised.   |
|             |                 | Removed | Obsolete SKUs were removed from the QuickSpecs.   |
| 10-Jun-2016 | Version 9       | Removed | HPE Dual 32GB microSD Enterprise Midline USB Kit was removed from the QuickSpecs.   |
| 6-Jun-2016  | Version 8       | Added   | Added new HDD offering to the HPE Drives section.   |

## Summary of Changes

|             |           |         |   |
|-------------|-----------|---------|---|
|             |           | Changed | HPE Networking, HPE Converged Infrastructure Management Software, and HPE Disk Backup were revised.   |
| 6-May-2016  | Version 7 | Changed | Energy Star certification in Pre-Configured Models section was revised.   |
| 8-Apr-2016  | Version 6 | Changed | HPE Processors section was revised.   |
| 31-Mar-2016 | Version 5 | Added   | Added new HPE Non-hot Plug Entry drives and Hot plug standard drives.<br>Added new 8Gb and 16Gb Fiber Channel HBA support.<br>Added new TPM 2.0 security module.          |
|             |           | Changed | Maximum Internal Storage, Graphics, Embedded Management, Security, Service and Support, Pre-configured Models, Power Supplies, and Storage Options sections were revised. |
|             |           | Removed | Obsolete SKUs were removed from the QuickSpecs.   |
| 16-Feb-2016 | Version 4 | Added   | New HDD offering was added to HPE Drives.   |
|             |           | Changed | HPE Data Center Racks, HPE Power Distribution Units (PDUs), and HPE Uninterruptible Power Systems (UPS) were revised.   |
| 12-Jan-2016 | Version 3 | Changed | Upgradeability and HPE Power Supplies were revised.   |
| 17-Dec-2015 | Version 2 | Added   | Smart Buy models were added to the NA version.  |
|             |           | Changed | Power Supply, Upgradeability, and Technical Specifications were revised.  |
| 1-Dec-2015  | Version 1 | New     | New QuickSpecs.   |



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

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