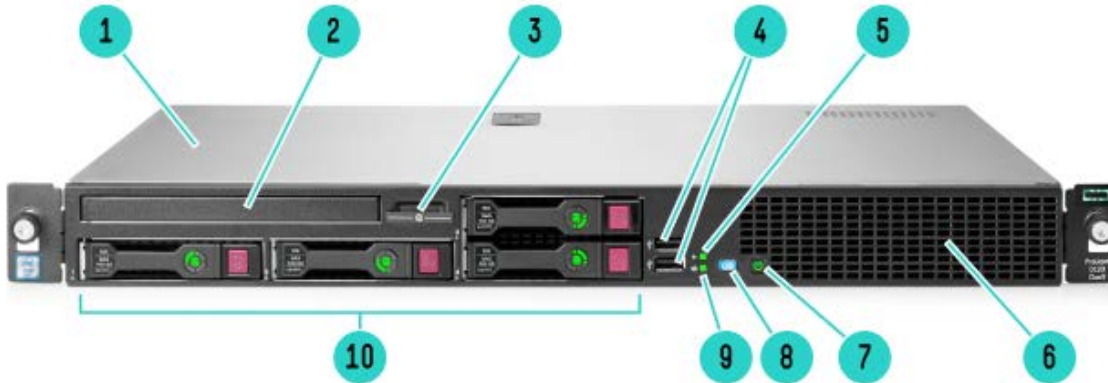


Overview

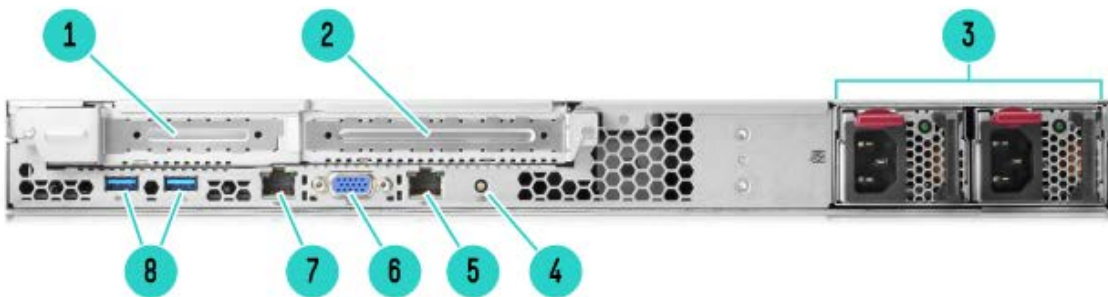
HPE ProLiant DL20 Generation9 (Gen9)

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

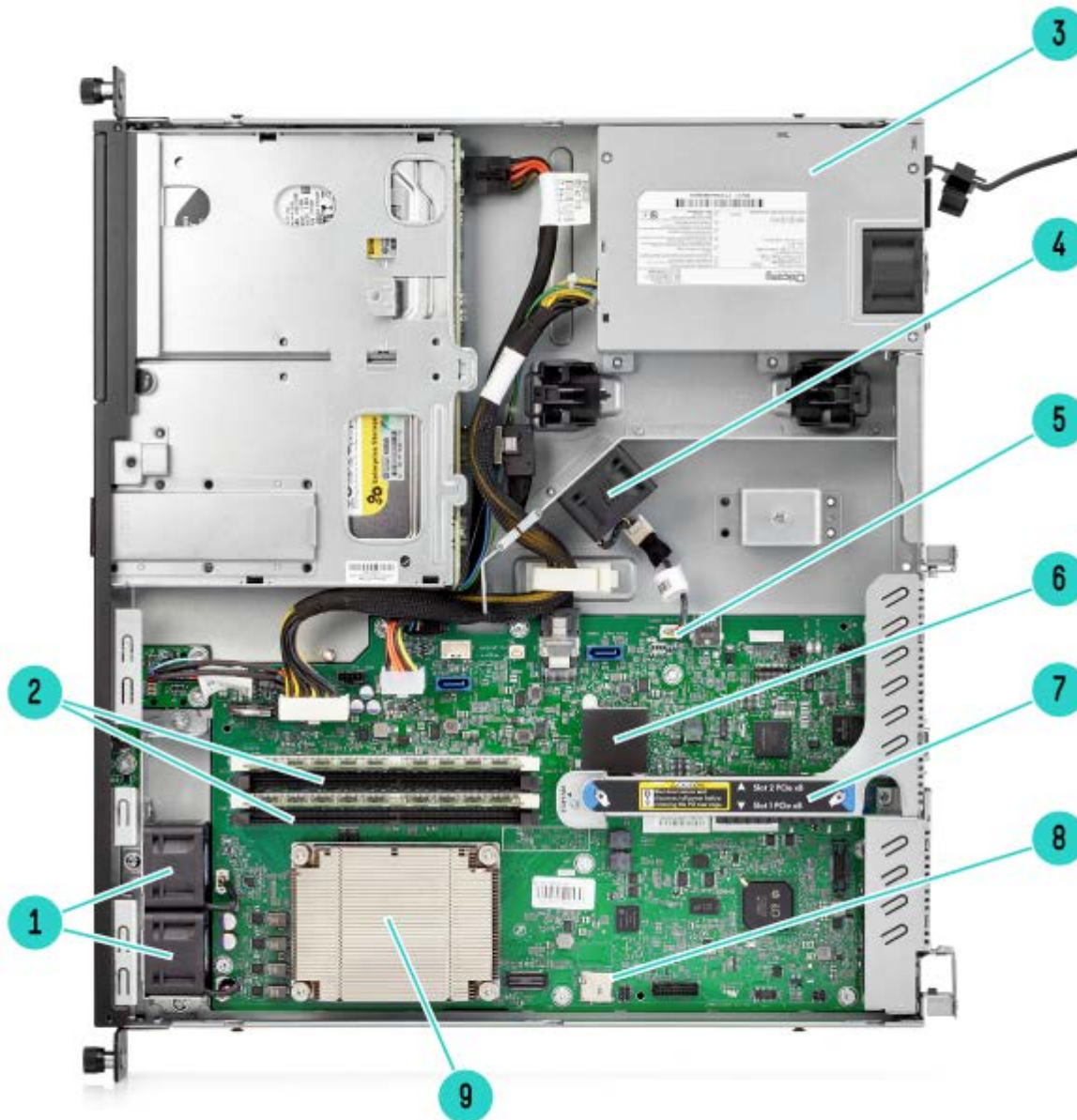
- | | | | |
|---|-----------------------------------------------------|----|----------------------|
| 1 | Access Panel | 2 | Optical Drive |
| 3 | Serial number/iLO information pull tab | 4 | 2 USB 2.0 connectors |
| 5 | Health LED | 6 | Front 2 Fan Assembly |
| 7 | Power On/Standby button and system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



Rear view

- | | | | |
|---|----------------------------------------------|---|-----------------------------|
| 1 | Expansion Slot 1, PCIe x 8 | 2 | Expansion Slot 2, PCIe x 16 |
| 3 | Redundant Power Supply (only on SFF Chassis) | 4 | UID LED |
| 5 | NIC Connector 2 | 6 | Video Connector |
| 7 | NIC1/shared iLO connector | 8 | USB 3.0 Connector |

Overview



Internal View

- | | | | |
|---|-----------------------------------------------------------|---|-------------------------------------------|
| 1 | Fan cage shown with 2 fans | 2 | DDR4 DIMM slots. 4 slots |
| 3 | (Under) Power supply (1x 290W power supply shown) | 4 | Central Fan Assembly |
| 5 | Internal USB 3.0 connector | 6 | Embedded HPE Smart Array B140i controller |
| 7 | PCIe Riser | 8 | MicroSD card slot |
| 9 | 1 Processor, heatsink showing, with HP Smart Socket Guide | | |

What's New

- HPE 290W Power supply has been 80Plus Silver Certified
- HPE OneView support for Converged management
- Introducing HPE Non-hot Plug Entry drives and Hot plug standard drives for price sensitive customers

Overview

- 8Gb and 16Gb Fiber Channel HBA support

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	Model	CPU frequency	Cores	L3 Cache	Power	DDR4 Hz
One of the following depending on model	G4400	3.3GHz	2	3MB	54W	2133
	G4500	3.5GHz	2	3MB	51W	2133
	i3-6100	3.7GHz	2	3MB	51W	2133
	i3-6300	3.8GHz	2	4MB	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
	E3-1240Lv5	2.1GHz	4	8MB	25W	2133
	E3-1260Lv5	2.9GHz	4	8MB	45W	2133

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 Management Chipset HPE iLO (Firmware HPE iLO4 2.3) 4GB NAND

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

Memory

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 @2133MHz)

Memory Protection ECC

Memory Protection

One of the following depending on model

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

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.

Standard Features

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	Device 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	Device 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.

Internal Storage Devices

One of the following depending on model

Optical Drives	Optional: DVD-ROM, DVD-RW
Hard Drives	None ship standard
Hard Drive Bays	4 SFF drive bays total with Optical Bay 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 both 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 P/N 654961-B21: HPE SFF Gen9 Hard Drive Blank Kit or P/N 689745-B21: HPE LFF Gen9 Hard Drive Blank Kit or P/N 654963-B21: HPE LFF Gen9 Hard Drive Blank kit. These part

Standard Features

numbers for single HDD blanks below are also provided should the customer require replacement HDD blanks for their server.

Maximum Internal Storage		CAPACITY	CONFIGURATION
One of the following depending on model	Hot Plug SFF SAS	8TB	4 x 2TB
	Hot Plug SFF SATA	8TB	4 x 2TB
	Hot Plug LFF SAS	16TB	2 x 8TB
	Hot Plug LFF SATA	16TB	2 x 8TB
	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 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. If a different power cord is required, please check the ProLiant Power Cables web page located

at <http://h18004.www1.hp.com/products/servers/proliantstorage/power-protection/options/power-cable.html>

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

System Fans		Non-redundant	Redundant
One of the following depending on model	1P model	3 fans	NA
		DL20 has 3 fans, 2 front fan assemblies and 1 center fan assembly which ship standard, non-redundant.	

Interfaces	
Video	1 rear video connector

Standard Features

USB	5 USB ports (standard) Front: 2xUSB 2.0 Rear: 2xUSB 3.0 Internal: 1x USB 3.0
-----	---------------------------------------------------------------------------------------

Micro SD Slot	1 Micro SD
---------------	------------

NOTE: 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
-------------------	--------------

NOTE: Customers can upgrade to next generation network (10 GbE) by installing a FlexibleLOM riser.

Operating Systems and Virtualization Software Support for ProLiant Servers

Microsoft Windows Server

Red Hat Enterprise Linux (RHEL)

SUSE Linux Enterprise Server (SLES)

VMware

NOTE: VMWare availability is dependent on General availability from the vendor. DL20 supports VMWare 5.5U3 and 6.0 U1

NOTE: 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: <http://www.hp.com/go/ossupport> and our driver download

page <http://h20566.www2.hp.com/portal/site/hpsc?ac.admitted=1447391526103.125225703.1938120508>.

Upgradeability

FlexibleLOM connector for 1 Gigabit or 10 Gigabit networking options

One of the following depending on model

Up to 4 DIMM slots available for higher memory capacity

Up to 4-SFF Drive bays or 2LFF Drive bays

HPE Smart Array or Smart HBA Controller

Redundant Power Supply

NOTE: 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

Industry Standard Compliance

UEFI (Unified Extensible Firmware Interface Forum)

PCIe 3.0 Compliant

PXE Support

WOL Support

Microsoft® Logo certifications

USB 3.0 Support

ASHRAE A3

NOTE: Refer to technical specifications section for more details.

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

Standard Features

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

HPE NVIDIA Quadro K2200 GPU Module

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

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.

Form Factor

1U Rack form factor

One of the following 4SFF and 2LFF version:

depending on model 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".

Embedded Management

HPE Integrated Lights-Out (HPE iLO) Monitor your servers for ongoing management, service alerting, reporting and remote management with HPE iLO. Not available on ML10 Gen9. Learn more at <http://www.hpe.com/info/ilo>.

UEFI Configure and boot your servers securely with industry standard Unified Extensible Firmware Interface (UEFI). Learn more at <http://www.hpe.com/servers/uefi>.

Standard Features

RESTful API 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 <http://www.hpe.com/info/restfulapi>.

Intelligent Provisioning Hassle free server and OS provisioning for 1 or few servers with Intelligent Provisioning. Learn more at <http://www.hpe.com/servers/intelligentprovisioning>.

Embedded Remote Support 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 <http://www.hpe.com/info/insightonline/explore>.

NOTE: For more information, visit: <http://www.hp.com/go/ilo> or [HPE iLO Management Engine technologies whitepaper](#).

Server utilities

Smart Update Optimize firmware and driver updates with Smart Update solutions including Smart Update Manager (SUM) and Service Pack for ProLiant (SPP) and smart components. Learn more at <http://www.hpe.com/servers/smartupdatemanager>.

HPE Systems Insight Manager (HPE SIM) 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 <http://www.hpe.com/servers/hpsim>.

Scripting Tool Kit and Windows PowerShell 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 <http://www.hpe.com/servers/proliant/stk> or <http://www.hpe.com/servers/powershell>.

RESTful Interface Tool 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 <http://www.hpe.com/info/resttool>.

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

HPE Insight Online HPE Insight Online, available at no additional cost as part of your Hewlett Packard Enterprise warranty, Care Pack 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 <http://www.hpe.com/info/insightonline/explore>.

Standard Features

Security

Power-on password
Serial interface control
Administrator's password
TPM 1.2
TPM 2.0
APCI 2.0b
UEFI

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 Care Pack 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://h18004.www1.hp.com/products/servers/platforms/warranty/index.html>

Optional Features

Embedded Management

iLO Essentials 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 <http://www.hpe.com/servers/iLO/essentials>.

iLO Scale-Out 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 <http://www.hpe.com/servers/iLO/scale-out>.

iLO Advanced HPE iLO Advanced licenses offer smart remote functionality without compromise, for all HPE ProLiant servers. The license includes the full integrated remote console, virtual keyboard, video, and mouse (KVM), multi-user collaboration, console record and replay, and GUI-based and scripted virtual media and virtual folders. You can also activate the enhanced security and power management functionality. Learn more about HPE iLO Advanced at <http://www.hpe.com/servers/ioloadvanced>.

Server Management

HPE Insight Control 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 <http://www.hpe.com/info/insightcontrol>.

Rack and Power Infrastructure

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 [HPE Rack and Power Infrastructure](#).

High Performance Clusters

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. <http://www.hp.com/go/clusters>.

HPC Interconnects **NOTE:** 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: <http://www.hp.com/techservers/clusters/ucp/index.html>.

Optional Features

Storage Software 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.

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

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.

Connect your devices

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

1- IDC 2 - HP CSC reports 2014 - 2015

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.

<http://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.

<http://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.

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.

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.

<http://h20195.www2.hp.com/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.

HPE Education Services

Keep your IT staff trained making sure they have the right skills to deliver on your business outcomes. Book on a class today and learn how to get the most from your technology investment. <http://www.hpe.com/ww/learn>

HPE Support Center

The HPE Support Center is a personalized online support portal with access to information, tools and experts to support 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 P/N 666987-B21: HPE SFF Hard Drive Blank Kit or P/N 666986-B21: HPE LFF Hard Drive Blank Kit.

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
[SKU Number]	829889-B21	823556-B21
Model Name	HPE ProLiant DL20 Gen9 G4400 4GB-U Non-hot Plug 2LFF 290W PS Entry Server	HPE ProLiant DL20 Gen9 E3-1220v5 8GB-U B140i 2LFF 290W PS Base Server
Processor	Intel® Pentium® G4400	Intel® Xeon® E3-1220v5
Number of Processors	One	
Memory	4GB (1x4GB UDIMMs, 2133 MHz)	8GB (1x8GB UDIMMs, 2133 MHz)
Network Controller	HPE embedded 1Gb 2-port 332i network Adapter	
Storage Controller	HPE Dynamic Smart Array B140i	
Hard Drive	None ship standard; includes 2 LFF hard drive blanks	None ship standard
Internal Storage	2 LFF HDD Bays (Non Hot Plug)	2 LFF HDD Bays (Hot Plug)
Optical Drive Bay	1; (Optional: DVD-ROM, DVD-RW)	
Optical Drive	None	
PCI-Express Slots	2 PCIe 3.0 slots	
Power Supply	(1) 290W Non Hot Plug Power Supply	
Fans	3 non hot plug, non-redundant	
Management	iLO Management (standard), Intelligent Provisioning (standard), iLO Essentials (optional), iLO Scale-out (optional only for DL), iLO Advanced (optional)	
Form Factor	Rack (1U), HPE Short Friction Rail kit	
Warranty	Server Warranty includes 1-Year Parts, 1-Year Labor, 1-Year Onsite support with next business day response	

	Performance Models	
[SKU Number]	823559-B21	823562-B21

Pre-configured Models

Model Name	HPE ProLiant DL20 Gen9 E3-1240v5 8GB-U H240 4SFF 290W PS Performance Server	HPE ProLiant DL20 Gen9 E3-1240v5 8GB-U H240 4SFF 900W RPS Performance Server
Processor	Intel® Xeon® E3-1240v5	
Number of Processors	One	
Memory	8GB (1x8GB UDIMMs, 2133 MHz)	
Network Controller	HPE embedded 1Gb 2-port 332i network Adapter	
Storage Controller	HPE H240 Smart Host Bus Adapter	
Hard Drive	None ship standard	
Internal Storage	4 SFF HDD Bays	
Optical Drive Bay	1; (Optional: DVD-ROM, DVD-RW)	
Optical Drive	None	
PCI-Express Slots	2 PCIe 3.0 slots	
Power Supply	(1) 290W Non Hot Plug Power Supply	(1) HPE 900W Redundant Power Supply and RPS Backplane kit
Fans	3 non hot plug, non-redundant	
Management	iLO Management (standard), Intelligent Provisioning (standard), iLO Essentials (optional), iLO Scale-out (optional only for DL), iLO Advanced (optional)	
Energy Star		Meets Energy Star requirements
Form Factor	Rack (1U), HPE Short Friction Rail kit	
Warranty	Server Warranty includes 1-Year Parts, 1-Year Labor, 1-Year Onsite support with next business day response	

NOTE: For 823562-B21 Model, add additional 900W Redundant Power supply input module for redundancy. The pre-configured model includes the backplane cable kit and need not be added additionally.

NOTE: 823562-B21 Energy Star certification would be available latest by June 2016.

Smart Buy Models

[SKU Number]	830697-S01	830698-S01
Model Name	HPE ProLiant DL20 Gen9 E3-1220v5 NHP US Svr/S-Buy	HPE ProLiant DL20 Gen9 E3-1240v5 LFF US Svr/S-Buy
Processor	Intel® Xeon® E3-1220v5	Intel® Xeon® E3-1240v5
Number of Processors	One	
Memory	8GB (1x8GB UDIMMs, 2133 MHz)	
Network Controller	HPE embedded 1Gb 2-port 332i network Adapter	
Storage Controller	HPE Dynamic Smart Array B140i	
Hard Drive	None ship standard	
Internal Storage	2 LFF NHP HDD Bays	2 LFF HDD Bays
Optical Drive Bay	1; (Optional: DVD-ROM, DVD-RW)	
Optical Drive	None	
PCI-Express Slots	2 PCIe 3.0 slots	
Power Supply	(1) 290W Non-Hot Plug Power Supply	(1) 290W Non-Hot Plug Power Supply
Fans	3 non hot plug, non-redundant	
Management	Integrated Lights-Out 4 (iLO 4) ships standard	
Form Factor	Rack (1U), HPE Short Friction Rail kit	
Warranty	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)

[Chassis]	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
SKU Number	819784-B21	819785-B21	819786-B21
Processor	1	1	1
DIMM Slots	4 DIMM slots for UDIMM DDR4 Memory		
Storage Controller	HPE Dynamic Smart Array B140i		
PCIe	2 PCIe 3.0 Slots		
Drive Cage	2LFF Non Hot Plug	2LFF Hot Plug	4SFF Hot Plug
Network Controller	HPE embedded 1Gb 2-port 332i network Adapter		
Fans	3 non hot plug, non redundant		
Management	iLO Management (standard), Intelligent Provisioning (standard)		
USB	2 front, 1 internal, 2 rear		
Ears	HPE Thumbscrew Ears		

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

HPE Processors

Entry Processors

HPE ProLiant DL20 Gen9 Intel® Core™ i3-6100 (3.7GHz/2-core/3MB/51W) FIO Processor Kit	840010-L21
HPE ProLiant DL20 Gen9 Intel® Core™ i3-6300 (3.8GHz/2-core/3MB/51W) FIO Processor Kit	840012-L21
HPE ProLiant DL20 Gen9 Intel® Pentium® G4500 (3.5GHz/2-core/3MB/51W) FIO Processor Kit	840016-L21
HPE ProLiant DL20 Gen9 Intel® Pentium® G4400 (3.3GHz/2-core/3MB/54W) FIO Processor Kit	840018-L21

Base Processors

HPE DL20 Gen9 E3-1220v5 (3.0GHz/4-core/8MB/80W) FIO Processor Kit	822425-L21
HPE DL20 Gen9 E3-1225v5 (3.3GHz/4-core/8MB/80W) FIO Processor Kit	836037-L21

NOTE: We do not support embedded graphics capability.

Configuration Information - Factory Integrated Models

HPE DL20 Gen9 E3-1230v5 (3.4GHz/4-core/8MB/80W) FIO Processor Kit 822427-L21

Performance Processors

HPE DL20 Gen9 E3-1240v5 (3.5GHz/4-core/8MB/80W) FIO Processor Kit 822429-L21

HPE DL20 Gen9 E3-1270v5 (3.6GHz/4-core/8MB/80W) FIO Processor Kit 822431-L21

HPE DL20 Gen9 E3-1280v5 (3.7GHz/4-core/8MB/80W) FIO Processor Kit 822433-L21

HPE DL20 Gen9 E3-1260Lv5 (2.9GHz/4-core/8MB/45W) FIO Processor Kit 822437-L21

HPE DL20 Gen9 E3-1240Lv5 (2.1GHz/4-core/8MB/25W) FIO Processor Kit 822435-L21

NOTE: DDR4 speed is the maximum memory speed of the processor. Actual memory speed may depend on the quantity and type of DIMMs installed.

NOTE: 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.

HPE Memory

NOTE: Select one or more memory.

NOTE: HPE memory from previous generation servers are not qualified or warranted with this HPE ProLiant Server.

NOTE: HPE Standard Memory (UDIMM) is required to realize the memory performance improvements and enhanced functionality listed in this document for this HPE ProLiant Server.

NOTE: With one processor installed, four DIMMs slots are available.

NOTE: For more information on ProLiant Energy Efficient Features, see: <http://www.hp.com/go/proliant-energy-efficient>

NOTE: 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: <http://www.hp.com/go/ddr4config>.

Unbuffered DIMMs (UDIMMs)

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

HPE 8GB (1x8GB) Dual Rank x8 DDR4-2133 CAS-15-15-15 Unbuffered Standard Memory Kit 805669-B21

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

HPE 4GB (1x4GB) Single Rank x8 DDR4-2133 CAS-15-15-15 Unbuffered Standard Memory Kit 805667-B21

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

HPE I/O Expansion Options

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

HPE Power Supplies

NOTE: 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: <http://www.hp.com/go/hppoweradvisor>

NOTE: 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

Configuration Information - Factory Integrated Models

HPE Entry-Level Power Supplies

HPE DL20 Gen9 290W FIO Power Supply Unit Kit 816283-B21

HPE 900W AC 240VDC Power Input FIO Module 828734-B21

NOTE: HP Server RPS FIO Backplane Kit (828735-B21) is required for this power supply.

NOTE: Up to two of these option kits can be installed in one system.

HPE 900W AC 240VDC Power Backplane FIO Kit 828735-B21

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

HPE 900W AC 240VDC Redundant Power Supply Kit 820792-B21

NOTE: This Redundant Power supply kit includes 2 power supply input module and 1 backplane kit.

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 Insight Software

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

HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle FIO Electronic License C6N36ABE

HPE Security

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.

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 Storage Controllers

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

Configuration Information - Factory Integrated Models

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.

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.

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

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	HPE DL20 Gen9 2LFF Mini SAS P440 Cable Kit	811279-B21
	NOTE: This cable kit is required to support P440 controller on 2LFF model	
	HPE DL20 Gen9 4SFF Mini SAS P440 Cable Kit	811282-B21
	NOTE: This cable kit is required to support P440 controller on 4SFF model	
	HPE DL20 Gen9 Smart Storage Battery Holder	822451-B21
	NOTE: 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	820306-B21
NOTE: 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	816284-B21	
NOTE: This cable kit is required to support M.2 and or ODD.		
HPE DL20 Gen9 Flexible LOM Riser Kit	811259-B21	
NOTE: This option is required to upgrade to next generation networking capabilities like 10GbE.		
HPE DL20 Gen9 GPU Enablement Kit	811271-B21	
NOTE: It is mandatory to choose the GPU enablement kit to support qualified GPU card		

HPE Memory	Unbuffered DIMMs (UDIMMs)	
	HPE 16GB (1x16GB) Dual Rank x8 DDR4-2133 CAS-15-15-15 Unbuffered Standard Memory Kit	805671-B21
	HPE 8GB (1x8GB) Dual Rank x8 DDR4-2133 CAS-15-15-15 Unbuffered Standard Memory Kit	805669-B21
	HPE 8GB (1x8GB) Single Rank x8 DDR4-2133 CAS-15-15-15 Unbuffered Standard Memory Kit	819880-B21
	HPE 4GB (1x4GB) Single Rank x8 DDR4-2133 CAS-15-15-15 Unbuffered Standard Memory Kit	805667-B21
NOTE: Depending on the processor selected these memory will run at 2133MHz.		

HPE Optical Drives	HP 9.5mm SATA DVD-ROM JackBlack Gen9 Optical Drive	726536-B21
	HP 9.5mm SATA DVD-RW JackBlack G9 Optical Drive	726537-B21
	NOTE: It is mandatory to choose a cable kit 816284-B21 with the above options.	

HPE Drives	SATA Non-Hot Plug LFF (3.5-inch) Midline (MDL) Drives	
	HP 4TB 6G SATA 7.2K rpm LFF (3.5in) Non-hot Plug Standard 1yr Warranty Hard Drive	801888-B21
	HP 3TB 6G SATA 7.2K rpm LFF (3.5-inch) Non-hot plug Midline 1yr Warranty Hard Drive	628065-B21
	HP 3TB 6G SATA 7.2K rpm LFF (3.5in) Non-hot Plug Standard 1yr Warranty Hard Drive	801886-B21

Core Options

HP 2TB 6G SATA 7.2K rpm LFF (3.5-inch) Non-hot plug Midline 1yr Warranty Hard Drive	659339-B21
HP 2TB 6G SATA 7.2K rpm LFF (3.5in) Non-hot Plug Standard 1yr Warranty Hard Drive	801884-B21
HP 1TB 6G SATA 7.2K rpm LFF (3.5-inch) Non-hot plug Midline 1yr Warranty Hard Drive	659337-B21
HP 1TB 6G SATA 7.2K rpm LFF (3.5in) Non-hot Plug Standard 1yr Warranty Hard Drive	801882-B21
HP 500GB 6G SATA 7.2K rpm LFF (3.5-inch) Non-hot plug Midline 1yr Warranty Hard Drive	659341-B21
SATA Non-Hot Plug LFF (3.5-inch) Entry(ETY) Drives	
HP 4TB 6G SATA 5.9K rpm LFF (3.5in) Non-hot Plug Entry 512e 1yr Warranty Hard Drive	815635-B21
HPE 1TB 6G SATA 7.2K rpm LFF (3.5in) Non-hot Plug Entry 512e 1yr Warranty Hard Drive	843266-B21
HPE 2TB 6G SATA 7.2K rpm LFF (3.5in) Non-hot Plug Entry 512e 1yr Warranty Hard Drive	843268-B21
HPE 3TB 6G SATA 7.2K rpm LFF (3.5in) Non-hot Plug Entry 512e 1yr Warranty Hard Drive	843270-B21
HPE 500GB 6G SATA 7.2K rpm LFF (3.5in) Non-hot Plug Entry 512e 1yr Warranty Hard Drive	843264-B21
NOTE: These Entry drives will have lower performance and workload rating in comparison to HPE enterprise drives.	
6G SATA SC Hot Plug LFF 7.2K (3.5-inch) Standard Drives	
HPE 2TB 6G SATA 7.2K rpm LFF (3.5in) SC Standard 1yr Warranty Hard Drive	858596-B21
HPE 1TB 6G SATA 7.2K rpm LFF (3.5in) SC Standard 1yr Warranty Hard Drive	858594-B21
SATA Hot Plug LFF (3.5-inch) Midline (MDL) Drives	
HPE 8TB 6G SATA 7.2K rpm LFF (3.5in) 512e SC Midline 1yr Warranty Hard Drive	819203-B21
HP 6TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 512e 1yr Warranty Hard Drive	765255-B21
HP 4TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 512e 1yr Warranty Hard Drive	765253-B21
HP 4TB 6G SATA 7.2k rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	693687-B21
HPE 4TB 6G SATA 7.2K rpm LFF (3.5in) SC Midline 1yr Warranty Hard Drive	861678-B21
HP 3TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	628061-B21
HP 2TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	658079-B21
HPE 2TB 6G SATA 7.2K rpm LFF (3.5in) SC Midline 1yr Warranty Hard Drive	861676-B21
HP 1TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	657750-B21
HP 500GB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	658071-B21
SAS Hot Plug SFF (2.5-inch) Enterprise (ENT) Drives	
HP 1.2TB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	781518-B21
HP 1.2TB 6G SAS 10K rpm SFF (2.5-inch) SC Dual Port Enterprise 3yr Warranty Hard Drive	718162-B21
HP 900GB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	785069-B21

Core Options

HP 900GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652589-B21
HP 600GB 12G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	759212-B21
HP 600GB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	781516-B21
HP 600GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652583-B21
HP 450GB 12G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	759210-B21
HP 450GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652572-B21
HP 300GB 12G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	759208-B21
HP 300GB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	785067-B21
HP 300GB 6G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652611-B21
HP 300GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652564-B21
HP 146GB 6G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652605-B21
HP 1.8TB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 512e 3yr Warranty Hard Drive	791034-B21
SAS Hot Plug SFF (2.5-inch) Midline (MDL) Drives	
HP 1TB 6G SAS 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	652749-B21
HP 500GB 6G SAS 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	652745-B21
SAS Hot Plug LFF (3.5-inch) Enterprise (ENT) Drives	
HP 600GB 12G SAS 15K rpm LFF (3.5-inch) SC Converter Enterprise 3yr Warranty Hard Drive	765424-B21
HP 450GB 12G SAS 15K rpm LFF (3.5-inch) SC Converter Enterprise 3yr Warranty Hard Drive	737394-B21
HP 300GB 12G SAS 15K rpm LFF (3.5-inch) SC Converter Enterprise 3yr Warranty Hard Drive	737261-B21
SAS Hot Plug LFF (3.5-inch) Midline (MDL) Drives	
HP 6TB 12G SAS 7.2K rpm LFF (3.5-inch) SC Midline 512e 1yr Warranty Hard Drive	765259-B21
HP 6TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	761477-B21
HP 4TB 12G SAS 7.2K rpm LFF (3.5-inch) SC Midline 512e 1yr Warranty Hard Drive	765257-B21
HP 4TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	695510-B21
HP 3TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	652766-B21
HP 2TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	652757-B21
HP 1TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	652753-B21
HPE 2TB 12G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	818365-B21
HPE 4TB 12G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	818367-B21
HPE 8TB 12G SAS 7.2K rpm LFF (3.5in) 512e SC Midline 1yr Warranty Hard Drive	819201-B21
SATA Hot Plug SFF (2.5-inch) Midline (MDL) Drives	
HP 1TB 6G SATA 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	655710-B21
HP 500GB 6G SATA 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	655708-B21
6G SATA Hot Plug SFF (2.5-inch) SC 512e Drives	
HP 2TB 6G SATA 7.2K rpm SFF (2.5-inch) SC 512e 1yr Warranty Hard Drive	765455-B21
HP 1TB 6G SATA 7.2K rpm SFF (2.5-inch) SC 512e 1yr Warranty Hard Drive	765453-B21
6G SATA Hot Plug LFF (3.5-inch) SC 512e Performance Drives	

Core Options

HP 6TB 6G SATA 7.2K rpm LFF (3.5-inch) SC 512e Performance 1yr Warranty Hard Drive	793667-B21
HP 4TB 6G SATA 7.2K rpm LFF (3.5-inch) SC 512e Performance 1yr Warranty Hard Drives	793665-B21
HP 6TB 6G SATA 7.2K rpm LFF (3.5-inch) SC 512e Helium 1yr Warranty Hard Drive	793683-B21
HP 8TB 6G SATA 7.2K rpm LFF (3.5-inch) SC 512e Helium 1yr Warranty Hard Drive	793695-B21
6G SATA Hot Plug SFF (2.5-inch) SC Mixed Use Solid State Drives	
HP 200GB 6G SATA Mixed Use-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804613-B21
HP 1.6TB 6G SATA Mixed Use-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804631-B21
HP 120GB 6G SATA Mixed Use-3 SFF 2.5-in SC 3yr Wty Solid State Drive	816965-B21
HP 800GB 6G SATA Mixed Use-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804625-B21
12G SAS Hot Plug SFF (2.5-inch) Enterprise Value Solid State Drives	
HP 1.6TB 12G SAS Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive	762263-B21
HP 800GB 12G SAS Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive	762261-B21
12G SAS Hot Plug LFF (3.5-inch) Enterprise Value Solid State Drives	
HP 1.6TB 12G SAS Value Endurance LFF 3.5-in SC Enterprise Value 3yr Wty Solid State Drive	762272-B21
12G SAS Hot Plug SFF (2.5-inch) SC 512e Drives	
HP 2TB 12G SAS 7.2K rpm SFF (2.5-inch) SC 512e 1yr Warranty Hard Drive	765466-B21
HP 1TB 12G SAS 7.2K rpm SFF (2.5-inch) SC 512e 1yr Warranty Hard Drive	765464-B21
HP 600GB 12G SAS 15K rpm SFF (2.5-inch) SC 512e Enterprise 3yr Warranty Hard Drive	748387-B21
HPE 1TB 12G SAS 7.2K rpm SFF (2.5in) SC Midline 1yr Warranty Hard Drive	832514-B21
12G SAS Hot Plug LFF (3.5-inch) SC 512e Performance Drives	
HP 6TB 12G SAS 7.2K rpm LFF (3.5-inch) SC 512e Performance 1yr Warranty Hard Drive	793671-B21
HP 4TB 12G SAS 7.2K rpm LFF (3.5-inch) SC 512e Performance 1yr Warranty Hard Drive	793669-B21
HP 8TB 12G SAS 7.2K rpm LFF (3.5-inch) SC 512e Helium 1yr Warranty Hard Drive	793703-B21
HP 6TB 12G SAS 7.2K rpm LFF (3.5-inch) SC 512e Helium 1yr Warranty Hard Drive	793699-B21
12G SAS Hot Plug SFF (2.5-inch) SC Read/Write Intensive Solid State Drives	
HP 1.92TB 12G SAS Read Intensive SFF 2.5-in SC 3yr Wty Solid State Drive	802891-B21
HP 800GB 12G SAS Write Intensive SFF 2.5-in SC 3yr Wty Solid State Drive	802586-B21
HP 400GB 12G SAS Write Intensive SFF 2.5-in SC 3yr Wty Solid State Drive	802582-B21
HP 200GB 12G SAS Write Intensive SFF 2.5-in SC 3yr Wty Solid State Drive	802578-B21
HPE 800GB 12G SAS Write Intensive-1 SFF (2.5in) SC 3yr Wty Solid State Drive	846430-B21
HPE 1.6TB 12G SAS Write Intensive-1 SFF (2.5in) SC 3yr Wty Solid State Drive	846432-B21
6G SATA Hot Plug SFF (2.5-inch) Enterprise Value Solid State Drives	
HP 1.6TB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive	757339-B21

Core Options

HP 600GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty
Solid State Drive 739898-B21

HP 480GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty
Solid State Drive 717971-B21

6G SAS Hot Plug Enterprise Mainstream Solid State Drives

HP 480GB 6G SATA Value Endurance LFF 3.5-in SC Enterprise Value 3yr Wty
Solid State Drive 718183-B21

12G SAS Mainstream Endurance Hot Plug SFF (2.5-inch) Enterprise Mainstream H2 Solid State Drives

HP 1.6TB 12G SAS Mainstream Endurance SFF 2.5-in ENT Mainstream SC 3yr Wty
H2 Solid State Drive 779176-B21

HP 800GB 12G SAS Mainstream Endurance SFF 2.5-in ENT Mainstream SC 3yr
Wty H2 Solid State Drive 779172-B21

HP 400GB 12G SAS Mainstream Endurance SFF 2.5-in ENT Mainstream SC 3yr
Wty H2 Solid State Drive 779168-B21

HP 200GB 12G SAS Mainstream Endurance SFF 2.5-in ENT Mainstream SC 3yr
Wty H2 Solid State Drive 779164-B21

HP 400GB 6G SATA Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream
3yr Wty Solid State Drive 691866-B21

HP 800GB 6G SATA Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream
3yr Wty Solid State Drive 691868-B21

HP 100GB 6G SATA Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream
3yr Wty Solid State Drive 691862-B21

6G SATA Hot Plug SFF Value Endurance (2.5-inch) Enterprise Value M1 Solid State Drives

HP 800GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty M1
Solid State Drive 764929-B21

HP 480GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty M1
Solid State Drive 764927-B21

HP 240GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty M1
Solid State Drive 764925-B21

HP 120GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty M1
Solid State Drive 764923-B21

6G SATA Hot Plug LFF Value Endurance (3.5-inch) Converter Enterprise Value G1 Solid State Drives

HP 480GB 6G SATA Value Endurance LFF 3.5-in SC Converter ENT Value 3yr
Wty G1 Solid State Drive 756660-B21

6G SATA Hot Plug LFF Value Endurance (3.5-inch) Converter Enterprise Value M1 Solid State Drives

HP 800GB 6G SATA Value Endurance LFF 3.5-in SC Converter ENT Value 3yr
Wty M1 Solid State Drive 764945-B21

HP 480GB 6G SATA Value Endurance LFF 3.5-in SC Converter ENT Value 3yr
Wty M1 Solid State Drive 764943-B21

HP 240GB 6G SATA Value Endurance LFF 3.5-in SC Converter ENT Value 3yr
Wty M1 Solid State Drive 764941-B21

Core Options

HP 120GB 6G SATA Value Endurance LFF 3.5-in SC Converter ENT Value 3yr Wty M1 Solid State Drive	764939-B21
HP 200GB 6G SATA Mixed Use-2 LFF 3.5-in SCC 3yr Wty Solid State Drive	804616-B21
HP 800GB 6G SATA Mixed Use-2 LFF 3.5-in SCC 3yr Wty Solid State Drive	804628-B21
HP 1.6TB 6G SATA Mixed Use-2 LFF 3.5-in SCC 3yr Wty Solid State Drive	804634-B21
6G SATA Hot Plug LFF (3.5-inch) Enterprise Value Solid State Drives	
HP 400GB 6G SATA Mainstream Endurance LFF 3.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691856-B21
HP 240GB 6G SATA Value Endurance LFF 3.5-in SC Converter ENT Value 3yr Wty G1 Solid State Drive	756639-B21
HP 800GB 6G SATA Mainstream Endurance LFF 3.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691860-B21
6G SATA Hot Plug SFF (2.5-inch) SC Read Intensive Solid State Drives	
HP 480GB 6G SATA Read Intensive SFF 2.5-in SC 3yr Wty Solid State Drive	789145-B21
HP 80GB 6G SATA Read Intensive-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804575-B21
HP 120GB 6G SATA Read Intensive-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804581-B21
HP 240GB 6G SATA Read Intensive-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804587-B21
HP 480GB 6G SATA Read Intensive-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804593-B21
HP 800GB 6G SATA Read Intensive-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804599-B21
HP 1.6TB 6G SATA Read Intensive-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804605-B21
6G SATA Hot Plug LFF (3.5-inch) SC Read Intensive Solid State Drives	
HP 480GB 6G SATA Read Intensive LFF 3.5-in SC Converter 3yr Wty Solid State Drive	789147-B21
HP 80GB 6G SATA Read Intensive-2 LFF 3.5-in SCC 3yr Wty Solid State Drive	804578-B21
HP 120GB 6G SATA Read Intensive-2 LFF 3.5-in SCC 3yr Wty Solid State Drive	804584-B21
HP 240GB 6G SATA Read Intensive-2 LFF 3.5-in SCC 3yr Wty Solid State Drive	804590-B21
HP 480GB 6G SATA Read Intensive-2 LFF 3.5-in SCC 3yr Wty Solid State Drive	804596-B21
HP 800GB 6G SATA Read Intensive-2 LFF 3.5-in SCC 3yr Wty Solid State Drive	804602-B21
HP 1.6TB 6G SATA Read Intensive-2 LFF 3.5-in SCC 3yr Wty Solid State Drive	804608-B21
6G SATA Value Endurance Hot Plug SFF (2.5-inch) SC Enterprise Value G1 Solid State Drives	
HP 480GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty G1 Solid State Drive	756657-B21
HP 240GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty G1 Solid State Drive	756636-B21
6G SATA Hot Plug RI-3 SFF (2.5-inch) SC Solid State Drives	
HP 120GB 6G SATA Read Intensive-3 SFF 2.5-in SC 3yr Wty Solid State Drive	816879-B21
HP 240GB 6G SATA Read Intensive-3 SFF 2.5-in SC 3yr Wty Solid State Drive	816889-B21
HP 480GB 6G SATA Read Intensive-3 SFF 2.5-in SC 3yr Wty Solid State Drive	816899-B21
HP 960GB 6G SATA Read Intensive-3 SFF 2.5-in SC 3yr Wty Solid State Drive	816909-B21
HP 1.92TB 6G SATA Read Intensive-3 SFF 2.5-in SC 3yr Wty Solid State Drive	816919-B21
HP 3.84TB 6G SATA Read Intensive-3 SFF 2.5-in SC 3yr Wty Solid State Drive	816929-B21
6G SATA Hot Plug LFF (3.5-inch) MU-3 SCC SSD	

Core Options

HP 120GB 6G SATA Mixed Use-3 LFF 3.5-in SC Converter 3yr Wty Solid State Drive	816969-B21
HP 240GB 6G SATA Mixed Use-3 LFF 3.5-in SC Converter 3yr Wty Solid State Drive	816979-B21
HP 480GB 6G SATA Mixed Use-3 LFF 3.5-in SC Converter 3yr Wty Solid State Drive	816989-B21
HP 960GB 6G SATA Mixed Use-3 LFF 3.5-in SC Converter 3yr Wty Solid State Drive	816999-B21
HP 1.92TB 6G SATA Mixed Use-3 LFF 3.5-in SC Converter 3yr Wty Solid State Drive	817015-B21
6G SATA Hot Plug MU-3 SFF (2.5-inch) SC Solid State Drives	
HP 240GB 6G SATA Mixed Use-3 SFF 2.5-in SC 3yr Wty Solid State Drive	816975-B21
HP 480GB 6G SATA Mixed Use-3 SFF 2.5-in SC 3yr Wty Solid State Drive	816985-B21
HP 960GB 6G SATA Mixed Use-3 SFF 2.5-in SC 3yr Wty Solid State Drive	816995-B21
HP 1.92TB 6G SATA Mixed Use-3 SFF 2.5-in SC 3yr Wty Solid State Drive	817011-B21
HPE 800GB 12G SAS Mixed Use-1 SFF (2.5in) SC 3yr Wty Solid State Drive	846434-B21
HPE 1.6TB 12G SAS Mixed Use-1 SFF (2.5in) SC 3yr Wty Solid State Drive	846436-B21
6G SATA Hot Plug LFF (3.5-inch) RI-3 SCC SSD	
HP 120GB 6G SATA Read Intensive-3 LFF 3.5-in SC Converter 3yr Wty Solid State Drive	816883-B21
HP 240GB 6G SATA Read Intensive-3 LFF 3.5-in SC Converter 3yr Wty Solid State Drive	816893-B21
HP 480GB 6G SATA Read Intensive-3 LFF 3.5-in SC Converter 3yr Wty Solid State Drive	816903-B21
HP 960GB 6G SATA Read Intensive-3 LFF 3.5-in SC Converter 3yr Wty Solid State Drive	816913-B21
HP 1.92TB 6G SATA Read Intensive-3 LFF 3.5-in SC Converter 3yr Wty Solid State Drive	816923-B21
HP 3.84TB 6G SATA Read Intensive-3 LFF 3.5-in SC Converter 3yr Wty Solid State Drive	816933-B21
6G SATA Hot Plug SFF (2.5-inch) SC Write Intensive Solid State Drives	
HP 200GB 6G SATA Write Intensive-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804639-B21
HP 400GB 6G SATA Write Intensive-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804665-B21
HP 800GB 6G SATA Write Intensive-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804671-B21
HP 1.2TB 6G SATA Write Intensive-2 SFF 2.5-in SC 3yr Wty Solid State Drive	804677-B21
6G SATA Hot Plug LFF (3.5-inch) SC Write Intensive Solid State Drives	
HP 200GB 6G SATA Write Intensive-2 LFF 3.5-in SCC 3yr Wty Solid State Drive	804642-B21
HP 400GB 6G SATA Write Intensive-2 LFF 3.5-in SCC 3yr Wty Solid State Drive	804668-B21
HP 800GB 6G SATA Write Intensive-2 LFF 3.5-in SCC 3yr Wty Solid State Drive	804674-B21
HP 1.2TB 6G SATA Write Intensive-2 LFF 3.5-in SCC 3yr Wty Solid State Drive	804680-B21
6G SATA Hot Plug LFF (3.5-inch) Enterprise Boot Solid State Drives	
HP 120GB 6G SATA Value Endurance LFF 3.5-in SC Enterprise Boot 3yr Wty Solid State Drive	718171-B21
6G SATA Hot Plug SFF (2.5-inch) Enterprise Boot Solid State Drives	

Core Options

HP 120GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Boot 3yr Wty Solid State Drive 717965-B21

M.2 SSD

HP Dual 120GB Value Endurance Solid State M.2 Enablement Kit for ProLiant ML/DL Servers 777894-B21

HP 120GB Value Endurance Solid State M.2 Enablement Kit for ProLiant ML/DL Servers 788028-B21

HPE 340GB Read Intensive-2 Solid State M.2 Enablement Kit for ProLiant ML/DL Servers 835563-B21

HPE Dual 340GB Read Intensive-2 Solid State M.2 Enablement Kit for ProLiant ML/DL Servers 835565-B21

HPE DL20 Gen9 M.2 RA and Optical Disk Drive Power Cable Kit 816284-B21

NOTE: 816284-B21 cable kit is a mandatory option required to support M.2 SSDs

NOTE: M.2 drives go in PCIe slot and use B140i SATA controller.

Hard Drive Blank Kits

HP Large Form Factor Hard Drive Blank Kit 666986-B21

HP Small Form Factor Hard Drive Blank Kit 666987-B21

HPE Networking

1 Gigabit Ethernet adapters

HP Ethernet 1Gb 4-port 331T Adapter 647594-B21

NOTE: This networking card can NOT be selected with P440, H240, H841. As an alternate solution the 4-port FlexibleLOM Adapter 629135-B21 can be chosen with P440, H240 or H841.

HP Ethernet 1Gb 4-port 366T Adapter 811546-B21

NOTE: This networking card can NOT be selected with P440, H240, H841. As an alternate solution the 4-port FlexibleLOM Adapter 665240-B21 can be chosen with P440, H240 or H841.

HP Ethernet 1Gb 2-port 361T Adapter 652497-B21

HP Ethernet 1Gb 2-port 332T Adapter 615732-B21

HP PS1810-24G Switch J9834A

10 Gigabit Ethernet adapters

HP Ethernet 10Gb 2-port 530T Adapter 656596-B21

HP Ethernet 10Gb 2-port 561T Adapter 716591-B21

HP Ethernet 10Gb 2-port 530SFP Adapter 652503-B21

HP Ethernet 10Gb 2-port 546SFP+ Adapter 779793-B21

HP Ethernet 10Gb 2-port 546FLR-SFP+ Adapter 779799-B21

HP FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter 727060-B21

HP Ethernet 10Gb 2-port 557SFP+ Adapter 788995-B21

HP Ethernet 10Gb 2-port 560SFP+ Adapter 665249-B21

HP Ethernet 10Gb 2-port 560FLR-SFP+ Adapter 665243-B21

NOTE: A minimum of two Gigabytes (2GB) 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. See cables/options below.

FlexibleLOM Adapters

Core Options

HP FlexFabric 10Gb 2-port 533FLR-T Adapter	700759-B21
HP FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter	700751-B21
HP Ethernet 10Gb 2-port 561FLR-T Adapter	700699-B21
HP Ethernet 1Gb 4-port 331FLR Adapter	629135-B22
HP Ethernet 1Gb 4-port 366FLR Adapter	665240-B21

NOTE: Please see the QuickSpecs for Technical Specifications and additional information: <http://www.hp.com/go/ProLiantNICs>

HPE I/O Expansion Options	HPE DL20 Gen9 Flexible LOM Riser Kit	811259-B21
	HPE DL20 Gen9 GPU Enablement Kit	811271-B21

NOTE: It is mandatory to choose any of the above riser kit for CTO configurations.

HPE Power Supplies	HPE ProLiant Gen9 Essential Server Power Supplies - Redundant	
	HPE 900W AC 240VDC Redundant Power Supply Kit	820792-B21

NOTE: This Redundant Power supply kit includes 2 power supply input modules and 1 backplane kit. Backplane cable kit (820306-B21) is mandatory for this option.

HPE 900W AC 240VDC Power Input Module	775595-B21
---------------------------------------	------------

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

HPE 900W AC 240VDC RPS Power Backplane	814835-B21
----------------------------------------	------------

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

NOTE: The backplane kit and the backplane cable kit (820306-B21) are mandatory with the power input module.

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

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

NOTE: This Power supply supports both 100-240V AC and 240V DC.

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: HPE 900W Gold (Redundant) AC 240VDC Power Input Module (775595-B21) must be used with Power Backplane (814835-B21).

NOTE: Each Redundant Power Supply Backplane can support up to two (2) power input modules.

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 Computation and Graphics Accelerators	HP NVIDIA Quadro K2200 Graphics Accelerator	J0G89A
--------------------------------------------------	---------------------------------------------	--------

NOTE: 1 GPU supported per Server.

NOTE: 1 GPU Enablement kit 779611-B21 must be selected when adding a GPU option.

NOTE: Only the above listed Graphics cards are Hewlett Packard Enterprise standard supported options in this server.

Core Options

NOTE: The NVIDIA Quadro modules are supported only on 64-bit versions of Linux and Windows operating systems as well as on Virtual Machine client operating systems. The supported bare metal operating systems are RHEL6, SLES 11 and Windows Server 2012 R2.

NOTE: Please see the HPE Power Advisor for estimated power consumption of your individual system configuration prior to installing GPUs. The HPE Power Advisor is located at: <http://www.hp.com/go/hppoweradvisor>.

Additional Options

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
	HPE Insight Control including 1yr 24x7 TSU E-LTU	C6N28ABE
	HPE Insight Management Media Kit	C6N31A

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 24x7 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: <http://www.hp.com/go/insightupdates>.

NOTE: For additional license options please see the **HPE Insight Control QuickSpecs**.

Embedded Management	HPE iLO Advanced	
	HPE iLO Advanced including 1yr 24x7 Technical Support and Updates 1-server LTU	512485-B21
	HPE iLO Advanced including 1yr 24x7 Technical Support and Updates Flexible Quantity LTU	512486-B21
	HPE iLO Advanced including 3yr 24x7 Tech Support and Updates 1-server LTU	BD505A
	HPE iLO Advanced including 1yr 24x7 Technical Support and Updates Tracking LTU	512487-B21
	HPE iLO Advanced including 3yr 24x7 Tech Support and Updates Flexible Quantity LTU	BD506A
	HPE iLO Advanced including 3yr 24x7 Tech Support and Updates Tracking LTU	BD507A
	HPE iLO Advanced including 1yr 24x7 Technical Support and Updates E-LTU	E6U59ABE
	HPE iLO Advanced including 3yr 24x7 Technical Support and Updates E-LTU	E6U64ABE
	HPE iLO Essentials	
	HPE iLO Essentials including 3yr 24x7 Tech Support and Updates 1-server LTU	BD774A
	HPE iLO Essentials including 3yr 24x7 Technical Support and Updates E-LTU	E6U61ABE
	HPE iLO Essentials including 1yr 24x7 Technical Support and Updates E-LTU	E6U62ABE
	HPE iLO Essentials including 1yr 24x7 Tech Support and Updates 1-server LTU	BD775A
	HPE iLO Scale-out	
	HPE iLO Scale-Out 1yr 24x7 Tech Support and Updates Flexible Quantity LTU	BD778A
	HPE iLO Scale-Out 3yr 24x7 Tech Support and Updates Flexible Quantity LTU	BD776A
	HPE iLO Scale-Out including 3yr 24x7 Tech Support and Updates Flex Qty E-LTU	BD776AAE
	HPE iLO Scale-Out including 3yr 24x7 Tech Support and Updates Tracking LTU	BD777A
HPE iLO Scale-Out including 1yr 24x7 Tech Support and Updates Flex Qty E-LTU	BD778AAE	
HPE iLO Scale-Out including 1yr 24x7 Tech Support and Updates Tracking LTU	BD779A	

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

Additional Options

Management Software	HPE OneView w/o iLO including 3yr 24x7 Support 1-server LTU	P8B24A
	HPE OneView w/o iLO including 3yr 24x7 Support Track 1-server LTU	P8B25A
	HPE OneView w/o iLO including 3yr 24x7 Support Flexible Quantity E-LTU	P8B26AAE
	HPE OneView Physical Media Kit LTU	E5Y37A
	HPE Operations Analytics for HPE OneView LTU	K8G29A
	HPE Operations Analytics for HPE OneView E-LTU	K8G29AAE

HPE iLO Advanced HPE iLO Advanced

License	HPE iLO Advanced including 1yr 24x7 Technical Support and Updates 1-server LTU	512485-B21
	HPE iLO Advanced including 1yr 24x7 Technical Support and Updates Flexible Quantity LTU	512486-B21
	HPE iLO Advanced including 1yr 24x7 Technical Support and Updates Tracking LTU	512487-B21
	HPE iLO Advanced including 3yr 24x7 Tech Support and Updates 1-server LTU	BD505A
	HPE iLO Advanced including 3yr 24x7 Tech Support and Updates Flexible Quantity LTU	BD506A
	HPE iLO Advanced including 3yr 24x7 Tech Support and Updates Tracking LTU	BD507A
	HPE iLO Advanced including 1yr 24x7 Technical Support and Updates E-LTU	E6U59ABE
	HPE iLO Advanced including 3yr 24x7 Technical Support and Updates E-LTU	E6U64ABE

High Performance HPE Cluster Management Utility

Clusters	HPE Insight Cluster Management Utility 3yr 24x7 Flexible LTU	BD476A
	HPE Insight Cluster Management Utility 1yr 24x7 Flexible LTU	QL803B
	HPE Insight Cluster Management Utility Media	BD477A

HPE Security	HP Trusted Platform Module 2.0 Kit	745823-B21
	HP Trusted Platform Module Option	488069-B21
	HP 1U Security Bezel Kit	664918-B21
	NOTE: Quick Release Ear option kit (P/N 811254-B21) is mandatory for installing security bezel.	

HPE Storage Controllers

SAS Controllers

HPE Smart Array Controllers

	HP Smart Array P440/2GB FBWC 12Gb 1-port Int SAS Controller	820834-B21
	NOTE: The above SKUs include 96W Smart Storage Battery.	
	HP Smart Array P440/4GB FBWC 12Gb 1-port Int SAS Controller	726821-B21
	NOTE: The option requires a 96W Smart Storage Battery p/n 727258-B21.	
	HP Smart Array P441/4GB FBWC 12Gb 2-ports Ext SAS Controller	726825-B21
	HP Smart Array P841/4GB FBWC 12Gb 4-ports Ext SAS Controller	726903-B21
	NOTE: P440 needs to be populated in slot 2 (Full Height).	
	HPE Smart Host Bus Adapters	
	HP H240 12Gb 2-ports Int Smart Host Bus Adapter	726907-B21
	HP H241 12Gb 2-ports Ext Smart Host Bus Adapter	726911-B21
	NOTE: H240 needs to be populated in slot 2 (Full Height).	

Additional Options

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 server and storage controller. Cable option kit descriptions include the right server and storage controller names. **NOTE:** All the servers include min-SAS cables required to connect drives to embedded B140i SATA controller or HBA240 controller (HBA240 is optional).

Optional Software

HP Secure Encryption per Svr Entitlement	C9A82AAE
HPE SmartCache No Media 24x7 Technical Support 1-server LTU	D7S26A
HPE SmartCache No Media 24x7 Technical Support Flexible LTU	D7S27A
HPE SmartCache No Media 24x7 Technical Support E-LTU	D7S27AAE

Optional Upgrades

HP 96W Smart Storage Battery with 145mm Cable for DL/ML/SL Servers	727258-B21
--------------------------------------------------------------------	------------

NOTE: This option is mandatorily required with HPE Smart Array controllers. One server can accommodate only 1 Smart Storage Battery that would suffice the requirement of all HPE Smart Array controllers.

Battery Holder

HPE DL20 Gen9 Smart Storage Battery Holder	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.hp.com/go/tape>. For hardware and software compatibility of HPE tape backup products see: <http://www.hp.com/storage/SPOCK> and <http://www.hp.com/go/ebs>. **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-6 Ultrium 6650 SAS External Tape Drive	EH964A
HPE StoreEver LTO-6 Ultrium 6250 Tape Drive in a 1U Rack Mount Kit	COL99A
HPE StoreEver LTO-6 Ultrium 6250 External Tape Drive	EH970A
HPE StoreEver LTO-5 Ultrium 3000 SAS Tape Drive in a 1U Rack Mount Kit	EJ014B
HPE StoreEver LTO-5 Ultrium 3000 SAS External Tape Drive	EH958B
HPE StoreEver LTO-5 Ultrium 3280 SAS External Tape Drive	EH900B
HPE StoreEver LTO-4 Ultrium 1760 SAS (1) in a 1U Rack Mount Kit	EH946C
HPE StoreEver LTO-4 Ultrium 1760 SAS External Tape Drive	EH920B
HPE StoreEver LTO-3 Ultrium 920 SAS External Tape Drive	EH848B
HPE StoreEver 1U SAS Rack Mount Kit	AE459B
HPE StoreEver Mini-SAS High Density to 4-lane Mini-SAS External Fanout 2m Cable	K2R09A
HPE StoreEver Mini-SAS High Density to 4-lane Mini-SAS External Fanout 4m Cable	K2R10A

HPE DAT Autoloader

HPE StoreEver 1/8 G2 LTO-6 Ultrium 6250 Fibre Channel Tape Autoloader	COH19A
-----------------------------------------------------------------------	--------

HPE MSL2024 Tape Library

HPE StoreEver MSL2024 0-drive Tape Library	AK379A
--------------------------------------------	--------

Additional Options

HPE MSL4048 Tape Library

HPE StoreEver MSL4048 0-drive Tape Library AK381A

HPE StoreEver MSL6480

HPE StoreEver MSL6480 Scaleable Expansion Module QU626A

HPE StoreEver MSL6480 Scalable Base Module QU625A

HPE Disk Backup HPE RDX Removable Disk Backup System

HPE RDX+ 3TB USB 3.0 External Disk Backup System P9L72A

HPE RDX 3TB USB 3.0 Internal Disk Backup System P9L71A

HP D3700 Enclosure QW967A

HP D3600 Enclosure QW968A

HPE StoreOnce 5100 48TB System BB915A

HPE StoreOnce 3540 24TB System BB914A

HPE StoreOnce 3520 12TB System BB922A

HPE StoreOnce 3100 8TB System BB913A

NOTE: For the complete range of RDX drives and media see: <http://www.hp.com/go/rdx>. For hardware and software compatibility of Hewlett Packard Enterprise disk backup products see: <http://www.hp.com/storage/SPOCK>.

HPE Storage Options

Emulex Fibre Channel HBAs

HP 82E 8Gb 2-port PCIe Fibre Channel Host Bus Adapter AJ763B

HP StoreFabric SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter C8R39A

QLogic Fibre Channel HBAs

HP 82Q 8Gb 2-port PCIe Fibre Channel Host Bus Adapter AJ764A

HP StoreFabric SN1000Q 16GB 2-port PCIe Fibre Channel Host Bus Adapter QW972A

HPE Disk Storage Systems Disk Enclosures

HP D6000 w/70 8TB 12G SAS 7.2K LFF (3.5in) Dual Port MDL HDD 560TB Bundle M0T59A

HP D6000 w/70 6TB 12G SAS 7.2K LFF (3.5in) Dual Port MDL HDD 420TB Bundle M0T57A

HP D6000 w/35 8TB 12G SAS 7.2K LFF (3.5in) Dual Port MDL HDD 280TB Bundle M0T58A

HP D6000 w/35 4TB 6G SAS 7.2K LFF Dual Port MDL HDD 140TB Bundle E7W30A

HP D6000 w/70 4TB 6G SAS 7.2K LFF Dual Port MDL HDD 280TB Bundle E7W31A

HP D6000 Dual I/O Module Disk Enclosure QQ695A

HP D6000 w/35 2TB 6G SAS 7.2K LFF Dual port MDL HDD 70TB Bundle QQ697A

HP D6000 w/70 2TB 6G SAS 7.2K LFF Dual port MDL HDD 140TB Bundle QQ698A

HP D6000 w/35 3TB 6G SAS 7.2K LFF Dual port MDL HDD 105TB Bundle QQ699A

HP D6000 w/70 3TB 6G SAS 7.2K LFF Dual port MDL HDD 210TB Bundle QQ700A

HP D2600 w/12 4TB 6G SAS 7.2K LFF Dual Port MDL HDD 48TB Bundle E7W32A

HPE Data Center Racks

HPE Advanced Series Racks

HPE 11648 1075mm Pallet Universal Rack H6J87A

HPE 11648 1075mm Shock Universal Rack H6J88A

HPE 11642 1075mm Pallet Universal Rack H6J65A

Additional Options

HPE 11642 1075mm Shock Universal Rack	H6J66A
HPE 11642 1200mm Pallet Universal Rack	H6J67A
HPE 11642 1200mm Shock Universal Rack	H6J68A
HPE 11636 1075mm Pallet Universal Rack	H6J77A
HPE 11636 1075mm Shock Universal Rack	H6J78A
HPE 11622 G2 1075mm Shock Universal Rack	H6J83A
HPE 11622 G2 1075mm Shock Universal Rack	H6J84A
HPE 11614 1075mm Shock Universal Rack	H6J82A

NOTE: Please see the **HPE Advanced Series Racks QuickSpecs** for information on additional racks options and rack specifications.

HPE Enterprise Series Racks

HPE 647 1075mm Pallet Intelligent Series Rack	BW911A
HPE 647 1075mm Shock Intelligent Series Rack	BW912A
HPE 647 1200mm Pallet Intelligent Series Rack	BW913A
HPE 647 1200mm Shock Intelligent Series Rack	BW914A
HPE 642 1075mm Pallet Intelligent Series Rack	BW903A
HPE 642 1075mm Shock Intelligent Series Rack	BW904A
HPE 642 1200mm Pallet Intelligent Series Rack	BW907A
HPE 642 1200mm Shock Intelligent Series Rack	BW908A
HPE 636 1075mm Pallet Intelligent Series Rack	BW895A
HPE 636 1075mm Shock Intelligent Series Rack	BW896A
HPE 842 1075mm Pallet Intelligent Series Rack	BW917A
HPE 842 1075mm Shock Intelligent Series Rack	BW918A

NOTE: Please see the **HPE Enterprise Series Racks QuickSpecs** for information on additional racks options and rack specifications.

HPE Standard Series Rack

HPE V142 1075mm deep Pallet 100 series Rack	AF046A
---------------------------------------------	--------

NOTE: Please see the **HPE Standard Series Racks QuickSpecs** for information on additional racks options and rack specifications.

HPE Power Distribution Units (PDUs)

HPE Basic Power Distribution Units (PDU)

HPE Basic 1.9kVA/L5-20P 16A/120V Outlets (12) 5-20R/Horizontal NA/JP PDU	H5M54A
HPE Basic 3.6kVA/60320 C20 Detachable 16A/230V Outlets (12) C13/Horizontal WW PDU	H5M56A
HPE Basic 2.8kVA/L5-30P 24A/120V Outlets (18) 5-20R/Vertical NA/JP PDU	H5M55A
HPE Basic 4.9kVA/60320 C20 Detachable 16A/230V Outlets (20) C13/Vertical WW PDU	H5M57A
HPE Basic 4.9kVA/L6-30P 24A/208V Outlets (20) C13/Vertical NA/JP PDU	H5M58A
HPE Basic 3Ph 8.6kVA/L15-30P 24A/208V Outlets (18) C13/Vertical NA/JP PDU	H5M61A
HPE Basic 4.9kVA/L6-30P 24A/208V Outlets (24) C13 (6) C19/Vertical NA/JP PDU	H5M59A
HPE Basic 8.3kVA/CS8265C 40A/208V Outlets (30) C13 (6) C19/Vertical NA PDU	H5M60A
HPE Basic 9.2kVA/50A Terminal Block 40A/230V Outlets (30) C13 (6) C19/Vertical WW PDU	H5M75A
HPE Basic 3Ph 5.7kVA/ L21-20P 16A/120-208V Outlets (24) C13 (3) 5-20R/Vertical NA/JP PDU	H5M63A

Additional Options

HPE Basic 3Ph 8.6kVA/L21-30P 24A/120-208V Outlets (24) C13 (3) C19 (3) 5-20R/Vertical NA/JP PDU	H5M64A
HPE Basic 3Ph 8.6kVA/L15-30P 24A/208V Outlets (24) C13 (6) C19/Vertical NA/JP PDU	H5M62A
HPE Basic 3Ph 11kVA/60309 16A/240V Outlets (36) C13 (6) C19/Vertical NA PDU	H5M67A
HPE Basic Modular 2.8kVA/L5-30P 24A/120V Outlets (4) C19/Horizontal NA/JP PDU	252663-D71
HPE Basic Modular 4.9kVA/L6-30P 24A/208V Outlets (4) C19/Horizontal NA/JP Core Only PDU	252663-D74
HPE Basic Modular 8.3kVA/CS8265C 40A/208V Outlets (4) C19/Horizontal NA/JP PDU	252663-D75
HPE Basic Modular 3Ph 8.6kVA/L15-30P 24A/208V Outlets (6) C19/Horizontal NA/JP PDU	AF512A
HPE Basic Modular 3Ph 14.4kVA/CS8365C 40A/208V Outlets (6) C19/Horizontal NA/JP PDU	AF519A
HPE Basic Modular 3Ph 17.3kVA/60309 60A 4-wire 48A/208V Outlets (6) C19/Horizontal NA/JP PDU	AF511A

NOTE: Please see the [HPE Basic Power Distribution Units \(PDU\) QuickSpecs](#) for information on additional options and product specifications.

HPE Metered Power Distribution Units (PDU)

HPE Metered 2.8kVA/L5-30P 24A/120V Outlets (12) 5-20R/Horizontal NA/JP PDU	D9N43A
HPE Metered 3.6kVA/60320 C20 Detachable 16A/230V Outlets (12) C13/Horizontal WW PDU	D9N46A
HPE Metered 4.9kVA/L6-30P 24A/208V Outlets (12) C13/Horizontal NA/JP PDU	D9N44A
HPE Metered 3.6kVA/60320 C20 Detachable 16A/230V Outlets (16) C13/Vertical WW PDU	D9N45A
HPE Metered 4.9kVA/L6-30P 24A/208V Outlets (12) C13/Vertical NA/JP PDU	G9Z05A
HPE Metered 4.9kVA/L6-30P 24A/208V Outlets (20) C13 (4) C19/Vertical NA/JP PDU	D9N47A
HPE Metered 3Ph 8.6kVA/L15-30P 24A/208V Outlets (18) C13 (3) C19/Vertical NA/JP PDU	D9N51A
HPE Metered 3Ph 5.7kVA/L21-20P 16A/120-208V Outlets (13) C13 (3) 5-20R/Vertical NA/JP PDU	D9N52A
HPE Metered 3Ph 8.6kVA/L21-30P 24A/120-208V Outlets (18) C13 (3) C19 (3) 5-20R/Vertical NA/JP PDU	D9N53A
HPE Metered 8.3kVA/CS8265C 40A/208V Outlets (30) C13 (3) C19/Vertical NA PDU	D9N49A
HPE Metered 3Ph 14.4kVA/CS8365C 40A/208V Outlets (12) C13 (12) C19/Vertical NA/JP PDU	D9N58A
HPE Metered 3Ph 16.6kVA/60309 32A-30A 5-wire 24A/230V Outlets (30) C13 (3) C19/Vertical NA/JP PDU	D9N61A
HPE Metered 3Ph 16.6kVA/60309 32A-30A 5-wire 24A/230V Outlets (12) C13 (12) C19/Vertical NA/JP PDU	D9N62A
HPE Metered 3Ph 17.3kVA/60309 60A 4-wire 48A/208V Outlets (24) C13 (3) C19/Vertical NA/JP PDU	D9N54A
HPE Metered 3Ph 17.3kVA/60309 60A 4-wire 48A/208V Outlets (12) C13 (12) C19/Vertical NA/JP PDU	D9N59A

Additional Options

HPE Metered 3Ph 17.3kVA/60309 60A 4-wire 48A/208V Outlets (12) C13 (12) C19/Vertical NA/JP PDU G9Z07A

HPE Metered 3Ph 19.9kVA/L22-30P 24A/277V Outlets (30) RF-203P-HP/Vertical NA PDU D9N63A

HP Environmental Sensor for Remote Monitored and Managed PDUs E2D53A

NOTE: Please see the [HPE Metered Power Distribution Units \(PDU\) QuickSpecs](#) for information on additional options and product specifications.

HPE Intelligent Power Distribution Unit (PDU)

HPE Intelligent Modular 4.9kVA/L6-30P 24A/208V Outlets (6) C19/Horizontal NA/JP PDU AF520A

HPE Intelligent Modular 8.3kVA/CS8265C 40A/208V Outlets (6) C19/Horizontal NA/JP PDU AF521A

HPE Intelligent Modular 3Ph 8.6kVA/L15-30P 24A/208V Outlets (6) C19/Horizontal NA/JP PDU AF522A

HPE Intelligent Modular 3Ph 17.3kVA/60309 60A 4-wire 48A/208V (6) C19/Horizontal NA/JP PDU AF523A

HPE Intelligent Modular 3Ph 11kVA/L22-20P 16A/240V Outlets (6) C19/Horizontal NA/JP PDU AF900A

HPE Intelligent Modular 3Ph 17.3kVA/60309 30A 5-wire 24A/240V (6) C19/Horizontal NA/JP PDU AF901A

HPE Intelligent Modular 3Ph 17.3kVA/IEC 60309 60A 4-wire 48A/208V (12) C19/Horizontal NA/JP PDU AF535A

HPE Intelligent Modular 3Ph 17.3kVA/IEC 60309 30A 5-wire 24A/240V (12) C19/Horizontal NA/JP PDU AF537A

HPE Intelligent Modular 4.9kVA/L6-30P 24A/208V Outlets (20) C13 (6) C19/Horizontal NA/JP PDU AF531A

HPE Intelligent Modular 3Ph 8.6kVA/L15-30P 24A/208V Outlets (20) C13 (6) C19/Horizontal NA/JP PDU AF532A

HPE Intelligent Modular 3Ph 14.4kVA/CS8365C 40A/208V Outlets (6) C19/Horizontal NA/JP PDU AF533A

HP 5xC13 Intelligent PDU Extension Bar G2 Kit AF547A

HP 5xC13 Outlets Power and UID LEDs Pair Standard Extension Bar AF528A

NOTE: Please see the [HPE Intelligent Power Distribution Unit \(PDU\) QuickSpecs](#) for information on additional options and product specifications.

HPE Metered and Switched Power Distribution Units (PDU)

HPE Metered Switched 2.8kVA/L5-30P 24A/120V Outlets (24) 5-20R /Vertical NA/JP PDU H8B48A

HPE Metered Switched 3.6kVA/60320 C20 Detachable 16A/230V Outlets (7) C13 (1) C19/Vertical WW PDU H8B49A

HPE Metered Switched 4.9kVA/L6-30P 24A/208V Outlets (20) C13 (4) C19/Vertical NA/JP PDU H8B50A

HPE Metered Switched 3Ph 8.6kVA/L15-30P 24A/208V Outlets (18) C13 (6) C19/Vertical NA/JP PDU H8B52A

HPE Metered Switched 3Ph 8.6kVA/L2190-30P 24A/208V Outlets (23) C13 C19 (1) 520R/Vertical NA/JP PDU H8B53A

HPE Metered Switched 3Ph 14.4kVA/CS8365C 40A/208V Outlets (12) C13 (12) C19/Vertical NA/JP PDU H8B55A

Additional Options

HPE Metered Switched 3Ph 17.3kVA/60309 4-wire 48A/208V Outlets (12) C13 (12) H8B56A
C19/Vertical NA/JP PDU

HP 800VA - 277V Input / 230V Output NA Rack Mount Transformer H3X09A

NOTE: Please see the [HPE Metered and Switched Power Distribution Units \(PDU\) QuickSpecs](#) for information on additional options and product specifications.

NOTE: To learn more, please visit the [HPE Uninterruptible Power Systems \(UPS\) web page](#).

HPE Rack Mount Consoles, KVM Switches, and Keyboards	Rail Kits	
	HP 1U Short Friction Rail Kit	775612-B21
	HPE Location Discovery Services	
	HP Location Discovery Services LCD8500 Kit	TL052A
	HPE Rack Mount Consoles	
	HP LCD8500 1U US Rackmount Console Kit	AF630A
	HP LCD8500 1U US TAA Rackmount Console Kit	AF645A
	HPE KVM Switches	
	HP 0x1x8 G3 KVM Console Switch	AF651A
	HP 0x2x16 G3 KVM Console Switch	AF652A
	HP TAA 0x2x16 G3 KVM Console Switch	AF653A
	HP USB Remote Access Key for G3 KVM Console Switches	AF650A
	HP KVM Console USB Interface Adapter	AF628A
	HP 0x2x16 KVM Server Console Switch G2 with Virtual Media CAC Software	AF618A
	HP 0x2x32 KVM Server Console Switch G2 with Virtual Media CAC Software	AF619A
	HP KVM Console USB 2.0 Virtual Media CAC Interface Adapter	AF629A
	HP 1x4 USB/PS2 KVM Console Switch	AF611A
	HP 1x1Ex8 KVM IP Console Switch G2 with Virtual Media CAC Software	AF620A
	HP 2x1Ex16 KVM IP Console Switch G2 with Virtual Media CAC Software	AF621A
	HP 4x1Ex32 KVM IP Console Switch G2 with Virtual Media CAC Software	AF622A
	NOTE: To learn more, please visit the HPE KVM Switches web page .	
HPE USB Keyboard and Mouse		
HP USB BFR with PVC Free US Keyboard/Mouse Kit	631341-B21	
HPE Other Options		
HP Rack LED Light Kit	BW939A	
HP Advanced Power Manager Kit	741192-B21	
HP Kit LCD 1.83m Latch Display Port Cable	G7T29A	
HP ConvergedSystem Door Branding Kit	TK815A	
HP ConvergedSystem Rack Light Kit	TK816A	
HP ConvergedSystem Rack Side Panel 1075mm Kit	TK817A	

HPE Uninterruptible HPE DirectFlow Three Phase UPS

Power Systems (UPS)	Power Unit (1U UPS)	
	HP R12000 DirectFlow - 1U Rackmount Uninterruptible Power System	G9Y75A
	HP R12000 DirectFlow - POD 1U Rackmount Uninterruptible Power System	AF478A
	Input/Output Module Options for 1U UPS	
	HP 30A 400-415 Volt Three Phase NA R10000 DirectFlow UPS IEC309 Input/Output Module	AF489A

Additional Options

HP 30A 480 Volt Three Phase NA R12000 DirectFlow UPS L22-30 Input/Output Module AF491A

HP 30A 480 Volt Three Phase NA R12000 DirectFlow UPS IEC309 Input/Output Module AF492A

HP 30A 400-415 Volt Three Phase NA R12000 DirectFlow UPS IEC309 Input/Output Module G9Y76A

Power Unit (2U UPS)

HP R18000 DirectFlow - 2U Rackmount Uninterruptible Power System AF479A

HP DirectFlow UPS Management Card AF493A

Input/Output Module Options for 2U UPS

HP 30A 480 Volt Three Phase NA R18000 DirectFlow UPS IEC309 Input/Output Module AF486A

HP 30A 480 Volt Three Phase NA R18000 DirectFlow UPS IEC309 Input/Output Module AF487A

HP 30A 400 Volt Three Phase NA R18000 DirectFlow UPS IEC309 Input/Output Module D9Q02A

HP 30A 400-415V Three Phase NA R18000 DirectFlow UPS 1:1 IEC309 Input/Output Module AF484A

NOTE: All Input/Output Modules support dual output outlets except the AF484A.

Battery Pack Options

HP DirectFlow UPS - 1U Rackmount Lithium-ion Battery Pack AF480A

HP DirectFlow UPS - 3U Rackmount VRLA Battery Pack AF482A

HP WW DirectFlow Secondary Battery Cable AF497A

NOTE: Please see the [HPE DirectFlow Three Phase Uninterruptible Power System QuickSpecs](#) for information on additional options and product specifications.

HPE Tower UPS

HPE T750 G4 UPS Models

HP T750 G4 NA/JP Uninterruptible Power System J2P85A

HPE T1000 G4 UPS Models

HP T1000 G4 NA/JP Uninterruptible Power System J2P86A

HPE T1500 G4 UPS Models

HP T1500 G4 NA/JP Uninterruptible Power System J2P87A

HPE Rack-mountable UPS

HPE R/T2200 G4 UPS Models

HP R/T2200 G4 NA/JP Uninterruptible Power System J2R00A

HPE R/T3000 G4 UPS Models

HP R/T3000 G4 Low Voltage NA/JP Uninterruptible Power System J2R01A

HP R/T3000 G4 High Voltage NA/JP Uninterruptible Power System J2R02A

R1500 G4 Models

HP R1500 G4 NA Uninterruptible Power System J2Q99A

R7000 Uninterruptible Power System (UPS)

HP R7000 4U 50A High Voltage NA/JP Uninterruptible Power System AF462A

R5000 Uninterruptible Power System (UPS)

HP R5000 3U L630 High Voltage NA/JP Uninterruptible Power System AF460A

HPE UPS Options

Additional Options

HP R/T2200 G4 Extended Runtime Module	J2R09A
HP R/T3000 G4 Extended Runtime Module	J2R10A
HP 2U Rack/Tower UPS Shipping Kit	L4Q11A

NOTE: Please see the **HPE Line Interactive Single Phase UPS QuickSpecs** for information on additional options and product specifications.

NOTE: To learn more, please visit the **HPE Uninterruptible Power Systems (UPS) web page**.

HPE USB and SD Options

HPE Enterprise Mainstream Flash Media Kits for Memory Cards

HP 32GB microSD Enterprise Mainstream Flash Media Kit	700139-B21
HP 8GB microSD Enterprise Mainstream Flash Media Kit	726116-B21
HP 8GB USB Enterprise Mainstream Flash Media Drive Key Kit	737953-B21
HP Dual 8GB microSD Enterprise Midline USB Kit	741279-B21

HPE Support Services

Installation & Start-up Services

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

Foundation Care

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

Proactive Care

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

NOTE: For a full list of available support services, please visit <https://ssc.hpe.com/portal/site/ssc/>

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)			
HPE SKU P/N	805667-B21	819880-B21	805669-B21	805671-B21
DIMM Rank	Single Rank	Single Rank	Dual Rank	Dual Rank
DIMM Capacity	4GB	8GB	8GB	16GB
Voltage	Std Voltage 1.2V	Std Voltage 1.2V	Std Voltage 1.2V	Std Voltage 1.2V
DIMM Native Speed (MT/s)	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)				
1 DIMM Per Channel	2133	2133	2133	2133
2 DIMM Per Channel	2133	2133	2133	2133
3 DIMM Per Channel		n/a		

DIMM slot and configuration diagram

DIMM slot and configuration diagrams

UDIMM maximum configuration (1 CPU model)

- Population order; start with "A" first, "B" second, "C" third, etc.

	CPU 1		CPU 2	
	Slot #	population order	Slot #	population order

Memory

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

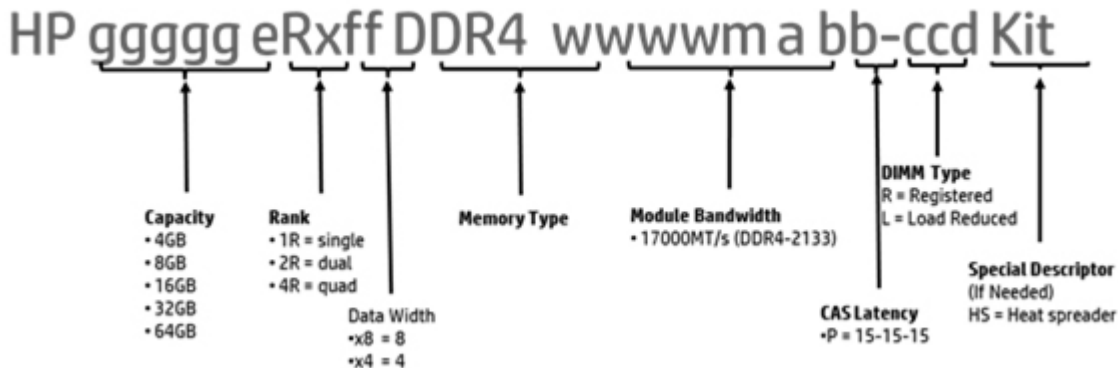
Memory Speed by Processor Model	Processor Models	Supported Memory Speeds
	i3-6100, i3-6300, G4500, G4400, E3-1220v5, E3-1225v5, E3-1230v5, E3-1240v5, E3-1270v5, E3-1280v5, E3-1260Lv5, E3-1240Lv5	2133MT/s

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)
	E3-1220v5, E3-1240v5	8GB (1x8GB)	56GB (3x16GB, 1x8GB)	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



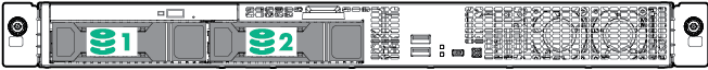
1 - 4

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

System Unit

Dimensions
(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)
2 LFF - 1.70 x 17.11 x 15.05 inches (4.32 x 43.46 x 38.22 cm)

NOTE: Depth of the chassis from rear to bezel is 15.5".

Weight
(approximate) Non hot Plug 2 17.37lb (7.88kg)
LFF fully loaded
(all hard drives,
power supplies,
and processors
installed)
Hot Plug 2LFF fully loaded 17.41lb (7.9kg)
loaded
(One hard drive,
power supply, and
processor
installed)
4 SFF Fully loaded 19.18lb (8.7kg)

290W Non-hot Plug Power Supply

Input Requirements

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)

BTU Rating

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

Power Specifications To review typical system power ratings use the Power Advisor which is available via the online tool located at URL: <http://www.hp.com/go/proliant-energy-efficient> or <http://www.hp.com/go/hppoweradvisor> - Click on the system of interest. Example: DL20 Gen9- Follow the instructions of the next screens.

Power Supply Output

Rated Steady-State Power	290 W Max
Maximum Peak Power	366 W within 10 seconds

900W Redundant Power Supply

Input Requirements

Rated Input Voltage	100 to 127 VAC 200 to 240VAC
Rated Input Frequency	50 to 60 Hz
Rated Input Current	6.3 A at 100 V AC 4.9 A at 200 V AC
Maximum rated input power	619 W at 100 VAC 976 W at 200 VAC
BTUs per hour non redundant	2112 at 100 VAC 3329 at 200 VAC

Technical Specifications

Power Specifications	To review typical system power ratings use the Power Advisor which is available via the online tool located at URL: http://www.hp.com/go/proliant-energy-efficient or http://www.hp.com/go/hppoweradvisor - Click on the system of interest. Example: DL20 Gen9- Follow the instructions of the next screens.	
Power Supply Output	Rated Steady-State Power	550 W at 100 VAC to 127 VAC input 900 W at 200 VAC to 240 VAC input
	Maximum Peak Power	550 W at 100 VAC to 127 VAC input 900 W at 200 VAC to 240 VAC input
System Inlet Temperature	Standard Operating Support	10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 305 m (1.8°F per every 1000 ft) above sea level to a maximum of 3050 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 20°C/hr (36°F/hr). The upper limit and rate of change may be limited by the type and number of options installed. System performance during standard operating support may be reduced if operating 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: http://www.hp.com/go/proliant/ashrae System performance may be reduced if operating in the extended ambient operating range or with a fan fault. NOTE: Supports A3 extended ambient.
Relative Humidity	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
Altitude	Operating	3050 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
	Non-operating	9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
Acoustic Noise	Listed are the declared A-Weighted sound power levels (LWAd) and declared average bystander position A-Weighted sound pressure levels (LpAm) when the product is operating in a 23°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109).	
	Idle	
	L WAd	Entry 3.7 B Base 3.8 B Performance 3.4B
	L pAm	Entry 20.0 dBA

Technical Specifications

		Base 20.0 dBA Performance 18.0 dBA
	Operating	
	L WAd	Entry 3.7 B Base 4.7 B Performance 5.6 B
	L pAm	Entry 20.0 dBA Base 30.0 dBA Performance 34.0 dBA
Emissions Classification (EMC)	FCC Rating Normative Standards	Class A 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

NOTE: 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.

HPE Dynamic Smart Array B140i Controller	Number of PCI links	Four
	PCI link rate	4 Gb/s
	Storage protocol support	SATA
	SAS/SATA peak data transfer rate	6 Gb/s
	Number of SAS/SATA links	10 links
	SAS/SATA connectivity	2x4 connectors; 2x1 connectors
	Expander support	No
	Drives supported (max)	Up to 10 Internal Drives
	RAID support	0, 1, 10, 5 SATA
	Software management	HPE SSA, SMH, SIM
	Warranty	Server warranty
	HPE Secure Encryption license	Not Supported
	HPE SmartCache License	Not Supported
	HPE Smart Storage Administrator	Supported

Technical Specifications

HPE Ethernet 1Gb 2-port 332i Adapter	Network Interface	10Base-T/100Base-TX/1000Base-TX
	Compatibility	IEEE 802.3 10Base-T IEEE 802.3ab 1000Base-T IEEE 802.3u 100Base-TX Energy Efficient Ethernet (EEE) compliant with IEEE Std 802.3az (default is disabled)
	Data Transfer Method	PCI Express, two lanes (x2)
	Controller	BCM5720
	Network Transfer Rate	10Base-T (Half-Duplex) 10 Mb/s per port, 20 Mb/s Combined 10Base-T (Full-Duplex) 20 Mb/s per port, 40 Mb/s Combined 100Base-TX (Half-Duplex) 100 Mb/s per port, 200 Mb/s Combined 100Base-TX (Full-Duplex) 200 Mb/s per port, 400 Mb/s Combined 1000Base-TX (Half-Duplex) 1000Mb/s per port, 2000 Mb/s Combined 1000Base-TX (Full-Duplex) 2000Mb/s per port, 4000 Mb/s Combined
	Connector	RJ-45
	Cable Support	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 Hewlett Packard Enterprise product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to: http://www.hp.com/go/green . To recycle your product, please go to: http://www.hp.com/go/green or contact your nearest Hewlett Packard Enterprise sales office. Products returned to Hewlett Packard Enterprise will be recycled, recovered or disposed of in a responsible manner.
---------------------------------------------------	---------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

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

Summary of Changes

Date	Version History	Action	Description of Change
10-Jun-2016	From Version 8 to 9	Removed	HPE Dual 32GB microSD Enterprise Midline USB Kit was removed from the QuickSpecs.
6-Jun-2016	From Version 7 to 8	Added	Added new HDD offering to the HPE Drives section.
		Changed	HPE Networking, HPE Converged Infrastructure Management Software, and HPE Disk Backup were revised.
6-May-2016	From Version 6 to 7	Changed	Energy Star certification in Pre-Configured Models section was revised.
8-Apr-2016	From Version 5 to 6	Changed	HPE Processors section was revised.
31-Mar-2016	From Version 4 to 5	Added	Added new HPE Non-hot Plug Entry drives and Hot plug standard drives. Added new 8Gb and 16Gb Fiber Channel HBA support. 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	From Version 3 to 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	From Version 2 to 3	Changed	Upgradeability and HPE Power Supplies were revised.
17-Dec-2015	From Version 1 to 2	Added	Smart Buy models were added to the NA version.
		Changed	Power Supply, Upgradeability, and Technical Specifications were revised.



hpe.com/qref/dl20gen9

Summary of Changes



Sign up for updates

© Copyright 2016 Hewlett Packard Enterprise Development LP. The information contained herein is subject to change without notice. The only warranties for Hewlett Packard Enterprise products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. Hewlett Packard Enterprise shall not be liable for technical or editorial errors or omissions contained herein.

Intel® and Xeon® are registered trademarks of Intel Corporation in the U.S. and other countries.

Microsoft®, Windows®, and Windows Server® are U.S. registered trademarks of the Microsoft group of companies.

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

c04834960 - 15474 - North America - V9 - 10-June-2016

