QuickSpecs

Overview

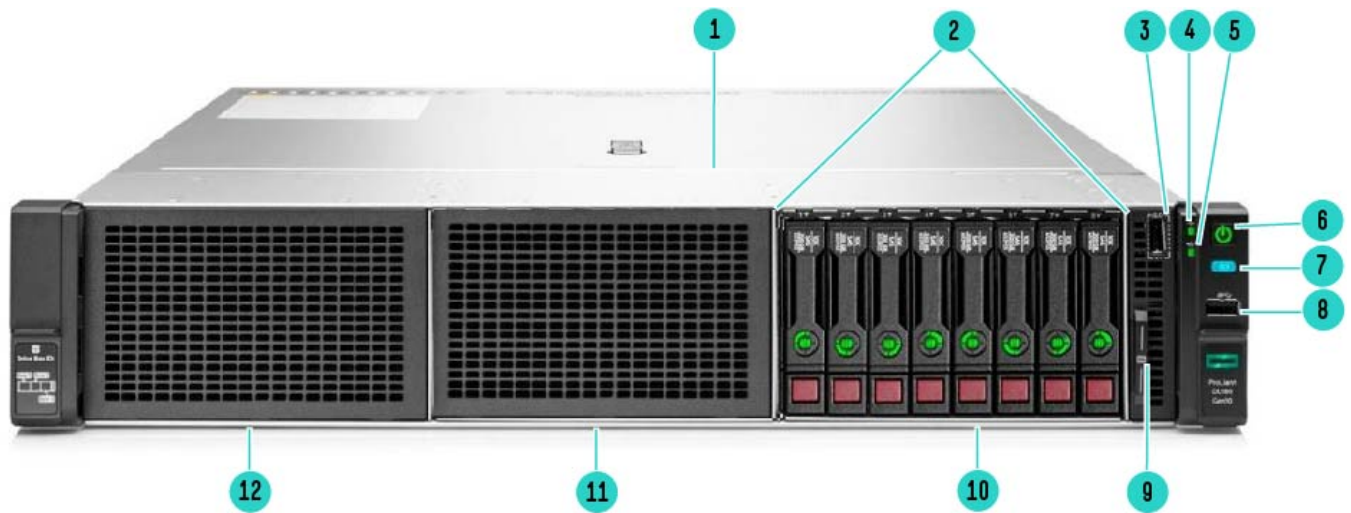### HPE ProLiant DL180 Gen10 Server

NOTE: The HPE Proliant DL180 Gen10 is a limited edition server targeted for specific regions.
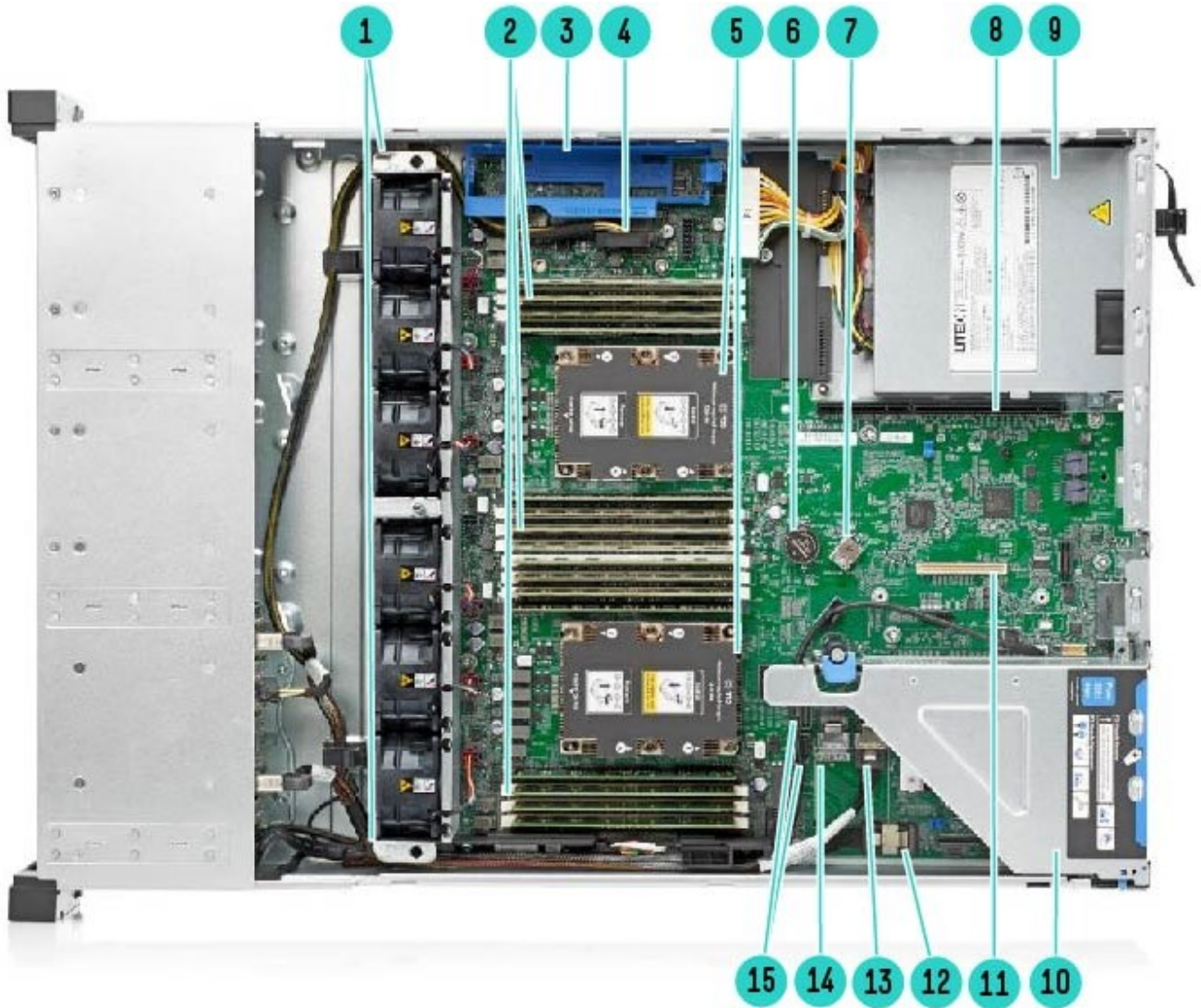Please contact your local sales representative for additional information

Adaptable for diverse workloads and environments, the secure 2P 2U HPE ProLiant DL180 Gen10 delivers world-class compelling performance with the right balance of expandability and scalability. Designed for supreme versatility and resiliency with the right balance of reliability, manageability and performance, while being backed by a comprehensive warranty make it ideal for multiple environments from Containers to Cloud to Big Data. Standardize on the industry's most trusted compute platform. SMBs and enterprises running application.

8SFF Chassis - Front View

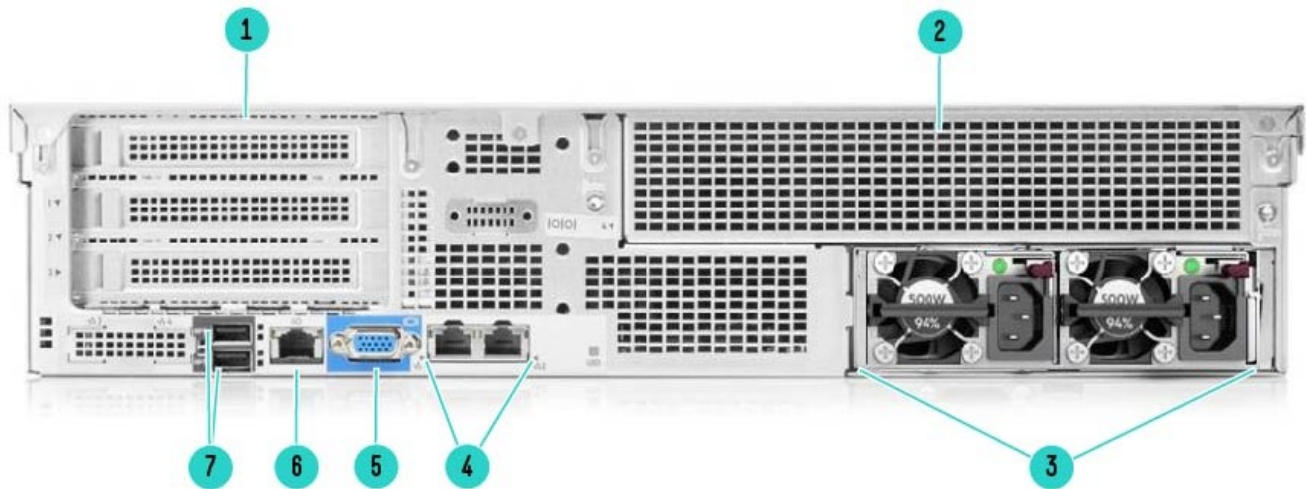|			
1.	Quick removal access panel	7.	UID button
2.	8 SFF Drive Cage	8.	USB 3.0
3.	iLO Front Service Port	9.	Serial label pull tag
4.	Health LED	10	Box 1
5.	NIC status	11.	Box 2
6.	Power On/Standby button and system power LED button	12	Box 3

Overview

8SFF Chassis – with optional 2ⁿᵈ CPU - Internal View

1.	Fan cage shown with 6 Hot-swap fans	9	Power Supply(Non hot-plug power supply shown)
2.	DDR4 DIMM slots. Shown fully populated in 16 slots (8 per processor)	10	Primary PCIe riser, standard
3.	**Optional** HPE Smart Storage Battery (Battery not shown)	11	Flexible Smart Array Connector
4.	Drive Backplane Connector	12	Mini-SAS port 2
5.	2 Processors, heatsink showing	13	Mini-SAS port 1
6.	System Battery	14	Mini-SAS port 3
7.	Internal USB 3.0 port	15	SATA Ports
8.	Connection for second (optional) riser (Requires second CPU)		

Overview

Rear View

1. Primary Riser. PCI Slots (Slots 1-3 top to bottom, riser shipped standard, not shown)
2. Secondary Riser. PCI Slots (Slots 4-6top, not shown, requires second riser card, and second processor).
3. Power Supply (Redundant Hot plug shown)
4. Embedded 2 x 1GbE Network Adapter
5. VGA Port
6. Dedicated iLO management port
7. USB connectors 3.0 (2)

Platform Information
Form Factor
2U rack

Chassis Types
8 SFF
NOTE: All models come with the S100i Smart Array Controller with embedded software RAID support for 14 drives. However this needs to be enabled using Enable SW RAID option (784308-B21) while configuring.

System Fans
Standard – fan types

	Non-Redundant	**Redundant**
1P Model	3 fans	4 fans

Standard Features

Standard Features

Processors – Up to 2 of the following depending on model.
NOTE: For more information regarding Intel Xeon processors, please see the following **http://www.intel.com/xeon**.

Intel Xeon Models	CPU Frequency	Cores	L3 Cache	Power	UPI	DDR4	Memory per socket
Silver Processors							
Silver 4110 Processor	2.1 GHz	8	11.00 MB	85W	2 @ 9.6 GT/s	2400 MT/s	768 GB
Bronze Processors							
Bronze 3106 Processor	1.7 GHz	8	11.00 MB	85W	2 @ 9.6 GT/s	2133 MT/s	768 GB

NOTE: Silver – 4100 Series - 2 Socket supports 2UPI @ 9.6 GT/s, 6-Channel DDR4 @ 2400 MHz providing up to 768 GB memory capacity. Intel Turbo Boost Technology, Intel Hyper-Threading Technology, Intel AVX-512(1x 512-bit FMA), 48 lanes PCIe 3.0, standard RAS supported.
NOTE: Bronze – 3100 Series - 2 Socket supports 2UPI @ 9.6 GT/s, supports 6-Channel DDR4 @ 2133 MHz providing up to 768GB memory capacity. Intel AVX-512(1x 512-bit FMA), 48 lanes PCIe 3.0, standard RAS supported.

Chipset
Intel C622 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 5 ASIC
NOTE: Read and learn more in the **iLO QuickSpecs**.

Memory
One of the following depending on model

Type:		HPE DDR4 SmartMemory, Registered (RDIMM), HPE DDR4 Standard Memory, Registered (RDIMM)
DIMM Slots Available	16	8 DIMM slots per processor, 6 channels per processor, 2 channels @ 2 DIMMs per channel, 4 channels @ 1 DIMM per channel
Maximum capacity (RDIMM)	256 GB	16 x 16 GB RDIMM @ 2400 MT/s

NOTE: The maximum memory by socket is limited by the processor selection.

Memory Protection
For details on the HPE Server Memory Options RAS feature, visit: **http://www.hpe.com/docs/memory-ras-feature.**

Standard Features

Expansion Slots

CPU1 x8x8x8 riser

Slots #	Technology	Bus Width	Connector Width	Slot Form Factor	Notes
1	PCIe 3.0	X8	X8	Full-height, full-length slot	Proc 1
2	PCIe 3.0	X8	X8	Full-height, half-length slot	Proc 1
3	PCIe 3.0	X8	X8	Full-height, half-length slot	Proc 1

NOTE: Bus Width Indicates the number of physical electrical lanes running to the connector.

FlexibleLOM

Slots #	Technology	Bus Width	Connector Width	Slot Form Factor	Notes
1	PCIe 3.0	X8	X8	Full-height, full-length slot	Proc 1
2	PCIe 3.0	X8	X8	Full-height, half-length slot	Proc 1
3	PCIe 3.0	X8	X8	FlexibleLOM	Proc 1

NOTE: Bus Width Indicates the number of physical electrical lanes running to the connector.
NOTE: This riser is necessary to install FlexibleLOM adapters

CPU1 x16x8 riser

Slots #	Technology	Bus Width	Connector Width	Slot Form Factor	Notes
1	PCIe 3.0	X16	X16	Full-height, full-length slot	Proc 1
2	PCIe 3.0	X8	X8	Full-height, half-length slot	Proc 1

NOTE: Bus Width Indicates the number of physical electrical lanes running to the connector.

CPU2 x8x8x8 riser

Slots #	Technology	Bus Width	Connector Width	Slot Form Factor	Notes
1	PCIe 3.0	X8	X8	Full-height, full-length slot	Proc 2
2	PCIe 3.0	X8	X8	Full-height, half-length slot	Proc 2
3	PCIe 3.0	X8	X8	Low profile	Proc 2

NOTE: Bus Width Indicates the number of physical electrical lanes running to the connector.
NOTE: When populating the second optional riser slot, the second processor must be installed.

Standard Features

Storage Controllers
The Gen10 controller naming framework has been updated to simplify identification as depicted below. For a more detailed breakout of the available Gen10 Smart Array controllers visit the **HPE Smart Array Gen10 Controllers Data Sheet**.
One of the following depending on model

Software RAID
HPE Smart Array S100i SR Gen10 SW RAID
NOTE: HPE Smart Array S100i SR Gen10 SW RAID will operate in UEFI mode only. For legacy support an additional controller will be needed, and for CTO orders please also select the Legacy mode settings part, 758959-B22.
NOTE: HPE Smart Array S100i SR Gen10 SW RAID is off by default and must be enabled.
NOTE: The S100i uses 14 embedded SATA ports
NOTE: HPE Smart Array S100i SR Gen10 SW RAID only supports Windows and does not support Linux. For Linux users, HPE offers a solution that uses in-distro open-source software to create a two-disk RAID 1 boot volume. For more information visit: **https://downloads.linux.hpe.com/SDR/project/lsrrb/**

Essential RAID Controller
HPE Smart Array E208i-p SR Gen10 Controller
HPE Smart Array E208e-p SR Gen10 Controller
HPE Smart Array E208i-a SR Gen10 Controller
HPE Smart Array P408i-a SR Gen10 Controller

NOTE: Performance RAID Controllers require the HPE Smart Storage Battery (P01366-B21) which is sold separately.

Internal Storage Devices
One of the following depending on model
Optical Drive
Optional: DVD-ROM, DVD-RW
Hard Drives
None ship standard

Maximum Internal Storage

	Capacity	Configuration
Hot Plug SFF SAS	9.6 TB	8X1.2 TB
Hot Plug SFF SAS SSD	3.2 TB	8X400 Gb
Hot Plug SFF SATA SSD	3.8 TB	8X480 Gb

Standard Features

Power Supply
HPE 500W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit
NOTE: Available in 94% efficiency.

HPE Flexible Slot (Flex Slot) Power Supplies share a common electrical and physical design that allows for hot plug, tool-less installation into HPE ProLiant Gen10 Performance Servers. Flex Slot power supplies are certified for high-efficiency operation and offer multiple power output options, allowing users to "right-size" a power supply for specific server configurations. This flexibility helps to reduce power waste, lower overall energy costs, and avoid "trapped" power capacity in the data center.

All pre-configured servers ship with a standard 6-foot IEC C-13/C-14 jumper cord (A0K02A). This jumper cord is also included with each standard AC power supply option kit. If a different power cord is required, please check the **ProLiant Power Cables** web page.

To review the power requirements for your selected system, please use the **HPE Power Advisor Tool**.
For information on power specifications and technical content visit **HPE Server power supplies**.

Interfaces

Video	1 rear – VGA Port (standard)
Network Ports	2 x 1 Gb ports shipping standard with optional Media Module, FlexibleLOM or stand up card
Management Network Port	1 Gb Dedicated
Front iLO Service Port	1 standard
Micro SD Slot	1 Micro SD

NOTE: The Micro 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.

USB 3.0	Up to 4 total: 1 front, 2 rear, 1 internal (secure),

Operating Systems and Virtualization Software Support for ProLiant Servers
- **Windows Server 2019 (Tested Only)**
- **Windows Server 2016**
- **VMware vSphere 6.0 U3**
- **VMware vSphere 6.5 U2**
- **VMware vSphere 6.7 U1**
- **Red Hat Enterprise Linux (RHEL) 6.9,**
- **Red Hat Enterprise Linux (RHEL) 7.6 (with Kbase)**
- **SUSE Linux Enterprise Server 12 SP4**
- **SUSE Linux Enterprise Server 15**

Standard Features

Industry Standard Compliance
ACPI 6.1 Compliant
PCIe 3.0 Compliant
WOL Support
Microsoft® Logo certifications
PXE Support
USB 3.0 Compliant (internal)
SMBIOS 3.1
UEFI 2.6
Redfish API
IPMI 2.0
Secure Digital 2.0
Advanced Encryption Standard (AES)
Triple Data Encrytion Standard (3DES)
SNMP v3
TLS 1.2
DMTF Systems Management Architecture for Server Hardware Command Line Protocol (SMASH CLP)
Active Directory v1.0
ASHRAE A3/A4
NOTE: For additional technical thermal details regarding ambient temperatures, humidity and features support please visit: **http://www.hpe.com/servers/ashrae**.
DL160/DL180 info not published.
UEFI (Unified Extensible Firmware Interface Forum)

Graphics
Integrated Video Standard
* Video modes up to 1920 x 1200@60Hz (32 bpp)
* 16MB Video Memory
HPE iLO 5 on system management memory
* 32 MB Flash
    * 4 Gbit DDR 3 with ECC protection

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

NOTE: The UEFI System Utilities tool is analogous to the HPE ROM-Based Setup Utility (RBSU) of legacy BIOS. For more information, please visit **http://www.hpe.com/servers/uefi**.

UEFI enables numerous new capabilities specific to HPE ProLiant servers such as:
* Secure Boot and Secure Start enable for enhanced security
* Operating system specific functionality
* Support for > 2.2 TB (using GPT) boot drives
* USB 3.0 Stack
* Embedded UEFI Shell
* Mass Configuration Deployment Tool using iLO RESTful API that is Redfish API Conformant
* PXE boot support for IPv6 networks
* Workload Profiles for simple performance optimization

Standard Features

UEFI Boot Mode only:
- TPM 2.0 Support
- NVMe Boot Support
- iSCSI Software Initiator Support.
- HTTP/HTTPs Boot support as a PXE alternative.

Boot support for option cards that only support a UEFI option ROM

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 Gen10 Server.

Embedded Management

HPE Integrated Lights-Out（HPE iLO）

Monitor your servers for ongoing management, service alerting, reporting and remote management with HPE iLO. Learn more at **http://www.hpe.com/info/ilo**.

UEFI

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

Intelligent Provisioning

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

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iLO RESTful API

iLO RESTful API is Redfish API conformance and offers simplified server management automation such as configuration and maintenance tasks based on modern industry standards. Learn more at **http://www.hpe.com/info/restfulapi**.

Server Utilities

Active Health System

The HPE Active Health System (AHS) is an essential component of the iLO management portfolio that provides continuous, proactive health monitoring of HPE servers. Learn more at **http://www.hpe.com/servers/ahs**.

Active Health System Viewer

Use the Active Health System Viewer, a web-based portal, to easily read AHS logs and speed problem resolution with HPE self-repair recommendations, to learn more visit: **http://www.hpe.com/servers/ahsv**.

Smart Update

Keep your servers up to date with the HPE Smart Update solution by using Smart Update Manager (SUM) to optimize the firmware and driver updates of the Service Pack for ProLiant (SPP). Learn more at **http://www.hpe.com/info/smartupdate.**

Service Pack for ProLiant

The Service Pack for ProLiant (SPP) is a comprehensive collection of server firmware, drivers, and system software tested as a single solution stack, which is delivered as a single ISO image. Learn more at **http://www.hpe.com/servers/spp**

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iLO Amplifier Pack

Designed for large enterprise and service provider environments with hundreds of HPE servers, the iLO Amplifier Pack is a free, downloadable open virtual application (OVA) that delivers the power to discover, inventory and update Gen8, Gen9 and Gen10 HPE servers at unmatched speed and scale. Use with an iLO Advanced License to unlock full capabilities. Learn more at **http://www.hpe.com/servers/iLOamplifierpack**.

Standard Features

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

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

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

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

Security
UEFI Secure Boot and Secure Start support
Immutable Silicon Root of Trust
FIPS 140-2 validation (iLO 5 certification in progress)
Common Criteria certification (iLO 5 certification in progress)
Configurable for PCI DSS compliance
Advanced Encryption Standard (AES) and Triple Data Encryption Standard (3DES) on browser
Support for Commercial National Security Algorithms (CNSA)
Tamper-free updates – components digitally signed and verified
Secure Recovery – recover critical firmware to known good state on detection of compromised firmware
Ability to rollback firmware
Secure erase of NAND/User data

Warranty
This product is covered by a global limited warranty and supported by HPE Services and a worldwide network of Hewlett Packard Enterprise Authorized Channel Partners resellers. Hardware diagnostic support and repair is available for three years from date of purchase. Support for software and initial setup is available for 90 days from date of purchase. Enhancements to warranty services are available through HPE Pointnext operational services or customized service agreements. Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.

NOTE: Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response. Warranty repairs may be accomplished through the use of Customer Self Repair (CSR) parts. These parts fall into two categories: 1) Mandatory CSR parts are designed for easy replacement. A travel and labor charge will result when customers decline to replace a Mandatory CSR part; 2) Optional CSR parts are also designed for easy replacement but may involve added complexity. Customers may choose to have Hewlett Packard Enterprise replace Optional CSR parts at no charge. Additional information regarding worldwide limited warranty and technical support is available at:
http://h17007.www1.hpe.com/us/en/enterprise/servers/warranty/.

Optional Features

Server Management

HPE Insight Cluster Management Utility (CMU)

HPE Insight Cluster Management Utility is a HyperScale management framework that includes software for the centralized provisioning, management and monitoring of nodes and infrastructure. Learn more at **http://www.hpe.com/info/cmu**.

Rack and Power Infrastructure

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

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

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

HPE Uninterruptible Power Systems are cost-effective power protection for any type workload. Some UPSs include options for remote management and extended runtime modules so you're critical dense data center is covered in power outages.

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

Learn more about HPE Racks, KVM, PDUs and UPSs at **HPE Rack and Power Infrastructure**.

Service and Support

HPE Pointnext - Service and Support

Achieve maximum return from your IT investment

Get the expertise you need at every step of the IT journey with HPE Pointnext services and support. We help you lower your risks and costs using proven best practices, automation and methodologies that have been tested and refined by HPE experts through thousands of implementations and deployments globally.

HPE Pointnext specializes in flawless and on-time implementation, on-budget execution, and creative configurations that get the most out of software and hardware alike. We collaborate with your IT team from technical design to implementation, build to migration, distribution, and finally to operational consulting and service.

- Integration and performance services provide resources to help you get your systems up and running quickly and augment your IT staff for projects.
- HPE Foundation Care provides fast problem resolution with comprehensive coverage and access to experts.
- HPE Proactive Care provides proactive problem prevention and an enhanced support experience for your systems.
- HPE Datacenter Care helps businesses run their IT operations by optimizing day-to-day tasks, integrating technology management and streamlining to a more agile cloud-like model.

Consume IT services on your terms, getting the specific value that you need for your business. HPE GreenLake Flex Capacity enables you to scale easily by adding capacity in minutes, not months. You pay only for what you actually need, creating true pay-per-use outcomes. Simplify your IT planning, capacity forecasting, and cost allocation with HPE GreenLake.

Learn more about HPE Pointnext services and solutions for your business.

Connect your devices:
Unlock all of the benefits of your technology investment by connecting your products to Hewlett Packard Enterprise. Reduce down time and improve diagnostic accuracy with a single consolidated view of your environment. By connecting, you will receive 24x7monitoring, pre-failure alerts, automatic call logging, and automatic parts dispatch. HPE Proactive Care Service and HPE Datacenter Care Service customers will also benefit from proactive activities to help prevent issues and increase optimization. All of these benefits are already available to you with your server storage and networking products, securely connected to HPE support. Learn more about getting connected at **http://www.hpe.com/services/getconnected**

Other related Services

HPE Server Hardware Installation
Provides for the basic hardware installation of HPE branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner.
https://www.hpe.com/h20195/V2/GetPDF.aspx/5981-9356EN.pdf

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**

Service and Support

HPE Support Center

The HPE Support Center is a personalized online support portal with access to information, tools and experts to support HPE business products. Submit support cases online, chat with Hewlett Packard Enterprise experts, access support resources or collaborate with peers. Learn more **http://www.hpe.com/support/hpesc**

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

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

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

For more information: **http://www.hpe.com/services**

Parts and Materials

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

Parts and components that have reached their maximum supported lifetime and/or the maximum usage limitations as set forth in the manufacturer's operating manual, product quick-specs, 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.

Configuration Information

SMB offering - Base Configuration (choose one of the following)
These SKUs are not currently available in all countries. Please contact your local sales representative for additional information

	SMB Models	
SKU Number	879513-B21	879514-B21
Model Name	HPE DL180 Gen10 Intel® Xeon-Bronze 3106 (1.7GHz/8-core/85W) Processor Kit	HPE DL180 Gen10 Intel® Xeon-Silver 4110 (2.1GHz/8-core/85W) Processor Kit
Chassis	8SFF	
Processor	3106 (1.7GHz/8-core/85W)	4110 (2.1GHz/8-core/85W)
Number of Processors	One processor with Standard heatsink	One processor with Standard heatsink
Memory	HPE 16GB 1Rx4 PC4-2666V-R Smart Kit	HPE 16GB 1Rx4 PC4-2666V-R Smart Kit
Network Controller	Embedded 2-Port 1GbE	Embedded 2-Port 1GbE
Storage Controller	Embedded 14Port S100i **NOTE:** SATA only	Embedded 14Port S100i **NOTE:** SATA only
Hard Drive	None included	None included
Optical Drive	None included	None included
PCIe Slots	3 Standard in Primary Riser	
Power Supply	1X500 Redundant Hot Plug	1X500 Redundant Hot Plug
Fans	4 Fans	4 Fans
Management	HPE iLO5	HPE iLO5
Rail Kit	SFF Easy Install	SFF Easy Install
Form Factor	2U Rack	
Warranty	3-year parts, 3-year labor, 3-year onsite support with next business day response	
NOTE: UEFI is the standard default for all SMB models		

Additional Options

HPE Processors

Processor Option Kits

HPE DL180 Gen10 Intel Xeon-Silver 4110 (2.1GHz/8-core/85W) Processor Kit	879731-B21
HPE DL180 Gen10 Intel Xeon-Bronze 3106 (1.7GHz/8-core/85W) Processor Kit	879729-B21

NOTE: Up to two processors supported. Performance Models include two processors.
NOTE: Turbo2: Intel® Turbo Boost Technology 2.0 provides more computing power when you need it with performance that adapts to spikes in your workload and delivers more performance upside than then previous generation turbo technology.
NOTE: DDR4 speed is the maximum memory speed of the processor. Actual memory speed may depend on the quantity and type of DIMMs installed.

Memory Selection

To streamline the configuration process for HPE ProLiant Gen10 servers and to provide the best product availability, HPE recommends memory from the list located here: **http://www.hpe.com/products/recommend**.
Best product availability is limited to US, Canada, and Latin America at this time.

HPE SmartMemory

HPE 16GB (1x16GB) Single Rank x4 DDR4-2666 CAS-19-19-19 Registered Smart Memory Kit	815098-B21

HPE Drives

Enterprise - 12G SAS - SFF Drives

HPE 300GB SAS 12G Enterprise 10K SFF (2.5in) SC 3yr Wty Digitally Signed Firmware HDD	872475-B21
HPE 600GB SAS 12G Enterprise 10K SFF (2.5in) SC 3yr Wty Digitally Signed Firmware HDD	872477-B21
HPE 1.2TB SAS 12G Enterprise 10K SFF (2.5in) SC 3yr Wty Digitally Signed Firmware HDD	872479-B21

SSD Selection

To streamline the configuration process for HPE ProLiant Gen10 servers and to provide the best product availability, HPE recommends SSDs from the list located here: **http://www.hpe.com/products/recommend**.
Best product availability is limited to US, Canada, and Latin America at this time.

To further assist with configuration, HPE also offers an SSD Selector Tool located here: **http://ssd.hpe.com**.

SAS - Mixed Use - SFF - Solid State Drives

HPE 400GB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	**P04525-B21**

SATA - Mixed Use - SFF - Solid State Drives

HPE 480GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	**P07922-B21**

FlexibleLOM adapters

HPE Ethernet 10/25Gb 2-port 640FLR-SFP28 Adapter	817749-B21

NOTE: The DL180 Gen10 chassis ships with 2x 1 Gb embedded.
NOTE: Only one FlexibleLOM can be added to the server. These options are upgradeable and can be changed from the original configuration after the server is shipped.
NOTE: FlexibleLOM Enablement Kit (866941-B21) is required to install these adapters
NOTE: Direct Attach Cable (DAC) for copper environments or fiber transceivers and cables for fiber-optic environments must be purchased separately. Please see the related NIC QuickSpecs for Technical Specifications and additional information:
https://www.hpe.com/us/en/product-catalog/servers/adapters/pip.models.hpe-storefabric-converged-network-adapters.4118472.html

HPE I/O Expansion Options

HPE DL180 Gen10 CPU1 x8x8x8 PCIe Riser Kit	878484-B21
HPE DL180 Gen10 CPU2 x8/x8/x8 PCIe Riser Kit	866945-B21

Additional Options

HPE Power Supplies

HPE 500W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit	865408-B21
HPE C13 - Nema 5-15P US/CA 110V 10Amp 1.83m Power Cord	AF556A

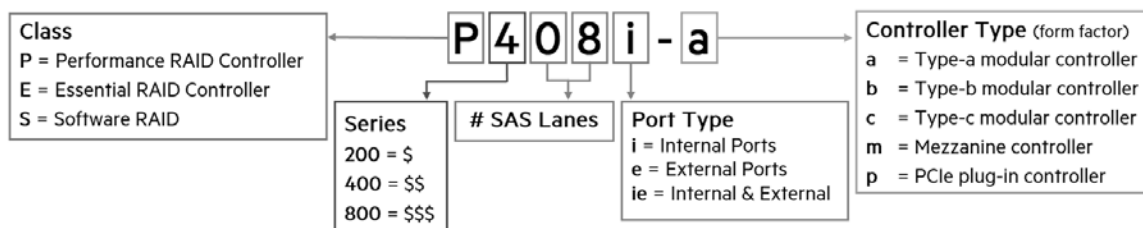### Embedded Management

HPE iLO Advanced

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

HPE iLO Advanced Security

HPE iLO Advanced Premium Security Edition License with 1yr Support on Licensed Features	Q7E31A
HPE iLO Advanced Premium Security Flex Qty License with 1yr Support on Licensed Features	Q7E32A
HPE iLO Advanced Premium Security Edition Electronic License with 1yr Support on Licensed Features	Q7E32AAE
HPE iLO Advanced Premium Security AKA Tracking License with 1yr Support on Licensed Features	Q7E35A
HPE iLO Advanced Premium Security Upgrade Electronic License with 3yr Support on Licensed Features	Q7E12AAE
HPE iLO Advanced Premium Security Edition License with 3yr Support on Licensed Features	Q7E33A
HPE iLO Advanced Premium Security Flex Qty License with 3yr Support on Licensed Features	Q7E34A
HPE iLO Advanced Premium Security Edition Electronic License with 3yr Support on Licensed Features	Q7E34AAE
HPE iLO Advanced Premium Security AKA Tracking License with 3yr Support on Licensed Features	Q7E36A

HPE Smart Array Controllers

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

Essential RAID Controllers

NOTE: Does not occupy a PCIe expansion slot.

HPE Smart Array E208i-p SR Gen10 (8 Internal Lanes/No Cache) 12G SAS PCIe Plug-in Controller	804394-B21
HPE Smart Array E208e-p SR Gen10 (8 External Lanes/No Cache) 12G SAS PCIe Plug-in Controller	804398-B21
HPE Smart Array E208i-a SR Gen10 (8 Internal Lanes/No Cache) 12G SAS Modular Controller	804326-B21
HPE Smart Array P408i-a SR Gen10 (8 Internal Lanes/2GB Cache) 12G SAS Modular Controller	804331-B21

Additional Options

Optional Upgrades

HPE 96W Smart Storage Battery (up to 20 Devices) with 145mm Cable Kit	P01366-B21
HPE DL180 Gen10 SFF Box3 to Smart Array E208i-a/P408i-a Cable Kit	882011-B21

NOTE: Provides backup power for multiple HPE Smart Array controllers or other devices.

HPE Tape Backup
NOTE: For the complete range of tape drives, autoloaders, libraries and media see:
https://www.hpe.com/us/en/storage/storeever-tape-storage.html. For hardware and software compatibility of Hewlett Packard Enterprise tape backup products **http://www.hpe.com/storage/BURAcompatibility**.

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

HPE Power Distribution Units (PDUs)
NOTE: Please see the **HPE Basic Power Distribution Units (PDU) QuickSpecs** for information on these products and their specifications.
NOTE: Please see the **HPE Metered Power Distribution Units (PDU) QuickSpecs** for information on these products and their specifications.
NOTE: Please see the **HPE Intelligent Power Distribution Unit (PDU) QuickSpecs** for information on these products and their specifications.
NOTE: Please see the **HPE Metered and Switched Power Distribution Units (PDU) QuickSpecs** for information on these products and their specifications.

HPE Uninterruptible Power Systems (UPS)
NOTE: To learn more, please visit the **HPE Uninterruptible Power Systems (UPS) web page**.
NOTE: Please see the **HPE DirectFlow Three Phase Uninterruptible Power System QuickSpecs** for information on these products and their specifications.
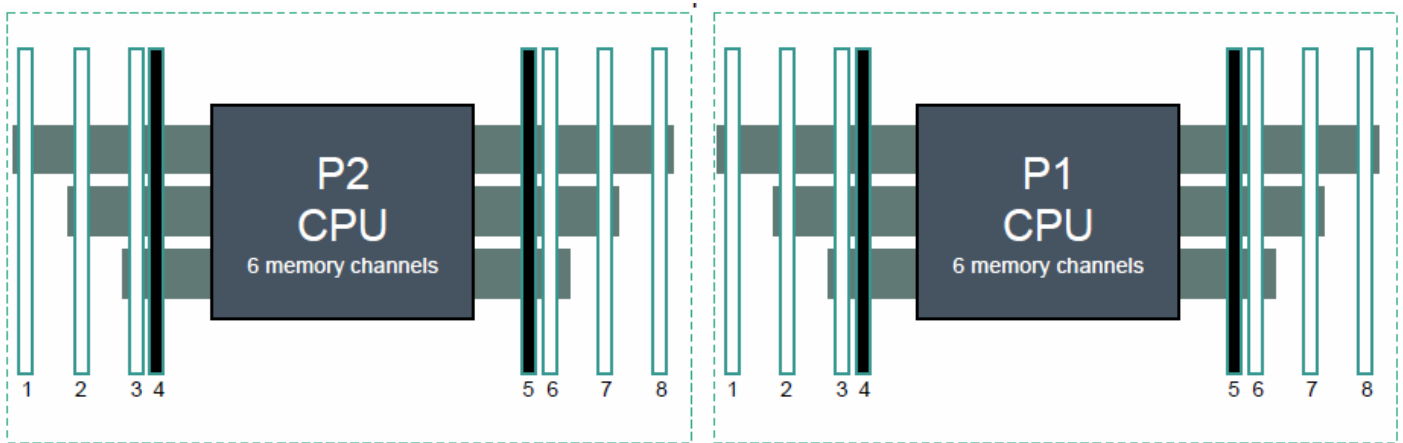**NOTE:** Please see the **HPE Line Interactive Single Phase UPS QuickSpecs** for information on these products and their specifications.

HPE Rack Options
NOTE: Please see the **HPE KVM Switches web page** for information on these products and their specifications.

Memory

Memory Population guidelines

HPE DL160/DL180 Gen 10 Servers Front Server
(2+1+1 slots per channel)

1 DIMM			3				
2 DIMMs		2	3				
3 DIMMs	1	2	3				
4 DIMMs		2	3		6	7	
5 DIMMs*	1	2	3		6	7	
6 DIMMs	1	2	3		6	7	8
7 DIMMs*	1	2	3	4	6	7	8
8 DIMMs*	1	2	3	4	5	6	7	8

HPE ProLiant Gen10 8 slot per CPU DIMM population order
*Unbalanced, not recommended

General Memory Population Rules and Guidelines:

Install DIMMs only if the corresponding processor is installed.

If only one processor is installed in a two-processor system, only half of the DIMM slots are available.

To maximize performance, it is recommended to balance the total memory capacity between all installed processors.

When two processors are installed, balance the DIMMs across the two processors.

White DIMM slots denote the first slot to be populated in a channel.

The maximum memory speed is a function of the memory type, memory configuration, and processor model.

The maximum memory capacity is a function of the number of DIMM slots on the platform, the largest DIMM capacity qualified on the platform, the number and model of installed processors qualified on the platform.

For details on the HPE Server Memory Options Population Rules, visit:

To realize the performance memory capabilities listed in this document, HPE DDR4 SmartMemory is required. For additional information, please see the **HPE DDR4 SmartMemory QuickSpecs**.

Memory

HPE DDR4 SmartMemory

DIMM Type	Register DIMM (RDIMM)		
HPE SKU P/N		815098-B21	
SKU Description		HPE 16GB (1x16GB) Single Rank x4 DDR4-2666 CAS-19-19-19 Registered Smart Memory Kit	
DIMM Rank ->		Single Rank (1R)	
DIMM Capacity ->		16GB	
Voltage		1.2V	
DRAM depth [bit]		2G	
DRAM Width [bit]		x4	
DRAM Density		8Gb	
CAS Latency		19-19-19	
DIMM Native Speed (MT/s)		2666 MT/s	
Intel Xeon®Platinum 81xx Processors Officially Supported Memory Speed (MT/s)			
1 DIMM Per Channel		2666 MT/s	
2 DIMM Per Channel		2666 MT/s	
Intel Xeon®Platinum 41xx/51xx/61xx Processors Officially Supported Memory Speed (MT/s)			
1 DIMM Per Channel		2400 MT/s	
2 DIMM Per Channel		2400 MT/s	
Intel Xeon®Platinum 31xx Processors Officially Supported Memory Speed (MT/s)			
1 DIMM Per Channel		2133 MT/s	
2 DIMM Per Channel		2133 MT/s	
HPE Server Memory Speed (MT/s): Intel Xeon®Platinum 81xx Processors *			
1 DIMM Per Channel		2666 MT/s	
2 DIMM Per Channel		2666 MT/s	
HPE Server Memory Speed (MT/s): Intel Xeon®Platinum 41xx/51xx/61xx Processors *			
1 DIMM Per Channel		2400 MT/s	
2 DIMM Per Channel		2400 MT/s	
HPE Server Memory Speed (MT/s): Intel Xeon®Platinum 31xx Processors *			
1 DIMM Per Channel		2133 MT/s	
2 DIMM Per Channel		2133 MT/s	
NOTE: The maximum memory speed is a function of the memory type, memory configuration, and processor model.			

Memory

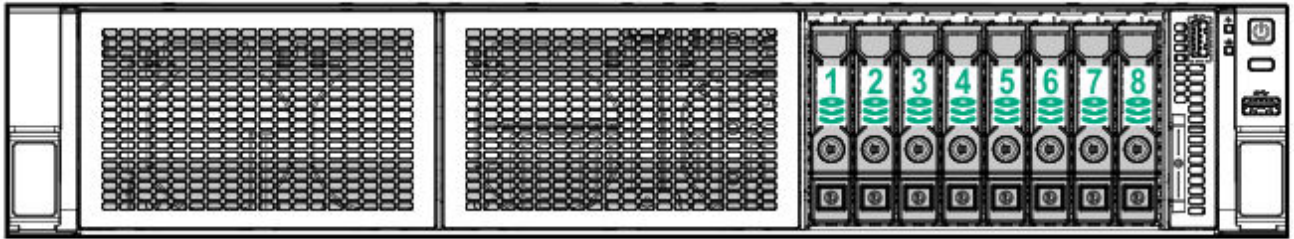| Pre Configured Models	Standard Memory	Maximum Memory Plus Optional Memory
3106	16 GB (1x16 GB RDIMM DR)	256 GB (16x 16 GB)
4110	16 GB (1x16 GB RDIMM DR)	256 GB (16x 16 GB)

DDR4 memory options part number decoder

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

- 16GB = 16,384 MB

For more information on memory, please see the Memory Quickspecs: **HPE DDR4 SmartMemory**

Storage

8 SFF Drives

Technical Specifications

System Unit		
Dimensions	8.73 x 44.54 x 63.47 cm 3.44 x 17.54 x 24.99 in	
Weight (approximate)	13.0 kg 28.0 lb	Minimum: 8 SFF chassis with 1x SFF HDD and 7 HDD blanks, 2x Drive Bay blanks, 1x processor including standard heatsink, 1x power supply (plus blank), 1x Smart Array, 1x Riser installed, cables for the above)
Input Requirements (per power supply)	Rated Line Voltage	100 to 120 VAC 200 to 240 VAC
BTU Rating	Maximum	For 500W Power Supply: 1979 BTU/hr (at 100 VAC), 1911 BTU/hr (at 200 VAC), 1965 BTU/hr (at 240 VAC) for China Only
Power Supply Output (per power supply)	Rated Steady-State Power	For 500W Power Supply: 500W (at 100 VAC), 500W (at 240 VAC), 500W (at 240 VAC) input for China only
System Inlet Temperature	Standard Operating Temperature	10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 305 m (1.8°F per every 1000 ft) above sea level to a maximum of 3050 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 20°C/hr (36°F/hr). The upper limit and rate of change may be limited by the type and number of options installed. System performance during standard operating support may be reduced if operating with a fan fault or above 30°C (86°F).
	Extended Ambient Operating Temperature	For approved hardware configurations, the supported system inlet range is extended to be: 5° to 10°C (41° to 50°F) and 35° to 40°C (95° to 104°F) at sea level with an altitude derating of 1.0°C per every 175 m (1.8°F per every 574 ft) above 900 m (2953 ft) to a maximum of 3050 m (10,000 ft). The approved hardware configurations for this system are listed at the URL: **http://www.hpe.com/servers/ashrae** For approved hardware configurations, the supported system inlet range is extended to be: 40° to 45°C (104° to 113°F) at sea level with an altitude derating of 1.0°C per every 125 m (1.8°F per every 410 ft) above 900 m (2953 ft) to a maximum of 3050 m (10,000 ft). The approved hardware configurations for this system are listed at the URL: **http://www.hpe.com/servers/ashrae** System performance may be reduced if operating in the extended ambient operating range or with a fan fault.
	Non-operating	-30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).
Relative Humidity	Operating	8% to 90% - Relative humidity (Rh), 28°C maximum wet bulb temperature, non-condensing.
(non-condensing)	Non-operating	5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing..
Altitude	Operating	3050 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
	Non-operating	9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min).

Technical Specifications

Acoustic Noise

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

Configuration SKU	Entry(LFF) Entry(SFF)	Base(LFF) Base(SFF)	Performance(LFF) Performance(SFF)
Idle			
L_{WAd}	4.2 B	4.3 B	4.7 B
L_{pAm}	26.6 dBA	27.0 dBA	28.5 dBA
Operating			
L_{WAd}	5.2 B	5.4 B	5.7 B
L_{pAm}	35.4 dBA	37.2 dBA	39.7 dBA

NOTE: Entry LFF configuration included one Intel SKL-SP Xeon-B 3104 processor, two HP 4TB SATA 7.2K LFF HDD, two 8GB PC4-2666V-R, thress system fans and one 500W 12V no AUX Pwr Sply.
NOTE: Entry SFF configuration included one Intel SKL-SP Xeon-B 3104 processor, two HP 500GB 6G SATA 7.2K SFF HDD, two 8GB PC4-2666V-R, thress system fans and one 500W 12V no AUX Pwr Sply.
NOTE: Base LFF configuration included one Intel SKL-SP Xeon-B 3106 processor, two HP 4TB SATA 7.2K LFF HDD, two 16GB PC4-2666V-R, thress system fans, one 1U 500W 12V HTPLG RED HE-P-A, Smart Array E208i-a SR Gen10 Ctrlr.
NOTE: Base SFF configuration included one Intel SKL-SP Xeon-B 3106 processor, two HP 500GB 6G SATA 7.2K SFF HDD, two 16GB PC4-2666V-R, thress system fans, one 500W 12V no AUX Pwr Sply, one Smart Array E208i-a SR Gen10 Ctrlr.
NOTE: Performance LFF configuration included two Intel SKL-SP Xeon-S 4114 processor, two HP 4TB SATA 7.2K LFF HDD, four 32GB PC4-2666V-R, five system fans, two 1U 800W 12V HTPLG RED, one Smart Array P408i-a SR Gen10 Ctrlr, BATT PACK, 96W Megacell.
NOTE: Performance SFF configuration included two Intel SKL-SP Xeon-S 4114 processor, two HP 300GB SAS 15K SFF HDD, four 32GB PC4-2666V-R, five system fans, two 1U 800W 12V HTPLG RED, one Smart Array P408i-a SR Gen10 Ctrlr, BATT PACK, 96W Megacell.
NOTE: Acoustics levels presented here are generated by the test configuration only. Acoustics levels will vary depending on system configuration. Values are subject to change without notification and are for reference only.
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.
NOTE: The Listed sound levels apply to standard shipping configurations. Additional options may result in increased sound levels.

Emissions Classification (EMC) – Regulatory Information

To view the regulatory information for your product, view the Safety and Compliance Information for Server, Storage, Power, Networking, and Rack Products, available at the Hewlett Packard Enterprise Support Center:
http://www.hpe.com/support/Safety-Compliance-EnterpriseProducts

Technical Specifications

HPE Smart Array

For information on the HPE Smart Array E208i-p SR Gen10 Controller please refer to their **QuickSpecs.**

For information on the HPE Smart Array E208e-p SR Gen10 Controller please refer to their **QuickSpecs.**

Environment-friendly Products and Approach - End-of-life Management and Recycling

Hewlett Packard Enterprise offers **end-of-life product return, trade-in, and recycling programs**, in many geographic areas, for our products. Products returned to Hewlett Packard Enterprise will be recycled, recovered or disposed of in a responsible manner.

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

Summary of Changes

Date	Version History	Action	Description of Change
02-Apr-2019	Version 3	Changed	Standard Features and Additional Options sections were updated.
04-Mar-2019	Version 2	Changed	Internal View image has been updated
04-Feb-2019	Version 1	New	New QuickSpecs.

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