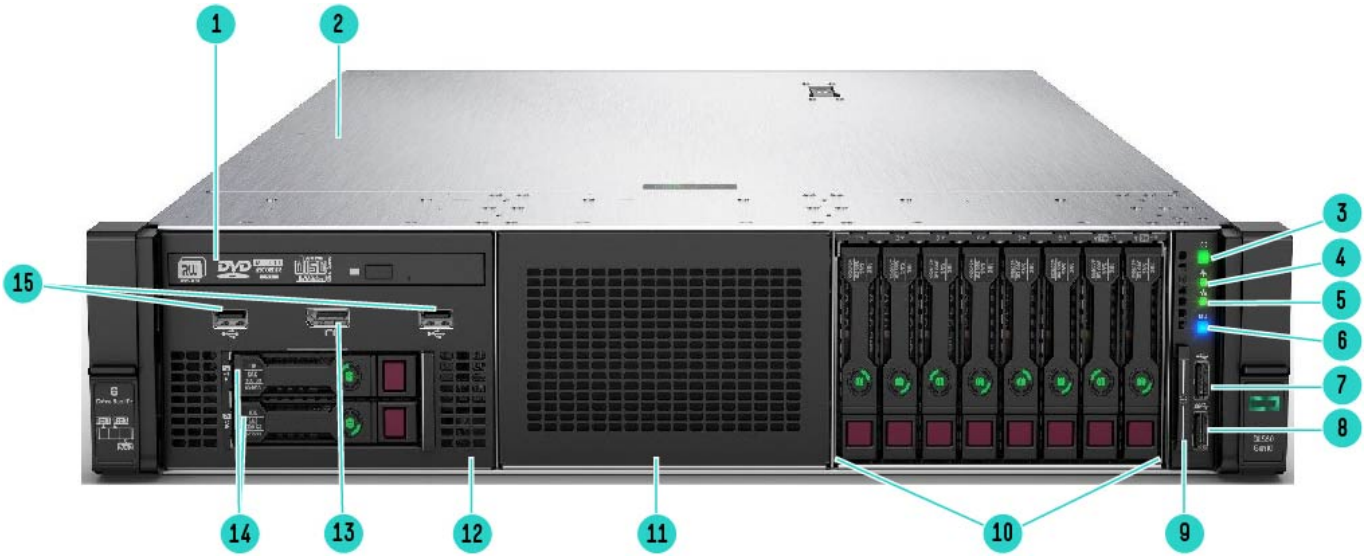
Overview

HPE ProLiant DL560 Gen10 Server

The HPE ProLiant DL560 Gen10 Server is a high-density, four-socket (4S) server with high performance, scalability and reliability, all in a 2U chassis. Supporting the latest 2nd generation Intel® Xeon® Scalable processors, the HPE ProLiant DL560 Gen10 Server offers greater processing power, up to 6 TB of faster memory, IO of up to eight PCIe 3.0 slots, up to 12 TB of HPE Persistent Memory plus the intelligence and simplicity of automated management with HPE OneView and HPE iLO 5.

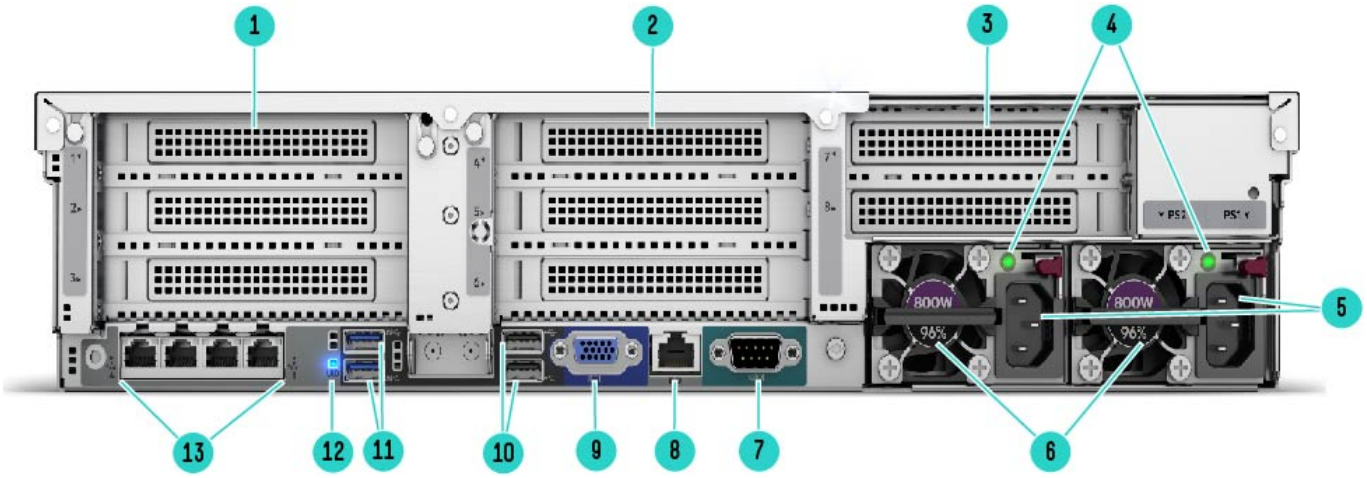
The HPE ProLiant DL560 Gen10 Server is the ideal server for business critical workloads, virtualization, server consolidation, database, business processing, and general 4P data-intensive applications where data center space and the right performance are paramount.



HPE ProLiant DL560 Gen10 Server - Front View

1. Optional Optical drive. Requires Universal Media bay
2. Quick removal access panel
3. Power On/Standby button and system power LED button
4. Health LED
5. NIC status
6. UID button
7. iLO Front Service Port
8. USB 3.0
9. Serial label pull tag
10. Drive Box 3. (8 SFF or 6SFF+2NVMe optional)
11. Drive Box 2. (8 SFF or 6SFF+2NVMe or 8 NVMe SSD optional)
12. Drive Box 1.(Optional Universal Media bay or 8 SFF bay or 6 SFF+2NVMe optional)
13. Optional front Display Port(via Universal Media Bay)
14. Optional 2 SFF HDD, requires optional Universal Media bay
15. Optional USB 2.0 (via Universal Media Bay)

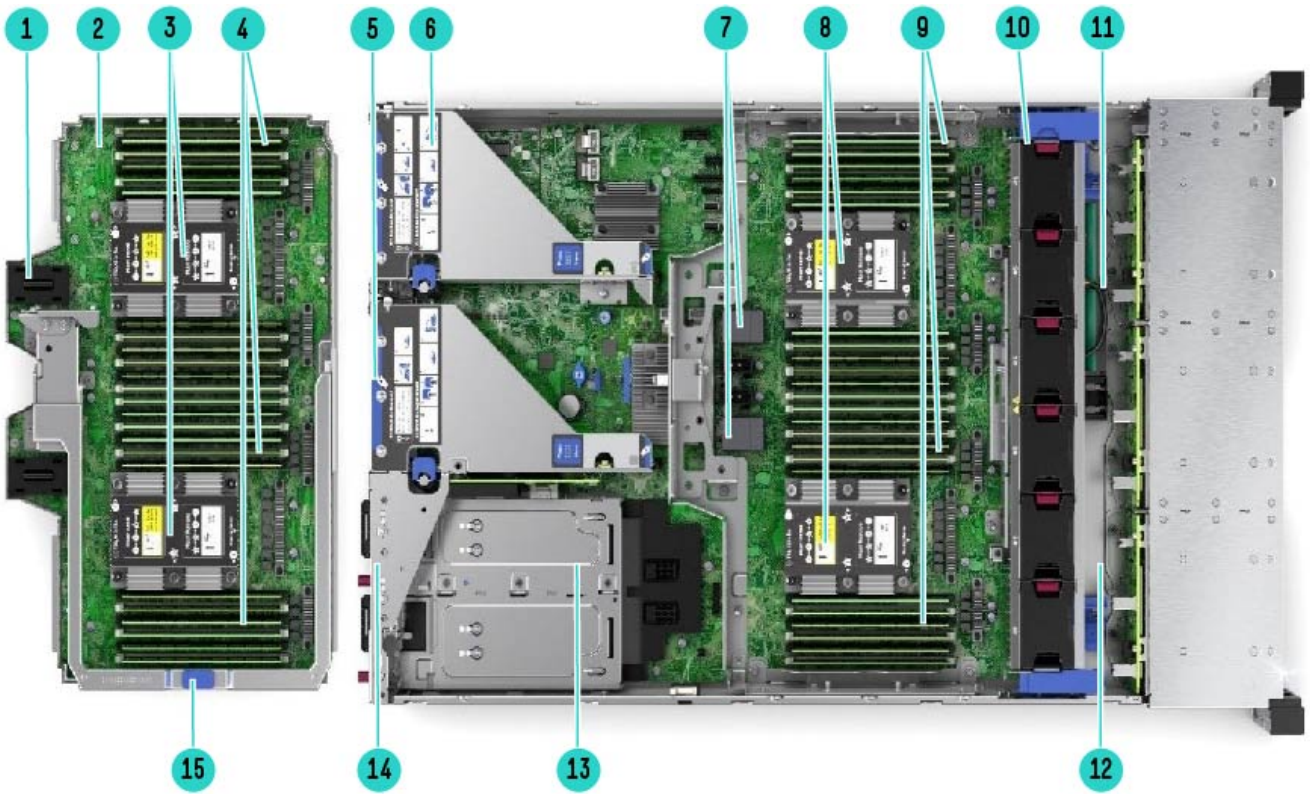
Overview



Rear View – DL560 Gen10

1. PCIe Slots (Slots 1-3 top to bottom, riser shipped standard)
2. PCIe Slots (Slots 4-6 top to bottom, requires second riser card and second processor)
3. PCIe Slots (Slots 7-8 top to bottom), requires tertiary riser card and second processor, Not available with 4x Flex Slot power supplies
4. Power supply power LEDs
5. Power supply power connections
6. HPE Flexible Slot Power Supply bay 1 and 2 (800W PS shown)
7. Serial connector
8. Dedicated iLO connector
9. VGA (video) connector
10. USB connectors 2.0 (2)
11. USB connectors 3.0 (2)
12 Unit ID LED
13. FlexibleLOM ports (Port 1 on right side)

Overview



Internal View: DL560 Gen10 with upper CPU mezzanine tray

1. Left connector used for DL560 4-port NVMe Mezzanine card (Daughter card)
2. Upper CPU Mezzanine Board Kit
3. 2 Processors, heatsink showing on upper CPU mezzanine board kit
4. DDR4 DIMM slots on upper CPU mezzanine board kit. Shown fully populated in 24 slots (12 per processor)
5. Optional secondary PCIe riser
6. Default primary PCIe riser
7. UPI connectors for upper CPU mezzanine board kit
8. 2 Processors, heatsink showing
9. DDR4 DIMM slots. Shown fully populated in 24 slots (12 per processor)
10. Fan cage shown with 6 standard Hot-plug fans
11. HPE Smart Storage Battery 1 or HPE Smart Storage Hybrid Capacitor
12. HPE Smart Storage Battery 2
13. (Under) Hot Plug redundant HPE Flexible Slot Power supplies
14. Optional Tertiary riser
15. Handle for removing upper CPU Mezzanine Board Kit

What's New

- New HPE 32GB 1Rx4 PC4-2933Y-R Memory Kit
- New 960GB/1.92TB/3.84TB Mixed Use SSDs

Overview

Platform Information

Form Factor

- 2U Rack Form Factor

Notes: Entry, Base and Performance pre-configured models ship with Gen10 Easy Install Rail Kits and Cable Management Assembly

Chassis Types

- 24 SFF with optional Universal Media Bay

Notes:

- The Universal Media Bay (872267-B21) is not available with the 24 SFF front end, and can only be populated in Box 1.
- The 8 SFF can be upgraded with a drive cage to 16 or 24 SFF with field upgrades. For optimal upgrade Box 2 should be populated second, with Box 1 the last to be populated for a field upgrade to 24 SFF.
- All pre-configured models come with embedded software RAID support for 10 SATA drives. Optional HPE Smart Array Controllers can be added.

System Fans

- 6 Hot Plug Fans (with N+1 redundancy)

Notes: 6 hot plug fans are shipped as standard.

Standard Features

Processors

One, two or four of the following depending on model.

Notes:

- The 2nd digit of the processor model number "x1xx" and "x2xx" is used to denote the processor generation (i.e. 1=1stgeneration and 2=2nd generation)
- This table covers the public Intel offering only.
- For more information regarding Intel Xeon processors, please see the following **http://www.intel.com/xeon**.

Processor Suffix	Description	Offering
L	Large memory tier	Up to 4.5 TB addressable memory per socket
M	Medium memory tier	Up to 2.0 TB addressable memory per socket
N	NFV Optimized	Targeted at Network Function Virtualization (NFV) workloads. Intel® Speed Select Technology-Base Frequency improves performance by directing base frequency to high priority/bottleneck cores.
S	Search Optimized	Optimized base frequency to address 'search' workloads.
V	VM Density Optimized	Fosters enhanced VM density, allowing to support more/larger virtual machines per host.
Y	Speed Select	Intel® Speed Select Technology –Performance Profile increases base frequency when less cores are enabled. Allows greater flexibility, deployment options and platform longevity.

Platinum Processors - 2nd Generation Intel® Xeon® Scalable Processor Family							
Intel Xeon Models	**CPU Frequency**	**Cores**	**L3 Cache (MB)**	**Power**	**UPI**	**DDR4**	**Memory per socket**
Platinum 8280L Processor	2.7GHz	28	38.5	205W	3 @ 10.4 GT/s	2933 MT/s	4.5TB
Platinum 8280M Processor	2.7GHz	28	38.5	205W	3 @ 10.4 GT/s	2933 MT/s	2TB
Platinum 8280 Processor	2.7GHz	28	38.5	205W	3 @ 10.4 GT/s	2933 MT/s	1TB
Platinum 8276M Processor	2.2GHz	28	38.5	165W	3 @ 10.4 GT/s	2933 MT/s	2TB
Platinum 8276L Processor	2.2GHz	28	38.5	165W	3 @ 10.4 GT/s	2933 MT/s	4.5TB
Platinum 8276 Processor	2.2GHz	28	38.5	165W	3 @ 10.4 GT/s	2933 MT/s	1TB
Platinum 8270 Processor	2.7GHz	26	35.75	205W	3 @ 10.4 GT/s	2933 MT/s	1TB
Platinum 8268 Processor	2.9GHz	24	35.75	205W	3 @ 10.4 GT/s	2933 MT/s	1TB
Platinum 8260M Processor	2.4GHz	24	35.75	165W	3 @ 10.4 GT/s	2933 MT/s	2TB
Platinum 8260L Processor	2.4GHz	24	35.75	165W	3 @ 10.4 GT/s	2933 MT/s	4.5TB
Platinum 8260Y Processor	2.4GHz	24/20/16	35.75	165W	3 @ 10.4 GT/s	2933 MT/s	1TB
Platinum 8260 Processor	2.4GHz	24	35.75	165W	3 @ 10.4 GT/s	2933 MT/s	1TB
Platinum 8256 Processor	3.8GHz	4	16.5	105W	3 @ 10.4 GT/s	2933 MT/s	1TB
Platinum 8253 Processor	2.2GHz	16	22	125W	3 @ 10.4 GT/s	2933 MT/s	1TB

Standard Features

Gold Processors - 2nd Generation Intel® Xeon® Scalable Processor Family							
Intel Xeon Models	**CPU Frequency**	**Cores**	**L3 Cache (MB)**	**Power**	**UPI**	**DDR4**	**Memory per socket**
Gold 6256 Processor	3.6GHz	12	24.75	205W	3 @ 10.4 GT/s	2933MT/s	1TB
Gold 6254 Processor	3.1GHz	18	24.75	200W	3 @ 10.4 GT/s	2933MT/s	1TB
Gold 6252 Processor	2.1GHz	24	35.75	150W	3 @ 10.4 GT/s	2933MT/s	1TB
Gold 6252N Processor	2.3GHz	24/20/16	35.75	150W	3 @ 10.4 GT/s	2933MT/s	1TB
Gold 6248 Processor	2.5GHz	20	27.5	150W	3 @ 10.4 GT/s	2933MT/s	1TB
Gold 6246 Processor	3.3GHz	12	24.75	165W	3 @ 10.4 GT/s	2933MT/s	1TB
Gold 6244 Processor	3.6GHz	8	24.75	150W	3 @ 10.4 GT/s	2933MT/s	1TB
Gold 6242 Processor	2.8GHz	16	22	150W	3 @ 10.4 GT/s	2933MT/s	1TB
Gold 6240L Processor	2.6GHz	18	24.75	150W	3 @ 10.4 GT/s	2933MT/s	4.5TB
Gold 6240M Processor	2.6GHz	18	24.75	150W	3 @ 10.4 GT/s	2933MT/s	2TB
Gold 6240 Processor	2.6GHz	18	24.75	150W	3 @ 10.4 GT/s	2933MT/s	1TB
Gold 6240Y Processor	2.6GHz	18/14/8	24.75	150W	3 @ 10.4 GT/s	2933MT/s	1TB
Gold 6238L Processor	2.1GHz	22	30.25	140W	3 @ 10.4 GT/s	2933MT/s	4.5TB
Gold 6238M Processor	2.1GHz	22	30.25	140W	3 @ 10.4 GT/s	2933MT/s	2TB
Gold 6238 Processor	2.1GHz	22	30.25	140W	3 @ 10.4 GT/s	2933MT/s	1TB
Gold 6234 Processor	3.3GHz	8	24.75	130W	3 @ 10.4 GT/s	2933MT/s	1TB
Gold 6230 Processor	2.1GHz	20	27.5	125W	3 @ 10.4 GT/s	2933MT/s	1TB
Gold 6230N Processor	2.3GHz	20	27.5	125W	3 @ 10.4 GT/s	2933MT/s	1TB
Gold 6226 Processor	2.7GHz	12	19.25	125W	3 @ 10.4 GT/s	2933MT/s	1TB
Gold 6262V Processor	1.9GHz	24	33	135W	3 @ 10.4 GT/s	2933MT/s	1TB
Gold 6222V Processor	1.8GHz	20	27.5	115W	3 @ 10.4 GT/s	2933MT/s	1TB
Gold 5222Processor	3.8GHz	4	16.5	105W	2 @ 10.4 GT/s	2933MT/s	1TB
Gold 5220 Processor	2.2GHz	18	24.75	125W	2 @ 10.4 GT/s	2666MT/s	1TB
Gold 5220S Processor	2.7GHz	18	24.75	125W	2 @ 10.4 GT/s	2666MT/s	1TB
Gold 5218B Processor	2.3GHz	16	22	125W	2 @ 10.4 GT/s	2666MT/s	1TB
Gold 5218N Processor	2.3GHz	16	22	110W	2 @ 10.4 GT/s	2666MT/s	1TB
Gold 5218 Processor	2.3GHz	16	22	125W	2 @ 10.4 GT/s	2666MT/s	1TB
Gold 5217 Processor	3.0GHz	8	11	115W	2 @ 10.4 GT/s	2666MT/s	1TB
Gold 5215L Processor	2.5GHz	10	13.75	85W	2 @ 10.4 GT/s	2666MT/s	4.5TB
Gold 5215M Processor	2.5GHz	10	13.75	85W	2 @ 10.4 GT/s	2666MT/s	2TB
Gold 5215 Processor	2.5GHz	10	13.75	85W	2 @ 10.4 GT/s	2666MT/s	1TB

Notes:

- Platinum – 82xx series - 2 and 4 socket capable, 3UPI @ 10.4 GT/s, 6-Channel DDR4 @ 2933 MT/s 1DPC, 1 TB memory capacity (up to 2 TB on 'M' SKUs and up to 4.5 TB on 'L' SKUs), Intel Turbo Boost Technology, Intel Hyper-Threading Technology, Intel AVX-512 (2x 512-bit FMA), 48 lanes PCIe 3.0, advanced RAS.
- Gold – 62xx and 52xx series - 2 and 4 socket capable, 3UPI @ 10.4 GT/s on 62xx processors, 2UPI @ 10.4 GT/s on 52xx processors, 6 Channel DDR4 @ 2933 MT/s 1DPC on 62xx and 5222 processors , 6-Channel DDR4 @ 2666 MT/s on 52xx processors, 1 TB memory capacity (up to 2 TB on 'M' SKUs and up to 4.5 TB on 'L' SKUs), Intel Turbo Boost Technology, Intel Hyper-Threading Technology, Intel AVX-512(1x 512-bit FMA) (SKU 5222 supports 2x 512 bit FMA), 48 lanes PCIe 3.0, advanced RAS.
- With the current HPE DDR4 SmartMemory maximum offering (128GB LRDIMMs), the 'L' SKUs and 'M' SKUs can support up to 1.5TB per socket.
- More than 1.5TB per socket requires the use of HPE Persistent Memory kits : available in 512GB, 256GB and 128GB
- Platinum 8260Y and Gold 6240Y processors support Intel® Speed Select Technology –Performance Profile
- Gold 5218B processor and Gold 5218 processor have the same specifications and cannot be mixed within a server
- Gold 6252N, 6230N and 5218N processors are optimized for NFV (Network Function Virtualization) workloads and support Intel® Speed Select Technology –Base Frequency
- Gold 6262V and 6222V are VM density optimized, Gold 5220S is search-optimized
- 82xx, 62xx and 52xx processors offer VNNI (vector neural network instruction) instruction set.

Standard Features

Platinum Processors – 1st Generation Intel® Xeon® Scalable Processor Family							
Intel Xeon Models	**CPU Frequency**	**Cores**	**L3 Cache (MB)**	**Power**	**UPI**	**DDR4**	**Memory per socket**
Platinum 8180M Processor	2.5 GHz	28	38.50	205W	3 @ 10.4 GT/s	2666 MT/s	1.5TB
Platinum 8180 Processor	2.5 GHz	28	38.50	205W	3 @ 10.4 GT/s	2666 MT/s	768GB
Platinum 8176 Processor	2.1 GHz	28	38.50	165W	3 @ 10.4 GT/s	2666 MT/s	768GB
Platinum 8170 Processor	2.1 GHz	26	35.75	165W	3 @ 10.4 GT/s	2666 MT/s	768GB
Platinum 8168 Processor	2.7 GHz	24	33.00	205W	3 @ 10.4 GT/s	2666 MT/s	768GB
Platinum 8164 Processor	2.0 GHz	26	35.75	150W	3 @ 10.4 GT/s	2666 MT/s	768GB
Platinum 8160 Processor	2.1 GHz	24	33.00	150W	3 @ 10.4 GT/s	2666 MT/s	768GB
Gold Processors - 1st Generation Intel® Xeon® Scalable Processor Family							
Gold 6154 Processor	3.0 GHz	18	24.75	200W	3 @ 10.4 GT/s	2666 MT/s	768GB
Gold 6152 Processor	2.1 GHz	22	30.25	140W	3 @ 10.4 GT/s	2666 MT/s	768GB
Gold 6150 Processor	2.7 GHz	18	24.75	165W	3 @ 10.4 GT/s	2666 MT/s	768GB
Gold 6148 Processor	2.4 GHz	20	27.50	150W	3 @ 10.4 GT/s	2666 MT/s	768GB
Gold 6142 Processor	2.6 GHz	16	22.00	150W	3 @ 10.4 GT/s	2666 MT/s	768GB
Gold 6140 Processor	2.3 GHz	18	24.75	140W	3 @ 10.4 GT/s	2666 MT/s	768GB
Gold 6137 Processor	3.9 GHz	8	24.75	205W	3 @ 10.4 GT/s	2666 MT/s	768GB
Gold 6136 Processor	3.0 GHz	12	24.75	150W	3 @ 10.4 GT/s	2666 MT/s	768GB
Gold 6134M Processor	3.2 GHz	8	24.75	130W	3 @ 10.4 GT/s	2666 MT/s	1.5TB
Gold 6134 Processor	3.2 GHz	8	24.75	130W	3 @ 10.4 GT/s	2666 MT/s	768GB
Gold 6132 Processor	2.6 GHz	14	19.25	140W	3 @ 10.4 GT/s	2666 MT/s	768GB
Gold 6130 Processor	2.1 GHz	16	22.00	125W	3 @ 10.4 GT/s	2666 MT/s	768GB
Gold 6126 Processor	2.6 GHz	12	19.25	125W	3 @ 10.4 GT/s	2666 MT/s	768GB
Gold 5120 Processor	2.2 GHz	14	19.25	105W	2 @ 10.4 GT/s	2400 MT/s	768GB
Gold 5118 Processor	2.3 GHz	12	16.50	105W	2 @ 10.4 GT/s	2400 MT/s	768GB
Gold 5117 processor	2.0 GHz	14	19.25	105W	2 @ 10.4 GT/s	2400 MT/s	768GB
Gold 5115 Processor	2.4 GHz	10	13.75	85W	2 @ 10.4 GT/s	2400 MT/s	768GB

Notes:

- Platinum 81xx series - 2 and 4 socket capable, 3UPI @ 10.4 GT/s, 6-Channel DDR4 @ 2666 MT/s, 768 GB memory capacity (1.5 TB on select skus), Intel Turbo Boost Technology, Intel Hyper-Threading TechnologyIntel AVX-512 (2x 512-bit FMA), 48 lanes PCIe 3.0, advanced RAS.
- Gold 61xx and 51xx series - 2 and 4 socket capable, 3UPI @ 10.4 GT/s on 61xx processors, 2UPI @ 10.4 GT/s on 51xx processors, 6-Channel DDR4 @ 2400 MHz (SKU 5122=supports 2666), 768 GB memory capacity (1.5 TB on select skus), Intel Turbo Boost Technology, Intel Hyper-Threading Technology, Intel AVX-512(1x 512-bit FMA) (SKU 5122 supports 2x 512 bit FMA), 48 lanes PCIe 3.0, advanced RAS.
- All processors ship with a normal or a high performance heatsink.
- 82xx, 81xx, 62xx and 61xx processors support 3 UPI links and all processors are connected in a cross bar configuration with each processor connected to another directly in a four processor system. 52xx and 51xx processors support 2 UPI links only and all processors are connected in a ring configuration with processors 1, 3 and 2, 4 not connected directly in a four processor system.

Chipset

- Intel C621 Chipset
  Notes: For more information regarding Intel® chipsets, please see the following URL: **http://www.intel.com/products/server/chipsets/**

On System Management Chipset

- HPE iLO 5 ASIC
  Notes: Read and learn more in the **iLO QuickSpecs**.

Standard Features

Memory

One of the following depending on model

Type	SmartMemory Registered (RDIMM), Load Reduced (LRDIMM)	
DIMM Slots Available	48	12 DIMM slots per processor, 6 channels per processor, 2 DIMMs per channel
With 2nd generation processors		
Maximum capacity (LRDIMM)	6 TB	48 x 128 GB LRDIMM @2933 MT/s 2 DPC
Maximum capacity (RDIMM)	1.5 TB	24 x 64 GB RDIMM @ 2933 MT/s 1 DPC
	3 TB	48 x 64 GB RDIMM @ 2666 MT/s 2 DPC
Maximum capacity (HPE Persistent Memory)	12 TB	24 x 512 GB Persistent Memory Kit @2666 MT/s
With 1st generation processors		
Maximum capacity (LRDIMM)	6 TB	48 x 128 GB LRDIMM @ 2666 MT/s
Maximum capacity (RDIMM)	1.5 TB	48 x 32 GB RDIMM @ 2666 MT/s
Maximum capacity (NVDIMM)	384 GB	24 x 16 GB NVDIMM @ 2666 MT/s

Notes:

- The 2666 MT/s DIMMs are only supported with the 1st generation Intel® Xeon® Scalable processors (81xx,61xx and 51xx)
- HPE Persistent Memory is only supported on the 2nd generation processors
- HPE Persistent Memory operates in two modes – memory mode and app direct mode.
- In memory mode, DRAM acts as a cache while HPE Persistent Memory provides large memory capacity which is volatile. DRAM installed does not count towards total memory capacity.
- In app direct mode, data that needs to be made persistent can be routed to HPE Persistent Memory. Both DRAM and HPE Persistent Memory count towards total memory capacity.
- Mixing of RDIMM and LRDIMM memory is not supported.
- The maximum memory speed is a function of the memory type, memory configuration, and processor model.
- Intel memory processors (with suffix M) are needed for supporting 1.5 TB memory per socket on 1st generation processors.
- Intel memory processors (with suffix M or suffix L) are needed for supporting more than 1 TB memory per socket on 2nd generation processors
- Maximum of 6 NVDIMMs are supported per processor on the 1st generation processors
- NVDIMMs are not supported on the 2nd generation processors

Memory Protection

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

Primary Riser (Standard)-Default				
Expansion Slots #	**Technology**	**Bus/Connector Width**	**Form Factor/Connector**	**Notes**
1	PCIe 3.0	x8	¾ length/full height	Proc 1
2	PCIe 3.0	X16	¾ length/full height	Proc 1
3	PCIe 3.0	x8	¾ length/full height	Proc 1
None	2 x M.2	SATA lanes	M.2	Chipset

Standard Features

Secondary Riser (Optional) 826704-B21 HPE DL Gen10 x16/x16 GPU Riser Kit					
Expansion Slots (Primary/ Secondary) #	**Technology**	**Bus/Connector Width**	**Form Factor/ Connector (Primary)**	**Form Factor/ Connector (Secondary)**	**Notes (Primary/ secondary)**
2/5	PCIe 3.0	x16	¾ length/full height	Half length/full height	Proc 1/2
3/6	PCIe 3.0	x16	¾ length/full height	Half length/full height	Proc 1/2

Notes: Can also be installed as primary but the default (standard) primary cage will need to be removed.

Secondary Riser (Optional) 873418-B21 HPE DL560 Gen10 4-port 8 NVMe Slimline Riser Kit				
Expansion Slots (Primary/ Secondary) #	**Technology**	**Bus/Connector Width**	**Form Factor /Connector**	**Notes (Primary/ secondary)**
None	NVMe	x8	Slimline	Proc 1/2
None	NVMe	x8	Slimline	Proc 1/2
None	NVMe	x8	Slimline	Proc 1/2
None	NVMe	x8	Slimline	Proc 1/2

Notes: Can also be installed as primary but the default(standard) primary cage will need to be removed.

Secondary Riser (Optional) 873420-B21 HPE DL560 Gen10 x8/x8/x8 1-port 2 NVMe Slimline Riser Kit					
Expansion Slots (Primary/ Secondary)#	**Technology**	**Bus/Connector Width**	**Form Factor/ Connector (Primary)**	**Form Factor/ Connector (Secondary)**	**Notes (Primary/ Secomdary)**
1/4	PCIe 3.0	x8	¾ length/full height	Half length/full height	Proc 1/2
2/5	PCIe 3.0	x8	¾ length/full height	Half length/full height	Proc 1/2
3/6	PCIe 3.0	x8	¾ length/full height	Half length/full height	Proc 1/2
None	NVMe	x8	Slimline	Slimline	Proc 1/2

Notes: Can also be installed as primary but the default(standard) primary cage will need to be removed.

Secondary Riser (Optional) 870548-B21 HPE DL Gen10 x8/x16/x8 Riser Kit				
Expansion Slots #	**Technology**	**Bus Width**	**Form Factor**	**Notes**
4	PCIe 3.0	x8	Half length/full height	Proc 2
5	PCIe 3.0	x16	Half length/full height	Proc 2
6	PCIe 3.0	x8	Half length/full height	Proc 2

Tertiary bufferfly riser (Optional) 872253-B21 HPE DL560 Gen10 x8/x8 Tertiary Riser Kit				
Expansion Slots #	**Technology**	**Bus Width**	**Form Factor**	**Notes**
7	PCIe 3.0	x8	Half length/full height	Proc 2
8	PCIe 3.0	x8	Half length/full height	Proc 2

Notes: the Tertiary is a bufferfly riser kit supports both secondary and tertiary. The secondary kit needs to be removed if the tertiary kit is installed.

Tertiary riser (Optional) 872255-B21 HPE DL560 Gen10 x8 1-port 2 NVMe Slimline Riser Kit				
Expansion Slots #	**Technology**	**Bus Width**	**Form Factor/Connector**	**Notes**
7	PCIe 3.0	x8	Half length/full height	Proc 2
None	NVMe	x8	Slimline	Proc 2

Notes: the Tertiary is a bufferfly riser kit supports both secondary and tertiary. The secondary kit needs to be removed if the tertiary kit is installed.

Standard Features

Tertiary riser (Optional) 872257-B21 HPE DL560 Gen10 2-port 4 NVMe Slimline Tertiary Riser Kit				
Expansion Slots #	**Technology**	**Bus Width**	**Form Factor/Connector**	**Notes**
None	NVMe	x8	Slimline	Proc 2
None	NVMe	x8	Slimline	Proc 2

Notes: the Tertiary is a bufferfly riser kit supports both secondary and tertiary. The secondary kit needs to be removed if the tertiary kit is installed.

4-port NVMe Mezzanine card (Optional) 874633-B21				
Expansion Slots #	**Technology**	**Bus Width**	**Form Factor/Connector**	**Notes**
None	NVMe	x8	Slimline	Proc 3
None	NVMe	x8	Slimline	Proc 3
None	NVMe	x8	Slimline	Proc 3
None	NVMe	x8	Slimline	Proc 3

Notes:

- The secondary and tertiary risers need the 2nd processor to be installed.
- The expansion slots at the back are numbered in ascending order from top to bottom and from left to right.
- Some riser kits (826704-B21, 873418-B21, 873420-B21) have FIO options with separate numbers and they do not ship with riser cages. Please review the FIO section for details.
- For additional details on ProLiant DL Gen10 server risers please visit: **https://www.hpe.com/h20195/v2/Getdocument.aspx?docname=a00043229enw**
- The optional 4-port NVMe Mezzanine card 874633-B21 supports a maximum of 8 NVMe drives and does not consume a PCIe slot. It goes on top of the HPE DL5x0 Gen10 CPU Mezzanine Board Kit (872222-B21) or HPE DL5x0 Gen10 CPU Version 2 Mezzanine Board Kit (P07991-B21) and requires a four processor configuration.
- The tertiary risers can only be installed when using two PSUs. There is no space for tertiary risers when the four PSU's are installed. If a secondary riser is required it needs to be ordered separately. Please refer section HPE I/O Expansion Options.
- A maximum of 1 primary, 1 secondary and 1 tertiary riser can be installed in one server.
- Slimline riser kit (873418-B21) does not contain any additional PCIe slots.

Network Controller

The HPE ProLiant DL560 Gen10 servers offer a flexible network technology - FlexibleLOMs, which offers customers a choice of 1 Gb, 10 Gb, 25 Gb or 10 Gb and 100 Gb base-T Ethernet or converged networking in their embedded adapter. A range of NIC cards are also available to enhance networking capabilities.

Notes: For additional details see the Networking Section of this document.

BTO Model	**Adapter**
Entry Model	HPE Ethernet 1Gb 4-port FLR-T I350-T4V2 Adapter
Base Model	HPE FlexFabric 10Gb 2-port FLR-SFP+ 57810S Adapter10GbE or HPE Ethernet 10Gb 2-port FLR-T BCM57416 Adapter
Performance Model	HPE Ethernet 10/25Gb 2-port FLR-SFP28 MCX4121A-ACFT Adapter or HPE Ethernet 10/25Gb 2-port FLR-SFP28 BCM57414 Adapter

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**.

Software RAID

- HPE Smart Array S100i SR Gen10 SW RAID

Notes:

- HPE Smart Array S100i SR Gen10 SW RAID will operate in UEFI mode only. For legacy support an additional controller will be needed, and for CTO orders please also select the Legacy mode settings part, 758959-B22.
- HPE Smart Array S100i SR Gen10 SW RAID is off by default and must be enabled. For enabling, please select HPE FIO Enable Smart Array SW RAID (784308-B21).

Essential RAID

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

Performance RAID

- HPE Smart Array P408i-a SR G10 LH Controller
- HPE Smart Array P408i-p SR Gen10 Controller
- HPE Smart Array P408e-p SR Gen10 Controller
- HPE Smart Array P816i-a SR G10 LH Controller
- HPE Smart Array P824i-p MR Gen10 Controller

Internal Storage Devices

One of the following depending on model

Optical Drive

- Optional: DVD-ROM, DVD-RW

Hard Drives

- None ship standard

Hard Drive Bays

- 8 hot plug SFF SAS/SATA HDD Bays in Entry and Base Models
- 16 hot plug SFF SAS/SATA HDD Bays in Performance Models

Notes:

- Box 3 is populated by 8 SFF SAS/SATA bay and shipped as default.
- The 8 NVMe drive option can only placed in Bay 2.
- The Universal Media Bay (872267-B21) not available with the 24 SFF front end, and can only be populated in Box 1.
- The 8 SFF can be upgraded with a drive cage to 16 or 24 SFF with field upgrades. For optimal upgrade Box 2 should be populated second, with Box 1 the last to be populated for a field upgrade to 24 SFF.
- A maximum of 12 NVMe drives can be supported with 2 NVMe drives in Bay 1, 8 NVMe drives in Bay 2 and 2 NVMe drives in Bay 3.
- All pre-configured models come with embedded software RAID support for 10 SATA drives. Optional HPE Smart Array Controllers can be added.

Maximum Internal Storage

Drive	Capacity	Configuration
Hot Plug SFF SATA HDD	48 TB	24 x 2 TB
Hot Plug SFF SAS HDD	58 TB	24 x 2.4 TB
Hot Plug SFF SATA SSD	184 TB	24 x 7.68 TB
Hot Plug SFF SAS SSD	367 TB	24 x 15.3 TB
SFF NVMe SSD	184 TB	12 x 15.36TB

Standard Features

Power Supply

One of the following depending on model

- HPE 800W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit
  Notes:
  - Available in 94% and 96% efficiency.
  - Also available in -48VDC and 227VAC/380VDC power inputs.
  - Must order 4x800W Flex Slot PSU.
- HPE 1600W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit
  Notes:
  - Available in 94% efficiency.
  - 1600W Power supplies only support high line voltage (200VAC to 240VAC).

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 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 (416151-B21). 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**

Operating Systems and Virtualization Software Support for ProLiant Servers

With 1st generation processors Intel® Xeon® Scalable Processor Family

- **Windows Server 2012 R2**
- **Windows Server 2016**
- Windows Server 2019
- VMware ESXi
- **Red Hat Enterprise Linux (RHEL)**
- **SUSE Linux Enterprise Server (SLES)**
- CentOS
  Notes: Not directly supported / Community Supported (Based on RHEL so RHEL testing and enablement applicable to Cent OS) CentOS 6.9 / CentOS 7.3.

With 2nd generation processors Intel® Xeon® Scalable Processor Family

- **Windows Server 2012 R2**
- **Windows Server 2016**
- Windows Server 2019
- VMware ESXi
- Red Hat Enterprise Linux (RHEL)
- **SUSE Linux Enterprise Server (SLES)**
- CentOS

Notes:

- Not directly supported / Community Supported (Based on RHEL so RHEL testing and enablement applicable to Cent OS) CentOS 6.9 / CentOS 7.3.
- For more information on Hewlett Packard Enterprise Certified and Supported ProLiant Servers for OS and Virtualization Software and latest listing of software drivers available for your server. **http://www.hpe.com/info/ossupport**.

Standard Features

Interfaces

Serial	1 rear
Video	1 front (optional with Universal Media Bay), 1 rear
HPE iLO Remote Management Network Port	1
HPE iLO Front Service Port	1
Micro SD Slot	1 (Internal), 2 (optional, internal)
Notes: Requires the optional HPE Dual Micro SD 8GB USB kit.	
USB 2.0 Ports	4 total: 2 front (optional); 2 rear
USB 3.0 Ports	5 total: 1 front; 2 rear, 2 internal
Notes: 2 front (optional) USB 2.0 ports need the HPE DL560 Gen10 Universal Media Bay Kit (872267-B21).	

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

Industry Standard Compliance

- ACPI 6.1 Compliant
- PCIe 3.0 Compliant
- WOL Support
- Microsoft® Logo certifications
- PXE Support
- USB 3.0 Compliant (internal); USB 2.0 Compliant (external ports via SUV)
- SMBIOS 3.1
- UEFI 2.6
- Redfish API

European Union (EU) eco-design regulations for server and storage products, known as Lot 9, go into effect on March 1st, 2020. Among other requirements, for servers this directive establishes power thresholds for idle state, as well as efficiency and performance in active state which vary among configurations. HPE ProLiant Gen10 servers are compliant with Lot9 requirements. For more information regarding HPE Lot 9 conformance, please visit:
https://www.hpe.com/us/en/about/environment/msds-specs-more.html

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

Standard Features

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.

Notes: The UEFI System Utilities tool is analogous to the HPE ROM-Based Setup Utility (RBSU) of legacy BIOS.

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

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

UEFI Boot Mode only:

- TPM 2.0 support
- NVMe Boot Support
- Platform Trust Technology (PTT) can be enabled
- iSCSI Software Initiator Support
- HTTP/HTTPs Boot support as a PXE alternative
- Boot support for option cards that only support a UEFI option ROM

Notes:

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

Intelligent Provisioning

Hassle free server and OS provisioning for one or more servers with Intelligent Provisioning.

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**.

Standard Features

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 **https://www.hpe.com/us/en/servers/smart-update**.

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

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

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

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

HPE OneView Standard
HPE OneView Standard can be used for inventory, health monitoring, alerting, and reporting without additional fees. It can monitor multiple HPE server generations. The user interface is similar to the HPE OneView Advanced version, but the software-defined functionality is not available. Learn more at **http://www.hpe.com/info/oneview**.

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**.

About Trusted Platform Module
Trusted Platform Module (TPM) is a separate processor that monitors the system state. TPM is a passive component needing to be updated and not able to lock down any component in the system except access to its own memory. It also provides some cryptographic operations - among them: creating RSA key pairs, and working with them.
The first verification of signatures happens by code on the CPU, which can be intercepted and replaced. Emulating a "properly" booted system is possible by sending the right values to the TPM.

HPE supports two version of TPM, the 1.2 device and the 2.0 device. The TPM 2.0 device works with Gen10 servers that are using a Linux operating system or Microsoft Windows Server 2016. Both TPM 1.2 and 2.0 are compatible with HPE ProLiant Gen9 and Gen10 servers. These TPM modules are not compatible with server generations prior to Gen9. Once the TPM module is installed, it locks into place and cannot be removed, nor can it be replaced with a different TPM device.

Standard Features

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)
- Granular control over iLO interfaces
- Smart card (PIV/CAC) and Kerberos based 2-factor Authentication
- Tamper-free updates – components digitally signed and verified
- Secure Recovery – recover critical firmware to known good state on detection of compromised firmware
- Ability to rollback firmware. Secure erase of NAND/User data
- TPM (Trusted Platform Module) 1.2 option.TPM (Trusted Platform Module) 2.0 option Bezel Locking Kit
- Chassis Intrusion detection option

Notes:

- HPE Trusted Platform Module 2.0 Option (864279-B21) works with Gen10 servers with UEFI Mode and not Legacy Mode. The Trusted Platform Module 2.0 Option can be configured to the 1.2 version through the UEFI BIOS to support TPM 1.2 functionality.
- HPE server systems can have a TPM module (of any type) installed only once. It cannot be replaced with any other TPM module.

HPE Silicon Root of Trust

The HPE Silcon Root of Trust provides protection because as soon as the server is powered on and the iLO firmware comes alive, it looks into the silicon for the immutable fingerprint that verifies all the firmware code is valid and uncompromised. Over a million lines of firmware code run, before the operating system starts, making it essential to confirm that all server essential firmware is free from malware or compromised code.

Silicon Root of Trust is included with iLO5 Standard with all platforms that contain the iLO5 chip. That includes ML, DL, Apollo, C-Class Blades, and Synergy Compute Modules. HPE Cloudline and the HPE Microserver do not have silicon root of trust, since they do not contain an iLO5 silicon chip. This technology is NOT available on any previous version of HPE ProLiant like the Gen9, Gen8, or Gen 7 servers, nor can those previous generations be retrofitted to accommodate the silicon root of trust.

The silicon validates the iLO 5 firmware code before it is fetched and executed. If any malware or compromised code has been inserted in the iLO 5 firmware, the silicon will detect that, because any infected firmware code will not match-up with the hash burned into the silicon. From there, the iLO 5 firmware validates the rest of the server firmware, namely the UEFI, CPLD, IE, and ME. The UEFI then validates the connection to the operating system, thus completing a complete root, or chain, that is anchored into the silicon.

During operation of the server, HPE has a new technology that conducts run-time firmware validation that checks the firmware stored in the server. At any point, if compromised code or malware is inserted in any of the critical firmware, an iLO audit log alert is created to notify the customer that a compromised has occurred.

In the unlikely event of a breach into the HPE server firmware, after detection has been completed, the customer may then securely recover the firmware automatically to a previous known good state. HPE provides this function through HPE iLO Advanced license.

Standard Features

Warranty

This product is covered by a global limited warranty and supported by HPE Services and a worldwide network of Hewlett Packard Enterprise Authorized Channel Partners resellers. Hardware diagnostic support and repair is available for three years from date of purchase. Support for software and initial setup is available for 90 days from date of purchase. Enhancements to warranty services are available through HPE 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.

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 iLO Advanced

HPE iLO Advanced licenses offer smart remote functionality without compromise, for all HPE ProLiant servers. The license includes the full integrated remote console, virtual keyboard, video, and mouse (KVM), multi-user collaboration, console record and replay, and GUI-based and scripted virtual media and virtual folders. You can also activate the enhanced security and power management functionality.

HPE OneView Advanced

HPE OneView brings a new level of automation to infrastructure management by taking a template driven approach to provisioning, updating, and integrating compute, storage, and networking infrastructure. It provides full-featured licenses which can be purchased for managing Gen8, Gen9 and Gen10 servers. To learn more visit **http://www.hpe.com/info/oneview**.

HPE InfoSight for Servers

HPE InfoSight for Servers combines the cloud-based machine learning of InfoSight with the health and performance monitoring of Active Health System (AHS) and iLO to optimize performance and predict and prevent problems. The end result is an intelligent environment that modernizes IT operations and enhances the support experience by predicting and preventing the infrastructure issues that lead to application disruptions, wasted IT staff time and missed business opportunities.
Learn more at **https://www.hpe.com/servers/infosight**

HPE Insight Cluster Management Utility (CMU)

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

GPGPU Information

- HPE NVIDIA Quadro P2200 Graphics Accelerator
- HPE NVIDIA Tesla T4 Graphics Accelerator

One Config Simple (SCE)

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

Rack and Power Infrastructure

The story may end with servers, but it starts with the foundation that makes compute go – and business grow. We have 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 have 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

Protect your business beyond warranty with HPE Pointnext Operational Service

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

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 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.

Notes:

– [1] IDC

– [2] – HPE CSC reports 2014 – 2015

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

Recommended Services

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

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

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

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

HPE Proactive Care gives customers an enhanced call experience. When your products are connected to HPE, Proactive Care helps prevent problems and maintains IT stability by utilizing personalized proactive reports with recommendations and advice This Service combines three years proactive reporting and advice with our 24x7 coverage, four hour hardware response time when there is a problem. This service also includes collaborative software support for Independent Software Vendors (ISVs), (Red Hat, VMWare, Microsoft, etc.) running on your HPE servers.

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

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

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

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

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

Service and Support

Other related Services

HPE Server Hardware Installation

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

HPE Installation and Startup Service

Provides for the installation of your HPE hardware according to product specifications including options. The HPE service delivery technician will connect the product to a LAN as appropriate and enable remote support to allow for automatic case creation for hardware failures. Installation and start up services also includes the installation of one supported operating system type (Windows® or Linux).

HPE Datacenter Care service

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

HPE GreenLake Flex Capacity

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

DC for Hyperscale

Datacenter Care for Hyperscale is available for Service Providers and HPC customers who use a scale out approach to computing with a high volume homogenous infrastructure and resilient architecture can take advantage of this environment support tailored to their operating model.

HPE Factory Express for Servers and storage

HPE Factory Express offers configuration, customization, integration and deployment services for HPE servers and storage products. Customers can choose how their factory solutions are built, tested, integrated, shipped and deployed.
Factory Express offers service packages for simple configuration, racking, installation, complex configuration and design services as well as individual factory services, such as image loading, asset tagging, and custom packaging. HPE products supported through Factory Express include a wide array of servers and storage: HPE Integrity, HPE ProLiant, HPE Apollo, HPE ProLiant Server Blades, HPE BladeSystem, HPE 9000 servers as well as the MSAxxxx3PAR suite, XP, rackable tape libraries and configurable network switches.

HPE Service Credits

HPE Service Credits offers flexible services and technical skills to meet your changing IT demands. With a menu of service that is tailored to suit your needs, you get additional resources and specialist skills to help you maintain peak performance of your IT. Offered as annual credits, you can plan your budgets while proactively responding to your dynamic business.

HPE Education Services

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

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

Notes:

- *HPE Support Center Mobile App is subject to local availability.
- HPE ProLiant DL560 Gen10 Server is covered under the HPE Service Contract applied to the HPE ProLiant Server. No separate HPE support services need to be purchased.

Warranty and Support Services will extend to include HPE options configured with your server or storage device. The price of support service is not impacted by configuration details. HPE sourced options that are compatible with your product will be covered under your server support at the same level of coverage allowing you to upgrade freely. Installation for HPE options is available as needed. To keep support costs low for everyone, some high value options will require additional support. Additional support is only required on select high value workload accelerators, fibre switches, InfiniBand and UPS batteries over 12KVA. See the specific high value options that require additional support **here**.

Parts and Materials

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

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

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

Pre-configured Models

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

- Pre-configured models ship with configurations below. Options can be selected from Core or Additional options section of this QuickSpecs.
- Hewlett Packard Enterprise does not allow factory integration of options into pre-configured models. Any additional options purchased will be shipped separately.
- If a custom configuration is desired, please see "Configuration Information - Factory Integrated Models" section of this QuickSpecs.
- European Union (EU) eco-design regulations for server and storage products, known as Lot 9, go into effect on March 1st, 2020. Among other requirements, for servers this directive establishes power thresholds for idle state, as well as efficiency and performance in active state which vary among configurations. HPE ProLiant Gen10 servers are compliant with Lot9 requirements. For more information regarding HPE Lot 9 conformance, please visit: **https://www.hpe.com/us/en/about/environment/msds-specs-more.html**

Entry Models	
SKU Number	P21271-B21 (WW) P21271-291 (JPN) P21271-AA1 (PRC)
Model Name	HPE ProLiant DL560 Gen10 5220 2.2GHz 18-core 2P 64GB-R P408i-a 8SFF 1600W RPS Server
Processor	Intel® Xeon® 5220 (18-Core, 2.2GHz, 125W)
Number of Processors	2
Memory	64 GB (2x32GB Registered DIMMs, 2933 MT/s) **Notes:** 24 DIMM slots available with Entry Model; 2 more processor slots and 24 more DIMMs available via optional HPE DL5x0 Gen10 CPU Version 2 Mezzanine Board Kit (P07991-B21)
Network Controller	HPE Ethernet 1Gb 4-port FLR-T I350-T4V2 Adapter
Storage Controller	HPE Smart Array P408i-a
Power Supply	2x 1600W **Notes:** 1600W Power supplies only support high line voltage (200VAC to 240VAC).
PCI-Express Slots	3 PCIe 3.0 slots available **Notes:** 8 PCIe 3.0 slots available with the secondary and tertiary riser installed.
Hard drive	None shipped as Standard
Internal Storage	8 SFF Drive Bays **Notes:** – Can be expanded up to a max of 24 SFF drives, with optional HPE DL560 Gen10 8SFF HDD Bay2 Kit (872235-B21) and HPE DL560 Gen10 8 SFF HDD Bay1 Kit (872231-B21). – Optionally NVMe SSD drives can be added with HPE DL560 Gen10 Premium 6SFF and 2 NVMe or 8 SFF Bay1 Kit (872227-B21) or HPE DL560 Gen10 Prem 6 SFF+2 NVMe Bay2 Kit(872229-B21) or HPE DL560 Gen10 Premium 6 SFF and 2 NVMe or 8 SFF Bay3 Kit (872231-B21) or HPE DL560 NVMe 8 SSD Express Bay Enablement Kit (872225-B21). – Alternatively, optional HPE DL560 Gen10 Universal Media Bay Kit.
Optical Drive Bay	Optional via Universal Media Bay
Optical Drive	Optional via Universal Media Bay
Fans	6 hot plug fans, redundant
Management	HPE iLO Standard with Intelligent Provisioning (embedded), HPE OneView Standard (requires download); HPE iLO Advanced and HPE OneView Advanced (require licenses)
Form Factor	RACK (2U), HPE Easy Install Rails with CMA
Warranty	3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response

Pre-configured Models

Base Models		
SKU Number	P02873-B21 (WW) P02873-291 (JPN) P02873-AA1 (PRC)	P40455-B21 (WW) P40455-291 (JPN) P40455-AA1 (PRC)
Model Name	HPE ProLiant DL560 Gen10 6230 2.1GHz 20-core 2P 128GB-R P408i-a 8SFF 2x1600W RPS Server Server	
Processor	Intel® Xeon® 6230 (20-Core, 2.1GHz, 125W)	
Number of Processors	2	
Memory	128 GB (4x32GB Registered DIMMs, 2933 MT/s) **Notes:** 24 DIMM slots available with Entry Model; 2 more processor slots and 24 more DIMMs available via optional HPE DL5x0 Gen10 CPU Version 2 Mezzanine Board Kit (P07991-B21)	
Network Controller	HPE FlexFabric 10Gb 2-port FLR-SFP+ 57810S Adapter	HPE Ethernet 10Gb 2-port FLR-T BCM57416 Adapter
Storage Controller	HPE Smart Array P408i-a	
Power Supply	2x 1600W **Notes:** 1600W Power supplies only support high line voltage (200VAC to 240VAC).	
PCI-Express Slots	3 PCIe 3.0 slots available **Notes:** 8 PCIe 3.0 slots available with the secondary and tertiary riser installed.	
Hard drive	None shipped as Standard	
Internal Storage	8 SFF Drive Bays **Notes:** – Can be expanded up to a max of 24 SFF drives, with optional HPE DL560 Gen10 8SFF HDD Bay2 Kit (872235-B21) and HPE DL560 Gen10 8 SFF HDD Bay1 Kit (872231-B21). – Optionally NVMe SSD drives can be added with HPE DL560 Gen10 Premium 6SFF and 2 NVMe or 8 SFF Bay1 Kit (872227-B21) or HPE DL560 Gen10 Prem 6 SFF+2 NVMe Bay2 Kit(872229-B21) or HPE DL560 Gen10 Premium 6 SFF and 2 NVMe or 8 SFF Bay3 Kit (872231-B21) or HPE DL560 NVMe 8 SSD Express Bay Enablement Kit (872225-B21). – Alternatively, optional HPE DL560 Gen10 Universal Media Bay Kit.	
Optical Drive Bay	Optional via Universal Media Bay	
Optical Drive	Optional via Universal Media Bay	
Fans	6 hot plug fans, redundant	
Management	HPE iLO Standard with Intelligent Provisioning (embedded), HPE OneView Standard (requires download); HPE iLO Advanced and HPE OneView Advanced (require licenses)	
Form Factor	RACK (2U), HPE Easy Install Rails with CMA	
Warranty	3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response	

Pre-configured Models

Base Models		
SKU Number	P02874-B21 (WW) P02874-291 (JPN) P20874-AA1 (PRC)	P40456-B21 (WW) P40456-291 (JPN) P40456-AA1 (PRC)
Model Name	HPE ProLiant DL560 Gen10 6254 3.1GHz 18-core 4P 256GB-R P408i-a 8SFF 2x1600W RPS Server	
Processor	Intel® Xeon® 6254 (18-Core, 3.1GHz, 200W)	
Number of Processors	4	
Memory	256 GB (8x32GB Registered DIMMs, 2933 MT/s)	
Network Controller	HPE FlexFabric 10Gb 2-port FLR-SFP+ 57810S Adapter	HPE Ethernet 10Gb 2-port FLR-T BCM57416 Adapther
Storage Controller	HPE Smart Array P408i-a	
Power Supply	2x 1600W **Notes:** 1600W Power supplies only support high line voltage (200VAC to 240VAC).	
PCI-Express Slots	6 PCIe 3.0 slots available **Notes:** 8 PCIe 3.0 slots available with the tertiary riser installed.	
Hard Drive	None ship standard	
Internal Storage	8 SFF Drive Bays	
Optical Drive Bay	Optional via Universal Media Bay	
Optical Drive	Optional via Universal Media Bay	
Fans	6 hot plug fans, redundant	
Management	HPE iLO Standard with Intelligent Provisioning (embedded), HPE OneView Standard (requires download); HPE iLO Advanced and HPE OneView Advanced (require licenses)	
Form Factor	Rack (2U), HPE Easy Install Rails with CMA	
Warranty	3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response	

Pre-configured Models

Performance Models		
SKU Number	P02875-B21 (WW) P02875-291 (JPN) P20875-AA1 (PRC)	P40457-B21 (WW) P40457-291 (JPN) P40457-AA1 (PRC)
Model Name	HPE ProLiant DL560 Gen10 8268 2.9GHz 24-core 4P 512GB-R P816i-a 16SFF 2x1600W RPS Server	
Processor	Intel® Xeon® 8268 (24-Core, 2.9GHz, 205W)	
Number of Processors	4	
Memory	512 GB (16x32GB Registered DIMMs, 2933 MT/s)	
Network Controller	HPE Ethernet 10/25Gb 2-port FLR-SFP28 MCX4121A-ACFT Adapter Adapter	HPE Ethernet 10/25Gb 2-port FLR-SFP28 BCM57414 Adapter
Storage Controller	Smart Array P816i-a	
PCI-Express Slots	8 PCIe 3.0 slots available	
Power Supply	2x 1600W **Notes:** 1600W Power supplies only support high line voltage (200VAC to 240VAC).	
Hard Drive	None ship standard	
Internal Storage	16 SFF Drive Bays	
Optical Drive Bay	None ship standard. optional via Universal Media Bay	
Optical Drive	None ship standard. optional via Universal Media Bay	
Fans	6 hot plug fans, redundant	
Management	HPE iLO Standard with Intelligent Provisioning (embedded), HPE OneView Standard (requires download); HPE iLO Advanced (included) and HPE OneView Advanced (included)	
Form Factor	Rack (2U), HPE Easy Install Rails with CMA	
Warranty	3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response	

Notes: UEFI is the standard default for all pre-defined models.

Country Code Key

xx1 = B21 Worldwide (exclude Japan and PRC)

xx1 = 291 Japan

xx1 = AA1 PRC

Notes: The -B21 WW SKU is to be ordered in all countries other than Japan or PRC.

Configuration Information

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.

- Factory Integrated Models must start with a CTO Server.
- FIO indicates that this option is only available as a factory installable option.
- All Factory Integrated Models will be populated with sufficient hard drive blanks based on the number of initial hard drives ordered with the server.
- Some options may not be integrated at the factory. Contact your local sales representative for additional information. For more information about riser configuration, please vist: **https://h20195.www2.hpe.com/v2/Getdocument.aspx?docname=a00043229enw**
- European Union (EU) eco-design regulations for server and storage products, known as LOT 9, go into effect on March 1st, 2020. Among other requirements, for servers this directive establishes power thresholds for idle state, as well as efficiency and performance in active state which vary among configurations.
- HPE ProLiant Gen10 servers are compliant with LOT9 requirements. For more information regarding HPE LOT 9 conformance, please visit: **https://www.hpe.com/us/en/about/environment/msds-specs-more.html**
- DL500 family is identified as Resilent Server category under LOT 9 regulation, system minimum configuration with 2 Memory DIMMs and 2 PSU for CE Market.

Step 1: Base Configuration (choose one of the following configurable models)

SKU Number	HPE ProLiant DL560 Gen10 8SFF Configure-to-order Server	841730-B21
TAA SKU	HPE ProLiant DL560 Gen10 TAA-compliant 8SFF Configure-to-order Server	875797-B21
Chipset	Intel® C621 Chipset	
Processor	2U Server Chassis with 2 processor slots available; 3 or 4 processors configuration would require HPE DL5x0 Gen10 CPU Version 2 Mezzanine Board Kit (P07991-B21)	
DIMM Slots	24 DIMM slots for RDIMM, LRDIMM DDR4 Memory; (6 DIMM slots per processor can be used for NVDIMMs or can be used for HPE Persistent Memory) 48 DIMM configuration would require optional HPE ProLiant HPE DL5x0 Gen10 CPU Mezzanine Board Kit (872222-B21) and 4 processors **Notes:** If 2nd generation Intel® Xeon® Scalable processors are being used (82xx, 62xx or 52xx series) the 48 DIMM configuration would require optional HPE DL5x0 Gen10 CPU Version 2 Mezzanine Board Kit (P07991-B21)	
Network Controller	None. FlexibleLOM slot (various options can be chosen for networking; NIC cards also available via expansion slots)	
Storage Controller	HPE Smart Array S100i **Notes:** HPE Smart Array S100i SR Gen10 SW RAID is off by default and must be enabled. For enabling, please select HPE FIO Enable Smart Array SW RAID (784308-B21).	
PCIe	3 PCIe 3.0 slots (8 PCIe 3.0 slots are available if second processor is chosen and a Secondary and Tertiary Riser Kits has been installed)	
Drive Cage - included	8 SFF, no drives	
Fans	6 hot plug fans, redundant	
Management	HPE iLO Standard with Intelligent Provisioning and (Standard); HPE OneView Standard (requires download) and HPE iLO Advanced, HPE OneView Advanced (require additional licenses)	
microSD Slots	1 microSD card slot (internal)	
TPM Connector	1 Trusted Platform Module (TPM) connector	
UEFI	BIOS Legacy mode (field configurable) or Unified Extensible Firmware Interface (UEFI) mode (default)	
USB	7 USB ports (2 USB 2.0 and 5 USB 3.0)	
Video Ports	2 video ports (1 front optional via the Universal Media Kit upgrade option, 1 rear)	
Rails	Easy install rails and cable management arm are optional	

Configuration Information

Notes:

- Trade Agreement Act (TAA) and means that these SKUs are manufactured in countries that are part of the global trade act. This provides greater security assurance that these servers come from countries that signed the agreement act. This is particularly important to HPE customers in our federal sector and other verticals that have concerns about the country of origin for our solutions.
- TAA servers are only orderable in North America and Canada.
- PCIe slot availability is dependent on the number of processors and riser kits installed. Please refer to the "Expansion slots" section for more details.
- For the DL560 Gen10, the number of processors can be one, two or four installed.
- For four processors, the HPE DL5x0 Gen10 CPU Version 2 Mezzanine Board Kit (P07991-B21) is required if 2nd generation Intel® Xeon® Scalable processors are being used.
- This aplies to CTO configurations, field upgrades may differ depending on field configuration.
- For more detail riser configuration, please see **https://h20195.www2.hpe.com/v2/Getdocument.aspx?docname=a00043229enw**

Step 2: Choose Required Options

Please select one –L21 processor required below.

Step 2a: Choose Processor Options

Processor Option Kits

Intel Xeon-Platinum

Intel Xeon-Platinum 8280L (2.7GHz/28-core/205W) FIO Processor Kit for HPE ProLiant DL560 Gen10 P07154-L21

Notes: Ships with Performance Heatsink.

Intel Xeon-Platinum 8280 (2.7GHz/28-core/205W) FIO Processor Kit for HPE ProLiant DL560 Gen10 P02984-L21

Notes: Ships with Performance Heatsink.

Intel Xeon-Platinum 8276L (2.2GHz/28-core/165W) FIO Processor Kit for HPE ProLiant DL560 Gen10 P07153-L21

Notes: Ships with Performance Heatsink.

Intel Xeon-Platinum 8276 (2.2GHz/28-core/165W) FIO Processor Kit for HPE ProLiant DL560 Gen10 P02958-L21

Notes: Ships with Performance Heatsink.

Intel Xeon-Platinum 8270 (2.7GHz/26-core/205W) FIO Processor Kit for HPE ProLiant DL560 Gen10 P02979-L21

Notes: Ships with Performance Heatsink.

Intel Xeon-Platinum 8268 (2.9GHz/24-core/205W) FIO Processor Kit for HPE ProLiant DL560 Gen10 P02985-L21

Notes: Ships with Performance Heatsink.

Intel Xeon-Platinum 8260L (2.4GHz/24-core/165W) FIO Processor Kit for HPE ProLiant DL560 Gen10 P07152-L21

Notes: Ships with Performance Heatsink.

Intel Xeon-Platinum 8260 (2.4GHz/24-core/165W) FIO Processor Kit for HPE ProLiant DL560 Gen10 P02959-L21

Notes: Ships with Performance Heatsink.

Intel Xeon-Platinum 8260Y (2.4GHz/24-core/165W) FIO Processor Kit for HPE ProLiant DL560 Gen10 P03023-L21

Notes: Ships with Performance Heatsink.

Intel Xeon-Platinum 8256 (3.8GHz/4-core/105W) FIO Processor Kit for HPE ProLiant DL560 Gen10 P02976-L21

Notes: Ships with Performance Heatsink.

Intel Xeon-Platinum 8253 (2.2GHz/16-core/125W) FIO Processor Kit for HPE ProLiant DL560 Gen10 P03007-L21

Intel Xeon-Gold

Intel Xeon-Gold 6256 (3.6GHz/12-core/205W) FIO Processor Kit for HPE ProLiant DL560 Gen10 P24434-L21

Notes: Ships with Performance Heatsink.

Configuration Information

Intel Xeon-Gold 6254 (3.1GHz/18-core/200W) FIO Processor Kit for HPE ProLiant DL560 Gen10	P02986-L21
Notes: Ships with Performance Heatsink.	
Intel Xeon-Gold 6252 (2.1GHz/24-core/150W) FIO Processor Kit for HPE ProLiant DL560 Gen10	P02962-L21
Notes: Ships with Performance Heatsink.	
Intel Xeon-Gold 6252N (2.3GHz/24-core/150W) FIO Processor Kit for HPE ProLiant DL560 Gen10	P02960-L21
Notes: Ships with Performance Heatsink.	
Intel Xeon-Gold 6248 (2.5GHz/20-core/150W) FIO Processor Kit for HPE ProLiant DL560 Gen10	P02961-L21
Notes: Ships with Performance Heatsink.	
Intel Xeon-Gold 6246 (3.3GHz/12-core/165W) Processor Kit for HPE ProLiant DL560 Gen10	P15170-B21
Notes: Ships with Performance Heatsink.	
Intel Xeon-Gold 6244 (3.6GHz/8-core/150W) FIO Processor Kit for HPE ProLiant DL560 Gen10	P02988-L21
Notes: Ships with Performance Heatsink.	
Intel Xeon-Gold 6242 (2.8GHz/16-core/150W) FIO Processor Kit for HPE ProLiant DL560 Gen10	P02989-L21
Notes: Ships with Performance Heatsink.	
Intel Xeon-Gold 6240L (2.6GHz/18-core/150W) FIO Processor Kit for HPE ProLiant DL560 Gen10.	P11949-L21
Notes: Ships with Performance Heatsink.	
Intel Xeon-Gold 6240 (2.6GHz/18-core/150W) FIO Processor Kit for HPE ProLiant DL560 Gen10	P02963-L21
Notes: Ships with Performance Heatsink.	
Intel Xeon-Gold 6240Y (2.6GHz/18-14-8-core/150W) FIO Processor Kit for HPE ProLiant DL560 Gen10	P03004-L21
Notes: Ships with Performance Heatsink.	
Intel Xeon-Gold 6238L (2.1GHz/22-core/140W) FIO Processor Kit for HPE ProLiant DL560 Gen10.	P11948-L21
Notes: Ships with Performance Heatsink.	
Intel Xeon-Gold 6238 (2.1GHz/22-core/140W) FIO Processor Kit for HPE ProLiant DL560 Gen10	P03005-L21
Notes: Ships with Performance Heatsink.	
Intel Xeon-Gold 6234 (3.3GHz/8-core/130W) FIO Processor Kit for HPE ProLiant DL560 Gen10	P03006-L21
Notes: Ships with Performance Heatsink.	
Intel Xeon-Gold 6230 (2.1GHz/20-core/125W) FIO Processor Kit for HPE ProLiant DL560 Gen10	P02965-L21
Notes: Ships with Performance Heatsink.	
Intel Xeon-Gold 6230N (2.3GHz/20-core/125W) FIO Processor Kit for HPE ProLiant DL560 Gen10	P02987-L21
Notes: Ships with Performance Heatsink.	
Intel Xeon-Gold 6262V (1.9GHz/24-core/135W) FIO Processor Kit for HPE ProLiant DL560 Gen10	P02977-L21
Notes: Ships with Performance Heatsink.	
Intel Xeon-Gold 6222V (1.8GHz/20-core/115W) FIO Processor Kit for HPE ProLiant DL560 Gen10	P02980-L21
Intel Xeon-Gold 6226 (2.7GHz/12-core/125W) FIO Processor Kit for HPE ProLiant DL560 Gen10	P02981-L21
Intel Xeon-Gold 5222 (3.8GHz/4-core/105W) FIO Processor Kit for HPE ProLiant DL560 Gen10	P02982-L21
Notes: Ships with Performance Heatsink.	
Intel Xeon-Gold 5220 (2.2GHz/18-core/125W) FIO Processor Kit for HPE ProLiant DL560 Gen10	P02983-L21
Intel Xeon-Gold 5220S (2.7GHz/18-core/125W) FIO Processor Kit for HPE ProLiant DL560 Gen10	P11945-L21
Intel Xeon-Gold 5218 (2.3GHz/16-core/125W) FIO Processor Kit for HPE ProLiant DL560 Gen10	P02978-L21
Intel Xeon-Gold 5218B (2.3GHz/16-core/125W) FIO Processor Kit for HPE ProLiant DL560 Gen10	P12573-L21
Intel Xeon-Gold 5218N (2.3GHz/16-core/110W) FIO Processor Kit for HPE ProLiant DL560 Gen10	P02964-L21
Intel Xeon-Gold 5217 (3.0GHz/8-core/115W) FIO Processor Kit for HPE ProLiant DL560 Gen10	P07147-L21
Intel Xeon-Gold 5215L (2.5GHz/10-core/85W) FIO Processor Kit for HPE ProLiant DL560 Gen10	P07150-L21
Intel Xeon-Gold 5215 (2.5GHz/10-core/85W) FIO Processor Kit for HPE ProLiant DL560 Gen10	P03024-L21

Configuration Information

Notes:

- If more than one processor is desired select one xxxxxx-L21 and one or three corresponding xxxxxx-B21 processors. Mixing different processor models is not supported.
- Mixing of 1st and 2nd generation Intel® Xeon® Scalable processors – (8/6/5)1xx and (8/6/5)2xx models - is not supported

Step 2b: Choose Memory Options

Only one of the following from each list unless otherwise noted

Registered DIMMs (RDIMMs)

HPE 8GB (1x8GB) Single Rank x8 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit	P00918-B21
HPE 8GB (1x8GB) Single Rank x8 DDR4-2666 CAS-19-19-19 Registered Smart Memory Kit	815097-B21
HPE 16GB (1x16GB) Single Rank x4 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit	P00920-B21
HPE 16GB (1x16GB) Single Rank x4 DDR4-2666 CAS-19-19-19 Registered Smart Memory Kit	815098-B21
HPE 16GB (1x16GB) Dual Rank x8 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit	P00922-B21
HPE 16GB (1x16GB) Dual Rank x8 DDR4-2666 CAS-19-19-19 Registered Smart Memory Kit	835955-B21
HPE 32GB (1x32GB) Single Rank x4 DDR4-2933 CAS-21-21-21 Registered Memory Kit	P38446-B21
HPE 32GB (1x32GB) Dual Rank x4 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit	P00924-B21
HPE 32GB (1x32GB) Dual Rank x4 DDR4-2666 CAS-19-19-19 Registered Smart Memory Kit	815100-B21
HPE 64GB (1x64GB) Dual Rank x4 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit	P00930-B21

Load Reduced DIMMs (LRDIMMs)

HPE 64GB (1x64GB) Quad Rank x4 DDR4-2933 CAS-21-21-21 Load Reduced Smart Memory Kit	P00926-B21
HPE 64GB (1x64GB) Quad Rank x4 DDR4-2666 CAS-19-19-19 Load Reduced Smart Memory Kit	815101-B21
HPE 128GB (1x128GB) Quad Rank x4 DDR4-2933 CAS-21-21-21 Load Reduced Smart Memory Kit	P11040-B21
HPE 128GB (1x128GB) Octal Rank x4 DDR4-2933 CAS-24-21-21 Load Reduced 3DS Smart Memory Kit	P00928-B21
HPE 128GB (1x128GB) Octal Rank x4 DDR4-2666 CAS-22-19-19 3DS Load Reduced Memory Kit	815102-B21

HPE Persistent Memory

Intel Optane 128GB persistent memory 100 Series for HPE	835804-B21
Intel Optane 256GB persistent memory 100 Series for HPE	835807-B21
Intel Optane 512GB persistent memory 100 Series for HPE	835810-B21

Notes:

- LRDIMM and RDIMM are distinct memory technologies and cannot be mixed within a server.
- The 2933 MT/s DIMMs are only supported with the 2nd generation Intel® Xeon® Scalable processors (82xx,62xx and 52xx)
- The 2666 MT/s DIMMs are only supported with the 1st generation Intel® Xeon® Scalable processors (81xx,61xx and 51xx)
- The HPE Persistent Memory Kits are only supported with the 2nd generation Intel® Xeon® Scalable processors
- The HPE Persistent Memory Kits are required to support up to 2 TB on 'M' processors and up to 4.5TB on 'L' processors
- The HPE Persistent Memory Kits cannot be selected with NVDIMMs or with any single rank x8 DDR4 2933 memory kit
- The HPE Persistent Memory Kits cannot be selected with HPE 800W Flex Slot -48VDC Hot Plug Low Halogen Power Supply Kit (865434-B21)
- Persistent Memory kits of different capacities cannot be mixed within a server
- For General Server Memory , HPE Persistent Memory and NVDIMM Population Rules and Guidelines for Gen10 see details here: **http://www.hpe.com/docs/memory-population-rules**

Step 2c: Choose Power Supplies

Only one or more of the following from each list unless otherwise noted

HPE Flex Slot Power Supplies

HPE 800W Flex Slot Titanium Hot Plug Low Halogen Power Supply Kit	865438-B21
HPE 800W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit	865414-B21
HPE 800W Flex Slot -48VDC Hot Plug Low Halogen Power Supply Kit	865434-B21

Configuration Information

HPE 800W Flex Slot Universal Hot Plug Low Halogen Power Supply Kit	865428-B21
HPE 1600W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit	830272-B21

Notes:

- Select one or more power supplies. For 800W, 4 power supplies need to be selected.
- 1600W Power supplies only support high line voltage (200VAC to 240VAC).
- 800W Titanium power supplies support high line voltage (200VAC to 240VAC)
- Prior to making a power supply selection it is highly recommended that the HPE Power Advisor is run to determine the right size power supply for your server configuration. The HPE Power Advisor is located at: **http://www.hpe.com/info/hppoweradvisor**.
- All power supplies in a server should match. Mixing Power Supplies is not supported.
- HPE ProLiant servers ship with an IEC-IEC power cord used for rack mounting with Power Distribution Units (PDUs). Visit **HPE power cords** for a full list of optional power cords.
- DL500 family is identified as Resilent Server category under LOT 9 regulation, system minimum configuration with 2 Memory DIMMs and 2 PSU for CE Market.

Step 2d: Choose network adapters

Only one of the following from each list unless otherwise noted

Network Adapters

HPE Ethernet 1Gb 4-port FLR-T BCM5719 Adapter	629135-B22
HPE Ethernet 1Gb 4-port FLR-T I350-T4V2 Adapter	665240-B21
HPE FlexFabric 10Gb 4-port FLR-T 57840S Adapter	764302-B21
HPE FlexFabric 10Gb 2-port FLR-SFP+ 57810S Adapter	700751-B21
HPE Ethernet 10Gb 2-port FLR-T BCM57416 Adapter	817721-B21
HPE FlexFabric 10Gb 2-port FLR-T 57810S Adapter	700759-B21
HPE Ethernet 10Gb 2-port FLR-SFP+ X710-DA2 Adapter	727054-B21
HPE Ethernet 10Gb 2-port FLR-T X550-AT2 Adapter	817745-B21
HPE Ethernet 10/25Gb 2-port FLR-SFP28 QL41401-A2G Converged Network Adapter	867334-B21
HPE Ethernet 10/25Gb 2-port FLR-SFP28 MCX4121A-ACFT Adapter	817749-B21
HPE Ethernet 10/25Gb 2-port FLR-SFP28 BCM57414 Adapter	817709-B21

Step 3: Choose Additional Factory Integratable Options

Only one of the following from each list unless otherwise noted

Risers

HPE DL560 Gen10 4-port 8 NVMe Slimline FIO Riser Kit	876242-B21
HPE DL560 Gen10 x8/x8/x8 1-port 2 NVMe Slimline FIO Riser Kit	876245-B21
HPE DL38X Gen10 x16/x16 GPU Slot2/3 FIO Riser Kit	871676-B21

Notes: For additional details on ProLiant DL Gen10 server risers please visit:
https://www.hpe.com/h20195/v2/Getdocument.aspx?docname=a00043229enw

HPE OneView

HPE OneView w/o iLO including 3yr 24x7 Support 1-server FIO LTU	P8B31A
HPE OneView for ProLiant DL Server including 3yr 24x7 Support FIO Bundle Physical 1-server LTU	E5Y43A

BIOS Mode

HPE Legacy FIO Mode Setting	758959-B22

Notes: Selecting this option will change the UEFI BIOS setting into Legacy BIOS Setting.

Configuration Information

Controller State

HPE FIO Enable Smart Array SW RAID 784308-B21

Notes: If not selecting an HPE Storage Controller, this option may be selected to support RAID and Hot-plug capabilities for SATA hard drives. The S100i does not support SAS hard drives.

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

Core Options

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

HPE Unique Options

HPE DL5x0 Gen10 12Gb SAS Expander Card Kit with Cables	873444-B21
HPE DL560 Gen10 2SFF Premium HDD Front NVMe/SAS/SATA Kit	872223-B21
Notes: Needs to be ordered with the HPE DL560 Gen10 Uni Media Bay Kit (872267-B21).	
HPE DL560 NVMe 8 SSD Express Bay Enablement Kit	872225-B21
HPE DL560 Gen10 Premium 6SFF and 2 NVMe or 8SFF Bay1 Kit	872227-B21
HPE DL560 Gen10 Premium 6SFF and 2 NVMe or 8SFF Bay2 Kit	872229-B21
HPE DL560 Gen10 Premium 6SFF and 2 NVMe or 8SFF Bay3 Kit	872231-B21
HPE DL560 Gen10 4-port NVMe Mezzanine Card	874633-B21
HPE DL560 Gen10 8SFF HDD Bay1 Kit	872233-B21
HPE DL560 Gen10 8SFF HDD Bay2 Kit	872235-B21
HPE DL560 Gen10 8SFF HDD Bay3 Kit	872237-B21
HPE DL560 Gen10 Universal Media Bay Kit	872267-B21
Notes: An optional Optical Disk Drive can be added, either DVD-ROM (726536-B21) or DVD-RW (726537-B21).	
HPE DL5x0 Gen10 System Insight Display Kit	872261-B21
HPE DL560 Gen10 4x Power Supply Enablement Kit	875675-B21
Notes: Must be ordered when selecting 4 power supplies.	
HPE DL5x0 Gen10 CPU Version 2 Mezzanine Board Kit	P07991-B21
HPE DL5x0 Gen10 CPU Mezzanine UPI Performance Kit	875608-B21

Notes:

- The HPE DL5x0 Gen10 CPU Version 2 Mezzanine Board Kit (P07991-B21) is needed for three or four processor configurations using 1st and 2nd generation Intel® Xeon® Scalable processors (all listed in this Quick spec. document)
- The HPE DL560 Gen10 8 SFF Bay 3 Cage/Backplane Kit (872237-B21) is shipped default with the server. The priority order of drive box population is Box 3, followed by Box 2 and then Box 1.

HPE Processors

Intel Xeon-Platinum

Intel Xeon-Platinum 8280L (2.7GHz/28-core/205W) Processor Kit for HPE ProLiant DL560 Gen10	P07154-B21
Notes: Ships with Performance Heatsink	
Intel Xeon-Platinum 8280 (2.7GHz/28-core/205W) Processor Kit for HPE ProLiant DL560 Gen10	P02984-B21
Notes: Ships with Performance Heatsink.	
Intel Xeon-Platinum 8276L (2.2GHz/28-core/165W) Processor Kit for HPE ProLiant DL560 Gen10	P07153-B21
Notes: Ships with Performance Heatsink.	
Intel Xeon-Platinum 8276 (2.2GHz/28-core/165W) Processor Kit for HPE ProLiant DL560 Gen10	P02958-B21
Notes: Ships with Performance Heatsink.	
Intel Xeon-Platinum 8270 (2.7GHz/26-core/205W) Processor Kit for HPE ProLiant DL560 Gen10	P02979-B21
Notes: Ships with Performance Heatsink.	
Intel Xeon-Platinum 8268 (2.9GHz/24-core/205W) Processor Kit for HPE ProLiant DL560 Gen10	P02985-B21
Notes: Ships with Performance Heatsink.	

Core Options

Intel Xeon-Platinum 8260 (2.4GHz/24-core/165W) Processor Kit for HPE ProLiant DL560 Gen10	P02959-B21
Notes: Ships with Performance Heatsink.	
Intel Xeon-Platinum 8260Y (2.4GHz/24-core/165W) Processor Kit for HPE ProLiant DL560 Gen10	P03023-B21
Notes: Ships with Performance Heatsink.	
Intel Xeon-Platinum 8256 (3.8GHz/4-core/105W) Processor Kit for HPE ProLiant DL560 Gen10	P02976-B21
Notes: Ships with Performance Heatsink.	
Intel Xeon-Platinum 8253 (2.2GHz/16-core/125W) Processor Kit for HPE ProLiant DL560 Gen10	P03007-B21
Intel Xeon-Gold	
Intel Xeon-Gold 6256 (3.6GHz/12-core/205W) Processor Kit for HPE ProLiant DL560 Gen10	P24434-B21
Notes: Ships with Performance Heatsink.	
Intel Xeon-Gold 6254 (3.1GHz/18-core/200W) Processor Kit for HPE ProLiant DL560 Gen10	P02986-B21
Notes: Ships with Performance Heatsink.	
Intel Xeon-Gold 6252 (2.1GHz/24-core/150W) Processor Kit for HPE ProLiant DL560 Gen10	P02962-B21
Notes: Ships with Performance Heatsink.	
Intel Xeon-Gold 6252N (2.3GHz/24-core/150W) Processor Kit for HPE ProLiant DL560 Gen10	P02960-B21
Notes: Ships with Performance Heatsink.	
Intel Xeon-Gold 6248 (2.5GHz/20-core/150W) Processor Kit for HPE ProLiant DL560 Gen10	P02961-B21
Notes: Ships with Performance Heatsink.	
Intel Xeon-Gold 6246 (3.3GHz/12-core/165W) Processor Kit for HPE ProLiant DL560 Gen10	P15170-B21
Notes: Ships with Performance Heatsink.	
Intel Xeon-Gold 6244 (3.6GHz/8-core/150W) Processor Kit for HPE ProLiant DL560 Gen10	P02988-B21
Notes: Ships with Performance Heatsink.	
Intel Xeon-Gold 6242 (2.8GHz/16-core/150W) Processor Kit for HPE ProLiant DL560 Gen10	P02989-B21
Notes: Ships with Performance Heatsink.	
Intel Xeon-Gold 6240L (2.6GHz/18-core/150W) Processor Kit for HPE ProLiant DL560 Gen10	P11949-B21
Notes: Ships with Performance Heatsink.	
Intel Xeon-Gold 6240 (2.6GHz/18-core/150W) Processor Kit for HPE ProLiant DL560 Gen10	P02963-B21
Notes: Ships with Performance Heatsink.	
Intel Xeon-Gold 6238L (2.1GHz/22-core/140W) Processor Kit for HPE ProLiant DL560 Gen10	P11948-B21
Notes: Ships with Performance Heatsink.	
Intel Xeon-Gold 6238 (2.1GHz/22-core/140W) Processor Kit for HPE ProLiant DL560 Gen10	P03005-B21
Notes: Ships with Performance Heatsink.	
Intel Xeon-Gold 6234 (3.3GHz/8-core/130W) Processor Kit for HPE ProLiant DL560 Gen10	P03006-B21
Notes: Ships with Performance Heatsink.	
Intel Xeon-Gold 6230 (2.1GHz/20-core/125W) Processor Kit for HPE ProLiant DL560 Gen10	P02965-B21
Notes: Ships with Performance Heatsink.	
Intel Xeon-Gold 6230N (2.3GHz/20-core/125W) Processor Kit for HPE ProLiant DL560 Gen10	P02987-B21
Notes: Ships with Performance Heatsink.	
Intel Xeon-Gold 6262V (1.9GHz/24-core/135W) Processor Kit for HPE ProLiant DL560 Gen10	P02977-B21
Notes: Ships with Performance Heatsink.	
Intel Xeon-Gold 6222V (1.8GHz/20-core/115W) Processor Kit for HPE ProLiant DL560 Gen10	P02980-B21
Intel Xeon-Gold 6226 (2.7GHz/12-core/125W) Processor Kit for HPE ProLiant DL560 Gen10	P02981-B21

Core Options

Intel Xeon-Gold 5222 (3.8GHz/4-core/105W) Processor Kit for HPE ProLiant DL560 Gen10	P02982-B21

Notes: Ships with Performance Heatsink.

Intel Xeon-Gold 5220 (2.2GHz/18-core/125W) Processor Kit for HPE ProLiant DL560 Gen10	P02983-B21
Intel Xeon-Gold 5220S (2.7GHz/18-core/125W) Processor Kit for HPE ProLiant DL560 Gen10	P11945-B21
Intel Xeon-Gold 5218 (2.3GHz/16-core/125W) Processor Kit for HPE ProLiant DL560 Gen10	P02978-B21
Intel Xeon-Gold 5218B (2.3GHz/16-core/125W) Processor Kit for HPE ProLiant DL560 Gen10	P12573-B21
Intel Xeon-Gold 5218N (2.3GHz/16-core/110W) Processor Kit for HPE ProLiant DL560 Gen10	P02964-B21
Intel Xeon-Gold 5217 (3.0GHz/8-core/115W) Processor Kit for HPE ProLiant DL560 Gen10	P07147-B21
Intel Xeon-Gold 5215L (2.5GHz/10-core/85W) Processor Kit for HPE ProLiant DL560 Gen10	P07150-B21
Intel Xeon-Gold 5215 (2.5GHz/10-core/85W) Processor Kit for HPE ProLiant DL560 Gen10	P03024-B21

Notes:

- If more than one processor is desired select one xxxxxx-L21 and one or three corresponding xxxxxx-B21 processors. Mixing different processor models is not supported.
- Mixing of 1st and 2nd generation Intel® Xeon® Scalable processors – (8/6/5)1xx and (8/6/5)2xx models -is not supported

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 Memory

Hewlett Packard Enterprise memory from previous generation servers is not qualified or warranted with this HPE ProLiant Server. HPE SmartMemory is required to realize the memory performance improvements and enhanced functionality listed in this document for Gen10. For additional information, please see the **HPE SmartMemory QuickSpecs.**
LRDIMM and RDIMM are all distinct memory technologies and cannot be mixed within a server.

Registered DIMMs (RDIMMs)

HPE 8GB (1x8GB) Single Rank x8 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit	P00918-B21
HPE 8GB (1x8GB) Single Rank x8 DDR4-2666 CAS-19-19-19 Registered Smart Memory Kit	815097-B21
HPE 16GB (1x16GB) Single Rank x4 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit	P00920-B21
HPE 16GB (1x16GB) Single Rank x4 DDR4-2666 CAS-19-19-19 Registered Smart Memory Kit	815098-B21
HPE 16GB (1x16GB) Dual Rank x8 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit	P00922-B21
HPE 16GB (1x16GB) Dual Rank x8 DDR4-2666 CAS-19-19-19 Registered Smart Memory Kit	835955-B21
HPE 32GB (1x32GB) Single Rank x4 DDR4-2933 CAS-21-21-21 Registered Memory Kit	P38446-B21
HPE 32GB (1x32GB) Dual Rank x4 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit	P00924-B21
HPE 32GB (1x32GB) Dual Rank x4 DDR4-2666 CAS-19-19-19 Registered Smart Memory Kit	815100-B21
HPE 64GB (1x64GB) Dual Rank x4 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit	P00930-B21

Load Reduced DIMMs (LRDIMMs)

HPE 64GB (1x64GB) Quad Rank x4 DDR4-2933 CAS-21-21-21 Load Reduced Smart Memory Kit	P00926-B21
HPE 64GB (1x64GB) Quad Rank x4 DDR4-2666 CAS-19-19-19 Load Reduced Smart Memory Kit	815101-B21
HPE 128GB (1x128GB) Quad Rank x4 DDR4-2933 CAS-21-21-21 Load Reduced Smart Memory Kit	P11040-B21

Load Reduced DIMMs (LRDIMMs)

HPE 128GB (1x128GB) Octal Rank x4 DDR4-2933 CAS-24-21-21 Load Reduced 3DS Smart Memory Kit	P00928-B21
HPE 128GB (1x128GB) Octal Rank x4 DDR4-2666 CAS-22-19-19 3DS Load Reduced Memory Kit	815102-B21

Notes:

- The maximum memory speed is a function of the memory type, memory configuration, and processor model.
- LRDIMM and RDIMM are distinct memory technologies and cannot be mixed within a server.
- The 2666 MT/s DIMMs are only supported with the 1st generation Intel® Xeon® Scalable processors (81xx,61xx and 51xx)

Core Options

– The 2933MT/s DIMMs are only supported with the 2nd generation Intel® Xeon® Scalable processors (82xx,62xx and 52xx).

HPE Persistent Memory

Intel Optane 128GB persistent memory 100 Series for HPE	835804-B21
Intel Optane 256GB persistent memory 100 Series for HPE	835807-B21
Intel Optane 512GB persistent memory 100 Series for HPE	835810-B21

Notes:

– A maximum of 6 HPE Persistent Memory Kits per processor and a maximum of 24 kits are supported on the DL560
– The HPE Persistent Memory Kits are only supported with the 2nd generation Intel® Xeon® Scalable processors
– The HPE Persistent Memory Kits are required to support up to 2 TB on 'M" processors and up to 4.5TB on 'L' processors
– The HPE Persistent Memory Kits cannot be selected with NVDIMMs or with any single rank x8 DDR4 2933 memory kit
– The HPE Persistent Memory Kits cannot be selected with HPE 800W Flex Slot -48VDC Hot Plug Low Halogen Power Supply Kit (865434-B21)
– Persistent memory kits of different capacities cannot be mixed within a server

Configuration	HPE Persistent Memory kits	Number of RDIMMs or LRDIMMs required
1P	1	6
	2	4,6 or 8
	4	6
	6	6
2P	2	12
	4	8.12 or 16
	8	12
	12	12
4P	4	24
	8	16,24 or 32
	16	24
	24	24

Notes: Please refer to **http://www.hpe.com/info/persistentmemory** for HPE Persistent Memory population rules and guidelines.

HPE Optical Drives

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

Notes: The optional Universal Media Bay Kits are required for this option. (HPE ProLiant DL560 Gen10 Universal Media Bay kit (872267-B21).

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

Notes: The optional Universal Media Bay Kits are required for this option. (HPE ProLiant DL560 Gen10 Universal Media Bay kit - 872267-B21).

HPE Mobile USB DVD-RW Optical Drive	701498-B21

Notes: External

HPE Drives

Notes:

– The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components.
– Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.

Enterprise - 12G SAS - SFF Drives

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

Core Options

HPE 300GB SAS 12G Enterprise 10K SFF (2.5in) SC 3yr Wty Digitally Signed Firmware HDD	872475-B21
HPE 600GB SAS 12G Enterprise 15K SFF (2.5in) SC 3yr Wty Digitally Signed Firmware HDD	870757-B21
HPE 600GB SAS 12G Enterprise 10K SFF (2.5in) SC 3yr Wty Digitally Signed Firmware HDD	872477-B21
HPE 900GB SAS 12G Enterprise 15K SFF (2.5in) SC 3yr Wty Digitally Signed Firmware HDD	870759-B21
HPE 1.2TB SAS 12G Enterprise 10K SFF (2.5in) SC 3yr Wty Digitally Signed Firmware HDD	872479-B21
HPE 1.8TB SAS 12G Enterprise 10K SFF (2.5in) SC 3yr Wty 512e Digitally Signed Firmware HDD	872481-B21
HPE 2.4TB SAS 12G Enterprise 10K SFF (2.5in) SC 3yr Wty 512e Digitally Signed Firmware HDD	881457-B21
Midline - 12G SAS - SFF Drives	
HPE 1TB SAS 12G Midline 7.2K SFF (2.5in) SC 1yr Wty Digitally Signed Firmware HDD	832514-B21
HPE 2TB SAS 12G Midline 7.2K SFF (2.5in) SC 1yr Wty 512e HDD	765466-B21
Midline - 6G SATA - SFF Drives	
HPE 1TB SATA 6G Midline 7.2K SFF (2.5in) SC 1yr Wty Digitally Signed Firmware HDD	655710-B21
HPE 2TB SATA 6G Midline 7.2K SFF (2.5in) SC 1yr Wty 512e Digitally Signed Firmware HDD	765455-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**.

Write Intensive - 12G SAS - SFF - Solid State Drives	
HPE 400GB SAS 12G Write Intensive SFF SC SS540 SSD	P21125-B21
HPE 400GB SAS 12G Write Intensive SFF SC PM5 SSD	P04541-B21
HPE 800GB SAS 12G Write Intensive SFF SC SS540 SSD	P21127-B21
HPE 800GB SAS 12G Write Intensive SFF SC PM5 SSD	P04543-B21
HPE 800GB SAS 12G Write Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P09100-B21
HPE 1.6TB SAS 12G Write Intensive SFF SC SS540 SSD	P21129-B21
HPE 1.6TB SAS 12G Write Intensive SFF SC PM5 SSD	P04545-B21
HPE 1.6TB SAS 12G Write Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P09102-B21
Read Intensive - 6G SATA - SFF - Solid State Drives	
HPE 240GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Multi Vendor SSD	P18420-B21
HPE 240GB SATA 6G Read Intensive SFF SC S4510 SSD	P05924-B21
HPE 240GB SATA 6G Read Intensive SFF SC PM883 SSD	P04556-B21
HPE 240GB SATA 6G Read Intensive SFF SC 5300P SSD	P19935-B21
HPE 480GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Multi Vendor SSD	P18422-B21
HPE 480GB SATA 6G Read Intensive SFF SC S4510 SSD	P05928-B21
HPE 480GB SATA 6G Read Intensive SFF SC SE4011 SSD	P06194-B21
HPE 480GB SATA 6G Read Intensive SFF SC PM883 SSD	P04560-B21
Read Intensive - 6G SATA - SFF - Solid State Drives	
HPE 480GB SATA 6G Read Intensive SFF SC 5300P SSD	P19937-B21
HPE 960GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Multi Vendor SSD	P18424-B21
HPE 960GB SATA 6G Read Intensive SFF SC S4510 SSD	P05932-B21
HPE 960GB SATA 6G Read Intensive SFF SC SE4011 SSD	P06196-B21
HPE 960GB SATA 6G Read Intensive SFF SC PM883 SSD	P04564-B21
HPE 960GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P04476-B21
HPE 960GB SATA 6G Read Intensive SFF SC 5300P SSD	P19939-B21
HPE 1.92TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Multi Vendor SSD	P18426-B21

Core Options

HPE 1.92TB SATA 6G Read Intensive SFF SC S4510 SSD	P05938-B21
HPE 1.92TB SATA 6G Read Intensive SFF SC SE4011 SSD	P06198-B21
HPE 1.92TB SATA 6G Read Intensive SFF SC PM883 SSD	P04566-B21
HPE 1.92TB SATA 6G Read Intensive SFF SC 5300P SSD	P19941-B21
HPE 3.84TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Multi Vendor SSD	P18428-B21
HPE 3.84TB SATA 6G Read Intensive SFF SC S4510 SSD	P05946-B21
HPE 3.84TB SATA 6G Read Intensive SFF SC PM883 SSD	P04570-B21
HPE 3.84TB SATA 6G Read Intensive SFF SC SE4011 SSD	P06200-B21
HPE 3.84TB SATA 6G Read Intensive SFF SC 5300P SSD	P19943-B21
HPE 7.68TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Multi Vendor	P18430-B21
HPE 7.68TB SATA 6G Read Intensive SFF SC 5300P SSD	P19945-B21

Notes: Multi-vendor SKUs are composed of numerous supplier manufactured SSDs within a given SATA capacity SKU. When ordering a particular SKU-B21 number the customer will receive a homogenous set of vendor manufactured SSDs in that capacity that has meet or exceeded the HPE qualification standards published above.

Read Intensive - 6G SATA - M.2 - Solid State Drives

HPE 240GB SATA 6G Read Intensive M.2 2280 5300B SSD	P19888-B21
HPE 480GB SATA 6G Read Intensive M.2 2280 5300P SSD	P19890-B21
HPE 960GB SATA 6G Read Intensive M.2 2280 5300P SSD	P19892-B21

Very Read Optimized –SATA -SFF- Solid State Drives

HPE 960GB SATA VRO SFF SC SSD	P19949-B21
HPE 1.92TB SATA VRO SFF SC SSD	P23487-B21
HPE 3.84TB SATA VRO SFF SC SSD	P23489-B21
HPE 7.68TB SATA VRO SFF SC SSD	P23493-B21

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

HPE 960GB SAS 12G Read Intensive SFF SC SS540 SSD	P21139-B21
HPE 960GB SAS 12G Read Intensive SFF SC Value SAS RM5 SSD	P10440-B21
HPE 960GB SAS 12G Read Intensive SFF SC PM5 SSD	P04517-B21
HPE 960GB SAS 12G Read Intensive SFF SC PM1643a SSD	P19903-B21
HPE 1.92TB SAS 12G Read Intensive SFF SC SS540 SSD	P21141-B21
HPE 1.92TB SAS 12G Read Intensive SFF SC Value SAS RM5 SSD	P10442-B21
HPE 1.92TB SAS 12G Read Intensive SFF SC PM5 SSD	P04519-B21
HPE 1.92TB SAS 12G Read Intensive SFF SC PM1643a SSD	P19905-B21
HPE 3.84TB SAS 12G Read Intensive SFF SC SS540 SSD	P21143-B21
HPE 3.84TB SAS 12G Read Intensive SFF SC Value SAS RM5 SSD	P10444-B21
HPE 3.84TB SAS 12G Read Intensive SFF SC PM5 SSD	P04521-B21
HPE 3.84TB SAS 12G Read Intensive SFF SC PM1643a SSD	P19907-B21
HPE 7.68TB SAS 12G Read Intensive SFF SC SS540 SSD	P21145-B21
HPE 7.68TB SAS 12G Read Intensive SFF SC PM1643a SSD	P19909-B21
HPE 15.3TB SAS 12G Read Intensive SFF SC SS540 SSD	P21147-B21
HPE 15.36TB SAS 12G Read Intensive SFF SC PM1643a SSD	P19911-B21

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

HPE 960GB SAS 12G Read Intensive SFF SC Value SAS Multi Vendor SSD	P36997-B21
HPE 1.92TB SAS 12G Read Intensive SFF SC Value SAS Multi Vendor SSD	P36999-B21

Core Options

HPE 3.84TB SAS 12G Read Intensive SFF SC Value SAS Multi Vendor SSD	P37001-B21
HPE 7.68TB SAS 12G Read Intensive SFF SC Value SAS Multi Vendor SSD	P37003-B21
HPE 7.68TB SAS 12G Read Intensive SFF SC Value SAS RM5 SSD	P10446-B21
HPE 7.68TB SAS 12G Read Intensive SFF SC PM5 SSD	P04523-B21
Performance Read Intensive- NVMe -SFF- U.3 - Solid State Drives	
HPE 960GB NVMe Gen4 High Performance Read Intensive SFF SCN U.3 CM6 SSD	P20015-B21
HPE 1.92TB NVMe Gen4 High Performance Read Intensive SFF SCN U.3 CM6 SSD	P20017-B21
HPE 3.84TB NVMe Gen4 High Performance Read Intensive SFF SCN U.3 CM6 SSD	P20019-B21
HPE 7.68TB NVMe Gen4 High Performance Read Intensive SFF SCN U.3 CM6 SSD	P20021-B21
Read Intensive- NVMe -SFF- U.3 - Solid State Drives	
HPE 960GB NVMe Gen4 Mainstream Performance Read Intensive SFF SCN U.3 PE8010 SSD	P19809-B21
HPE 1.92TB NVMe Gen4 Mainstream Performance Read Intensive SFF SCN U.3 PE8010 SSD	P19813-B21
HPE 3.84TB NVMe Gen4 Mainstream Performance Read Intensive SFF SCN U.3 PE8010 SSD	P19817-B21
HPE 7.68TB NVMe Gen4 Mainstream Performance Read Intensive SFF SCN U.3 PE8010 SSD	P19821-B21
HPE 960GB NVMe Gen4 Mainstream Performance Read Intensive SFF SCN U.3 CD6 SSD	P25944-B21
HPE 1.92TB NVMe Gen4 Mainstream Performance Read Intensive SFF SCN U.3 CD6 SSD	P20139-B21
HPE 3.84TB NVMe Gen4 Mainstream Performance Read Intensive SFF SCN U.3 CD6 SSD	P20141-B21
HPE 7.68TB NVMe Gen4 Mainstream Performance Read Intensive SFF SCN U.3 CD6 SSD	P20143-B21
HPE 15.36TB NVMe Gen4 Mainstream Performance Read Intensive SFF SCN U.3 CD6 SSD	P20145-B21
Read/Write Intensive - NVMe - SFF - Solid State Drives	
HPE 375GB NVMe Gen3 High Performance Low Latency Write Intensive SFF SCN U.2 P4800X SSD	878014-B21
HPE 750GB NVMe Gen3 High Performance Low Latency Write Intensive SFF SCN U.2 P4800X SSD	P06952-B21
HPE 960GB NVMe Gen3 Mainstream Performance Read Intensive SFF SCN U.2 PE6011 SSD	P13676-B21
HPE 960GB NVMe x4 Lanes Read Intensive SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	P07190-B21
HPE 1.92TB NVMe Gen3 Mainstream Performance Read Intensive SFF SCN U.2 PE6011 SSD	P13678-B21
HPE 1.92TB NVMe x4 Lanes Read Intensive SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	P10210-B21
HPE 1.92TB NVMe x4 Lanes Read Intensive SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	P07192-B21
HPE 1.92TB NVMe x4 Lanes Read Intensive SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	P10214-B21
HPE 2TB NVMe Gen3 High Performance Read Intensive SFF SCN U.2 P4510 SSD	P13695-B21
HPE 3.84TB NVMe Gen3 Mainstream Performance Read Intensive SFF SCN U.2 PE6011 SSD	P13680-B21
HPE 3.84TB NVMe x4 Lanes Read Intensive SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	P10212-B21
HPE 3.84TB NVMe x4 Lanes Read Intensive SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	P07194-B21
HPE 3.84TB NVMe x4 Lanes Read Intensive SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	P10216-B21
HPE 4TB NVMe Gen3 High Performance Read Intensive SFF SCN U.2 P4510 SSD	P13697-B21
HPE 7.68TB NVMe Gen3 Mainstream Performance Read Intensive SFF SCN U.2 PE6011 SSD	P13682-B21
HPE 7.68TB NVMe x4 Lanes Read Intensive SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	P07196-B21
HPE 15.36TB NVMe Gen3 High Performance Read Intensive SFF SCN U.2 CM5 SSD	P07198-B21

Notes:

- A NVMe (872225-B21 or 872227-B21 or 872229-B21, 872231-B21) or Premium (872223-B21) drive cage are required to support these drives in conjunction with a NVMe riser kit or 4-port NVMe Mezzanine card.
- Not supported by HPE Smart Array controllers.

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

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

Core Options

HPE 400GB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P09088-B21
HPE 800GB SAS 12G Mixed Use SFF SC SS540 SSD	P21131-B21
HPE 800GB SAS 12G Mixed Use SFF SC PM5 SSD	P04527-B21
HPE 800GB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P09090-B21
HPE 800GB SAS 12G Mixed Use SFF SC PM1645a SSD	P19913-B21
HPE 960GB SAS 12G Mixed Use SFF SC Value SAS Multi Vendor SSD	P37005-B21
HPE 960GB SAS 12G Mixed Use SFF SC Value SAS RM5 SSD	P10448-B21
HPE 1.6TB SAS 12G Mixed Use SFF SC SS540 SSD	P21133-B21
HPE 1.6TB SAS 12G Mixed Use SFF SC PM5 SSD	P04533-B21
HPE 1.6TB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P09092-B21
HPE 1.6TB SAS 12G Mixed Use SFF SC PM1645a SSD	P19915-B21
HPE 1.92TB SAS 12G Mixed Use SFF SC Value SAS Multi Vendor SSD	P37011-B21
HPE 1.92TB SAS 12G Mixed Use SFF SC Value SAS RM5 SSD	P10454-B21
HPE 3.2TB SAS 12G Mixed Use SFF SC SS540 SSD	P21135-B21
HPE 3.2TB SAS 12G Mixed Use SFF SC PM5 SSD	P04537-B21
HPE 3.2TB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P09094-B21
HPE 3.2TB SAS 12G Mixed Use SFF SC PM1645a SSD	P19917-B21
HPE 3.84TB SAS 12G Mixed Use SFF SC Value SAS Multi Vendor SSD	P37017-B21
HPE 6.4TB SAS 12G Mixed Use SFF SC SS540 SSD	P21137-B21
HPE 6.4TB SAS 12G Mixed Use SFF SC PM1645a SSD	P19919-B21
Mixed Use - 12G SAS - SFF - Solid State Drives	
HPE 3.84TB SAS 12G Mixed Use SFF SC Value SAS RM5 SSD	P10460-B21
HPE 6.4TB SAS 12G Mixed Use SFF SC PM5 SSD	P04539-B21
HPE 6.4TB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P09096-B21
Mixed Use - 6G SATA - SFF - Solid State Drives	
HPE 480GB SATA 6G Mixed Use SFF SC SE5031 SSD	P13658-B21
HPE 480GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Multi Vendor SSD	P18432-B21
HPE 480GB SATA 6G Mixed Use SFF SC S4610 SSD	P05976-B21
HPE 480GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P07922-B21
HPE 480GB SATA 6G Mixed Use SFF SC SM883 SSD	P09712-B21
HPE 480GB SATA 6G Mixed Use SFF SC 5300M SSD	P19947-B21
HPE 960GB SATA 6G Mixed Use SFF SC SE5031 SSD	P13660-B21
HPE 960GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Multi Vendor SSD	P18434-B21
HPE 960GB SATA 6G Mixed Use SFF SC S4610 SSD	P05980-B21
HPE 960GB SATA 6G Mixed Use SFF SC SM883 SSD	P09716-B21
HPE 960GB SATA 6G Mixed Use SFF SC 5300M SSD	P19949-B21
HPE 1.92TB SATA 6G Mixed Use SFF SC SE5031 SSD	P13662-B21
HPE 1.92TB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Multi Vendor SSD	P18436-B21
HPE 1.92TB SATA 6G Mixed Use SFF SC S4610 SSD	P05986-B21
HPE 1.92TB SATA 6G Mixed Use SFF SC SM883 SSD	P09722-B21
HPE 1.92TB SATA 6G Mixed Use SFF SC 5300M SSD	P19951-B21
HPE 3.84TB SATA 6G Mixed Use SFF RW SE5031 SSD	P13664-B21
HPE 3.84TB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Multi Vendor SSD	P18438-B21
HPE 3.84TB SATA 6G Mixed Use SFF SC S4610 SSD	P05994-B21

Core Options

HPE 3.84TB SATA 6G Mixed Use SFF SC SM883 SSD	P21517-B21
HPE 3.84TB SATA 6G Mixed Use SFF SC 5300M SSD	P19953-B21

Notes: Multi-vendor SKUs are composed of numerous supplier manufactured SSDs within a given SATA capacity SKU. When ordering a particular SKU-B21 number the customer will receive a homogenous set of vendor manufactured SSDs in that capacity that has meet or exceeded the HPE qualification standards published above.

Dual SATA 6G M.2 - UFF to SFF SCM SSD

HPE Dual 240GB SATA 6G Read Intensive M.2 to SFF SCM 5300B SSD Kit	P19894-B21
HPE Dual 480GB SATA 6G Read Intensive M.2 to SFF SCM 5300P SSD Kit	P19896-B21

Performance Mixed Use - NVMe – U.3 - Solid State Drives

HPE 800GB NVMe Gen4 High Performance Mixed Use SFF SCN U.3 CM6 SSD	P20094-B21
HPE 1.6TB NVMe Gen4 High Performance Mixed Use SFF SCN U.3 CM6 SSD	P20096-B21
HPE 3.2TB NVMe Gen4 High Performance Mixed Use SFF SCN U.3 CM6 SSD	P20098-B21
HPE 6.4TB NVMe Gen4 High Performance Mixed Use SFF SCN U.3 CM6 SSD	P20100-B21

Mixed Use - NVMe – U.3 - Solid State Drives

HPE 800GB NVMe Gen4 Mainstream Performance Mixed Use SFF SCN U.3 PE8030 SSD	P19825-B21
HPE 1.6TB NVMe Gen4 Mainstream Performance Mixed Use SFF SCN U.3 PE8030 SSD	P19829-B21
HPE 3.2TB NVMe Gen4 Mainstream Performance Mixed Use SFF SC U.3 PE8030 SSD	P19833-B21
HPE 6.4TB NVMe Gen4 Mainstream Performance Mixed Use SFF SCN U.3 PE8030 SSD	P19837-B21
HPE 800GB NVMe Gen4 Mainstream Performance Mixed Use SFF SCN U.3 CD6 SSD	P25953-B21
HPE 1.6TB NVMe Gen4 Mainstream Performance Mixed Use SFF SCN U.3 CD6 SSD	P20203-B21
HPE 3.2TB NVMe Gen4 Mainstream Performance Mixed Use SFF SCN U.3 CD6 SSD	P20205-B21
HPE 6.4TB NVMe Gen4 Mainstream Performance Mixed Use SFF SCN U.3 CD6 SSD	P20207-B21
HPE 12.8TB NVMe Gen4 Mainstream Performance Mixed Use SFF SCN U.3 CD6 SSD	P20209-B21

Mixed Use - NVMe - SFF - Solid State Drives

HPE 800GB NVMe x4 Lanes Mixed Use SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	P07179-B21
HPE 800GB NVMe Gen3 Mainstream Performance Mixed Use SFF SCN U.2 PE6031 SSD	P13668-B21
HPE 1.6TB NVMe Gen3 High Performance Mixed Use SFF SCN U.2 P4610 SSD	P13699-B21
HPE 1.6TB NVMe Gen3 Mainstream Performance Mixed Use SFF SCN U.2 PE6031 SSD	P13670-B21
HPE 3.2TB NVMe Gen3 Mainstream Performance Mixed Use SFF SCN U.2 PE6031 SSD	P13672-B21
HPE 3.2TB NVMe x4 Lanes Mixed Use SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	P07183-B21
HPE 3.2TB NVMe Gen3 High Performance Mixed Use SFF SCN U.2 P4610 SSD	P13701-B21
HPE 6.4TB NVMe Gen3 Mainstream Performance Mixed Use SFF SCN U.2 PE6031 SSD	P13674-B21
HPE 6.4TB NVMe x4 Lanes Mixed Use SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	P07185-B21
HPE 6.4TB NVMe Gen3 High Performance Mixed Use SFF SCN U.2 P4610 SSD	P13703-B21

Notes:

- A NVMe (872225-B21 or 872227-B21 or 872229-B21, 872231-B21) or Premium (872223-B21) drive cage are required to support these drives in conjunction with a NVMe riser kit.
- Not supported by HPE Smart Array controllers.

Hard Drive Blank Kits

HPE Small Form Factor Hard Drive Blank Kit	666987-B21

Hard Drive Kits

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

Notes: This is a M.2 enablement standup card.

Core Options

HPE DL560 Gen10 8SFF HDD Bay1 Kit	872233-B21
HPE DL560 Gen10 8SFF HDD Bay2 Kit	872235-B21
HPE DL560 Gen10 8SFF HDD Bay3 Kit	872237-B21

NVMe Kit

HPE NS204i-p x2 Lanes NVMe PCIe3 x8 OS Boot Device	P12965-B21
HPE DL560 NVMe 8 SSD Express Bay Enablement Kit	872225-B21
HPE DL560 Gen10 Premium 6SFF and 2 NVMe or 8SFF Bay1 Kit	872227-B21
HPE DL560 Gen10 Premium 6SFF and 2 NVMe or 8SFF Bay2 Kit	872229-B21
HPE DL560 Gen10 Premium 6SFF and 2 NVMe or 8SFF Bay3 Kit	872231-B21

Media Bay Kits

HPE DL560 Gen10 Universal Media Bay Kit	872267-B21
HPE DL560 Gen10 2SFF Premium HDD Front NVMe/SAS/SATA Kit	872223-B21

Notes: This kit can only be used with the HPE DL560 Gen10 Universal Media kit.

HPE Networking

25 Gigabit Ethernet adapters

HPE Ethernet 10/25Gb 2-port SFP28 QL41401-A2G Adapter	867328-B21
HPE Ethernet 10/25Gb 2-port SFP28 BCM57414 Adapter	817718-B21
HPE Ethernet 10/25Gb 2-port SFP28 MCX4121A-ACUT Adapter	817753-B21

10 Gigabit Ethernet adapters

HPE Ethernet 10Gb 2-port 548SFP+ Adapter	P11338-B21
HPE Ethernet 10Gb 2-port SFP+ QL41401-A2G Adapter	P08446-B21
HPE Ethernet 10Gb 2-port SFP+ 57810S Adapter	652503-B21
HPE Ethernet 10Gb 2-port BASE-T 57810S Adapter	656596-B21

10 Gigabit Ethernet adapters

HPE Ethernet 10Gb 2-port BASE-T BCM57416 Adapter	813661-B21
HPE Ethernet 10Gb 2-port 562SFP+ Adapter	727055-B21
HPE Ethernet 10Gb 2-port BASE-T X550-AT2 Adapter	817738-B21
HPE Ethernet 10Gb 2-port BASE-T QL41401-A2G Adapter	867707-B21

Notes:

- A minimum of two Gigabytes (2 GB) of server memory is required per each adapter.
- 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/server-adapters.hits-12.html**

1 Gigabit Ethernet adapters

HPE Ethernet 1Gb 4-port BASE-T BCM5719 Adapter	647594-B21
HPE Ethernet 1Gb 4-port BASE-T I350-T4V2 Adapter	811546-B21
HPE Ethernet 1Gb 2-port BASE-T BCM5720 Adapter	615732-B21
HPE Ethernet 1Gb 2-port BASE-T I350-T2V2 Adapter	652497-B21

100 Gigabit Ethernet adapters

HPE Ethernet 100Gb 1-port QSFP28 MCX515A-CCAT Adapter	874253-B21

FlexibleLOM Adapters

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

Core Options

HPE Ethernet 1Gb 4-port FLR-T I350-T4V2 Adapter	665240-B21
HPE FlexFabric 10Gb 2-port FLR-T 57810S Adapter	700759-B21
HPE FlexFabric 10Gb 2-port FLR-SFP+ 57810S Adapter	700751-B21
HPE Ethernet 10Gb 2-port FLR-T BCM57416 Adapter	817721-B21
HPE FlexFabric 10Gb 4-port FLR-T 57840S Adapter	764302-B21
HPE Ethernet 10Gb 2-port FLR-SFP+ X710-DA2 Adapter	727054-B21
HPE Ethernet 10Gb 2-port FLR-T X550-AT2 Adapter	817745-B21
HPE Ethernet 10/25Gb 2-port FLR-SFP28 QL41401-A2G Converged Network Adapter	867334-B21
HPE Ethernet 10/25Gb 2-port FLR-SFP28 BCM57414 Adapter	817709-B21
HPE Ethernet 10/25Gb 2-port FLR-SFP28 MCX4121A-ACFT Adapter	817749-B21

Notes: Please see the NIC QuickSpecs for Technical Specifications and additional information:
https://www.hpe.com/us/en/product-catalog/servers/server-adapters.hits-12.html

HPE InfiniBand

HPE InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+QSFP Adapter	764284-B21
HPE InfiniBand FDR/Ethernet 40/50Gb 2-port 547FLR-QSFP Adapter	879482-B21
HPE InfiniBand EDR/Ethernet 100Gb 2-port 841QSFP28 Adapter	872726-B21

Notes: Not supported on DL560 Gen10 24SFF chassis when System Inlet Temperature higher than 25°C.

HPE InfiniBand EDR/Ethernet 100Gb 2-port 840QSFP28 Adapter	825111-B21
HPE InfiniBand EDR 100Gb 1-port 841QSFP28 Adapter	872725-B21
HPE 100Gb 1-port OP101 QSFP28 x16 PCIe Gen3 with Intel Omni-Path Architecture Adapter	829335-B21
HPE InfiniBand HDR100/Ethernet 100Gb 1-port QSFP56 PCIe3 x16 MCX653105A-ECAT Adapter	P06250-B21
HPE InfiniBand HDR100/Ethernet 100Gb 2-port QSFP56 PCIe3 x16 MCX653106A-ECAT Adapter	P06251-B21

Notes: Not supported on DL560 Gen10 24SFF chassis when System Inlet Temperature higher than 25°C.

HPE InfiniBand HDR/Ethernet 200Gb 1-port QSFP56 PCIe3 x16 MCX653105A-HDAT Adapter	P06154-B21

Notes: Not supported on DL560 Gen10 24SFF chassis when System Inlet Temperature higher than 25°C.

HPE InfiniBand HDR PCIe3 Auxiliary Card with 350mm Cable Kit	P06154-B23

Notes: For additional InfiniBand information:
https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04154440

HPE I/O Expansion Options

HPE DL560 Gen10 x8/x8/x8 1-port 2 NVMe Slimline Riser Kit	873420-B21
HPE DL560 Gen10 4-port 8 NVMe Slimline Riser Kit	873418-B21
HPE DL560 Gen10 x8/x8 Tertiary Riser Kit	872253-B21
HPE DL Gen10 x16/x16 GPU Riser Kit	826704-B21
HPE DL Gen10 x8/x16/x8 Riser Kit	870548-B21
HPE DL560 Gen10 x8 1-port 2 NVMe Slimline Riser Kit	872255-B21
HPE DL560 Gen10 2-port 4 NVMe Slimline Tertiary Riser Kit	872257-B21

Notes:

- Secondary and Tertiary risers are optional kits which can be utilized when system is populated with at least two (2) processors. Refer to “Expansion Slots” section for additional details on risers.
- For additional details on ProLiant DL Gen10 server risers please visit:
  https://www.hpe.com/h20195/v2/Getdocument.aspx?docname=a00043229enw

Core Options

HPE Power Supplies

HPE 1600W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit 830272-B21

Notes:

- Flex Slot Platinum Plus power supplies support power efficiency of up to 94% and include a C-14 power inlet connector that can support HPE Power Discovery Services (blue connector).
- 1600W Power supplies only support high line voltage (200VAC to 240VAC).

HPE 800W Flex Slot -48VDC Hot Plug Low Halogen Power Supply Kit 865434-B21

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

HPE 800W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit 865414-B21

Notes: Flex Slot Platinum power supplies support power efficiency of up to 94% and include a standard C-14 power inlet connector.

HPE 800W Flex Slot Titanium Hot Plug Low Halogen Power Supply Kit 865438-B21

Notes:

- 800W Titanium power supplies support high line voltage (200VAC to 240VAC).
- Flex Slot Titanium power supplies support power efficiency of up to 96% and include a standard C-14 power inlet connector

HPE 800W Flex Slot Universal Hot Plug Low Halogen Power Supply Kit 865428-B21

Notes:

- Flex Slot universal power supplies support power efficiency of up to 94% and support both 277VAC/380VDC power inputs.
- Prior to making a power supply selection it is highly recommended that the HPE Power Advisor is run to determine the right size power supply for your server configuration. The HPE Power Advisor is located at: **http://www.hpe.com/info/hppoweradvisor**.
- All power supplies in a server should match. Mixing Power Supplies is not supported.
- Option kits contain the specified power supply and a PDU IEC cable.
- 1600W power supplies only support high line voltage.
- HPE ProLiant servers ship with an IEC-IEC power cord used for rack mounting with Power Distribution Units (PDUs). Visit **HPE power cords** for a full list of optional HPE power cords.
- DL500 family is identified as Resilent Server category under LOT 9 regulation, system minimum configuration with 2 Memory DIMMs and 2 PSU for CE Market.

GPGPU information

Part number	Card	Qty support	Processor support	PCIe speed	8/16/24 SFF	Max. 8 NVMe	Greater than 8 NVMe
Q0V77A	NVIDIA Quadro P2000 GPU Module	2	All	Gen3	35C	35C	30C
R2U55C	NVIDIA Quadro P2200 GPU Module	2	All	Gen3	35C	35C	35C
R0W29C	NVIDIA Tesla T4 16GB Module	2	All	Gen3	35C*	35C**	No Support

Notes:

- Check the power usage via the HPE Power Advisor Tool located at **http://www.hpe.com/info/hppoweradvisor**.
- A maximum of 2 GPU cards can be supported, 1 in primary riser expansion slot 2 and another in secondary riser expansion slot 5. Refer Expansion Slots sections for additional details on risers.
- *- 24 SFF not supported
- ** - only support 8 SFF+8 NVMe configuration

Additional Options

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

iLO Advanced

HPE iLO Advanced Electronic License with 1yr Support on iLO Licensed Features	E6U59ABE
HPE iLO Advanced Electronic License with 3yr Support on iLO Licensed Features	E6U64ABE
HPE iLO 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 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 Common Password FIO Setting	P08040-B21

Notes:

- Replaces iLO default randomized password by an HPE defined common password. HPE highly recommends changing this password immediately after the initial onboarding process.
- Customers who want to choose their own custom iLO default password should use the HPE Factory Express Integration Services

HPE OneView Advanced (with HPE iLO Advanced)

HPE OneView including 3yr 24x7 Support Physical 1-server LTU	E5Y34A
HPE OneView including 3yr 24x7 Support Flexible Quantity E-LTU	E5Y35AAE
HPE OneView for ProLiant DL Server including 3yr 24x7 Support FIO Bundle Physical 1-server LTU	E5Y43A

HPE OneView Advanced (without HPE iLO Advanced)

HPE OneView w/o iLO including 3yr 24x7 Support 1-server LTU	P8B24A
HPE OneView w/o iLO including 3yr 24x7 Support Track 1-server LTU	P8B25A
HPE OneView w/o iLO including 3yr 24x7 Support Flexible Quantity E-LTU	P8B26AAE
HPE OneView w/o iLO including 3yr 24x7 Support 1-server FIO LTU	P8B31A

Notes:

- Licenses ship without media. The HPE OneView Media Kit can be ordered separately, or can be downloaded at: **https://www.hpe.com/us/en/integrated-systems/software.html**.
- Electronic and flexible-quantity licenses can be used to purchase multiple licenses with a single activation key.
- Please see the **HPE OneView QuickSpecs** for technical specifications and additional information.

HPE PCIe Workload Accelerator Options

HPE Mixed Use PCIe Workload Accelerator

HPE 1.6TB NVMe Gen4 x8 High Performance Mixed Use AIC HHHL PM1735 SSD	P26934-B21
HPE 3.2TB NVMe Gen4 x8 High Performance Mixed Use AIC HHHL PM1735 SSD	P26936-B21
HPE 6.4TB NVMe Gen4 x8 High Performance Mixed Use AIC HHHL PM1735 SSD	P26938-B21
HPE 1.6TB NVMe x8 Lanes Mixed Use HHHL 3yr Wty Digitally Signed Firmware Card	P10264-B21
HPE 6.4TB NVMe x8 Lanes Mixed Use HHHL 3yr Wty Digitally Signed Firmware Card	P10268-B21

HPE Write Intensive PCIe Workload Accelerator

HPE 750GB NVMe Gen3 x4 High Performance Low Latency Write Intensive AIC HHHL P4800X SSD	878038-B21

Notes: Please see the **HPE PCIe Workload Accelerators for ProLiant Servers QuickSpecs** for Technical Specifications and additional information.

Additional Options

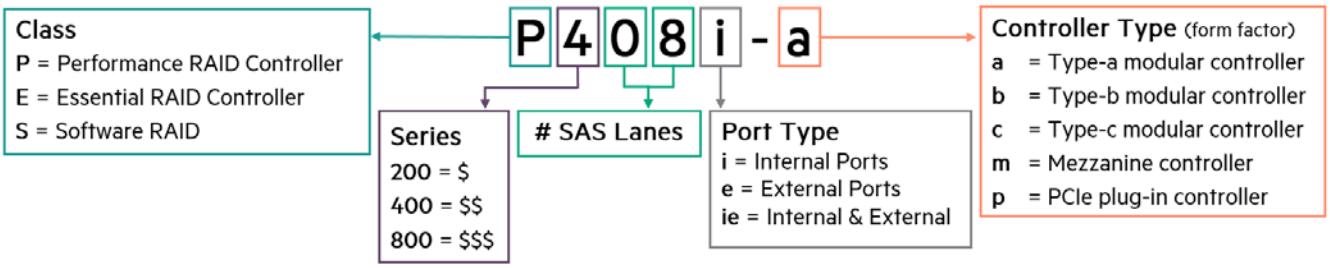
HPE Security

HPE Trusted Platform Module 2.0 Gen10 Option	864279-B21
HPE OEM 2U Non-Brand Gen10 Bezel FIO Kit	872212-B21
HPE OEM 2U Non-Brand Gen10 Bezel Kit	872214-B21

Notes: HPE Trusted Platform Module 2.0 Option (864279-B21) works with Gen10 servers with UEFI Mode not Legacy Mode. It is not compatible with HPE ProLiant Gen9 servers or earlier generation variants.HPE server systems can have a TPM module (of any type) installed only once. It cannot be replaced with any other TPM module.

HPE 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**.



Performance RAID Controllers

Notes: All performance RAID controllers are supported by either the HPE Smart Storage Battery (P01366-B21) or the HPE Smart Storage Hybrid Capacitor (P02377-B21), which support multiple devices and are sold separately.

HPE Smart Array P816i-a SR Gen10 (16 Int Lanes/4GB Cache/SmartCache) 12G SAS Modular LH Controller	869083-B21

Notes: Does not occupy a PCIe expansion slot.

HPE Smart Array P408i-a SR Gen10 (8 Internal Lanes/2GB Cache) 12G SAS Modular LH Controller	869081-B21

Notes: Does not occupy a PCIe expansion slot.

HPE Smart Array P408i-p SR Gen10 (8 Internal Lanes/2GB Cache) 12G SAS PCIe Plug-in Controller	830824-B21
HPE Smart Array P408e-p SR Gen10 (8 External Lanes/4GB Cache) 12G SAS PCIe Plug-in Controller	804405-B21

Essential RAID Controllers

HPE Smart Array E208i-a SR Gen10 (8 Internal Lanes/No Cache) 12G SAS Modular LH Controller	869079-B21

Notes: 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

Optional Software

HPE Smart Array SR SmartCache (Single Key/Single Server) LTU	D7S26A
HPE Smart Array SR SmartCache (Single Key/Multiple Servers) LTU	D7S27A
HPE Smart Array SR SmartCache (Single Key/Multiple Servers) E-LTU	D7S27AAE

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

Additional Options

Optional Upgrades

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

Notes: Provides backup power for multiple HPE Smart Array controllers or other devices. Is required with performance RAID controllers and NVDIMMs.

HPE Smart Storage Hybrid Capacitor with 145mm Cable Kit P02377-B21

Notes:

- Supports up to 3 performance RAID controllers. If 4 or more performance RAID controllers are selected, HPE 96W Smart Storage Battery (P01366-B21) is required
- Only one of either HPE Smart Storage Hybrid Capacitor (P02377-B21) or the HPE 96W Smart Storage Battery (P01366-B21) can be configured in a server
- HPE Smart Storage Hybrid Capacitor cannot be used with NVDIMMs

HPE DL38X/560/580/ML350 Gen10 P824i-p Cable Kit P00614-B21

Notes: Needs to be ordered with the HPE SmartArray P824i-p MR Gen10 controller.

HPE Tape Backup

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 Storage Options

Emulex Fibre Channel HBAs

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

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

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

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

QLogic Fibre Channel HBAs

HPE SN1610E 32Gb 1-port Fibre Channel Host Bus Adapter R2J62A

HPE SN1610E 32Gb 2-port Fibre Channel Host Bus Adapter R2J63A

HPE SN1610Q 32Gb 1-port Fibre Channel Host Bus Adapter R2E08A

HPE SN1610Q 32Gb 2-port Fibre Channel Host Bus Adapter R2E09A

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

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

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

HPE SN1600Q 32Gb Dual Port Fibre Channel Host Bus Adapter P9M76A

Converged Network Adapter

HPE CN1200R 10GBASE-T Converged Network Adapter Q0F26A

HPE CN1300R 10/25Gb Dual Port Converged Network Adapter Q0F09A

Additional Options

HPE Racks

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

HPE Uninterruptible Power Systems (UPS)

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

HPE Power Distribution Units (PDUs)

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

HPE Rack Options

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

Rail Kits

HPE 2U Large Form Factor Easy Install Rail Kit	733662-B21

Notes: Does not include CMA (733664-B21).

HPE 2U Cable Management Arm for Easy Install Rail Kit	733664-B21
HPE 2U Large Form Factor Ball Bearing Rail Kit	720864-B21

Notes: Does not include CMA (720865-B21).

HPE 2U Cable Management Arm for Ball Bearing Rail Kit	720865-B21

Notes:

- Rail kits are optional for DL560 Gen10 and are no longer included standard with the server. Customers have the option to purchase their server without a rail kit.
- Ball bearing and Easy Install rail kits contain telescoping rails which allow for in-rack serviceability.
- 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.

HPE USB and SD Options

HPE Enterprise Mainstream Flash Media Kits for Memory Cards

HPE 32GB microSD RAID 1 USB Boot Drive	P21868-B21
HPE 32GB microSD Flash Memory Card	700139-B21
HPE 8GB Dual microSD Flash USB Drive	741279-B21

Notes: Please see the **HPE Flash Media Kits QuickSpecs** for additional information.

Additional Options

HPE Support Services

Installation & Start-up Services

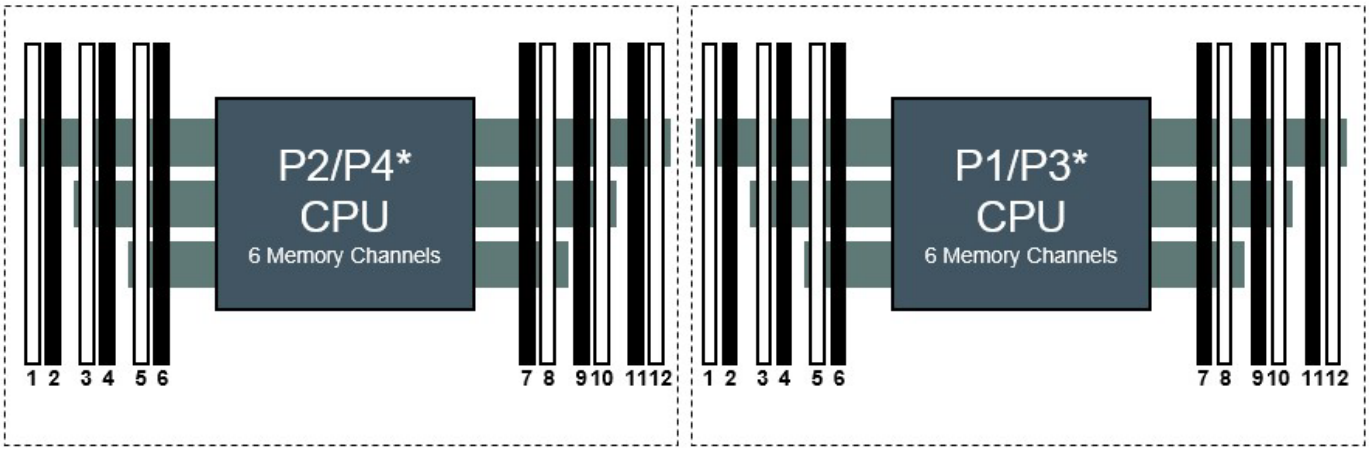
HPE Install ProLiant DL560 Service	U6H58E
HPE Startup ProLiant DL560 Service	U6H60E

Proactive Care

HPE 3 Year Proactive Care 24x7 DL560 Gen10 Service	H8PW6E
HPE 3 Year Proactive Care 24x7 with DMR DL560 Gen10 Service	H8PW7E
HPE 3 Year Proactive Care 24x7 with CDMR DL560 Gen10 Service	H8PW8E
HPE 3 Year Proactive Care Call-To-Repair DL560 Gen10 Service	H8PX5E
HPE 3 Year Proactive Care Call-To-Repair 24x7 with DMR DL560 Gen10 Service	H8PX6E
HPE 3 Year Proactive Care Call-To-Repair with CDMR DL560 Gen10 Service	H8PX7E

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

Memory



HPE Proliant Gen10 DL360/ DL380/ DL560* Servers

2 Slots per Channel

Notes:*HPE Proliant DL560 is a 4 socket server (uses P3, P4)

1 DIMM								**8**				
2 DIMM s								**8**		**10**		
3 DIMM s								**8**		**10**		**12**
4 DIMM s			**3**		**5**			**8**		**10**		
5 DIMM s*			**3**		**5**			**8**		**10**		**12**
6 DIMM s	**1**		**3**		**5**			**8**		**10**		**12**
7 DIMM s*	**1**		**3**		**5**		**7**	**8**		**10**		**12**
8 DIMM s			**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**		
9 DIMM s*	**1**		**3**		**5**		**7**	**8**	**9**	**10**	**11**	**12**
10 DIMM s*	**1**		**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**		**12**
11 DIMM s*	**1**		**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
12 DIMM s	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**

HPE ProLiant Gen10 12 slot per CPU

DIMM population order

Memory Population guidelines

Notes: *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.
- Mixing of DIMM types (UDIMM, RDIMM, and LRDIMM) is not supported.
- 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: **http://www.hpe.com/docs/memory-population-rules**

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

Memory Speed Table for HPE ProLiant DL560 Gen 10

For the HPE Server Memory speed table, please visit: **https://www.hpe.com/docs/memory-speed-table**

Standard and Maximum Memory Capacity (Pre-configured Models)

Pre Configured Models	Standard Memory	Maximum Memory Plus Optional Memory	Standard Memory Replaced with Optional Memory
5120	32 GB (2 x 16 GB)	384 GB (24 x 16 GB)	6144GB (48 x 128 GB)
6130	64 GB (4 x 16 GB)	384 GB (24 x 16 GB)	6144GB (48 x 128 GB)
6148	128 GB (8 x 16 GB)	768 GB (48 x 16 GB)	6144GB (48 x 128 GB)
8170	256 GB (16 x 16 GB)	768 GB (48 x 16 GB)	6144GB (48 x 128 GB)
5220	64 GB (2 x 32 GB)	768 GB (24 x 32 GB)	6144GB (48 x 128 GB)
6230	128 GB (4 x 32 GB)	768 GB (24 x 32 GB)	6144GB (48 x 128 GB)
6254	256 GB (8 x 32 GB)	1536 GB (48 x 32 GB)	6144GB (48 x 128 GB)
8268	512 GB (16 x 32 GB)	1536 GB (48 x 32 GB)	6144GB (48 x 128 GB)

DDR4 memory options part number decoder

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

- 4 GB = 4,096 MB
- 8 GB = 8,192 MB
- 16 GB = 16,384 MB
- 32 GB = 32,768 MB
- 64 GB = 65,536 MB
- 128 GB = 131,072 MB

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

Storage

8 SFF (+2 SFF) hot-plug drive model with Universal Media Bay

24 SFF (incl 12 NVMe SSDs) hot-plug drive model

Technical Specifications

System Unit

- **Dimensions**
  (H x W x D) (with bezel)
  - 8.75cm x 44.54cm x 75.47cm
  - 3.44 x 17.54 x 29.71 in
- **Weight** (approximate)
  - 34.12 kg
    75.23 lb
    - **Maximum**: (all hard drives, power supplies, DIMMs and processors installed)
      18.45 kg
      40.67 lb
    - **Minimum:** (one processor, one standard heatsink, one air baffle, one hard drive, one power supply, one DIMM, one rail kit with CMA and one primary riser installed)

Input Requirements (per power supply)

- **Rated Input Voltage**
  - 100 - 127 VAC, 200 – 240 VAC, 240VDC for China Only (800W Platinum PS only)
  - 200 – 240 VAC, 240VDC for China Only (800W Titanium PS only)
  - 200 V to 277 VAC, 380 VDC (800W Universal PS only)
  - -40 VDC to -72 VDC, -48 VDC nominal input (800W -48VDC PS only)
  - 200 - 240 VAC, 240 VDC for China only (1600W PS Only)
- **Rated Input Current**
  - 9.4 A (100 VAC), 4.5 A (200 VAC), 3.8 A at 240VDC for China Only (800W Platinum PS only)
  - A at 200 VAC 3.62 A at
  - 240 VAC, 3.62 A at 240 VDC for China
  - Only (800W Titanium PS only)
  - 4.5 A at 200 V AC, 3.2 A at 277 V AC, 2.3 A at 380 VDC - (800W Universal PS only)
  - 26 A at -40 VDC input, 19 A at -48 VDC input, nominal input, 12.4 A at -72 VDC input - (800W -48VDC PS only)
  - 8.7 A at 200 VAC, 7.2 A at 240 VAC - (1600W PS Only)
- **Rated Input Frequency**
  - 50 to 60 Hz (Not applicable for VDC ranges)
- **Maximum Rated Input Power**
  - 940 W (100 VAC), 900 W (200VAC), 912 W at 240 VDC for China Only - (800W Platinum PS only)
  - 870 W at 200 VAC, 870 W at 240 VAC, 870 W at 240 VDC for China only - (800W Titanium PS only)
  - 900 W at 200 VAC, 887 W at 277 VAC, 874 W at 380 VDC - (800W Universal PS only)
  - 936 W at -40 VDC input 912 W at -48 VDC input, nominal input 900 W at -72 VDC input - (800W -48VDC PS only)
  - 1734 W at 200 VAC 1720 W at 240 VAC - (1600W PS Only)

BTU Rating

Maximum

- 3207 BTU/hr at 100 VAC, 3071 BTU/hr at 200 VAC, 3112 BTU/hr at 240 for China only - (800W Platinum PS only)
- 2969 BTU/hr at 200 VAC, 2969 BTU/hr at 240 VAC, 2969 BTU/hr at 240 VDC for China only - (800W Titanium PS only
- 3071 BTU/hr at 200 VAC, 3026 BTU/hr at 277 VAC, 2982 BTU/hr at 380 VDC - (800W Universal PS only)
- 3194 BTU/hr at -40 VDC input, 3112 BTU/hr at -48 VDC input (nominal input), 3071 BTU/hr at -72 VDC input - (800W -48VDC PS only)
- 5918 BTU/hr at 200 VAC, 5884 BTU/hr at 240 VAC - (1600W PS Only)

Technical Specifications

Power Supply Output(per power supply)

- **Rated Steady-State Power**
  - 800 W at 100 VAC to 127 VAC input, 800 W at 200 VAC to 240 VAC input, 800 W at 240 VDC input for China only - (800W Platinum PS only)
  - 800 W at 200 VAC to 240 VAC input, 800 W at 240 VDC input for China only - (800W Titanium PS only)
  - 800 W at 200 VAC to 277 VAC input, 800 W at 380 VDC input - (800W Universal PS only)
  - 800 W at -40 VDC to -72 VDC - (800W -48VDC PS only)
  - 1600 W at 200 VAC to 240 VAC input, 1600 W at 240 VDC input - (1600W PS Only)
- **Maximum Peak Power**
  - 800 W at 100 VAC to 127 VAC input, 800 W at 200 VAC to 240 VAC input, 800 W at 240 VDC input for China only - (800W Platinum PS only)
  - 800 W at 200 VAC to 240 VAC input, 800 W at 240 VDC input for China only - (800W Titanium PS only)
  - 800 W at 200 VAC to 277 VAC input, 800 W at 380 VDC input- (800W Universal PS only)
  - 800 W at -40 VDC to -72 VDC - (800W -48VDC PS only)
  - 2200 W for 1ms (turbo mode) at 200 VAC to 240 VAC input - (1600W PS Only)

Notes: To review typical system power ratings use the HPE Power Advisor which is available online located at url: **http://www.hpe.com/info/hppoweradvisor**.

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.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 (82.4°F) maximum wet bulb temperature, non-condensing.
- **Non-operating** (non-condensing)
  5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.

Technical Specifications

Altitude

- **Operating**
  3050 m (10,000 ft). This value may be limited by the type and number of options installed. 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). 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.

Product Configuration	Entry	Base	Performance
Idle - LWAd	5.0 B	5.1 B	5.1 B
Idle - LpAm	47 dBA	48 dBA	48 dBA
Operating - LWAd	5.3 B	5.7 B	5.6 B
Operating - LpAm	50 dBA	54 dBA	53 dBA

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

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

HPE Smart Array

For latest information on **HPE Smart Array Gen10 Controllers for HPE ProLiant DL, ML and Apollo Servers** please refer to their QuickSpecs. (E208i-a,E208i-p,E208e-p,P408i-a,P408i-p,P408e-p,P816i-a)

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
07-Dec-2020	Version 30	Changed	Overview, Standard Features and Core Options sections were updated. Obsolete SKUs were removed.
02-Nov-2020	Version 29	Changed	Standard Features and Pre-configured Models sections were updated. Obsolete SKUs were removed.
05-Oct-2020	Version 28	Changed	Core Options section was updated. Obsolote SKUs were removed.
03-Aug-2020	Version 27	Changed	Standard Features, Core Options and Additional Options sections were updated.
15-Jun-2020	Version 26	Changed	Overview, Pre-configured Models Core Options and Memory sections were updated.
01-Jun-2020	Version 25	Changed	Configuration Information and Core Options sections were updated.
06-Apr-2020	Version 24	Changed	Pre-configured Models, Configuration Information, Additional Options and Core Options sections were updated.
24-Feb-2020	Version 23	Changed	Overview, Standard Features, Pre-configured Models, Configuration Information and Core Options sections were updated. Obsolete SKUs were removed
02-Dec-2019	Version 22	Changed	Core Options and Additional Options sections were updated Obsolete SKUs were removed
07-Oct-2019	Version 21	Changed	Overview, Standard Features, Configuration Information, Core Options and Additional Options sections were updated. Obsolete SKU was removed.
05-Aug-2019	Version 20	Changed	Overview,Standard Features,Configuration Information - Factory Integrated Models,Core Options,Additional Options and SMB Models section sections were updated. Obsolete SKU was removed.
01-Jul-2019	Version 19	Changed	The 5218N wattage has changed from 105 to 110W The U.S. version of QuickSpecs is no longer being updated, please reference the Worldwide QuickSpecs for latest information.
03-Jun-2019	Version 18	Changed	Overview, Standard Features, Configuration Information and Core Options sections were updated.
18-Apr-2019	Version 17	Changed	Standard Features, Core Options and Configuration Information sections were updated.
02-Apr-2019	Version 16	Changed	Overview, Standard Features,Optional Features, Configuration Information, Pre-configured Models,Core Options and Memory sections were updated.
04-Feb-2019	Version 15	Changed	Optional Features, Pre-Configured Models, Core Options and Additional Options sections were updated. SKU descriptions were updated and obsolete SKUs were removed.
03-Dec-2018	Version 14	Changed	SKUs were Added and deleted in Core Options
15-Oct-2018	Version 13	Changed	Overview, Standard Features, Configuration Information, Core Options and Additional Options sections were updated. SKU descriptions were updated. and obsolete SKUs were removed.
01-Oct-2018	Version 12	Changed	Overview, Standard Features, Configuration Information, Core Options, Additional Options and Memory sections were updated. SKU descriptions were updated and obsolete SKUs were removed.
06-Aug-2018	Version 11	Changed	New Solid State Drivers offering was added. Configuration Information - Factory Integrated Models and Core Options, Core Options, and Additional Options were revised. Obsolete SKUs were removed from the QuickSpecs.
04-Jun-2018	Version 10	Changed	Added new PCIe workload accelerator and aditional options on drives and NICs. Service and Support section was updated. Core Options, Additional Options, and Memory were revised. Obsolete SKUs were removed from the QuickSpecs.

Summary of Changes

Date	Version History	Action	Description of Change
02-Apr-2018	Version 9	Changed	Configuration Information - Factory Integrated Models and Core Options were revised. Obsolete SKUs were removed from the QuickSpecs.
05-Mar-2018	Version 8	Removed	Obsolete SKUs were removed from the QuickSpecs.
05-Feb-2018	Version 7	Changed	Added New SSD offering. Maximum Internal Storage was revised. Core Options and Additional Options were revised. Obsolete SKUs were removed from the QuickSpecs.
18-Dec-2017	Version 6	Changed	Configuration Information - Factory Integrated Models and Core Options were revised.
04-Dec-2017	Version 5	Changed	Added support for new core boosting Intel® Xeon® Processors 6143 and 8165 and support for up to 24 16GB NVDIMM. Processors and Memory were revised.
16-Oct-2017	Version 4	Changed	Added note – 1600W Power supplies only support high line voltage (200VAC to 240VAC) – to power supplies. Memory section was revised.
25-Sep-2017	Version 3	Changed	Added support for new Intel® Xeon® Processors 6144 and 6146. Added new 128 GB LRDIMM to support higher memory configurations to support 6 TB. New SSD offering and NICs options were added. Added HPE Support Services options. Standard Features, Core Options, Additional Options, and Memory section were revised.
07-Aug-2017	Version 2	Changed	Added new Solid State Drives offering to the HPE Drives. Standard Features, Pre-configured Models, Configuration Information - Factory Integrated Models, Core Options, Additional Options, and Memory section were revised. Updated notes. Removed references to Insight Control.
11-Jul-2017	Version 1	New	New QuickSpecs.

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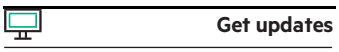

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