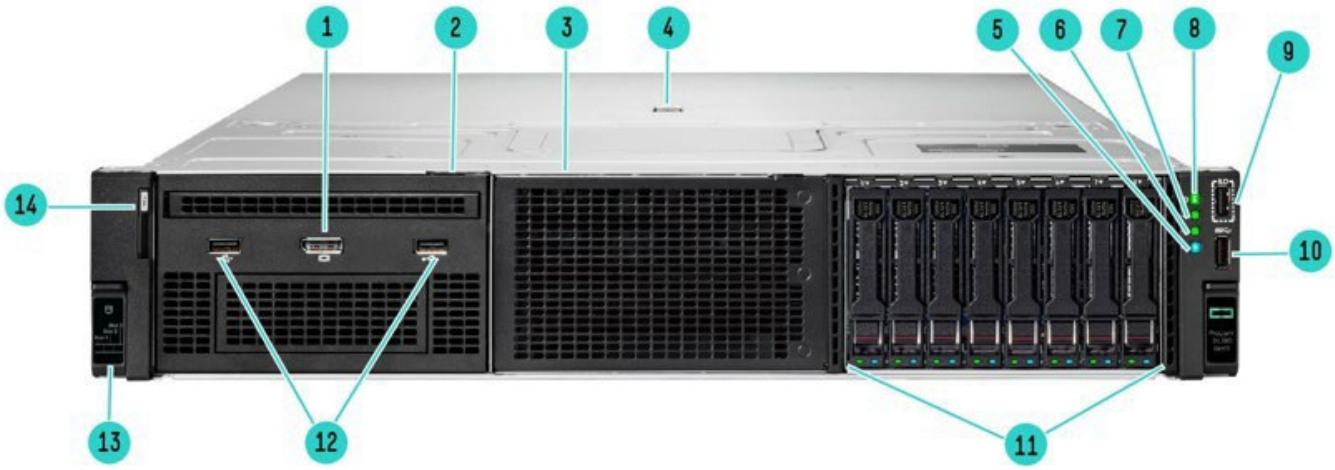
HPE PROLIANT DL380 GEN11

Standard Feature and Specification

TriTech Computers L.L.C

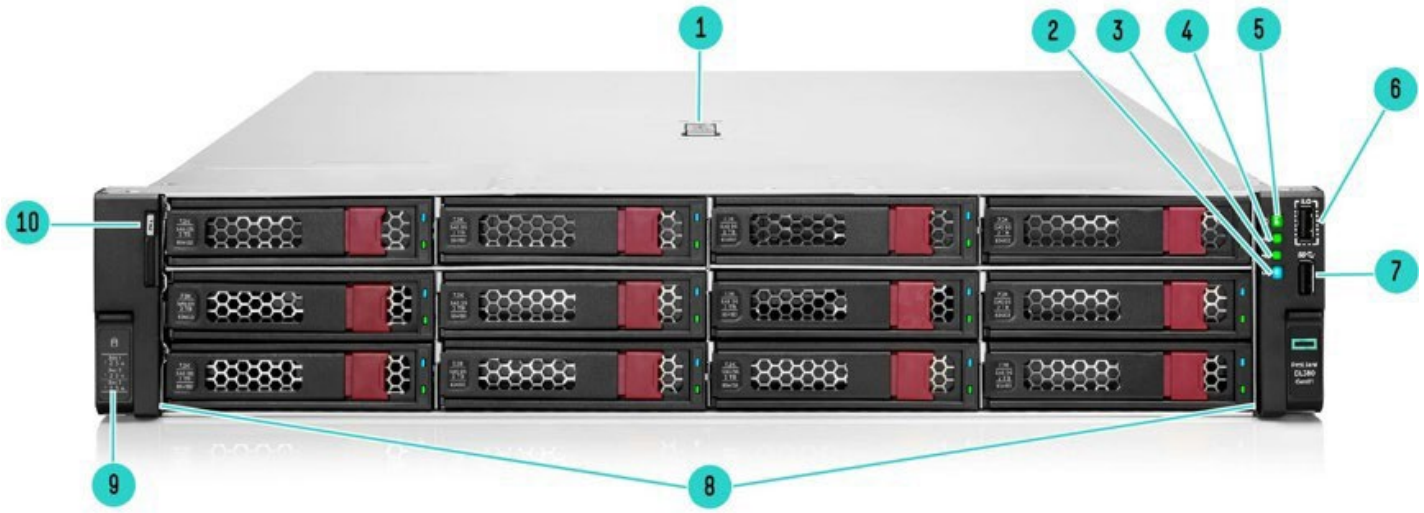
Overview

Adaptable for diverse workloads and environments, the secure 2P 2U HPE ProLiant DL380 Gen11 Servers delivers world-class performance with the right balance of expandability and scalability. Designed for supreme versatility and resiliency while being backed by a comprehensive warranty make it ideal for multiple environments from Containers to Cloud to Big Data. Standardize on the industry's most trusted compute platform.



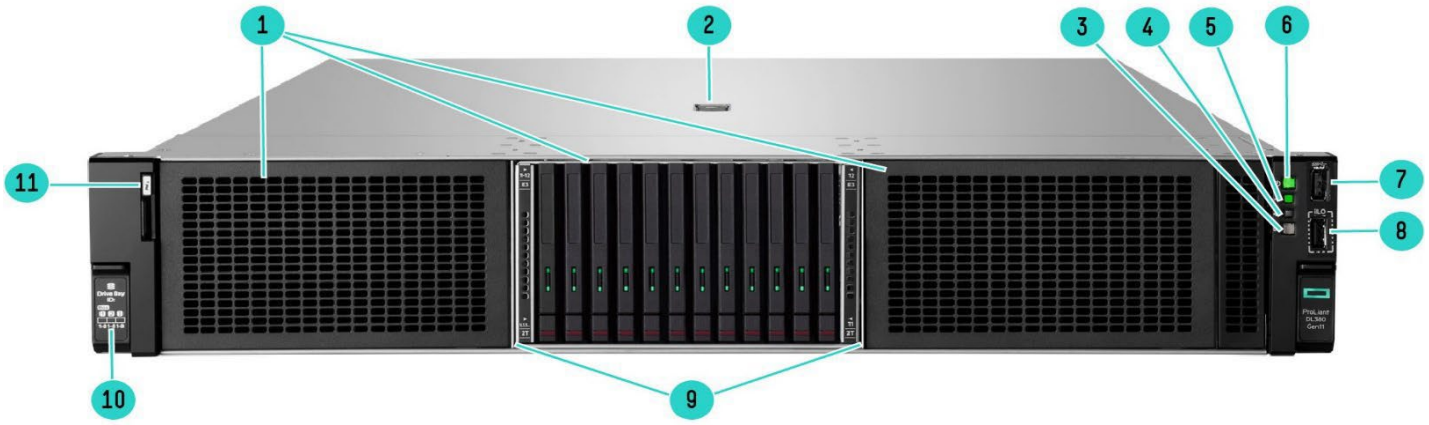
Front View – 8SFF chassis with optional Universal Media Bay shown

1. Optional Front Display Port (via Universal Media Bay)
2. Power On / Standby button / LED
3. Box 1 (shown with optional Universal Media Bay installed)
4. iLO Service Port
5. Box 2 (Empty)
6. USB 3.2 Gen1
7. Quick removal access panel
8. Box 3 (shown with 8SFF drives populated)
9. Unit Identification button/LED
10. Optional USB 2.0 port (via Universal Media Bay)
11. NIC Status
12. Drive Support Label
13. Health LED
14. Serial Number Label Pull Tab



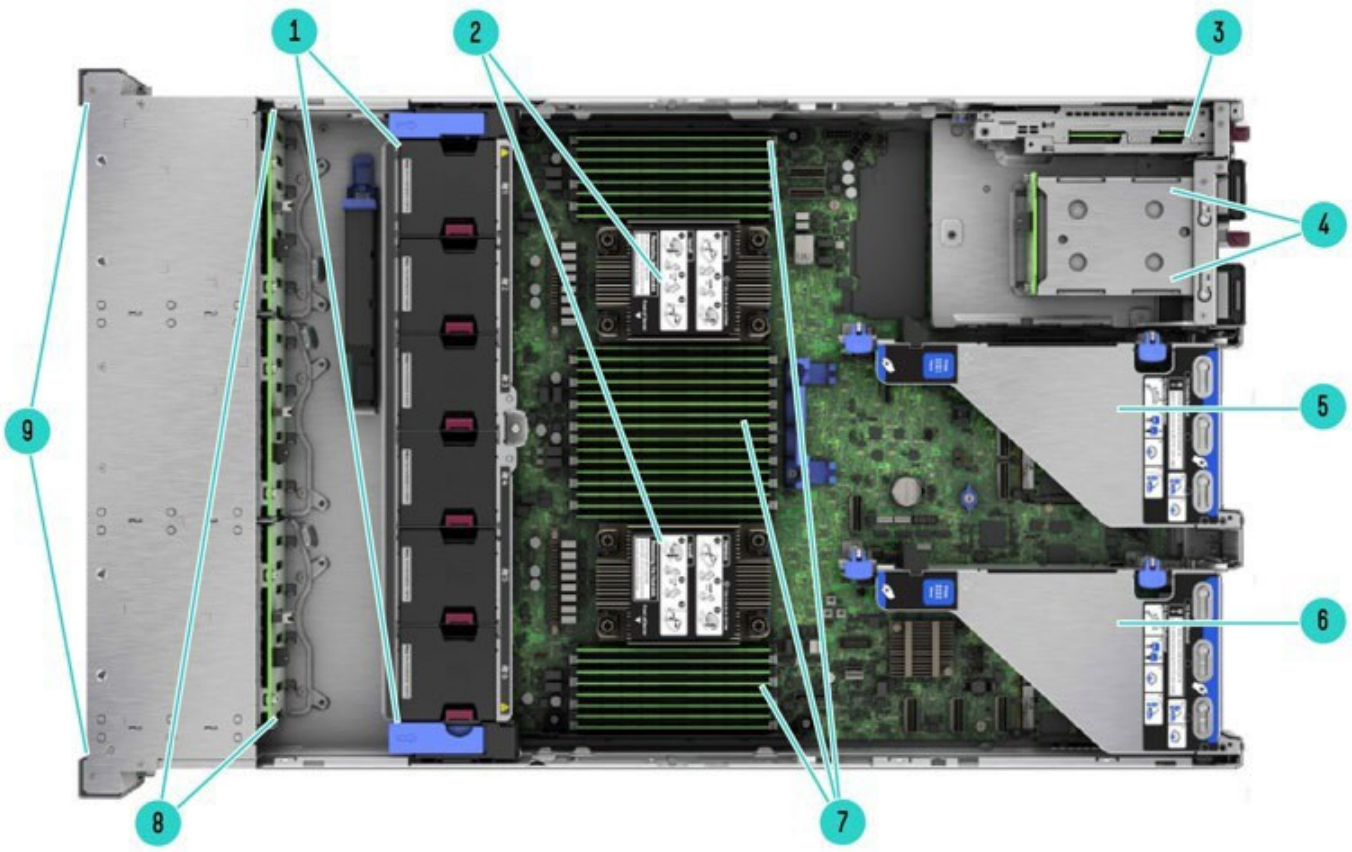
Front View – 12LFF chassis shown

1. Quick removal access panel
2. iLO Service Port
3. Unit Identification Button / LED
4. USB 3.2 Gen1 Port
5. NIC Status
6. 12 x LFF Media
7. Health LED
8. Drive support label
9. Power On / Standby button / LED
10. Serial Number Label Pull Tab



Front View –12EDSFF chassis shown

1. 12EDSFF drive bays optical drive	2. iLO Service Port
3. Quick removal access panel	4. USB 3.2 Gne1
5. UID Button / LED	6. 12x EDSFF Media
7. NIC Status	8. Drive support label
9. Health LED	10. Serial Number Label Pull Tab
11. Power On / Standby button and LED	

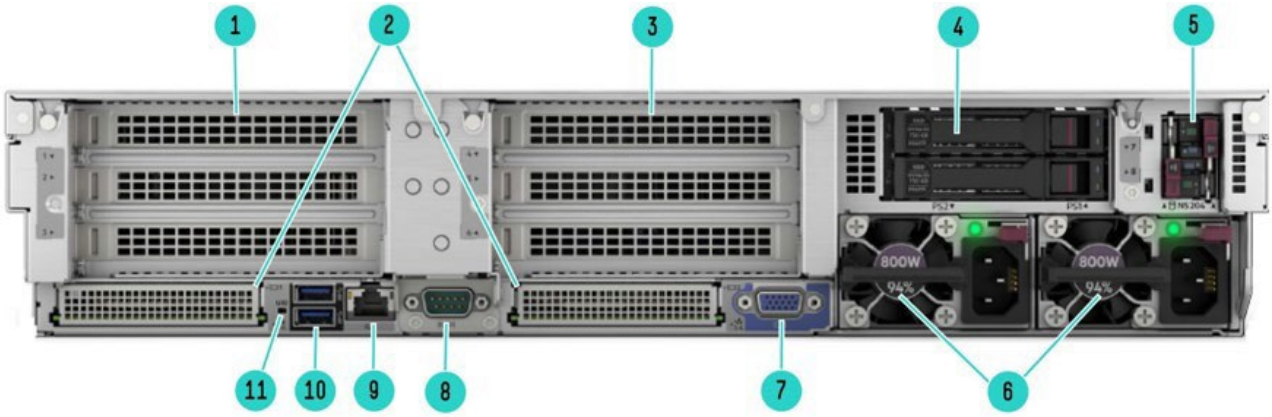


Internal View 8SFF chassis

1. Hot Plug Fans[1]
2. Primary Riser
3. Processors, heatsinks showing
4. DIMM slots, shown fully populated in 32 slots[2]
5. Optional NS204i-u Boot Device
6. Drive Backplanes
7. Hot Plug redundant HPE Flexible Slot Power Supplies
8. Drive Cages
9. Secondary Riser (Optional) (Requires second processor)

Notes:

- [1]High performance temperature fans optional
- [2]Shown fully populated in 32 slots (16 per processor)



Rear View – Standard for all DL380 Gen11

1. Primary Riser. PCIe 5.0 Slots (Slots 1-3)
2. OCP NIC 3.0 Slots, shown covered
3. Secondary Riser. PCIe 5.0 Slots (Slots 4-6)
4. Tertiary Riser (Slots 7-8) shown with optional 2SFF drive cage installed
5. Optional NS204i-u Boot Device
6. Power Supply
7. VGA Connector
8. Serial Port Optional
9. Dedicated iLO Management Port
10. USB 3.2 Gen1 Connectors (2)
11. UID Indicator LED

What's New

- New Intel® Data Center GPU Max 1100

Platform Information

Form Factor

- 2U rack

ChsisTyps

- 8SFF (SAS/SATA/NVMe) with optional 6SFF Universal Media Bay (P50728-B21), and/or up to 6SFF rear drive bay options.
- 24SFF bay (SAS/SATA/NVMe) with up to 6SFF rear drive bay options for a total 30 SFF drives .
- 8LFF supporting 2SFF front, and up to 4LFF rear or 2SFF rear drive bay options.
- 12LFF with optional 4LFF rear for a total of 16LFF drives.

Notes:

- The 8SFF chassis is upgraded to support up to 24SFF (front) with a variety of 8SFF Drive Cages to select from, including 8SFF U.3 x4/x2 Trimode, 8SFF U.3 (x1 Trimode), and 8SFF SAS/SATA. See "Drive Cages" section within this document for options.
- The 8SFF chassis comes with an 8SFF U.3 x1 Trimode drive bay by default in bay 3.
- The Universal Media Bay (P50728-B21) is only available as an option for the 8SFF chassis and can only be populated in Box 1.
- The 2LFF primary and 2LFF secondary rear cages will consume all PCIe slots for the primary and secondary riser, respectively
- The 8LFF chassis cannot be upgraded to 12LFF front in the field.
- The 2LFF primary and 2LFF secondary rear cages supported in LFF chass

System Fans

- High Performance Fan Kit – required for all CPUs over 205W TDP.

Notes:

- On 8SFF CTO server models ship with 4 standard fans.
- The 12LFF and 8LFF CTO server models ship with 4 standard fans.
- The 24SFF CTO server model ships with 6 high performance fans.
- The High-Performance fan kit (P48820-B21) is available to meet ambient temperature requirements.
- In general, the Maximum Performance fan kit is required when rear drives, or >205W Processors SKUs, or High Performance NVMe drives, three drive cages, mid-tray, GPU card, or certain backplanes are populated. See notes under each option category or each individual option for specif

Standards Features

Processors – Up to 2 of the following depending on model.
The 2nd digit of the processor model number "x4xx" is used to denote the processor generation (i.e. 4=4th generation Intel Scalable Series Processors)

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

This table covers the public Intel offering only.

Processor Suffix	Description	Offering
H	Database and Analytics	Highest core counts. Database and Analytics usages benefit from Intel Data Streaming Accelerator (DSA) and Intel In-Memory Accelerator Analytics (IAA)
M	Media Transcode	Optimized for Intel Advanced Vector Extensions (AVX) frequencies to deliver better performance/watt for Media, AI, and HPC workloads.
N	Network/5G/Edge (High Throughput / Low Latency)	Designed for Network Function Visualization and networking workloads, such as: L3 forwarding, 5G User Plane Function, Open vSwitch Data Plane Development Kit, Vector Packet Processing FIB router, VPP IPsec, web server/NGINX, vEPC, vBNG, and vCMTS.
S	Storage and HCI	Optimized for Storage UMA use cases with increased UPI Bandwidth for vs Mainline SKUs.
P	Cloud - IAAS	Designed for cloud IaaS environments to deliver higher frequencies at constrained TDPs.
Q	Liquid Cooling	Liquid cooled processors with higher frequency and performance at same TDP.
U	Single Socket Optimized	Optimized for targeted platforms adequately served by the cores, memory bandwidth and IO capacity available from a single processor
V	Cloud - SAAS	Optimized for orchestration efficiency that delivers higher core counts and VMs per rack.
Y	Intel SST-PP (Speed Select Technology - Performance Profile)	Intel® SST-PP increases base frequency when fewer cores are enabled. Allows greater flexibility, deployment options and platform longevity.

5th Generation Intel® Xeon® Scalable Processor Family (Platinum)								
Intel® Xeon® Models	**Frequency**	**Cores**	**L3 Cache**	**Power**	**UPI**	**DDR5**	**SGX Enclave size**	**Die**
Platinum 8593Q Processor	2.2 GHz	64	320 MB	385W	4	5600 MT/s	512 GB	XCC
Platinum 8592+ Processor	1.9 GHz	64	320 MB	350W	4	5600 MT/s	512 GB	XCC
Platinum 8592V Processor	2.0 GHz	64	320 MB	330W	3	4800 MT/s	512 MB	XCC
Platinum 8581V[1] Processor	2.0 GHz	60	300 MB	270W	0	4800 MT/s	512 GB	XCC
Platinum 8580 Processor	2.0 GHz	60	300 MB	350W	4	5600 MT/s	512 GB	XCC
Platinum 8570 Processor	2.1 GHz	56	300 MB	350W	4	5600 MT/s	512 GB	XCC
Platinum 8568Y Processor	2.3 GHz	48	300 MB	350W	4	5600 MT/s	512 GB	XCC
Platinum 8562Y+ Processor	2.8 GHz	32	300 MB	300W	3	5600 MT/s	512 GB	MCC
Platinum 8558P Processor	2.7 GHz	48	260 MB	350W	3	5600 MT/s	512 GB	XCC
Platinum 8558 Processor	2.1 GHz	48	260 MB	330W	4	5200 MT/s	512 GB	XCC
Platinum 8558U1 Processor	2.0 GHz	48	260 MB	300W	0	4800 MT/s	512 GB	XCC

Notes:

- In 300Watt processor one socket configuration, the air cooling with Performance Heatsinks & Performance Fan Kits can be supported. Field upgrade to two socket is not supported with air cooling solution.
- [1] Single socket only, no dual socket support
- Intel® Speed Select enabled processors: Platinum 8593Q, 8592V, 8581V, 8568Y+, 8562Y+, 8558P, 8558 and 8558U

5th Generation Intel® Xeon® Scalable Processor Family (Gold 6)								
Intel® Xeon® Models	**Frequency**	**Cores**	**L3 Cache**	**Power**	**UPI**	**DDR5**	**SGX Enclave size**	**Die**
Gold 6558Q Processor	3.2 GHz	32	60.0 MB	350W	3	5200 MT/s	128 GB	MCC
Gold 6554S Processor	2.2 GHz	36	180 MB	270W	4	5200 MT/s	128 GB	XCC
Gold 6548N Processor	2.8 GHz	32	60.0 MB	300W	3	5200 MT/s	128 GB	MCC
Gold 6548Y+ Processor	2.5 GHz	32	60.0 MB	250W	3	5200 MT/s	128 GB	MCC
Gold 6544Y Processor	3.6 GHz	16	45.0 MB	270W	3	5200 MT/s	128 GB	MCC
Gold 6542Y Processor	2.9 GHz	24	60.0 MB	250W	3	5200 MT/s	128 GB	MCC
Gold 6538N Processor	2.1 GHz	32	60.0 MB	205W	3	5200 MT/s	128 GB	MCC
Gold 6538Y+ Processor	2.2 GHz	32	60.0 MB	225W	3	5200 MT/s	128 GB	MCC
Gold 6534 Processor	3.9 GHz	8	22.5 MB	195W	3	4800 MT/s	128 GB	MCC
Gold 6530 Processor	2.1 GHz	32	160 MB	270W	3	4800 MT/s	128 GB	XCC
Gold 6526Y Processor	2.8 GHz	16	37.5 MB	195W	3	5200 MT/s	128 GB	MCC

Notes:

- One or two processor(s)
- Intel® Speed Select enabled processors: Gold 6558Q, 6554S, 6548N, 6548Y+, 6544Y, 6542Y, 6538N, 6538Y+ and 6526Y

5th Generation Intel® Xeon® Scalable Processor Family (Gold 5)								
Intel® Xeon® Models	**Frequency**	**Cores**	**L3 Cache**	**Power**	**UPI**	**DDR5**	**SGX Enclave size**	**Die**
Gold 5520+ Processor	2.2 GHz	28	52. 5MB	205W	3	4800 MT/s	128 GB	MCC
Gold 5515+Processor	3.2 GHz	8	22.5 MB	165W	3	4800 MT/s	128 GB	MCC

Notes:

- One or two processor(s)
- Intel® Speed Select enabled processors: N.A.

5th Generation Intel® Xeon® Scalable Processor Family (Silver)								
Intel® Xeon® Models	**Frequency**	**Cores**	**L3 Cache**	**Power**	**UPI**	**DDR5**	**SGX Enclave size**	**Die**
Silver 4516+ Processor	2.2 GHz	24	45.0 MB	185W	2	4400 MT/s	64 GB	MCC
Silver 4514Y Processor	2.0 GHz	16	30.0 MB	150W	2	4400 MT/s	64 GB	MCC
Silver 4510 Processor	2.4 GHz	12	30.0 MB	150W	2	4000 MT/s	64 GB	EE LCC
Silver 4509Y Processor	2.6 GHz	8	22.5 MB	125W	2	4400 MT/s	64 GB	EE LCC

Notes:

- One or two processor(s)
- Intel® Speed Select enabled processors: 4516Y+, 4514Y and 4509Y

5th Generation Intel® Xeon® Scalable Processor Family (Bronze)								
Intel® Xeon® Models	**Frequency**	**Cores**	**L3 Cache**	**Power**	**UPI**	**DDR5**	**SGX Enclave size**	**Die**
Bronze 3508U Processor1	2.1 GHz	8	22.5 MB	125W	N/A	4400 MT/s	64 GB	EE LCC

Notes:

- [1]Single socket capable, no dual socket support
- Intel® Speed Select enabled processors: N.A.
- If 3508U is selected, then 96GB 5600MT/s Memory cannot be selected
- PCIe4.0 only

4th Generation Intel® Xeon® Scalable Processor Family (Platinum)							
Intel Xeon Model	**CPU Frequency**	**Cores**	**L3 Cache (MB)**	**Power**	**UPI Links**	**DDR5**	**SGX Enclave size (GB)**
Platinum 9462 Processor[2]	2.7GHz	32	75	350W	3	4800 MT/s	128
Platinum 8490H Processor	1.9GHz	60	112.5	350W	4	4800 MT/s	512
Platinum 8480+ Processor	2.0GHz	56	105	350W	4	4800 MT/s	512
Platinum 8470 Processor	2.0GHz	52	105	350W	4	4800 MT/s	512
Platinum 8470N Processor	1.7GHz	52	97.5	300W	4	4800 MT/s	128
Platinum 8470Q Processor[1]	2.1GHz	52	105	350W	4	4800 MT/s	512
Platinum 8468 Processor	2.1GHz	48	105	350W	4	4800 MT/s	512
Platinum 8468V Processor	2.4GHz	48	97.5	330W	3	4800 MT/s	128
Platinum 8462Y+ Processor	2.8GHz	32	60	300W	3	4800 MT/s	128
Platinum 8460Y+ Processor	2.0GHz	40	105	300W	4	4800 MT/s	128
Platinum 8458P Processor	2.7GHz	44	82.5	350W	3	4800 MT/s	512
Platinum 8452Y Processor	2.0GHz	36	67.5	300W	3	4800 MT/s	128
Platinum 8444H Processor	2.9GHz	16	45	270W	4	4800 MT/s	512

Notes:

- Processors do not ship with heatsinks or fan kits, these must be ordered separately.
- Processors with TDP equal to or greater than 150W through 350W require High Performance Heatsink (P48818-B21)
- Processors with TDP greater than 150W through 350W and mid-tray drive cage require HPE DL3xx/560 Gen11 High Performance Heatsink (P48905-B21)
- "Q" processors require Max Performance Heatsink (P48817-B21)
- Processors with TDP equal to or less than 150W require Standard Heatsink (P49145-B21)
- [1]Liquid cooled CPUs require Maximum Performance Heat Sink (P48817-B21). One heatsink covers both CPUs.
- [2] This is Intel High Bandwidth Memory (HBM) CPU.

4th Generation Intel® Xeon® Scalable Processor Family (Gold)							
Intel Xeon Models	**CPU Frequency**	**Cores**	**L3 Cache (MB)**	**Power**	**UPI Links**	**DDR5**	**SGX Enclave size (GB)**
Gold 6454S Processor	2.2GHz	32	60	270W	4	4800 MT/s	128
Gold 6448H Processor	2.4GHz	32	60	250W	3	4800 MT/s	512
Gold 6430 Processor	2.1GHz	32	60	270W	3	4800 MT/s	128
Gold 6414U Processor[1]	2.0GHz	32	60	250W	0	4800 MT/s	128
Gold 6458Q Processor	3.1GHz	32	60	350W	3	4800 MT/s	128
Gold 6448Y Processor	2.1GHz	32	60	225W	3	4800 MT/s	128
Gold 6444Y Processor	3.6GHz	16	45	270W	3	4800 MT/s	128
Gold 6442Y Processor	2.6GHz	24	60	225W	3	4800 MT/s	128
Gold 6438N Processor	2.0GHz	32	60	205	3	4800 MT/s	128
Gold 6438Y+ Processor	2.0GHz	32	60	205W	3	4800 MT/s	128
Gold 6434 Processor	3.7GHz	8	22.5	195W	3	4800 MT/s	128
Gold 6426Y Processor	2.5GHz	16	37.5	185W	3	4800 MT/s	128
Gold 6421N Processor	1.8GHz	32	60	185	0	4400 MT/s	128
Gold 6418H	2.1GHz	24	60	185W	3	4800 MT/s	512
Gold 6416H	2.2GHz	18	45	165W	3	4800 MT/s	512
Gold 5415+ Processor	2.9GHz	8	22.5	150W	3	4400 MT/s	128
Gold 5416S Processor	2.0GHz	16	30	150W	3	4400 MT/s	128
Gold 5418N Processor	1.8GHz	24	45	165W	3	4000 MT/s	128
Gold 5418Y Processor	2.0GHz	24	45	185W	3	4400 MT/s	128
Gold 5420+ Processor	2.0GHz	28	52.5	205W	3	4400 MT/s	128
Gold 5411N Processor	1.9GHz	24	45	165W	0	4400 MT/s	128

Notes:
- Processors do not ship with heatsinks or fan kits, these must be ordered separately.
- Processors with TDP greater than 150W through 350W require High Performance Heatsink (P48818-B21)
- Processors with TDP greater than 150W through 350W and mid-tray drive cage require HPE DL3xx/560 Gen11 High Performance Heatsink (P48905-B21)
- "Q" processors require Max Performance Heatsink (P48817-B21)
- Processors with TDP equal to or less than 150W require Standard Heatsink (P49145-B21)
- 8-Channel DDR5 @ 4800 MT/s
- [1]Single socket processor. No dual socket support.

4th Generation Intel® Xeon® Scalable Processor Family (Silver)							
Intel Xeon Models	**CPU Frequency**	**Cores**	**L3 Cache (MB)**	**Power**	**UPI Links**	**DDR5**	**SGX Enclave size (GB)**
Silver 4410Y Processor	2.0GHz	12	30	150W	2	4000 MT/s	64
Silver 4416+ Processor	2.0GHz	20	37.5	165W	2	4000 MT/s	64

Notes:
- Processors do not ship with heatsinks or fan kits, these must be ordered separately.
- Processors with TDP greater than 150W through 350W require High Performance Heatsink (P48818-B21)
- Processors with TDP greater than 150W through 350W and mid-tray drive cage require HPE DL3xx/560 Gen11 High Performance Heatsink (P48905-B21)
- Processors with TDP equal to or less than 150W require Standard Heatsink (P49145-B21)

4th Generation Intel® Xeon® Scalable Processor Family (Bronze)							
Intel Xeon Models	**CPU Frequency**	**Cores**	**L3 Cache (MB)**	**Power**	**UPI Links**	**DDR5**	**SGX Enclave size (GB)**
Bronze 3408U	1.8GHz	8	22.5	125W	0	4000 MT/s	64

Notes:
- Processors do not ship with heatsinks or fan kits, these must be ordered separately.
- Processors with TDP equal to or less than 150W require Standard Heatsink (P49145-B21)

Chipset
Intel C741 Chipset
Notes: For more information regarding Intel® chipsets, please see the following URL:
https://www.intel.com/content/www/us/en/products/chipsets/server-chipsets.html

On System Management Chipset
HPE iLO 6 ASIC
Read and learn more in the **iLO QuickSpecs**.

Memory
One of the following depending on model.

Type	HPE DDR5 Smart Memory, Registered (RDIMM)
DIMM Slots Available	32 16 DIMM slots per processor, 8channels per processor, 2 DIMMs per channel
Maximum capacity	8.0 TB 32 x 256 GB RDIMM @ 4800 MT/s (32 DIMMs only with 8SFF or 16SFF, 16 DIMMs maximum with 24SFF)

Notes: The maximum memory speed is limited by the processor selection.

Expansion Slots

Primary Riser

Notes:

- Bus width indicates the number of physical electrical lanes running to the connector.
- There are 2 types of risers supported on Primary Slot
- x16 cards installed on x8 slots could observe sub-optimal performance.

Primary Riser1					
Slots #	**Technology**	**Bus Width**	**Connector Width**	**Slot Form Factor**	**Notes**
1	PCIe 5.0	X8	X16	Full-height, full-length slot	Proc 1
2	PCIe 5.0	X16	X16	Full-height, full-length slot	Proc 1
3	PCIe 5.0	X8	X16	Full-height, half-length slot	Proc 1
Primary Riser2					
Slots #	**Technology**	**Bus Width**	**Connector Width**	**Slot Form Factor**	**Notes**
1**	NA	NA	NA	NA	NA
1	PCIe 5.0	X16	X16	Full-height, full-length slot	Proc 1
2	PCIe 5.0	X16	X16	Full-height, full-length slot	Proc 1
3	PCIe 5.0	X16	X16	Full-height, half-length slot	Proc 1

Notes: ** If Slot 1 of HPE DL380 Gen11 2U 3x16 Prim Riser Kit needs to be enabled then 3 x16 Primary Cable Kit (P56073-B21) must be selected.

Secondary Riser:

Notes:

- Bus Width Indicates the number of physical electrical lanes running to the connector.
- There are 2 types of risers support on Secondary Slot
- x16 cards installed on x8 slots could observe sub-optimal performance.

Secondary Riser1					
Slots #	**Technology**	**Bus Width**	**Connector Width**	**Slot Form Factor**	**Notes**
4	PCIe 5.0	X8	X16	Full-height, full-length slot	Proc 2
5	PCIe 5.0	X16	X16	Full-height, full-length slot	Proc 2
6	PCIe 5.0	X8	X16	Full-height, half-length slot	Proc 2

Secondary Riser2					
Slots #	**Technology**	**Bus Width**	**Connector Width**	**Slot Form Factor**	**Notes**
4*	NA	NA	NA	NA	NA
4	PCIe 5.0	X16	X16	Full-height, full-length slot	Proc 2
5	PCIe 5.0	X16	X16	Full-height, full-length slot	Proc 2
6	PCIe 5.0	X16	X16	Full-height, half-length slot	Proc 2

Notes: * If Slot 4 of HPE DL380 Gen11 2U 3x16 Sec Riser Kit needs to be enabled then 3 x16 Secondary Cable Kit (P56074- B21) must be selected.

Tertiary Riser

Notes:

- Bus Width Indicates the number of physical electrical lanes running to the connector.
- There is 1 type of riser supported on the Tertiary Slot
- x16 cards installed on x8 slots could observe sub-optimal performance.

Tertiary Riser1 (default)					
Slots #	**Technology**	**Bus Width**	**Connector Width**	**Slot Form Factor**	**Notes**
7	PCIe 5.0	X16	X16	Full-height,full-length slot	Proc 2
8	PCIe 4.0	X16	X16	Full-height,full-length slot	Proc 2

Tertiary Riser1 (with Optional Tertiary Riser FIO x8 Enablement Kit P53632-B21)					
Slots #	**Technology**	**Bus Width**	**Connector Width**	**Slot Form Factor**	**Notes**
7	PCIe 5.0	X16	X16	Full-height,full-length slot	Proc 2
8	PCIe 5.0	X8	X16	Full-height,full-length slot	Proc 2

Graphics

Integrated Video Standard

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

Maximum Internal Storage

Drive	Capacity	Configuration
Hot Plug SFF SAS HDD	91.2 TB	24+8+6 x 2.4TB
Hot Plug SFF SAS SSD	583.3 TB	24 +8+6 15.35TB
Hot Plug SFF SATA HDD	76 TB	24+8+6 x 2 TB
Hot Plug SFF SATA SSD	291.84 TB	24 +8+ 6 x 7.68 TB
Hot Plug LFF SAS HDD	360 TB	12+4+4x 18 TB (with optional rear LFF drive cage)
Hot Plug LFF SATA HDD	360 TB	12+4+4 x 18 TB (with optional rear LFF drive cage)
Hot Plug SFF NVMe PCIe SSD	374.4 TB	24+ x 15.36TB + 6 x 960GB<10W (with optional rear Primary and Secondary 2SFF and rear 2SFF drive cages)
EDSFF NVMe	550.8 TB	36EDSFF Drives x 15.3 TB

Internal Storage Devices

- **Optical Drive**
  Optional: DVD-ROM, DVD-RW
- **Hard Drives**
  None ship standard

Power Supply

- HPE 1800W-2200W Flex Slot Titanium Hot Plug Low Halogen Power Supply Kit
  Notes: 1 available in 96% efficiency.
- HPE 1600W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit
  Notes: 1 available in 94% efficiency.
- HPE 1600W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit
- HPE 1000W Flex Slot Titanium Hot Plug Low Halogen Power Supply Kit
  Notes: 1 available in 96% efficiency.
- HPE 800W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit
  Notes: 1 available in 94% efficiency.

HPE Flexible Slot (Flex Slot) Power Supplies share a common electrical and physical design that allows for hot plug, tool-less installation into HPE ProLiant Gen11 Performance Servers. Flex Slot power supplies are certified for high-efficiency operation and offer multiple power output options, allowing users to "right-size" a power supply for specific server configurations. This flexibility helps to reduce power waste, lower overall energy costs, and avoid "trapped" power capacity in the data center.

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

Storage Controllers

The available Gen11 controllers are depicted below.

Software RAID Controller

- **Intel VROC SATA for HPEProLiantGen11**

  Notes:

  - All models feature an embedded storage controller, with embedded software SATA RAID support for up to 14 bays.
  - Intel VROC for HPE ProLiant Gen11 is an enterprise, hybrid Software RAID solution specifically designed for SSDs.
  - Intel VROC is a software-based solution utilizing Intel CPU to RAID or HBA direct connected drives.
  - RAID Support- 0/1/5/10.
  - Windows and Linux OS support.
  - Host Tools- Windows GUI/CLI, Linux CLI.
  - UEFI Support- HII Utility, OBSE.
  - iLO Support- IML, Alert, SNMP, AHS.
  - iLO Redfish- Redfish Read .
  - Intel VROC SATA for HPE ProLiant Gen11 will operate in UEFI mode only. For legacy support an additional storage controller will be needed.
  - Intel VROC SATA is off by default and must be enabled.
  - VROC cannot support mix among SATA/sSATA/tSATA due to VROC limitation. Visit **Intel Virtual RAID on CPU for HPE Gen11 User Guide**.
    - 12LFF: Mix of raid is not allowed across boxes/drive bays. Each LFF drive cage (box1/2/3) has four bays and is separated with different drive group with Intel VROC SATA RAID configuration.
    - 8SFF: Mix of raid is not allowed across boxes/drive bays. One box contain 8 bays and is separated into two drive groups (Bay1-4 and Bay5-8) with Intel VROC SATA RAID configuration.

- **Intel VROC NVMe for HPE ProLiant Gen11**
- **Notes:**
  - All models feature 4 x8 PCIe 5.0 connectors per socket for NVMe connectivity, provides support for up to 8 direct attach x4 NVMe bays.
  - Only supported on SFF models.
  - Intel VROC for HPE ProLiant Gen11 is an enterprise, hybrid Software RAID solution specifically designed for NVMe SSDs connected directly to the CPU. Intel VROC is a software-based solution utilizing Intel CPU to RAID or HBA direct connected drives.
  - Intel Virtual RAID on CPU Standard for RAID 0/1/10 (S0E37A/S0E38AAE) or Premium SKU for RAID 0/1/5/10 (R7J57A/R7J59AAE) must be ordered to enable RAID support.
  - Windows, Linux, VMware OS support.
  - Host Tools- Windows GUI/CLI, Linux CLI.
  - UEFI Support- HII Utility, OBSE.
  - Active health monitoring of NVMe M.2 drives requires use of SMART tools.

- Intel VROC NVMe for HPE ProLiant Gen11 will operate in UEFI mode only. For legacy support an additional Tri-
- Mode controller will be needed.
- For NVMe SSDs only, no PCIe card support.

Essential RAID Controller

- HPE Smart Array E208e-p SR Gen10 Controller

Tri-Mode Controller

- HPE MR416i-p Gen11 Controller
- HPE MR416i-o Gen11 Controller
- HPE MR216i-p Gen11 Controller
- HPE MR216i-o Gen11 Controller
- HPE MR408i-o Gen11 Controller
- HPE SR932i-p Gen11 Controller[1,2]

  Notes:
  - PE80xx NVMe drives are not supported.
  - [1]Requires x16 physical and electrical riser slot
  - [2]If second controller is required, must select secondary riser
  - Controllers with cache require either P02377-B21 HPE Smart Storage Hybrid Capacitor with 145mm Cable Kit or P01366-B21 HPE 96W Smart Storage Lithium-ion Battery with 145mm Cable Kit.

Interfaces

Serial	Optional Rear
Display Port	1 optional front display port via Universal Media Bay
VGA Port	1 standard, rear for all chassis. 1 Optional front display port (Via Universal Media Bay) **Notes:** Both ports are not active simultaneously.
Network Ports	None standard. Choice of OCP networking card or stand-up networking card required. BTO models will come pre-selected with a primary networking card.
HPE iLO Remote Management Network Port	1 Gb Dedicated, rear
Front iLO Service Port	1 standard (Not available when System Insight Display Kit is ordered)
USB 3.2 Port Gen1	Up to 4 total: 1 front(3.2 Gen1), 2 rear(3.0), 2 internal (secure – 1 – 3.2 Gen1, 1 – 2.0), 1 optional USB 2.0 front via Universal Media Bay
System Insight Display (SID)	Optional **Notes:** Not shipping as standard. Available as a CTO option or as a field upgrade (P48819-B21).

Operating Systems and Virtualization Software Support for ProLiant Servers

See **HPE Servers Support & Certification Matrices** (For OS support for HBM, refer to the OS Certification Matrices.)

- **Microsoft Windows Server**
- **VMware ESXi This does not include support for Intel High Bandwidth Memory (HBM) processors.**
- **Red Hat Enterprise Linux (RHEL)**
- **SUSE Linux Enterprise Server (SLES)**
- **Canonical Ubuntu**
- **Oracle Linux and Oracle VM**

HPE Server UEFI

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 Gen11 servers have a UEFI Class 3 implementation to support UEFI Mode.

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

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

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

UEFI Boot Mode only

- TPM 2.0 Support
  Notes: Enabling TPM 2.0 no longer requires TPM module option kit for Gen11. It is an embedded feature.
- iSCSI Software Initiator Support.
- NVMe Boot Support
- HTTP/HTTPs Boot support as a PXE alternative.
- Platform Trust Technology (PTT) can be enabled.
- 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.

Industry Standard Compliance

- ACPI 6.3 Compliant
- PCIe 5.0 Compliant
- Wake on LAN (WoL) Support
- Microsoft® Logo certifications
- PXE Support
- VGA
- Display Port
  Notes: This support is on the optional Universal Media Bay.
- USB 3.2 Gen1 Compliant
- USB 2.0 Compliant (via Universal Media Bay)
  Notes: This support is on the optional Universal Media Bay.
- Energy Star
- SMBIOS 3.2
- Redfish API
- IPMI 2.0
- Secure Digital 4.0
- TPM 1.20 and 2.0 Support
  Notes: Enabling TPM 2.0 no longer requires TPM module option kit for Gen11. It is an embedded feature.
- Advanced Encryption Standard (AES)
- Triple Data Encryption Standard (3DES)
- SNMP v3

- TLS 1.2
- DMTF Systems Management Architecture for Server Hardware Command Line Protocol (SMASH CLP)
- Active Directory v1.0
- ASHRAE A3/A4
  Notes: For additional technical, thermal details regarding ambient temperature, humidity, and feature support, please visit **DL380 Gen11 Extended Ambient Temperature Guidelines**
- European Union Erp Lot 9 Regulation
  Notes:
  - Beginning on January 1st, 2024, units sold into the European Union (EU), European Economic Area (EEA), the United Kingdom, or Switzerland must include more efficient AC power supplies: 94% for multi-output and 96% for single-output. HPE Flexible Slot power supplies are single-output, and part numbers 865438-B21, P03178-B21, and P44712-B21 are 96% efficient, thus meeting requirements.
  - HPE is on target to fulfil compliant systems ahead of time and will begin enforcing these requirements in advance to satisfy requests with the current power supplies by the set deadline.
  - Please visit: **https://www.hpe.com/us/en/about/environment/msds-specs-more.html** for more information regarding HPE Lot 9 conformance.
  - UEFI (Unified Extensible Firmware Interface Forum) 2.7

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 **https://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 1 or more servers with Intelligent Provisioning.
Learn more at **https://support.hpe.com/hpesc/public/docDisplay?docId=c04465280&docLocale=en_US**

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

OpenBMC Support
OpenBMC Capable through iLO6 Transfer of Ownership Process.
Learn more at **OpenBMC Support**

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 **https://www.hpe.com/servers/ahs**.

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).

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. Use with an iLO Advanced License to unlock full capabilities.
Learn more at **https://www.hpe.com/servers/iLOamplifierpack**

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 **https://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 **https://www.hpe.com/servers/powershell**.

HPE OneView Standard
HPE OneView is an on premise, multi-generational server monitoring and management solution. HPE OneView Standard can be used for inventory, health monitoring, alerting, and reporting without additional fees. Customers can upgrade their management experience with an HPE OneView Advanced license all provided by the same tool. Learn more at **https://www.hpe.com/info/oneview**.

HPE GreenLake for Compute Ops Management
HPE is intelligently transforming compute management with an intuitive cloud operating experience through HPE GreenLake cloud platform to streamline and secure operations from edge-to-cloud. Automated key lifecycle tasks, for onboarding, updating, managing, and monitoring HPE servers, brings agility and greater efficiencies to wherever compute devices reside via a unified single browser-based interface. Manage single locations or multiple, distributed sites. Keep tens to thousands of servers secure with batch policy controls and automated updates.

Compute Ops Management is cloud-native software that is continually updated with new services, features, patches, and fixes. The management application resides in the HPE GreenLake cloud platform (access via **https://console.greenlake.hpe.com**) and leverages the HPE GreenLake architecture, security, and unified operations.

A 3-year subscription to HPE GreenLake for Compute Ops Management is added by default when ordering an HPE ProLiant Gen11 rack, tower, or micro server.

For more information, visit the HPE GreenLake for Compute Ops Management QuickSpecs:
https://www.hpe.com/psnow/doc/a50004263enw

Security
- UEFI Secure Boot and Secure Start support
- Tamper-free updates – components digitally signed and verified
- Immutable Silicon Root of Trust
- Ability to rollback firmware
- FIPS 140-2 validation
- Secure erase of NAND/User data
- Common Criteria certification
- TPM (Trusted Platform Module) 1.2 option
- Configurable for PCI DSS compliance
- TPM (Trusted Platform Module) 2.0 option
  Notes: Enabling TPM 2.0 no longer requires TPM module option kit for Gen11. It is an embedded feature.
- Advanced Encryption Standard (AES) and Triple Data Encryption Standard (3DES) on browser
- Bezel Locking Kit option
- Support for Commercial National Security Algorithms (CNSA)
- Chassis Intrusion detection option
- Secure Recovery – recover critical firmware to known good state on detection of compromised firmware

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 Services operational services or customized service agreements. Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.

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

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 Advanced offers a sophisticated level of automation to infrastructure management by taking a template driven approach to provisioning, updating, and integrating compute, storage, and networking infrastructure. It builds upon the base features of HPE OpenView Standard, provides full-featured licenses which can be purchased for managing multiple HPE server generations.
To learn more visit **https://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 **https://www.hpe.com/info/cmu**.

One Config Simple (OCS/SCE)

OCS/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've reinvented our entire portfolio of rack and power products to make IT infrastructure more secure, more practical, and more efficient. In other words, we've created a stronger, smarter, and simpler infrastructure to help you get the most out of your IT equipment. As an industry leader, Hewlett Packard Enterprise is uniquely positioned to address the key concerns of power, cooling, cable management and system access.

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

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

HPE Uninterruptible Power Systems are cost-effective power protection for any type workload. Some UPSs include options for remote management and extended runtime modules so you're critical dense data center is covered in power outages.
HPE KVM Solutions include a console and switches designed to work with your server and IT equipment reliably. We've got a cost-effective KVM switch for your first rack and multiple connection IP switches with remote management and security capabilities to keep your data center rack up and running.

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

HPE Services

No matter where you are in your digital transformation journey, you can count on HPE Services to deliver the expertise you need when, where and how you need it. From planning to deployment, ongoing operations and beyond, our experts can help you realize your digital ambitions.
https://www.hpe.com/services

Consulting Services

No matter where you are in your journey to hybrid cloud, experts can help you map out your next steps. From determining what workloads should live where, to handling governance and compliance, to managing costs, our experts can help you optimize your operations.
https://www.hpe.com/services/consulting

HPE Managed Services

HPE runs your IT operations, providing services that monitor, operate, and optimize your infrastructure and applications, delivered consistently and globally to give you unified control and let you focus on innovation.
HPE Managed Services | HPE

Operational services

Optimize your entire IT environment and drive innovation. Manage day-to-day IT operational tasks while freeing up valuable time and resources. Meet service-level targets and business objectives with features designed to drive better business outcomes. **https://www.hpe.com/services/operational**

HPE Complete Care Service

HPE Complete Care Service is a modular, edge-to-cloud IT environment service designed to help optimize your entire IT environment and achieve agreed upon IT outcomes and business goals through a personalized experience. All delivered by an assigned team of HPE Services experts. HPE Complete Care Service provides:

- A complete coverage approach -- edge to cloud
- An assigned HPE team
- Modular and fully personalized engagement
- Enhanced Incident Management experience with priority access
- Digitally enabled and AI driven customer experience

https://www.hpe.com/services/completecare

HPE Tech Care Service

HPE Tech Care Service is the operational support service experience for HPE products. The service goes beyond traditional support by providing access to product specific experts, an AI driven digital experience, and general technical guidance to not only reduce risk but constantly search for ways to do things better. HPE Tech Care Service delivers a customer-centric, AI driven, and digitally enabled customer experience to move your business forward. HPE Tech Care Service is available in three response levels. Basic, which provides 9x5 business hour availability and a 2-hour response time. Essential which provides a 15-minute response time 24x7 for most enterprise level customers, and Critical which includes a 6-hour repair commitment where available and outage management response for severity 1 incidents.
https://www.hpe.com/services/techcare

HPE Lifecycle Services

HPE Lifecycle Services provide a variety of options to help maintain your HPE systems and solutions at all stages of the product lifecycle. A few popular examples include:

- Lifecycle Install and Startup Services: Various levels for physical installation and power on, remote access setup, installation and startup, and enhanced installation services with the operating system.
- HPE Firmware Update Analysis Service: Recommendations for firmware revision levels for selected HPE products, taking into account the relevant revision dependencies within your IT environment.
- HPE Firmware Update Implementation Service: Implementation of firmware updates for selected HPE server, storage, and solution products, taking into account the relevant revision dependencies within your IT environment.
- Implementation assistance services: Highly trained technical service specialists to assist you with a variety of activities, ranging from design, implementation, and platform deployment to consolidation, migration, project management, and onsite technical forums.
- HPE Service Credits: Access to prepaid services for flexibility to choose from a variety of specialized service activities, including assessments, performance maintenance reviews, firmware management, professional services, and operational best practices.

Notes: To review the list of Lifecycle Services available for your product go to:
https://www.hpe.com/services/lifecycle

For a list of the most frequently purchased services using service credits, see the **HPE Service Credits Menu**

Other Related Services from HPE Services:

HPE Education Services

Training and certification designed for IT and business professionals across all industries. Broad catalogue of course offerings to expand skills and proficiencies in topics ranging from cloud and cybersecurity to AI and DevOps. Create learning paths to expand proficiency in a specific subject. Schedule training in a way that works best for your business with flexible continuous learning options.
https://www.hpe.com/services/training

Defective Media Retention

An option available with HPE Complete Care Service and HPE Tech Care Service and applies only to Disk or eligible SSD/Flash Drives replaced by HPE due to malfunction.

Consult your HPE Sales Representative or Authorized Channel Partner of choice for any additional questions and services options.

Parts and Materials

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

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

How to Purchase Services

Services are sold by Hewlett Packard Enterprise and Hewlett Packard Enterprise Authorized Service Partners:

- Services for customers purchasing from HPE or an enterprise reseller are quoted using HPE order configuration tools.
- Customers purchasing from a commercial reseller can find services at **https://ssc.hpe.com/portal/site/ssc/**

Service and Support

AI Powered and Digitally Enabled Support Experience

Achieve faster time to resolution with access to product-specific resources and expertise through a digital and data driven customer experience

Sign into the HPE Support Center experience, featuring streamlined self-serve case creation and management capabilities with inline knowledge recommendations. You will also find personalized task alerts and powerful troubleshooting support through an intelligent virtual agent with seamless transition when needed to a live support agent.
https://support.hpe.com/hpesc/public/home/signin

Consume IT On Your Terms

HPE GreenLake edge-to-cloud platform brings the cloud experience directly to your apps and data wherever they are—the edge, colocations, or your data center. It delivers cloud services for on-premises IT infrastructure specifically tailored to your most demanding workloads. With a pay-per-use, scalable, point-and-click self-service experience that is managed for you, HPE GreenLake edge-to-cloud platform accelerates digital transformation in a distributed, edge-to-cloud world.

- Get faster time to market
- Save on TCO, align costs to business
- Scale quickly, meet unpredictable demand
- Simplify IT operations across your data centers and clouds

To learn more about HPE Services, please contact your Hewlett Packard Enterprise sales representative or Hewlett Packard Enterprise Authorized Channel Partner. Contact information for a representative in your area can be found at "Contact HPE" **https://www.hpe.com/us/en/contact-hpe.html**

For more information
https://www.hpe.com/servic