Extended Ambient Temperature Guidelines for Gen10 HPE ProLiant servers and HPE Synergy

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Abstract

This document provides information about the extended ambient operating temperature support for Gen10 HPE ProLiant servers and HPE Synergy compute modules.

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Revision history

Part number	Publication date	Edition	Summary of changes
30-1E44F62D-002	July 2023	2	Corrected broken URLs.

Part number	Publication date	Edition	Summary of changes
30-1E44F62D-001	June 2022	1	• Added ASHRAE Class A2 statement to Hewlett Packard Enterprise Extended Ambient Operating Support standards. • New part number series.

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Hewlett Packard Enterprise Extended Ambient Operating Support standards

The American Society of Heating Refrigeration and Air-Conditioning Engineers sets standards for building systems, energy efficiency, indoor air quality, refrigeration, and sustainability. The ASHRAE A3 and A4 classes are the latest classes that have been defined in an effort to support the Fresh Air Data cooling initiative. Hewlett Packard Enterprise Extended Ambient Operating Support is defined as comparable to an ASHRAE class.

The following table provides a summary of environmental ranges supported, with altitude de-ratings, by Hewlett Packard Enterprise ProLiant servers. Items in bold are ProLiant features that exceed the ASHRAE comparable class feature set.

Hewlett Packard Enterprise Standard Operating Support

Dry bulb temp range (°C)	Relative humidity range (% RH)	Maximum wet bulb temp (°C)	Maximum altitude	Altitude de-rating [1]	Available yearly operational time [2]
10°C to 35°C (50°F to 95°F)	8% to 90%	28°C non-condensing	3,050 meters	1.0°C/305 m above sea level	See specific product information for any temperature restrictions

1 Altitude de-rating assumes no direct sustained sunlight.
2 At Standard Operating Support conditions, there is no time limitation for operating the servers in ASHRAE Class A2 conditions.

Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)

Dry bulb temp range (°C)	Relative humidity range (% RH)	Maximum wet bulb temp (°C)	Maximum altitude	Altitude de-rating [1]	Available yearly operational time
5°C to 40°C (41°F to 104°F)	8% to 90%	28°C non-condensing	3,050 meters	1.0°C/175 m above 900m	See specific product information for any temperature restrictions [2]

1 Altitude de-rating assumes no direct sustained sunlight.
2 Only systems containing an earlier generation of the HPE Smart Storage Battery (727258-B21; 782958-B21; 727261-B21; or 782961-B21) are restricted to 10% (or less) of available yearly operational time.

Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)

Dry bulb temp range (°C)	Relative humidity range (% RH)	Maximum wet bulb temp (°C)	Maximum altitude	Altitude de-rating [1]	Available yearly operational time
5°C to 45°C (41°F to 113°F)	8% to 90%	28°C non-condensing	3,050 meters	1.0°C/125 m above 900m	Up to 1% of available yearly operational time

1 Altitude de-rating assumes no direct sustained sunlight.

The maximum rate of change for Inlet Ambient temperature is 20°C/hr (36°F/hr). The upper limit and rate of change is limited by the type and number of options installed.

Hewlett Packard Enterprise Extended Ambient Operating Support summary

This section provides a summary of the Extended Ambient Operating support details. See the specific server information for configuration details that affect support.

HPE ProLiant Gen10 Server	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
HPE ProLiant BL460c Gen10 Server	Yes	No
HPE ProLiant DL20 Gen10 Server	Yes	Yes
HPE ProLiant DL160 Gen10 Server	Yes	Yes
HPE ProLiant DL180 Gen10 Server	Yes	Yes
HPE ProLiant DL325 Gen10 Server	Yes	Yes
HPE ProLiant DL360 Gen10 Server	Yes	Yes

HPE ProLiant Gen10 Server	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
HPE ProLiant DL380 Gen10 Server	Yes	Yes
HPE ProLiant DL385 Gen10 Server	Yes	Yes
HPE ProLiant DL560 Gen10 Server	Yes	Yes
HPE ProLiant DL580 Gen10 Server	Yes	Yes
HPE ProLiant ML30 Gen10 Server	Yes	Yes
HPE ProLiant ML110 Gen10 Server	Yes	No
HPE ProLiant ML350 Gen10 Server	Yes	Yes
HPE Synergy 480 Gen10 Compute Module	Yes	Yes
HPE Synergy 660 Gen10 Compute Module	Yes	Yes
HPE ProLiant XL170r Gen10 Server	Yes	No
HPE ProLiant XL190r Gen10 Server	Yes	No
HPE ProLiant XL230k Gen10 Server	Yes	Yes

HPE ProLiant BL460c Gen10 Server

For more information about configuration rules and requirements, see the HPE ProLiant BL460c Gen10 Server documentation on the Hewlett Packard Enterprise website (**https://www.hpe.com/info/bladesystem-docs**).

Subtopics

10Gb/20Gb FLB CTO

10Gb/20Gb FLB CTO

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
Unsupported options in any configuration: • P3700 2.0 TB NVMe PCIe SSDs • Processors ◦ 155W and above, 6144	Unsupported options: • Processors ◦ 130W and above, 5122, 6128, and 8156 ◦ 5217, 5222, 6230Y, and 8256 • LRDIMMs • GPUs • Type B mezzanine cards • M.2 enablement kits • HPE NVMe SSDs	Not supported.

HPE ProLiant DL20 Gen10 Server

For more information about configuration rules and requirements, see the HPE ProLiant DL20 Gen10 Server documentation on the Hewlett Packard Enterprise website (**https://www.hpe.com/info/dl20gen10-docs**).

Subtopics

2LFF or 4SFF+2SFF

2LFF or 4SFF+2SFF

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
Options limited to 30°C ambient: Seagate 400/480GB NVMe M.2 SSDs	Unsupported options: • 95W processors • NVMe M.2 SSDs • Higher than 240GB SATA M.2 • 12W HPE Smart Storage Battery	Additional options not supported at A4: All SATA M.2

HPE ProLiant DL160 Gen10 Server

For more information about configuration rules and requirements, see the HPE ProLiant DL160 Gen10 Server documentation on the Hewlett Packard Enterprise website (**https://www.hpe.com/info/DL160Gen10-docs**).

Subtopics

1LFF or 8SFF
2LFF or 3LFF
4LFF

1LFF or 8SFF

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
100 Gb two-port 840QSFP28, ambient 27°C support.	Options not supported: • Processors: ◦ 6252, 6248, 6244, 6242, 6240, 6238, 6234, 6226, 6209U • SATA and PCIe M.2 • NVMe SFF SSDs • PCIe Accelerator cards • 10Gb 2-port 521FLR-T Adapter • 10/25Gb 2-port 631FLR-SFP28 • HPE Ethernet 10Gb 2-port 562FLR-SFP+Adapter • 10/25Gb 2-port 621SFP28 Adapter • HPE Ethernet 10/25Gb 2p 631FLR-SFP28 Adapter • HPE Ethernet 10/25Gb 2p 631SFP28 Adapter • HPE Ethernet 10/25Gb 2P 640FLR-SFP28 Adapter • HPE Ethernet 10/25Gb 2P 640SFP28 Adapter • HPE Ethernet 10/25Gb 2p 622FLR-SFP28	Additional options not supported at A4: • Processors: 5215, 5217

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
	• HPE Ethernet 10Gb 2-port 562SFP+ Adapter • 10Gb 2-port 521T Adapter • 40G/100G InfiniBand or networking cards • NVDIMM	

2LFF or 3LFF

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
100 Gb two-port 840QSFP28, ambient 27°C support.	Options not supported: • Processors: ◦ 6252, 6248, 6244, 6242, 6240, 6238, 6234, 6226, 6209U • SATA and PCIe M.2 • NVMe SFF SSDs • PCIe Accelerator cards • 10Gb 2-port 521FLR-T Adapter • 10/25Gb 2-port 631FLR-SFP28 • HPE Ethernet 10Gb 2-port 562FLR-SFP+Adapter	Not supported.

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
	• 10/25Gb 2-port 621SFP28 Adapter • HPE Ethernet 10/25Gb 2p 631FLR-SFP28 Adapter • HPE Ethernet 10/25Gb 2p 631SFP28 Adapter • HPE Ethernet 10/25Gb 2P 640FLR-SFP28 Adapter • HPE Ethernet 10/25Gb 2P 640SFP28 Adapter • HPE Ethernet 10/25Gb 2p 622FLR-SFP28 • HPE Ethernet 10Gb 2-port 562SFP+ Adapter • 10Gb 2-port 521T Adapter • 40G/100G InfiniBand or networking cards • NVDIMM	

4LFF

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
100 Gb two-port 840QSFP28, ambient 27°C support.	Not supported.	Not supported.

HPE ProLiant DL180 Gen10 Server

For more information about configuration rules and requirements, see the HPE ProLiant DL180 Gen10 Server documentation on the Hewlett Packard Enterprise website (**https://www.hpe.com/info/DL180Gen10-docs**).

Subtopics

4LFF or 8LFF
12LFF
8SFF, 16SFF, or 24SFF

4LFF or 8LFF

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
	Options not supported: • Processors: ◦ 6252, 6248, 6244, 6242, 6240, 6238, 6234, 6226, 6209U • SATA and PCIe M.2 • NVMe SFF SSDs • PCIe Accelerator cards • 10Gb 2-port 521FLR-T Adapter • 10/25Gb 2-port 631FLR-SFP28 • HPE Ethernet 10Gb 2-port 562FLR-SFP+Adapter	Additional options not supported at A4: • Processors: 5215, 5217

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
	• 10/25Gb 2-port 621SFP28 Adapter • HPE Ethernet 10/25Gb 2p 631FLR-SFP28 Adapter • HPE Ethernet 10/25Gb 2p 631SFP28 Adapter • HPE Ethernet 10/25Gb 2P 640FLR-SFP28 Adapter • HPE Ethernet 10/25Gb 2P 640SFP28 Adapter • HPE Ethernet 10/25Gb 2p 622FLR-SFP28 • HPE Ethernet 10Gb 2-port 562SFP+ Adapter • 10Gb 2-port 521T Adapter • 40G/100G InfiniBand or networking cards • NVDIMM	

12LFF

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
	Not supported.	Not supported.

8SFF, 16SFF, or 24SFF

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
	Options not supported: • Processors: ◦ 6252, 6248, 6244, 6242, 6240, 6238, 6234, 6226, 6209U • SATA and PCIe M.2 • NVMe SFF SSDs • PCIe Accelerator cards • 10Gb 2-port 521FLR-T Adapter • 10/25Gb 2-port 631FLR-SFP28 • HPE Ethernet 10Gb 2-port 562FLR-SFP+Adapter • 10/25Gb 2-port 621SFP28 Adapter • HPE Ethernet 10/25Gb 2p 631FLR-SFP28 Adapter • HPE Ethernet 10/25Gb 2p 631SFP28 Adapter • HPE Ethernet 10/25Gb 2P 640FLR-SFP28 Adapter • HPE Ethernet 10/25Gb 2P 640SFP28 Adapter • HPE Ethernet 10/25Gb 2p 622FLR-SFP28 • HPE Ethernet 10Gb 2-port 562SFP+ Adapter	Additional options not supported at A4: • Processors: 5215, 5217

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
	• 10Gb 2-port 521T Adapter • 40G/100G InfiniBand or networking cards • NVDIMM	

HPE ProLiant DL325 Gen10 Server

For more information about configuration rules and requirements, see the HPE ProLiant DL325 Gen10 Server documentation on the Hewlett Packard Enterprise website (**https://www.hpe.com/info/DL325Gen10-docs**).

Subtopics

8SFF NVMe
4LFF or 8SFF SATA/SAS

8SFF NVMe

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
	Not supported.	Not supported.

4LFF or 8SFF SATA/SAS

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
	Unsupported options: • PCIe Accelerator cards • 10/25Gb two-port 622FLR-SFP28 • 10Gb two-port 521FLR-T Adapter • 10/25Gb two-port 621SFP28 Adapter • 10Gb two-port 521T Adapter • 40G/100G InfiniBand or networking cards • HPE Flexible Slot Battery Backup Unit	Unsupported options: • Processors ◦ 7451, 7551P, 7601 • Internal dual M.2 kit

HPE ProLiant DL360 Gen10 Server

For more information about configuration rules and requirements, see the HPE ProLiant DL360 Gen10 Server documentation on the Hewlett Packard Enterprise website (**https://www.hpe.com/info/DL360Gen10-docs**).

Subtopics

10SFF with high performance fans
4LFF or 8SFF + 2SFF with high performance fans
4LFF or 8SFF+2SFF with standard fans

10SFF with high performance fans

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
Unsupported options in any configuration: • P3700 2.0 TB NVMe drive	Unsupported options: • Processors ◦ 6144, 6146, 6154, 8168, 8180/M ◦ 6240Y, 6242R, 6244, 6246, 6246R, 6248R, 6250, 6250L, 6254, 6256, 6258R, 8268/M/L, 8270, 8280/M/L • LRDIMMs • GPUs • HPE NVMe SSDs • I/O Accelerator cards • Rear HDDs • PCIe M.2 on primary riser • Intel Optane DIMMs	Not supported.

Option based on QuickSpec version 35 (July 6, 2020).

4LFF or 8SFF + 2SFF with high performance fans

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
Unsupported options in any configuration: • P3700 2.0 TB NVMe drive	Unsupported options: • Processors: ◦ 6144, 6146, 6154, 8168, 8180/M ◦ 6240Y, 6242R, 6244, 6246, 6246R, 6248R, 6250, 6250L, 6254, 6256, 6258R, 8268/M/L, 8270, 8280/M/L • LRDIMMs • GPUs • HPE NVMe SSD Express Bay Enablement Kit with NVMe SSDs • I/O Accelerator cards • Rear HDDs • PCIe M.2 on primary riser • Intel Optane DIMMs	Additional options not supported at A4: • Processors: ◦ 5122, 6128, 6132, 6134/M, 6136, 6142/M/F, 6148/F, 6150, 8156, 8158, 8160/M/T/F, 8164, 8170/M, 8176/M/F ◦ 5217, 5222, 6240, 6242, 6242R, 6246, 6246R, 6248, 6248R, 6250, 6250L, 6252, 6256, 6258R, 8256/M/L, 8260/M/L/Y, 8276/M/L • 2SFF drive kit • SATA M.2 on primary riser • 10/25Gb two-port 622FLR-SFP28
Option based on QuickSpec version 35 (July 6, 2020).		

4LFF or 8SFF+2SFF with standard fans

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
All options for 4LFF or 8SFF+2SFF with performance fans are not supported, in addition to the following: • HPE NVMe SSD Express Bay Enablement Kit with NVMe SSDs	Not supported.	Not supported.

HPE ProLiant DL380 Gen10 Server

For more information about configuration rules and requirements, see the HPE ProLiant DL380 Gen10 Server documentation on the Hewlett Packard Enterprise website (**https://www.hpe.com/info/DL380Gen10-docs**).

Subtopics

8SFF, 16SFF, 8LFF with high performance fans
8SFF, 16SFF, 8LFF with standard fans
24SFF, 24SFF + rear HDDs with high-performance fans
12LFF, 12 LFF + rear HDDs with high-performance fans
12LFF + midtray HDD, 12LFF + midtray HDD + rear HDDs with high performance fans
8NVMe, 16NVMe, 20NVMe drives with high-performance fans
8NVMe + rear HDD with high performance fans
16NVMe + rear HDD with high performance fans
20NVMe + rear HDD with high-performance fans

8SFF, 16SFF, 8LFF with high performance fans

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)

• Media bay in 16SFF and 8LFF
• GPUs will have inlet ambient temperature restrictions
• The following processors have separate inlet ambient temperature restrictions:
  ◦ 6250, 6250L, 6256, 6242R, 6246R, 6248R, 6258R
	Unsupported options:
	• Processors
	  ◦ 6144, 6146, 6154, 8168, 8180/M
	  ◦ 6240Y, 6242, 6244, 6246, 6246R, 6248R, 6250, 6252N, 6254, 6256, 6258R, 8268/M/L, 8270, 8280/M/L
	• LRDIMMs
	• HPE NVMe SSD Express Bay Enablement Kit with NVMe SSDs
	• I/O Accelerator cards
	• Rear HDD
	• NVMe PCIe SSDs
	• 10/25Gb two-port 622FLR-SFP2
	• GPUs
	• uFF M.2 SATA drives
	• Intel Optane DIMMs
	• 40G/100G InfiniBand or networking cards
		Additional options not supported at A4:
		• Processors
		  ◦ 5122, 6128, 6132, 6134/M, 6136, 6142/M/F, 6148/F, 6150, 8156, 8158, 8160/M/T/F, 8164, 8170/M, 8176/M/F
		  ◦ 4210T, 4215R, 5217, 5217R, 5220R, 5222, 6222V, 6226, 6226R, 6230R/N/T, 6234, 6238R/T, 6240, 6240R, 6242, 6248, 6252, 8256/M/L, 8260/M/L/Y, 8276/M/L

8SFF, 16SFF, 8LFF with standard fans

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
No options for 8SFF, 16SFF, 8LFF with high-performance fans supported plus: • Rear HDD • GPUs • The following processors have separate inlet ambient temperature restrictions: ◦ 6250, 6250L, 6256, 6242R, 6246R, 6248R, 6258R	Not supported.	Not supported.

Options based on QuickSpec version 37 (June 1, 2020).

24SFF, 24SFF + rear HDDs with high-performance fans

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
4 or 6 SFF HDDs in the rear limited to 30°C inlet ambient temperature	Not supported.	Not supported.

12LFF, 12 LFF + rear HDDs with high-performance fans

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
• Rear HDDs limited to 30°C inlet ambient temperature with: ◦ Rear 4 or 6 SFF HDD ◦ Rear 2SFF + 3LFF HDD	Not supported.	Not supported.

12LFF + midtray HDD, 12LFF + midtray HDD + rear HDDs with high performance fans

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
• Rear HDDs limited to 30°C inlet ambient temperature • Use ≤ 125W processor • Unsupported options: ◦ Processors: 5122, 6128, 8156, 5217, 5217R, 5222, 6230, 8256 ◦ GPUs	Not supported.	Not supported.

Options based on QuickSpec version 37 (June 1, 2020).

8NVMe, 16NVMe, 20NVMe drives with high-performance fans

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
HPE NVMe > 25W	Not supported.	Not supported.

8NVMe + rear HDD with high performance fans

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
Rear HDD limited to 30°C inlet ambient temperature	Not supported.	Not supported.

16NVMe + rear HDD with high performance fans

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
Rear HDD limited to 30°C inlet ambient temperature	Not supported.	Not supported.

20NVMe + rear HDD with high-performance fans

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
Not supported.	Not supported.	Not supported.

HPE ProLiant DL385 Gen10 Server

For more information about configuration rules and requirements, see the HPE ProLiant DL385 Gen10 Server documentation on the Hewlett Packard Enterprise website (**https://www.hpe.com/info/DL385Gen10-docs**).

Subtopics

8SFF, 16SFF, 8LFF with high performance fans
8SFF, 16SFF, 8LFF with standard fans
24SFF, 24SFF + rear HDDs with high-performance fans
12LFF, 12 LFF + rear HDDs with high-performance fans
12LFF + midtray HDD, 12LFF + midtray HDD + rear HDDs with high performance fans
8NVMe, 16NVMe, 24NVMe drives with high-performance fans
8NVMe + rear HDD with high-performance fans
16NVMe + rear HDD with high-performance fans
24NVMe + rear HDD with high-performance fans

8SFF, 16SFF, 8LFF with high performance fans

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
• Media bay in 16SFF and 8LFF	Unsupported options: • LRDIMMs	Additional options not supported at A4: • Processors

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
• HPE FlexFabric 10Gb 2p 522 FLR-T Adapter in 8LFF supported only ≤ 30°C and ≤ 165W processor • Double-wide GPUs will have inlet ambient temperature restrictions	• HPE NVMe SSD Express Bay Enablement Kit with NVMe SSDs • I/O Accelerator cards • Rear HDD • NVMe PCIe SSDs • 10/25Gb two-port 622FLR-SFP2 • GPUs • uFF M.2 SATA drives • 40G/100G InfiniBand or networking cards	◦ 7551, 7601 • M.2 connectors on system board

8SFF, 16SFF, 8LFF with standard fans

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
No options for 8SFF, 16SFF, 8LFF with high-performance fans supported plus: • Rear HDD • GPUs	Not supported.	Not supported.

24SFF, 24SFF + rear HDDs with high-performance fans

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
• 4 or 6 SFF HDDs in the rear limited to 30°C inlet ambient temperature • HPE FlexFabric 10Gb 2p 522 FLR-T Adapter supported only with ≤ 30°C and ≤ 165W processor	Not supported.	Not supported.

12LFF, 12 LFF + rear HDDs with high-performance fans

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
• Rear HDDs limited to 30°C inlet ambient temperature with: ◦ Rear 4 or 6 SFF HDD ◦ Rear 2SFF + 3LFF HDD • HPE FlexFabric 10Gb 2p 522 FLR-T Adapter supported only with ≤ 30°C and ≤ 165W processor	Not supported.	Not supported.

12LFF + midtray HDD, 12LFF + midtray HDD + rear HDDs with high performance fans

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
• Rear HDDs limited to 30°C inlet ambient temperature • Use ≤ 125W processor • Unsupported options: ◦ 7301, 735P, 7351, 740P, 7401, 7451, 7501, 7551, 7601 processors ◦ GPUs	Not supported.	Not supported.

8NVMe, 16NVMe, 24NVMe drives with high-performance fans

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
• HPE NVMe > 2.0 TB • HPE FlexFabric 10Gb 2p 522F LR-T Adapter supported when 16 NVMe drives are installed	Not supported.	Not supported.

8NVMe + rear HDD with high-performance fans

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
Rear HDD limited to 30°C inlet ambient temperature	Not supported.	Not supported.

16NVMe + rear HDD with high-performance fans

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
Rear HDD limited to 25°C inlet ambient temperature	Not supported.	Not supported.

24NVMe + rear HDD with high-performance fans

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
Not supported.	Not supported.	Not supported.

HPE ProLiant DL560 Gen10 Server

For more information about configuration rules and requirements, see the HPE ProLiant DL560 Gen10 Server documentation on the Hewlett Packard Enterprise website (**https://www.hpe.com/info/DL560Gen10-docs**).

Subtopics

8SFF
16SFF and 24SFF

8SFF

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
	Requirements: • Processors: ◦ Up to 4x of the following processors are supported: 6126, 6130, 6138, 8153, 6226, 6230, 6238, 8253 ◦ Up to 4 DIMMs per processor are supported up to 16 GB R-DIMMs Unsupported options: • GPUs • NVMe PCIe SSDs • HPE PCIe Workload Accelerator cards • 10/25 Gb two-port 622FLR-SFP28 • 10 Gb two-port 521FLR-T adapter	Requirements: • Processors: ◦ Up to 4x of the following processors are supported: 6126, 6130, 6138, 8153, 6226, 6230, 6238, 8253 ◦ Up to 4 DIMMs per processor are supported up to 16 GB R-DIMMs Unsupported options: • GPUs • NVMe PCIe SSDs • HPE PCIe Workload Accelerator cards • 10/25 Gb two-port 622FLR-SFP28 • 10 Gb two-port 521FLR-T adapter

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
	• 10/25 Gb two-port 621SFP28 adapter • 10 Gb two-port 521T adapter • 40 G/100 G InfiniBand or networking cards	• 10/25 Gb two-port 621SFP28 adapter • 10 Gb two-port 521T adapter • 40 G/100 G InfiniBand or networking cards

16SFF and 24SFF

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
NVMe drives will have Inlet Ambient restrictions.	Not supported.	Not supported.

HPE ProLiant DL580 Gen10 Server

For more information about configuration rules and requirements, see the HPE ProLiant DL580 Gen10 Server documentation on the Hewlett Packard Enterprise website (**https://www.hpe.com/info/DL580Gen10-docs**).

Subtopics

8SFF, 16SFF, 24SFF, and 32SFF
40SFF and 48SFF

8SFF, 16SFF, 24SFF, and 32SFF

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
	Requirements: • Processors: ◦ Up to 4x of the following processors are supported: 6126, 6130, 6138, 8153, 6226, 6230, 6238, 8253 ◦ Up to 4 DIMMs per processor are supported up to 16 GB R-DIMMs Unsupported options: • GPUs • NVMe PCIe SSDs • HPE PCIe Workload Accelerator cards • 10/25 Gb two-port 622FLR-SFP28 • 10 Gb two-port 521FLR-T Adapter • 10/25 Gb two-port 621SFP28 Adapter • 10 Gb two-port 521T Adapter • 40 G/100 G InfiniBand or networking cards	Requirements: • Processors: ◦ Up to 4x of the following processors are supported: 6126, 6130, 6138, 8153, 6226, 6230, 6238, 8253 ◦ Up to 4 DIMMs per processor are supported up to 16 GB R-DIMMs Unsupported options: • GPUs • NVMe PCIe SSDs • HPE PCIe Workload Accelerator cards • 10/25 Gb two-port 622FLR-SFP28 • 10 Gb two-port 521FLR-T Adapter • 10/25 Gb two-port 621SFP28 Adapter • 10 Gb two-port 521T Adapter • 40 G/100 G InfiniBand or networking cards

40SFF and 48SFF

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
NVMe drives will have inlet ambient restrictions.	Not supported.	Not supported.

HPE ProLiant ML30 Gen10 Server

For more information about configuration rules and requirements, see the HPE ProLiant ML30 Gen10 Server documentation on the Hewlett Packard Enterprise website (**https://www.hpe.com/info/ml30gen10-docs**).

Subtopics

Any LFF or SFF with redundant power supply
Any LFF or SFF with ATX power supply

Any LFF or SFF with redundant power supply

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
	Unsupported options: • 2.5” and 3.5” 15/10K rpm SAS HDD • SAS SSD • SATA M.2 • NVMe M.2	Unsupported options: • Any SAS HDD/SSD • SATA M.2 • NVMe M.2 • GPU

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
	• GPU	

Any LFF or SFF with ATX power supply

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
	Not supported.	Not supported.

HPE ProLiant ML110 Gen10 Server

For more information about configuration rules and requirements, see the HPE ProLiant ML110 Gen10 Server documentation on the Hewlett Packard Enterprise website (**https://www.hpe.com/info/ML110Gen10-docs**).

Subtopics

Any SFF or LFF redundant fan kit
Any SFF or LFF standard fan kit

Any SFF or LFF redundant fan kit

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
A redundant power supply is required for a redundant fan kit.	All options supported. A redundant power supply is required for a redundant fan kit.	Not supported.

Any SFF or LFF standard fan kit

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
Unsupported options: • 2.5 inch 15 Krpm SAS on second cage • SAS SSD	Not supported.	Not supported.

HPE ProLiant ML350 Gen10 Server

NOTE:

Any configurations to support ASHRAE A3/A4 compliance must install six standard fans.

For more information about configuration rules and requirements, see the HPE ProLiant ML350 Gen10 Server documentation on the Hewlett Packard Enterprise website (**https://www.hpe.com/info/ML350Gen10-docs**).

Subtopics

16SFF or 8LFF with six standard fans
24SFF or 12LFF with six standard fans
4LFF or 8LFF with six standard fans

16SFF or 8LFF with six standard fans

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
Unsupported options in any configuration: • P3700 2.0 TB NVMe drives • DW GPUs will have inlet ambient temperature restrictions	Unsupported options: • NVDIMM • All NVMe SSDs • I/O Accelerator cards • GPUs • NVMe M.2 • Intel Optane DIMMs	Unsupported options: • Processors: ◦ 6242R, 6244, 6246, 6246R, 6248R, 6250, 6250L, 6252U, 6254, 6256, 6258R, 8260, 8260C, 8268, 8270, 8276, 8280 • NVDIMM • All NVMe SSDs • I/O Accelerator cards • GPUs • SATA M.2 • NVMe M.2
Options based on QuickSpec version 22 (June 1, 2020).		

24SFF or 12LFF with six standard fans

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
Options not supported: • DW GPUs will have inlet ambient temperature restrictions	All A3 options shown in 16SFF or 8LFF configuration not supported.	All A4 options shown in 16SFF or 8LFF configuration not supported.

4LFF or 8LFF with six standard fans

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
Options not supported: • DW GPUs will have inlet ambient temperature restrictions	All A3 options shown in 16SFF or 8LFF configuration not supported.	All A4 options shown in 16SFF or 8LFF configuration not supported.

HPE Synergy 480 Gen10 Compute Module

For more information about configuration rules and requirements, see the HPE ProLiant Synergy 480 Gen10 Compute Module documentation on the Hewlett Packard Enterprise website (**https://www.hpe.com/info/synergy-docs**).

Subtopics

All chassis configurations

All chassis configurations

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
Options not supported in any configuration: • P3700 2.0 TB NVMe drives	Unsupported options: • Processors ◦ 6144, 6146, 6154, 8168, 8180/M ◦ 6240Y, 6242, 6244, 6246, 6246R, 6248R, 6252N, 6254, 6258R, 8268/M/L, 8270, 8280/M/L • LRDIMMs • GPUs • HPE NVMe SSD • Intel Optane DIMMs	Additional options not supported at A4: • Processors ◦ 5122, 6128, 6134/M, 6136, 6148, 6142/M, 6150, 8156, 8158, 8160/M, 8164, 8170/M, 8176/M ◦ 5217, 5220R, 5222, 6222V, 6226, 6226R, 6230R, 6234, 6238/L/M, 6238R, 6240, 6240R, 6242, 6248, 6252, 6262V, 8256/M/L, 8260/M/L/Y, 8276/M/L
Options based on QuickSpec version 20 (April 6, 2020).		

HPE Synergy 660 Gen10 Compute Module

For more information about configuration rules and requirements, see the HPE ProLiant Synergy 660 Gen10 Compute Module documentation on the Hewlett Packard Enterprise website (**https://www.hpe.com/info/synergy-docs**).

Subtopics

4SFF with NVMe HDD

4SFF with NVMe HDD

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
Unsupported options: • P3700 2.0 TB NVMe drives	Unsupported options: • Processors ◦ 6144, 6146, 6154, 8168, 8180/M ◦ 6240Y, 6242, 6244, 6246, 6254, 8268/M/L, 8270, 8280/M/L • HPE NVMe HDD • LRDIMMs • Intel Optane DIMMs	Additional options not supported at A4: • Processors ◦ 5122M, 6128, 6134/M, 6136, 6142/M, 6148, 6150, 8156, 8158, 8160/M, 8164, 8170/M, 8176/M ◦ 5217, 5222, 6222V, 6226, 6234, 6238/L/M, 6240, 6242, 6248, 6252, 6262V, 8256/M/L, 8260/M/L/Y, 8276/M/L
Options based on QuickSpec version 16 (April 6, 2020).		

HPE ProLiant XL170r Gen10 Server

For more information about configuration rules and requirements, see the HPE ProLiant XL170r Gen10 Server documentation on the Hewlett Packard Enterprise website (**https://www.hpe.com/info/XL170r-Gen10-UG-en**).

Subtopics

R2200: 12LFF
R2600: 24SFF combo
R2800: 24SFF with a SAS expander
R2800: 16NVMe

R2200: 12LFF

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
Up to 12 drives (for drives with capacity < 10TB) • Unsupported options: ◦ 64GB and 128GB LRDIMMs on redundant fan SKU ◦ HPE Persistent Memory module ◦ Fibre channel host bus adapter ◦ Converged network adapter with an optical cable ◦ PCIe NIC cards with SFP+, SFP28, QSFP, or QSFP28 transceivers and an optical cable ◦ InfiniBand adapters with QDR, FDR, or EDR speed and an optical cable ◦ FlexibleLOM adapters with SFP+, SFP28, or QSFP transceivers and an optical cable • Options with limitations: ◦ 6126, 6126F, 6130, 6130F, 6132, 6134, 6136, 6138, 6138F, 6140, 6142, 6144, 6148, 6152, 8153, 8158, 8160, 8164, 5218, 5220, 6226, 6230, 6234, 6238, 6240, 6242, 6248, 62	Unsupported options: • Front drive at bays 2 and 3 • 6244 processor • PPA (Processor Power Adjustment) • 128 GB LRDIMM • 64 GB LRDIMM on redundant fan SKU • HPE Persistent Memory module • P408i-p and P408e-p storage cards • 96W HPE Smart Storage Battery • Fibre channel host bus adapter • Converged network adapter with an optical cable • PCIe NIC cards with SFP+, SFP28, QSFP, or QSFP28 transceivers and an optical cable • FlexibleLOM • Media Module Ethernet 10Gb 2p 568FLR-MMSFP+ adapter with an optical cable and Media Module Ethernet 10Gb 2p 568FLR-MMT adapter	Not supported.

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
52, and 8253 processors limited to 30°C ◦ 6244 processor limited to 25°C ◦ 32 GB RDIMM on redundant fan SKU limited to 30°C ◦ P408i-p & P408e-p storage cards limited to 22°C ◦ E208e-p storage cards limited to 30°C ◦ Converged network adapter with a copper cable limited to 30°C ◦ PCIe NIC cards with SFP+, SFP28, or QSFP transceivers and a copper cable limited to 30°C ◦ PCIe NIC cards with QSFP28 transceivers and a copper cable limited to 25°C ◦ InfiniBand adapters with QDR or FDR speed and a copper cable limited to 30°C ◦ InfiniBand adapters with EDR speed and a copper cable limited to 25°C ◦ FlexibleLOM adapters with SFP+, SFP28 or QSFP transceivers and a copper cable limited to 30°C ◦ Media Module Ethernet 10Gb 2p 568FLR-MMSFP+ adapter and Media Modul	• InfiniBand adapter with QDR, FDR, or EDR speed and an optical cable • Single PSU module • PSU redundancy	

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
e Ethernet 10Gb 2p 568 FLR-MMT adapter limited to 30°C **Up to 12 drives (for drives with capacity ≥ 10TB)** • Unsupported options: ◦ 6244 processor ◦ 64GB and 128GB LRDIMMs on redundant fan SKU ◦ HPE Persistent Memory module ◦ P408i-p storage card ◦ Fibre channel host bus adapter ◦ Converged network adapter with an optical cable ◦ PCIe NIC cards with SFP+, SFP28, QSFP, or QSFP28 transceivers and an optical cable ◦ InifiniBand adapters with QDR, FDR, or EDR speed and an optical cable ◦ FlexibleLOM adapters with SFP+, SFP28, or QSFP transceivers and an optical cable • Options with limitations: ◦ 6126, 6126F, 6130, 6130F, 6132, 6134, 6136, 6138, 6138F, 6140, 6142, 6144, 6148, 6152, 8153, 81		

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
58, 8160, 8164, 5218, 5220, 6226, 6230, 6234, 6238, 6240, 6242, 6248, 6252, and 8253 processors limited to 25°C ◦ 32 GB RDIMM on redundant fan SKU limited to 30°C ◦ P408e-p storage card limited to 22°C ◦ E208i-p and E208e-p storage cards limited to 28°C ◦ Converged network adapter with a copper cable limited to 25°C ◦ PCIe NIC cards with SFP+, SFP28 or QSFP transceivers and a copper cable limited to 25°C ◦ PCIe NIC cards with QSFP28 transceivers and a copper cable limited to 22°C ◦ InfiniBand adapters with QDR or FDR speed and a copper cable limited to 25°C ◦ InfiniBand adapters with EDR speed and a copper cable limited to 22°C ◦ FlexibleLOM adapters with SFP+, SFP28 or QSFP transceivers and a copper cable limited to 25°C ◦ Media Module Ethernet 10Gb 2p 568FLR-MMSFP+		

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
adapter and Media Module Ethernet 10Gb 2p 568 FLR-MMT adapter limited to 30°C **Up to 8 drives (populated at bays 1 and 3)** • Options with limitations: ◦ 6244 processor limited to 30°C ◦ 128 GB LRDIMM on redundant fan SKU limited to 30 °C ◦ HPE Persistent Memory module limited to 25°C ◦ P408i-p and P408e-p storage cards limited to 30°C ◦ Fibre channel host bus adapter limited to 28°C ◦ Converged network adapter with an optical cable limited to 28°C ◦ PCIe NIC cards with SFP+, SFP28 or QSFFP transceivers and an optical cable limited to 28°C ◦ PCIe NIC cards with QSFP28 transceivers and an optical cable limited to 22 °C ◦ InfiniBand adapters with QDR or FDR speed and an optical cable limited to 28 °C		

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
◦ InfiniBand adapters with EDR speed and an optical cable limited to 22°C ◦ FlexibleLOM adapters with SFP+, SFP28 or QSFP transceivers and an optical cable limited to 25°C		

R2600: 24SFF combo

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
Options with limitations: • 6244 processor limited to 28 °C • 128 GB LRDIMM on redundant fan SKU limited to 30°C • HPE Persistent Memory module limited to 22°C • P408i-p storage card limited to 28°C • P408e-p storage card limited to 30°C • Fibre channel host bus adapter limited to 25°C	Unsupported options: • Front drives in bays 3, 4, 5, and 6 • NVMe drives • 6244 processor • PPA (Processor Power Adjustment) • 128 GB LRDIMM • 64 GB LRDIMM on redundant fan SKU • HPE Persistent Memory module • P408i-p and P408e-p storage cards	Not supported.

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
• Converged network adapter with an optical cable limited to 25°C • PCIe NIC cards with SFP+, SFP28, or QSFP transceivers and an optical cable limited to 25 °C • PCIe NIC cards with QSFP28 transceivers and an optical cable limited to 22°C • InfiniBand adapters with QDR or FDR speed and an optical cable limited to 25°C • InfiniBand adapters with EDR speed and an optical cable limited to 22°C • FlexibleLOM adapters with SFP+, SFP28, or QSFP transceivers and an optical cable limited to 25°C • Media Module Ethernet 10Gb 2p 568FLR-MMT adapter limited to 30°C	• 96W HPE Smart Storage Battery • Fibre channel host bus adapter • Converged network adapter with an optical cable • PCIe NIC cards with SFP+, SFP28, QSFP or SFP28 transceivers and an optical cable • FlexibleLOM • Media Module Ethernet 10Gb 2p 568FLR-MMSFP+ adapter with an optical cable & Media Module Ethernet 10Gb 2p 568FLR-MMT adapter • InfiniBand adapter with QDR, FDR, or EDR speed and an optical cable • Single PSU module • PSU redundancy	

R2800: 24SFF with a SAS expander

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
Unsupported options: • HPE Persistent Memory module Options with limitations: • 6244 processor limited to 28 °C • 128 GB LRDIMM on redundant fan SKU limited to 30°C • P408i-p storage card limited to 28°C • P408e-p storage card limited to 30°C • Fibre channel host bus adapter limited to 25°C • Converged network adapter with an optical cable limited to 25°C • PCIe NIC cards with SFP+, SFP28 or QSFFP transceivers and an optical cable limited to 25°C • PCIe NIC cards with QSFP28 transceivers and an optical cable limited to 22°C • InfiniBand adapters with QDR or FDR speed and an optical cable limited to 25°C	Not supported.	Not supported.

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
• InfiniBand adapters with EDR speed and an optical cable limited to 22°C • FlexibleLOM adapters with SFP+, SFP28, or QSFP transceivers and an optical cable limited to 25°C • Media Module Ethernet 10Gb 2p 568FLR-MMT adapter limited to 30°C		

R2800: 16NVMe

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
Options with limitations: • 6244 processor limited to 30 °C • HPE Persistent Memory module limited to 22°C • P408e-p storage cards limited to 30°C • Fibre channel host bus adapter limited to 25°C • Converged network adapter with an optical cable limited to 25°C	Not supported.	Not supported.

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
• PCIe NIC cards with SFP+, SFP28, or QSFP transceivers and an optical cable limited to 25 °C • PCIe NIC cards with QSFP28 transceivers and an optical cable limited to 22°C • InfiniBand adapters with QDR or FDR speed and an optical cable limited to 25°C • InfiniBand adapters with EDR speed and an optical cable limited to 22°C • FlexibleLOM adapters with SFP+, SFP28, or QSFP transceivers and an optical cable limited to 25°C • Media Module Ethernet 10Gb 2p 568FLR-MMT adapter limited to 30°C		

HPE ProLiant XL190r Gen10 Server

For more information about configuration rules and requirements, see the HPE ProLiant XL190r Gen10 Server documentation on the Hewlett Packard Enterprise website (**https://www.hpe.com/info/XL190r-Gen10-UG-en**).

Subtopics

R2200: 12LFF
R2600: 24SFF combo
R2800: 24SFF with a SAS expander
R2800: 16NVMe

R2200: 12LFF

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
Up to 12 drives (for drives with capacity < 10TB) • Unsupported options: ◦ Fibre channel host bus adapter ◦ Converged network adapter with an optical cable ◦ HPE Persistent Memory module ◦ PCIe NIC cards with SFP+, SFP28, QSFP, or QSFP28 transceivers and an optical cable ◦ InfiniBand adapters with QDR, FDR, or EDR speed and an optical cable ◦ FlexibleLOM adapters with SFP+, SFP28, or QSFP transceivers and an optical cable ◦ P40, P100, V100 16GB, T4, and V100 32GB GPU cards • Options with limitations: ◦ 6136, 6142, 6144, 6148, 8158, 8160, 8164, 6240,	Unsupported options: • Front drives in bays 2, 3, 10, and 11 • System fan redundancy • Processors ◦ 6136, 6142, 6144, 6148, 8158, 8160, 8164, 6240, 6242, 6244, 6248, and 6252 • PPA (Processor Power Adjustment) • P408i-p and P408e-p storage cards • 96W HPE Smart Storage Battery • Fibre channel host bus adapter • HPE Persistent Memory module • Converged network adapter with an optical cable • PCIe NIC cards with SFP+, SFP28, QSFP, or QSFP28 transceivers and an optical cable • FlexibleLOM	Not supported.

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
6242, 6248, and 6252 processors limited to 25°C ◦ 6244 processor limited to 22°C ◦ 6126, 6126F, 6128, 6130, 6130F, 6132, 6134, 6138, 6138F, 6140, 6152, 8153, 5217, 5218, 5220, 6226, 6230, 6234, 6238, and 8253 processors limited to 30°C ◦ P408i-p storage cards limited to 22°C ◦ P408e-p storage card limited to 25°C ◦ E208i-p storage card limited to 30°C ◦ E208e-p storage card limited to 28°C ◦ Converged network adapter with a copper cable limited to 30°C ◦ PCIe NIC cards with SFP+, SFP28, or QSFP transceivers and a copper cable limited to 30°C ◦ PCIe NIC cards with QSFP28 transceivers and a copper cable limited to 28°C ◦ InfiniBand adapters with QDR or FDR speed and a copper cable limited to 30°C	• InfiniBand adapter with QDR, FDR or EDR speed and an optical cable • Single PSU module • PSU redundancy • M10, P4, P40, P100, V100 16 GB, V100 32GB, and T4 GPU cards	

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
◦ InfiniBand adapters with EDR speed and a copper cable limited to 28°C ◦ FlexibleLOM adapters with SFP+, SFP28, or QSFP transceivers and a copper cable limited to 30°C ◦ Media Module Ethernet 10Gb 2p 568FLR-MMSFP+ adapter and Media Module Ethernet 10Gb 2p 568 FLR-MMT adapter limited to 30°C ◦ PCIe accelerators limited to 30°C ◦ M10 GPU card limited to 22°C ◦ P4 GPU card limited to 22 °C **Up to 12 drives (for drives with capacity ≥ 10TB)** • Unsupported options: ◦ 6244 processor ◦ P408i-p storage card ◦ Fibre channel host bus adapter ◦ HPE Persistent Memory module ◦ Converged network adapter with an optical cable ◦ PCIe NIC cards with SFP+, SFP28, QSFP, or QSFP28 t		

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
ransceivers and an optical cable ◦ InfiniBand adapters with QDR, FDR, or EDR speed and an optical cable ◦ FlexibleLOM adapters with SFP+, SFP28, or QSFP transceivers and an optical cable ◦ M10, P4, P40, P100, V100 16GB, T4, and V100 32 GB GPU cards • Options with limitations: ◦ 6136, 6142, 6144, 6148, 8158, 8160, 8164, 6240, 6242, 6248, and 6252 processors limited to 25°C ◦ 6126, 6126F, 6128, 6130, 6130F, 6132, 6134, 6138, 6138F, 6140, 6152, 8153, 5217, 5218, 5220, 6226, 6230, 6234, 6238, and 8253 processors limited to 30°C ◦ P408e-p storage card limited to 25°C ◦ E208i-p storage card limited to 30°C ◦ E208e-p storage card limited to 28°C ◦ Converged network adapter with a copper cable limited to 28°C		

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
◦ PCIe NIC cards with SFP+, SFP28, or QSFP transceivers and a copper cable limited to 28°C ◦ PCIe NIC cards with QSFP28 transceivers and a copper cable limited to 25°C ◦ InfiniBand adapters with QDR or FDR speed and a copper cable limited to 28°C ◦ InfiniBand adapters with EDR speed and a copper cable limited to 25°C ◦ FlexibleLOM adapters with SFP+, SFP28, or QSFP transceivers and a copper cable limited to 28°C ◦ Media Module Ethernet 10Gb 2p 568FLR-MMSFP + adapter and Media Module Ethernet 10Gb 2p 568 FLR-MMT adapter limited to 30°C ◦ PCIe accelerators limited to 30°C **Up to 8 drives (populated at bays 1, 3, 9, and 11)** • Unsupported options: ◦ P100, V100 16GB and V100 32GB GPU cards • Options with limitations: ◦ 6136, 6142, 6144, 6148, 8158, 8160, 8164, 6240,		

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
6242, 6248, and 6252 processors limited to 30°C ◦ 6244 processor limited to 28°C ◦ HPE Persistent Memory module limited to 22°C ◦ P408i-p and P408e-p storage cards limited to 30°C ◦ Fibre channel host bus adapter limited to 28°C ◦ Converged network adapter with an optical cable limited to 28°C ◦ PCIe NIC cards with SFP+, SFP28, or QSFP transceivers and an optical cable limited to 28°C ◦ PCIe NIC cards with QSFP28 transceivers and an optical cable limited to 25°C ◦ InfiniBand adapters with QDR or FDR speed and an optical cable limited to 28°C ◦ InfiniBand adapters with EDR speed and an optical cable limited to 25°C ◦ FlexibleLOM adapters with SFP+, SFP28, or QSFP transceivers and an optical cable limited to 28°C		

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
◦ P4 GPU card limited to 30 °C ◦ P40 GPU card limited to 25°C ◦ T4 GPU card limited to 22 °C **Up to 6 drives (populated at first 3 bays of each node)** • Options with limitations: ◦ P100 GPU card limited to 25°C ◦ V100 16GB and V100 32 GB GPU cards limited to 25°C on non-redundant fan SKU and 22°C on redundant fan SKU		

R2600: 24SFF combo

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
Up to 24 drives • Unsupported options: ◦ P100, V100 16GB, and V100 32GB GPU cards • Options with limitations:	Unsupported options: • Front drives in bays 3, 4, 5, 6, 11, 12, 13, and 14 • NVMe drives • System fan redundancy • Processors	Not supported.

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
◦ 6136, 6142, 6144, 6148, 8158, 8160, 8164, 6240, 6242, 6248, and 6252 processors limited to 30°C ◦ 6244 processor limited to 25°C ◦ HPE Persistent Memory module limited to 22°C ◦ P408i-p and P408e-p storage cards limited to 30°C ◦ Fibre channel host bus adapter limited to 28°C ◦ Converged network adapter with an optical cable limited to 28°C ◦ PCIe NIC cards with SFP+, SFP28, or QSFP transceivers and an optical cable limited to 28°C ◦ PCIe NIC cards with QSFP28 transceivers and an optical cable limited to 22°C ◦ InfiniBand adapters with QDR or FDR speed and an optical cable limited to 28°C ◦ InfiniBand adapters with EDR speed and an optical cable limited to 22°C ◦ FlexibleLOM adapters with SFP+, SFP28, or QSFP t	◦ 6136, 6142, 6148, 8158, 8160, 8164, 6240, 6242, 6244, 6248, and 6252 • PPA (Processor Power Adjustment) • HPE Persistent Memory module • P408i-p and P408e-p storage cards • 96W HPE Smart Storage Battery • Fibre channel host bus adapter • Converged network adapter with an optical cable • PCIe NIC cards with SFP+, SFP28, QSFP, or QSFP28 transceivers and an optical cable • FlexibleLOM • InfiniBand adapter QDR, FDR, or EDR speed and an optical cable • Single PSU module • PSU redundancy • M10, P4, P40, P100, V100 16GB, T4, and V100 32GB GPU cards	

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
ransceivers and an optical cable limited to 28°C ◦ P4 GPU card limited to 28 °C ◦ P40 GPU card limited to 25°C ◦ T4 GPU card limited to 22 °C **Up to 12 drives (populated at first 6 bays of each node)** • Options with limitations: ◦ P100 GPU card limited to 22°C for mix of SFF and NVMe drives and 25°C for SFF smart drives only ◦ V100 16GB and V100 32GB GPU cards limited to 22°C		

R2800: 24SFF with a SAS expander

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
Up to 24 drives • Unsupported options: ◦ P100, V100 16GB, and V100 32GB GPU cards	Not supported.	Not supported.

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
• Options with limitations: ◦ 6136, 6142, 6144, 6148, 8158, 8160, 8164, 6240, 6242, 6248, and 6252 processors limited to 30°C ◦ 6244 processor limited to 25°C ◦ HPE Persistent Memory module limited to 22°C ◦ P408i-p and P408e-p storage cards limited to 30°C ◦ Fibre channel host bus adapter limited to 25°C ◦ Converged network adapter with an optical cable limited to 25°C ◦ PCIe NIC cards with SFP+, SFP28, or QSFP transceivers and an optical cable limited to 25°C ◦ PCIe NIC cards with QSFP28 transceivers and an optical cable limited to 22°C ◦ InfiniBand adapters with QDR or FDR speed and an optical cable limited to 25°C ◦ InfiniBand adapters with EDR speed and an optical cable limited to 22°C ◦ FlexibleLOM adapters with SFP+, SFP28, or QSFP t		

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
ransceivers and an optical cable limited to 25°C ◦ P4 GPU card limited to 28 °C ◦ T4 and P40 GPU cards limited to 22°C		

R2800: 16NVMe

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
Up to 16 drives • Unsupported options: ◦ P408i-p storage card ◦ V100 16GB GPU card on non-redundant fan SKU ◦ V100 32GB GPU card • Options with limitations: ◦ 6244 processor limited to 25°C ◦ P408e-p storage cards limited to 30°C ◦ Fibre channel host bus adapter limited to 28°C	Not supported.	Not supported.

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
◦ Converged network adapter with an optical cable limited to 28°C ◦ PCIe NIC cards with SFP+, SFP28, or QSFP transceivers and an optical cable limited to 28°C ◦ PCIe NIC cards with QSFP28 transceivers and an optical cable limited to 22°C ◦ InfiniBand adapters with QDR or FDR speed and an optical cable limited to 28°C ◦ InfiniBand adapters with EDR speed and an optical cable limited to 22°C ◦ FlexibleLOM adapters with SFP+, SFP28, or QSFP transceivers and an optical cable limited to 28°C ◦ P4 GPU card limited to 25°C ◦ P40 GPU card limited to 25°C on non-redundant fan SKU and 28°C on redundant fan SKU ◦ P100 GPU card limited to 22°C ◦ V100 16GB GPU card limited to 22°C on redundant fan SKU		

Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40°C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45°C Operating Support (ASHRAE Class A4 compliant)
◦ HPE Persistent Memory module limited to 25°C ◦ T4 GPU card limited to 22 °C **Up to 8 drives (populated at first 4 bays of each node)** • Options with limitation: ◦ V100 16GB GPU card limited to 22°C on non-redundant fan SKU **Up to 4 drives (populated at first 2 bays of each node)** • Options with limitations: ◦ V100 32GB GPU card limited to 22°C		

HPE ProLiant XL230k Gen10 Server

For more information about configuration rules and requirements, see the HPE ProLiant XL230k Gen10 Server documentation on the Hewlett Packard Enterprise website (**https://www.hpe.com/info/XL230kGen10-docs**).

Subtopics

No HDD backplane
4SFF/µFF
4NVMe

No HDD backplane

External PCI	Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40 °C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45 °C Operating Support (ASHRAE Class A4 compliant)
No External PCI	Unsupported options: • 6137 processors limited to 25°C • 6250, 6256 processors limited to 25°C	Unsupported options: • 6137 • 6250, 6256, 6246R, 6248R, 6258R • Fabric mezzanine	Unsupported options: • 6137 • 6250, 6256, 6242R, 6246R, 6248R, 6258R • Fabric mezzanine
External PCI present	All options above not supported plus: • Processors ◦ 6258R processors limited to 25°C	All options above not supported plus: • Processors ◦ 6154, 8168, 8180 ◦ 6244, 6242R, 6254, 8268, 8270, 8280	All options above not supported plus: • 6154, 8168, 8180 • 6244, 6254, 8268, 8270, 8280

4SFF/µFF

External PCI	Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40 °C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45 °C Operating Support (ASHRAE Class A4 compliant)
No External PCI	Unsupported options: • Processors	Unsupported options: • Processors	Unsupported options: • Processors

External PCI	Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40 °C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45 °C Operating Support (ASHRAE Class A4 compliant)
	◦ 6137 ◦ 6250, 6256 ◦ 6242R, 6246R, 6248R processors limited to 30°C ◦ 6258R processors limited to 25°C	◦ 6135, 6137, 6143, 6144, 6146, 6154, 8165, 8168, 8180 ◦ 6242R, 6246R, 6248R, 6250, 6254, 6256, 6258R, 8268, 8270, 8280 • I/O Accelerator • Fabric mezzanine	◦ 5122, 6128, 6134, 6136, 6137, 6142, 6144, 6146, 6148, 6150, 6154, 8156, 8158, 8160, 8164, 8168, 8170, 8176, 8180 ◦ 5222, 6226R, 6230R, 6240, 6242, 6242R, 6244, 6246R, 6248, 6248R, 6250, 6254, 6256, 6258R, 8256, 8260, 8268, 8270, 8276, 8280 • LRDIMM • I/O Accelerator • Fabric mezzanine
External PCI present	All options above not supported plus: • Processors ◦ 6154, 8168, 8180 ◦ 6254, 6258R, 8268, 8270, 8280 ◦ 6242R, 6246R, 6248R processors limited to 25°C	All options above not supported plus: • Processors ◦ 5122, 8156, 8176F ◦ 5222, 6244, 8256	All options above not supported plus: • Processors ◦ 6132 ◦ 5217

4NVMe

External PCI	Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40 °C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45 °C Operating Support (ASHRAE Class A4 compliant)
No External PCI	Unsupported options: • 6137 • 6250, 6256 • 6242R, 6246R, 6248R, 6258R processors limited to 25°C • I/O Accelerator	Unsupported options: • Processors ◦ 5122, 6128, 6134, 6137, 6146, 6154, 8156, 8168, 8180 ◦ 5222, 6254, 8256, 8268, 8270, 8280 • I/O Accelerator • Fabric mezzanine	Unsupported options: • Processors ◦ 5122, 6128, 6132, 6134, 6136, 6137, 6142, 6144, 6146, 6148, 6150, 6154, 8156, 8158, 8160, 8164, 8168, 8170, 8176, 8180 ◦ 5217, 5222, 6226R, 6230R, 6240, 6242, 6244, 6248, 6252, 6254, 8256, 8260, 8268, 8270, 8276, 8280 • LRDIMM • I/O Accelerator • Fabric mezzanine
External PCI present	All options above not supported plus: • Processors ◦ 6146, 6154, 8168, 8180 limited to 30°C	All options above not supported plus: • Processors ◦ 6136, 6142, 6144, 6148, 6150, 8158, 8160, 8164, 8170, 8176 ◦ 5222, 6226R, 6230R, 6240, 6242,	All options above not supported plus: • Processors ◦ 5217R

External PCI	Hewlett Packard Enterprise Standard Operating Support (All options supported unless otherwise noted.)	Hewlett Packard Enterprise Extended Ambient 40 °C Operating Support (ASHRAE Class A3 compliant)	Hewlett Packard Enterprise Extended Ambient 45 °C Operating Support (ASHRAE Class A4 compliant)
	◦ 6254, 8268, 8270, 8280 limited to 30°C	6244, 6248, 6252, 8256, 8260, 8276	

Options based on QuickSpec version 24 (June 15, 2020).

Websites

QuickSpecs

https://www.hpe.com/info/qs

Hewlett Packard Enterprise Support Center

https://www.hpe.com/support/hpesc

For additional websites, see Support and other resources.

Support and other resources

Subtopics

Accessing Hewlett Packard Enterprise Support
Accessing updates
Remote support
Customer self repair
Warranty information
Regulatory information
Documentation feedback

Accessing Hewlett Packard Enterprise Support

- For live assistance, go to the Contact Hewlett Packard Enterprise Worldwide website:

  https://www.hpe.com/info/assistance

- To access documentation and support services, go to the Hewlett Packard Enterprise Support Center website:

  https://www.hpe.com/support/hpesc

Information to collect

- Technical support registration number (if applicable)
- Product name, model or version, and serial number
- Operating system name and version
- Firmware version
- Error messages
- Product-specific reports and logs
- Add-on products or components
- Third-party products or components

Accessing updates

- Some software products provide a mechanism for accessing software updates through the product interface. Review your product documentation to identify the recommended software update method.
- To download product updates:

  Hewlett Packard Enterprise Support Center

  https://www.hpe.com/support/hpesc

  My HPE Software Center

  https://www.hpe.com/software/hpesoftwarecenter

- To subscribe to eNewsletters and alerts:

  https://www.hpe.com/support/e-updates

- To view and update your entitlements, and to link your contracts and warranties with your profile, go to the Hewlett Packard Enterprise Support Center **More Information on Access to Support Materials** page:

  https://www.hpe.com/support/AccessToSupportMaterials

> **IMPORTANT:**
> Access to some updates might require product entitlement when accessed through the Hewlett Packard Enterprise Support Center. You must have an HPE Onepass set up with relevant entitlements.

Remote support

Remote support is available with supported devices as part of your warranty or contractual support agreement. It provides intelligent event diagnosis, and automatic, secure submission of hardware event notifications to Hewlett Packard Enterprise, which initiates a fast and accurate resolution based on the service level of your product. Hewlett Packard Enterprise strongly recommends that you register your device for remote support.

If your product includes additional remote support details, use search to locate that information.

HPE Get Connected

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

HPE Tech Care Service

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

HPE Complete Care

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

Customer self repair

Hewlett Packard Enterprise customer self repair (CSR) programs allow you to repair your product. If a CSR part needs to be replaced, it will be shipped directly to you so that you can install it at your convenience. Some parts do not qualify for CSR.

For more information about CSR, contact your local service provider.

Warranty information

To view the warranty information for your product, see the **warranty check tool**.

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:

https://www.hpe.com/support/Safety-Compliance-EnterpriseProducts

Additional regulatory information

Hewlett Packard Enterprise is committed to providing our customers with information about the chemical substances in our products as needed to comply with legal requirements such as REACH (Regulation EC No 1907/2006 of the European Parliament and the Council). A chemical information report for this product can be found at:

https://www.hpe.com/info/reach

For Hewlett Packard Enterprise product environmental and safety information and compliance data, including RoHS and REACH, see:

https://www.hpe.com/info/ecodata

For Hewlett Packard Enterprise environmental information, including company programs, product recycling, and energy efficiency, see:

https://www.hpe.com/info/environment

Documentation feedback

Hewlett Packard Enterprise is committed to providing documentation that meets your needs. To help us improve the documentation, use the **Feedback** button and icons (at the bottom of an opened document) on the Hewlett Packard Enterprise Support Center portal (**https://www.hpe.com/support/hpesc**) to send any errors, suggestions, or comments. This process captures all document information.