HPE Synergy 660 Gen10 Compute Module Maintenance and Service Guide

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HPE Synergy 660 Gen10 Compute Module Maintenance and Service Guide

Abstract

This document is for the person who installs, administers, and troubleshoots compute modules and storage systems. Hewlett Packard Enterprise assumes you are qualified in the servicing of computer equipment and trained in recognizing hazards in products with hazardous energy levels.

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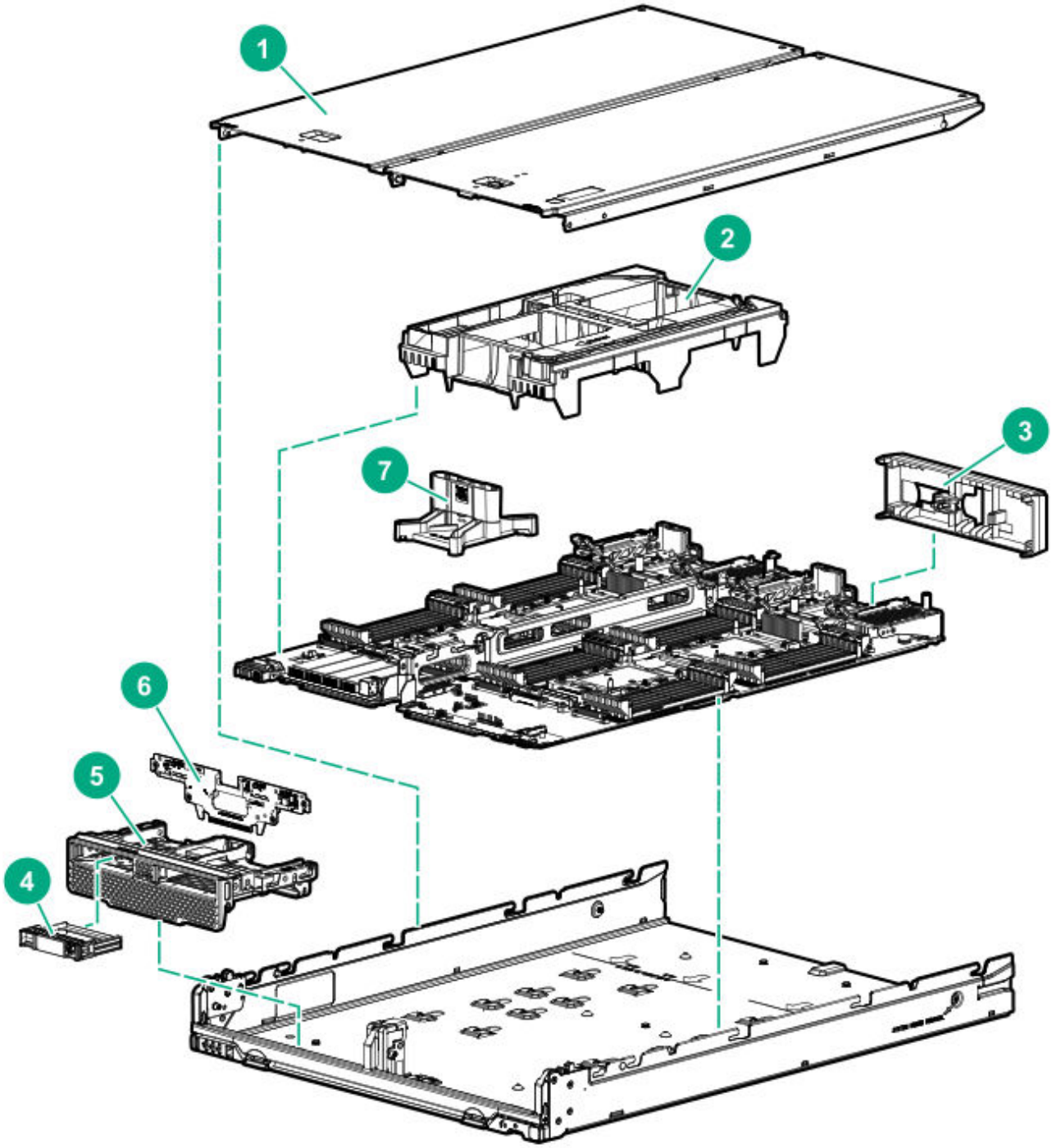
Illustrated parts catalog

Subtopics

Mechanical components
System components
Compute module options

Mechanical components

Hewlett Packard Enterprise continually improves and changes product parts. See the **Hewlett Packard Enterprise PartSurfer website** for complete and current supported parts information.



Item	Description
1	Access panel spare part
2	DIMM baffle spare parts
3	Compute module end cap spare part

Item	Description
4	SFF drive blank spare part
5	Front panel/drive cage assembly spare parts
6	Drive backplane spare parts
7	Heatsink blank spare part

See Removal and replacement procedures for more information.

Subtopics

Access panel spare part
DIMM baffle spare parts
Compute module end cap spare part
SFF drive blank spare part
Front panel/drive cage assembly spare parts
Drive backplane spare parts
Rear heatsink blank spare part

Access panel spare part

Customer self repair: **mandatory**

Description	Spare part number
Access panel	873087-001

DIMM baffle spare parts

Customer self repair: **mandatory**

Description	Spare part number
DIMM baffles	873088-001

Compute module end cap spare part

Customer self repair: **mandatory**

Description	Spare part number
Compute module end cap	813579-001

SFF drive blank spare part

Customer self repair: **mandatory**

Description	Part number
SFF drive blank	670033-001

Front panel/drive cage assembly spare parts

Customer self repair: **mandatory**

Description	Spare part number
Drive cage with bezel	873079-001
Drive cage with bezel (no drives)	830892-001

Drive backplane spare parts

Customer self repair: **optional**

Description	Spare part number
Standard drive backplane	873075-001
Premium drive backplane	873076-001

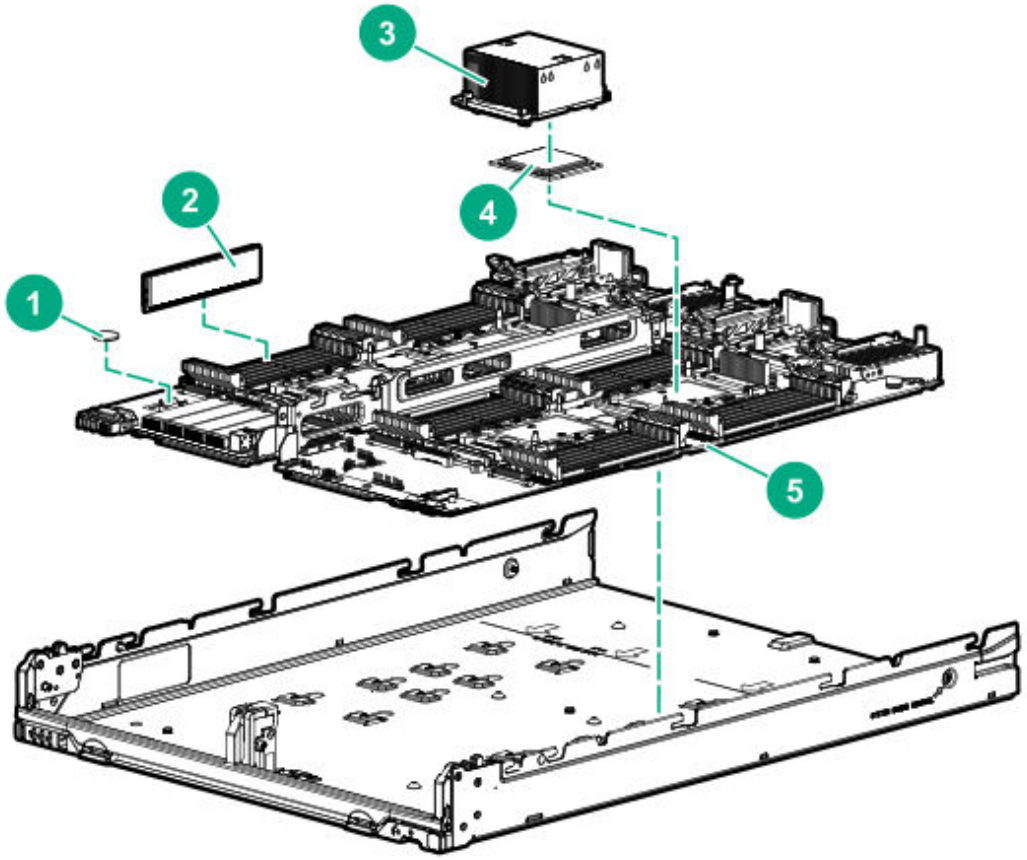
Rear heatsink blank spare part

Customer self repair: **mandatory**

Description	Spare part number
Rear heatsink blank	873080-001

System components

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Item	Description
1	System battery spare part
2	DIMM spare parts HPE Persistent Memory module spare parts HPE 16GB NVDIMM spare part [1]
3	Processor heatsink spare part
4	First-generation Intel Xeon Scalable Processor spare parts Second-generation Intel Xeon Scalable Processor spare parts
5	System board spare part

[1] Not shown

See Removal and replacement procedures for more information.

Subtopics

System battery spare part
DIMM spare parts
Processor heatsink spare parts
First Generation Intel Xeon Scalable Processor spare parts
Second-Generation Intel Xeon Scalable Processor spare parts
System board spare parts
HPE 16GB NVDIMM spare part
Persistent memory module spare parts

System battery spare part

Customer self repair: **mandatory**

Description	Spare part number
System battery	234556-001

DIMM spare parts

Customer self repair: **mandatory**

Table 1. 2666 MT/s DIMMs

Description	Spare part number
8-GB, 1Gx8, PC4-2666V-R	850879-001
16-GB, 2Gx4, PC4-2666V-R	850880-001
16-GB, 1Gx8, PC4-2666V-R	868846-001
32-GB, 2Gx4, PC4-2666V-L	850881-001
64-GB, 2Gx4, PC4-2666V-L	850882-001
128-GB, 2Gx4, PC4-2666V-L	850883-001

Table 2. 2933 MT/s DIMMs

Description	Spare part number
8-GB, 1Rx8, PC4-2933Y-R	P06186-001

Description	Spare part number
16-GB, 1Rx4 PC4-2933Y-R	P06187-001
16-GB, 2Rx8 PC4-2933Y-R	P06188-001
16-GB, 1Gx8, PC4-2933Y-R, SAM	P12416-001
32-GB, 2Rx4 PC4-2933Y-R	P06189-001
32-GB, 2Gx4, PC4-2933Y-R, SAM	P12417-001
64-GB, 4Rx4 PC4-2933Y-L	P06190-001
64-GB, 2Rx4 PC4-2933Y-R	P06192-001
64-GB, 4Gx4, PC4-2933Y-R, SAM	P12418-001
128-GB, 8Rx4 PC4-2933Y-L 3DS	P06191-001

Processor heatsink spare parts

Customer self repair: **no**

Description	Spare part number
Front processor heatsink (processors 1 and 2)	873081-001
Rear processor heatsink (processors 3 and 4)	873082-001

First Generation Intel Xeon Scalable Processor spare parts

Customer self repair: **no**

All Intel Xeon processors in this HPE ProLiant server must have the same cache size, speed, number of cores, and rated maximum power consumption.

Table 1. 51XX processors

Description	Spare part number
Xeon-G 5115 10c 85W (GHz? Not found in partsurfer)	878082-001
Xeon-G 5118 12c 2.3-GHz 105W	875717-001
Xeon-G 5120 14c 2.2-GHz105W	875718-001
Xeon-G 5122 4c 3.6-GHz 105W	875719-001

Table 2. 61XX processors

Description	Spare part number
Xeon-G 6126 12c 2.6-GHz 125W	875720-001
Xeon-G 6128 6c 3.4-GHz 115W	875721-001
Xeon-G 6130 16c 2.1-GHz 125W	874736-001
Xeon-G 6132 14c 2.6-GHz 140W	875722-001
Xeon-G 6134 8c 3.2-GHz 130W	875723-001
Xeon-G 6136 12c 3.0-GHz 150W	875724-001
Xeon-G 6138 20c 2.0-GHz 125W	874735-001
Xeon-G 6140 18c 2.3-GHz 140W	874734-001
Xeon-G 6140M 18c 2.3-GHz 140W	878084-001
Xeon-G 6142 16c 2.6-GHz 150W	874733-001
Xeon-G 6142M 16c 2.6-GHz 150W	878085-001
Xeon-G 6143 16c 2.8-GHz 205W	882169-001
Xeon-G 6144 8c 3.5-GHz 150W	875725-001
Xeon-G 6146 12c 3.2-GHz 165W	875726-001
Xeon-G 6148 20c 2.4-GHz 150W	874732-001
Xeon-G 6150 18c 2.7-GHz 165W	874731-001
Xeon-G 6152 22c 2.1-GHz 140W	874730-001
Xeon-G 6154 18c 3.0-GHz 200W	875727-001

Table 3. 81XX processors

Description	Spare part number
Xeon-P 8153 16c 2.0-GHz 120W	875728-001

Description	Spare part number
Xeon-P 8156 4c 2.1-GHz 105W	875732-001
Xeon-P 8158 12c 3.0-GHz 150W	875733-001
Xeon-P 8160 24C 2.1-GHz 150W	874729-001
Xeon-P 8160M 24c 3.6-GHz 150W	878086-001
Xeon-P 8164 26c 2.0-GHz 150W	875729-001
Xeon-P 8165 24c 2.3-GHz 205W	P00868-001
Xeon-P 8168 24c 2.70-GHz 205W	875730-001
Xeon-P 8170 26c 2.1-GHz 165W	874728-001
Xeon-P 8176 28c 2.1-GHz 165W	874727-001
Xeon-P 8180M 28c 2.5-GHz 205W	878089-001
Xeon-P 8180 28c 2.50-GHz 205W	875731-001

Second-Generation Intel Xeon Scalable Processor spare parts

Customer self repair: **no**

All Intel Xeon processors in this HPE ProLiant server must have the same cache size, speed, number of cores, and rated maximum power consumption.

Table 1. 32XX processors

Description	Spare part number
Xeon-B 3204 6c 1.7-GHz 85W	P11604-001

Table 2. 42XX processors

Description	Spare part number
Xeon-S 4208 8c 2.1-GHz 85W	P11605-001
Xeon-S 4210 10c 2.2-GHz 85W	P11606-001
Xeon-S 4214 12c 2.2-GHz 85W	P11607-001
Xeon-S 4214Y 12/10/8c 2.1-GHz 105W	P11636-001
Xeon-S 4215 8c 2.5-GHz 85W	P11608-001

Description	Spare part number
Xeon-S 4216 16c 2.2-GHz 85W	P11609-001

Table 3. 52XX processors

Description	Spare part number
Xeon-G 5215 10c 2.6-GHz 85W	P11610-001
Xeon-G 5215M 10c 2.6-GHz 85W	P11626-001
Xeon-G 5215L 10c 2.6-GHz 85W	P11631-001
Xeon-G 5217 8c 3.0-GHz 115W	P11611-001
Xeon-G 5218 16c 2.3-GHz 125W	P11612-001
Xeon-G 5218B 16c 2.3-GHz 125W	P12532-001
Xeon-G 5218N 16c 2.3-GHz 105W	P12021-001
Xeon-G 5220 18c 2.2-GHz 125W	P11613-001
Xeon-G 5220S 18c 2.6-GHz 125W	P11627-001
Xeon-G 5222 4c 3.8-GHz 105W	P11632-001

Table 4. 62XX processors

Description	Spare part number
Xeon-G 6222V 20c 1.8-GHz 115W	P12019-001
Xeon-G 6226 12c 2.7-GHz 125W	P12008-001
Xeon-G 6230 20c 2.1-GHz 125W	P11614-001
Xeon-G 6230N 20c 2.3-GHz 125W	P12022-001
Xeon-G 6234 8c 3.3-GHz 130W	P12009-001
Xeon-G 6238 22c 2.1-GHz 140W	P12010-001
Xeon-G 6238M 22c 2.1-GHz 140W	P12014-001
Xeon-G 6238L 22c 2.1-GHz 140W	P12016-001
Xeon-G 6240 18c 2.6-GHz 150W	P11615-001
Xeon-G 6240M 18c 2.6-GHz 150W	P12013-001
Xeon-G 6240L 18c 2.6-GHz 150W	P12015-001
Xeon-G 6240Y 18/14/8c 2.6-GHz 150W	P11637-001
Xeon-G 6242 16c 2.8-GHz 150W	P11616-001
Xeon-G 6244 8c 3.7-GHz 150W	P11617-001
Xeon-G 6246 12c 3.3-GHz 165W	P12018-001

Description	Spare part number
Xeon-G 6248 20c 2.5-GHz 150W	P11618-001
Xeon-G 6252 24c 2.1-GHz 150W	P11619-001
Xeon-G 6252N 24c 2.3-GHz 150W	P12023-001
Xeon-G 6254 18c 3.1-GHz 200W	P11620-001
Xeon-G 6262V 24c 1.9-GHz 135W	P12020-001
Xeon-G 6250 8c 3.9-GHz 185W	P25092-001
Xeon-G 6256 12c 3.6-GHz 205W	P25093-001

Table 5. 82XX processors

Description	Spare part number
Xeon-P 8253 16c 2.2-GHz 125W	P12011-001
Xeon-P 8256 4c 3.8-GHz 105W	P12012-001
Xeon-P 8260 24c 2.4-GHz 165W	P11621-001
Xeon-P 8260M 24c 2.4-GHz 165W	P11628-001
Xeon-P 8260L 24c 2.4-GHz 165W	P11633-001
Xeon-P 8260Y 24-20-16c 2.4-GHz 165W	P11638-001
Xeon-P 8268 24c 2.9-GHz 205W	P11622-001
Xeon-P 8270 26c 2.7-GHz 205W	P11623-001
Xeon-P 8276 28c 2.2-GHz 165W	P11624-001
Xeon-P 8276M 28c 2.2-GHz 165W	P11629-001
Xeon-P 8276L 28c 2.2-GHz 165W	P11634-001
Xeon-P 8280 28c 2.7-GHz 205W	P11625-001
Xeon-P 8280M 28c 2.7-GHz 205W	P11630-001
Xeon-P 8280L 28c 2.7-GHz 205W	P11635-001

System board spare parts

Customer self repair: **optional**

Description	Spare part number
System board with base pan and mezzanine assembly, compatible with First Generation Intel Xeon Scalable Processors	870842-001
System board with base pan and mezzanine assembly, compatible with Second Generation Intel Xeon Scalable Processors	P08272-001

HPE 16GB NVDIMM spare part

Customer self repair: **mandatory**

Description	Spare part number
NVDIMM 16GB 1Rx4 NN4-2666V-R	874540-001

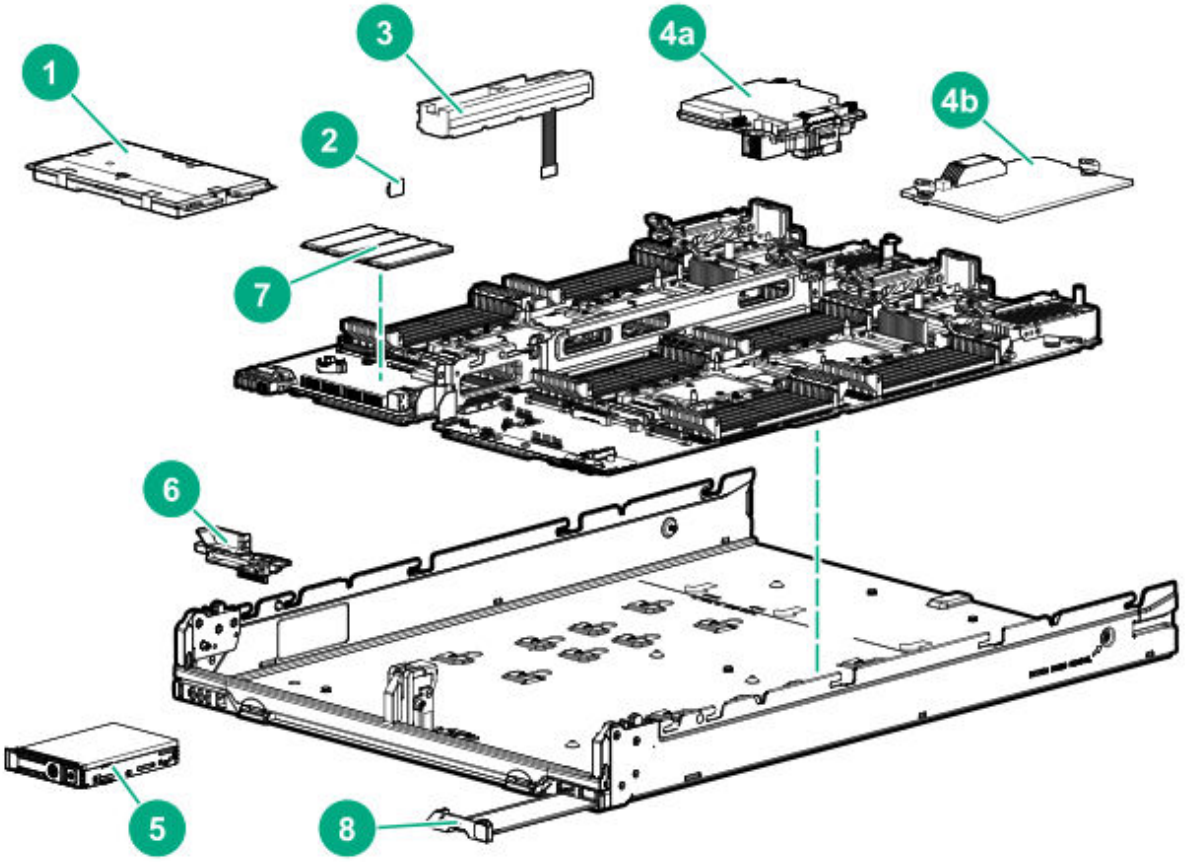
Persistent memory module spare parts

Customer self repair: **mandatory**

Description	Spare part number
Intel Optane 128GB PMEM 100 for HPE	844071-001
Intel Optane 256GB PMEM 100 for HPE	844072-001
Intel Optane 512GB PMEM 100 for HPE	844073-001

Compute module options

Hewlett Packard Enterprise continually improves and changes product parts. For complete and current supported parts information, see the **Hewlett Packard Enterprise PartSurfer website**.



Item	Description
1	Storage controller spare parts
2	HPE Trusted Platform Module 2.0 spare part
3	Energy pack options
4	Mezzanine option spare parts: 4a) Mezzanine D-type card 4b) Mezzanine C-type card
5	Drive spare parts: • SFF SAS HDD spare parts

Item	Description
	• SFF SATA HDD spare parts • SFF SAS SSD spare parts • SFF SATA SSD spare parts • SFF NVMe SSD spare parts • SFF SATA uFF SSD spare parts • USB and microSD option spare parts
6	HPE Synergy Internal SATA board spare part
7	M.2 flash drive spare parts
8	Serial label pull tab spare parts
9	Cable spare parts [1]

[1] Not shown

For more information, see Removal and replacement procedures.

Subtopics

Storage controller spare parts
HPE Trusted Platform Module 2.0 spare part
Mezzanine option spare parts
Energy pack options
Drive spare parts
HPE Synergy Internal SATA board spare part
M.2 flash drive spare parts
Serial label pull tab spare parts
Cable spare parts

Storage controller spare parts

Customer self repair: **mandatory**

Description	Spare part number
HPE Synergy 660 Controller SAS Pass-thru board	873090-001

Description	Spare part number
HPE Synergy P408i-c SR Gen10 Controller	836277-001
HPE Smart Array P416ie-m SR Gen10 Controller	836275-001
HPE Smart Array P416ie-m Controller cable	873947-001
HPE Smart Array E208i-c SR Gen10 Controller	836276-001
Storage controller blank	880174-001

HPE Trusted Platform Module 2.0 spare part

Customer self repair: **no**

Description	Spare part number
HPE Trusted Platform Module 2.0 Gen 10 kit, TAA	872159-001

Mezzanine option spare parts

Customer self repair: **optional**

Description	Spare part number
HPE Synergy 2820C 10Gb CNA	815670-001
HPE Synergy 3820C 10/20Gb CNA	782833-001
HPE Synergy 4820C 10/20/25Gb CNA	877647-001
HPE Synergy 5830C 32Gb FC HBA	782831-001
HPE Synergy 3530C 16G FC HBA	782830-001
HPE Synergy 3830C 16G GC HBA	782829-001
HPE Synergy 5330C 32Gb FC HBA	872164-001
HPE Synergy 4610C 10/25Gb Ethernet Adapter	P01921-001

Description	Spare part number
HPE Synergy 6410C 25/50Gb Ethernet Adapter	871365-001
HPE Synergy 6810C 25/50Gb Ethernet Adapter	867569-001

Energy pack options

Subtopics

HPE Smart Storage Battery spare part
HPE Smart Storage Hybrid Capacitor spare part

HPE Smart Storage Battery spare part

Customer self repair: **mandatory**

Description	Spare part number
HPE Smart Storage Battery with cable, 96W	878644-001

HPE Smart Storage Hybrid Capacitor spare part

Customer self repair: **mandatory**

Description	Spare part number
HPE Smart Storage Hybrid Capacitor, 260mm cable	P07474-001

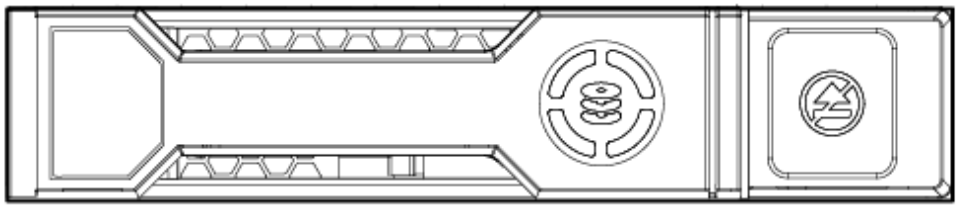
Drive spare parts

Subtopics

SFF SAS HDD spare parts
SFF SATA HDD spare parts
SFF SAS SSD spare parts
SFF SATA SSD spare parts
SFF NVMe SSD spare parts
SFF SATA uFF SSD spare parts
USB and microSD option spare parts

SFF SAS HDD spare parts

Customer self repair: **mandatory**

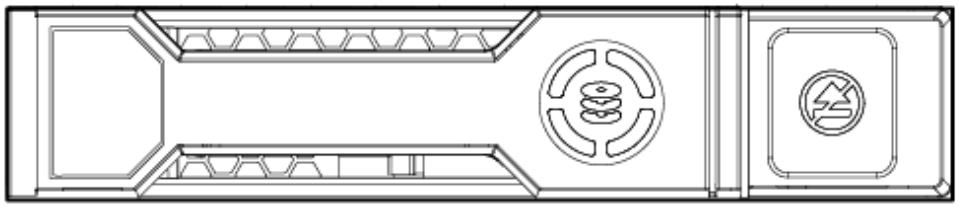


Description	Spare part number
600 GB SAS 15,000-rpm, SC 512e DS HDD	870797-001
600 GB SAS 15,000-rpm, SC ENT HDD	870794-001
900 GB SAS 15,000-rpm, SC DS HDD	870795-001
900 GB SAS 15,000-rpm, SC 512e DS HDD	870798-001
300 GB SAS 10,000-rpm, SC HDD	785410-001
300 GB SAS 10,000-rpm, SC DS HDD	872735-001
600 GB SAS 10,000-rpm, SC HDD	781577-001
600 GB SAS 10,000-rpm, SC DS HDD	872736-001

Description	Spare part number
900 GB SAS 10,000-rpm, SC HDD	785411-001
1.2 TB SAS 10,000-rpm, SC HDD	781578-001
1.2 TB SAS 10,000-rpm, SC DS HDD	872737-001
1.8 TB SAS 10,000-rpm, SC 512e DS HDD	872738-001
1.8 TB SAS 10,000-rpm, SC 512e HDD	791055-001
1.0 TB SAS 7,200-rpm, SC DS HDD	832984-001
1.0 TB SAS 7,200-rpm, SC 512e DS HDD	765872-001
2.0 TB SAS 7,200-rpm, SC 512e DS HDD	765873-001

SFF SATA HDD spare parts

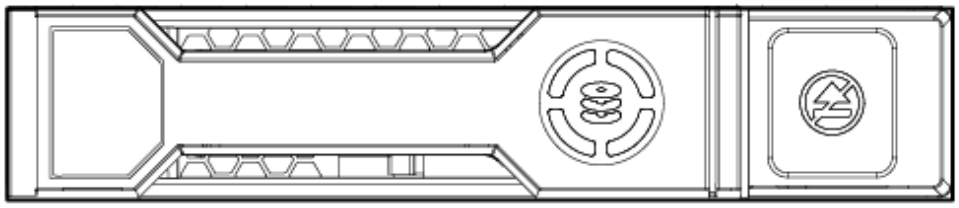
Customer self repair: **mandatory**



Description	Spare part number
1 TB SATA 7,200-rpm, SFF SC 512e DS HDD	765868-001
2 TB SATA 7,200-rpm, SFF SC 512e DS HDD	765869-001
1 TB SATA 7,200-rpm, SFF SC DS HDD	656108-001

SFF SAS SSD spare parts

Customer self repair: **mandatory**

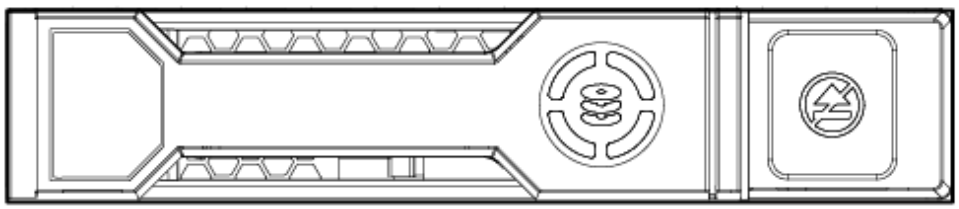


Description	Spare part number
400 GB 12G MU SC SSD	872505-001
400 GB MU DS SC SSD	P06576-001
400 GB MU SC DS SSD	P09922-001
400 GB WI DS SC SSD	P06600-001
400 GB WI SC DS SSD	P09947-001
800 GB 12G MU SC SSD	872506-001
800 GB MU DS SC SSD	P06577-001
800 GB MU SC DS SSD	P09923-001
800 GB WI DS SC SSD	P06602-001
800 GB WI SC DS SSD	P09948-001
900 GB RI DS SC SSD	P06596-001
960 GB MU SC VS DS SSD	P10604-001
960 GB RI SC DS SSD	P08608-001
960GB RI SC VS DS	P10637-001
960 GB 12G RI SC SSD	872432-001
1.6 TB 12G MU SC SSD	872509-001
1.6 TB MU DS SC SSD	P06580-001
1.6 TB MU SC DS SSD	P09924-001
1.6 TB WI DS SC SSD	P06604-001
1.6 TB WI SC DS SSD	P09949-001
1.92 TB 12G RI SC SSD	872433-001
1.92 TB MU SC VS DS SSD	P10607-001
1.92TB RI DS SC SSD	P06597-001
1.92TB RI SC DS SSD	P08609-001

Description	Spare part number
1.92TB RI SC VS DS SSD	P10638-001
3.2 TB 12G MU SC SSD	872511-001
3.2 TB MU DS SC SSD	P06582-001
3.2 TB MU SC DS SSD	P09925-001
3.2 TB WI DS SC SSD	P06605-001
3.84 TB MU SC VS DS SSD	P10610-001
3.84 TB RI DS SC SSD	P06598-001
3.84 TB RI SC DS SSD	P08610-001
3.84 TB RI SC VS DS SSD	P10639-001
3.84 TB 12G RI SC SSD	872434-001
6.4 TB MU DS SC SSD	P06583-001
6.4 TB MU SC DS SSD	P09926-001
7.68 TB RI DS SC SSD	P06599-001
7.68 TB RI SC DS SSD	P08611-001
7.68 TB RI SC VS DS SSD	P10640-001
15.3 TB RI SC DS SSD	P08612-001

SFF SATA SSD spare parts

Customer self repair: **mandatory**



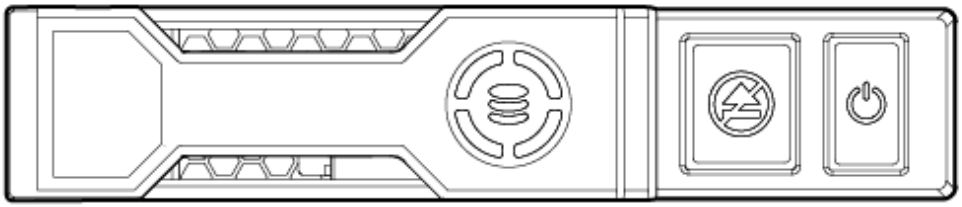
Description	Spare part number
240 GB SATA 6G RI SC DS SSD	868924-001

Description	Spare part number
240 GB SATA RI DS SC SSD	875652-001
240 GB SATA RI SC DS SSD	P05319-001
240 GB SATA RI SC DS SSD	P08565-001
400 GB SATA 6G WI SC DS SSD	872512-001
480 GB SATA RI SC DS SSD	P05320-001
480 GB SATA RI SC DS SSD	P05312-001
480 GB SATA 6G RI SC DS SSD	868936-001
480 GB SATA 6G MU SC DS SSD	872518-001
480 GB SATA RI DS SC SSD	P06571-001
480 GB SATA RI SC DS SSD	P08567-001
480 GB SATA MU SC DS SSD	P08620-001
480 GB SATA MU SC DS SSD	P08690-001
480 GB SATA MU SC DS SSD	P09907-001
800 GB SATA 6G WI SC DS SSD	872514-001
960 GB SATA RI DS SC SSD	P06572-001
960 GB SATA RI SC DS SSD	P05321-001
960 GB SATA 6G MU SFF SC DS SSD	872520-001
960 GB SATA 6G RI SFF SC DS SSD	868928-001
960 GB SATA RI SC DS SSD	P05313-001
960 GB SATA RI SC DS SSD	P08569-001
960 GB SATA MU SC DS SSD	P08622-001
960 GB SATA MU SC DS SSD	P08692-001
960 GB SATA MU SC DS SSD	P09909-001
1.6 TB SATA 6G WI SC DS SSD	872516-001
1.92 TB SATA 6G RI SC DS SSD	868930-001
1.92 TB SATA 6G MU SC DS SSD	872522-001
1.92 TB SATA RI SC DS SSD	P05314-001
1.92 TB SATA RI SC DS SSD	P05322-001
1.92 TB SATA RI DS SC SSD	P06573-001
1.92 TB SATA RI SC DS SSD	P08572-001
1.92 TB SATA MU SC DS SSD	P08625-001
1.92 TB SATA MU SC DS SSD	P08694-001
1.92 TB SATA MU SC DS SSD	P09912-001

Description	Spare part number
3.84 TB SATA MU DS SC SSD	P02562-001
3.84 TB SATA 6G RI SC DS SSD	868932-001
3.84 TB SATA RI SC DS SSD	P05315-001
3.84 TB SATA RI SC DS SSD	P05323-001
3.84 TB SATA RI DS SC SSD	P06574-001
3.84 TB SATA RI SC DS SSD	P08575-001
3.84 TB SATA MU SC DS SSD	P08632-001
7.68 TB SATA RI SC DS SSD	P05316-001

SFF NVMe SSD spare parts

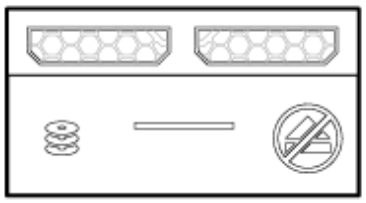
Customer self repair: **mandatory**



Description	Spare part number
375 GB NVMe x4 WI DS SCN	P02559-001
400 GB NVMe x4 WI SFF SC SSD	765059-001
800 GB NVMe x4 WI SFF SCN SSD	765060-001
1.6 TB NVMe x4 WI SFF SCN SSD	765061-001
1.6 TB NVMe x4 MU SCN DS	P10470-001
1.92 TB NVMe x4 RI SCN DS	P10466-001
2 TB NVMe x4 WI SFF SCN SSD	765062-001
3.2 TB NVMe x4 MU SCN DS	P10471-001
3.84 TB NVMe x4 RI SCN DS	P10467-001

Description	Spare part number
6.4 TB NVMe x4 MU SCN DS	P10472-001
7.68 TB NVMe x4 RI SCN DS	P10468-001

SFF SATA uFF SSD spare parts



Customer Self Repair : **mandatory**

Description	Spare part number
uFF SSD 120 GB	831995-001
uFF SSD 340 GB	830453-001

USB and microSD option spare parts

Customer self repair: **mandatory**

Description	Spare part number
HPE Dual 8GB microSD EM USB device	799057-001
8-GB USB flash media key	743503-001
8-GB micro SDHC flash media card	738576-001
32-GB micro SDHC flash media card	704502-001

HPE Synergy Internal SATA board spare part

Customer self repair: **optional**

Description	Spare part number
HPE Synergy Internal SATA board	873085-001

M.2 flash drive spare parts

Customer self repair: **mandatory**

Description	Spare part number
120 GB SATA M.2 2280 6G RI VE	781565-001
150 GB SATA M.2 2280 12G RI DS	875835-001
240 GB SATA M.2 2280 MU SCM DS	P07721-001
240 GB SATA M.2 2280 MU DS	875850-001
340 GB SATA M.2 2280 6G RI VE	781566-001
480 GB SATA M.2 2280 6G RI DS	875836-001
480 GB SATA M.2 2280 MU DS	P07437-001
480 GB SATA M.2 2280 MU DS	875851-001
480 GB SATA M.2 2280 RI DS	875855-001
960 GB SATA M.2 2280 RI DS	875856-001
960 GB SATA M.2 2280 MU DS	875852-001

Serial label pull tab spare parts

Customer self repair: **mandatory**

Description	Spare part number
Serial label pull tab	873074-001

Cable spare parts

Customer self repair: **mandatory**

Description	Spare part number
Backplane cable	869990-001

Customer self repair

Hewlett Packard Enterprise products are designed with many Customer Self Repair (CSR) parts to minimize repair time and allow for greater flexibility in performing defective parts replacement. If during the diagnosis period Hewlett Packard Enterprise (or Hewlett Packard Enterprise service providers or service partners) identifies that the repair can be accomplished by the use of a CSR part, Hewlett Packard Enterprise will ship that part directly to you for replacement. There are two categories of CSR parts:

- **Mandatory**—Parts for which customer self repair is mandatory. If you request Hewlett Packard Enterprise to replace these parts, you will be charged for the travel and labor costs of this service.
- **Optional**—Parts for which customer self repair is optional. These parts are also designed for customer self repair. If, however, you require that Hewlett Packard Enterprise replace them for you, there may or may not be additional charges, depending on the type of warranty service designated for your product.

NOTE

Some Hewlett Packard Enterprise parts are not designed for customer self repair. In order to satisfy the customer warranty, Hewlett Packard Enterprise requires that an authorized service provider replace the part. These parts are identified as "No" in the Illustrated Parts Catalog.

Based on availability and where geography permits, CSR parts will be shipped for next business day delivery. Same day or four-hour delivery may be offered at an additional charge where geography permits. If assistance is required, you can call the Hewlett Packard Enterprise Support Center and a technician will help you over the telephone. Hewlett Packard Enterprise specifies in the materials shipped with a replacement CSR part whether a defective part must be returned to Hewlett Packard Enterprise. In cases where it is required to return the defective part to Hewlett Packard Enterprise, you must ship the defective part back to Hewlett Packard Enterprise within a defined period of time, normally five (5) business days. The defective part must be returned with the associated documentation in the provided shipping material. Failure to return the defective part may result in Hewlett Packard Enterprise billing you for the replacement. With a customer self repair, Hewlett Packard Enterprise will pay all shipping and part return costs and determine the courier/carrier to be used.

For more information about the Hewlett Packard Enterprise CSR program, contact your local service provider.

Parts only warranty service

Your Hewlett Packard Enterprise Limited Warranty may include a parts only warranty service. Under the terms of parts only warranty service, Hewlett Packard Enterprise will provide replacement parts free of charge.

For parts only warranty service, CSR part replacement is mandatory. If you request Hewlett Packard Enterprise to replace these parts, you will be charged for the travel and labor costs of this service.

Réparation par le client (CSR)

Les produits Hewlett Packard Enterprise comportent de nombreuses pièces CSR (Customer Self Repair = réparation par le client) afin de minimiser les délais de réparation et faciliter le remplacement des pièces défectueuses. Si pendant la période de diagnostic, Hewlett Packard Enterprise (ou ses partenaires ou mainteneurs agréés) détermine que la réparation peut être effectuée à l'aide d'une pièce CSR, Hewlett Packard Enterprise vous l'envoie directement. Il existe deux catégories de pièces CSR :

- **Obligatoire—**Pièces pour lesquelles la réparation par le client est obligatoire. Si vous demandez à Hewlett Packard Enterprise de remplacer ces pièces, les coûts de déplacement et main d'œuvre du service vous seront facturés.
- **Facultatif—**Pièces pour lesquelles la réparation par le client est facultative. Ces pièces sont également conçues pour permettre au client d'effectuer lui-même la réparation. Toutefois, si vous demandez à Hewlett Packard Enterprise de remplacer ces pièces, l'intervention peut ou non vous être facturée, selon le type de garantie applicable à votre produit.

REMARQUE: Certaines pièces Hewlett Packard Enterprise ne sont pas conçues pour permettre au client d'effectuer lui-même la réparation. Pour que la garantie puisse s'appliquer, Hewlett Packard Enterprise exige que le remplacement de la pièce soit effectué par un Mainteneur Agréé. Ces pièces sont identifiées par la mention "Non" dans le Catalogue illustré.

Les pièces CSR sont livrées le jour ouvré suivant, dans la limite des stocks disponibles et selon votre situation géographique. Si votre situation géographique le permet et que vous demandez une livraison le jour même ou dans les 4 heures, celle-ci vous sera facturée. Pour toute assistance, appelez le Centre d'assistance Hewlett Packard Enterprise pour qu'un technicien vous aide au téléphone Dans les documents envoyés avec la pièce de rechange CSR, Hewlett Packard Enterprise précise s'il est nécessaire de lui retourner la pièce défectueuse. Si c'est le cas, vous devez le faire dans le délai indiqué, généralement cinq (5) jours ouvrés. La pièce et sa documentation doivent être retournées dans l'emballage fourni. Si vous ne retournez pas la pièce défectueuse, Hewlett Packard Enterprise se réserve le droit de vous facturer les coûts de remplacement. Dans le cas d'une pièce CSR, Hewlett Packard Enterprise supporte l'ensemble des frais d'expédition et de retour, et détermine la société de courses ou le transporteur à utiliser.

Pour plus d'informations sur le programme CSR de Hewlett Packard Enterprise, contactez votre Mainteneur Agrée local.

Service de garantie "pièces seules"

Votre garantie limitée Hewlett Packard Enterprise peut inclure un service de garantie "pièces seules". Dans ce cas, les pièces de rechange fournies par Hewlett Packard Enterprise ne sont pas facturées.

Dans le cadre de ce service, la réparation des pièces CSR par le client est obligatoire. Si vous demandez à Hewlett Packard Enterprise de remplacer ces pièces, les coûts de déplacement et main d'œuvre du service vous seront facturés.

Riparazione da parte del cliente

Per abbreviare i tempi di riparazione e garantire una maggiore flessibilità nella sostituzione di parti difettose, i prodotti Hewlett Packard Enterprise sono realizzati con numerosi componenti che possono essere riparati direttamente dal cliente (CSR, Customer Self Repair). Se in fase di diagnostica Hewlett Packard Enterprise (o un centro di servizi o di assistenza Hewlett Packard Enterprise) identifica il guasto come riparabile mediante un ricambio CSR, Hewlett Packard Enterprise lo spedirà direttamente al cliente per la sostituzione. Vi sono due categorie di parti CSR:

- **Obbligatorie—**Parti che devono essere necessariamente riparate dal cliente. Se il cliente ne affida la riparazione ad Hewlett Packard Enterprise, deve sostenere le spese di spedizione e di manodopera per il servizio.
- **Opzionali—**Parti la cui riparazione da parte del cliente è facoltativa. Si tratta comunque di componenti progettati per questo scopo. Se tuttavia il cliente ne richiede la sostituzione ad Hewlett Packard Enterprise, potrebbe dover sostenere spese addizionali a seconda del tipo di garanzia previsto per il prodotto.

NOTA: alcuni componenti Hewlett Packard Enterprise non sono progettati per la riparazione da parte del cliente. Per rispettare la garanzia, Hewlett Packard Enterprise richiede che queste parti siano sostituite da un centro di assistenza autorizzato. Tali parti sono identificate da un "No" nel Catalogo illustrato dei componenti.

In base alla disponibilità e alla località geografica, le parti CSR vengono spedite con consegna entro il giorno lavorativo seguente. La consegna nel giorno stesso o entro quattro ore è offerta con un supplemento di costo solo in alcune zone. In caso di necessità si può richiedere l'assistenza telefonica di un addetto del centro di supporto tecnico Hewlett Packard Enterprise. Nel materiale fornito con una parte di ricambio CSR, Hewlett Packard Enterprise specifica se il cliente deve restituire dei component. Qualora sia richiesta la resa ad Hewlett Packard Enterprise del componente difettoso, lo si deve spedire ad Hewlett Packard Enterprise entro un determinato periodo di tempo, generalmente cinque (5) giorni lavorativi. Il componente difettoso deve essere restituito con la documentazione associata nell'imballo di spedizione fornito. La mancata restituzione del componente può comportare la fatturazione del ricambio da parte di Hewlett Packard Enterprise. Nel caso di riparazione da parte del cliente, Hewlett Packard Enterprise sostiene tutte le spese di spedizione e resa e sceglie il corriere/vettore da utilizzare.

Per ulteriori informazioni sul programma CSR di Hewlett Packard Enterprise, contattare il centro di assistenza di zona.

Servizio di garanzia per i soli componenti

La garanzia limitata Hewlett Packard Enterprise può includere un servizio di garanzia per i soli componenti. Nei termini di garanzia del servizio per i soli componenti, Hewlett Packard Enterprise fornirà gratuitamente le parti di ricambio.

Per il servizio di garanzia per i soli componenti è obbligatoria la formula CSR che prevede la riparazione da parte del cliente. Se il cliente invece richiede la sostituzione ad Hewlett Packard Enterprise dovrà sostenere le spese di spedizione e di manodopera per il servizio.

Customer Self Repair

Hewlett Packard Enterprise Produkte enthalten viele CSR-Teile (Customer Self Repair), um Reparaturzeiten zu minimieren und höhere Flexibilität beim Austausch defekter Bauteile zu ermöglichen. Wenn Hewlett Packard Enterprise (oder ein Hewlett Packard Enterprise Servicepartner) bei der Diagnose feststellt, dass das Produkt mithilfe eines CSR-Teils repariert werden kann, sendet Ihnen Hewlett Packard Enterprise dieses Bauteil zum Austausch direkt zu. CSR-Teile werden in zwei Kategorien unterteilt:

- **Zwingend**—Teile, für die das Customer Self Repair-Verfahren zwingend vorgegeben ist. Wenn Sie den Austausch dieser Teile von Hewlett Packard Enterprise vornehmen lassen, werden Ihnen die Anfahrt- und Arbeitskosten für diesen Service berechnet.
- **Optional**—Teile, für die das Customer Self Repair-Verfahren optional ist. Diese Teile sind auch für Customer Self Repair ausgelegt. Wenn Sie jedoch den Austausch dieser Teile von Hewlett Packard Enterprise vornehmen lassen möchten, können bei diesem Service je nach den für Ihr Produkt vorgesehenen Garantiebedingungen zusätzliche Kosten anfallen.

HINWEIS: Einige Hewlett Packard Enterprise Teile sind nicht für Customer Self Repair ausgelegt. Um den Garantieanspruch des Kunden zu erfüllen, muss das Teil von einem

Hewlett Packard Enterprise Servicepartner ersetzt werden. Im illustrierten Teilekatalog sind diese Teile mit „No“ bzw. „Nein“ gekennzeichnet.

CSR-Teile werden abhängig von der Verfügbarkeit und vom Lieferziel am folgenden Geschäftstag geliefert. Für bestimmte Standorte ist eine Lieferung am selben Tag oder innerhalb von vier Stunden gegen einen Aufpreis verfügbar. Wenn Sie Hilfe benötigen, können Sie das Hewlett Packard Enterprise Support Center anrufen und sich von einem Mitarbeiter per Telefon helfen lassen. Den Materialien von Hewlett Packard Enterprise, die mit einem CSR-Ersatzteil geliefert werden, können Sie entnehmen, ob das defekte Teil an Hewlett Packard Enterprise zurückgeschickt werden muss. Wenn es erforderlich ist, das defekte Teil an Hewlett Packard Enterprise zurückzuschicken, müssen Sie dies innerhalb eines vorgegebenen Zeitraums tun, in der Regel innerhalb von fünf (5) Geschäftstagen. Das defekte Teil muss mit der zugehörigen Dokumentation in der Verpackung zurückgeschickt werden, die im Lieferumfang enthalten ist. Wenn Sie das defekte Teil nicht zurückschicken, kann Hewlett Packard Enterprise Ihnen das Ersatzteil in Rechnung stellen. Im Falle von Customer Self Repair kommt Hewlett Packard Enterprise für alle Kosten für die Lieferung und Rücksendung auf und bestimmt den Kurier-/Frachtdienst.

Weitere Informationen über das Hewlett Packard Enterprise Customer Self Repair Programm erhalten Sie von Ihrem Servicepartner vor Ort.

Parts-only Warranty Service (Garantieservice ausschließlich für Teile)

Ihre Hewlett Packard Enterprise Garantie umfasst möglicherweise einen Parts-only Warranty Service (Garantieservice ausschließlich für Teile). Gemäß den Bestimmungen des Parts-only Warranty Service stellt Hewlett Packard Enterprise Ersatzteile kostenlos zur Verfügung.

Für den Parts-only Warranty Service ist das CSR-Verfahren zwingend vorgegeben. Wenn Sie den Austausch dieser Teile von Hewlett Packard Enterprise vornehmen lassen, werden Ihnen die Anfahrt- und Arbeitskosten für diesen Service berechnet.

Reparaciones del propio cliente

Los productos de Hewlett Packard Enterprise incluyen muchos componentes que el propio usuario puede reemplazar (Customer Self Repair, CSR) para minimizar el tiempo de reparación y ofrecer una mayor flexibilidad a la hora de realizar sustituciones de componentes defectuosos. Si, durante la fase de diagnóstico, Hewlett Packard Enterprise (o los proveedores o socios de servicio de Hewlett Packard Enterprise) identifica que una reparación puede llevarse a cabo mediante el uso de un componente CSR, Hewlett Packard Enterprise le enviará dicho componente directamente para que realice su sustitución. Los componentes CSR se clasifican en dos categorías:

- **Obligatorio**—Componentes cuya reparación por parte del usuario es obligatoria. Si solicita a Hewlett Packard Enterprise que realice la sustitución de estos componentes, tendrá que hacerse cargo de los gastos de desplazamiento y de mano de obra de dicho servicio.
- **Opcional**—Componentes cuya reparación por parte del usuario es opcional. Estos componentes también están diseñados para que puedan ser reparados por

el usuario. Sin embargo, si precisa que Hewlett Packard Enterprise realice su sustitución, puede o no conllevar costes adicionales, dependiendo del tipo de servicio de garantía correspondiente al producto.

NOTA: Algunos componentes de Hewlett Packard Enterprise no están diseñados para que puedan ser reparados por el usuario. Para que el usuario haga valer su garantía, Hewlett Packard Enterprise pone como condición que un proveedor de servicios autorizado realice la sustitución de estos componentes. Dichos componentes se identifican con la palabra "No" en el catálogo ilustrado de componentes.

Según la disponibilidad y la situación geográfica, los componentes CSR se enviarán para que lleguen a su destino al siguiente día laborable. Si la situación geográfica lo permite, se puede solicitar la entrega en el mismo día o en cuatro horas con un coste adicional. Si precisa asistencia técnica, puede llamar al Centro de asistencia técnica de Hewlett Packard Enterprise y recibirá ayuda telefónica por parte de un técnico. Con el envío de materiales para la sustitución de componentes CSR, Hewlett Packard Enterprise especificará si los componentes defectuosos deberán devolverse a Hewlett Packard Enterprise. En aquellos casos en los que sea necesario devolver algún componente a Hewlett Packard Enterprise, deberá hacerlo en el periodo de tiempo especificado, normalmente cinco días laborables. Los componentes defectuosos deberán devolverse con toda la documentación relacionada y con el embalaje de envío. Si no enviara el componente defectuoso requerido, Hewlett Packard Enterprise podrá cobrarle por el de sustitución. En el caso de todas sustituciones que lleve a cabo el cliente, Hewlett Packard Enterprise se hará cargo de todos los gastos de envío y devolución de componentes y escogerá la empresa de transporte que se utilice para dicho servicio.

Para obtener más información acerca del programa de Reparaciones del propio cliente de Hewlett Packard Enterprise, póngase en contacto con su proveedor de servicios local.

Servicio de garantía exclusivo de componentes

La garantía limitada de Hewlett Packard Enterprise puede que incluya un servicio de garantía exclusivo de componentes. Según las condiciones de este servicio exclusivo de componentes, Hewlett Packard Enterprise le facilitará los componentes de repuesto sin cargo adicional alguno.

Para este servicio de garantía exclusivo de componentes, es obligatoria la sustitución de componentes por parte del usuario (CSR). Si solicita a Hewlett Packard Enterprise que realice la sustitución de estos componentes, tendrá que hacerse cargo de los gastos de desplazamiento y de mano de obra de dicho servicio.

Customer Self Repair

Veel onderdelen in Hewlett Packard Enterprise producten zijn door de klant zelf te repareren, waardoor de reparatieduur tot een minimum beperkt kan blijven en de flexibiliteit in het vervangen van defecte onderdelen groter is. Deze onderdelen worden CSR-onderdelen (Customer Self Repair) genoemd. Als Hewlett Packard Enterprise (of een Hewlett Packard Enterprise Service Partner) bij de diagnose vaststelt dat de reparatie kan worden uitgevoerd met een CSR-onderdeel, verzendt Hewlett Packard

Enterprise dat onderdeel rechtstreeks naar u, zodat u het defecte onderdeel daarmee kunt vervangen. Er zijn twee categorieën CSR-onderdelen:

- **Verplicht**—Onderdelen waarvoor reparatie door de klant verplicht is. Als u Hewlett Packard Enterprise verzoekt deze onderdelen voor u te vervangen, worden u voor deze service reiskosten en arbeidsloon in rekening gebracht.
- **Optioneel**—Onderdelen waarvoor reparatie door de klant optioneel is. Ook deze onderdelen zijn ontworpen voor reparatie door de klant. Als u echter Hewlett Packard Enterprise verzoekt deze onderdelen voor u te vervangen, kunnen daarvoor extra kosten in rekening worden gebracht, afhankelijk van het type garantieservice voor het product.

OPMERKING: Sommige Hewlett Packard Enterprise onderdelen zijn niet ontwikkeld voor reparatie door de klant. In verband met de garantievoorwaarden moet het onderdeel door een geautoriseerde Service Partner worden vervangen. Deze onderdelen worden in de geïllustreerde onderdelencatalogus aangemerkt met "Nee".

Afhankelijk van de leverbaarheid en de locatie worden CSR-onderdelen verzonden voor levering op de eerstvolgende werkdag. Levering op dezelfde dag of binnen vier uur kan tegen meerkosten worden aangeboden, indien dit mogelijk is gezien de locatie. Indien assistentie is gewenst, belt u het Hewlett Packard Enterprise Support Center om via de telefoon ondersteuning van een technicus te ontvangen. Hewlett Packard Enterprise vermeldt in de documentatie bij het vervangende CSR-onderdeel of het defecte onderdeel aan Hewlett Packard Enterprise moet worden geretourneerd. Als het defecte onderdeel aan Hewlett Packard Enterprise moet worden teruggezonden, moet u het defecte onderdeel binnen een bepaalde periode, gewoonlijk vijf (5) werkdagen, retourneren aan Hewlett Packard Enterprise. Het defecte onderdeel moet met de bijbehorende documentatie worden geretourneerd in het meegeleverde verpakkingsmateriaal. Als u het defecte onderdeel niet terugzendt, kan Hewlett Packard Enterprise u voor het vervangende onderdeel kosten in rekening brengen. Bij reparatie door de klant betaalt Hewlett Packard Enterprise alle verzendkosten voor het vervangende en geretourneerde onderdeel en kiest Hewlett Packard Enterprise zelf welke koerier/transportonderneming hiervoor wordt gebruikt.

Neem contact op met een Service Partner voor meer informatie over het Customer Self Repair programma van Hewlett Packard Enterprise.

Garantieservice "Parts Only"

Het is mogelijk dat de Hewlett Packard Enterprise garantie alleen de garantieservice "Parts Only" omvat. Volgens de bepalingen van de Parts Only garantieservice zal Hewlett Packard Enterprise kosteloos vervangende onderdelen ter beschikking stellen.

Voor de Parts Only garantieservice is vervanging door CSR-onderdelen verplicht. Als u Hewlett Packard Enterprise verzoekt deze onderdelen voor u te vervangen, worden u voor deze service reiskosten en arbeidsloon in rekening gebracht

Reparo feito pelo cliente

Os produtos da Hewlett Packard Enterprise são projetados com muitas peças para reparo feito pelo cliente (CSR) de modo a minimizar o tempo de reparo e permitir

maior flexibilidade na substituição de peças com defeito. Se, durante o período de diagnóstico, a Hewlett Packard Enterprise (ou fornecedores/parceiros da Hewlett Packard Enterprise) concluir que o reparo pode ser efetuado pelo uso de uma peça CSR, a Hewlett Packard Enterprise enviará a peça diretamente ao cliente. Há duas categorias de peças CSR:

- **Obrigatória**—Peças cujo reparo feito pelo cliente é obrigatório. Se desejar que a Hewlett Packard Enterprise substitua essas peças, serão cobradas as despesas de transporte e mão-de-obra do serviço.
- **Opcional**—Peças cujo reparo feito pelo cliente é opcional. Essas peças também são projetadas para o reparo feito pelo cliente. No entanto, se desejar que a Hewlett Packard Enterprise as substitua, pode haver ou não a cobrança de taxa adicional, dependendo do tipo de serviço de garantia destinado ao produto.

OBSERVAÇÃO: Algumas peças da Hewlett Packard Enterprise não são projetadas para o reparo feito pelo cliente. A fim de cumprir a garantia do cliente, a Hewlett Packard Enterprise exige que um técnico autorizado substitua a peça. Essas peças estão identificadas com a marca "No" (Não), no catálogo de peças ilustrado.

Conforme a disponibilidade e o local geográfico, as peças CSR serão enviadas no primeiro dia útil após o pedido. Onde as condições geográficas permitirem, a entrega no mesmo dia ou em quatro horas pode ser feita mediante uma taxa adicional. Se precisar de auxílio, entre em contato com o Centro de suporte técnico da Hewlett Packard Enterprise para que um técnico o ajude por telefone. A Hewlett Packard Enterprise especifica nos materiais fornecidos com a peça CSR de reposição se a peça com defeito deve ser devolvida à Hewlett Packard Enterprise. Nos casos em que isso for necessário, é preciso enviar a peça com defeito à Hewlett Packard Enterprise, você deverá enviar a peça com defeito de volta para a Hewlett Packard Enterprise dentro do período de tempo definido, normalmente em 5 (cinco) dias úteis. A peça com defeito deve ser enviada com a documentação correspondente no material de transporte fornecido. Caso não o faça, a Hewlett Packard Enterprise poderá cobrar a reposição. Para as peças de reparo feito pelo cliente, a Hewlett Packard Enterprise paga todas as despesas de transporte e de devolução da peça e determina a transportadora/serviço postal a ser utilizado.

Para obter mais informações sobre o programa de reparo feito pelo cliente da Hewlett Packard Enterprise, entre em contato com o fornecedor de serviços local.

Serviço de garantia apenas para peças

A garantia limitada da Hewlett Packard Enterprise pode incluir um serviço de garantia apenas para peças. Segundo os termos do serviço de garantia apenas para peças, a Hewlett Packard Enterprise fornece as peças de reposição sem cobrar nenhuma taxa.

No caso desse serviço, a substituição de peças CSR é obrigatória. Se desejar que a Hewlett Packard Enterprise substitua essas peças, serão cobradas as despesas de transporte e mão-de-obra do serviço.

カスタマーセルフリペア

修理時間を短縮し、故障部品の交換における高い柔軟性を確保するために、Hewlett Packard Enterprise製品には多数のカスタマーセルフリペア（CSR）部品があります。診断の際に、CSR部品を使用すれば修理ができるとHewlett Packard Enterprise（Hewlett Packard EnterpriseまたはHewlett Packard Enterprise正規保守代理店）が判断した場合、Hewlett Packard Enterpriseはその部品を直接、お客様に発送し、お客様に交換していただきます。CSR部品には以下の2種類があります。

- **必須** - カスタマーセルフリペアが必須の部品。当該部品について、もしもお客様がHewlett Packard Enterpriseに交換作業を依頼される場合には、その修理サービスに関する交通費および人件費がお客様に請求されます。
- **任意** - カスタマーセルフリペアが任意である部品。この部品もカスタマーセルフリペア用です。当該部品について、もしもお客様がHewlett Packard Enterpriseに交換作業を依頼される場合には、お買い上げの製品に適用される保証サービス内容の範囲内においては、別途費用を負担していただくことなく保証サービスを受けることができます。

注：Hewlett Packard Enterprise製品の一部の部品は、カスタマーセルフリペアの対象外です。製品の保証を継続するためには、Hewlett Packard EnterpriseまたはHewlett Packard Enterprise正規保守代理店による交換作業が必須となります。部品カタログには、当該部品がカスタマーセルフリペア除外品である旨が記載されています。

部品供給が可能な場合、地域によっては、CSR部品を翌営業日に届くように発送します。また、地域によっては、追加費用を負担いただくことにより同日または4時間以内に届くように発送することも可能な場合があります。サポートが必要なときは、Hewlett Packard Enterpriseサポートセンターに電話していただければ、技術者が電話でアドバイスします。交換用のCSR部品または同梱物には、故障部品をHewlett Packard Enterpriseに返送する必要があるかどうかが表示されています。故障部品をHewlett Packard Enterpriseに返送する必要がある場合は、指定期限内（通常は5営業日以内）に故障部品をHewlett Packard Enterpriseに返送してください。故障部品を返送する場合は、届いた時の梱包箱に関連書類とともに入れてください。故障部品を返送しない場合、Hewlett Packard Enterpriseから部品費用が請求されます。カスタマーセルフリペアの際には、Hewlett Packard Enterpriseは送料および部品返送費を全額負担し、使用する宅配便会社や運送会社を指定します。

部品のみ保証サービス

Hewlett Packard Enterprise保証サービスには、部品のみ保証サービスが適用される場合があります。このサービスでは、交換部品は無償で提供されます。

部品のみ保証サービスにおいては、CSR部品をお客様により交換作業していただくことが必須になります。当該部品について、もしもお客様がHewlett Packard Enterpriseに交換作業を依頼される場合には、その修理サービスに関する交通費および人件費がお客様のご負担となります。

客户自行维修

Hewlett Packard Enterprise 产品提供许多客户自行维修 (CSR) 部件，以尽可能缩短维修时间和在更换缺陷部件方面提供更大的灵活性。如果在诊断期间 Hewlett Packard Enterprise（或Hewlett Packard Enterprise 服务提供商或服务合作伙伴）确定可以通过使用 CSR 部件完成维修，Hewlett Packard Enterprise 将直接把该部件发送给您进行更换。有两类 CSR 部件：

- **强制性的** — 要求客户必须自行维修的部件。如果您请求 Hewlett Packard Enterprise 更换这些部件，则必须为该服务支付差旅费和人工费用。
- **可选的** — 客户可以选择是否自行维修的部件。这些部件也是为客户自行维修设计的。不过，如果您要求 Hewlett Packard Enterprise 为您更换这些部件，则根据为您的产品指定的保修服务类型，Hewlett Packard Enterprise 可能收取或不再收取任何附加费用。

注：某些 Hewlett Packard Enterprise 部件的设计并未考虑客户自行维修。为了满足客户保修的需要，Hewlett Packard Enterprise 要求授权服务提供商更换相关部件。这些部件在部件图解目录中标记为“否”。

CSR 部件将在下一个工作日发运（取决于备货情况和允许的地理范围）。在允许的地理范围内，可在当天或四小时内发运，但要收取额外费用。如果需要帮助，您可以致电 Hewlett Packard Enterprise 技术支持中心，将会有技术人员通过电话为您提供帮助。Hewlett Packard Enterprise 会在随更换的 CSR 部件发运的材料中指明是否必须将有缺陷的部件返还给 Hewlett Packard Enterprise。如果要求您将有缺陷的部件返还给 Hewlett Packard Enterprise，那么您必须在规定的期限内（通常是五 (5) 个工作日）将缺陷部件发给 Hewlett Packard Enterprise。有缺陷的部件必须随所提供的发运材料中的相关文件一起返还。如果未能送还有缺陷的部件，Hewlett Packard Enterprise 可能会要求您支付更换费用。客户自行维修时，Hewlett Packard Enterprise 将承担所有相关运输和部件返回费用，并指定快递商/承运商。

有关 Hewlett Packard Enterprise 客户自行维修计划的详细信息，请与您当地的服务提供商联系。

仅部件保修服务

您的 Hewlett Packard Enterprise 有限保修服务可能涉及仅部件保修服务。根据仅部件保修服务条款的规定，Hewlett Packard Enterprise 将免费提供更换的部件。

仅部件保修服务要求进行 CSR 部件更换。如果您请求 Hewlett Packard Enterprise 更换这些部件，则必须为该服务支付差旅费和人工费用。

客戶自行維修

Hewlett Packard Enterprise 產品設計了許多「客戶自行維修」(CSR) 的零件以減少維修時間，並且使得更換瑕疵零件時能有更大的彈性。如果在診斷期間，Hewlett Packard Enterprise (或 Hewlett Packard Enterprise 服務供應商或維修夥伴) 辨認出此項維修工作可以藉由使用 CSR 零件來完成，則 Hewlett Packard Enterprise 將直接寄送該零件給您作更換。CSR 零件分為兩種類別：

- **強制的** — 客戶自行維修所使用的零件是強制性的。如果您要求 Hewlett Packard Enterprise 更換這些零件，Hewlett Packard Enterprise 將會向您收取此服務所需的外出費用與勞動成本。
- **選購的** — 客戶自行維修所使用的零件是選購的。這些零件也設計用於客戶自行維修之用。不過，如果您要求 Hewlett Packard Enterprise 為您更換，則可能需要也可能不需要負擔額外的費用，端視針對此產品指定的保固服務類型而定。

備註：某些 Hewlett Packard Enterprise 零件沒有消費者可自行維修的設計。為符合客戶保固，Hewlett Packard Enterprise 需要授權的服務供應商更換零件。這些零件在圖示的零件目錄中，被標示為「否」。

基於材料取得及環境允許的情況下，CSR 零件將於下一個工作日以快遞寄送。在環境的允許下當天或四小時內送達，則可能需要額外的費用。若您需要協助，可致電 Hewlett Packard Enterprise 支援中心，會有一位技術人員透過電話來協助您。不論損壞的零件是否必須退回，Hewlett Packard Enterprise 皆會在與 CSR 替換零件一起運送的材料中註明。若要將損壞的零件退回 Hewlett Packard Enterprise，您必須在指定的一段時間內 (通常為五 (5) 個工作天)，將損壞的零件寄回 Hewlett Packard Enterprise。損壞的零件必須與寄送資料中隨附的相關技術文件一併退還。如果無法退還損壞的零件，Hewlett Packard Enterprise 可能要向您收取替換費用。針對客戶自行維修情形，Hewlett Packard Enterprise 將負責所有運費及零件退還費用，並指定使用何家快遞/貨運公司。

如需 Hewlett Packard Enterprise 的 CSR 方案詳細資訊，請連絡您當地的服務供應商。

僅限零件的保固服務

您的「Hewlett Packard Enterprise 有限保固」可能包含僅限零件的保固服務。在僅限零件的保固服務情況下，Hewlett Packard Enterprise 將免費提供替換零件。

針對僅限零件的保固服務，CSR 零件替換是強制性的。如果您要求 Hewlett Packard Enterprise 更換這些零件，Hewlett Packard Enterprise 將會向您收取此服務所需的外出費用與勞動成本。

고객 셀프 수리

Hewlett Packard Enterprise 제품은 수리 시간을 최소화하고 결함이 있는 부품 교체 시 더욱 융통성을 발휘할 수 있도록 하기 위해 고객 셀프 수리(CSR) 부품을 다량 사용하여 설계되었습니다. 진단 기간 동안 Hewlett Packard Enterprise(또는 Hewlett Packard Enterprise 서비스 공급업체 또는 서비스 협력업체)에서 CSR 부품을 사용하여 수리가 가능하다고 판단되면 Hewlett Packard Enterprise는 해당 부품을 바로 사용자에게 보내어 사용자가 교체할 수 있도록 합니다. CSR 부품에는 두 가지 종류가 있습니다.

- **필수** - 고객 셀프 수리가 의무 사항인 필수 부품. 사용자가 Hewlett Packard Enterprise에 이 부품의 교체를 요청할 경우 이 서비스에 대한 출장비 및 작업비가 청구됩니다.
- **선택 사항** - 고객 셀프 수리가 선택 사항인 부품. 이 부품들도 고객 셀프 수리가 가능하도록 설계되었습니다. 하지만 사용자가 Hewlett Packard Enterprise에 이 부품의 교체를 요청할 경우 사용자가 구입한 제품에 해당하는 보증 서비스 유형에 따라 추가 비용 없이 교체가 가능할 수 있습니다.

참고: 일부 Hewlett Packard Enterprise 부품은 고객 셀프 수리가 불가능하도록 설계되었습니다. Hewlett Packard Enterprise는 만족스러운 고객 보증을 위해 공인 서비스 제공업체를 통해 부품을 교체하도록 하고 있습니다. 이러한 부품들은 Illustrated Parts Catalog에 "No"라고 표시되어 있습니다.

CSR 부품은 재고 상태와 지리적 조건이 허용하는 경우 다음 영업일 납품이 가능하도록 배송이 이루어집니다. 지리적 조건이 허용하는 경우 추가 비용이 청구되는 조건으로 당일 또는 4시간 배송이 가능할 수도 있습니다. 도움이 필요하시면 Hewlett Packard Enterprise Support Center로 전화하십시오. 전문 기술자가 전화로 도움을 줄 것입니다. Hewlett Packard Enterprise는 결함이 발생한 부품을 Hewlett Packard Enterprise로 반환해야 하는지 여부를 CSR 교체 부품과 함께 배송된 자료에 지정합니다. 결함이 발생한 부품을 Hewlett Packard Enterprise로 반환해야 하는 경우에는 지정된 기간 내(통상 영업일 기준 5일)에 Hewlett Packard Enterprise로 반환해야 합니다. 이때 결함이 발생한 부품은 제공된 포장 재료에 넣어 관련 설명서와 함께 반환해야 합니다. 결함이 발생한 부품을 반환하지 않는 경우 Hewlett Packard Enterprise가 교체 부품에 대해 비용을 청구할 수 있습니다. 고객 셀프 수리의 경우, Hewlett Packard Enterprise는 모든 운송 및 부품 반환 비용을 부담하며 이용할 운송업체 및 택배 서비스를 결정합니다.

Hewlett Packard Enterprise CSR 프로그램에 대한 자세한 내용은 가까운 서비스 제공업체에 문의하십시오.

부품 제공 보증 서비스

Hewlett Packard Enterprise 제한 보증에는 부품 제공 보증 서비스가 포함될 수 있습니다. 이러한 경우 Hewlett Packard Enterprise는 부품 제공 보증 서비스의 조건에 따라 교체 부품만을 무료로 제공합니다.

부품 제공 보증 서비스 제공 시 CSR 부품 교체는 의무 사항입니다. 사용자가 Hewlett Packard Enterprise에 이 부품의 교체를 요청할 경우 이 서비스에 대한 출장비 및 작업비가 청구됩니다.

Removal and replacement procedures

Subtopics

Required tools
Safety considerations
Compute module preparation
Removing and replacing an access panel
Removing and replacing a drive blank
Removing and replacing a drive
Removing and replacing an M.2 SSD flash drive
Removing and replacing an SFF flash adapter
Removing and replacing a compute module end cap

Removing and replacing a mezzanine option card
Removing and replacing a heatsink blank
Removing and replacing DIMM baffles
DIMM-processor compatibility
Removing and replacing an NVDIMM
Removing and replacing a persistent memory module
HPE Smart Storage Battery
HPE Smart Storage Hybrid Capacitor
Removing and replacing a front panel/drive cage assembly
Removing and replacing a storage controller
Removing and replacing the system battery
Removing and replacing the drive backplane
Removing and replacing the internal SATA board
Removing and replacing the system board
Dual 8Gb microSD Enterprise Midline USB device
HPE Trusted Platform Module 2.0 Gen10 Option

Required tools

You need T-15 and a T-30 Torx screwdrivers for performing procedures listed in this document.

Safety considerations

Before performing service procedures, review all the safety information.

Subtopics

Preventing electrostatic discharge
Compute module warnings and cautions
Symbols on equipment

Preventing electrostatic discharge

About this task

To prevent damaging the system, be aware of the precautions you must follow when setting up the system or handling parts. A discharge of static electricity from a finger or

other conductor may damage system boards or other static-sensitive devices. This type of damage may reduce the life expectancy of the device.

Procedure

- Avoid hand contact by transporting and storing products in static-safe containers.
- Keep electrostatic-sensitive parts in their containers until they arrive at static-free workstations.
- Place parts on a grounded surface before removing them from their containers.
- Avoid touching pins, leads, or circuitry.
- Always be properly grounded when touching a static-sensitive component or assembly.

Compute module warnings and cautions

WARNING

To reduce the risk of shock or injury from high-current electrical energy, do not remove the compute module access panel, and then install the compute module into the frame.

WARNING

To reduce the risk of personal injury from hot surfaces, allow the drives and the internal system components to cool before touching them.

CAUTION

Do not operate the compute module with the access panel removed. Operating the compute module in this manner results in improper airflow and improper cooling that can lead to thermal damage.

CAUTION

When performing non-hot-plug operations, you must power down the compute module and/or the system. However, it might be necessary to leave the compute module powered up when performing other operations, such as hot-plug installations or troubleshooting.

Symbols on equipment

The following symbols may be placed on equipment to indicate the presence of potentially hazardous conditions.





This symbol indicates the presence of hazardous energy circuits or electric shock hazards. Refer all servicing to qualified personnel.

WARNING

To reduce the risk of injury from electric shock hazards, do not open this enclosure. Refer all maintenance, upgrades, and servicing to qualified personnel.





This symbol indicates the presence of electric shock hazards. The area contains no user or field serviceable parts. Do not open for any reason.

WARNING

To reduce the risk of injury from electric shock hazards, do not open this enclosure.





This symbol on an RJ-45 receptacle indicates a network interface connection.

WARNING

To reduce the risk of electric shock, fire, or damage to the equipment, do not plug telephone

or telecommunications connectors into this receptacle.





This symbol indicates the presence of a hot surface or hot component. If this surface is contacted, the potential for injury exists.

WARNING

To reduce the risk of injury from a hot component, allow the surface to cool before touching.





This symbol indicates that the component exceeds the recommended weight for one individual to handle safely.

WARNING

To reduce the risk of personal injury or damage to the equipment, observe local occupational health and safety requirements and guidelines for manual material handling.



These symbols, on power supplies or systems, indicate that the equipment is supplied by multiple sources of power.

WARNING

To reduce the risk of injury from electric shock, remove all power cords to

disconnect power from the system completely.

Compute module preparation

About this task

To service any internal compute module component:

Procedure

1. Power down the compute module.
2. Remove the compute module

Subtopics

Powering down the compute module
Removing the compute module
Installing the compute module

Powering down the compute module

About this task

Before powering down the compute module for any upgrade or maintenance procedures, perform a backup of the system and all data. Then, shut down, as appropriate, applications and operating systems. A successful shutdown is indicated by the system power LED displaying amber.

IMPORTANT
Always attempt a graceful shutdown before forcing a nongraceful shutdown. Application data can be lost when performing a nongraceful shutdown of applications and the OS.

Before proceeding, verify the following:

- The compute module is in standby mode by observing that the system power LED is amber.

- The UID LED is not flashing blue.

> **NOTE**
>
> - When the compute module is in standby mode, auxiliary power is still being provided to the system.
> - If the UID LED is flashing blue, a remote session, or a firmware update is in progress.

To power down the compute module, use one of the following methods:

- To perform a graceful shutdown of applications and the OS when powering down the compute module to standby mode, do one of the following:
  - Press and release the **Power On/Standby** button.
  - Select the **Momentary press** power off selection in HPE OneView.
  - Select the **Momentary press** virtual power button selection in HPE iLO.
- If a graceful shutdown fails to power down the compute module to standby mode when an application or OS stops responding, force a nongraceful shutdown of applications and the OS. Do one of the following:
  - Press and hold the **Power On/Standby** button for more than four seconds.
  - Select the **Press and hold** power off selection in HPE OneView.
  - Select the **Press and hold** virtual power button selection in HPE iLO.

Removing the compute module

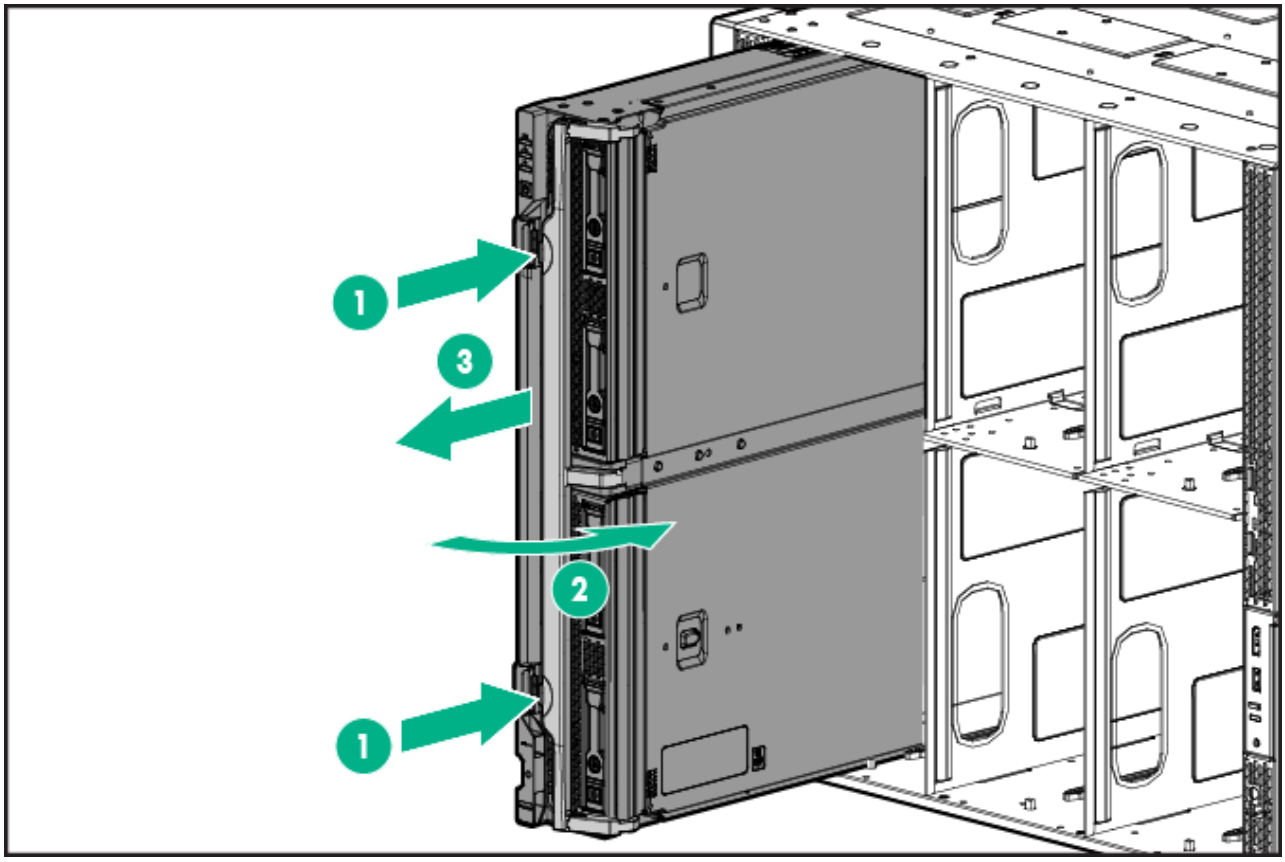
Prerequisites

> **CAUTION**
> Before proceeding, verify that the compute module is in standby mode by observing that the system power LED is amber, and verify that the UID LED is not flashing blue.

Procedure

1. Identify the proper compute module.

2. Power down the compute module.
3. Remove the compute module from the frame.



4. Place the compute module on a flat, level work surface.
5. Install the compute module end cap when the compute module is outside of the frame.

Results

To install the component, reverse the removal procedure steps.

WARNING
To reduce the risk of personal injury from hot surfaces, allow the drives and the internal system components to cool before touching them.

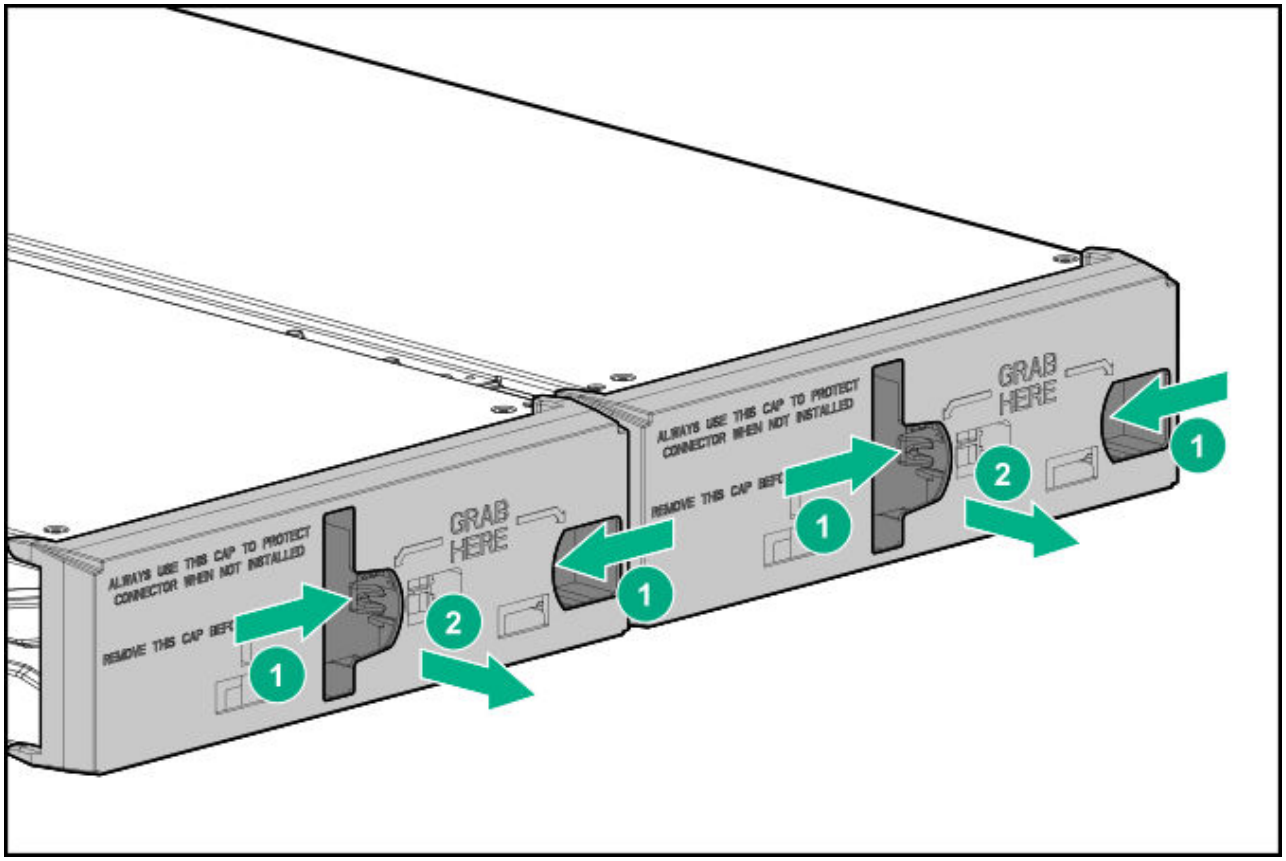
CAUTION
To prevent damage to electrical components, properly ground the compute module before beginning any installation procedure. Improper grounding can cause ESD.

Installing the compute module

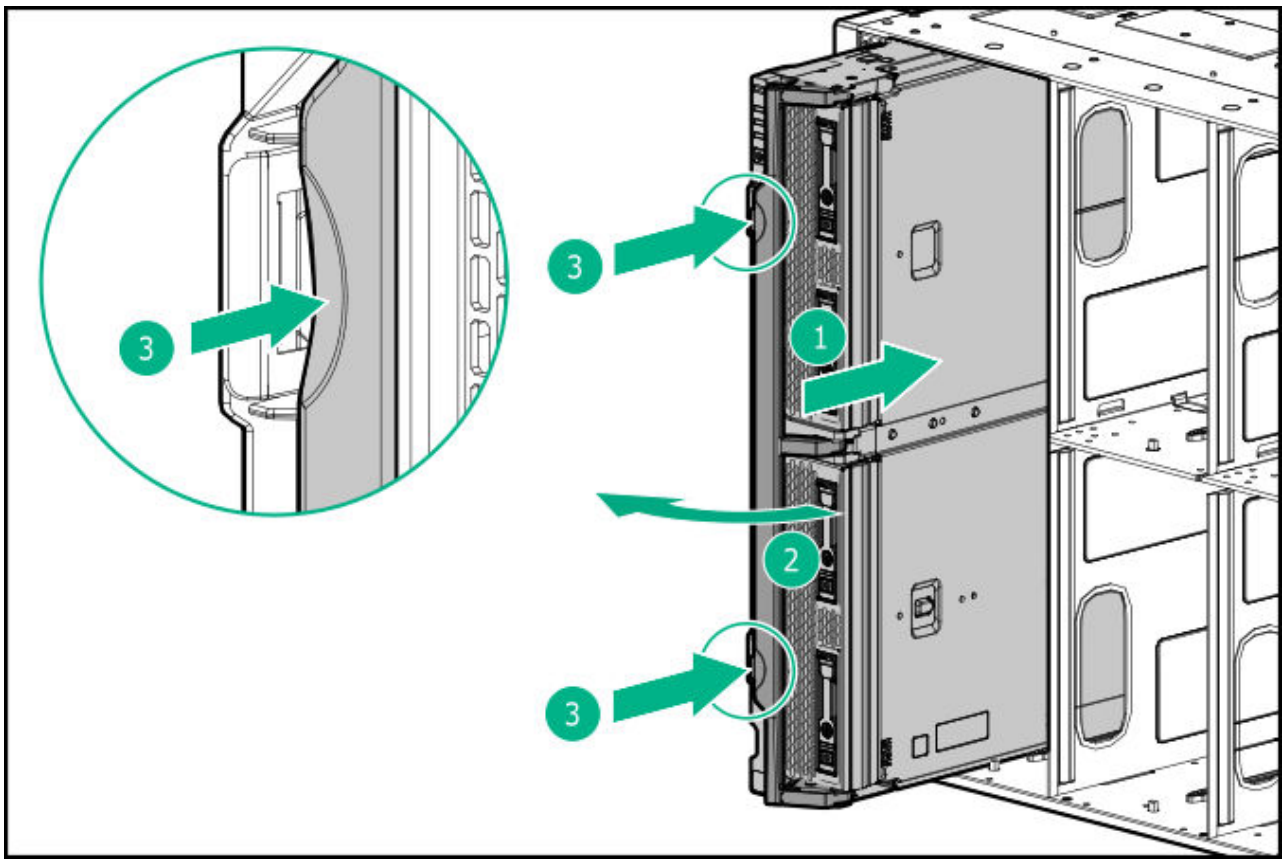
Prerequisites

Procedure

1. Verify that the device bay is configured for a full-height compute module. For more information, see the setup and installation guide for the frame on the **Hewlett Packard Enterprise website**.
2. Remove the compute module end cap.



3. Prepare the compute module for installation by opening the compute module handle
4. Install the compute module. Press the compute module handle near the release button to completely close the handle.



5. To determine the compute module status, review the compute module front panel LEDs. For more information on the compute module LEDs, see "Component identification."

Results

To remove the component, reverse the installation procedure.

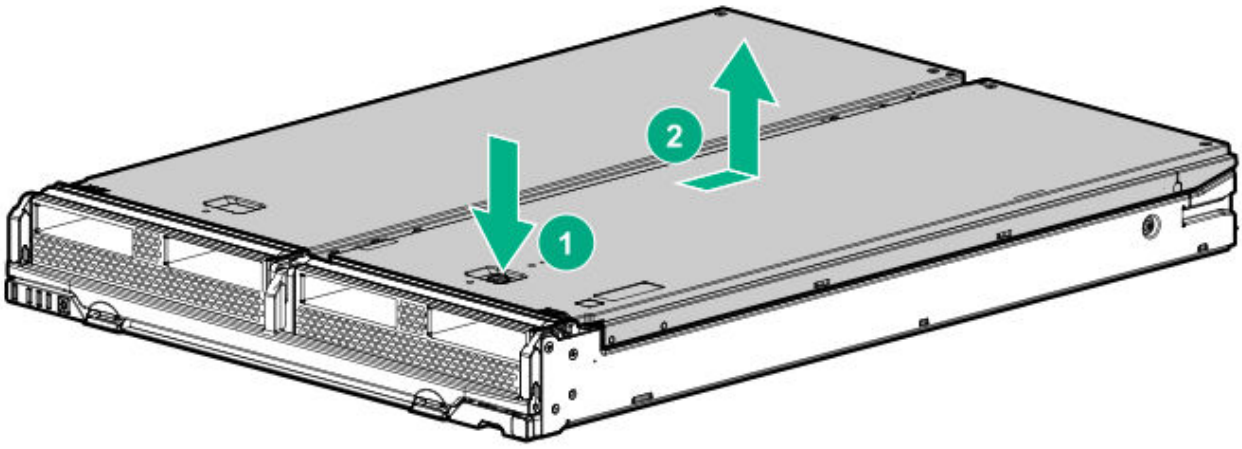
> **CAUTION**
> Before removing the compute module, verify that the compute module is in standby mode by observing that the system power LED is amber. Also, verify that the UID LED is not flashing blue.

Removing and replacing an access panel

Procedure

1. Power down the compute module .

2. Remove the compute module.
3. Press the access panel release button.



4. Slide the access panel towards the rear of the compute module, and then lift to remove the panel.

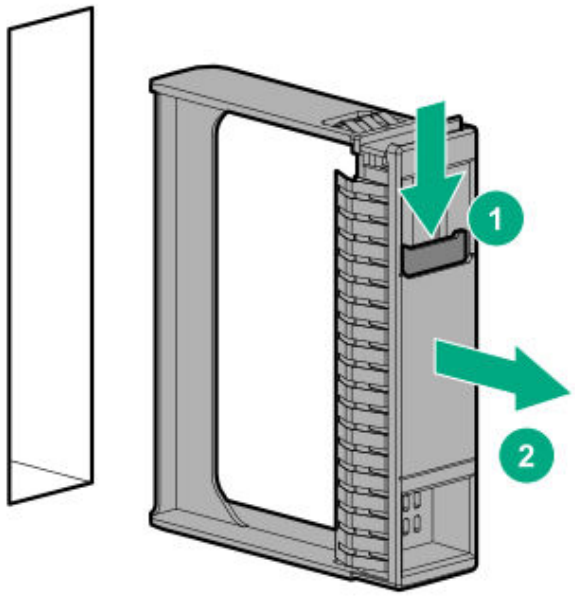
Results

To replace the component, reverse the removal procedure.

Removing and replacing a drive blank

Procedure

1. Press the drive release button.
2. Remove the drive.



CAUTION

To prevent improper cooling and thermal damage, do not operate the compute module unless all bays are populated with either a component or a blank.

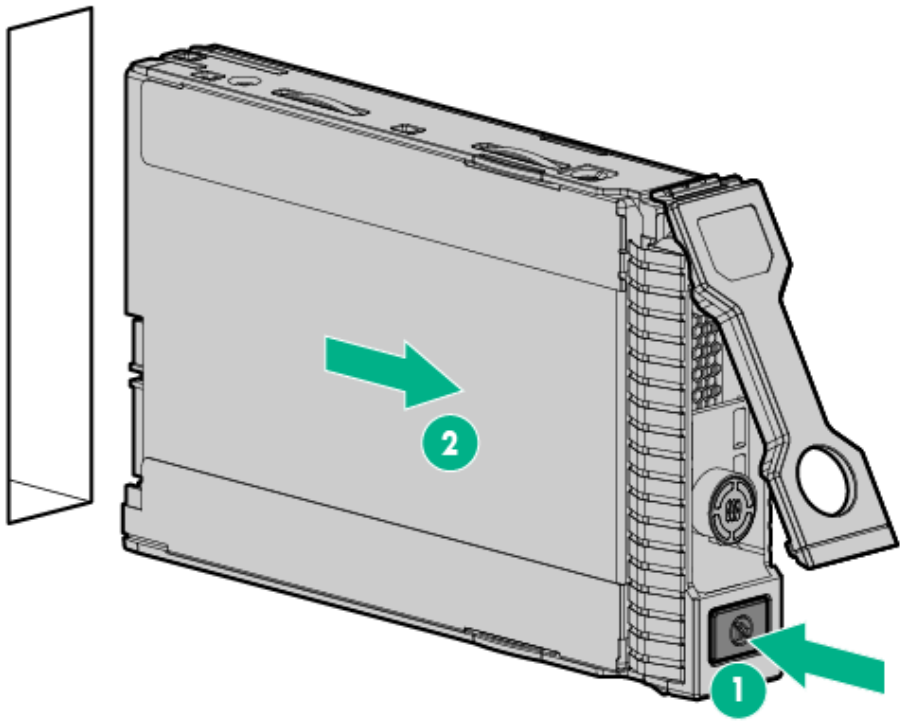
Results

To replace the component, reverse the removal procedure.

Removing and replacing a drive

Procedure

1. Determine the status of the drive from the drive LED definitions.
2. Back up all data on the drive.
3. Remove the drive.



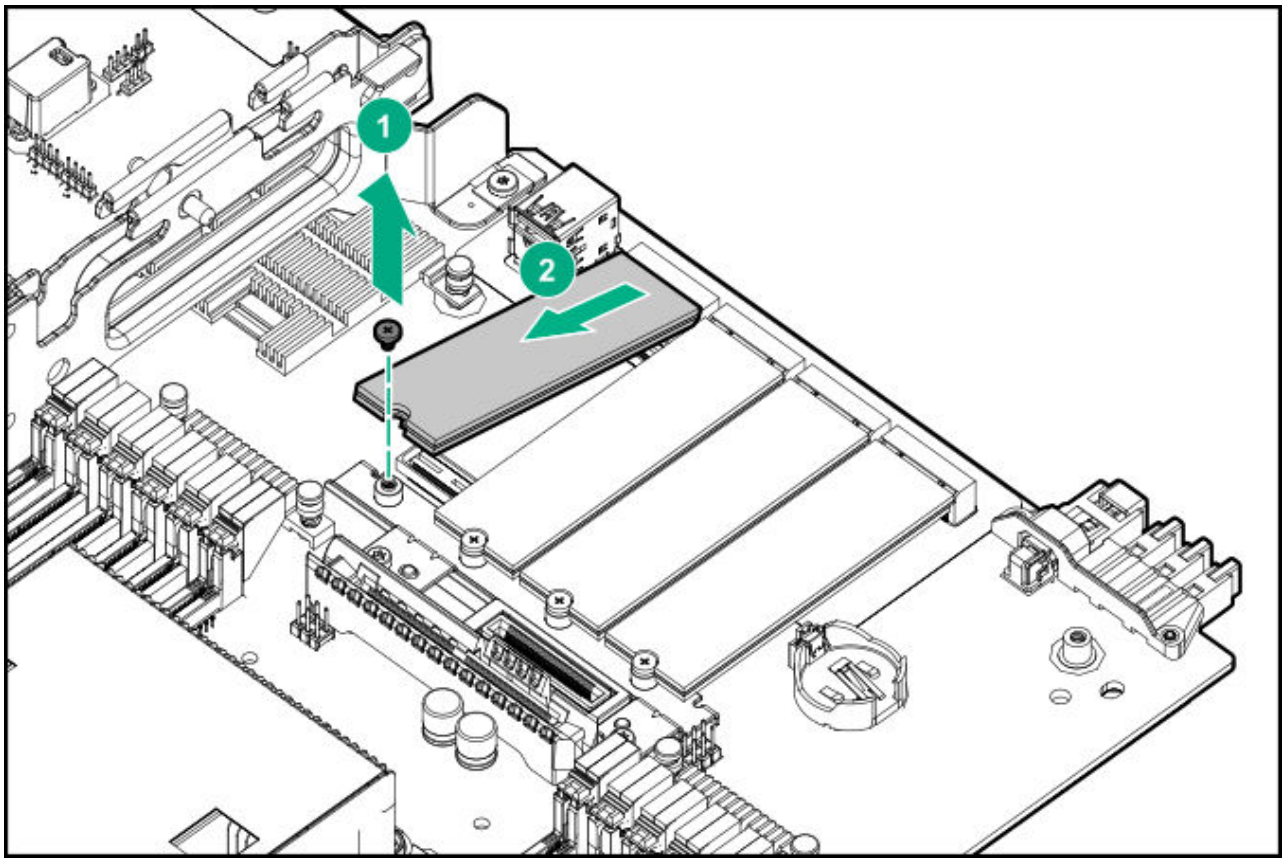
Results

To replace the drive, slide the drive into the bay until it is fully seated, and then close the latch handle to lock the drive in the bay.

Removing and replacing an M.2 SSD flash drive

Procedure

1. Power down the compute module.
2. Remove the compute module.
3. Lay the compute module on a flat and level surface.
4. Remove the access panel.
5. Remove the front panel/drive cage assembly.
6. Remove the SSD flash drive board standoff screw.
7. Remove the SSD flash drive.



Removing and replacing an SFF flash adapter

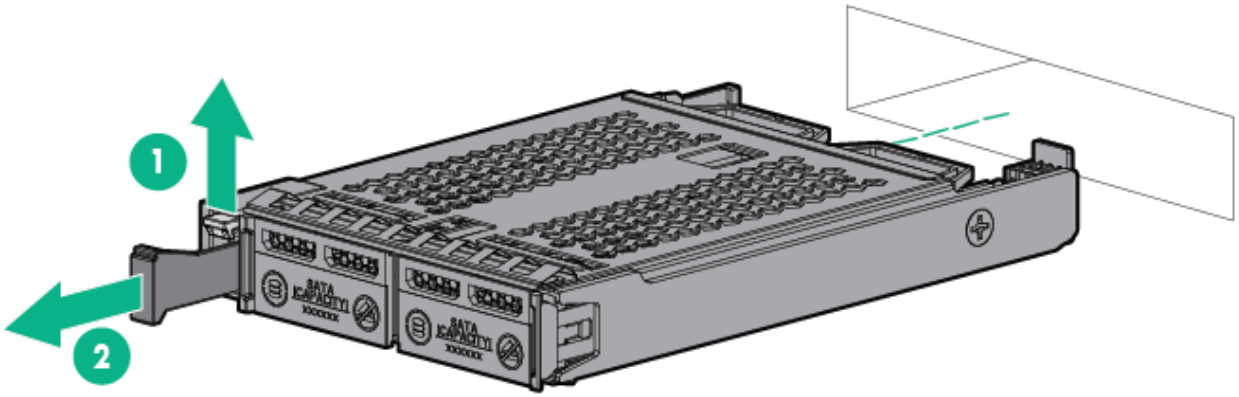
About this task

> **CAUTION**
> Removing the SFF Flash Adapter also removes two uFF drives and might cause one or more logical drives to fail.

Procedure

1. Power down the compute module.
2. Slide the adapter ejection handle release latch up.

   The handle will eject from the adapter.
3. Pull the adapter handle to remove the SFF flash adapter.



Results

To replace the component, reverse the removal procedure.

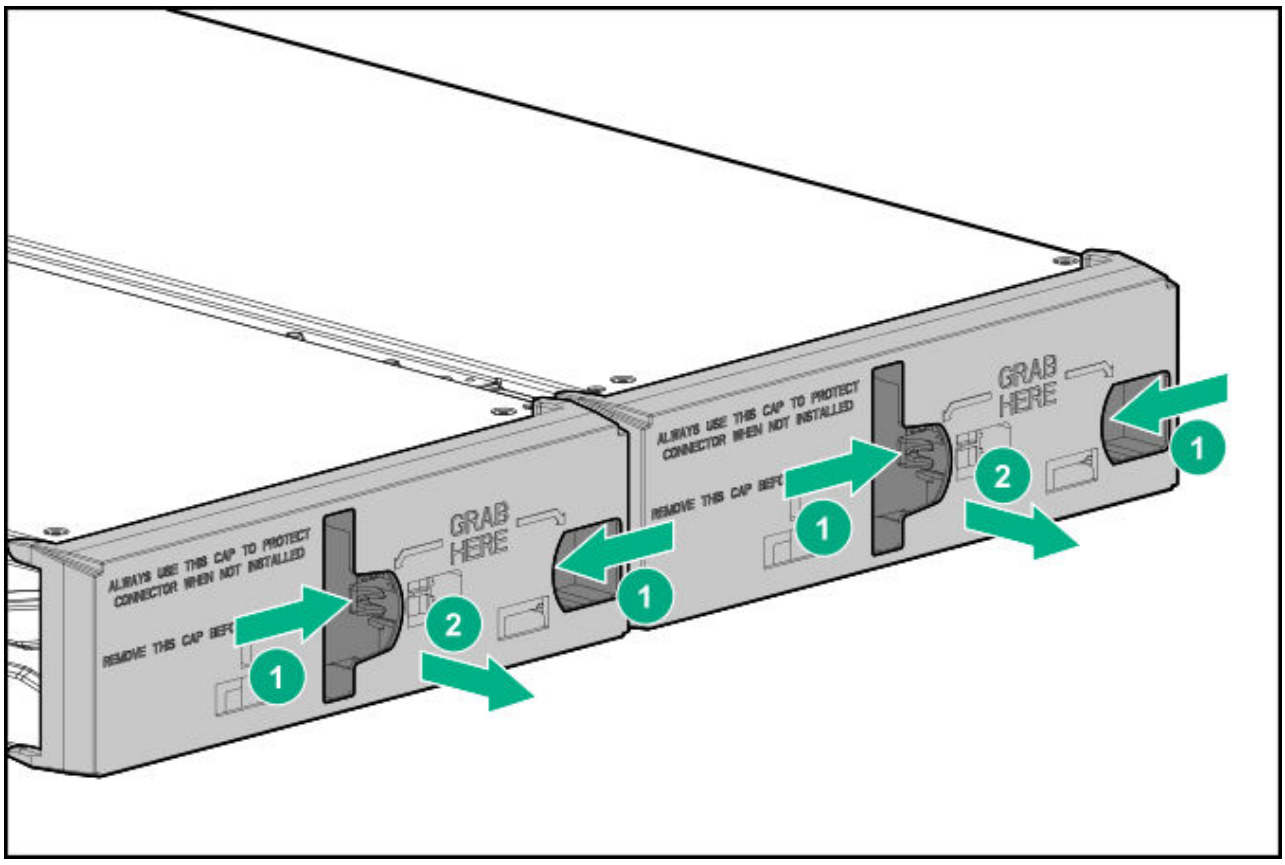
More information

Powering down the compute module

Removing and replacing a compute module end cap

Procedure

1. Remove the compute module from the shipping container.
2. Place the compute module on a flat, level work surface.
3. Remove the compute module end cap.



Results

To replace the component, reverse the removal procedure.

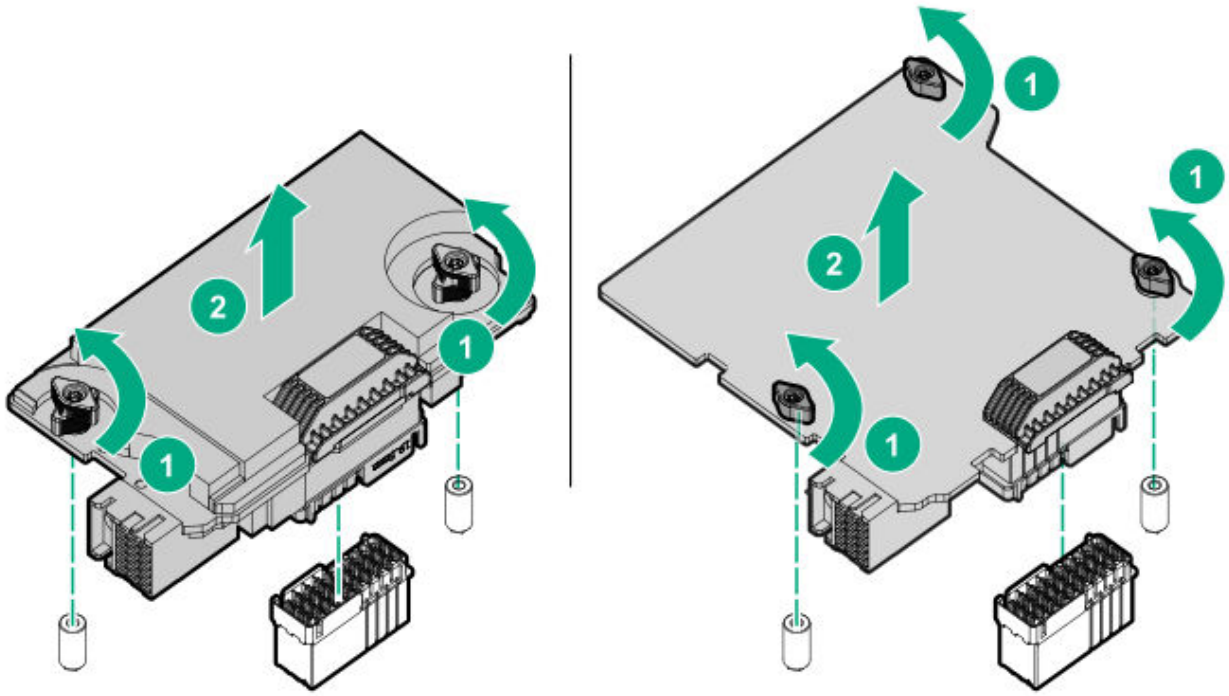
More information

Powering down the compute module

Removing and replacing a mezzanine option card

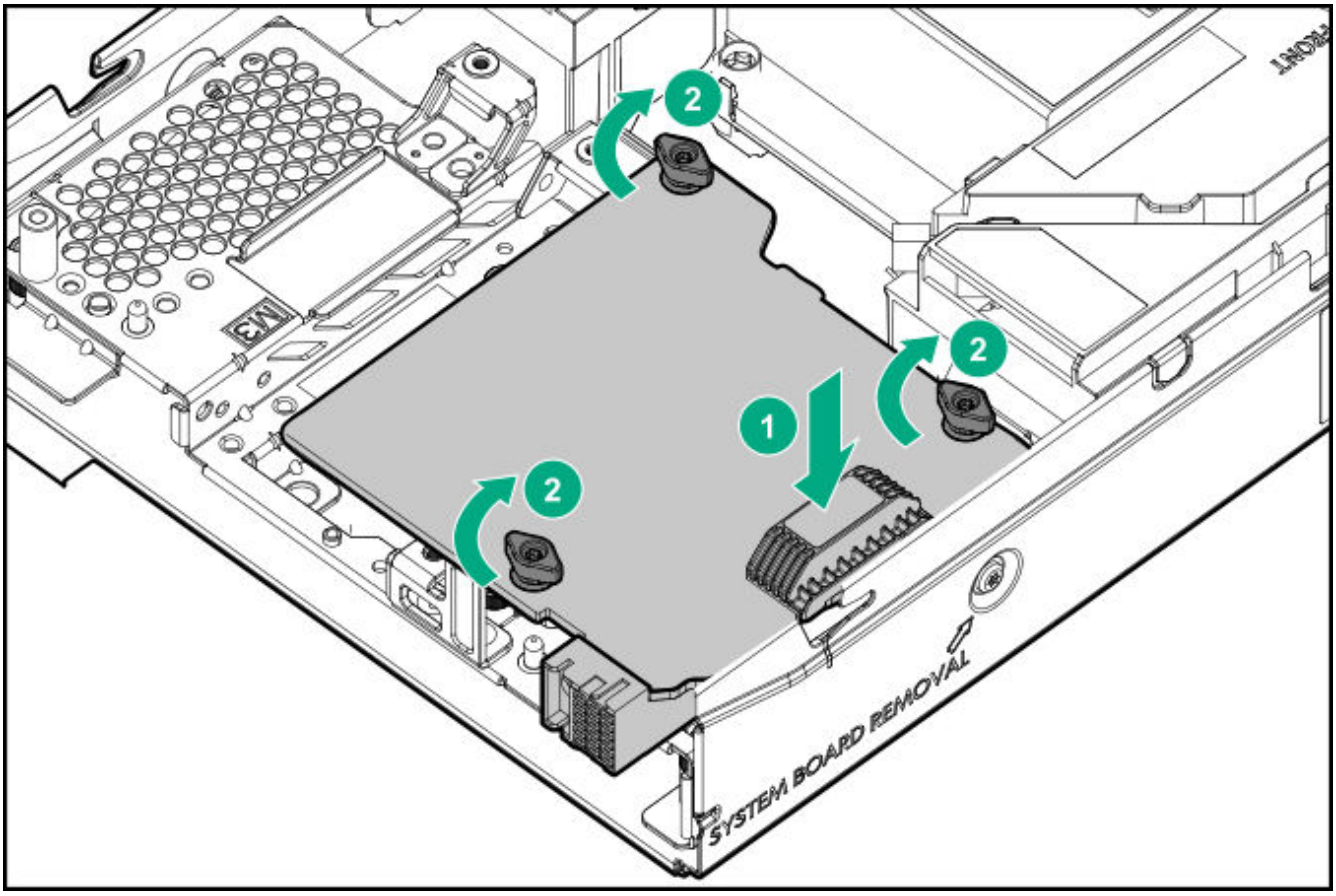
Procedure

1. Power down the compute module .
2. Remove the compute module.
3. Place the compute module on a flat, level work surface.
4. Remove the access panel.
5. Remove the mezzanine option card.



Results

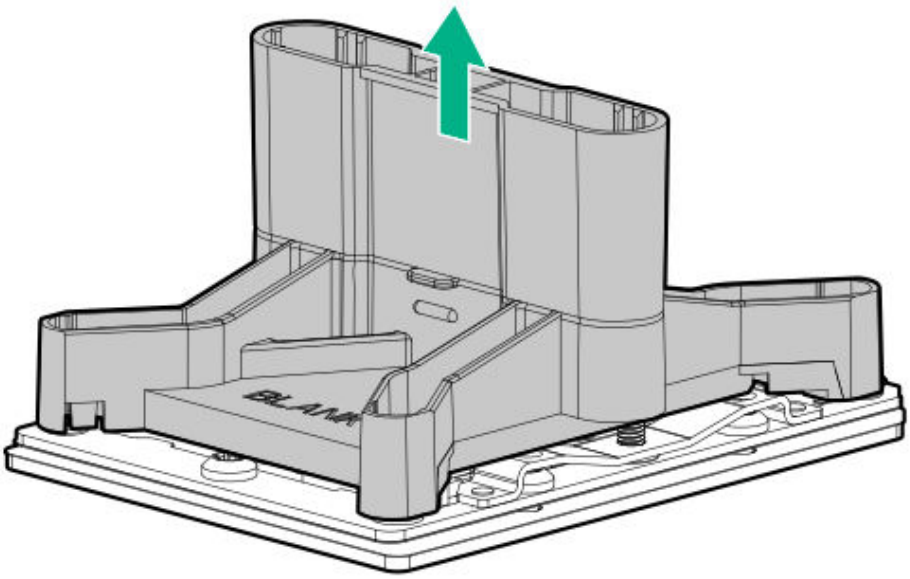
To replace the component, reverse the removal procedure.



Removing and replacing a heatsink blank

Procedure

1. Power down the compute module .
2. Remove the compute module.
3. Place the compute module on a flat, level work surface.
4. Remove the access panel.
5. Remove the heatsink blank. Retain the heatsink blank for future use.



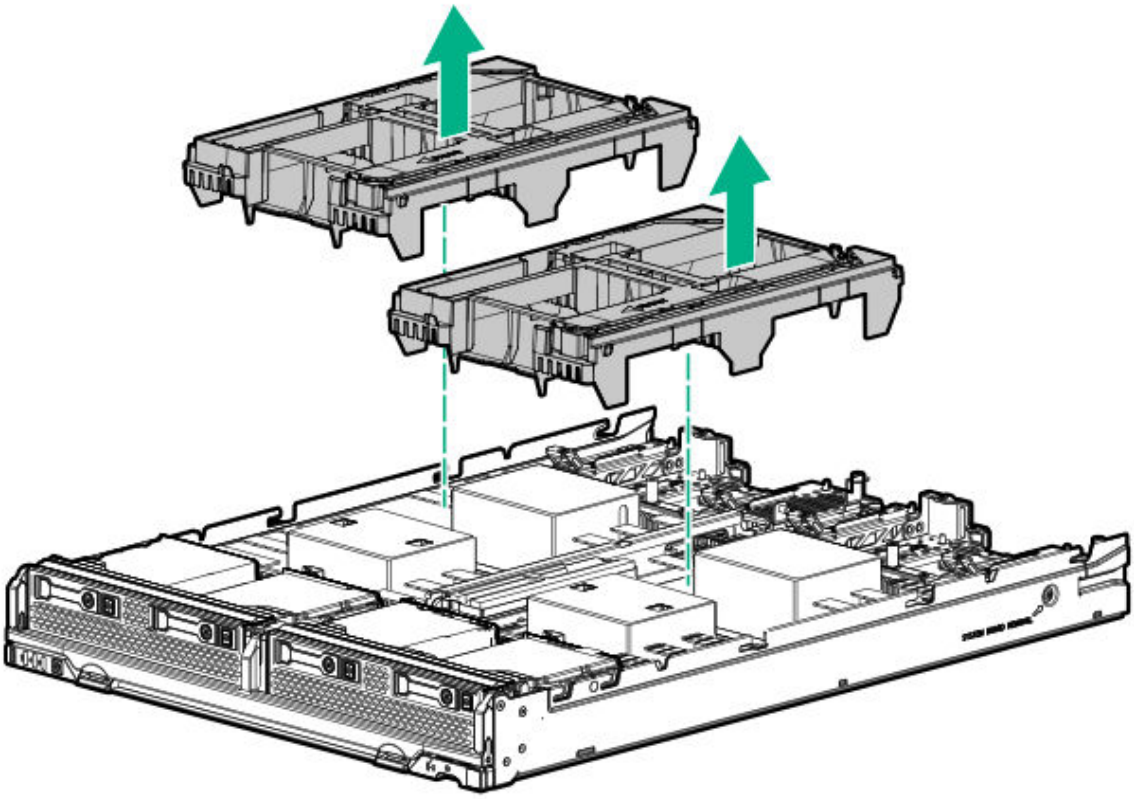
Results

To replace the component, reverse the removal procedure.

Removing and replacing DIMM baffles

Procedure

1. Power down the compute module .
2. Remove the compute module.
3. Place the compute module on a flat, level work surface.
4. Remove the access panel.
5. Remove one or more DIMM baffles.



6. If an energy pack is installed, remove it from the DIMM baffle.

Results

To replace the component, reverse the removal procedure.

> **IMPORTANT**
> Be sure to install the energy pack in the same baffle from which it was removed when replacing it.

DIMM-processor compatibility

The installed processor determines the type of DIMM that is supported in the compute module:

- First-generation Intel Xeon Scalable processors support DDR4-2666 DIMMs.
- Second-generation Intel Xeon Scalable processors support DDR4-2933 DIMMs.

Mixing DIMM types is not supported. Install only the supported DDR4-2666 or DDR4-2933 DIMMs in the compute module.

Subtopics

Removing and replacing DIMMs

Removing and replacing DIMMs

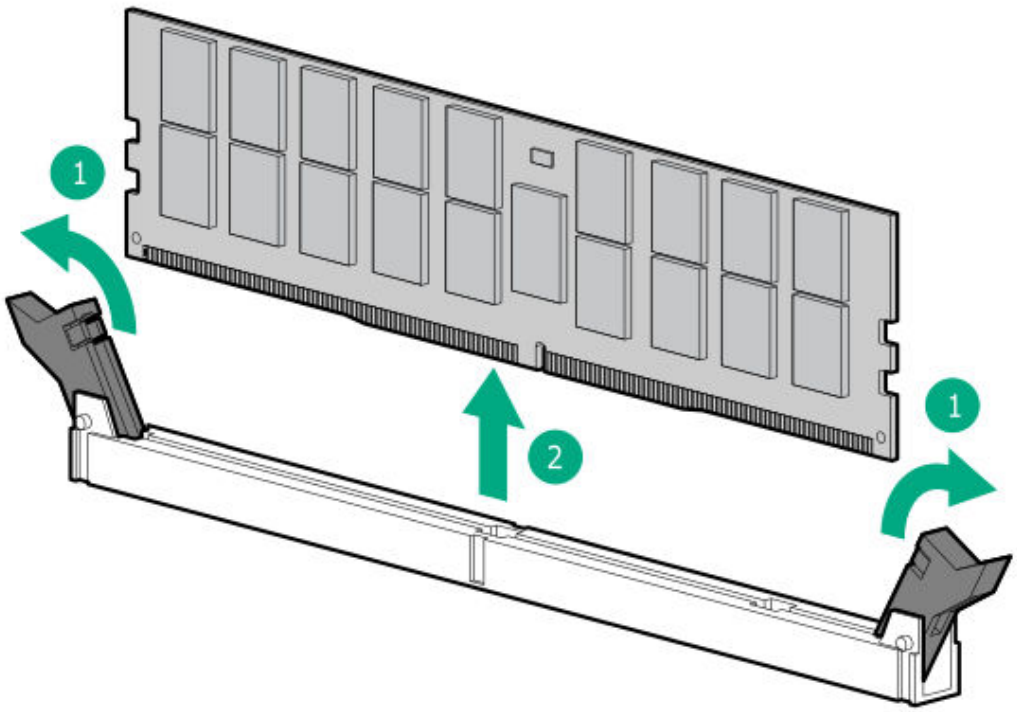
Procedure

1. Power down the compute module .
2. Remove the compute module.
3. Place the compute module on a flat, level work surface.
4. Remove the access panel.
5. Remove all DIMM baffles.

   IMPORTANT

   Flip the DIMM baffle on top of the heatsink, and leave the Smart Storage Battery installed and on the baffle when accessing the right DIMM baffle.

   See "DIMM slot locations" to identify DIMMs installed in the compute module.
6. Remove the DIMM.



Results

To replace the component, reverse the removal procedure. Use HPE UEFI System Utilities to configure the memory mode.

CAUTION

- To prevent improper cooling and thermal damage, always install DIMMs of the same height in the compute module.
- This compute module does not support mixing standard and nonstandard height DIMMs.

Removing and replacing an NVDIMM

Prerequisites

Before replacing memory, read the memory configuration and population guidelines in the server user guide.

About this task

CAUTION
Do not remove an NVDIMM when any LEDs on any NVDIMM in the system are illuminated. Removing an NVDIMM when an LED is illuminated might cause a loss of data.

CAUTION
Electrostatic discharge can damage electronic components. Be sure you are properly grounded before beginning this procedure.

CAUTION
Failure to properly handle DIMM s can cause damage to DIMM components and the system board connector.

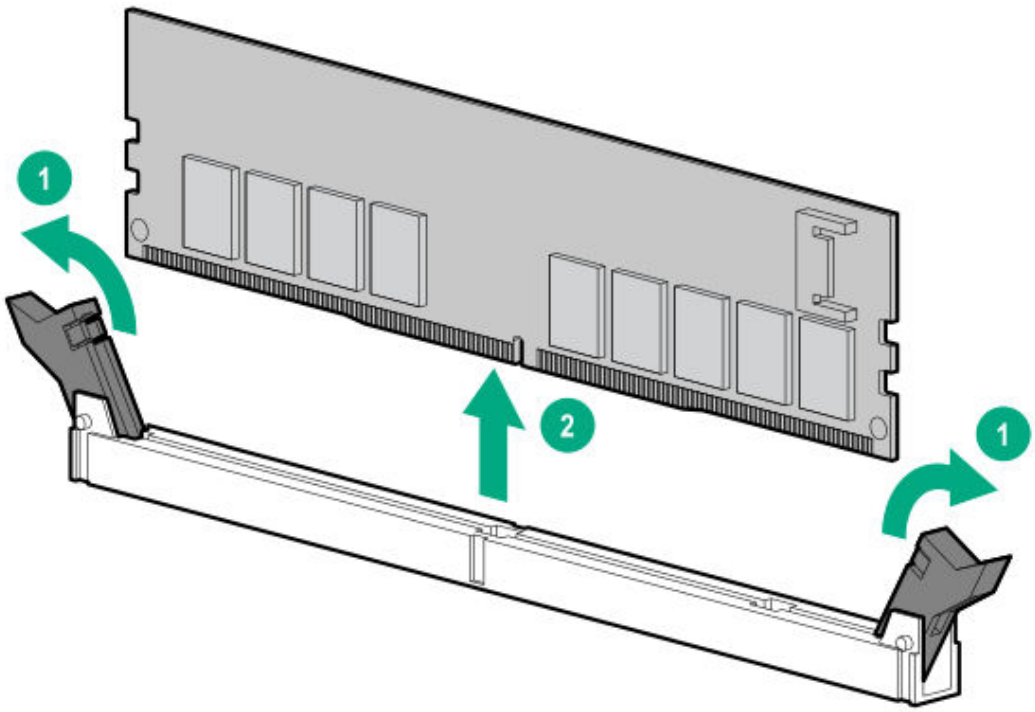
To identify NVDIMMs installed in the compute module, see "NVDIMM identification"

Procedure

1. Sanitize/erase any NVDIMMs being removed or relocated as necessary. For more information, see "NVDIMM relocation guidelines."
2. Power down the compute module .
3. Remove the compute module.
4. Place the compute module on a flat, level work surface.
5. Remove the access panel.
6. Remove all DIMM baffles.

   IMPORTANT
   Flip the DIMM baffle on top of the heatsink. Leave the Smart Storage Battery installed and on the baffle when accessing the right DIMM baffle.

   See "DIMM slot locations" to identify DIMMs installed in the compute module.
7. Observe the NVDIMM LEDs. Do not remove an NVDIMM when any NVDIMM LED in the system is illuminated.
8. Remove the NVDIMM-N.



Results

To replace the component, reverse the removal procedure.

Subtopics

NVDIMM-processor compatibility
DIMM and NVDIMM population information
NVDIMM sanitization
NVDIMM relocation guidelines
Recovering restored data from an NVDIMM-N DRAM
Configuring the compute module for NVDIMMs

NVDIMM-processor compatibility

HPE 16GB NVDIMMs are only supported in servers with first-generation Intel Xeon Scalable processors installed.

DIMM and NVDIMM population information

For specific DIMM and NVDIMM population information, see the DIMM population guidelines on the Hewlett Packard Enterprise website (**https://www.hpe.com/docs/memory-population-rules**).

NVDIMM sanitization

Media sanitization is defined by NIST SP800-88 Guidelines for Media Sanitization (Rev 1, Dec 2014) as "a general term referring to the actions taken to render data written on media unrecoverable by both ordinary and extraordinary means."

The specification defines the following levels:

- Clear: Overwrite user-addressable storage space using standard write commands; might not sanitize data in areas not currently user-addressable (such as bad blocks and overprovisioned areas)
- Purge: Overwrite or erase all storage space that might have been used to store data using dedicated device sanitize commands, such that data retrieval is "infeasible using state-of-the-art laboratory techniques"
- Destroy: Ensure that data retrieval is "infeasible using state-of-the-art laboratory techniques" and render the media unable to store data (such as disintegrate, pulverize, melt, incinerate, or shred)

The NVDIMM-N Sanitize options are intended to meet the Purge level.

For more information on sanitization for NVDIMMs, see the following sections in the HPE 16GB NVDIMM User Guide on the Hewlett Packard Enterprise website (**https://www.hpe.com/info/nvdimm-docs**):

- NVDIMM sanitization policies
- NVDIMM sanitization guidelines
- Setting the NVDIMM-N Sanitize/Erase on the Next Reboot Policy

NIST SP800-88 Guidelines for Media Sanitization (Rev 1, Dec 2014) is available for download from the NIST website (**https://nvlpubs.nist.gov/nistpubs/SpecialPublications/NIST.SP.800-88r1.pdf**).

NVDIMM relocation guidelines

Requirements for relocating NVDIMMs or a set of NVDIMMs when the data must be preserved

- The destination compute module hardware must match the original compute module hardware configuration.
- All System Utilities settings in the destination compute module must match the original System Utilities settings in the original compute module.
- If NVDIMM-Ns are used with NVDIMM Interleaving ON mode in the original compute module, do the following:
  - Install the NVDIMMs in the same DIMM slots in the destination compute module.
  - Install the entire NVDIMM set (all the NVDIMM-Ns on the processor) on the destination compute module.

  This guideline would apply when replacing a system board due to system failure.

  If any of the requirements cannot be met during NVDIMM relocation, do the following:

  - Manually back up the NVDIMM-N data before relocating NVDIMM-Ns to another compute module.
  - Relocate the NVDIMM-Ns to another compute module.
  - Sanitize all NVDIMM-Ns on the new compute module before using them.

Requirements for relocating NVDIMMs or a set of NVDIMMs when the data does not have to be preserved

If data on the NVDIMM-N or set of NVDIMM-Ns does not have to be preserved, then

- Move the NVDIMM-Ns to the new location and sanitize all NVDIMM-Ns after installing them to the new location. For more information, see NVDIMM sanitization.
- Observe all DIMM and NVDIMM population guidelines. For more information, see DIMM and NVDIMM population information.
- Observe the process for removing an NVDIMM.
- Observe the process for installing an NVDIMM.
- Review and configure the system settings for NVDIMMs. For more information, see Configuring the compute module for NVDIMMs.

Recovering restored data from an NVDIMM-N DRAM

About this task

CAUTION

Do not remove an NVDIMM when any LEDs on any NVDIMM in the system are illuminated. Removing an NVDIMM when an LED is illuminated might cause a loss of data.

CAUTION

Electrostatic discharge can damage electronic components. Be sure you are properly grounded before beginning this procedure.

CAUTION

Failure to properly handle DIMMs can damage the DIMM components and the system board connector. For more information, see the DIMM handling guidelines in the troubleshooting guide for your product on the Hewlett Packard Enterprise website:

- HPE ProLiant Gen10 (**https://www.hpe.com/info/gen10-troubleshooting**)
- HPE Synergy (**https://www.hpe.com/info/synergy-troubleshooting**)

When the NVDIMM-N DRAM contains the only copy of restored data, perform the following procedure to recover the information:

Procedure

1. Copy the data from the NVDIMM to some other storage device (such as SSD, HDD, or another NVDIMM) as soon as possible (before cold reset or power loss).
2. Power down the compute module .
3. Remove the compute module.
4. Place the compute module on a flat, level work surface.
5. Remove the access panel.

6. Remove all DIMM baffles.

   IMPORTANT

   Flip the DIMM baffle on top of the heatsink. Leave the Smart Storage Battery installed and on the baffle when accessing the right DIMM baffle.

   See "DIMM slot locations" to identify DIMMs installed in the compute module.

7. Observe the NVDIMM LEDs. Do not remove an NVDIMM when any NVDIMM LED in the system is illuminated.
8. Remove the NVDIMM-N.
9. Install a replacement NVDIMM-N.
0. Install any components removed to access the DIMM slots and the HPE Smart Storage Battery.
1. Install the access panel.
2. Install the compute module in the rack.
3. Power up the compute module.
4. Sanitize the replacement NVDIMM.
5. Copy the data from the storage device to the NVDIMM-N.

Configuring the compute module for NVDIMMs

After installing NVDIMMs, configure the compute module for NVDIMMs. For information on configuring settings for NVDIMMs, see the HPE 16GB NVDIMM User Guide on the Hewlett Packard Enterprise website (**https://www.hpe.com/info/nvdimm-docs**).

The compute module can be configured for NVDIMMs using either of the following:

- UEFI System Utilities—Use System Utilities through the Remote Console to configure the compute module for NVDIMM memory options by pressing the **F9** key during POST. For more information about UEFI System Utilities, see the Hewlett Packard Enterprise website (**https://www.hpe.com/info/uefi/docs**).
- iLO RESTful API for HPE iLO 5—For more information about configuring the system for NVDIMMs, see **https://hewlettpackard.github.io/ilo-rest-api-docs/ilo5/**.

Removing and replacing a persistent memory module

About this task

For specific population and configuration information, see the memory population guidelines on the Hewlett Packard Enterprise website (**http://www.hpe.com/docs/memory-population-rules**).

To identify the persistent memory modules installed in the compute module, see Intel Optane persistent memory 100 series for HPE label identification.

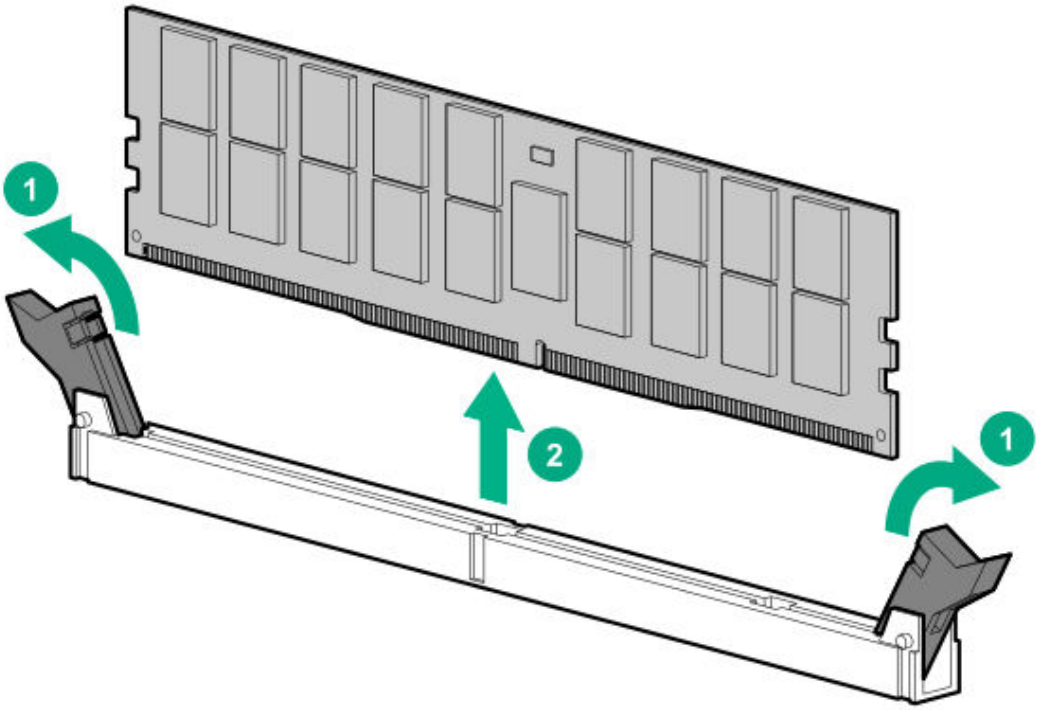
Procedure

1. Observe the following alerts:

   > **CAUTION**
   > Electrostatic discharge can damage electronic components. Be sure you are properly grounded before beginning this procedure.

   > **CAUTION**
   > Failure to properly handle persistent memory modules can damage the component and the system board connector.

2. Power down the compute module.
   a. Shut down the OS as directed by the OS documentation.
   b. To place the compute module in standby mode, press the Power On/Standby button. When the compute module enters standby power mode, the system power LED changes to amber.
   c. Disconnect the power cords (rack and tower servers).
3. Remove the compute module.
4. Place the compute module on a flat, level work surface.
5. Remove the access panel.
6. Remove all components necessary to access the DIMM slots.
7. Remove the persistent memory module.



8. Install the new persistent memory module, and review the persistent memory configuration of the compute module.

   For more information, see Configuring the compute module for Intel Optane persistent memory 100 series for HPE.

9. If you are relocating the persistent memory module to or from another compute module, see the Persistent memory module relocation guidelines.

Subtopics

Persistent memory module-processor compatibility
Configuring the compute module for Intel Optane persistent memory 100 series for HPE
Persistent memory module relocation guidelines
Persistent memory module sanitization

Persistent memory module-processor compatibility

Intel Optane persistent memory 100 series for HPE is supported only in servers with second-generation Intel Xeon Scalable processors installed.

Configuring the compute module for Intel Optane persistent memory 100 series for HPE

After installing persistent memory modules, configure the compute module for Intel Optane persistent memory for HPE.

> **IMPORTANT**
> Always follow recommendations from your software application provider for high-availability best practices to ensure maximum uptime and data protection.

A number of configuration tools are available, including:

- UEFI System Utilities—Access System Utilities through the Remote Console to configure the compute module by pressing the **F9** key during POST.
- iLO RESTful API—Use the iLO RESTful API through tools such as the RESTful Interface Tool (ilorest) or other third-party tools.
- HPE Persistent Memory Management Utility—The HPE Persistent Memory Management Utility is a desktop application used to configure the compute module for Intel Optane persistent memory 100 series for HPE, as well as evaluate and monitor the compute module memory configuration layout.

For more information, see the Intel Optane persistent memory 100 series for HPE User Guide on the Hewlett Packard Enterprise website (**https://www.hpe.com/info/persistentmemory-docs**).

Persistent memory module relocation guidelines

Observe the relocation guidelines when doing the following:

- When relocating persistent memory modules to another DIMM slot on the compute module.
- When relocating persistent memory modules to another compute module.

- When reinstalling persistent memory modules after replacing the compute module system board.

> **IMPORTANT**
> When data must be preserved, Hewlett Packard Enterprise strongly recommends that you perform a manual backup of all user data on the persistent memory modules before changing the goal configuration or performing relocation procedures.

Requirements for relocating persistent memory modules or a set of persistent memory modules when the data must be preserved

- The destination compute module hardware must match the original compute module hardware configuration.
- All System Utilities settings in the destination compute module must match the original System Utilities settings in the original compute module.
- If persistent memory modules are used with **Persistent Memory Interleaving** set to Enabled in the original compute module, do the following:
  - Install the persistent memory modules in the same DIMM slots in the destination compute module.
  - Install the entire interleaved set (all the DIMMs and persistent memory modules on the processor) on the destination compute module.

  If any of the requirements cannot be met during relocation, do the following:
  - Manually back up the persistent memory data before relocating persistent memory modules to another compute module.
  - Relocate the persistent memory modules to another compute module.
  - Sanitize all persistent memory modules on the new compute module before using them.

Requirements for relocating encrypted persistent memory modules or a set of persistent memory modules when the data must be preserved

- If persistent memory modules are encrypted with local key management, either manually retrieve the persistent memory module passwords from the compute module (user-generated passwords only) or export a password file to a USB key.

  Hewlett Packard Enterprise recommends exporting the password file to a USB key.

- Follow the requirements for relocating persistent memory modules or a set of persistent memory modules when the data must be preserved.
- Do one of the following:
  - If persistent memory modules are encrypted with local key management, either manually enter the persistent memory module passwords in the System Utilities or import the password file from the USB key.
  - If persistent memory modules are encrypted with remote key management, enroll the HPE iLO in the key management server to provide access to the data on the persistent memory modules.

  For more information, see the Intel Optane persistent memory 100 series for HPE User Guide on the Hewlett Packard Enterprise website (**https://www.hpe.com/info/persistentmemory-docs**).

Requirements for relocating persistent memory modules or a set of persistent memory modules when the data does not have to be preserved

- Move the persistent memory modules to the new location and sanitize all persistent memory modules after installing them to the new location.
- Observe the DIMM and persistent memory module population guidelines.
- Observe the process for removing a persistent memory module.
- Observe the process for installing a persistent memory module.
- Review and configure the system settings for Intel Optane persistent memory for HPE.

For more information, see the Intel Optane persistent memory 100 series for HPE User Guide on the Hewlett Packard Enterprise website (**https://www.hpe.com/info/persistentmemory-docs**).

Persistent memory module sanitization

Media sanitization is defined by NIST SP800-88 Guidelines for Media Sanitization (Rev 1, Dec 2014) as "a general term referring to the actions taken to render data written on media unrecoverable by both ordinary and extraordinary means."

The specification defines the following levels:

- Clear: Overwrite user-addressable storage space using standard write commands; might not sanitize data in areas not currently user-addressable (such as bad blocks and over-provisioned areas).
- Purge: Overwrite or erase all storage space that might have been used to store data using dedicated device sanitize commands, such that data retrieval is "infeasible using state-of-the-art laboratory techniques."
- Destroy: Ensure that data retrieval is "infeasible using state-of-the-art laboratory techniques" and render the media unable to store data (such as disintegrate, pulverize, melt, incinerate, or shred).

Intel Optane persistent memory for HPE supports the purge level using a cryptographic erase technique and an overwrite technique.

HPE ProLiant and HPE Synergy Gen10 server products support sanitizing persistent memory modules during POST. Use the HPE RESTful Interface Tool or UEFI System Utilities to schedule sanitization on the next boot.

For more information, see the sanitization policies and guidelines in the Intel Optane persistent memory 100 series for HPE User Guide on the Hewlett Packard Enterprise website (**https://www.hpe.com/info/persistentmemory-docs**).

NIST SP800-88 Guidelines for Media Sanitization (Rev 1, Dec 2014) is available for download from the NIST website (**https://nvlpubs.nist.gov/nistpubs/SpecialPublications/NIST.SP.800-88r1.pdf**).

HPE Smart Storage Battery

The HPE Smart Storage Battery supports the following devices:

- HPE Smart Array SR controllers
- HPE Smart Array MR controllers

A single 96W battery can support up to 24 devices.

After the battery is installed, it might take up to two hours to charge. Controller features requiring backup power are not re-enabled until the battery is capable of supporting the backup power.

This server supports the 96W HPE Smart Storage Battery with the 260mm cable.

HPE Smart Storage Hybrid Capacitor

The HPE Smart Storage Hybrid Capacitor supports the following devices:

- HPE Smart Array SR controllers
- HPE Smart Array MR controllers

The capacitor pack can support up to three devices.

This server supports the HPE Smart Storage Hybrid Capacitor with the 260mm cable.

Before installing the HPE Smart Storage Hybrid Capacitor, verify that the system BIOS meets the minimum firmware requirements to support the capacitor pack.

> **IMPORTANT**
> If the system BIOS or controller firmware is older than the minimum recommended firmware versions, the capacitor pack will only support one device.

The capacitor pack is fully charged after the system boots.

Subtopics

Minimum firmware versions
Removing and replacing the energy pack

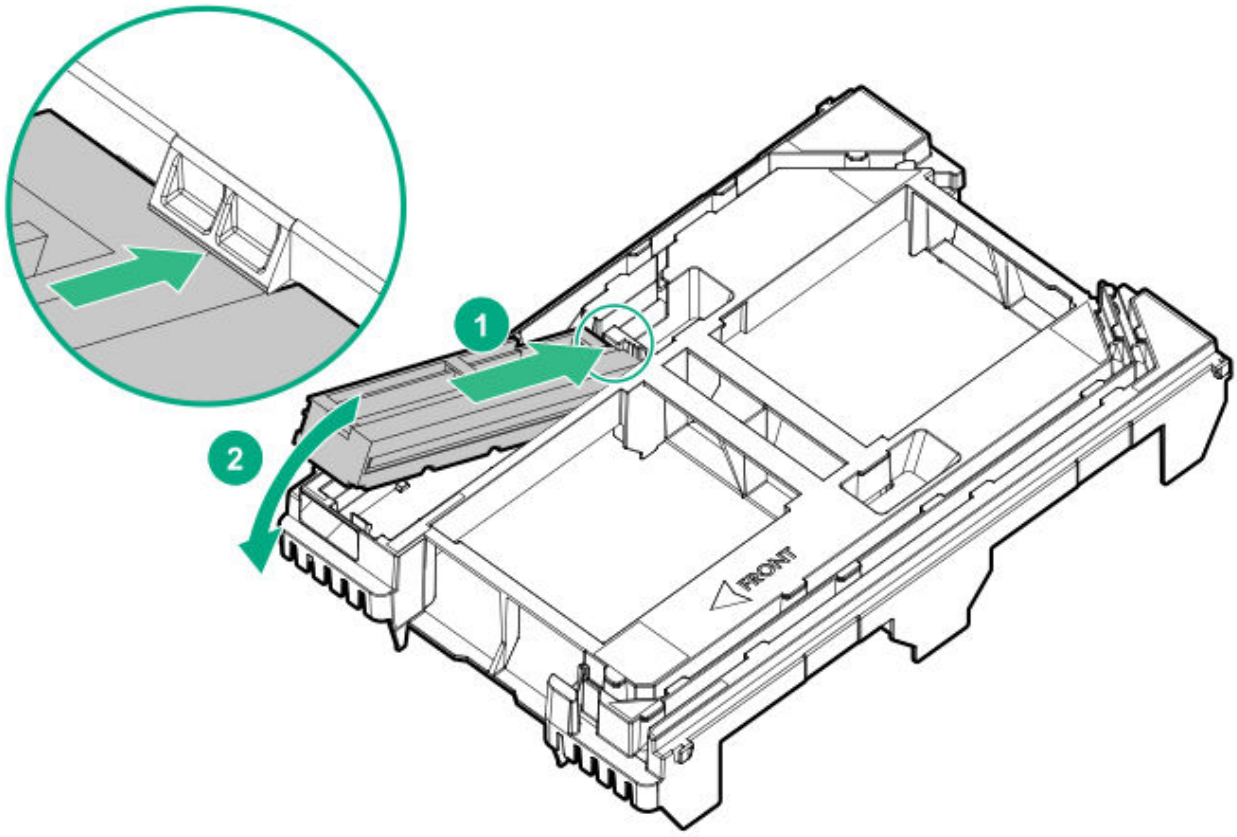
Minimum firmware versions

Product	Minimum firmware version
HPE Synergy 660 Gen10 Compute Module system ROM	2.00
HPE Smart Array SR controllers	1.90
HPE Smart Array MR controllers	24.23.0-0041

Removing and replacing the energy pack

Procedure

1. Power down the compute module .
2. Remove the compute module.
3. Remove the access panel.
4. Place the compute module on a flat, level work surface.
5. Unplug the energy pack cable from the system board.
6. Remove all DIMM baffles, and disconnect the energy pack from the system board.
7. Remove the energy pack.



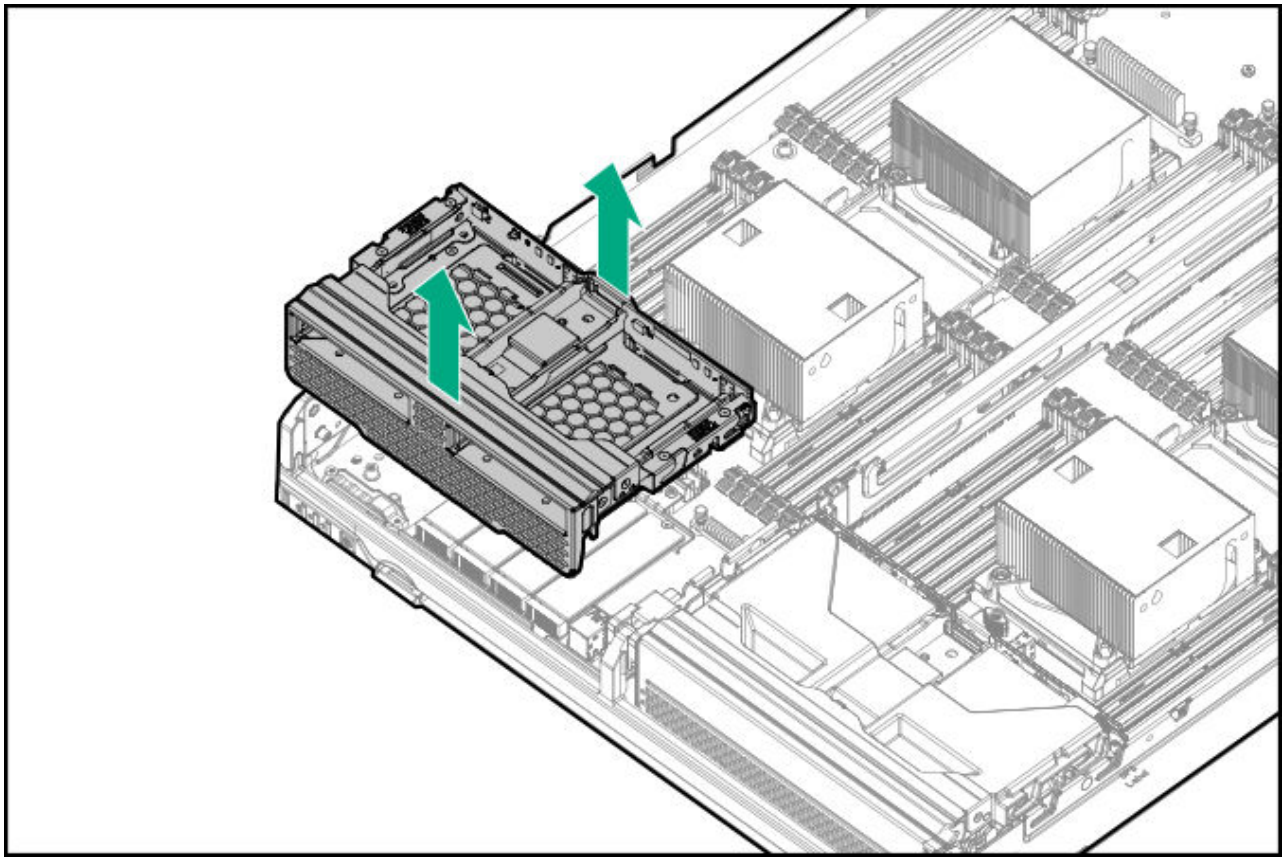
Results

To replace the component, reverse the removal procedure.

Removing and replacing a front panel/drive cage assembly

Procedure

1. Power down the compute module.
2. Remove the compute module.
3. Place the compute module on a flat, level work surface.
4. Remove the access panel.
5. Remove all drives.
6. Remove all drive blanks.
7. Remove the front panel/drive cage assembly.



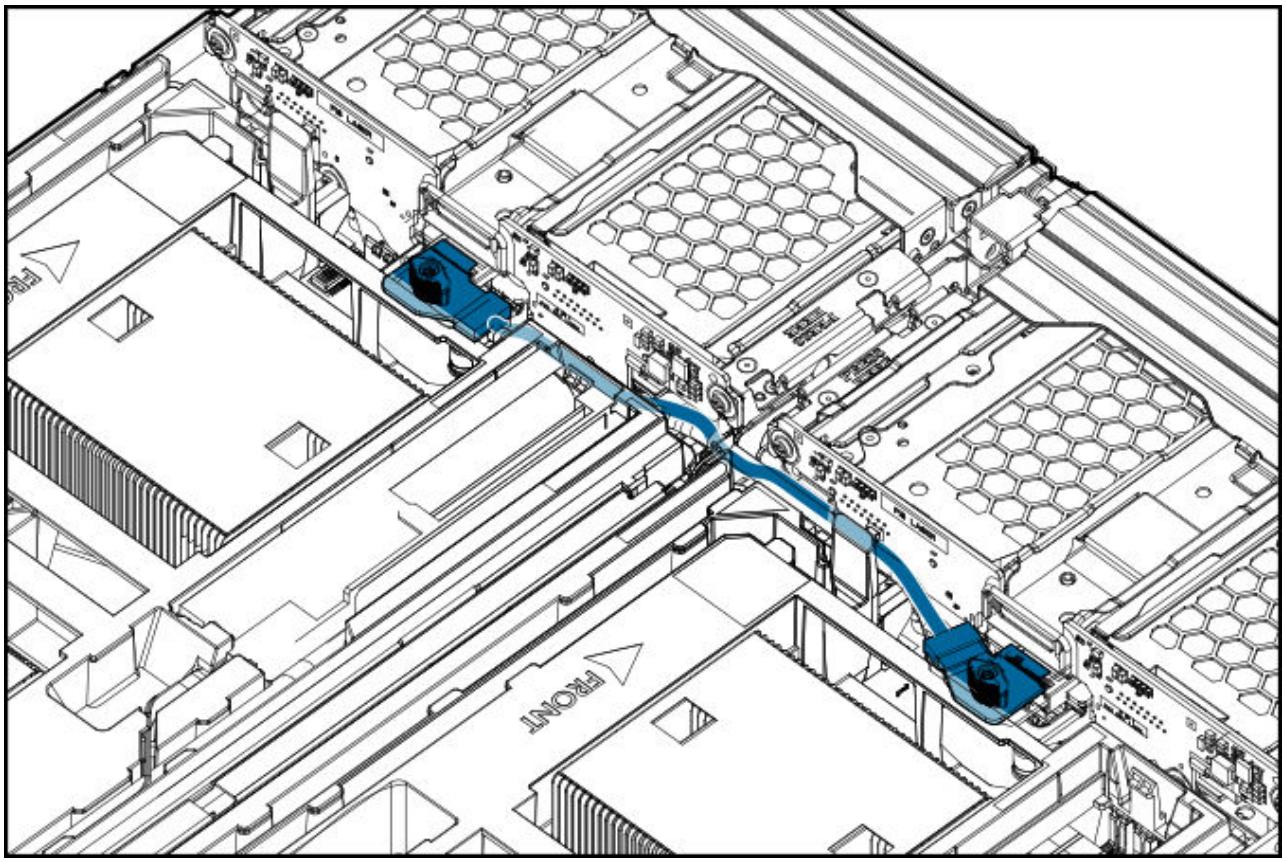
Results

To replace the component, reverse the removal procedure.

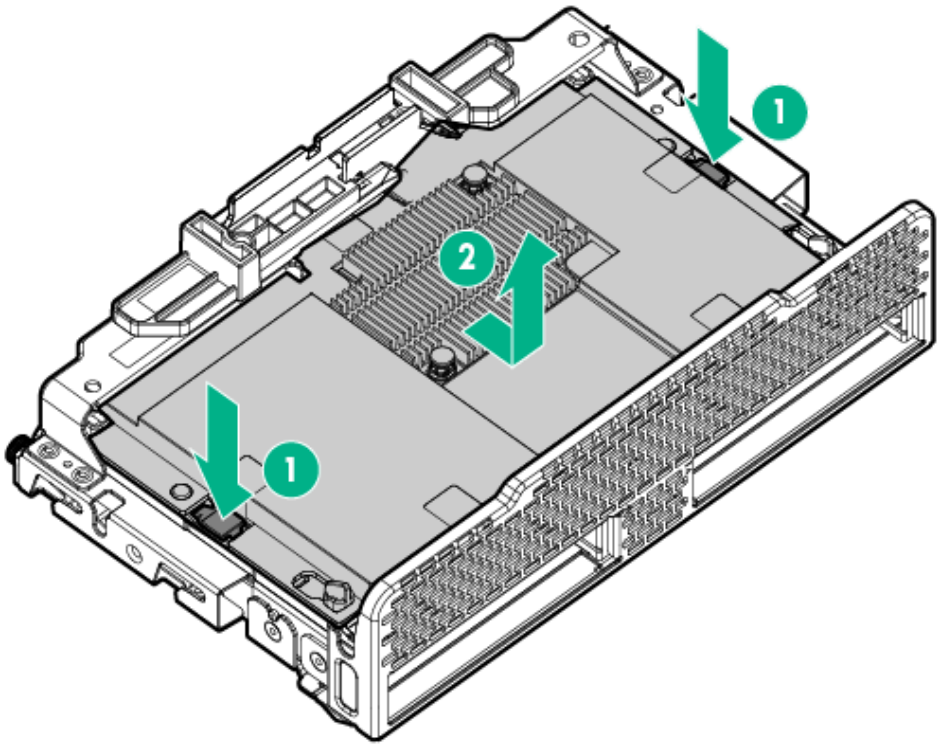
Removing and replacing a storage controller

Procedure

1. Power down the compute module.
2. Remove the compute module.
3. Place the compute module on a flat, level work surface.
4. Remove the access panel.
5. Remove front panel/drive cage assembly 1.
6. Remove the backplane cable.



7. Remove the storage controller.



Results

To replace the component, reverse the removal procedure.

Removing and replacing the system battery

About this task

If the compute module no longer automatically displays the correct date and time, then replace the battery that provides power to the real-time clock. Under normal use, battery life is 5 to 10 years.

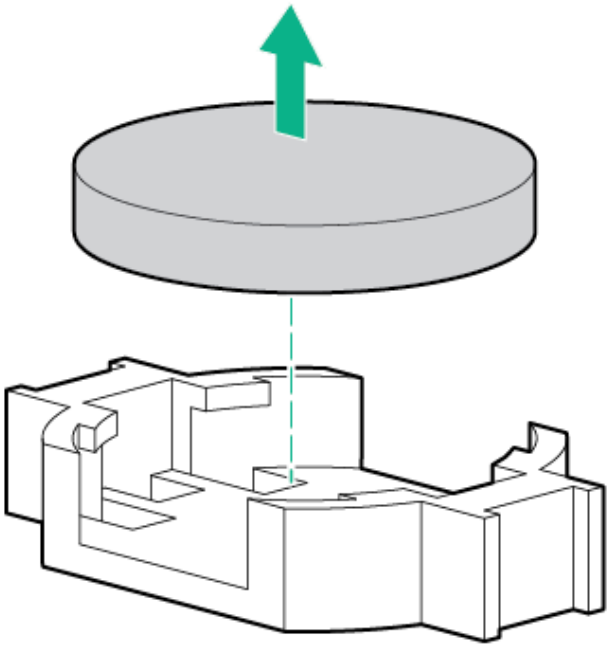
WARNING

The computer contains an internal lithium manganese dioxide, a vanadium pentoxide, or an alkaline battery pack. If the battery pack is not properly handled, a risk of fire and burns exists. To reduce the risk of personal injury:

- Do not attempt to recharge the battery.
- Do not expose the battery to temperatures higher than 60°C (140°F).
- Do not disassemble, crush, puncture, short external contacts, or dispose of in fire or water.
- Replace only with the spare designated for this product.

Procedure

1. Power down the compute module .
2. Remove the compute module.
3. Place the compute module on a flat, level work surface.
4. Remove the access panel.
5. Remove the front panel/drive cage assembly.
6. Locate the battery on the system board.
7. Remove the battery.



IMPORTANT

Replacing the system board battery resets the system ROM to its default configuration. After replacing the battery, use BIOS/ Platform Configuration (RBSU) in the UEFI System Utilities to reconfigure the system.

Results

To replace the component, reverse the removal procedure.

For more information about battery replacement or proper disposal, contact an authorized reseller or an authorized service provider.

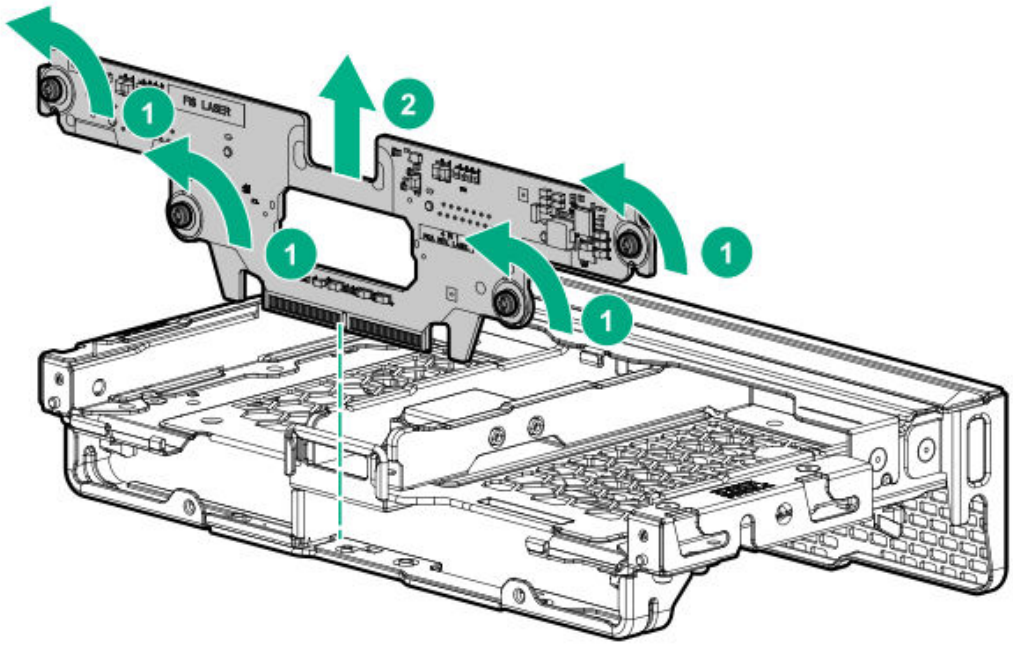
Removing and replacing the drive backplane

Prerequisites

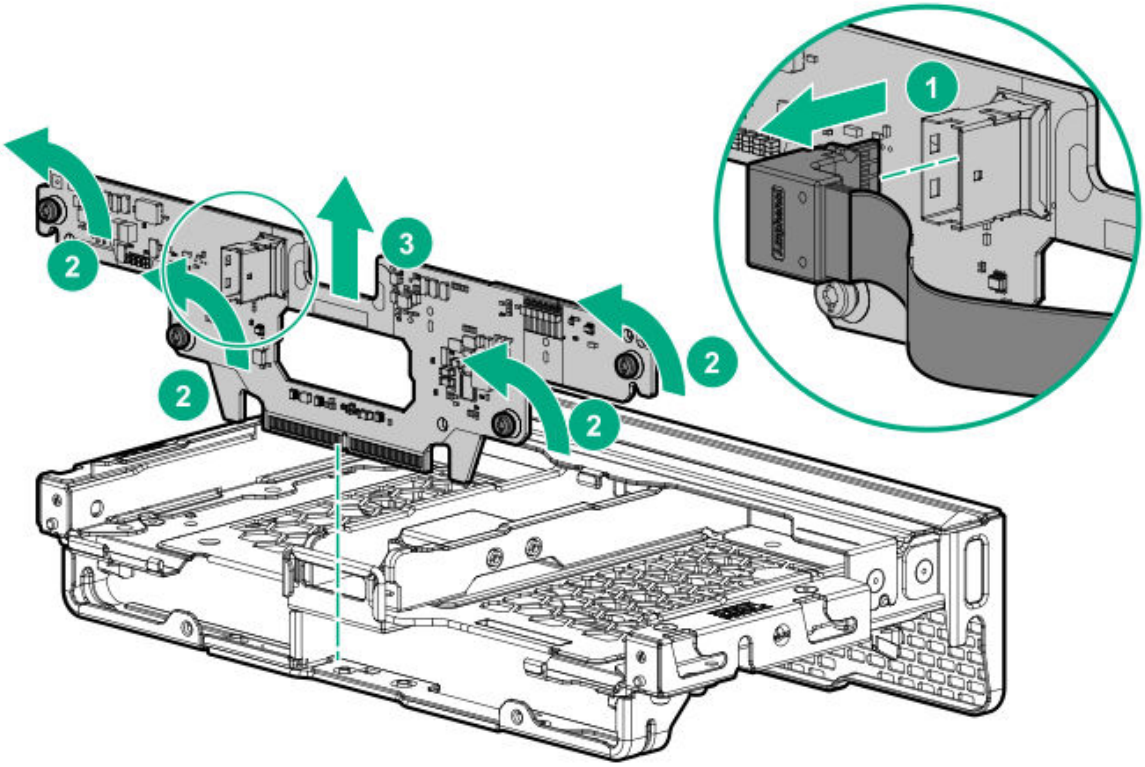
To complete this procedure, you need a T-15 Torx screwdriver.

Procedure

1. Power down the compute module .
2. Remove the compute module.
3. Place the compute module on a flat, level work surface.
4. Remove the access panel.
5. Remove all drives.
6. Remove all drive blanks.
7. If removing a premium backplane, disconnect the premium backplane cable.
8. Remove the front panel/drive cage assembly.
9. Remove the Storage controller and/or the internal SATA board.
0. Use a T-15 Torx screwdriver to remove the drive backplane from the front panel/drive cage assembly:
   - Remove the standard drive backplane:
     a. Disconnect the standard drive backplane cable.
     b. Remove the standard drive backplane.



- Remove the premium drive backplane:
  a. Disconnect the premium drive backplane cable.
  b. Remove the premium drive backplane.



Results

To replace the component, reverse the removal procedure.

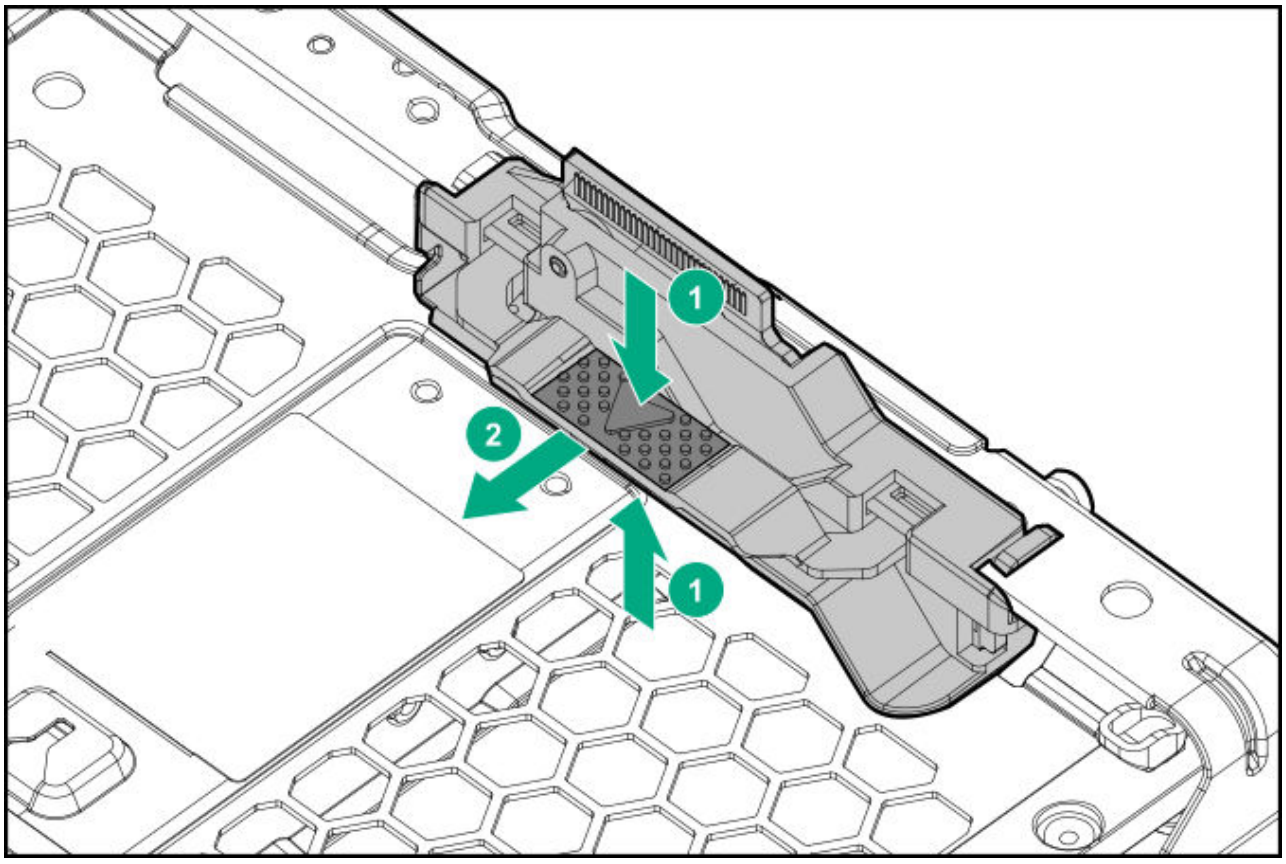
CAUTION

Be sure to orient the drive backplane connectors so that they are facing the drive slots to avoid damaging the connector housing component.

Removing and replacing the internal SATA board

Procedure

1. Power down the compute module .
2. Remove the compute module.
3. Place the compute module on a flat, level work surface.
4. Remove the access panel.
5. Remove the front panel/drive cage assembly.
6. Remove the internal SATA board.



Results

To replace the component, reverse the removal procedure.

Removing and replacing the system board

Prerequisites

If persistent memory modules are installed in the compute module and are encrypted with local key management, do one of the following:

- Manually retrieve the persistent memory module passwords from the compute module (user-generated passwords only)
- Export a password file to a USB key.

  Hewlett Packard Enterprise recommends exporting the password file to a USB key.

For more information, see the Intel Optane persistent memory 100 series for HPE User Guide on the Hewlett Packard Enterprise website (**https://www.hpe.com/info/persistentmemory-docs**).

- Access to HPE OneView
- Active Internet connection
- T-30 Torx screwdriver

Procedure

1. Power down the compute module .
2. Unassign the server profile if it was assigned previously.
3. Remove the compute module from the frame.
4. Place the compute module on a flat, level work surface.
5. Remove the access panel.
6. Remove the front panel/drive cage assembly.
7. Remove the internal USB drive, if installed.

   To locate the internal USB connector, see "System board components."
8. Remove the microSD card, if installed.

   To locate the microSD card, see "System board components."
9. Remove all DIMM baffles.
0. Remove all DIMMs.

   Be sure to note the DIMM slot locations in which each DIMM is installed. These components must be installed in the same locations on the new system board.

1. Remove the persistent memory modules installed on the system board (Removing and replacing an HPE Persistent Memory module).

   Be sure to note the DIMM slot locations in which each persistent memory module is installed. These components must be installed in the same locations on the new system board.

2. Do the following:

   a. Observe the guidelines and procedures for NVDIMM relocation.

   b. Remove all NVDIMMs.

3. Remove all mezzanine option cards.

4. Remove the processor heatsink assembly from the failed system board, and place it on a flat, level surface.

   See Migrating a processor heatsink assembly to a replacement system board.

5. Disassemble the heatsink blank, and then use the dust cap to cover the processor socket on the system board.

6. Remove the system board from the base pan, loosening any screws securing the system board.

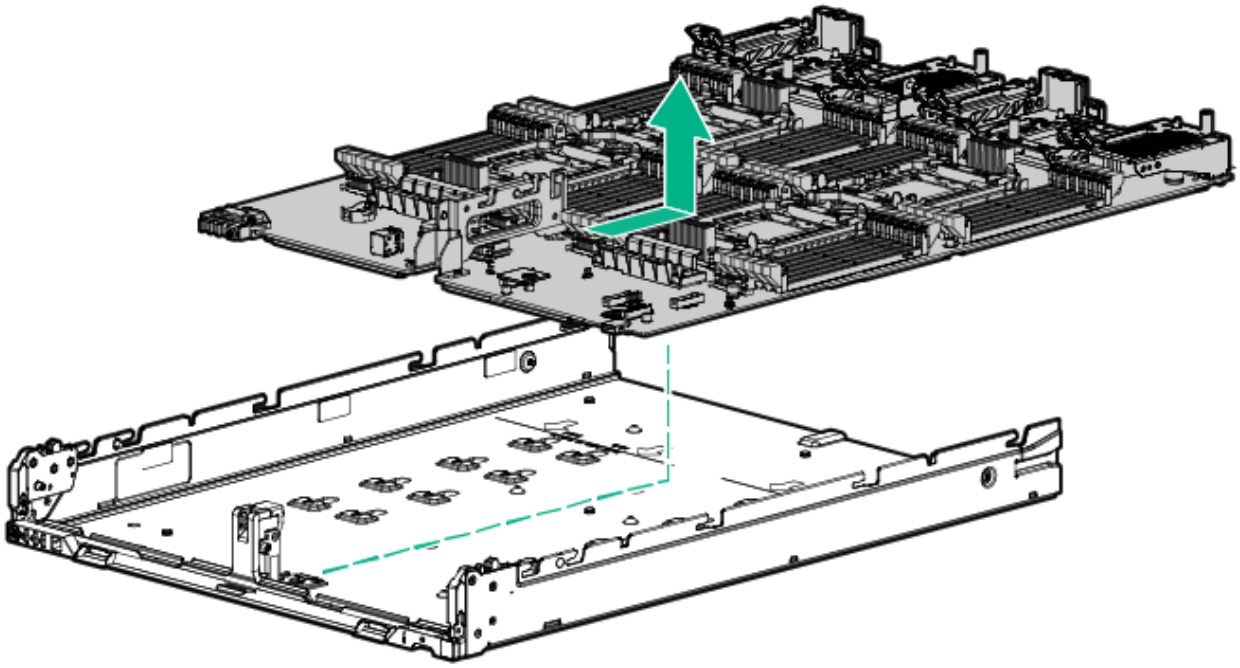
   a. Grasp the system board handle at the front.

   b. Slide it rearward to just beyond the pan arrow marking.

   > **IMPORTANT**
   >
   > Be sure to observe the base pan arrow markings when removing the system board. After the system board is just past the pan arrow markings, you can then lift the entire board out of the pan.

   c. Uncrew any screws securing the System board and grasp the system board with one hand on the system board handle and the other on the system board rear side.

   d. Lift the system board out away from the pan.



7. Install the processor socket protective cover in each processor socket on the damaged system board.

> **CAUTION**
>
> When removing a system board, always install all processor socket covers to prevent damage to the processor sockets and system board.

Results

To replace the system board:

1. Install the spare system board.

> **NOTE**
>
> Be sure to remove the processor socket protective cover from the new system board, and install it on the replaced system board.

2. Install all components removed from the failed system board. To install the processor heatsink assembly, see Migrating a processor heatsink assembly to a replacement system board.
   Be sure to install the DIMM and persistent memory modules in the same DIMM slots as the failed system board.
3. Install the access panel.
4. Install the compute module into the frame.
5. Power up the compute module.
6. Re-enter the server serial number and product ID.
7. Power down the compute module.
8. Refresh the server profile in HPE OneView to ensure the correct server serial number and product ID are displayed.
9. Reassign the server profile if it was unassigned previously.
0. Review the persistent memory configuration of the compute module.
1. Do one of the following:
   - If persistent memory modules are encrypted with local key management, either manually enter the persistent memory module passwords in the System Utilities or import the password file from the USB key.
   - If persistent memory modules are encrypted with remote key management, enroll the compute module iLO in the key management server to provide access to the data on the persistent memory modules.

Subtopics

Re-entering the server serial number and product ID
Unassigning a server profile using HPE OneView
Reassigning a server profile using HPE OneView
Migrating a processor-heatsink assembly to a replacement system board

Re-entering the server serial number and product ID

About this task

After you replace the system board, the compute module serial number and the product ID must be configured:

Procedure

1. Access the server console through HPE OneView.
2. Power up the compute module.
3. During POST, press **F9** to access System Utilities.
4. On the System Utilities home screen, select **System Configuration > BIOS/Platform Configuration (RBSU) > Advanced Options > Advanced Service Options**.
5. Select the Serial Number field and press **Enter**.

   The following alert appears:

   ```
   The serial number is modified by qualified service personnel and m
   ust match the serial number located on the chassis.
   ```

6. Click **OK**.
7. Type the serial number and press **Enter**.
8. Select the Product ID field and press **Enter**.

   The following alert appears:

   ```
   Product ID is modified only by qualified personnel. This value mus
   t match the product ID located on the chassis.
   ```

9. Type the product ID and press **Enter**.
0. Press **F10** to save the configuration.
1. After the compute module resets and goes through POST, power down the compute module .

Results

The procedure is complete.

Unassigning a server profile using HPE OneView

Procedure

1. From the HPE OneView main menu, select **Server Profiles**.
2. In the master profile, select the profile to unassign.

3. Select **Actions > Edit**.
4. In the **Server hardware** box, select **unassigned**.
5. Click **OK**.

Reassigning a server profile using HPE OneView

Procedure

1. From the HPE OneView main menu, select **Server Profiles**.
2. In the master profile, select the profile that was previously unassigned.
3. Select **Actions > Edit**.
4. In the **Server hardware** box, select the appropriate server.
5. Click **OK**.

Migrating a processor-heatsink assembly to a replacement system board

Prerequisites

Before performing this procedure, Hewlett Packard Enterprise recommends identifying the processor-heatsink assembly components.

Procedure

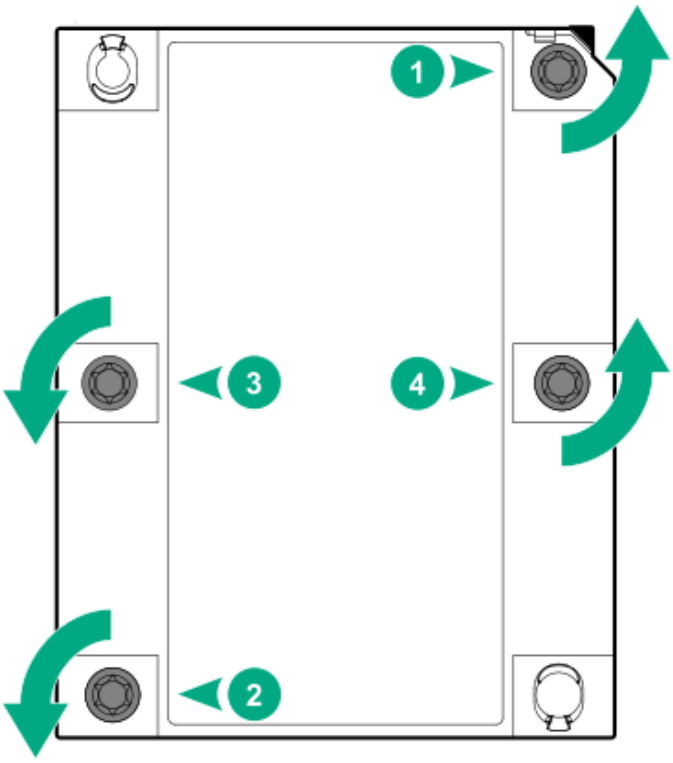
1. Observe the following alerts.

> **CAUTION**
>
> When handling the heatsink, always hold it along the top and bottom of the fins. Holding it from the sides can damage the fins.

> **CAUTION**
>
> To avoid damage to the processor or system board, only authorized personnel should attempt to replace or install the processor in this compute module.

> **CAUTION**
>
> **THE CONTACTS ARE VERY FRAGILE AND EASILY DAMAGED.**
> To avoid damage to the socket or processor, do not touch the contacts.

2. Power down the compute module.
3. Remove the compute module from the frame.
4. Place the compute module on a flat, level work surface.
5. Remove the access panel.
6. Remove the air baffle.
7. Remove the processor-heatsink assembly from the failed system board:
   a. Loosen the heatsink nuts in the order specified by the label on the heatsink (4 - 3 - 2 - 1).



b. Allow the heatsink to cool.

c. Lift the processor heatsink assembly up and away from the system board.

d. Turn the processor-heatsink assembly over and place it on a work surface with the processor facing up.

e. Install the dust cover each processor socket on the failed system board.

8. Install the processor-heatsink assembly:

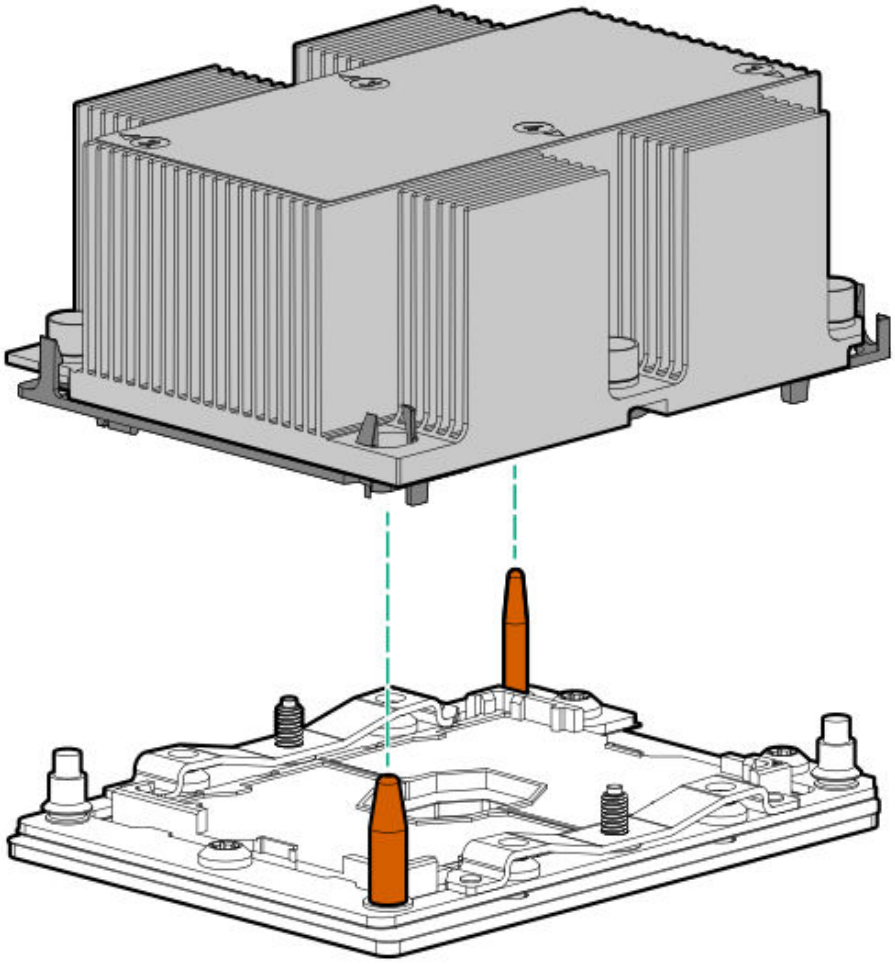
a. Remove the dust cover.

b. Locate the Pin 1 indicator on the processor frame and the socket.

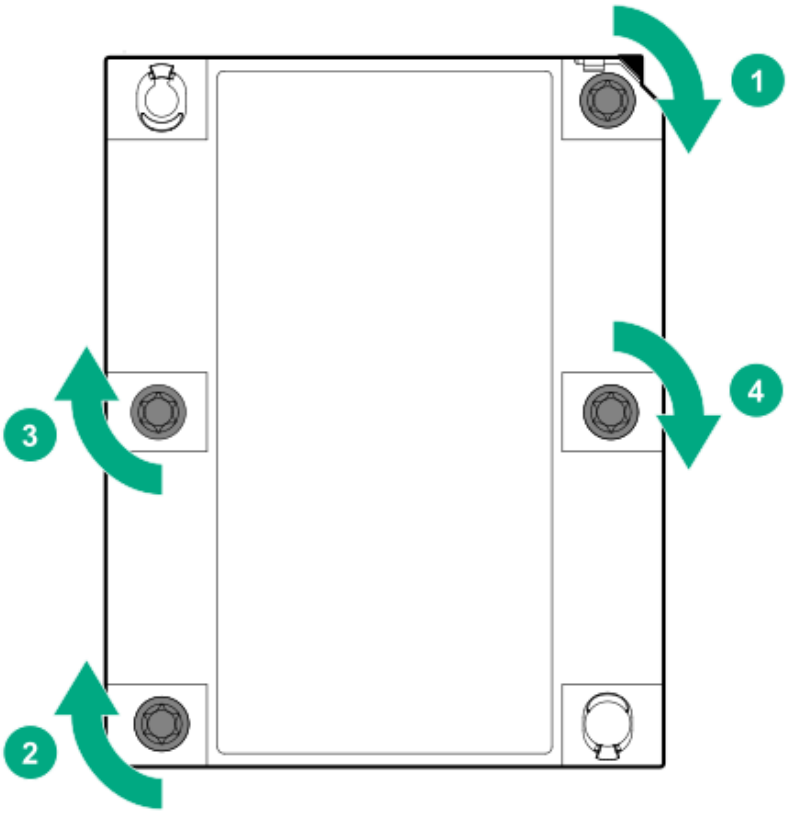
c. Align the processor-heatsink assembly with the alignment posts and gently lower it down until it sits evenly on the socket.

The heatsink alignment posts are keyed. The processor will only install one way.

A standard heatsink is shown. Your heatsink might look different.



d. Using a T-30 Torx screwdriver, tighten the nuts to the torque specified on the heatsink label.



9. Install the air baffle.
0. Install the access panel.
1. Install the compute module into the frame.
2. Power up the compute module.

Dual 8Gb microSD Enterprise Midline USB device

This compute module supports the installation of the Dual 8Gb microSD Enterprise Midline USB device on the compute module internal USB connector.

This USB storage device contains a dual-microSD card module that supports up to two SD, SDHC, or SDXC storage cards providing data redundancy through a mirrored RAID-1 configuration. This USB storage device connects to an internal USB connector and is configured upon boot.

To locate the internal USB connector, see "System board components." For more information, see the Dual 8Gb microSD EM USB storage device documentation on the **Hewlett Packard Enterprise website**.

HPE Trusted Platform Module 2.0 Gen10 Option

The HPE Trusted Platform Module 2.0 Gen10 Option is not a customer-removable part.

> **CAUTION**
> If the TPM is removed from the original compute module and powered up on a different compute module, data stored in the TPM including keys will be erased.

If you suspect a TPM board failure, leave the TPM installed and remove the system board. Contact a Hewlett Packard Enterprise authorized service provider for a replacement system board and TPM board.

HPE Synergy documentation resources

The Hewlett Packard Enterprise Information Library (**https://www.hpe.com/info/synergy-docs**) provides a comprehensive, one stop location for all HPE Synergy documentation, including installation instructions, user guides, maintenance and service guides, best practices, and links to additional resources. The Library supports filtering to improve findability.

Document:	Provides:
HPE Synergy Solution	
Start Here Poster	First-time setup procedure of an HPE Synergy solution, from hardware installation to HPE OneView configuration.
Release Notes	Release descriptions, new features, documentation updates, and issues and suggested actions for products like HPE Synergy, HPE Synergy Image Streamer, and HPE OneView.
Migration Guide	Information about migrating from HPE Synergy Composer to HPE Synergy Composer2 and from HPE Synergy Frame Link Module to HPE Synergy 4-port Frame Link Module.
Validating HPE Synergy appliance firmware: Preparing an HPE Synergy appliance for first-time setup	Procedures for preparing an HPE Synergy appliance for initial use in a system.

Document:	Provides:
Appliances User Guide	Outlines appliance module management, configuration, and security.
Cabling Guide	Cabling examples for management network, HPE Synergy Image Streamer, interconnects, and power.
Configuration and Compatibility Guide	An overview of HPE Synergy management and fabric architecture, detailed hardware component identification, and configuration requirements for hardware components.
Frame Link Module User Guide	Management, configuration, and security information for the HPE Synergy 4-Port Frame Link Module, HPE Synergy Frame Link Module, and HPE Synergy Management Console.
Power Management Overview Guide	Additional details on how HPE Synergy manages power usage in an HPE Synergy 12000 Frame.
Maintenance and Service Guide	A maintenance and service guide provides spare parts lists and replacement procedures for HPE Synergy products. These products include appliance modules, compute modules, storage modules, interconnect modules, and the HPE Synergy 12000 Frame.
Troubleshooting Guide	Information for resolving common problems and courses of action for fault isolation and identification, issue resolution, and maintenance.
Error Message Guide	Information for resolving issues associated with specific error messages.
Documentation Map	A descriptive map to filter and locate the HPE Synergy documentation you need.
Glossary	Terminology, descriptions, and drawings to provide an understanding of the product and to help familiarize with the HPE Synergy ecosystem.
HPE Synergy Image Streamer	
Deployment workflow	Interactively describes the various steps involved in setting up HPE Synergy Image Streamer for OS deployment and has pointers to the different documents that contain detailed instructions on the steps.
Support Matrix	The latest software and firmware requirements, supported hardware, and configuration maximums for HPE Synergy Image Streamer.
User Guide	The OS deployment process using HPE Synergy Image Streamer, features of HPE Synergy Image Streamer, and purpose and life cycle of HPE Synergy Image Streamer artifacts. Also includes authentication, authorization,

Document:	Provides:
	and troubleshooting information for HPE Synergy Image Streamer.
GitHub	The repository (**https://github.com/HPE/**) contains sample artifacts and documentation on how to use the sample artifacts. Also contains technical white papers explaining deployment steps that can be performed using HPE Synergy Image Streamer.
Help	Information about basic HPE Synergy Image Streamer concepts and user interface based tasks.
HPE OneView for HPE Synergy	
Support Matrix for HPE Synergy	The latest software and firmware requirements, supported hardware, and configuration maximums for HPE OneView.
User Guide and Help for HPE Synergy	Resource features, planning tasks, configuration quick start tasks, navigational tools for the graphical user interface, and more support and reference information for HPE OneView.
Global Dashboard User Guide and Help	Instructions for installing, configuring, navigating, and troubleshooting the HPE OneView Global Dashboard.
Troubleshooting Guide for HPE Synergy	Common procedures for troubleshooting HPE OneView, which is embedded on the HPE Synergy Composer.
Error Message Guide	Information for resolving issues associated with specific HPE OneView error messages.
Troubleshooting resources	Troubleshooting screens within the tool, online help, and a troubleshooting guide.

Subtopics

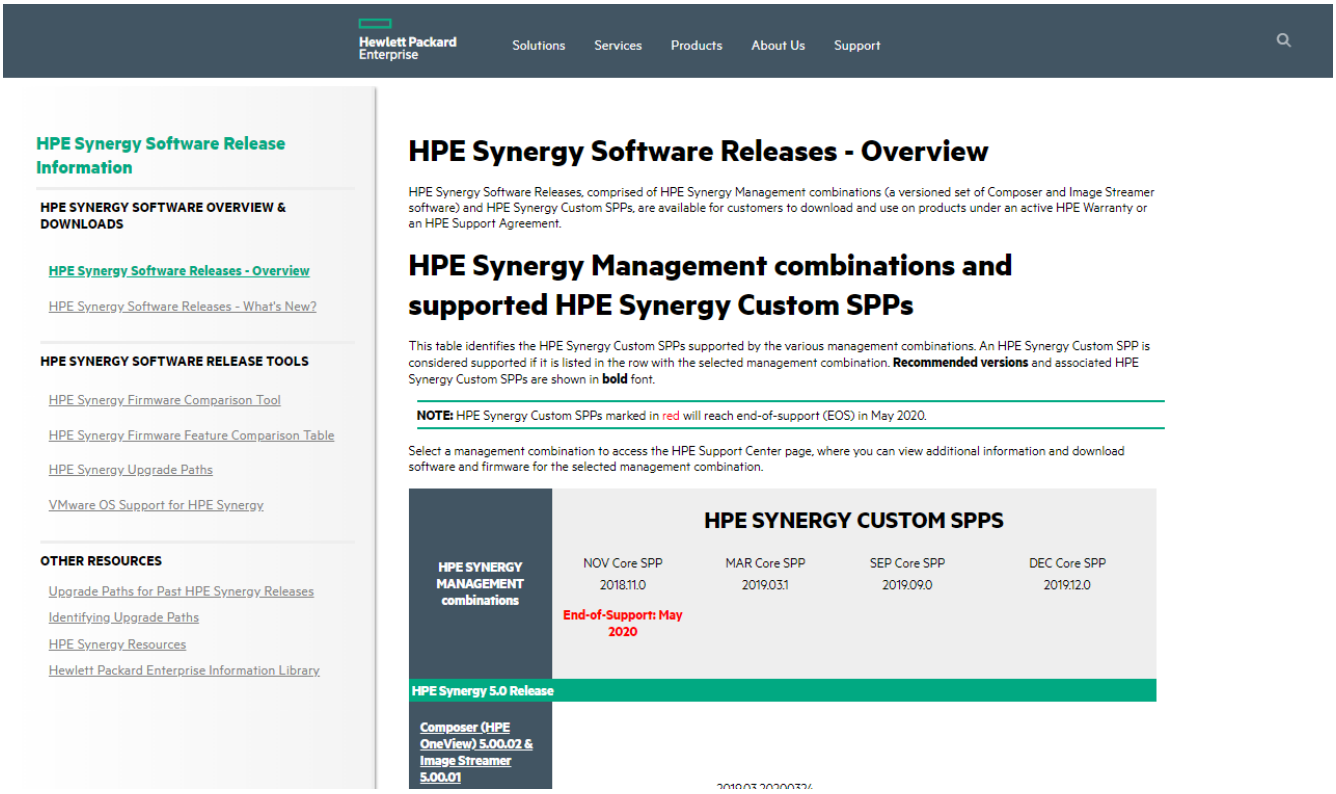
HPE Synergy firmware update resources

HPE Synergy firmware update resources

HPE OneView for HPE Synergy:	Provides:
Firmware and Driver Update Guide	Information on how to update the firmware and recommended best practices to update firmware and drivers through HPE OneView.

The HPE Synergy Software Release Information site (**https://www.hpe.com/info/synergy-sw-release-information**) provides an interactive resource for firmware update information. HPE Synergy firmware update resources are also available within HPE OneView.

Figure 1. HPE Synergy Software Release Information



HPE Synergy Software Release Information site: Provides:	
Overview	A list of HPE Synergy Management Combinations with links to download pages and associated Synergy Custom SPPs.
What's new	A list of what is new for an HPE Synergy release.
Firmware Comparison Tool	A list of HPE Synergy Management Combinations to use to compare HPE Synergy Custom SPPs supported by the selected HPE Synergy Management Combination. This tool is also useful for seeing which custom SPPs are compatible with older Management Combinations.
Firmware Feature Table	A list of firmware features to use to compare HPE Synergy Custom SPPs supported by the selected HPE Synergy Management Combination.

HPE Synergy Software Release Information site:	Provides:
Upgrade Paths Table	Information on HPE Synergy Composer and HPE Synergy Image Streamer upgrade paths and HPE Synergy Management Combinations.
VMware OS Support	Information and requirements for using the VMware vSphere OS with HPE Synergy Custom SPPs.
Upgrade Paths for Past HPE Synergy Releases	Information on past HPE Synergy Composer and HPE Synergy Image Streamer upgrade paths and HPE Synergy Management Combinations.
Identifying Upgrade Paths	Information on how to use the upgrade path table.
HPE Synergy Resources	A list of key resources for HPE Synergy.
Hewlett Packard Enterprise Information Library	A solution level library for all HPE Synergy product documentation.

HPE Synergy document overview (documentation map)

The Hewlett Packard Enterprise Information Library (**https://www.hpe.com/info/synergy-docs**) provides a comprehensive, one stop location for all HPE Synergy documentation, including installation instructions, user guides, maintenance and service guides, best practices, and links to additional resources. The Library supports filtering to improve findability.

In addition, the HPE Synergy Software Release Information site (**https://www.hpe.com/info/synergy-sw-release-information**) provides an interactive resource for software release information.

Software Release Information	Managing
• HPE Synergy Software releases - Overview • HPE Synergy Software releases - What's new • HPE Synergy Firmware Comparison Tool	• HPE OneView User Guide for HPE Synergy • HPE Synergy Image Streamer Help • HPE Synergy Image Streamer User Guide • HPE Synergy Image Streamer API Reference

- HPE Firmware Feature Comparison Table
- HPE Synergy Upgrade Paths
- VMware OS Support Tool for HPE Synergy
- Upgrade Paths for Past HPE Synergy Releases
- Identifying Upgrade Paths
- HPE Synergy Resources
- HPE Synergy Image Streamer deployment workflow
- HPE Synergy Frame Link Module User Guide

Planning

- HPE Synergy Migration Guide
- HPE Synergy 12000 Frame Site Planning Guide
- HPE Synergy Configuration and Compatibility Guide
- HPE OneView Support Matrix for HPE Synergy
- HPE Synergy Image Streamer Support Matrix
- Setup Overview for HPE Synergy
- HPE Synergy Software Overview Guide

Monitoring

- HPE OneView User Guide for HPE Synergy
- HPE OneView Global Dashboard User Guide

Installing hardware

- HPE Synergy Start Here Poster (included with frame)
- HPE Synergy 12000 Frame Setup and Installation Guide
- Rack Rails Installation Instructions for the HPE Synergy 12000 Frame (included with frame)
- HPE Synergy 12000 Frame Rack Template (included with frame)
- Hood labels
- User guides
- HPE Synergy Cabling Guide
- HPE OneView Help for HPE Synergy — Hardware setup

Maintaining

- Product maintenance and service guides
- HPE OneView for HPE Synergy Firmware and Driver Update Guide
- HPE OneView Help for HPE Synergy
- HPE OneView User Guide for HPE Synergy
- HPE Synergy Appliances Maintenance and Service Guide

Configuring for managing and monitoring

- HPE OneView Help for HPE Synergy
- HPE OneView User Guide for HPE Synergy
- HPE OneView API Reference for HPE Synergy
- User Guides
- HPE Synergy Software Release Information site

Troubleshooting

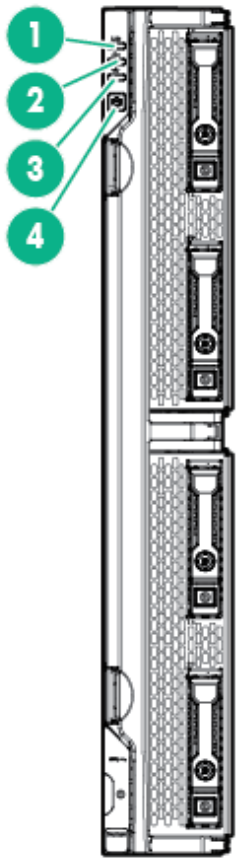
- HPE OneView alert details
- HPE Synergy Troubleshooting Guide
- Error Message Guide for HPE ProLiant Gen10 servers and HPE Synergy
- Integrated Management Log Messages and Troubleshooting Guide for HPE ProLiant Gen10 and HPE Synergy
- HPE OneView API Reference for HPE Synergy
- HPE OneView Troubleshooting Guide for HPE Synergy
- HPE OneView Error Message Guide
- HPE Synergy Image Streamer API Reference

Component identification

Subtopics

Front panel LEDs and buttons
Front panel components
Drive numbering
Smart Carrier (SC) drive LED definitions
Smart Carrier NVMe (SCN) drive LED definitions
SFF flash adapter components and LED definitions
System board components
Component and LED identification for HPE Synergy hardware

Front panel LEDs and buttons

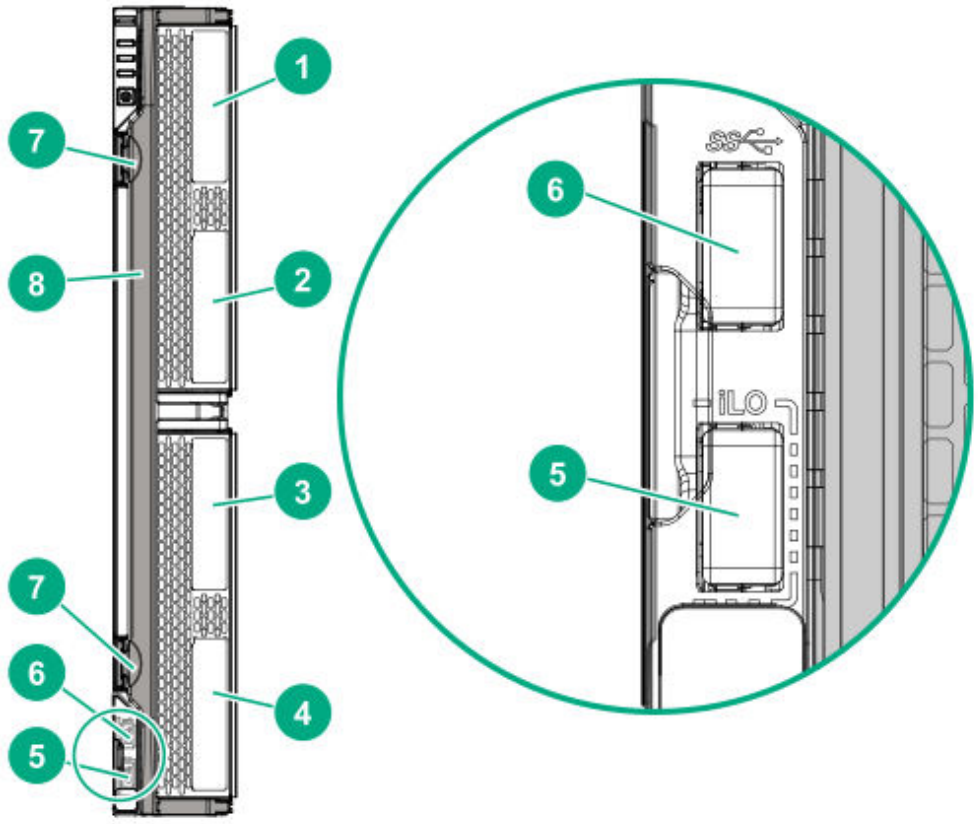


Item	Description	Status
1	UID LED	Solid blue = Activated Flashing blue (1 Hz/cycle per sec) = Remote management or firmware upgrade in progress Off = Deactivated
2	Health status LED	Solid green = Normal Flashing green (1 Hz/cycle per sec) = iLO is rebooting Flashing amber = System degraded Flashing red (1 Hz/cycle per sec) = System critical

Item	Description	Status
3	Mezzanine NIC status LED	Solid green= Link on any Mezzanine NIC Flashing green= Activity on any Mezzanine NIC Off = No link or activity on any Mezzanine NIC
4	Power On/Standby button and system power LED	Solid green = System on Flashing green (1 Hz/cycle per sec) = Performing power on sequence Solid amber = System in standby Off = No power present [1]

[1] If all other LEDs are off, then no power is present to the compute module. (For example, facility power is not present, power cord is not attached, no power supplies are installed, power supply failure has occurred, or the compute module is not properly seated.) If the health LED is flashing green while the system power LED is off, the **Power On/Standby** button service is initializing or that an iLO reboot is in progress.

Front panel components



Item	Description
1	Drive Box 1, Drive bay 1 [1]
2	Drive Box 1, Drive bay 2 [1]
3	Drive Box 2, Drive bay 1 [1]
4	Drive Box 2, Drive bay 2 [1]
5	iLO Service Port (169.254.1.2) (located behind the Serial label pull tab)
6	External USB (located behind the Serial label pull tab)
7	Compute module handle release latch
8	Compute module handle

[1] If uFF drives (the SFF Flash Storage Adapter) are installed in the drive bays, the drive bay numbering is different. For more information, see Drive numbering.

Subtopics

Serial label pull tab information

The serial label pull tab is located on the front panel of the compute module. To locate the serial label pull tab, see Front panel components. The serial label pull tab provides the following information:

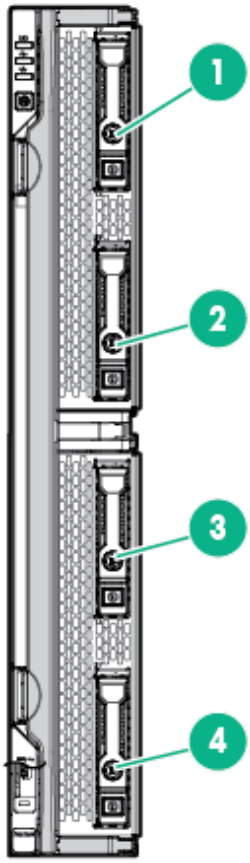
- Product serial number
- HPE iLO information
- QR code that points to mobile-friendly documentation

Drive numbering

Depending on the configuration, the drive bay numbering on this compute module will vary. Supported configurations on this compute module are shown in the following table.

Compute module model	Configuration	Drive support
SAS model	Standard backplane with embedded controller or supported controller option	Four SFF hot-plug SAS drive bays with support for up to 4 SFF HDDs or SSDs
	uFF	• Up to 4 SFF SAS/SATA HDDs or SSDs • Up to 8 uFF SATA HDDs
SATA model	Chipset SATA with embedded controller or supported controller option	Four SFF hot-plug SATA drive bays with support for the following: • Up to 4 SFF SATA HDDs or SSDs • Up to 8 uFF SATA HDDs (with the SFF flash adapter for each 2 uFF drives)
	M.2	Up to 4 M.2 SATA SSDs

Compute module model	Configuration	Drive support
NVMe model	Premium backplane with direct connect, or supported controller option	Four SFF hot-plug SAS/SATA/NVMe drive bays with support for the following: • Up to 4 SFF SAS/SATA HDDs or SSDs(with the P416ie-m) • Up to 8 uFF SATA HDDs (with the P416ie-m) • Up to 4 uFF U.2 NVMe HDDs (direct connect)



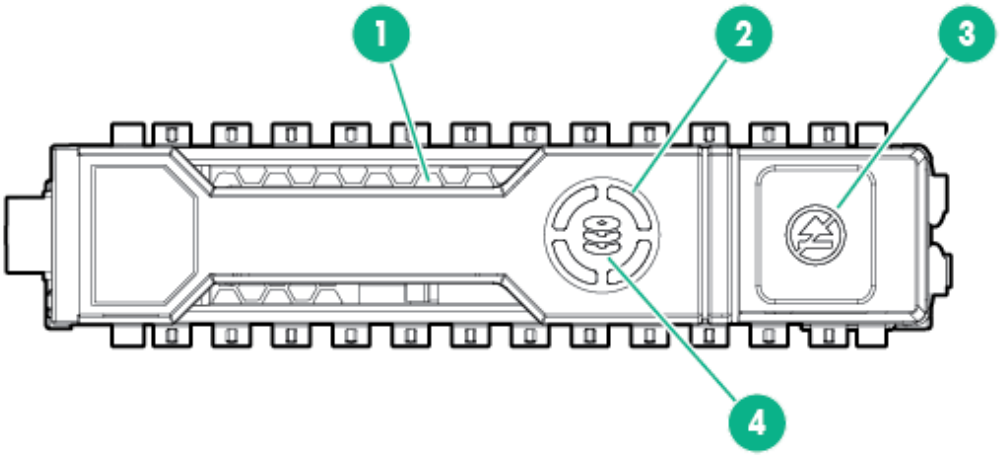
Item	SAS configuration	SATA configuration [1]	Expansion storage configuration
1	1	Drive box 1, drive bay 1 and 101	Drive box 1, drive bay 1
2	2	Drive box 1, drive bay 2 and 102	Drive box 1, drive bay 2

Item	SAS configuration	SATA configuration [1]	Expansion storage configuration
3	1	Drive box 2, drive bay 1 and 101	Drive box 2, drive bay 1
4	2	Drive box 2, drive bay 2 and 102	Drive box 2, drive bay 2

[1] SATA drives are supported only with the HPE Synergy 480 Gen9 Compute Module backplane.

The driveless model is not shown, as it does not have drive bays and does support for any drives.

Smart Carrier (SC) drive LED definitions



Item	LED	Status	Definition
1	Locate	Solid blue	The drive is being identified by a host application.
		Flashing blue	The drive carrier firmware is being updated or requires an update.
2	Activity ring	Rotating green	Drive activity
		Off	No drive activity

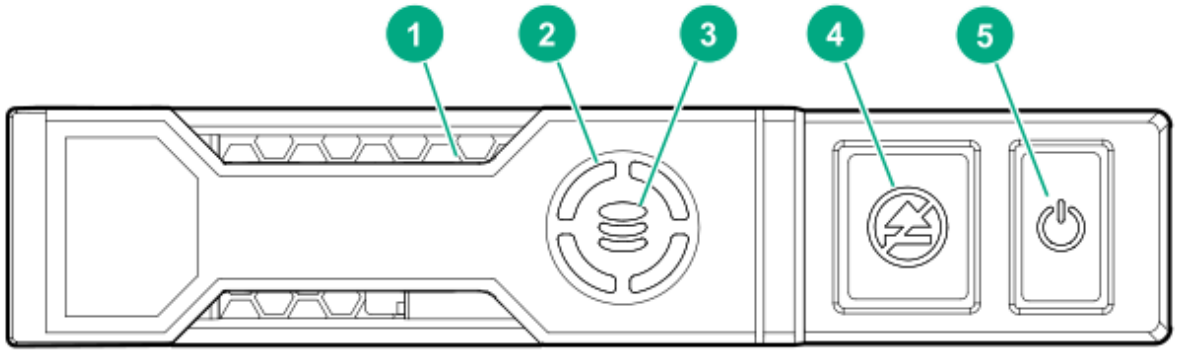
Item	LED	Status	Definition
3	Do not remove	Solid white	Do not remove the drive. Removing the drive causes one or more of the logical drives to fail.
		Off	Removing the drive does not cause a logical drive to fail.
4	Drive status	Solid green	The drive is a member of one or more logical drives.
		Flashing green	The drive is doing one of the following: • Rebuilding • Performing a RAID migration • Performing a strip size migration • Performing a capacity expansion • Performing a logical drive extension • Erasing • Spare part activation
		Flashing amber/green	The drive is a member of one or more logical drives and predicts the drive will fail.
		Flashing amber	The drive is not configured and predicts the drive will fail.
		Solid amber	The drive has failed.
		Off	The drive is not configured by a RAID controller or a spare drive.

Smart Carrier NVMe (SCN) drive LED definitions

The NVMe drive is a PCIe bus device. A device attached to a PCIe bus cannot be removed without allowing the device and bus to complete and cease the signal/traffic flow.

CAUTION

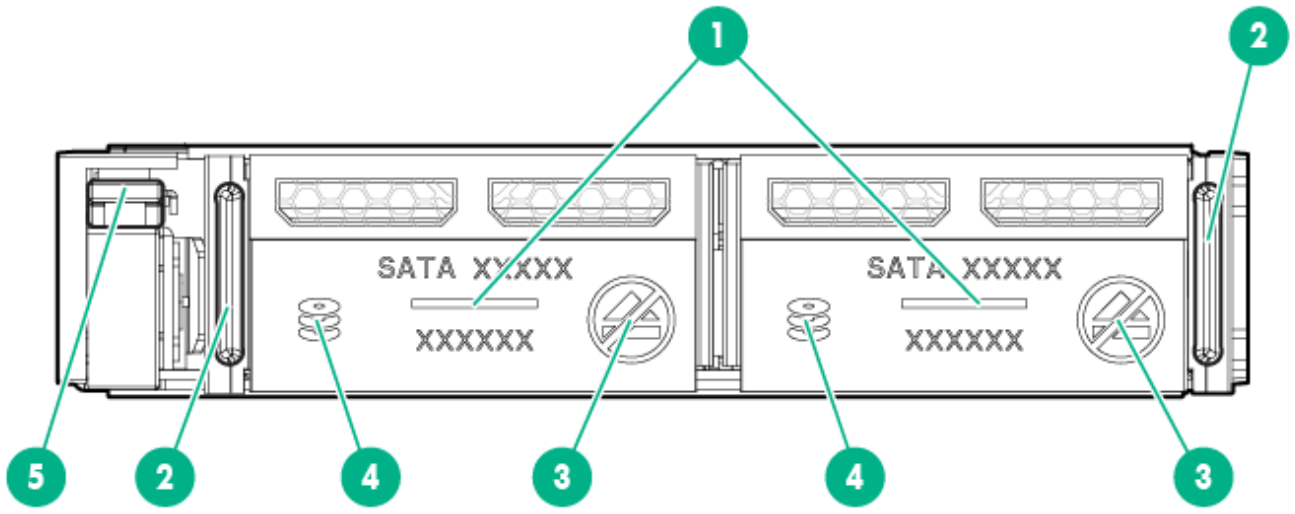
Do not remove an NVMe drive from the drive bay while the Do not remove LED is flashing. The Do not remove LED flashes to indicate that the device is still in use. Removing the NVMe drive before the device has completed and ceased signal/traffic flow can cause loss of data.



Item	LED	Status	Definition
1	Locate	Solid blue	The drive is being identified by a host application.
		Flashing blue	The drive carrier firmware is being updated or requires an update.
2	Activity ring	Rotating green	Drive activity
		Off	No drive activity
3	Drive status	Solid green	The drive is a member of one or more logical drives.
		Flashing green	The drive is doing one of the following: • Rebuilding • Performing a RAID migration • Performing a stripe size migration • Performing a capacity expansion • Performing a logical drive extension • Erasing
		Flashing amber/green	The drive is a member of one or more logical drives and predicts the drive will fail.
		Flashing amber	The drive is not configured and predicts the drive will fail.
		Solid amber	The drive has failed.

Item	LED	Status	Definition
		Off	The drive is not configured by a RAID controller.
4	Do not remove	Solid white	Do not remove the drive. The drive must be ejected from the PCIe bus prior to removal.
		Flashing white	The drive ejection request is pending.
		Off	The drive has been ejected.
5	Power	Solid green	Do not remove the drive. The drive must be ejected from the PCIe bus prior to removal.
		Flashing green	The drive ejection request is pending.
		Off	The drive has been ejected.

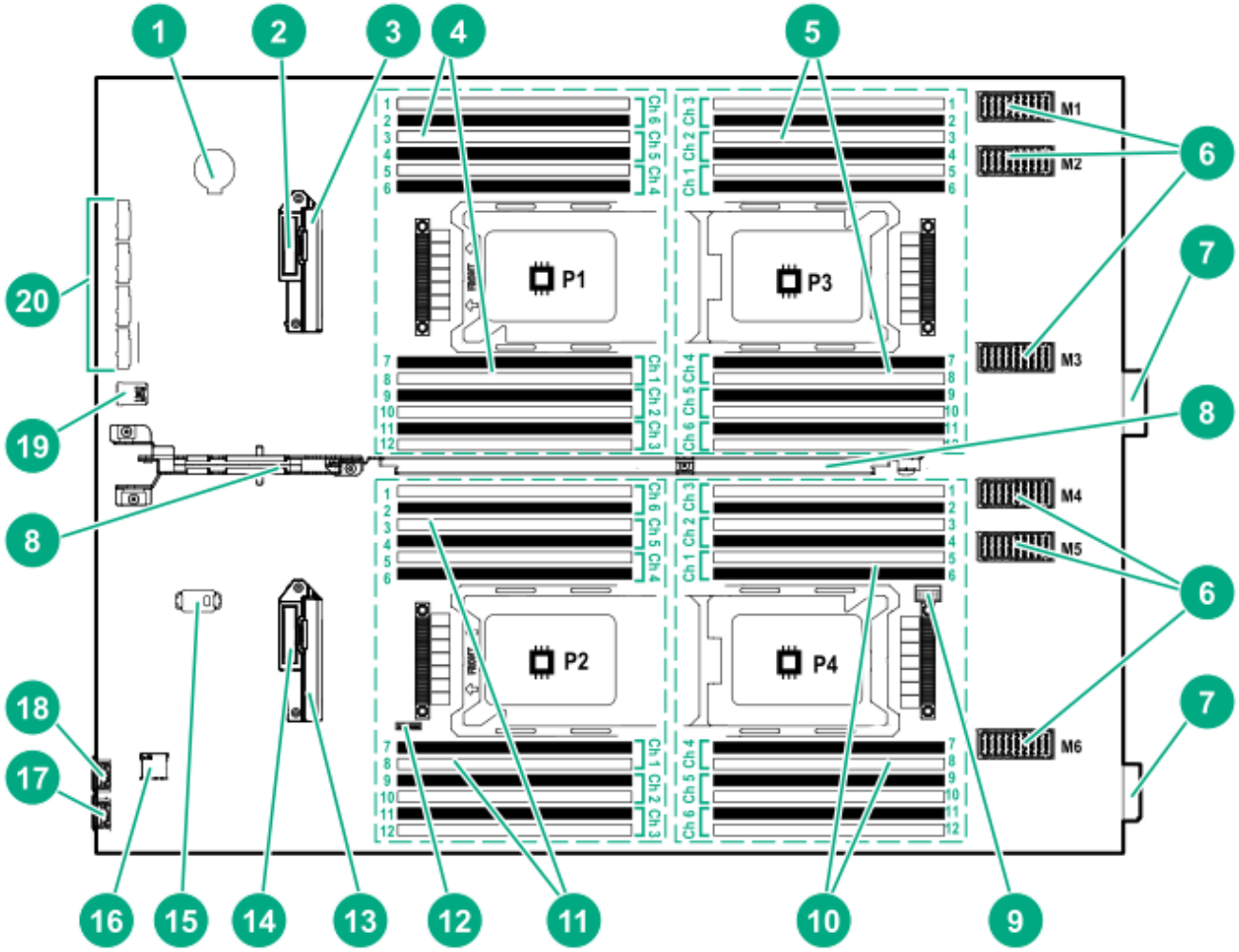
SFF flash adapter components and LED definitions



Item	Component	Description
1	Locate	• Off—Normal • Solid blue—The drive is being identified by a host application.

Item	Component	Description
		• Flashing blue—The drive firmware is being updated or requires an update.
2	uFF drive ejection latch	Removes the uFF drive when released.
3	Do not remove LED	• Off—OK to remove the drive. Removing the drive does not cause a logical drive to fail. • Solid white—Do not remove the drive. Removing the drive causes one or more of the logical drives to fail.
4	Drive status LED	• Off—The drive is not configured by a RAID controller or a spare drive. • Solid green—The drive is a member of one or more logical drives. • Flashing green (4 Hz)—The drive is operating normally and has activity. • Flashing green (1 Hz)—The drive is rebuilding, erasing, or performing a RAID migration, stripe size migration, capacity expansion, logical drive extension, or spare activation. • Flashing amber/green (1 Hz)—The drive is a member of one or more logical drives that predicts the drive will fail. • Solid amber—The drive has failed. • Flashing amber (1 Hz)—The drive is not configured and predicts the drive will fail.
5	Adapter ejection release latch and handle	Removes the SFF flash adapter when released.

System board components



Item	Description
1	System battery
2	SATA interconnect 1
3	Drive backplane connector 1
4	P1 DIMM slots (12 each)
5	P3 DIMM slots (12 each)
6	Mezzanine connectors
7	Management/power connector (2)
8	Handle
9	Energy pack option connector
10	P4 DIMM slots (12 each)

Item	Description
11	P2 DIMM slots (12 each)
12	System maintenance switch
13	Drive backplane connector 2
14	SATA interconnect 2
15	TPM connector
16	MicroSD connector
17	iLO Service Port (169.254.1.2) (located behind the Serial label pull tab)
18	External USB (located behind the Serial label pull tab)
19	Internal USB 3.0 connector
20	M.2 connectors

Subtopics

System maintenance switch
Processor, heatsink, and socket components
Mezzanine connector definitions
DIMM slot locations
DIMM label identification
NVDIMM identification
NVDIMM LED identification
Intel Optane persistent memory 100 series for HPE label identification

System maintenance switch

Position	Default	Function
S1 [1]	Off	Off = HPE iLO security is enabled. On = HPE iLO security is disabled.
S2	Off	Off = System configuration can be changed. On = System configuration is locked.
S3	Off	Reserved
S4	Off	Reserved

Position	Default	Function
S5 [1]	Off	Off = Power-on password is enabled. On = Power-on password is disabled.
S6 [1], [2]	Off	Off = No function On = Restore default manufacturing settings
S7	Off	Off = Set default boot mode to UEFI. On = Set default boot mode to legacy.
S8	—	Reserved
S9	—	Reserved
S10	—	Reserved
S11	—	Reserved
S12	—	Reserved

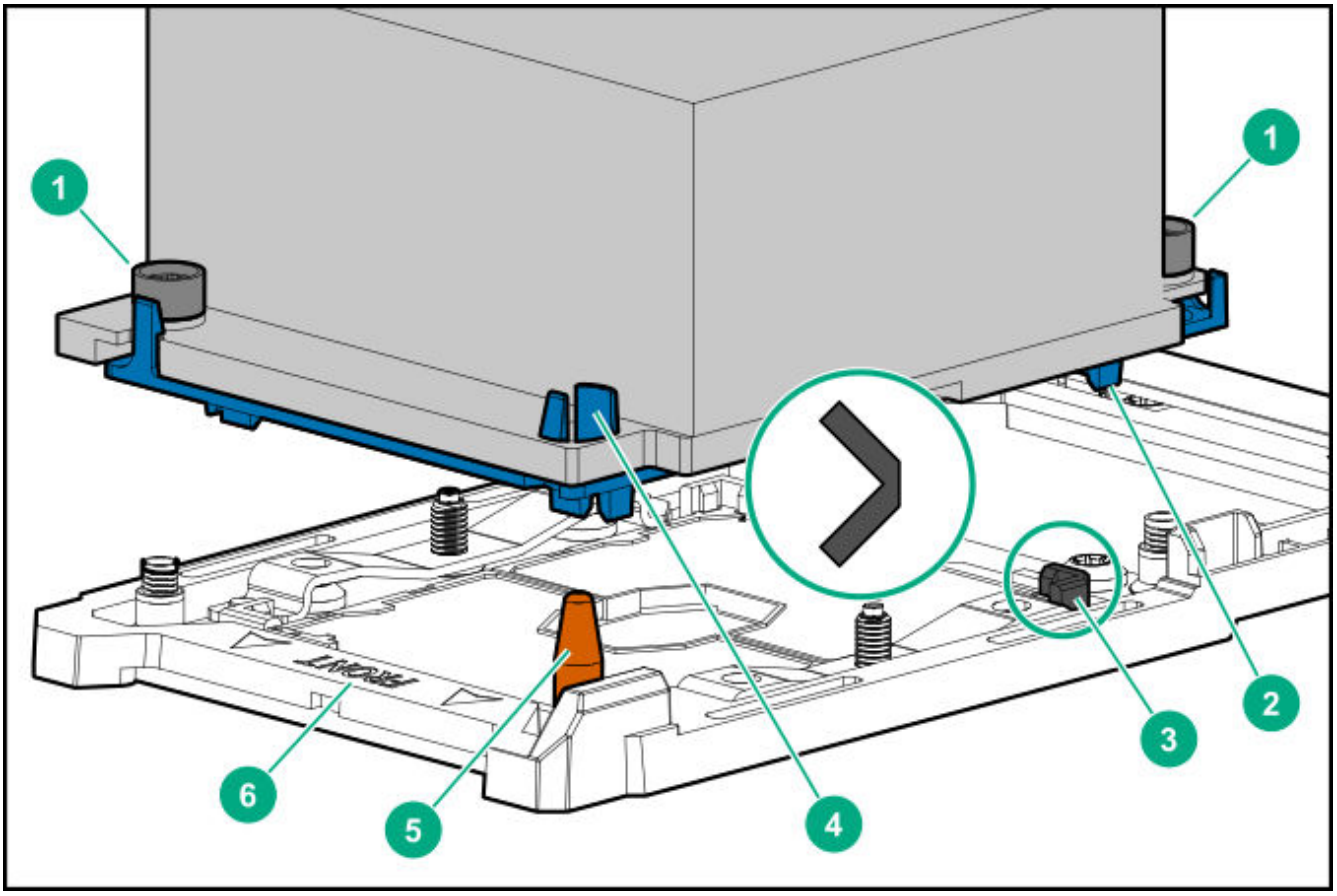
[1] You can access the redundant ROM by setting S1, S5, and S6 to On.
[2] When the system maintenance switch position 6 is set to the On position, the system is prepared to restore all configuration settings to their manufacturing defaults.

When the system maintenance switch position 6 is set to the On position and Secure Boot is enabled, some configurations cannot be restored. For more information, see Secure Boot configuration.

IMPORTANT

Before using the S7 switch to change to Legacy BIOS Boot Mode, be sure that the HPE Dynamic Smart Array S100 Controller is disabled. Do not use the S100i controller when the compute module is in Legacy BIOS Boot Mode.

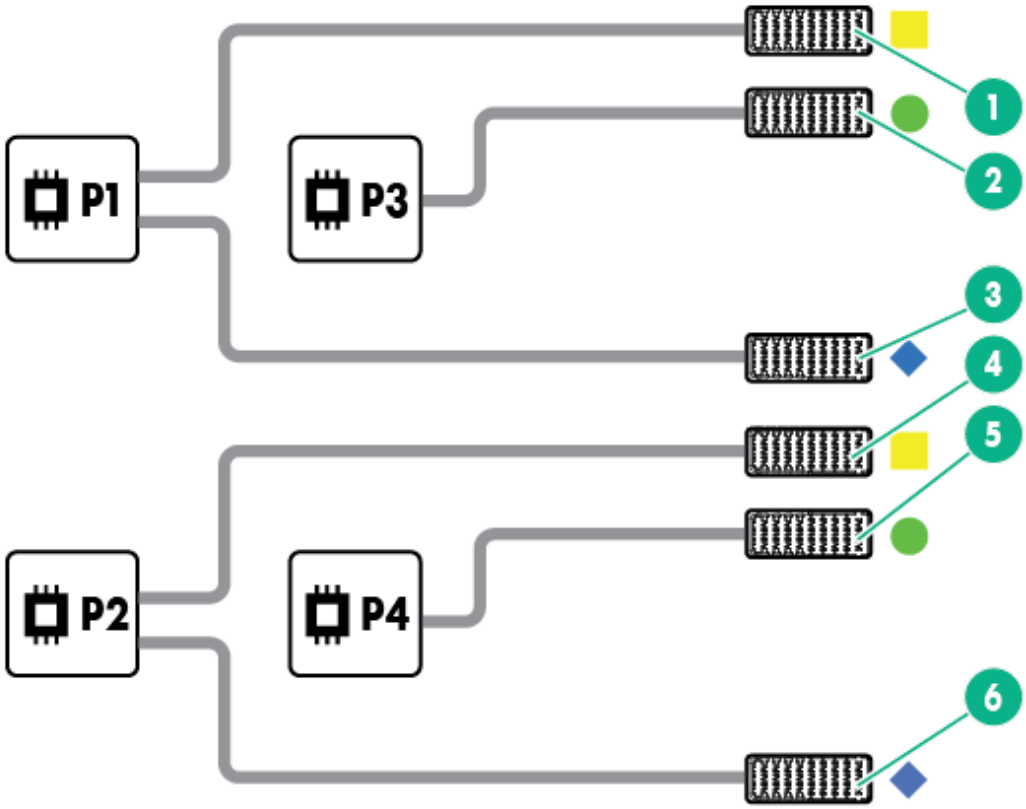
Processor, heatsink, and socket components



Item	Description
1	Heatsink nuts
2	Processor carrier
3	Pin 1 indicator [1]
4	Heatsink guide/keying feature
5	Alignment post
6	Heatsink keying frame

[1] Symbol also on the processor and frame.

Mezzanine connector definitions



Item	Connector identification	Supported card types	Fabric	Supported ICM bays
1	Mezzanine connector 1 (M1)	Type C and Type D	1	ICM 1 and 4
2	Mezzanine connector 2 (M2) [1]	Type C and Type D	2	ICM 2 and 5
3	Mezzanine connector 3 (M3)	Type C only	3	ICM 3 and 6
4	Mezzanine connector 4 (M4)	Type C and Type D	1	ICM 1 and 4
5	Mezzanine connector 5 (M5) [2]	Type C and Type D	2	ICM 2 and 5

Item	Connector identification	Supported card types	Fabric	Supported ICM bays
6	Mezzanine connector 6 (M6)	Type C	3	ICM 3 and 6

[1] When installing a mezzanine option on mezzanine connector 2, processor 3 must be installed.
[2] When installing a mezzanine option on mezzanine connector 5, processor 4 must be installed.

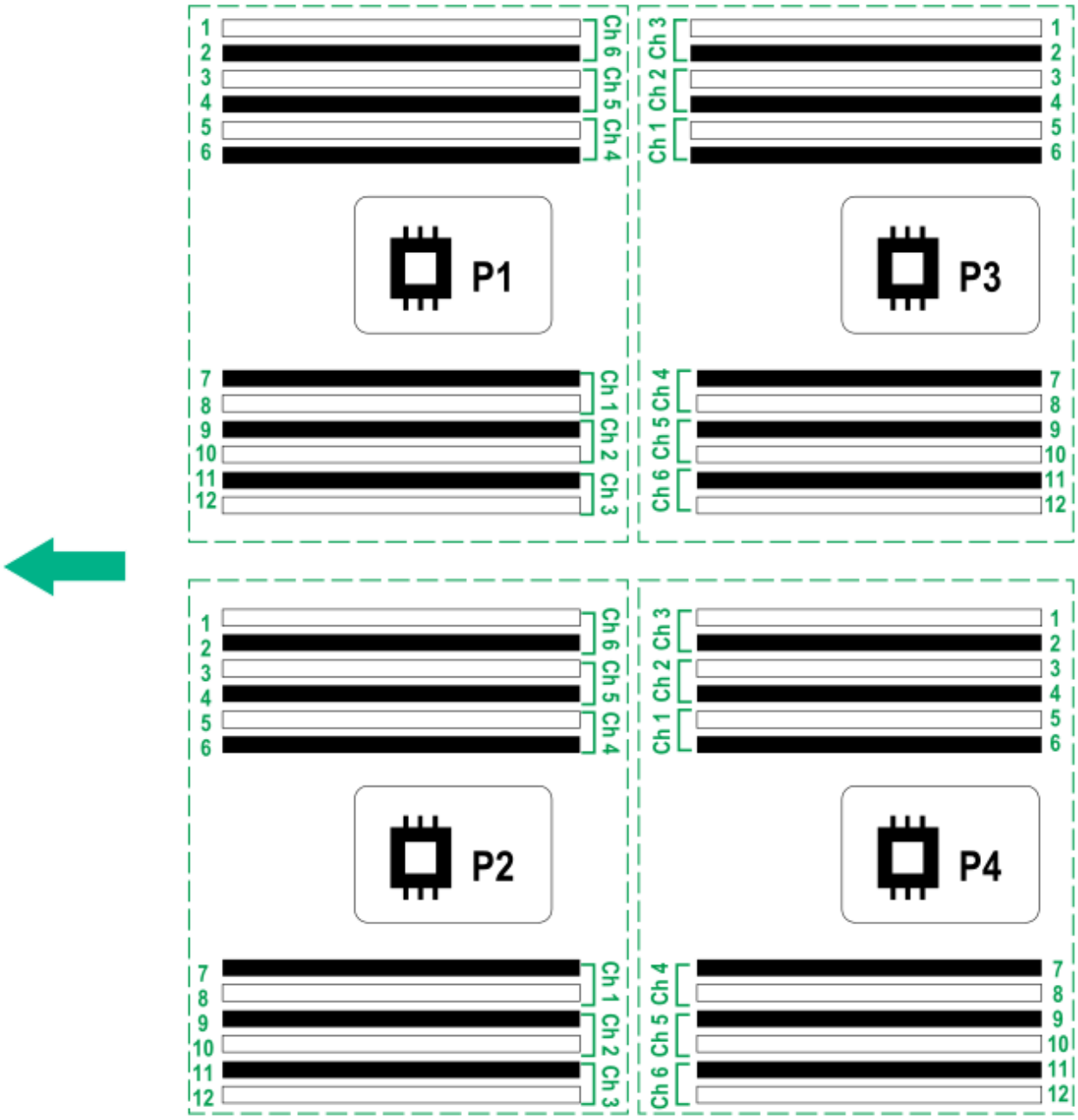
DIMM slot locations

DIMM slots are numbered sequentially (1 through 12) for each processor. The supported AMP modes use the alpha assignments for population order, and the slot numbers designate the DIMM slot ID for spare replacement.

The colored slots indicate the slot order within each channel:

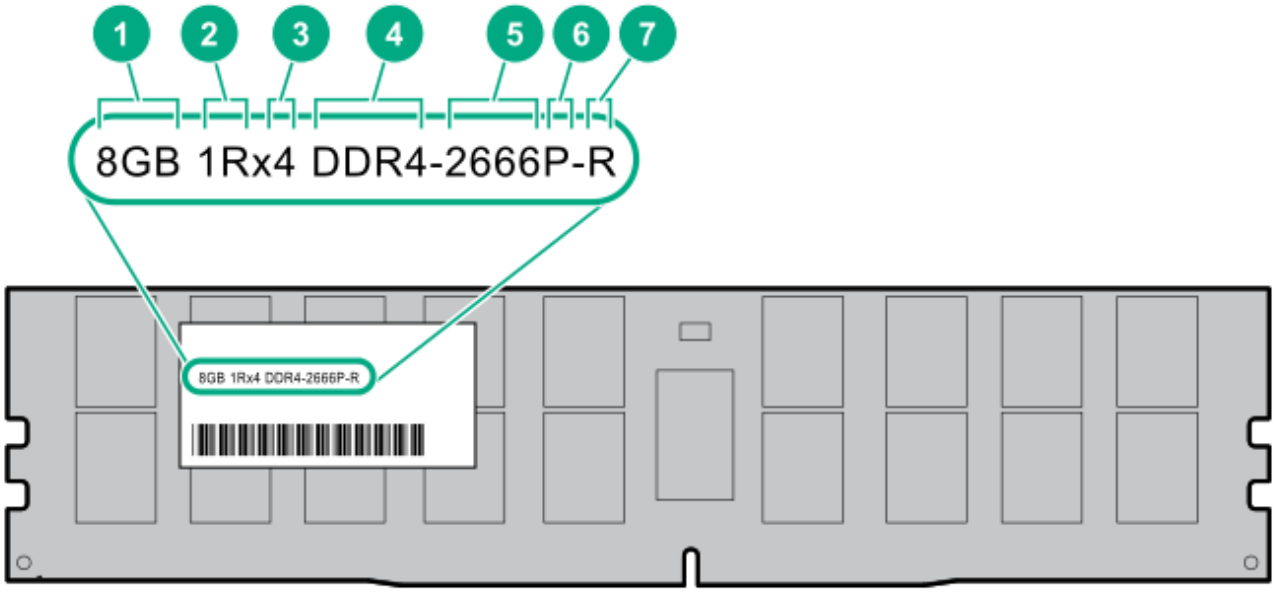
- White — First slot of a channel
- Black — Second slot of a channel

The arrow points to the front of the compute module.



DIMM label identification

To determine DIMM characteristics, see the label attached to the DIMM. The information in this section helps you to use the label to locate specific information about the DIMM.



Item	Description	Example
1	Capacity	8 GB 16 GB 32 GB 64 GB 128 GB
2	Rank	1R = Single rank 2R = Dual rank 4R = Quad rank 8R = Octal rank
3	Data width on DRAM	x4 = 4-bit x8 = 8-bit x16 = 16-bit
4	Memory generation	PC4 = DDR4
5	Maximum memory speed	2133 MT/s 2400 MT/s 2666 MT/s

Item	Description	Example
		2933 MT/s
6	CAS latency	P = CAS 15-15-15 T = CAS 17-17-17 U = CAS 20-18-18 V = CAS 19-19-19 (for RDIMM, LRDIMM) V = CAS 22-19-19 (for 3DS TSV LRDIMM) Y = CAS 21-21-21 (for RDIMM, LRDIMM) Y = CAS 24-21-21 (for 3DS TSV LRDIMM)
7	DIMM type	R = RDIMM (registered) L = LRDIMM (load reduced) E = Unbuffered ECC (UDIMM)

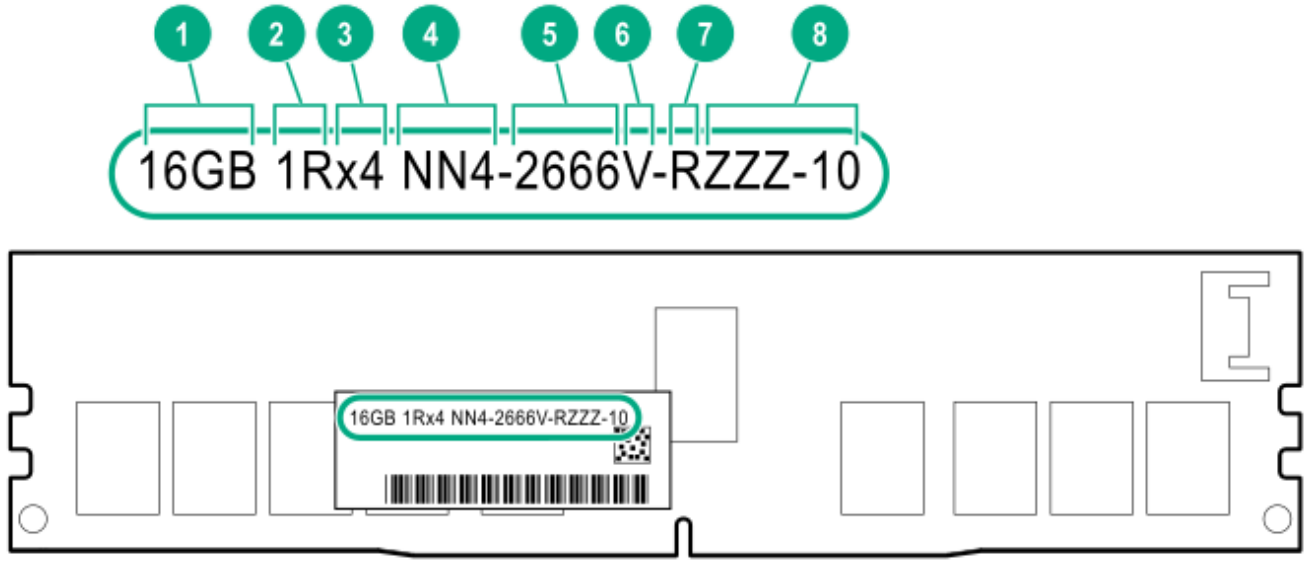
For more information about product features, specifications, options, configurations, and compatibility, see the HPE DDR4 SmartMemory QuickSpecs on the Hewlett Packard Enterprise website (**https://www.hpe.com/support/DDR4SmartMemoryQS**).

NVDIMM identification

NVDIMMs are supported only when first-generation Intel Xeon Scalable processors are installed on the compute module.

NVDIMM boards are blue instead of green. This change to the color makes it easier to distinguish NVDIMMs from DIMMs.

To determine NVDIMM characteristics, see the full product description as shown in the following example:



Item	Description	Definition
1	Capacity	16 GiB
2	Rank	1R (Single rank)
3	Data width per DRAM chip	x4 (4 bit)
4	Memory type	NN4=DDR4 NVDIMM-N
5	Maximum memory speed	2667 MT/s
6	Speed grade	V (latency 19-19-19)
7	DIMM type	RDIMM (registered)
8	Other	—

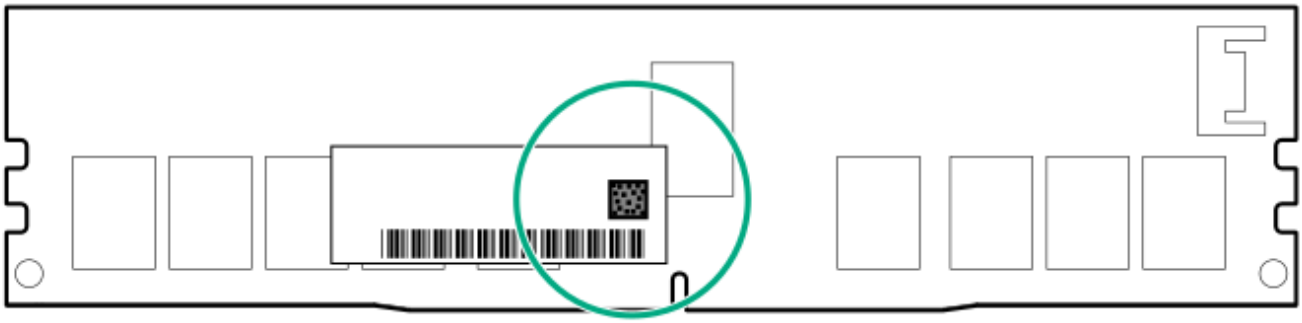
For more information about NVDIMMs, see the product QuickSpecs on the Hewlett Packard Enterprise website (**https://www.hpe.com/info/qs**).

Subtopics

NVDIMM 2D Data Matrix barcode

NVDIMM 2D Data Matrix barcode

The 2D Data Matrix barcode is on the right side of the NVDIMM label and can be scanned by a cell phone or other device.

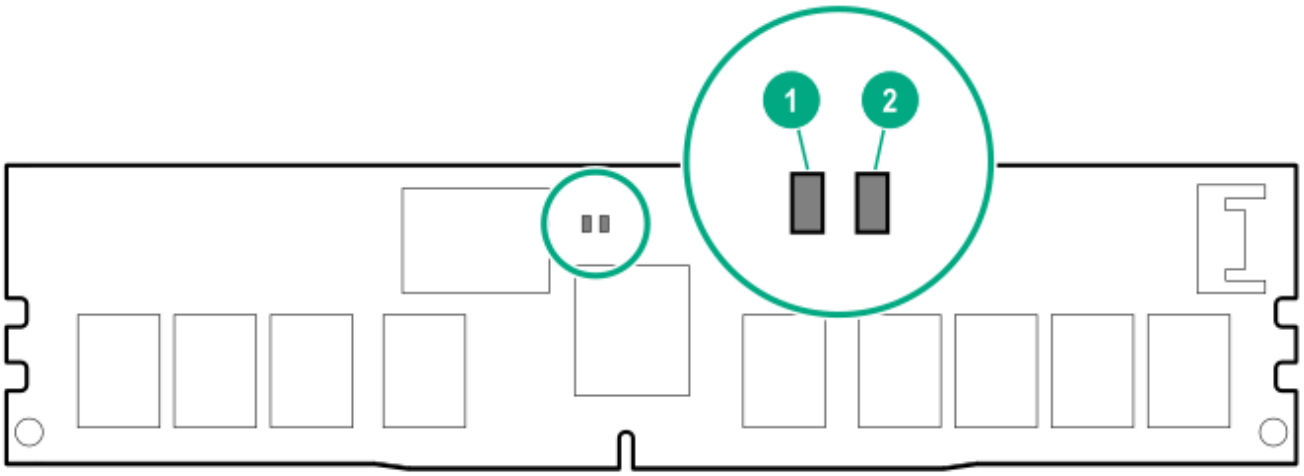


When scanned, the following information from the label can be copied to your cell phone or device:

- (P) is the module part number.
- (L) is the technical details shown on the label.
- (S) is the module serial number.

Example: (P)HMN82GR7AFR4N-VK (L)16GB 1Rx4 NN4-2666V-RZZZ-10(S)80AD-01-1742-11AED5C2

NVDIMM LED identification



Item	LED description	LED color
1	Power LED	Green
2	Function LED	Blue

Subtopics

NVDIMM-N LED combinations
NVDIMM Function LED patterns

NVDIMM-N LED combinations

State	Definition	NVDIMM-N Power LED (green)	NVDIMM-N Function LED (blue)
0	AC power is on (12V rail) but the NVM controller is not working or not ready.	On	Off
1	AC power is on (12V rail) and the NVM controller is ready.	On	On
2	AC power is off or the battery is off (12V rail off).	Off	Off

State	Definition	NVDIMM-N Power LED (green)	NVDIMM-N Function LED (blue)
3	AC power is on (12V rail) or the battery is on (12V rail) and the NVDIMM-N is active (backup and restore).	On	Flashing

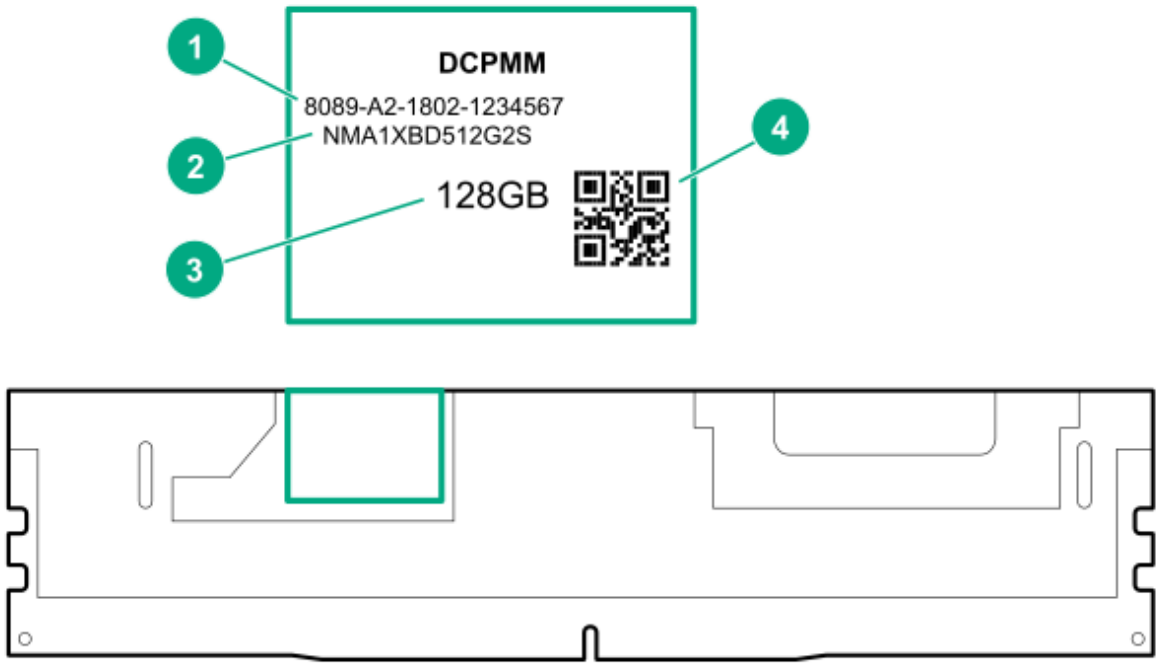
NVDIMM Function LED patterns

For the purpose of this table, the NVDIMM-N LED operates as follows:

- Solid indicates that the LED remains in the on state.
- Flashing indicates that the LED is on for 2 seconds and off for 1 second.
- Fast-flashing indicates that the LED is on for 300 ms and off for 300 ms.

State	Definition	NVDIMM-N Function LED
0	The restore operation is in progress.	Flashing
1	The restore operation is successful.	Solid or On
2	Erase is in progress.	Flashing
3	The erase operation is successful.	Solid or On
4	The NVDIMM-N is armed, and the NVDIMM-N is in normal operation.	Solid or On
5	The save operation is in progress.	Flashing
6	The NVDIMM-N finished saving and battery is still turned on (12 V still powered).	Solid or On
7	The NVDIMM-N has an internal error or a firmware update is in progress. For more information about an NVDIMM-N internal error, see the IML.	Fast-flashing

Intel Optane persistent memory 100 series for HPE label identification



Item	Description	Example
1	Unique ID number	8089-A2-1802-1234567
2	Model number	NMA1XBD512G2S
3	Capacity	128 GB 256 GB 512 GB
4	QR code	Includes part number and serial number

For more information about product features, specifications, options, configurations, and compatibility, see the product QuickSpecs on the Hewlett Packard Enterprise website (**https://www.hpe.com/support/persistentmemoryQS**).

Component and LED identification for HPE Synergy hardware

For more information about component and LED identification for HPE Synergy components, see the product-specific maintenance and service guide or the HPE Synergy 12000 Frame Setup and Installation Guide in the **Hewlett Packard Enterprise Information Library** .

Cabling

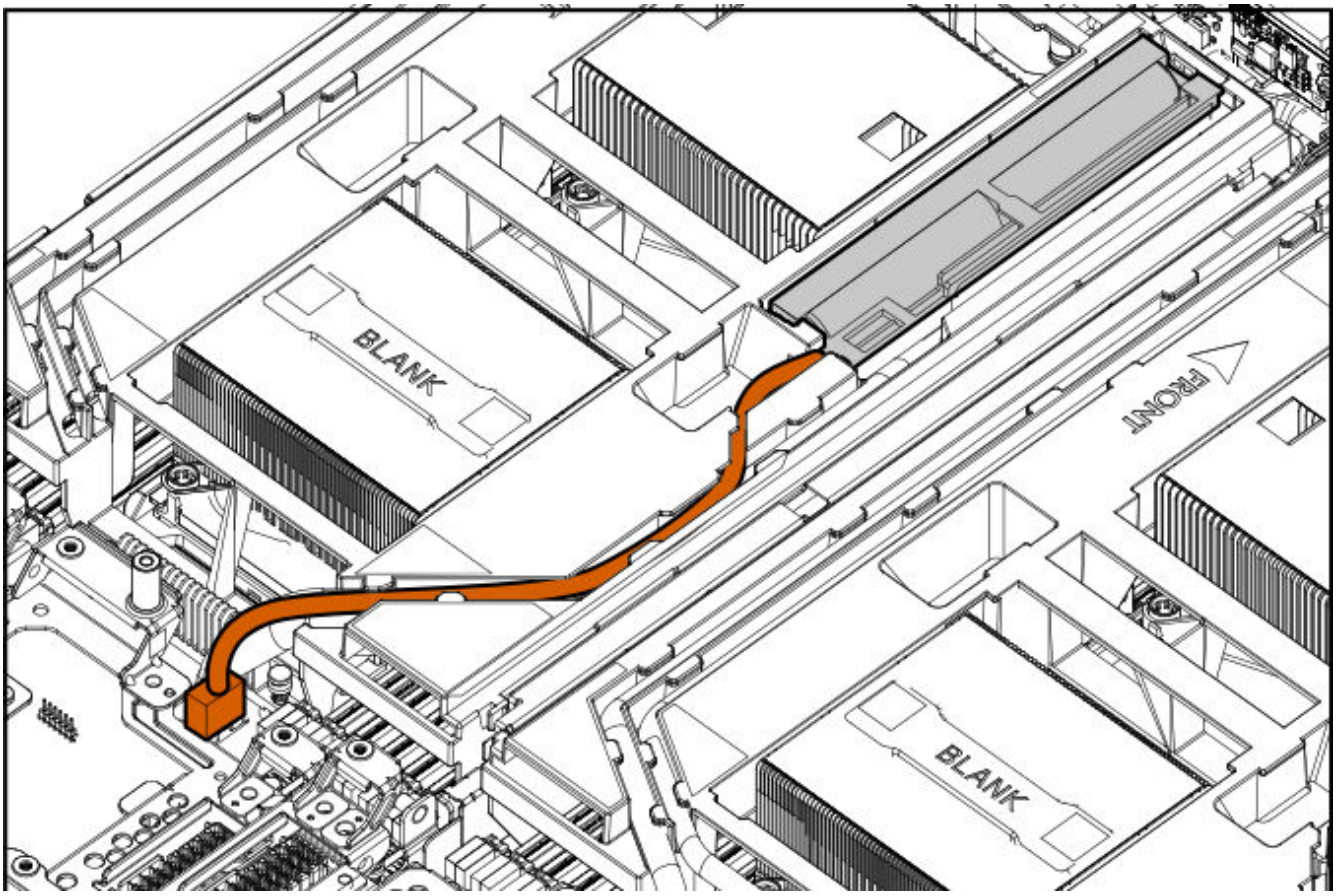
Subtopics

Cabling resources
Energy pack option cabling
Standard drive backplane cabling
P416ie-m Smart Array Controller cabling

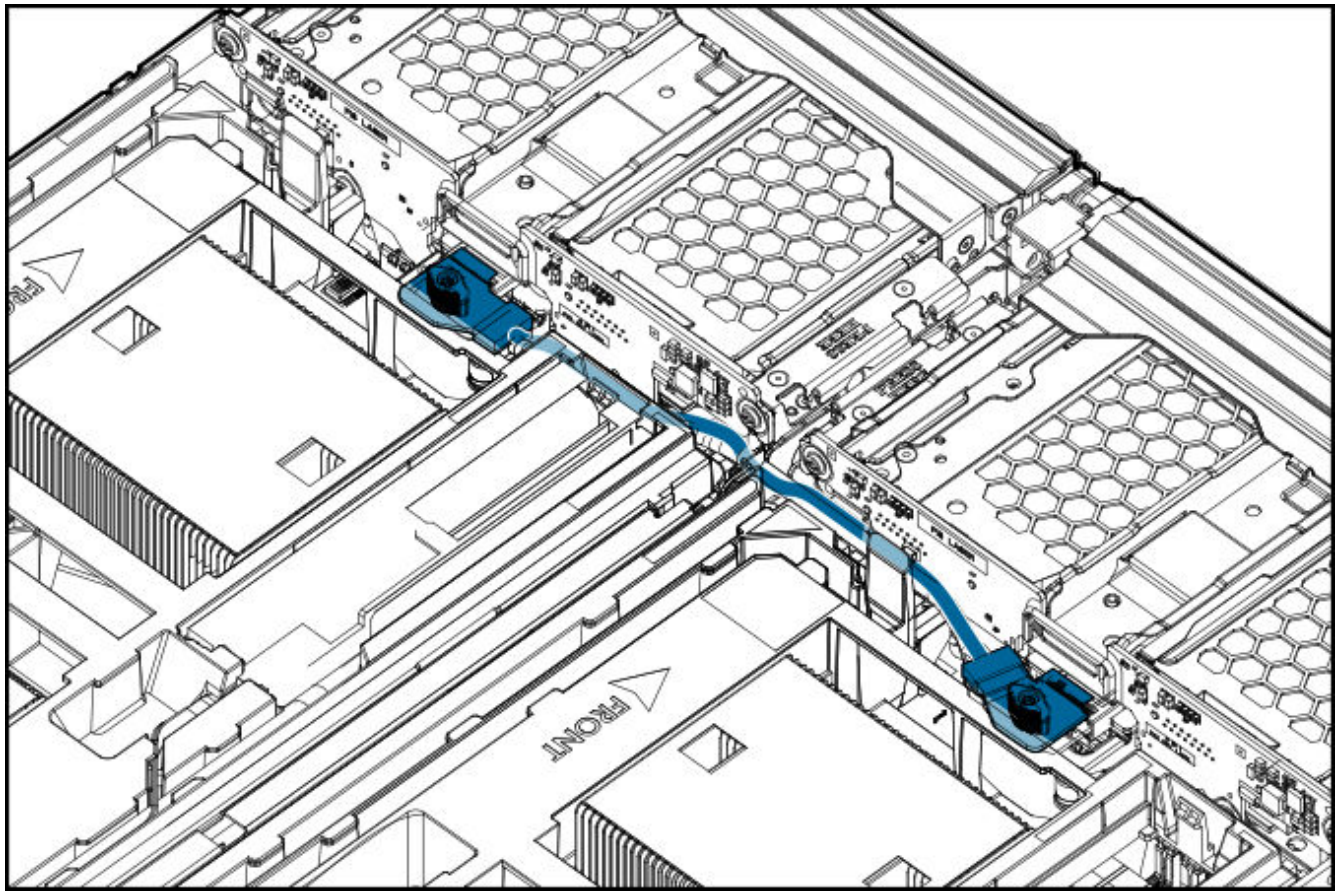
Cabling resources

Cabling configurations and requirements vary depending on the product and installed options. For more information about product features, specifications, options, configurations, and compatibility, see the product QuickSpecs on the Hewlett Packard Enterprise website (**http://www.hpe.com/info/qs**).

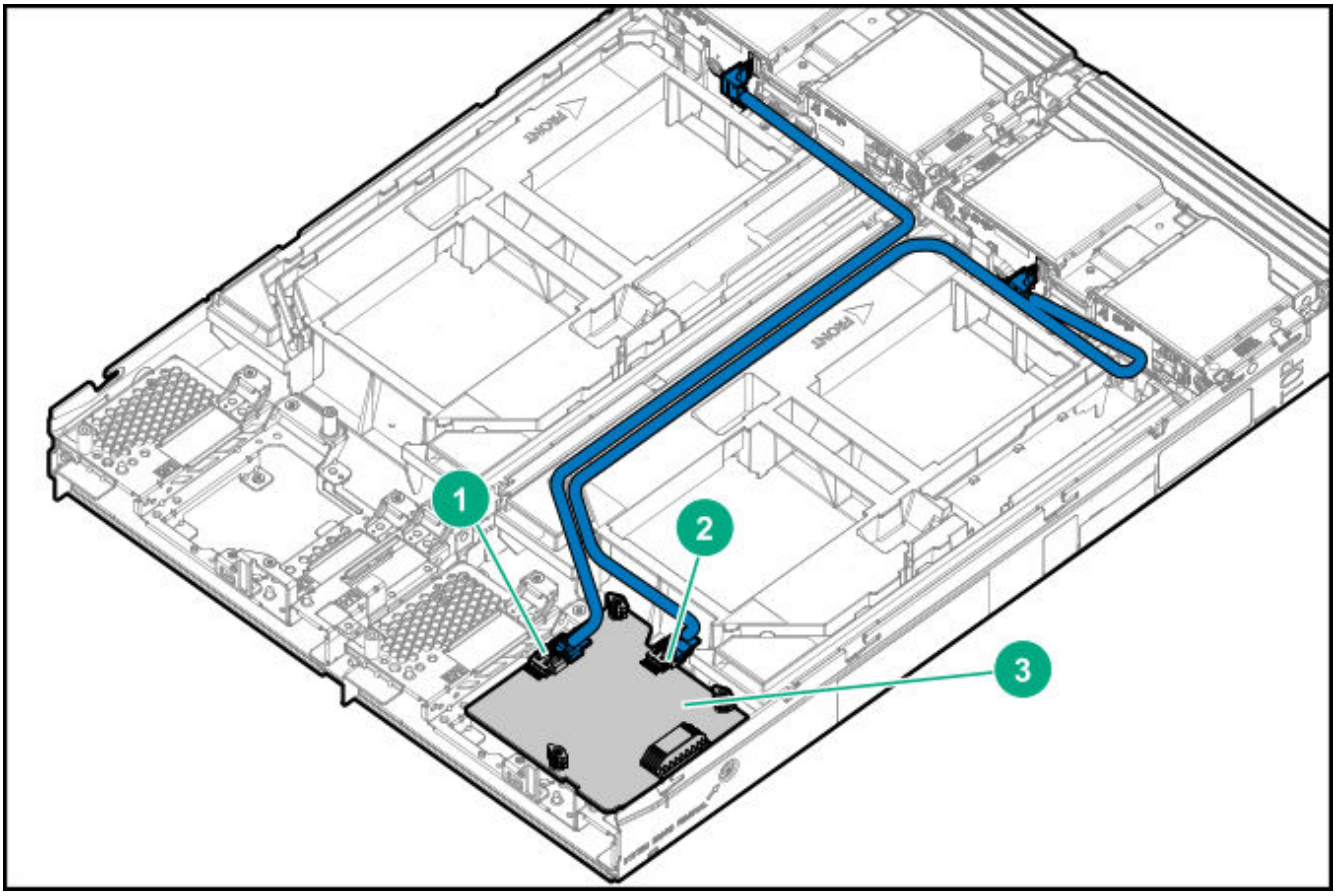
Energy pack option cabling



Standard drive backplane cabling



P416ie-m Smart Array Controller cabling



Item	Description
1	Port3i - SAS/SATA cable connector
2	Port4i - SAS/SATA cable connector
3	Mezzanine option card

Specifications

Subtopics

Environmental specifications
Physical specifications

Environmental specifications

Specification	Value
Temperature range [1]	—
Operating	10°C to 35°C (50°F to 95°F)
Nonoperating	-30°C to 60°C (-22°F to 140°F)
Relative humidity (noncondensing) [2]	—
Operating	10% to 90% @ 28°C (82.4°F)
Nonoperating	5% to 95% @ 38.7°C (101.7°F)
Altitude [3]	—
Operating	3,050 m (10,000 ft)
Nonoperating	9,144 m (30,000 ft)

[1] The following temperature conditions and limitations apply:

- All temperature ratings shown are for sea level.
- An altitude derating of 1°C per 304.8 m (1.8°F per 1,000 ft) up to 3,048 m (10,000 ft) applies.
- No direct sunlight is allowed.
- The maximum permissible rate of change is 10°C/hr (18°F/hr).
- The type and number of options installed might reduce the upper temperature and humidity limits.
- Operating with a fan fault or above 30°C (86°F) might reduce system performance.

[2] Storage maximum humidity of 95% is based on a maximum temperature of 45°C (113°F).

[3] Maximum storage altitude corresponds to a minimum pressure of 70 kPa (10.1 psia).

Physical specifications

Specification	Value
Height	430.30 mm (16.94 in)
Depth	606.6 mm (23.88 in)
Width	63.50 mm (2.50 in)
Weight (maximum)	17.41 kg (38.38 lb)
Weight (minimum)	13.75 kg (30.31 lb)

Acronyms and abbreviations

EM
enterprise mainstream (HPE SSD endurance class)

ENT
electrical nonmetallic tubing

EV
enterprise value (HPE SSD endurance class)

iLO
Integrated Lights-Out

IML
Integrated Management Log

KVM
keyboard, video, and mouse

NVMe
Non-Volatile Memory Express

POST
Power-On Self-Test

SAS
serial attached SCSI

SATA
serial ATA

SFF
small form factor

TPM
Trusted Platform Module

UEFI
Unified Extensible Firmware Interface

uFF
micro form factor

USB
universal serial bus

Websites

General websites

Hewlett Packard Enterprise Information Library

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

Single Point of Connectivity Knowledge (SPOCK) Storage compatibility matrix

https://www.hpe.com/storage/spock

Storage white papers and analyst reports

https://www.hpe.com/storage/whitepapers

For additional websites, see Support and other resources.

Support and other resources

Subtopics

Accessing Hewlett Packard Enterprise Support
Accessing updates
Remote support
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

  Hewlett Packard Enterprise Support Center: Software downloads

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

  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 Passport 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 will initiate a fast and accurate resolution based on your product's service level. 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.

Remote support and Proactive Care information

HPE Get Connected

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

HPE Proactive Care services

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

HPE Datacenter Care services

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

HPE Proactive Care service: Supported products list

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

HPE Proactive Care advanced service: Supported products list

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

Proactive Care customer information

Proactive Care central

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

Proactive Care service activation

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

Warranty information

To view the warranty information for your product, see the links provided below:

HPE ProLiant and IA-32 Servers and Options

https://www.hpe.com/support/ProLiantServers-Warranties

HPE Enterprise and Cloudline Servers

https://www.hpe.com/support/EnterpriseServers-Warranties

HPE Storage Products

https://www.hpe.com/support/Storage-Warranties

HPE Networking Products

https://www.hpe.com/support/Networking-Warranties

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

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