HPE Synergy 660 Gen10 Compute Module - Product Information Reference

Part Number:
Published:
Edition:

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Abstract

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Revision history

Part number	Publication date	Edition	Summary of changes

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Summary

Subtopics

Product description
What's new

Product description



The HPE Synergy 660 Gen10 Compute Module delivers agility, control and security in a Four-Socket, Full-Height form factor to support demanding workloads and virtualization density. Powered by 2 or 4 Intel Xeon Scalable family processors, 48 slots for HPE DDR4 SmartMemory supporting up to 6TB, flexible storage controller options with up to four SFF drives (8 uFF drives) and/or up to 4 internal M.2 drives, and six (6) I/O mezzanine slots. this compute module is designed to create a pool of flexible compute capacity within a composable infrastructure. This makes the HPE Synergy 660 Gen10 Compute Module the ideal platform for virtualization density, high availability, and Scale-Up enterprise workloads.

What's new

- Additional Drive systems and replacements

- Replaced part numbers for 32GB and 64GB Smart Memory products to meet specification requirements
- European Union (ErP Lot9) standards information

Standard Models

Subtopics

New RoHS compliant part numbers
Standard models

New RoHS compliant part numbers

To find the latest RoHS compliance information, please use the HPE PartSurfer (**Click here to visit the HPE PartSurfer website**) and click on one of the linked model numbers. When locating RoHS information in PartSurfer, you can use the Options part number for the components, the sales order number for a system that the component is used in, or the Spare part number for a specific part.

Standard models

Description	Model Number
HPE Synergy 660 Gen10 Configure-To-Order (CTO) compute module	871929-B21 **Click here to obtain the parts list of this model**.
HPE Synergy 660 Gen10 CTO premium backplane c ompute module	871931-B21 **Click here to obtain the parts list of this model**.
HPE Synergy 660 Gen10 CTO without drive bays co mpute module	871930-B21 **Click here to obtain the parts list of this model**.
HPE Synergy 660 Gen10 TAA-Compliant CTO witho ut drive bays compute module	871930-B22 **Click here to obtain the parts list of this model**.

Description	Model Number
HPE Synergy 660 Gen10 TAA-Compliant CTO premium backplane compute module	871931-B22 **Click here to obtain the parts list of this model**.
HPE Synergy 660 Gen10 TAA-Compliant CTO compute module	871929-B22 **Click here to obtain the parts list of this model**.

Product features

Feature	Description
Processors [1]	Two or four of the following depending on model

Table 1. Intel Xeon Scalable processor family - 1st generation

Intel Xeon models	CPU Frequency	Cores	Power	UPI	DDR4	Memory per socket
Platinum processors						
Platinum 8180 processor	2.5 GHz	28	205 W	3 @ 10.4 GT/s	2666 MT/s	768GB
Platinum 8176 processor	2.1 GHz	28	165 W	3 @ 10.4 GT/s	2666 MT/s	768GB
Platinum 8170 processor	2.1 GHz	26	165 W	3 @ 10.4 GT/s	2666 MT/s	768GB
Platinum 8168 processor	2.7 GHz	24	205 W	3 @ 10.4 GT/s	2666 MT/s	768GB
Platinum 8165 processor	2.3 GHz	24	205 W	3 @ 10.4 GT/s	2666 MT/s	768GB
Platinum 8164 processor	2.0 GHz	26	150 W	3 @ 10.4 GT/s	2666 MT/s	768GB
Platinum 8160 processor	2.1 GHz	24	150 W	3 @ 10.4 GT/s	2666 MT/s	768GB

Feature	Description						
	Intel Xeon models	**CPU Frequency**	**Cores**	**Power**	**UPI**	**DDR4**	**Memory per socket**
	Platinum 8158 processor	3.0 GHz	12	150 W	3 @ 10.4 GT/s	2666 MT/s	768GB
	Platinum 8156 processor	3.6 GHz	4	105 W	3 @ 10.4 GT/s	2666 MT/s	768GB
	Platinum 8153 processor	2.0 GHz	16	125 W	3 @ 10.4 GT/s	2666 MT/s	768GB
	Gold processors						
	Gold 6154 processor	3.0 GHz	18	200 W	3 @ 10.4 GT/s	2666 MT/s	768GB
	Gold 6152 processor	2.1 GHz	22	140 W	3 @ 10.4 GT/s	2666 MT/s	768GB
	Gold 6150 processor	2.7 GHz	18	165 W	3 @ 10.4 GT/s	2666 MT/s	768GB
	Gold 6148 processor	2.4 GHz	20	150 W	3 @ 10.4 GT/s	2666 MT/s	768GB
	Gold 6146 processor	3.2 GHz	12	165 W	3 @ 10.4 GT/s	2666 MT/s	768GB
	Gold 6144 processor	3.5 GHz	8	150 W	3 @ 10.4 GT/s	2666 MT/s	768GB
	Gold 6143 processor	2.8 GHz	16	205 W	3 @ 10.4 GT/s	2666 MT/s	768GB
	Gold 6142 processor	2.6 GHz	16	150 W	3 @ 10.4 GT/s	2666 MT/s	768GB
	Gold 6140 processor	2.3 GHz	18	140 W	3 @ 10.4 GT/s	2666 MT/s	768GB
	Gold 6138 processor	2.0 GHz	20	125 W	3 @ 10.4 GT/s	2666 MT/s	768GB
	Gold 6136 Processor	3.0 GHz	12	150 W	3 @ 10.4 GT/s	2666 MT/s	768GB

Feature	Description

Intel Xeon models	CPU Frequency	Cores	Power	UPI	DDR4	Memory per socket
Gold 6134 processor	3.2 GHz	8	130 W	3 @ 10.4 GT/s	2666 MT/s	768GB
Gold 6132 processor	2.6 GHz	14	140 W	3 @ 10.4 GT/s	2666 MT/s	768GB
Gold 6130 processor	2.1 GHz	16	125 W	3 @ 10.4 GT/s	2666 MT/s	768GB
Gold 6128 processor	3.4 GHz	6	115 W	3 @ 10.4 GT/s	2666 MT/s	768GB
Gold 6126 processor	2.6 GHz	12	125 W	3 @ 10.4 GT/s	2666 MT/s	768GB
Gold 5122 processor	3.6 GHz	4	105 W	3 @ 10.4 GT/s	2666 MT/s	768GB
Gold 5120 processor	2.2 GHz	14	105 W	3 @ 10.4 GT/s	2400 MT/s	768GB
Gold 5118 processor	2.3 GHz	12	105 W	3 @ 10.4 GT/s	2400 MT/s	768GB
Gold 5115 processor	2.4 GHz	10	85 W	3 @ 10.4 GT/s	2400 MT/s	768GB

Table 2. Intel Xeon Scalable processor family - 2nd generation

Intel Xeon models	CPU Frequency	Cores	Power	DDR4	Max Memory per socket	Persistent memory support
Platinum processors						
Platinum 8280L processor	2.7 GHz	28	205 W	2933 MT/s	4.5TB	Yes
Platinum 8280 processor	2.7 GHz	28	205 W	2933 MT/s	1TB	Yes

Feature	Description						
	Intel Xeon models	**CPU Frequency**	**Cores**	**Power**	**DDR4**	**Max Memory per socket**	**Persistent memory support**
	Platinum 8276L processor	2.2 GHz	28	165 W	2933 MT/s	4.5TB	Yes
	Platinum 8276 processor	2.2 GHz	28	165 W	2933 MT/s	1TB	Yes
	Platinum 8270 processor	2.6 GHz	26	205 W	2933 MT/s	1TB	Yes
	Platinum 8268 processor	2.9 GHz	24	205 W	2933 MT/s	1TB	Yes
	Platinum 8260Y processor [2]	2.4 GHz	24	165 W	2933 MT/s	1TB	Yes
		2.5 GHz	20				
		2.8 GHz	16				
	Platinum 8260L processor	2.4 GHz	24	165 W	2933 MT/s	4.5TB	Yes
	Platinum 8260 processor	2.4 GHz	24	165 W	2933 MT/s	1TB	Yes
	Platinum 8256 processor	3.4 GHz	4	105 W	2933 MT/s	1TB	Yes
	Platinum 8253 processor	2.2 GHz	16	125 W	2933 MT/s	1TB	Yes
	Gold processors						
	Gold 6262V processor	1.9 GHz	24	135 W	2933 MT/s	1TB	Yes

Feature	Description						
	Intel Xeon models	**CPU Frequency**	**Cores**	**Power**	**DDR4**	**Max Memory per socket**	**Persistent memory support**
	Gold 6252N processor	2.3 GHz	24	150 W	2933 MT/s	1TB	Yes
	Gold 6254 processor	3.1 GHz	18	200 W	2933 MT/s	1TB	Yes
	Gold 6252 processor	2.1 GHz	24	150 W	2933 MT/s	1TB	Yes
	Gold 6248 processor	2.5 GHz	20	150 W	2933 MT/s	1TB	Yes
	Gold 6246 processor	3.3 GHz	12	165 W	2933 MT/s	1TB	Yes
	Gold 6244 processor	3.6 GHz	8	150 W	2933 MT/s	1TB	Yes
	Gold 6242 processor	2.8 GHz	16	150 W	2933 MT/s	1TB	Yes
	Gold 6240Y processor[2]	2.6 GHz	18	150 W	2933 MT/s	1TB	Yes
		2.8 GHz	14				
		3.1 GHz	8				
	Gold 6240L processor	2.6 GHz	18	150 W	2933 MT/s	4.5TB	Yes
	Gold 6240 processor	2.6 GHz	18	150 W	2933 MT/s	1TB	Yes
	Gold 6238L processor	2.1 GHz	22	140 W	2933 MT/s	4.5TB	Yes
	Gold 6238 processor	2.1 GHz	22	140 W	2933 MT/s	1TB	Yes

Feature	Description						
	Intel Xeon models	**CPU Frequency**	**Cores**	**Power**	**DDR4**	**Max Memory per socket**	**Persistent memory support**
	Gold 6234 processor	3.4 GHz	8	130 W	2933 MT/s	1TB	Yes
	Gold 6230N processor	2.3 GHz	20	125 W	2933 MT/s	1TB	Yes
	Gold 6230 processor	2.1 GHz	20	125 W	2933 MT/s	1TB	Yes
	Gold 6226 processor	2.7 GHz	12	125 W	2933 MT/s	1TB	Yes
	Gold 6222V processor	1.8 GHz	20	115 W	2933 MT/s	1TB	Yes
	Gold 5222 processor	3.8 GHz	4	105 W	2933 MT/s	1TB	Yes
	Gold 5220S processor	2.6 GHz	18	125 W	2666 MT/s	1TB	Yes
	Gold 5220 processor	2.2 GHz	18	125 W	2666 MT/s	1TB	Yes
	Gold 5218N processor	2.3 GHz	16	105 W	2666 MT/s	1TB	Yes
	Gold 5218B processor	2.3 GHz	16	125 W	2666 MT/s	1TB	Yes
	Gold 5218 processor	2.3 GHz	16	125 W	2666 MT/s	1TB	Yes
	Gold 5217 processor	3 GHz	8	125 W	2666 MT/s	1TB	Yes
	Gold 5215L processor	2.6 GHz	10	85 W	2666 MT/s	1TB	Yes

<table>
<tr><th>Feature</th><th>Description</th></tr>
<tr><td></td><td>
<table>
<tr><th>Intel Xeon models</th><th>CPU Frequency</th><th>Cores</th><th>Power</th><th>DDR4</th><th>Max Memory per socket</th><th>Persistent memory support</th></tr>
<tr><td>Gold 5215M processor</td><td>2.6 GHz</td><td>10</td><td>85 W</td><td>2666 MT/s</td><td>1TB</td><td>Yes</td></tr>
<tr><td>Gold 5215 processor</td><td>2.6 GHz</td><td>10</td><td>85 W</td><td>2666 MT/s</td><td>1TB</td><td>Yes</td></tr>
</table>
</td></tr>
<tr><td>Chipset</td><td>Intel C621 series chipset
Click here to view more information regarding Intel Server Chipsets.</td></tr>
<tr><td>Synergy management</td><td>HPE Composer powered by OneView
Click here to view more information on OneView.</td></tr>
<tr><td>On compute management chipset</td><td>HPE iLO 5 ASIC
Click here to view HPE Integrated Lights-Out (iLO) QuickSpecs for more information.</td></tr>
<tr><td>Memory [3, 4, 5, 6]</td><td>HPE Registered Dual in-line Memory Module (RDIMMs) and Load-Reduction Dual in-line Memory Module (LRDIMMs)
Two to Forty-Eight (48) of the following depending on model. The following memory supports Intel Xeon scalable processor family 2nd generation:
• HPE 8GB (1 x 8GB) Single Rank x8 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit
• HPE 16GB (1 x 16GB) Single Rank x4 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit
• HPE 16GB (1 x 16GB) Dual Rank x8 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit
• HPE Synergy 32GB (1 x 32GB) Dual Rank x4 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit
• HPE 32GB (1 x 32GB) Dual Rank x4 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit
• HPE 32GB 1Rx4 PC4-2933Y-R Smart Kit</td></tr>
</table>

Feature	Description
	• HPE Synergy 64GB (1 x 64GB) Dual Rank x4 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit • HPE 64GB (1 x 64GB) Dual Rank x4 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit • HPE 128GB (1 x 128GB) Quad Rank x4 DDR4-2933 CAS-21-21-21 Load Reduced Smart Memory Kit
	The following memory supports Intel Xeon scalable processor family 1st generation: • HPE 8GB (1 x 8GB) single rank x8 DDR4-2666 CAS-19-19-19 registered memory kit • HPE 16GB (1 x 16GB) single rank x4 DDR4-2666 CAS-19-19-19 registered memory kit • HPE 16GB (1 x 16GB) dual rank x8 DDR4-2666 CAS-19-19-19 registered memory kit • HPE Synergy 32GB (1 x 32GB) dual rank x4 DDR4-2666 CAS-19-19-19 registered memory kit • HPE Synergy 64GB (1 x 64GB) quad rank x4 DDR4-2666 CAS-19-19-19 LRDIMM memory kit • HPE 128GB (1 x 128GB) octal rank x4 DDR4-2666 CAS-22-19-19 LRDIMM memory kit

Type	HPE DDR4 SmartMemory, Registered (RDIMM), Load Reduced (LRDIMM)	
DIMM Slots available	48	12 DIMM Slots per processor, 6 channels per processor, 2 DIMMs per channel
Maximum capacity (LRDIMM)	6TB	48 x 128GB LRDIMM - 2666 MT/s (Check on availability of 128GB DIMMs before ordering)
Maximum capacity (RDIMM)	1.5TB	48 x 32GB RDIMM - 2666 MT/s
Maximum capacity Non-Volatile Dual in-line Memory Module (NVDIMM)	192GB	12 x 16GB NVDIMM - 2666 MT/s

<table>
<tr><th>Feature</th><th>Description</th></tr>
<tr><td>Modes of operation</td><td>New class of memory which can be configured as either large server memory or fast storage.
Flexibility to deploy as dense memory or fast storage
Single technology used as memory or storage reducing Xeon complexity</td></tr>
<tr><td>Memory protection</td><td><table><tr><td>Advanced ECC</td><td>Advanced ECC uses single device data correction to detect and correct single and all multibit error that occurs within a single DRAM chip.</td></tr><tr><td>Online spare</td><td>Memory online spare mode detects a rank that is degrading and switches operation to the spare rank.</td></tr><tr><td>Online mode</td><td>Memory online spare mode (Rank spare mode)</td></tr></table>Click here to access the page for How memory RAS technologies can enhance the uptime of HPE ProLiant servers.</td></tr>
<tr><td>Network adapters or Mezzanine options include</td><td>HPE Synergy 3820C 10/20 GbE Converged Network Adapter (CNA)
HPE Synergy 2820C 10 GbE CNA
HPE Synergy 4820C 10/20/25Gb CNA
HPE Synergy 4610C 10/25 GbE adapter
HPE Synergy 6410C 25/50 GbE adapter
HPE Synergy 6820C 25/50Gb CNA
HPE Synergy 5330C 32G Fibre Channel (FC) Host Bus Adapters (HBA)
HPE Synergy 5830C 32G FC HBA
HPE Synergy 3530C 16G FC host bus network adapter
HPE Synergy 3830C 16G FC host bus network adapter</td></tr>
<tr><td>Mezzanine connectors</td><td>Six (6) I/O expansion mezzanine connectors:
Mezzanine connector 1 is x16 PCIe 3.0 type D (Supports type C and type D mezzanine cards) for fabric 1 [7]</td></tr>
</table>

Feature	Description
	• Mezzanine connector 2 is x16 PCIe 3.0 type D (Supports type C and type D mezzanine cards) for fabric 2 [8] • Mezzanine connector 3 is x16 PCIe 3.0 type C (Supports type C mezzanine cards) for fabric 3 [9] • Mezzanine connector 4 is x16 PCIe 3.0 type D (Supports type C and type D mezzanine cards) for fabric 1 [10] • Mezzanine connector 5 is x16 PCIe 3.0 type D (Supports type C and type D mezzanine cards) for fabric 2 [11] • Mezzanine connector 6 is x16 PCIe 3.0 type C (Supports type C mezzanine cards) for fabric 3 [12]
HPE compute module Read Only Memory (ROM)	• HPE ROM is now digitally signed using the HPE corporate signing service. This signature is verified before the flash process starts, reducing accidental programming and preventing malicious efforts to corrupt system ROM. • HPE ROM Provides for essential initialization and validation of hardware components before control is passed to the user installed operating system. The ROM also provides the capability of booting from various fixed media (HDD, CD-ROM) and removable media (USB), to continue operation to the operating system. • HPE ROM Performs very early configuration of the video controller, to allow monitoring of initialization progress via an attached monitor. If configuration or hardware errors are discovered during this early phase of hardware initialization, suitable messages are now displayed on the connected monitor. Additionally, these configuration or hardware errors are logged to the Integrated Management Log (IML) to assist in diagnosis. • HPE Synergy compute ROM is used to configure the following: ◦ Processor and chipset status registers ◦ System memory, memory map, and memory initialization ◦ System hardware configuration (Integrated PCI devices and optional PCIe cards) ◦ End user specific BIOS configuration using the Unified Extensible Firmware Interface (UEFI) system utilities
Storage controllers	• **Software RAID (Embedded):** HPE Smart array S100i software RAID Gen10 (HPE FIO enable smart array SW RAID)

Feature	Description
	• **Essential RAID controllers:** HPE Smart array E208i-c SR Gen10 12G SAS modular co ntroller • **Performance RAID controllers:** ◦ HPE Smart array P408i-c SR Gen10 12G SAS modular controller ◦ HPE Smart array P416ie-m SR Gen10 12G SAS mezzanine controller (Mezzanine hybrid smart array controller for use with Synergy D3940 storage modules; up to 4 storage modules per frame with the HPE Synergy 660 Gen10 compute modul es). • **Premium Backplane CTO Compute Module** Premium backplane compute module option for use with up to 4 NVMe drives in fron t drive cage. Also, supports P416ie-m with specific SAS cable connections allowing P4 16ie-m to manage SATA/SAS drives in both front drive cage and HPE SY D3940 DAS Storage module.

Maximum inte rnal storage [1] [3]	**Models**	**Capacity**	**Configuration**
	Hot-Plug SFF SAS SSD	61.2TB	4 x 15.3TB
	Hot-Plug SFF SATA SSD	15.36TB	4 x 3.84TB
	Hot-Plug SFF SAS HDD	9.6TB	4 x 2.4TB
	Hot-Plug SFF SATA HDD	8.0TB	4 x 2.0TB
	Hot-Plug SFF NVMe SSD	16.0TB	4 x 4.0GB
	Hot-Plug uFF SATA SSD	2.72TB	8 x 340GB
	Hot-Plug internal M.2	7.68TB	4 x 1.92TB

Interfaces	**Micro SDHC slot**	One (1) internal micro Secure Digital High Capacity (Micro SDHC) card slot.
	USB 3.0 Port	One (1) internal USB 3.0 connector for USB flash media drive keys.
	USB 3.0 Port	One (1) external USB 3.0 connector for USB flash media drive keys.
	iLO USB 2.0 Port	One (1) external USB 2.0 connector for iLO 5.
Form factor	HPE Synergy 660 Gen10 is a 10U full-height, single-wide, compute module that plugs into the HPE Synergy frame 12000.	

Feature	Description
Frames	HPE Synergy 12000 frame, is the base for all Synergy products and supports full redundancy in a single frame, while allowing for scalability and redundancy out to many frames (Up to 21 frames supported per single composer/OneView). • Up to 12 half-height, 6 full-height single-wide, or 3 full-height double-wide compute modules (Mixing allowed) • Up to 5 half-height, double-wide HPE Synergy D3940 Storage modules (Mixing with compute modules in any to any ratio allowed) • One HPE Synergy 12000 frame will support up to six (6) HPE Synergy 660 Gen10 compute modules
Industry standard compliance	• Microsoft logo certifications • USB 3.0 Compliant; iLO USB is 2.0 compliant • WOL Enabled on specific adapters • PXE Support enabled • Trusted Platform Module (TPM) 2.0 support (RBSU support of TPM 1.2) • IEEE (Specific IEEE standards depending on ethernet adapter card(s) installed) • Advanced Encryption Standard (AES) • Triple Data Encryption Standard (3DES) • SNMP • SSL 2.0 • DMTF Systems Management Architecture for Server Hardware Command Line Protocol (SMASH CLP) • Active directory v1.0 • PCIe 3.0 • UEFI Forum • ErP Lot9 (see Technical Specifications see **HPE Environmental Declarations website** for HPE Lot9 Declarations, a White Paper, FAQs and products list of verified products.
Graphics	**Integrated matrox G200eH2 video standard with 16MB of video RAM** • 1280 x 1024 (32 bp) • 1920 x 1200 (16 bp)

Feature	Description
	HPE iLO 5 On System management memory • 32MB Flash • 512MB with ECC (224MB after ECC and video).
HPE server UEFI/legacy ROM [14]	UEFI is an industry standard that provides better manageability and more secured configuration than the legacy ROM while interacting with the server at boot time. HPE Gen10 servers have a UEFI Class 2 implementation and support both UEFI mode (Default) and legacy BIOS mode. **UEFI Enables numerous new capabilities specific to HPE Synergy compute modules such as:** • Secure boot and secure start enable for enhanced security • Operating System (OS) specific functionality • Support for > 2.2TB (Using GPT) boot drives **USB 3.0 stack** • Embedded UEFI shell • Mass configuration deployment tool using iLO RESTful API that is Redfish API conformant • PXE Boot support for IPv6 networks • Workload profiles for simple performance optimization
	UEFI Boot mode only: • TPM 2.0 Support • NVMe Boot support • Platform Trust Technology (PTT) can be enabled. • iSCSI Software initiator support. • HTTP/HTTPs Boot Support as a PXE alternative. • Boot Support for option cards that only support a UEFI option ROM
Server Management	• HPE OneView Advanced • HPE iLO Advanced (standard with Synergy Compute) • HPE iLO Advanced Premium • HPE Insight Cluster Management Utility (CMU) • HPE Insight Control

Feature	Description
Embedded management	• HPE Synergy composer with HPE OneView • HPE iLO • UEFI • Intelligent Provisioning • iLO RESTful API
Fibre Channel Support	Optional Fibre Channel mezzanine HBAs are supported on the HPE Synergy 660 Gen10. Up to two (2) optional Fibre Channel mezzanine HBAs are supported on the HPE Synergy 480 Gen10. • HPE Synergy 3530C 16G Fibre Channel HBA • HPE Synergy 3830C 16G Fibre Channel HBA • HPE Synergy 5330C 32G Fibre Channel HBA • HPE Synergy 5830C 32G Fibre Channel HBA
Compatible SAN	HPE Synergy 660 Gen10 Compute Modules are optimized for HPE MSA, EVA, 3PAR, XP, and LeftHand.
Security	• Newest forms of security based on iLO 5 features • Secure start, with hardware root of trust ◦ HPE Hardware designed logic in iLO chip validates iLO firmware burned in chip ◦ iLO then validates system/compute ROM firmware for digital signature ◦ iLO completes the chain of trust ◦ ROM validates option ROMs and OS bootloader VIA UEFI secure boot
	Standard security features • Power-On password • Administrator's password • Keyboard password (QuickLock) • HPE iLO management on system management chipset with SSL encryption, secure shell version 2, AES and 3DES on browser, CLP and XML scripting interface, AES and RC4 encryption of video • External USB port enable/disable • Network server mode

Feature	Description
	• Serial interface control • TPM 1.2 or 2.0 option • AES • Intel Advanced Encryption Standard-New Instructions (AES-NI)

NOTE

1.

- Platinum - 8200 Series – Supports 2 socket (Synergy 480 Gen10) or up to 4 soc ket (Synergy 660 Gen10) compute modules, 2 Socket supports 2UPI and 4 Socket supports 3UPI - 10.4 GT/s, supports 6-Channel DDR4 @ 2933 MT/s providing up to 1TB on most and 2, 4.5TB on select processor skus. Intel Turbo Boost Technology, I ntel Hyper-Threading Technology supported. Intel AVX-512 (2x 512-bit FMA), 48 l anes PCIe 3.0, advanced RAS.
- Platinum - 8100 Series – Supports 2 socket (Synergy 480 Gen10) or up to 4 soc ket (Synergy 660 Gen10) compute modules, 2 Socket supports 2UPI and 4 Socket supports 3UPI - 10.4 GT/s, supports 6-Channel DDR4 @ 2666 MT/s providing up to 768GB memory capacity (1.5TB on select processor skus). Intel Turbo Boost Techn ology, Intel Hyper-Threading Technology supported. Intel AVX-512 (2x 512-bit FM A), 48 lanes PCIe 3.0, advanced RAS.
- Gold - 5200, 6200 Series - Supports 2 socket (Synergy 480 Gen10) or up to 4 soc ket (Synergy 660 Gen10) compute modules, 2 Socket supports 2UPI and 4 Socket supports 3UPI - 10.4 GT/s, supports 6-Channel DDR4 - 2933/2666 MHz providing up to 1, 2, or 4.5TB memory capacity depending on processor selected. Intel Turbo Boost Technology, Intel Hyper-Threading Technology, Intel AVX-512(1x 512-bit FM A) (SKU 5122 supports 2x 512 bit FMA), 48 lanes PCIe 3.0, advanced RAS suppor ted.
- Gold - 5100, 6100 Series - Supports 2 socket (Synergy 480 Gen10) or up to 4 soc ket (Synergy 660 Gen10) compute modules, 2 Socket supports 2UPI and 4 Socket supports 3UPI - 10.4 GT/s, supports 6-Channel DDR4 - 2400 MHz (SKU 5122=su pports 2666) providing up to 768GB memory capacity (1.5TB on select skus). Inte l Turbo Boost Technology, Intel Hyper-Threading Technology, Intel AVX-512(1x 512 -bit FMA) (SKU 5122 supports 2x 512 bit FMA), 48 lanes PCIe 3.0, advanced RAS supported.

Click here to access the page for Intel Xeon Processors for more information.

2. These processors come with Intel Speed Select. The identifier for processor indicate In tel Speed Select Core processor. Processor provides capability to configure and operate at 3 distinct operating points. Core count selected sets frequency of operations.(Highe

Feature	Description
	r Core – Lower Frequency) Static Boot Time Configuration: BIOS discovers and prompts for setting at boot only. 3. Maximum capacity with LRDIMM will increase to 6TB in 2H201 4. The 128GB LRDIMM, when available, may not be mixed with other DIMM capacities/types 5. LRDIMM and RDIMM are distinct memory technologies and cannot be mixed within a compute module 6. HPE memory from previous generation servers (DDR3) is not compatible with this compute module. HPE DDR4 SmartMemory is required to realize the memory performance improvements and enhanced functionality listed in this document for Gen10. 7. This mezzanine connector supports dual-port mezzanine cards: one port is routed to interconnect module bay 1 and the other to bay 4. 8. • This mezzanine connector supports dual-port mezzanine cards:. one port is routed to interconnect module bay 2 and the other to bay 5. • The HPE Synergy 660 Gen10 supports 2 or 4 processors. Mezzanine 2 and 5 are only supported when 4 processors are installed. 9. This mezzanine connector supports dual-port mezzanine cards: one port is routed to interconnect module bay 3 and the other to bay 6. 10. This mezzanine connector supports dual-port mezzanine cards: one port is routed to interconnect module bay 1 and the other to bay 4. 11. • This mezzanine connector supports dual-port mezzanine cards:. one port is routed to interconnect module bay 2 and the other to bay 5. • The HPE Synergy 660 Gen10 supports 2 or 4 processors. Mezzanine 2 and 5 are only supported when 4 processors are installed. 12. This mezzanine connector supports dual-port mezzanine cards: one port is routed to interconnect module bay 3 and the other to bay 6. 13. The Synergy 660 Gen10 compute module includes the HPE hot plug small form factor (SFF) SmartDrive carrier for enhanced management and reduced maintenance errors. HPE drives from previous generation servers (prior to Gen8) are not compatible with the Synergy 660 Gen9 or Gen10 drive bays. 14. • The UEFI System Utilities tool is analogous to the HPE ROM-Based Setup Utility (RBSU) of legacy BIOS. • For UEFI boot mode, boot environment and OS image installations should be configured properly to support UEFI

Feature	Description
	• UEFI FIO setting (758959-B22) can be selected to configure the system in legacy mode in the factory for users HPE Synergy Gen10 server

Physical specifications

Feature	Description
Dimensions (H x W x D) (With bezel)	• 6.35 x 43.03 x 59.92 cm (2.50 x 16.94 x 23.59 in)
Weight (Approximate)	• **Minimum:** 13.75 kg (30.31 lb) - Two processor and 1 DIMM/processor installed • **Maximum:** 17.41 kg (38.38 lb) - All processors, 48 DIMMs, drives, mezzanine cards, and one flash cache battery installed

Environmental specifications

Feature	Description
System inlet temperature	
Operating temperature	• 10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 305 m (1.8°F per every 1000 ft) above sea level to a maximum of 3050 m (10,000 ft), no direct sustained sunlight

Feature	Description
	• Maximum rate of change is 20°C/hr (36°F/hr). T he upper limit and rate of change may be limited by the type and number of options installed • System performance during standard operating support may be reduced if operating with a fan fault or above 30°C (86°F)
Non-operating temperature	-30° to 60°C (-22° to 140°F). Maximum rate of chan ge is 20°C/hr (36°F/hr)
Extended ambient operating support	For approved hardware configurations, the supporte d system inlet range is extended to be: 5° to 10°C (4 1° to 50°F) and 35° to 40°C (95° to 104°F) at sea l evel with an altitude derating of 1.0°C per every 175 m (1.8°F per every 574 ft) above 900 m (2953 ft) to a maximum of 3050 m (10,000 ft)
Relative humidity (Non-condensing)	
Operating relative humidity	Minimum to be the higher (More moisture) of -12°C (10.4°F) dew point or 8% relative humidity. Maximum to be the lower (Less moisture) of 24°C (75.2°F) de w point or 90% relative humidity
Non-operating relative humidity	5% to 95% Relative Humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing
Altitude	
Operating altitude	3050 m (10,000 ft). This value may be limited by th e type and number of options installed. Maximum all owable altitude change rate is 457 m/min (1500 ft/m in)
Non-operating altitude	9144 m (30,000 ft). Maximum allowable altitude cha nge rate is 457 m/min (1500 ft/min)
Acoustic noise	Check the below link for acoustic noise specifications : **Click here to access the page for Synergy Infrastru cture**.

Electrical specifications

Feature	Description
Power specifications	For power specifications including input requirements, BTU rating, and power supply output, see the HPE Synergy frame TechSpecs. To review typical system power ratings use the HPE power advisor: **Click here to access the HPE Power Advisor page.**

Spare Parts

Subtopics

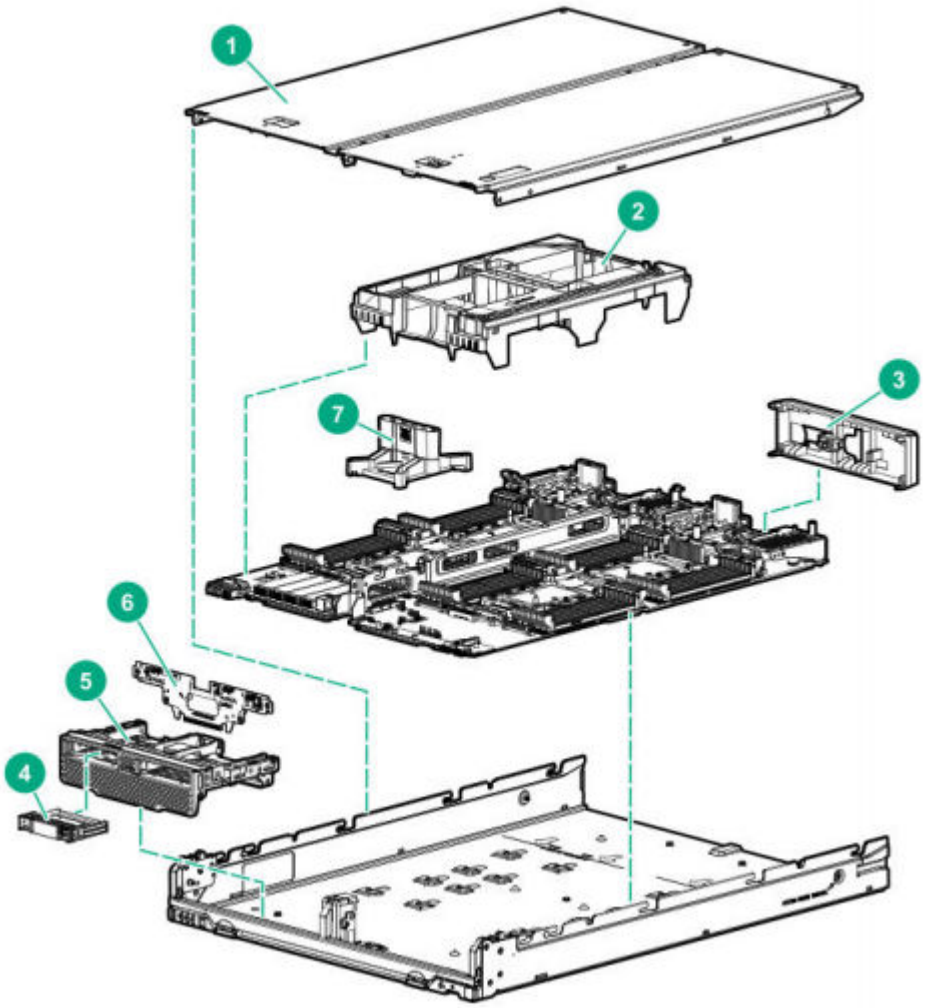
New model specific parts lists
Mechanical components
System components
Compute module options

New model specific parts lists

IMPORTANT: To obtain current part number information for a specific product model, use the Standard Models page for this product family.

- The product Standard Models page now links the model SKU numbers to the spare parts list for each model found on the HPE PartSurfer web site. (To report missing or incorrect parts information in PartSurfer, please use the "Contact us" and "Missing or incorrect data" links within the PartSurfer web site utility).
- To look up RoHS-compliant information in PartSurfer, use the component's option part number or the sales order number for a system in which the component is used (Available in the QuickSpecs or Standard Models page).

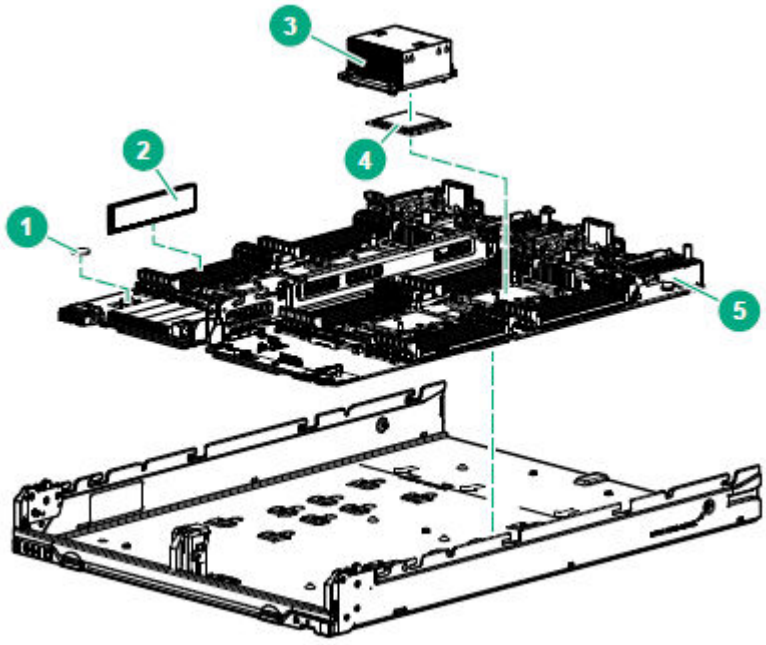
Mechanical components



Item	Description	Spare Part Number
1	**Access panel**	
	Top Cover, Synergy 660 Gen10	873087-001
2	**Dual In-line Memory Module (DIMM) baffle**	
	DIMM Baffle for Synergy 660 Gen10	873088-001
3	**Compute module end cap**	
	Cap blade end	813579-001

Item	Description	Spare Part Number
4	**Small Form Factor (SFF) Hard Disk Drive (HDD) blank assembly**	
	Hard drive blank (Cover) - To fill empty SFF drive bays - For Gen8 servers	670033-001
5	**Front panel/drive cage assembly**	
	HDD cage with bezel, Synergy 480 Gen10	873079-001
	Drive cage with bezel (No drives)	830892-001
6	**Drive backplane**	
	HDD backplane, Synergy 480 Gen10, standard	873075-001
	HDD backplane, Synergy 480 Gen10, premium	873076-001
7	**Rear heatsink blank**	
	Rear heatsink blank for Synergy 480 Gen10	873080-001

System components



Item	Description	Spare Part Number
1	**System battery**	
	Battery for Real-Time Clock (RTC) - 3.0 V, 220 mAh, l ithium coin cell, 20 mm diameter, 3.2 mm height (CR2 032)	234556-001
2	**DIMM**	
	2666 MT/s DIMMs	
	8GB PC4-2666V-R, registered Synchronous Dynamic Random Access Memory (SDRAM) 1G x 8, Dual Data Rate (DDR4) mode, DIMM organized as 1G x 72	850879-001
	16GB PC4-2666V-R, registered SDRAM 2Gx4, ope rated in a DDR4 mode, packaged in a DIMM organi zed as 2Gx72	850880-001
	16Gb PC4-2666V-R SDRAM 1G x 8, operated in DDR 4 mode, DIMM, 2G x 72	868846-001
	32GB PC4-2666V-R, registered SDRAM 2Gx4 operate d in a DDR4 mode, packaged in a DIMM, organized as 4G x 72	850881-001
	64GB PC4-2666V-R, SDRAM 2G x 4, operated in a DD R4 mode, packaged in a DIMM organized as 8G x 72	850882-001
	128GB PC4-2666V-L, load reduced (LRDIMM) SDRA M, operated in a DDR4 mode, packaged in a DIMM, o rganized as 16Gx72	850883-001
	2933 MT/s DIMMs	
	HPE 8GB (1 x 8GB) Single Rank x8 DDR4-2933 CAS -21-21-21 registered smart memory kit	P06186-001
	HPE 16GB (1 x 16GB) Single Rank x4 DDR4-2933 CA S-21-21-21 registered smart memory kit	P06187-001
	HPE 16GB (1 x 16GB) Dual Rank x8 DDR4-2933 CAS -21-21-21 registered smart memory kit	P06188-001
	HPE 16GB (1 x 16GB) Dual Rank x8 DDR4-2933 regi stered smart memory kit	P12416-001

Item	Description	Spare Part Number
	HPE 32GB (1 x 32GB) Dual Rank x4 DDR4-2933 CAS -21-21-21 registered smart memory kit	P06189-001
	HPE 32GB (1 x 32GB) Dual Rank x4 DDR4-2933 regi stered smart memory kit	P12417-001
	64GB, Quad Rank x4, DDR4-2933, CAS-21-21-21, loa d reduced smart memory kit	P06190-001
	HPE 64GB (1 x 64GB) Dual Rank x4 DDR4-2933 CAS -21-21-21 registered smart memory kit	P06192-001
	DIMM,64GB PC4-2933Y-R,4Gx4 SAM	P12418-001
	HPE 128GB (1 x 128GB) Octal rank x4 DDR4-2933 CAS--24-21-21 LRDIMM smart memory kit	P06191-001
3	**Processor heatsink**	
	Heat Sink - Synergy 480 Gen10	873082-001
	Heatsink, CPU front standard Synergy 480 Gen10	873081-001
4	**First Generation Intel Xeon Scalable Processor**	
	51XX processors	
	Intel Xeon Gold 5115 ten core 64-bit processor - 2.40 GHz (Skylake), 13.75MB level-3 cache, 85 W TDP, soc ket FCLGA3647	878082-001
	Intel Xeon Gold 5118 twelve core 64-bit processor - 2 .30 GHz (Skylake) 16.5MB level-3 cache, 105 W TDP, socket FCLGA3647	875717-001
	Intel Xeon Gold 5120 fourteen core 64-bit processor - 2.20 GHz (Skylake) 19.25MB level-3 cache, 105 W T DP, socket FCLGA3647	875718-001
	Intel Xeon Gold 5122 four core 64-bit processor - 3.6 0 GHz (Skylake) 16.5MB level-3 cache, 105 W TDP, s ocket FCLGA3647	875719-001
	61XX processors	

Item	Description	Spare Part Number
	Intel Xeon Gold 6126 twelve core 64-bit processor - 2 .60 GHz (Skylake) 19.25MB level-3 cache, 125 W TD P, socket FCLGA3647	875720-001
	Intel Xeon Gold 6128 six core 64-bit processor - 3.40 GHz (Skylake), 19.25MB level-3 cache, 115 W TDP, s ocket FCLGA3647	875721-001
	Intel Xeon Gold 6130 sixteen cores, processor - 2.10 GHz,(Skylake), 22MB level-3 cache, 125 W TDP, soc ket FCLGA3647	874736-001
	Intel Xeon Gold 6132 fourteen cores, processor - 2.60 GHz (Skylake), 19.25MB level-3 cache, 140 W TDP, s ocket FCLGA3647	875722-001
	Intel Xeon Gold 6134 eight core 64-bit processor - 3. 20 GHz (Skylake) 24.75MB level-3 cache, 130 W TDP, socket FCLGA3647	875723-001
	Intel Xeon Gold 6136 twelve core 64-bit processor - 3 .0 GHz (Skylake), 24.75MB level-3 cache, 150 W TDP, socket FCLGA3647	875724-001
	Intel Xeon Gold 6138 twenty core 64-bit processor - 2.0 GHz (Skylake) 27.5MB level-3 cache, 125 W TDP power, socket FCLGA3647	874735-001
	Intel Xeon-G 6140 eighteen core 64-bit processor - 2 .30 GHz (Skylake), 24.75MB level-3 cache, 140 W TD P, socket FCLGA3647	874734-001
	Intel Xeon Gold 6140M eighteen core 64-bit processo r - 2.30 GHz (Skylake), 24.75MB level-3 cache, 140 W TDP, socket FCLGA3647 (Supports 1.5TB memory si ze)	878084-001
	Intel Xeon-Gold 6142M sixteen cores, processor - 2.6 0 GHz, (Skylake) 22MB level-3 cache, 150 W TDP, soc ket FCLGA3647 (Supports 1.5TB max memory)	878085-001
	Intel Xeon-G 6143 sixteen core 64-bit processor - 2.8 0 GHz (Skylake), 205 W TDP	882169-001
	Intel Xeon-Gold 6142 sixteen cores, processor - 2.60 GHz, (Skylake) 22MB level-3 cache, 150 W TDP, soc ket FCLGA3647	874733-001

Item	Description	Spare Part Number
	Intel Xeon-Gold 6148 twenty cores, processor - 2.40 GHz (Skylake), 27.5MB level-3 cache, 150 W TDP, socket FCLGA3647	874732-001
	Intel Xeon Gold 6150 eighteen core 64-bit processor - 2.70 GHz (Skylake), 24.75MB level-3 cache, 165 W TDP, socket FCLGA3647	874731-001
	Intel Xeon-Gold 6152 twenty two cores 64-bit processor - 2.10 GHz, (Skylake) 30.25MB level-3 cache, 140 W TDP, socket FCLGA3647	874730-001
	Intel Xeon Gold 6154 eighteen core 64-bit processor - 3.00 GHz (Skylake) 24.75MB level-3 cache, 200 W TDP, socket FCLGA3647	875727-001
	Intel Xeon Gold 6146 twelve cores, scalable processor - 3.20 GHz (24.75MB level-3 cache, 165 W TDP, socket FCLGA 3647)	875726-001
	Intel Xeon Gold 6144 eight cores, processor - 3.50 GHz (Skylake), 24.75MB level-3 cache, 150 W TDP, socket FCLGA3647	875725-001
	81XX processors	
	Intel Xeon Platinum 8153 sixteen cores 64-bit processor - 2.00 GHz (Skylake), 22MB level-3 cache, 125 W TDP, socket FCLGA3647	875728-001
	Intel Xeon Platinum 8156 four core 64-bit processor - 3.60 GHz (Skylake), 16.5MB level-3 cache, 105 W TDP, socket LGA 3647	875732-001
	Intel Xeon Platinum 8158 twelve core 64-bit processor - 3.0 GHz (Skylake), 24.75MB level-3 cache, 150 W TDP, socket FCLGA3647	875733-001
	Intel Xeon Platinum 8160 twenty four core 64-bit processor - 2.10 GHz (Skylake), 33MB level-3 cache, 150 W TDP, socket FCLGA3647	874729-001
	Intel Xeon Platinum 8160M twenty four core 64-bit processor - 2.10 GHz (Skylake), 33MB level-3 cache, 150 W TDP, socket FCLGA3647 (Supports 1.5TB memory size)	878086-001

Item	Description	Spare Part Number
	Intel Xeon Platinum 8164 twenty six core 64-bit processor - 2.0 GHz (Skylake), 35.7MB level-3 cache, 150 W TDP, socket FCLGA3647	875729-001
	Intel Xeon-P 8165 twenty four core 64-bit processor - 2.3 GHz (Skylake),24MB level-3 cache, 205 W TDP, socket FCLGA3647- Platinum	P00868-001
	Intel Xeon Platinum 8168 twenty four core 64-bit processor - 2.70 GHz (Skylake), 33MB level-3 cache, 205 W TDP, socket FCLGA3647	875730-001
	Intel Xeon Platinum 8170 twenty six core 64-bit processor - 2.10 GHz (Skylake), 35.75MB level-3 cache, 165 W TDP, socket FCLGA3647	874728-001
	Intel Xeon Platinum 8180M Twenty-eight Core 64-bit processor - 2.50 GHz (Skylake), 38.5MB Level-3 cache, 205 W TDP, socket FCLGA3647 - (Supports 1.5TB memory size)	878089-001
	Intel Xeon Platinum 8176 twenty cight core 64-bit processor - 2.10 GHz (Skylake), 38.5MB level-3 cache, 165 W TDP, socket FCLGA3647	874727-001
	Intel Xeon Platinum 8180 twenty eight core 64-bit processor - 2.50 GHz (Skylake), 38.5MB level-3 cache, 205 W TDP, socket FCLGA3647	875731-001
	Second Generation Intel Xeon Scalable Processor	
	32XX processors	
	Intel Xeon 3204 v4 Six-Core 64-bit processor - 1.90 GHz (Cascade Lake, 8.25MB cache, 85 W TDP, socket FCLGA3647)	P11604-001
	42XX processors	
	Intel Xeon Silver 4208 v4 Eight-Core 64-bit processor - 2.10 GHz (Cascade Lake, 11MB cache, 85 W TDP, socket FCLGA3647)	P11605-001
	Intel Xeon Silver 4210 v4 Ten-Core 64-bit processor - 2.20 GHz (Cascade Lake, 13.75MB cache, 85 W TDP, socket FCLGA3647)	P11606-001

Item	Description	Spare Part Number
	Intel Xeon Silver 4214 v4 Twelve-Core 64-bit processor - 2.20 GHz (Cascade Lake, 16.5MB cache, 85W TDP, socket FCLGA3647)	P11607-001
	Intel Xeon Silver 4214Y v4 Twelve-Core 64-bit processor - 2.20 GHz (Cascade Lake, 16.5MB cache, 85 W TDP, socket FCLGA3647)	P11636-001
	Intel Xeon Silver 4215 v4 Eight-Core 64-bit processor - 2.50 GHz (Cascade Lake, 11MB cache, 85 W TDP)	P11608-001
	Intel Xeon Silver 4216 Sixteen-Core 64-bit processor - 2.10 GHz (Cascade Lake, 22MB cache, 100 W TDP, socket FCLGA3647)	P11609-001
	52XX processors	
	Intel Xeon Gold 5215 v4 Ten-Core 64-bit processor - 2.60 GHz (Cascade Lake, 20MB cache, 85 W TDP, socket LGA-3647)	P11610-001
	Intel Xeon Gold 5215M v4 Ten-Core 64-bit processor - 2.50 GHz (Cascade Lake, 38.5MB cache, 85 W TDP, socket FCLGA3647)	P11626-001
	Intel Xeon Gold 5215L v4 Ten-Core 64-bit processor - 2.50 GHz (Cascade Lake, 13.75MB cache, 85W TDP, socket FCLGA3647)	P11631-001
	Intel Xeon Gold 5217 v4 Eight-Core 64-bit processor - 3.00 GHz (Cascade Lake, 11MB cache, 115 W TDP, socket FCLGA3647)	P11611-001
	Intel Xeon Gold 5218 v4 Sixteen-Core 64-bit processor - 2.30 GHz (Cascade Lake, 22MB cache, 125 W TDP, socket FCLGA3647)	P11612-001
	Intel Xeon Gold 5218B v4 Sixteen-Core 64-bit processor - 2.30 GHz (Cascade Lake, 22MB cache, 125 W TDP, socket FCLGA3647)	P12532-001
	Intel Xeon Gold 5218N v4 Sixteen-Core 64-bit processor - 2.30 GHz (Cascade Lake, 22MB cache, 110 W TDP, socket FCLGA3647)	P12021-001
	Intel Xeon Gold 5220 v4 Eighteen-Core 64-bit processor - 2.20 GHz (Cascade Lake, 24.75MB cache, 125 W TDP, socket FCLGA2011-3)	P11613-001

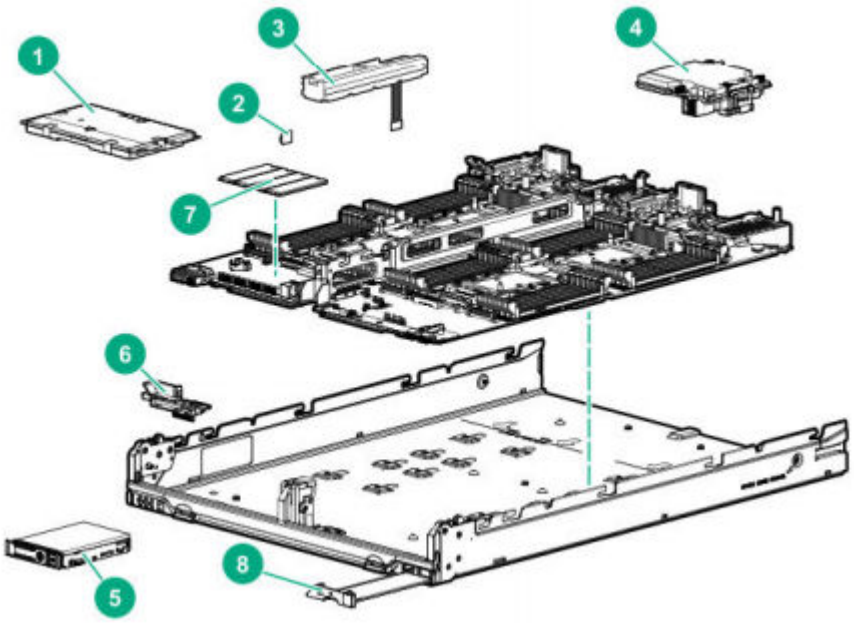
Item	Description	Spare Part Number
	Intel Xeon Gold 5220S v4 Eighteen-Core 64-bit processor - 2.70 GHz (Cascade Lake, 25MB cache, 125 W TDP)	P11627-001
	Intel Xeon Gold 5222 v4 Four-Core 64-bit processor - 3.80 GHz (Cascade Lake, 16.5MB cache, 105 W TDP, socket LGA-3647)	P11632-001
	62XX processors	
	Intel Xeon Gold 6222V v4 Twenty-Core 64-bit processor - 1.80 GHz (Cascade Lake, 28MB cache,115 W TDP)	P12019-001
	Intel Xeon Gold 6226 v4 Twelve-Core 64-bit processor - 2.70 GHz (Cascade Lake, 19MB cache, 125 W TDP)	P12008-001
	Intel Xeon Gold CLX 6230 Twenty-Core 64-bit processor - 2.10 GHz (Cascade Lake , 27.5MB cache, Intel QuickPath interconnect (QPI) speed 8.0 GT/s, 125 W TDP, socket FCLGA3647)	P11614-001
	Intel Xeon Gold CLX 6230N Twenty-Core 64-bit processor - 2.30 GHz (Cascade Lake, 27.5MB cache, 125 W TDP, socket FCLGA3647)	P12022-001
	Intel Xeon Gold 6234 v4 Eight-Core 64-bit processor - 3.30 GHz (Cascade Lake, 25MB cache, 130 W TDP, socket FCLGA3647)	P12009-001
	Intel Xeon Gold 6238 v4 Twenty Two-Core 64-bit processor - 2.10 GHz (Cascade Lake, 30MB cache, 140 W TDP, socket FCLGA3647)	P12010-001
	Intel Xeon Gold 6238M v4 Twenty two Core 64-bit processor - 2.10 GHz (Cascade Lake, 30MB cache, 140 W (TDP)	P12014-001
	Intel Xeon Gold 6238L v4 Twenty two-Core 64-bit processor - 2.10 GHz (Cascade Lake, 30MB cache, 140 W TDP)	P12016-001
	Intel Xeon Gold CLX 6240 v4 Eighteen-Core 64-bit processor - 2.60 GHz (Cascade Lake, 24.75MB cache, 150 W (TDP), socket LGA-3647)	P11615-001

Item	Description	Spare Part Number
	Intel Xeon Gold 6240M v4 Eighteen-Core 64-bit processor - 2.60 GHz (Cascade Lake, 25MB cache, 150 W (TDP), socket FCLGA3647)	P12013-001
	Intel Xeon Gold 6240 v4 Eighteen-Core 64-bit processor - 2.60 GHz (Cascade Lake, 25MB cache, 150 W (TDP), socket FCLGA3647)	P12015-001
	Intel Xeon Gold 6240Y v4 Eighteen-Core 64-bit processor - 2.60 GHz (Cascade Lake, 24.75MB cache, 150 W (TDP), socket FCLGA3647)	P11637-001
	Intel Xeon Gold 6242 v4 Sixteen-Core 64-bit processor - 2.80 GHz (Cascade Lake, 22MB cache, 150 W (TDP), socket LGA-3647)	P11616-001
	Intel Xeon Gold CLX 6244 Eight-Core 64-bit processor - 3.60 GHz (Cascade Lake , 24.75MB cache, Intel QPI speed 8.0 GT/s, 150 W TDP, socket FCLGA3647)	P11617-001
	Intel Xeon Gold CLX 6246 Twelve-Core 64-bit processor - 3.30 GHz (Cascade Lake, 24.75MB cache, Intel QPI speed 8.0 GT/s, 165 W (TDP), socket FCLGA-3647)	P12018-001
	Intel Xeon Gold 6248 v4 Twenty-Core 64-bit processor - 2.50 GHz (Cascade Lake, 27.5MB cache, 150 W TDP, socket FCLGA3647)	P11618-001
	Intel Xeon Gold 6252 v4 Twenty Four-Core 64-bit processor - 2.10 GHz (Cascade Lake, 22MB cache, 150 W TDP, socket LGA-3647)	P11619-001
	Intel Xeon Gold CLX 6252N Twenty Four-Core 64-bit processor - 2.30 GHz (Cascade Lake, 35.75MB cache, Intel QPI speed 8.0 GT/s, 150 W TDP, socket FCLGA-3647)	P12023-001
	Intel Xeon Gold 6254 v4 Eighteen-Core 64-bit processor - 3.10 GHz (Cascade Lake, 24.75MB cache, 200 W TDP, socket FCLGA3647)	P11620-001
	Intel Xeon Gold 6262V v4 Twenty four-Core 64-bit processor - 1.90 GHz (Cascade Lake, 33MB cache, interconnect (QPI), 135 W TDP)	P12020-001
	Intel Xeon-Gold 6250 v4 Eight-Core 64-bit processor - 3.9 GHz (185 W TDP)	P25092-001

Item	Description	Spare Part Number
	Intel Xeon-Gold 6256 v4 Twelve-Core 64-bit processor - 3.6 GHz (205 W TDP)	P25093-001
	82XX processors	
	Intel Xeon Gold 8253 v4 Sixteen-Core 64-bit processor - 2.20 GHz (Cascade Lake, 22MB cache, 125 W TDP)	P12011-001
	Intel Xeon Platinum 8256 Four-Core 64-bit processor - 3.80 GHz (Cascade Lake , 16.5MB cache, Intel QPI speed 8.0 GT/s, 105 W (TDP)	P12012-001
	Intel Xeon Platinum 8260 v4 Twenty Four-Core 64-bit processor - 2.40 GHz (Cascade Lake, 35.75MB cache, 165 W TDP, socket FCLGA3647)	P11621-001
	Intel Xeon Platinum 8260M v4 Twenty Four-Core 64-bit processor - 2.40 GHz (Cascade Lake, 36MB cache, 165 W TDP, socket FCLGA3647)	P11628-001
	Intel Xeon Platinum CLX 8260L Twenty Four-Core 64-bit processor - 2.40 GHz (Cascade Lake, 36MB cache, 165 W TDP, socket FCLGA3647)	P11633-001
	Intel Xeon Platinum 8260Y v4 Sixteen-Core 64-bit processor - 2.40 GHz (Cascade Lake, 35.75MB cache, 165 W TDP, socket FCLGA3647)	P11638-001
	Intel Xeon Platinum 8268 v4 Twenty Four-Core 64-bit processor - 2.90 GHz (Cascade Lake, 35.75MB cache, 205 W TDP, socket FCLGA-3647)	P11622-001
	Intel Xeon Platinum 8270 v4 Twenty Six-Core 64-bit processor - 2.70 GHz (Cascade Lake, 35.75MB cache, 205 W TDP, socket FCLGA3647)	P11623-001
	Intel Xeon CLX 8276 Twenty Eight-Core 64-bit processor - 2.20 GHz (Cascade Lake, 38.5MB cache, 165 W TDP, socket FCLGA3647)	P11624-001
	Intel Xeon Platinum CLX 8276M Twenty Eight-Core 64-bit processor - 2.20 GHz (Cascade Lake, 38.5MB cache, 165 W (TDP)	P11629-001
	Intel Xeon Platinum 8276L Twenty Eight -Core 64-bit processor - 2.20 GHz (Cascade Lake, 38.5MB cache, 165 W TDP, socket FCLGA3647)	P11634-001

Item	Description	Spare Part Number
	Intel Xeon Platinum 8280 v4 Twenty Eight-Core 64-bit processor - 2.70 GHz (Cascade Lake, 38.5MB cache, 205 W TDP, socket FCLGA-3647)	P11625-001
	Intel Xeon Platinum 8280M Twenty Eight-Core 64-bit processor - 2.70 GHz (Cascade Lake, 38.5MB cache, Intel QPI speed 8.0 GT/s, 205 W TDP)	P11630-001
	Intel Xeon Platinum CLX 8280L Twenty Eight-Core 64-bit processor - 2.70 GHz (Cascade Lake, 38.5MB cache, Intel QPI speed 8.0 GT/s, 205 W TDP)	P11635-001
5	**System board**	
	System board with base pan for Synergy 660 Gen10 Compute Module	870842-001
	MLB synergy 660 CLX	P08272-001
6	**HPE 16GB NVDIMM**	
	NVDIMM 16GB 1R x 4 NN4-2666T-R	874540-001
	HPE Persistent memory module	
	HPE 128GB 2666 Persistent Memory Kit featuring Intel Optane DC Persistent Memory	844071-001
	Memory DIMM 256GB 2666 MT/s	844072-001
	PMM 512GB 2666 MT/s PMM	844073-001

Compute module options



Item	Description	Spare Part Number
1	**Storage controller**	
	SAS pass through, Synergy 660 Gen10	873090-001
	NROC P408i-c Short Range (SR) Gen10 controller	836277-001
	NROC P416ie-M SR Gen10 controller	836275-001
	NROC E208i-c SR Gen10 controller	836276-001
	P416ie-m SR Gen10 Storage	873947-001
	Storage controller blank for Synergy 660	880174-001
2	**HPE TPM 2.0**	
	TPM - Compatible with HPE Gen10 servers running Microsoft windows server 2012 R2 or newer, supports TPM 1.2 (UEFI and legacy mode) and 2.0 (UEFI mode)	872159-001
3	**HPE Smart storage battery**	
	Battery, 96 W megacell, 260 mm-b	878644-001

Item	Description	Spare Part Number
	3CAP hybridcap module, W 260 MM cable	P07474-001
4	**Mezzanine option**	
	Synergy 2820C 10Gb, 2-port converged networ k adapter	815670-001
	Synergy 3820C 10/20 GbE 2-port mezzanine c ontroller	782833-001
	Mezzanine C G3 2p 25 GbE adapter	877647-001
	Mezzanine G3 2p 32G Fibre Channel HBA	782831-001
	Mezzanine G3 2p 32G FC	872164-001
	Ethernet adapter, mezzanine, 2p 10/25Gb	P01921-001
	Mezzanine C adapter G3 2port 50G KR2 X4	871365-001
	CPU knights landing 3250 64C 1.30G M 215 W	867569-001
	HPE Synergy 3530C 16Gb 2port FC HBA	782830-001
	Synergy 3830C 16Gb FC HBA	782829-001
5	**SFF SAS HDD**	
	600GB SAS hard drive - 12 Gb/s interface, 15,0 00 rpm, 2.5 in SFF, enterprise drive, Smart Carri er (SC), Digitally Signed (DS) firmware	870794-001
	900GB SAS hard drive - 12 Gb/s interface, 15,0 00 rpm, 2.5 in SFF, enterprise drive, SC, DS firm ware	870795-001
	600GB SAS hard drive - 12 Gb/s interface, 15,0 00 rpm, 2.5 in SFF, enterprise drive, 512e form at, DS firmware	870797-001
	600GB Hot-Plug SAS HDD - 12 Gb/s transfer rate, 10,000 RPM, 2.5 in SFF, SC - For use with Gen8/Gen9 or newer	781577-001
	600GB SAS hard drive - 12 Gb/s interface, 10,0 00 RPM, 2.5 in SFF, SC, DS firmware	872736-001

Item	Description	Spare Part Number
	900GB Hot-Plug SAS HDD - 12 Gb/s transfer rate, 10,000 RPM, 2.5 in SFF, enterprise, SC	785411-001
	1.2TB Hot-Plug SAS HDD - 12 Gb/s transfer rate, 10,000 RPM, 2.5 in SFF, SC - For use with Gen8/Gen9 or newer	781578-001
	900GB SAS hard drive - 12 Gb/s interface, 15,000 RPM, 2.5 in SFF, Dual Port (DP), SC, DS firmware, 512e format	870798-001
	300GB Hot-Plug SAS HDD - 10,000 RPM, 12 Gb/s transfer rate, 2.5 in SFF, SC - For use with Gen8/Gen9 or newer	785410-001
	1.8TB Hot-Plug SAS HDD - 12 Gb/s transfer rate, 10,000 RPM, 2.5 in SFF, Enterprise, 512e format, SC - For use with Gen8/Gen9 or newer	791055-001
	300GB SAS hard drive - 12 Gb/s interface, 10,000 rpm, 2.5 in SFF, SC, DS firmware	872735-001
	1.2TB SAS hard drive - 12 Gb/s interface, 10,000 rpm, 2.5 in SFF, SC, DS firmware	872737-001
	1.8TB SAS hard drive - 12 Gb/s interface, 10,000 rpm, 2.5 in SFF, enterprise drive, 512e format, DS firmware	872738-001
	1TB Hot-Plug SAS HDD - 7,200 rpm, 12 Gb/s transfer rate, 2.5 in SFF, Midline (MDL), 512e sector format, SC	765872-001
	2TB Hot-Plug SAS HDD - 12 Gb/s transfer rate, 7,200 rpm, 2.5 in SFF, MDL, 512e format, SC - For use with Gen8/Gen9 or newer	765873-001
	1TB SAS drive - 12 Gb/s transfer rate, 7,500 rpm, 2.5 in SFF, MDL, SC - For use with Gen8/Gen9 or newer	832984-001
	Drive SSD 960GB SFF SAS SC	P22635-001
	DRV SSD 1.92TB SFF SAS SC	P22636-001
	DRV SSD 3.84TB SFF SAS SC	P22637-001

Item	Description	Spare Part Number
	DRV SSD 7.68TB SFF SAS SC	P22589-001
	DRV SSD 15.36TB SFF SAS SC	P22590-001
	SFF SATA HDD	
	1TB Hot-Plug SATA HDD - 7,200 rpm, 6 Gb/s transfer rate, 2.5 in SFF, MDL, SC - Not for use in MSA products	656108-001
	1TB Hot-Plug SATA HDD - 7,200 rpm, 6 Gb/s transfer rate, 2.5 in SFF, MDL, 512e sector format, SC	765868-001
	2TB Hot-Plug SATA HDD - 6 Gb/s transfer rate, 7,200 rpm, 2.5 in SFF, MDL, 512e sector format, SC	765869-001
	SFF SAS Solid State Drive (SSD)	
	3.2TB SSD - SAS interface, 12 Gb/s interface, 2.5 in SFF, Mixed Use (MU), SC, DS firmware	872511-001
	1.6TB SSD - SAS interface, 12 Gb/s interface, 2.5 in SFF, MU, SC, DS firmware	872509-001
	800GB SSD - SAS interface, 12 Gb/s interface, 2.5 in SFF, MU, SC, DS firmware	872506-001
	400GB SSD - SAS interface, 12 Gb/s interface, 2.5 in SFF, MU, SC, DS firmware	872505-001
	400GB SAS SSD - 2.5 in SFF, MU, DS firmware, SC	P06576-001
	400GB SAS SSD - 2.5 in SFF, MU, SC, DS firmware	P09922-001
	Drive SSD 400GB SFF SAS Write Intensive (WI) DS SC	P06600-001
	400GB SAS SSD - 2.5 in SFF, WI, SC, DS firmware	P09947-001
	800GB SAS SSD - 2.5 in SFF, MU, DS firmware, SC	P06577-001

Item	Description	Spare Part Number
	800GB SAS SSD - 2.5 in SFF, MU, SC, DS firmware	P09923-001
	Drive SSD 800GB SFF SAS WI DS SC	P06602-001
	800GB SAS SSD - 2.5 in SFF, WI, SC, DS firmware	P09948-001
	Drive SSD 960GB SFF SAS Read intensive (RI) DS SC	P06596-001
	Drive SSD 960GB SFF SAS MU SC VS DS	P10604-001
	960GB SAS SSD - RI, 2.5 in SFF, SC, DS firmware	P08608-001
	Drive SSD 960GB SFF SAS RI SC VS DS	P10637-001
	1.6TB SAS SSD - 2.5 in SFF, MU, SC, DS firmware	P06580-001
	1.6TB SAS SSD - 2.5 in SFF, MU, SC, DS firmware	P09924-001
	1.6TB SAS SSD - 2.5 in SFF, SC, WI, DS firmware	P06604-001
	1.6TB SAS SSD - 2.5 in SFF, WI, SC, DS firmware	P09949-001
	Drive SSD 1.92TB LFF SAS MU SC VS DS	P10607-001
	Drive SSD 1.92TB SFF SAS RI DS SC	P06597-001
	1.92TB SAS SSD - RI, 2.5 in SFF, SC, DS firmware	P08609-001
	Drive SSD 1.92TB SFF SAS RI SC VS DS	P10638-001
	3.2TB SAS SSD - 2.5 in SFF, MU, SC, DS firmware	P06582-001
	3.2TB SAS SSD - 2.5 in SFF, MU, SC, DS firmware	P09925-001
	Drive SSD 3.2TB SFF SAS WI DS SC	P06605-001

Item	Description	Spare Part Number
	Drive SSD 3.84TB SFF SAS MU SC VS DS	P10610-001
	Drive SSD 3.84TB SFF SAS RI DS SC	P06598-001
	3.84TB SAS SSD - RI, 2.5 in SFF, SC, DS firmware	P08610-001
	Drive SSD 3.84TB SFF SAS RI SC VS DS	P10639-001
	6.4TB SAS SSD - 2.5 in SFF, MU, SC, DS firmware	P06583-001
	6.4TB SAS SSD - 2.5 in SFF, MU, SC, DS firmware	P09926-001
	Drive SSD 7.68TB SFF SAS RI DS SC	P06599-001
	7.68TB SAS SSD - RI, 2.5 in SFF, SC, DS firmware	P08611-001
	Drive SSD 7.68TB SFF SAS RI SC VS DS	P10640-001
	15.3TB SAS SSD - RI, 2.5 in SFF, SC, DS firmware	P08612-001
	3.84TB SSD - SAS interface, 12 Gb/s interface, 2.5 in SFF, RI, SC, DS firmware	872434-001
	1.92TB SSD - SAS interface, 12 Gb/s interface, 2.5 in SFF, RI, SC, DS firmware	872433-001
	960GB SSD - SAS interface, 12 Gb/s interface, 2.5 in SFF, RI, SC, DS firmware	872432-001
	SFF SATA SSD	
	400GB SSD - SATA interface, 6 Gb/s interface, 2.5 in SFF, WI-3, SC, DS firmware	872512-001
	800GB SSD - SATA interface, 6 Gb/s interface, 2.5 in SFF, WI-3, SC, DS firmware	872514-001
	1.6TB SSD - SATA interface, 6 Gb/s interface, 2.5 in SFF, WI-3, SC, DS firmware	872516-001
	240GB SATA SSD - 6 Gb/s transfer rate, RI, 2.5 in SFF, SC, DS firmware	868924-001

Item	Description	Spare Part Number
	240GB Hot-Plug SSD - SATA interface, RI, 6 Gb/s transfer rate, 2.5 in SFF, SC, DS firmware	875652-001
	240GB SATA SSD - 2.5 in SFF, RI, SC, DS firmware	P05319-001
	Drive SSD 240GB SFF SATA RI SC DS	P08565-001
	480GB SATA SSD - 2.5 in SFF, RI, SC, DS firmware	P05320-001
	Drive SSD 480GB SFF SATA RI SC DS	P05312-001
	480GB SATA SSD - 2.5 in SFF, RI, DS firmware, SC	P06571-001
	Drive SSD 480GB SFF SATA RI SC DS	P08567-001
	Drive SSD 480GB SFF SATA MU SC DS	P08620-001
	480GB SATA SSD - 2.5 in SFF, MU, SC, DS firmware	P08690-001
	480GB SATA SSD - 2.5 in SFF, MU, SC, DS firmware	P09907-001
	960GB SATA SSD - 2.5 in SFF, RI, DS firmware, SC	P06572-001
	960GB SATA SSD - 2.5 in SFF, RI, SC, DS firmware	P05321-001
	Drive SSD 960GB SFF SATA RI SC DS	P05313-001
	Drive SSD 960GB SFF SATA RI SC DS	P08569-001
	Drive SSD 960GB SFF SATA MU SC DS	P08622-001
	960GB SATA SSD - 2.5 in SFF, MU, SC, DS firmware	P08692-001
	960GB SATA SSD - 2.5 in SFF, MU, SC, DS firmware	P09909-001
	Drive SSD 1.92TB SFF SATA RI SC DS	P05314-001

Item	Description	Spare Part Number
	1.92TB SATA SSD - 2.5 in SFF, RI, SC, DS firmware	P05322-001
	1.92TB SATA SSD - 2.5 in SFF, RI, DS firmware, SC	P06573-001
	Drive SSD 1.92TB SFF SATA RI SC DS	P08572-001
	Drive SSD 1.92TB SFF SATA MU SC DS	P08625-001
	1.92TB SATA SSD - 2.5 in SFF, MU, SC, DS firmware	P08694-001
	1.92TB SATA SSD - 2.5 in SFF, MU, SC, DS firmware	P09912-001
	3.84TB SATA SSD - SC, MU, DS firmware drive, 2.5 in SFF	P02562-001
	Drive SSD 3.84TB SFF SATA RI SC DS	P05315-001
	3.84TB SATA SSD - 2.5 in SFF, RI, SC, DS firmware	P05323-001
	3.84TB SATA SSD - 2.5 in SFF, RI, DS firmware, SC	P06574-001
	Drive SSD 3.84TB SFF SATA RI SC DS	P08575-001
	Drive SSD 3.84TB SFF SATA MU SC DS	P08632-001
	Drive SSD 7.68TB SFF SATA RI SC DS	P05316-001
	480 GB SATA, 6G, RI, SFF, SC, DS firmware SSD	868936-001
	960GB SATA SSD - SATA interface, RI, 2.5 in SFF, SC, DS firmware	868928-001
	1.9TB SATA SSD - SATA interface, RI, 2.5 in SFF, SC, DS firmware	868930-001
	3.84TB SATA SSD - SATA interface, RI, 2.5 in SFF, SC, DS firmware	868932-001
	480GB Hot-Plug SSD - SATA interface, MU-3, 6 Gb/s transfer rate, 2.5 in SFF, PLP, SC, DS firmware	872518-001

Item	Description	Spare Part Number
	960GB Hot-Plug SSD - SATA interface, MU-3, 6 Gb/s transfer rate, 2.5 in SFF, SC, DS firmware	872520-001
	1.92TB SSD - SATA interface, 6 Gb/s transfer rate, 2.5 in SFF, MU-3, SC, DS firmware	872522-001
	SFF Non-Volatile Memory express (NVMe) SSD	
	375GB SSD - WI, 2.5 in SFF, NVMe x4, SC NVMe, DS firmware	P02559-001
	1.6TB SSD - NVMe x4, 2.5-in SFF, MU, SC NVMe, DS firmware	P10470-001
	1.92TB SSD - NVMe x4, 2.5-in SFF, SC NVMe, DS firmware	P10466-001
	3.2TB SSD - NVMe x4, 2.5-in SFF, MU, SC NVMe, DS firmware	P10471-001
	3.84TB SSD - NVMe x4, 2.5-in SFF, RI, SC NVMe, DS firmware	P10467-001
	6.4TB SSD - NVMe x4, 2.5-in SFF, MU, SC NVMe, DS firmware	P10472-001
	7.68TB SSD - NVMe x4, 2.5-in SFF,RI, SCN, DS	P10468-001
	400GB NVMe SSD - NVMe interface, WI, 2.5 in SFF, Mainstream Endurance (ME), SC2, PLP - Supports select Gen9 servers	765059-001
	800GB NVMe SSD - NVMe interface, WI, 2.5 in SFF, ME, SC2, PLP - Supports select Gen9 servers	765060-001
	1.6TB NVMe SSD - NVMe interface, WI, 2.5 in SFF, ME, SC2, PLP - Supports select Gen9 servers only	765061-001
	2.0TB NVMe SSD - NVMe interface, WI, 2.5 in SFF, ME, SC2, PLP - Supports select Gen9 servers	765062-001
	Dual flash adapter and SFF SATA uFF SSD	

Item	Description	Spare Part Number
	120GB SATA SSD - 6 Gb/s interface, RI, M.2 for m factor (2280), VE, supports PLP	831995-001
	SFF flash adapter	830452-001
	340GB SATA SSD 6G 2280 VE uFF	830453-001
	USB and microSD option	
	8GB Dual Micro SD Flash USB Dongle Key V3	799057-001
	8GB USB flash media key	743503-001
	8GB micro SD enterprise mainstream flash medi a kit	738576-001
	32GB USB Secure Digital High Capacity (SDHC) flash media drive card	704502-001
6	**HPE Synergy Internal SATA board**	
	Chipset SATA, Gen10	873085-001
7	**M.2 flash drive**	
	480GB SSD - SATA interface, 6 Gb/s interface, R I, M.2 form factor (2280), standard carrier, DS fir mware	875836-001
	150GB SSD - SATA interface,12 Gb/s interface, RI, M.2 form factor (2280), standard carrier, DS f irmware	875835-001
	240GB SATA, SSD - M.2 MU, SCM, DS firmware	P07721-001
	240GB SSD - SATA interface, M.2 type 2280 for m factor, MU, DS firmware	875850-001
	480GB SATA SSD - M.2 2280 MU, DS firmware	P07437-001
	480GB SSD - SATA interface, M.2 type 2280 for m factor, RI, DS firmware	875855-001
	Drive SSD 480GB SATA M.2 2280 MU DS	875851-001
	960GB SSD - SATA interface, M.2 type 2280 for m factor, RI, DS firmware	875856-001

Item	Description	Spare Part Number
	960GB SSD - SATA interface, M.2 type 2280 for m factor, MU, DS firmware	875852-001
	120GB SATA SSD - 6 Gb/s interface, RI, M.2 for m factor (2280), Value Endurance (VE), suppor ts power loss prevention - Supports DL/ML Gen 9	781565-001
	340GB SATA SSD - RI-2, M.2 type 2280 (80.0 × 22.0 x 3.5 mm) form factor, 6 Gb/s transfer rate, VE, supports Power Loss Protection (PLP) - Sup port DL/ML Gen9	781566-001
8	**Serial label pull tab**	
	Serial label pull tab for Synergy 480 Gen10	873074-001
9	**Cable**	
	Cable BP alpha to beta Synergy 660 Gen10	869990-001

Option Parts

Subtopics

New model specific parts lists
Intel Xeon scalable family Gen1 - processors
Intel Xeon scalable family Gen2 - processors
Memory
Networking adapters
HPE Storage controllers
Drives
M.2 drive options
HPE Security
Flash media kits
Synergy services

New model specific parts lists

IMPORTANT: To obtain current part number information for a specific product model, use the Standard Models page for this product family.

- The product Standard Models page now links the model SKU numbers to the spare parts list for each model found on the HPE PartSurfer web site. (To report missing or incorrect parts information in PartSurfer, please use the "Contact us" and "Missing or incorrect data" links within the PartSurfer web site utility.)
- To look up RoHS-compliant information in PartSurfer, use the component's option part number or the sales order number for a system in which the component is used (Available in the QuickSpecs or Standard Models page).

Intel Xeon scalable family Gen1 - processors

Description	Option Part Number
Intel Xeon-Platinum processors	
HPE Synergy 480/660 Gen10 Intel Xeon-Platinum 8180 (2.5 GHz/28-core/205 W) Factory Installation Option (FIO) processor kit	872119-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Platinum 8180 (2.5 GHz/28-core/205 W) processor kit	872119-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Platinum 8176 (2.1 GHz/28-core/165 W) FIO processor kit	872120-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Platinum 8176 (2.1 GHz/28-core/165 W) processor kit	872120-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Platinum 8170 (2.1 GHz/26-core/165 W) FIO processor kit	872121-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Platinum 8170 (2.1 GHz/26-core/165 W) processor kit	872121-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Platinum 8168 (2.7 GHz/24-core/205 W) FIO processor kit	872122-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Platinum 8168 (2.7 GHz/24-core/205 W) processor kit	872122-B21

Description	Option Part Number
HPE Synergy 480/660 Gen10 Intel Xeon-Platinum 8165 (2.3 GHz/24-core/205 W) FIO processor kit	881653-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Platinum 8165 (2.3 GHz/24-core/205 W) processor kit	881653-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Platinum 8164 (2.0 GHz/26-core/150 W) FIO processor kit	872123-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Platinum 8164 (2.0 GHz/26-core/150 W) processor kit	872123-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Platinum 8160 (2.1 GHz/24-core/150 W) FIO processor kit	872129-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Platinum 8160 (2.1 GHz/24-core/150 W) processor kit	872129-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Platinum 8158 (3.0 GHz/12-core/150 W) FIO processor kit	873385-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Platinum 8158 (3.0 GHz/12-core/150 W) processor kit	873385-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Platinum 8156 (3.6 GHz/4-core/105 W) FIO processor kit	873382-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Platinum 8156 (3.6 GHz/4-core/105 W) processor kit	873382-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Platinum 8153 (2.0 GHz/16-core/125 W) FIO processor kit	873389-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Platinum 8153 (2.0 GHz/16-core/125 W) processor kit	873389-B21
Intel Xeon-Platinum 8160M (2.1 GHz/24-core/150 W) processor kit	872130-B21
Intel Xeon-Platinum 8180M (2.5 GHz/28-core/205 W) processor kit	872131-B21
Intel Xeon-Gold processors	
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6154 (3.0 GHz/18-core/200 W) FIO processor kit	872132-L21

Description	Option Part Number
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6154 (3.0 GHz/18-core/200 W) processor kit	872132-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6152 (2.1 GHz/22-core/140 W) FIO processor kit	872133-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6152 (2.1 GHz/22-core/140 W) processor kit	872133-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6150 (2.7 GHz/18-core/165 W) FIO processor kit	872134-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6150 (2.7 GHz/18-core/165 W) processor kit	872134-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6148 (2.4 GHz/20-core/150 W) FIO processor kit	872135-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6148 (2.4 GHz/20-core/150 W) processor kit	872135-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6146 (3.2 GHz/12-core/165 W) FIO processor kit	872136-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6146 (3.2 GHz/12-core/165 W) processor kit	872136-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6144 (3.5 GHz/8-core/150 W) FIO processor kit	872137-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6144 (3.5 GHz/8-core/150 W) processor kit	872137-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6143 (2.8 GHz/16-core/205 W) FIO processor kit	881652-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6143 (2.8 GHz/16-core/205 W) processor kit	881652-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6142M (2.6 GHz/16-core/150 W) FIO processor kit	872117-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6142M (2.6 GHz/16-core/150 W) processor kit	872117-B21
Intel Xeon-Gold 6140M (2.3 GHz/18-core/140 W) processor kit	872116-B21

Description	Option Part Number
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6142 (2.6 GHz/16-core/150 W) FIO processor kit	872138-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6142 (2.6 GHz/16-core/150 W) processor kit	872138-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6140 (2.3 GHz/18-core/140 W) FIO processor kit	872139-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6140 (2.3 GHz/18-core/140 W) processor kit	872139-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6138 (2.0 GHz/20-core/125 W) FIO processor kit	873376-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6138 (2.0 GHz/20-core/125 W) processor kit	873376-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6136 (3.0 GHz/12-core/150 W) FIO processor kit	873378-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6136 (3.0 GHz/12-core/150 W) processor kit	873378-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6134 (3.2 GHz/8-core/130 W) FIO processor kit	873379-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6134 (3.2 GHz/8-core/130 W) processor kit	873379-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6132 (2.6 GHz/14-core/140 W) FIO processor kit	873380-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6132 (2.6 GHz/14-core/140 W) processor kit	873380-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6130 (2.1 GHz/16-core/125 W) FIO processor kit	873381-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6130 (2.1 GHz/16-core/125 W) processor kit	873381-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6128 (3.4 GHz/6-core/115 W) FIO processor kit	873383-L21

Description	Option Part Number
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6128 (3.4 GHz/6-core/115 W) processor kit	873383-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6126 (2.6 GHz/12-core/125 W) FIO processor kit	873384-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6126 (2.6 GHz/12-core/125 W) processor kit	873384-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 5122 (3.6 GHz/4-core/105 W) FIO processor kit	873386-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 5122 (3.6 GHz/4-core/105 W) processor kit	873386-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 5120 (2.2 GHz/14-core/105 W) FIO processor kit	873388-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 5120 (2.2 GHz/14-core/105 W) processor kit	873388-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 5118 (2.3 GHz/12-core/105 W) FIO processor kit	873387-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 5118 (2.3 GHz/12-core/105 W) processor kit	873387-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 5115 (2.4 GHz/10-core/85 W) FIO processor kit	873390-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 5115 (2.4 GHz/10-core/85 W) processor kit	873390-B21
Intel Xeon-Silver processors	
HPE Synergy 480 Gen10 Intel Xeon-Silver 4116 (2.1 GHz/12-core/85 W) FIO processor kit	872114-L21
HPE Synergy 480 Gen10 Intel Xeon-Silver 4116 (2.1 GHz/12-core/85 W) processor kit	872114-B21
HPE Synergy 480 Gen10 Intel Xeon-Silver 4114 (2.2 GHz/10-core/85 W) FIO processor kit	872112-L21
HPE Synergy 480 Gen10 Intel Xeon-Silver 4114 (2.2 GHz/10-core/85 W) processor kit	872112-B21

Description	Option Part Number
HPE Synergy 480 Gen10 Intel Xeon-Silver 4112 (2.6 GHz/4-core/85 W) FIO processor kit	872113-L21
HPE Synergy 480 Gen10 Intel Xeon-Silver 4112 (2.6 GHz/4-core/85 W) processor kit	872113-B21
HPE Synergy 480 Gen10 Intel Xeon-Silver 4110 (2.1 GHz/8-core/85 W) FIO processor kit	872110-L21
HPE Synergy 480 Gen10 Intel Xeon-Silver 4110 (2.1 GHz/8-core/85 W) processor kit	872110-B21
Intel Xeon-Bronze processors	
HPE Synergy 480 Gen10 Intel Xeon-Bronze 3104 (1.7 GHz/6-core/85 W) FIO processor kit	872118-L21
HPE Synergy 480 Gen10 Intel Xeon-Bronze 3104 (1.7 GHz/6-core/85 W) processor kit	872118-B21

NOTE

- All processors within any single compute module must be identical.
- HT indicates that the processor model supports Intel Hyper-Threading technology.
- Turbo indicates the maximum potential frequency when using Intel turbo boost technology. The frequency boost increment is dependent on the processor SKU and the number of active cores. In general, a higher boost increment is obtained when fewer cores are active.
- DDR4 speed is the maximum memory speed of the processor. Actual memory speed may depend on the quantity and type of DIMMs installed.
- Supports 1 or 2 processors. Mixing different processor models is not supported.
- For the Intel C621 chipset scalable family processors come with model numbers to indicate SKU level, processor generation, SKU model, integrations-optimizations or memory capacity. (i.e. HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6136; 6 is the SKU Level, 1 is the processor generation, 34 is the SKU model, m indicates memory sku).
- The HPE Synergy 480 Gen9 compute module includes three I/O mezzanine connectors. A processor must be installed in processor slot 1 for access to mezzanine connector one and three (Mezzanine connectors 1 and 3). A processor must be installed in processor slot 2 for access to the mezzanine connector two (Mezzanine connector 2).
- The processor model as well as the memory configuration determines the maximum speed memory can operate.
- Platinum - 8100 series - 2 and 4 socket capable, 2S - 2UPI, 4S - 3UPI - 10.4 GT/s, 6-channel DDR4 - 2666 MT/s, 768GB memory capacity (1.5TB on select skus), Intel turbo

Description	Option Part Number

boost technology, Intel Hyper-Threading technology Intel AVX-512 (2 x 512-bit FMA), 48 lanes PCIe 3.0, advanced RAS.

- Gold - 5100, 6100 series - 2 and 4 socket capable, 2S - 2UPI, 4S - 3UPI - 10.4 GT/s, 6-Channel DDR4 - 2400 MHz (SKU 5122 = supports 2666), 768GB memory capacity (1.5 TB on select skus), Intel turbo boost technology, Intel Hyper-Threading technology, Intel AVX-512 (1 x 512-bit FMA) (SKU 5122 supports 2 x 512 bit FMA), 48 lanes PCIe 3.0, advanced RAS.
- Silver and bronze processors are primarily designed for 2 socket servers and will appear as Synergy 480 Gen10 only processors.
- Silver - 4100 series - 2 socket capable, 2S - 2UPI - 9.6 GT/s, 6-channel DDR4 - 2400 MHz, 768GB memory capacity, Intel turbo boost technology, Intel Hyper-Threading technology, Intel AVX-512 (1 x 512-bit FMA), 48 lanes PCIe 3.0, standard RAS.
- Bronze - 3100 series - 2 socket capable, 2S - 2UPI - 9.6 GT/s, 6-channel DDR4 - 2133 MHz, 768GB memory capacity, Intel AVX-512 (1 x 512-bit FMA), 48 lanes PCIe 3.0, standard RAS.

Intel Xeon scalable family Gen2 - processors

Description	Option Part Number
Intel Xeon-Platinum Processor	
HPE Synergy 480/660 Gen10 Intel Xeon-Platinum 8280L (2.7 GHz/28-core/205 W) FIO processor kit	P07363-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Platinum 8280L (2.7 GHz/28-core/205 W) processor kit	P07363-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Platinum 8280M (275 GHz/28-core/205 W) FIO processor kit	P07362-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Platinum 8280M (2.7 GHz/28-core/205 W) processor kit	P07362-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Platinum 8280 (2.7 GHz/28-core/205 W) processor kit	P07361_B21

Description	Option Part Number
HPE Synergy 480/660 Gen10 Intel Xeon-Platinum 8276L (2.3 GHz/ 28-core/165 W) FIO processor kit	P07360-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Platinum 8276L (2.2 GHz/ 28-core/165 W) processor kit	P07360-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Platinum 8276M (2.3 GH z/28-core/165 W) FIO processor kit	P07359-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Platinum 8276M (2.2 GH z/28-core/165 W) processor kit	P07359-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Platinum 8276L (2.3 GHz/ 28-core/165 W) FIO processor kit	P07358-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Platinum 8276 (2.2 GHz/2 8-core/165 W) processor kit	P07358-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Platinum 8270 (2.7 GHz/2 6-core/205 W) FIO processor kit	P07357-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Platinum 8270 (2.7 GHz/2 6-core/205 W) processor kit	P07357-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Platinum 8268 (2.9 GHz/2 4-core/205 W) FIO processor kit	P07356-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Platinum 8268 (2.9 GHz/2 4-core/205 W) processor kit	P07356-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Platinum 8260Y (2.4 GHz/ 24-20-16-core/165 W) FIO processor kit	P07355-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Platinum 8260Y (2.4 GHz/ 24-20-16-core/165 W) processor kit	P07355-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Platinum 8260L (2.4 GHz/ 24-core/165 W) FIO processor kit	P07354-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Platinum 8260L (2.4 GHz/ 24-core/165 W) processor kit	P07354-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Platinum 8260M (2.4 GH z/24-core/165 W) FIO processor kit	P07353-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Platinum 8260M (2.4 GH z/24-core/165 W) processor kit	P07353-B21

Description	Option Part Number
HPE Synergy 480/660 Gen10 Intel Xeon-Platinum 8260 (2.4 GHz/24-core/165 W) FIO processor kit	P07352-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Platinum 8260 (2.4 GHz/24-core/165 W) processor kit	P07352-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Platinum 8256 (3.4 GHz/4-core/105 W) FIO processor kit	P07340-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Platinum 8256 (3.8 GHz/4-core/105 W) processor kit	P07340-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Platinum 8253 (2.2 GHz/16-core/125 W) FIO processor kit	P07338-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Platinum 8253 (2.2 GHz/16-core/125 W) processor kit	P07338-B21
Intel Xeon-Gold Processors	
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 5218N (2.3 GHz/16-core/105 W) FIO processor kit	P07341-L21
Intel Xeon-Gold 6230N (2.3 GHz/20-core/125 W) processor kit	P08919-B21
Intel Xeon-Gold 6230N (2.3 GHz/20-core/125 W) FIO processor kit	P08919-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 5218N (2.3 GHz/16-core/105 W) processor kit	P07341-B21
Intel Xeon-Gold 5218N (2.3 GHz/16-core/110 W) FIO processor kit	P07341-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6262V (1.9 GHz/24-core/135 W) FIO processor kit	P11881-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6262V (1.9 GHz/24-core/135 W) processor kit	P11881-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6254 (3.1 GHz/18-core/200 W) FIO processor kit	P07351-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6254 (3.1 GHz/18-core/200 W) processor kit	P07351-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6252 (2.1 GHz/24-core/150 W) FIO processor kit	P07350-L21

Description	Option Part Number
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6252 (2.1 GHz/24-core/150 W) processor kit	P07350-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6248 (2.6 GHz/20-core/150 W) FIO processor kit	P07349-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6248 (2.5 GHz/20-core/150 W) processor kit	P07349-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6246 (3.3 GHz/12-core/165 W) FIO processor kit	P16385-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6246 (3.3 GHz/12-core/165 W) processor kit	P16385-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6244 (3.7 GHz/8-core/165 W) FIO processor kit	P07348-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6244 (3.6 GHz/8-core/150 W) processor kit	P07348-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6242 (2.8 GHz/16-core/150 W) FIO processor kit	P07347-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6242 (2.8 GHz/16-core/150 W) processor kit	P07347-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6240Y (2.6 GHz/1814-8-core/150 W) FIO processor kit	P07346-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6240Y (2.6 GHz/18-14-8-core/150 W) processor kit	P07346-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6240L (2.6 GHz/18-core/150 W) FIO processor kit	P11886-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6240L (2.6 GHz/18-core/150 W) processor kit	P11886-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6240M (2.6 GHz/18-core/150 W) FIO processor kit	P11884-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6240M (2.6 GHz/18-core/150 W) processor kit	P11884-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6238L (2.1 GHz/22-core/140 W) FIO processor kit	P11885-L21

Description	Option Part Number
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6238L (2.1 GHz/22 -core/140 W) processor kit	P11885-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6238M (2.1 GHz/22 -core/140 W) FIO processor kit	P11883-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6238M (2.1 GHz/22 -core/140 W) processor kit	P11883-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6238 (2.1 GHz/22-c ore/140 W) FIO processor kit	P07337-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6238 (2.1 GHz/22-c ore/140 W) processor kit	P07337-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6234 (3.3 GHz/8-co re/130 W) FIO processor kit	P11694-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6234 (3 GHz/8-core/ 130 W) processor kit	P11694-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6230 (2.1 GHz/20-c ore/150 W) FIO processor kit	P07344-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6230 (2.1 GHz/20-c ore/125 W) processor kit	P07344-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6226 (2.8 GHz/12-c ore/125 W) FIO processor kit	P12767-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6226 (2.8 GHz/12-c ore/125 W) processor kit	P12767-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6222V (1.8 GHz/20 -core/115 P08679-L21W) FIO processor kit	P11880-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6222V (1.8 GHz/20 -core/115 W) processor kit	P11880-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 5222 (3.8 GHz/4-co re/105 W) FIO processor kit	P08679-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 5222 (3.8 GHz/4-co re/105 W) processor kit	P08679-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 5220S (2.6 GHz/18 -core/125 W) FIO processor kit	P11882-L21

Description	Option Part Number
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 5220S (2.6 GHz/18-core/125 W) processor kit	P11882-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 5220 (2.2 GHz/18-core/125 W) FIO processor kit	P07343-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 5220 (2.2 GHz/18-core/125 W) processor kit	P07343-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 5218B (2.3 GHz/16-core/125 W) FIO processor kit	P12572-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 5218B (2.3 GHz/16-core/125 W) processor kit	P12572-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6240 (2.6 GHz/18-core/150 W) FIO processor kit	P07345-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6240 (2.6 GHz/18-core/150 W) processor kit	P07345-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 5218 (2.3 GHz/16-core/125 W) FIO processor kit	P07342-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 5218 (2.3 GHz/16-core/125 W) processor kit	P07342-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 5217 (3.0 GHz/8-core/115 W) FIO processor kit	P07339-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 5217 (3.0 GHz/8-core/115 W) processor kit	P07339-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 5215L (2.5 GHz/10-core/85 W) FIO processor kit	P12142-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 5215M (2.5 GHz/10-core/85 W) processor kit	P12142-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 5215M (2.5 GHz/10-core/85 W) FIO processor kit	P12143-L21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 5215L (2.5 GHz/10-core/85 W) processor kit	P12143-B21
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 5215 (2.5 GHz/10-core/85 W) FIO processor kit	P07336-L21

Description	Option Part Number
HPE Synergy 480/660 Gen10 Intel Xeon-Gold 5215 (2.5 GHz/10-core/85 W) processor kit	P07336-B21
Intel Xeon-Silver Processors	
HPE Synergy 480 Gen10 Intel Xeon-Silver 4216 (2.2 GHz/16-core/85 W) FIO processor kit	P11692-L21
HPE Synergy 480 Gen10 Intel Xeon-Silver 4216 (2.1 GHz/16-core/100 W) processor kit	P11692-B21
Intel Xeon-Silver 4215R (3.2 GHz/8-core/130 W) FIO processor kit for HPE Synergy 480 Gen10	P23586-L21
Intel Xeon-Silver 4215R (3.2 GHz/8-core/130 W) processor kit for HPE Synergy 480 Gen10	P23586-B21
Intel Xeon-Silver 4215 (2.5 GHz/8-core/85 W) FIO processor kit for HPE Synergy 480 Gen10	P08680-L21
Intel Xeon-Silver 4215 (2.5 GHz/8-core/85 W) processor kit for HPE Synergy 480 Gen10	P08680-B21
Intel Xeon-Silver 4214R (2.4 GHz/12-core/100 W) FIO processor kit for HPE Synergy 480 Gen10	P18503-L21
Intel Xeon-Silver 4214R (2.4 GHz/12-core/100 W) processor kit for HPE Synergy 480 Gen10	P18503-B21
HPE Synergy 480 Gen10 Intel Xeon-Silver 4214Y (2.2 GHz/12-10-8-core/85 W) FIO processor kit	P07334-L21
HPE Synergy 480 Gen10 Intel Xeon-Silver 4214Y (2.2 GHz/12-10-8-core/85 W) processor kit	P07334-B21
HPE Synergy 480 Gen10 Intel Xeon-Silver 4214 (2.2 GHz/12-core/85 W) FIO processor kit	P11693-L21
HPE Synergy 480 Gen10 Intel Xeon-Silver 4214 (2.2 GHz/12-core/85 W) processor kit	P11693-B21
Intel Xeon-Silver 4210R (2.4 GHz/10-core/100 W) FIO processor kit for HPE Synergy 480 Gen10	P18502-L21
Intel Xeon-Silver 4210R (2.4 GHz/10-core/100 W) processor kit for HPE Synergy 480 Gen10	P18502-B21

Description	Option Part Number
HPE Synergy 480 Gen10 Intel Xeon-Silver 4210 (2.2 GHz/10-core/85 W) FIO processor kit	P07333-L21
HPE Synergy 480 Gen10 Intel Xeon-Silver 4210 (2.2 GHz/10-core/85 W) processor kit	P07333-B21
HPE Synergy 480 Gen10 Intel Xeon-Silver 4208 (2.1 GHz/8-core/85 W) FIO processor kit	P08678-L21
HPE Synergy 480 Gen10 Intel Xeon-Silver 4208 (2.1 GHz/8-core/85 W) processor kit	P08678-B21
Intel Xeon-Bronze Processors	
HPE Synergy 480 Gen10 Intel Xeon-Bronze 3204 (1.9 GHz/6-core/85 W) FIO processor kit	P07332-L21
HPE Synergy 480 Gen10 Intel Xeon-Bronze 3204 (1.9 GHz/6-core/85 W) processor kit	P07332-B21
Intel Xeon-Bronze 3206R (1.9 GHz/8-core/85 W) FIO processor kit for HPE Synergy 480 Gen10	P18500-L21
Intel Xeon-Bronze 3206R (1.9 GHz/8-core/85 W) processor kit for HPE Synergy 480 Gen10	P18500-B21

NOTE

- All processors within any single compute module must be identical.
- HT indicates that the processor model supports Intel Hyper-Threading technology.
- Turbo indicates the maximum potential frequency when using Intel turbo boost technology. The frequency boost increment is dependent on the processor SKU and the number of active cores. In general, a higher boost increment is obtained when fewer cores are active.
- DDR4 speed is the maximum memory speed of the processor. Actual memory speed may depend on the quantity and type of DIMMs installed.
- Supports 1 or 2 processors. Mixing different processor models is not supported.
- For the Intel C621 chipset scalable family processors come with model numbers to indicate SKU level, processor generation, SKU model, integrations-optimizations or memory capacity. (i.e. HPE Synergy 480/660 Gen10 Intel Xeon-Gold 6134M; 6 is the SKU Level, 1 is the processor generation, 34 is the SKU model, m indicates memory sku)
- The HPE Synergy 480 Gen9 compute module includes three I/O mezzanine connectors. A processor must be installed in processor slot 1 for access to mezzanine connector on

Description	Option Part Number
e and three (Mezzanine connectors 1 and 3). A processor must be installed in processor slot 2 for access to the mezzanine connector two (Mezzanine connector 2). • The processor model as well as the memory configuration determines the maximum s peed memory can operate. • Platinum - 8200 Series - Supports 2 socket (Synergy 480 Gen10) or up to 4 socket (Sy nergy 660 Gen10) compute modules, 2 Socket supports 2UPI and 4 Socket supports 3 UPI @ 10.4 GT/s, supports 6-Channel DDR4 @ 2933 MT/s providing up to 1TB on most and 2, 4.5TB on select processor skus. Intel Turbo Boost Technology, Intel Hyper-Threa ding Technology supported. Intel AVX-512 (2x 512-bit FMA), 48 lanes PCIe 3.0, advan ced RAS. • Gold - 5200, 6200 Series - Supports 2 socket (Synergy 480 Gen10) or up to 4 socket (Synergy 660 Gen10) compute modules, 2 Socket supports 2UPI and 4 Socket supports 3UPI @ 10.4 GT/s, supports 6-Channel DDR4 @ 2933/2666 MHz providing up to 1, 2 or 4.5TB memory capacity depending on processor selected. Intel Turbo Boost Techno logy, Intel Hyper-Threading Technology, Intel AVX-512(1x 512-bit FMA)(SKU 5122 sup ports 2x 512 bit FMA), 48 lanes PCIe 3.0, advanced RAS supported. • Silver - 4200 Series - Supports 2 socket (Synergy 480 Gen10) compute module only, 2 Socket supports 2UPI , 6-Channel DDR4 @ 2400 MHz providing up to 1, 2 or 4.5TB de pending on processor selected. Intel Turbo Boost Technology, Intel Hyper-Threading Te chnology, Intel AVX-512(1x 512-bit FMA), 48 lanes PCIe 3.0, standard RAS supported. • Bronze - 3200 Series - Supports 2 socket (Synergy 480 Gen10) compute module only, 2 Socket supports 2UPI, supports 6-Channel DDR4 @ 2133 MHz depending on proces sor and memory selected, providing up to 1TB memory capacity. Intel AVX-512(1x 512 -bit FMA), 48 lanes PCIe 3.0, standard RAS supported. • See indivual Specs for more details	

Memory

Description	Option Part Number
Memory supports Intel Xeon Scalable Family processors - 1st generation	
HPE 8GB (1 x 8GB) single rank x8 DDR4-2666 CAS -19-19-19 registered memory kit	815097-B21

Description	Option Part Number
Memory supports Intel Xeon Scalable Family processors - 1st generation	
HPE 16GB (1 x 16GB) single rank x4 DDR4-2666 CAS-19-19-19 registered memory kit	815098-B21
HPE 16GB (1 x 16GB) dual rank x8 DDR4-2666 CAS-19-19-19 registered memory kit	835955-B21
HPE Synergy 32GB (1 x 32GB) dual rank x4 DDR4-2666 CAS-19-19-19 registered smart memory kit	P28221-B21
HPE Synergy 64GB (1 x 64GB) quad rank x4 DDR4-2666 CAS-19-19-19 load reduced smart memory kit	P28223-B21
HPE 128GB (1 x 128GB) octal rank x4 DDR4-2666 CAS-22-19-19 3DS load reduced memory kit	815102-B21
Memory supports Intel Xeon Scalable Family processors - 2nd generation	
HPE 8GB (1 x 8GB) single rank x8 DDR4-2933 CAS-21-21-21 registered smart memory kit	P00918-B21
HPE 16GB (1 x 16GB) single rank x4 DDR4-2933 CAS-21-21-21 registered smart memory kit	P00920-B21
HPE 16GB (1 x 16GB) dual rank x8 DDR4-2933 CAS-21-21-21 registered smart memory kit	P00922-B21
HPE 32GB (1 x 32GB) Dual Rank x4 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit	P00924-B21
HPE 64GB (1 x 64GB) Dual Rank x4 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit	P00930-B21
HPE Synergy 32GB (1 x 32GB) dual rank x4 DDR4-2933 CAS-21-21-21 registered smart memory kit	P28225-B21
HPE Synergy 64GB (1 x 64GB) dual rank x4 DDR4-2933 CAS-21-21-21 registered smart memory kit	P28217-B21
HPE Synergy 64GB (1 x 64GB) quad rank x4 DDR4-2933 CAS-21-21-21 Load reduced smart memory kit	P28219-B21
HPE 128GB (1 x 128GB) octal rank x4 DDR4-2933 CAS-24-21-21 load reduced 3DS smart memory kit	P00928-B21

Description	Option Part Number
Memory supports Intel Xeon Scalable Family processors - 1st generation	
HPE 128GB (1 x 128GB) quad rank x4 DDR4-2933 CAS-21-21-21 load reduced smart memory kit	P11040-B21
HPE Persistent memory kit featuring Intel optane DC persistent memory [1]	
HPE 128GB 2666 DC persistent memory kit with In tel optane technology	835804-B21
HPE 256GB 2666 DC persistent memory kit with In tel optane technology	835807-B21
HPE 512GB 2666 DC persistent memory kit with In tel optane technology	835810-B21

NOTE

1. Supported on select HPE Synergy Gen10 servers with second generation Intel Xeon Scalable Gen2 processors (SY480 and SY660).

HPE memory from previous generation servers (DDR3) is not compatible with this compute module. HPE SmartMemory is required to realize the memory performance improvements a nd enhanced functionality listed in this document for Gen10.

LRDIMM and RDIMM are distinct memory technologies and cannot be mixed within a comp ute module.

Networking adapters

Description	Option Part Number
Ethernet mezzanine adapters	
HPE Synergy 3820C 10/20Gb Converged Network Adapter (CNA)	777430-B21
HPE Synergy 4610C 10/25 GbE adapter	813890-B21
HPE Synergy 4820C 10/20/25Gb CNA	876449-B21
HPE Synergy 6410C 25/50 GbE adapter	868779-B21

Description	Option Part Number
HPE Synergy 6810C 25/50 GbE adapter	867322-B21
HPE Synergy 6820C 25/50Gb CNA	P02054-B21
HPE Fibre Channel (FC)	
HPE Synergy 5330C 32Gb FC HBA	870828-B21
HPE Synergy 5830C 32Gb FC HBA	777456-B21
HPE Synergy 3830C 16G FC HBA	777452-B21
HPE Synergy 3530C 16G FC HBA	777454-B21

NOTE

Networking adapters must have matched interconnect modules or interconnect links matched in the corresponding ICM slot on the rear of the Synergy 12000 frame.

HPE Storage controllers

Description	Option Part Number
HPE FIO Enable Smart Array SW RAID	784308-B21
HPE Synergy compute chipset SATA FIO board kit	872955-B21
HPE Smart Array E208i-c SR Gen10 (8 Internal lanes/No cache) 12G SAS modular controller [1]	823852-B21
HPE Smart storage hybrid capacitor with 260 mm cable kit	P02381-B21
HPE Smart Array P408i-c SR Gen10 (8 Internal lanes/2GB cache) 12G SAS modular controller	823856-B21
HPE 96 W Smart storage Lithium-ion battery with 260 mm cable kit	P01367-B21
HPE 32GB microSD RAID 1 USB boot drive	P21868-B21

Description	Option Part Number
HPE Smart Array P416ie-m SR Gen10 (8 Internal 8 external lanes/2GB cache) 12G SAS mezzanine controller	804428-B21
HPE Smart Array P416ie-m SR Gen10 SAS cable kit	871573-B21

NOTE

1. HPE Smart Array E208i-c SR Gen10 controller (823852-B21) or HPE Smart Array P480i-c SR Gen10 controller (832856-B21) is required with HPE Synergy 660 Gen10 Configure-To-Order (CTO) Compute Module (871929-B21/B22).

For SATA/SAS drive use with premium compute modules/front local drives.

Drives

Description	Option Part Number
SATA drives	
HPE 7.68TB SATA 6G Very Read Optimized (VRO) Small Form Factor (SFF) SC 5210 Solid State Drive (SSD)	P23493-B21
HPE 7.68TB SATA 6G Read Intensive (RI) SFF (2.5 in) SC 3-year warranty multi vendor	P18430-B21
HPE 7.68TB SATA 6G RI SFF (2.5 in) SC 3-year warranty Digitally Signed (DS) firmware SSD	P04482-B21
HPE 7.68TB SATA 6G RI SFF SC 5300P SSD	P19945-B21
HPE 3.84TB SATA 6G VRO SFF SC 5210 SSD	P23489-B21
HPE 3.84TB SATA 6G RI SFF SC SE4011 SSD	P06200-B21
HPE 3.84TB SATA 6G RI SFF SC S4510 SSD	P05946-B21
HPE 3.84TB SATA 6G RI SFF SC PM883 SSD	P04570-B21
HPE 3.84TB SATA 6G RI SFF (2.5 in) SC 3-year warranty multi vendor SSD	P18428-B21

Description	Option Part Number
HPE 3.84TB SATA 6G Read Intensive SFF SC PM893 SSD	P47813-B21
HPE 3.84TB SATA 6G RI SFF SC 5300P SSD	P19943-B21
HPE 3.84TB SATA 6G Mixed Use (MU) SFF SC SM883 SSD	P21517-B21
HPE 3.84TB SATA 6G MU SFF RW SE5031 SSD	P13664-B21
HPE 3.84TB SATA 6G MU SFF SC S4610 SSD	P05994-B21
HPE 3.84TB SATA 6G MU SFF (2.5 in) SC 3-year warranty multi vendor SSD	P18438-B21
HPE 3.84TB SATA 6G MU SFF SC 5300M SSD	P19953-B21
HPE 1.92TB SATA 6G VRO SFF SC 5210 SSD	P23487-B21
HPE 1.92TB SATA 6G RI SFF SC SE4011 SSD	P06198-B21
HPE 1.92TB SATA 6G RI SFF SC S4510 SSD	P05938-B21
HPE 1.92TB SATA 6G RI SFF SC PM883 SSD	P04566-B21
HPE 1.92TB SATA 6G RI SFF (2.5 in) SC 3-year warranty multi vendor SSD	P18426-B21
HPE 1.9TB SATA 6G Read Intensive SFF SC PM893 SSD	P47812-B21
HPE 1.92TB SATA 6G RI SFF SC 5300P SSD	P19941-B21
HPE 1.92TB SATA 6G MU SFF SC SM883 SSD	P09722-B21
HPE 1.92TB SATA 6G MU SFF SC SE5031 SSD	P13662-B21
HPE 1.92TB SATA 6G MU SFF SC S4610 SSD	P05986-B21
HPE 1.92TB SATA 6G MU SFF (2.5 in) SC 3-year warranty multi vendor SSD	P18436-B21
HPE 1.92TB SATA 6G MU SFF SC PM897 SSD	P47816-B21
HPE 1.92TB SATA 6G MU SFF (2.5 in) SC 3-year warranty DS firmware SSD	P07930-B21
HPE 1.92TB SATA 6G MU SFF SC 5300M SSD	P19951-B21
HPE 960GB SATA 6G RI SFF SC SE4011 SSD	P06196-B21
HPE 960GB SATA 6G RI SFF SC S4510 SSD	P05932-B21
HPE 960GB SATA 6G RI SFF SC PM883 SSD	P04564-B21
HPE 960GB SATA 6G RI SFF (2.5 in) SC 3-year warranty multi vendor SSD	P18424-B21

Description	Option Part Number
HPE 960GB SATA 6G Read Intensive SFF SC PM893 SSD	P47811-B21
HPE 960GB SATA 6G RI SFF (2.5 in) SC 3-year warranty DS firmware SSD	P04476-B21
HPE 960GB SATA 6G RI SFF SC 5300P SSD	P19939-B21
HPE 960GB SATA 6G MU SFF SC SM883 SSD	P09716-B21
HPE 960GB SATA 6G MU SFF SC SE5031 SSD	P13660-B21
HPE 960GB SATA 6G MU SFF SC S4610 SSD	P05980-B21
HPE 960GB SATA 6G MU SFF (2.5 in) SC 3-year warranty multi vendor SSD	P18434-B21
HPE 960GB SATA 6G MU SFF SC PM897 SSD	P47815-B21
HPE 960GB SATA 6G MU SFF SC 5300M SSD	P19949-B21
HPE 480GB SATA 6G RI SFF SC SE4011 SSD	P06194-B21
HPE 480GB SATA 6G RI SFF SC S4510 SSD	P05928-B21
HPE 480GB SATA 6G RI SFF SC PM883 SSD	P04560-B21
HPE 480GB SATA 6G RI SFF (2.5 in) SC 3-year warranty multi vendor SSD	P18422-B21
HPE 480GB SATA 6G Read Intensive SFF SC PM893 SSD	P47810-B21
HPE 480GB SATA 6G RI SFF (2.5 in) SC 3-year warranty DS firmware SSD	P04474-B21
HPE 480GB SATA 6G RI SFF SC 5300P SSD	P19937-B21
HPE 480GB SATA 6G MU SFF SC SM883 SSD	P09712-B21
HPE 480GB SATA 6G MU SFF SC SE5031 SSD	P13658-B21
HPE 480GB SATA 6G MU SFF SC S4610 SSD	P05976-B21
HPE 480GB SATA 6G MU SFF (2.5 in) SC 3-year warranty multi vendor SSD	P18432-B21
HPE 480GB SATA 6G MU SFF SC PM897 SSD	P47814-B21
HPE 480GB SATA 6G MU SFF (2.5 in) SC 3-year warranty DS firmware SSD	P07922-B21
HPE 480GB SATA 6G MU SFF SC 5300M SSD	P19947-B21
HPE 240GB SATA 6G RI SFF SC S4510 SSD	P05924-B21
HPE 240GB SATA 6G RI SFF SC PM883 SSD	P04556-B21

Description	Option Part Number
HPE Dual 480GB SATA 6G Read Intensive M.2 to SFF SCM Multi Vendor SSD	P47819-B21
HPE 240GB SATA 6G RI SFF (2.5 in) SC 3-year warranty multi vendor SSD	P18420-B21
HPE 240GB SATA 6G RI SFF SC 5300P SSD	P19935-B21
HPE Dual 480GB SATA 6G RI M.2 to SFF SCM 5300P SSD kit	P19896-B21
HPE Dual 240GB SATA 6G RI M.2 to SFF SCM 5300B SSD kit	P19894-B21
SAS drives	
HPE 15.3TB SAS 12G RI SFF SC SS540 SSD	P21147-B21
HPE 15.3TB SAS 24G RI SFF SC PM6 SSD	P26314-B21
HPE 15.36TB SAS 12G RI SFF SC PM1643a SSD	P19911-B21
HPE 12.8TB SAS 24G MU SFF SC PM6 SSD	P26366-B21
HPE 15.3TB SAS 12G RI SFF (2.5 in) SC 3-year warranty DS firmware SSD	P06592-B21
HPE 7.68TB SAS 12G RI SFF SC value SAS RM5 SSD	P10446-B21
HPE 7.68TB SAS 12G RI SFF SC SS540 SSD	P21145-B21
HPE 7.68TB SAS 12G RI SFF SC PM5 SSD	P04523-B21
HPE 7.68TB SAS 24G RI SFF SC PM6 SSD	P26310-B21
HPE 7.68TB SAS 12G RI SFF SC PM1643a SSD	P19909-B21
HPE 7.68TB SAS 12G RI SFF (2.5 in) SC 3-year warranty DS firmware SSD	P06590-B21
HPE 6.4TB SAS 12G MU SFF SC SS540 SSD	P21137-B21
HPE 6.4TB SAS 12G MU SFF SC PM5 SSD	P04539-B21
HPE 6.4TB SAS 12G MU SFF SC PM1645a SSD	P19919-B21
HPE 6.4TB SAS 12G MU SFF (2.5 in) SC 3-year warranty DS firmware SSD	P09096-B21
HPE 6.4TB SAS 24G MU SFF SC PM6 SSD	P26362-B21
HPE 3.84TB SAS 12G RI SFF SC value SAS RM5 SSD	P10444-B21
HPE 3.84TB SAS 12G RI SFF SC SS540 SSD	P21143-B21

Description	Option Part Number
HPE 3.84TB SAS 12G RI SFF SC PM5 SSD	P04521-B21
HPE 3.84TB SAS 12G RI SFF SC PM1643a SSD	P19907-B21
HPE 3.84TB SAS 24G RI SFF SC PM6 SSD	P26306-B21
HPE 3.84TB SAS 12G RI SFF (2.5 in) SC 3-year warranty DS firmware SSD	P06588-B21
HPE 3.84TB SAS 12G MU SFF SC value SAS RM5 SSD	P10460-B21
HPE 3.2TB SAS 12G Write Intensive (WI) SFF SC PM5 SSD	P04547-B21
HPE 3.2TB SAS 12G MU SFF SC SS540 SSD	P21135-B21
HPE 3.2TB SAS 24G MU SFF SC PM6 SSD	P26358-B21
HPE 3.2TB SAS 12G MU SFF SC PM5 SSD	P04537-B21
HPE 3.2TB SAS 12G MU SFF SC PM1645a SSD	P19917-B21
HPE 3.2TB SAS 12G MU SFF (2.5 in) SC 3-year warranty DS firmware SSD	P09094-B21
HPE 1.92TB SAS 12G RI SFF SC value SAS RM5 SSD	P10442-B21
HPE 1.92TB SAS 12G RI SFF SC SS540 SSD	P21141-B21
HPE 1.92TB SAS 12G RI SFF SC PM5 SSD	P04519-B21
HPE 1.92TB SAS 12G RI SFF SC PM1643a SSD	P19905-B21
HPE 1.92TB SAS 24G RI SFF SC PM6 SSD	P26302-B21
HPE 1.92TB SAS 12G MU SFF SC value SAS RM5 SSD	P10454-B21
HPE 1.6TB SAS 12G WI SFF SC SS540 SSD	P21129-B21
HPE 1.6TB SAS 12G WI SFF SC PM5 SSD	P04545-B21
HPE 1.6TB SAS 24G WI SFF SC PM6 SSD	P26376-B21
HPE 1.6TB SAS 12G WI SFF (2.5 in) SC 3-year warranty DS firmware SSD	P09102-B21
HPE 1.6TB SAS 12G MU SFF SC SS540 SSD	P21133-B21
HPE 1.6TB SAS 12G MU SFF SC PM5 SSD	P04533-B21
HPE 1.6TB SAS 12G MU SFF SC PM6 SSD	P26354-B21

Description	Option Part Number
HPE 1.6TB SAS 12G MU SFF SC PM1645a SSD	P19915-B21
HPE 1.6TB SAS 12G MU SFF (2.5 in) SC 3-year warranty DS firmware SSD	P09092-B21
HPE 960GB SAS 12G RI SFF SC value SAS RM5 SSD	P10440-B21
HPE 960GB SAS 12G RI SFF SC SS540 SSD	P21139-B21
HPE 960GB SAS 12G RI SFF SC PM5 SSD	P04517-B21
HPE 960GB SAS 12G RI SFF SC PM1643a SSD	P19903-B21
HPE 960GB SAS 24G RI SFF SC PM6 SSD	P26285-B21
HPE 960GB SAS 12G MU SFF SC value SAS RM5 SSD	P10448-B21
HPE 800GB SAS 12G WI SFF SC SS540 SSD	P21127-B21
HPE 800GB SAS 12G WI SFF SC PM5 SSD	P04543-B21
HPE 800GB SAS 24G WI SFF SC PM6 SSD	P26372-B21
HPE 800GB SAS 12G WI SFF (2.5 in) SC 3-year warranty DS firmware SSD	P09100-B21
HPE 800GB SAS 12G MU SFF SC SS540 SSD	P21131-B21
HPE 800GB SAS 12G MU SFF SC PM5 SSD	P04527-B21
HPE 800GB SAS 12G MU SFF SC PM1645a SSD	P19913-B21
HPE 800GB SAS 24G MU SFF SC PM6 SSD	P26290-B21
HPE 800GB SAS 12G MU SFF (2.5 in) SC 3-year warranty DS firmware SSD	P09090-B21
HPE 400GB SAS 12G WI SFF SC SS540 SSD	P21125-B21
HPE 400GB SAS 12G WI SFF SC PM5 SSD	P04541-B21
HPE 400GB SAS 24G WI SFF SC PM6 SSD	P26295-B21
HPE 400GB SAS 12G WI SFF (2.5 in) SC 3-year warranty DS firmware SSD	P09098-B21
HPE 400GB SAS 12G MU SFF (2.5 in) SC 3-year warranty DS firmware SSD	P04525-B21
HPE 400GB SAS 12G MU SFF (2.5 in) SC 3-year warranty DS firmware SSD	P09088-B21
HPE 1.92TB SAS 12G Read Intensive SFF SC Multi Vendor SSD	P49030-B21

Description	Option Part Number
HPE 1.92TB SAS 12G Read Intensive SFF SC Value SAS Multi Vendor SSD	P36999-B21
HPE 15.36TB SAS 12G Read Intensive SFF SC Multi Vendor SSD	P49044-B21
HPE 3.84TB SAS 12G Read Intensive SFF SC Multi Vendor SSD	P49034-B21
HPE 3.84TB SAS 12G Read Intensive SFF SC Value SAS Multi Vendor SSD	P37001-B21
HPE 7.68TB SAS 12G Read Intensive SFF SC Multi Vendor SSD	P49039-B21
HPE 7.68TB SAS 12G Read Intensive SFF SC Value SAS Multi Vendor SSD	P37003-B21
HPE 960GB SAS 12G Read Intensive SFF SC Multi Vendor SSD	P49028-B21
HPE 960GB SAS 12G Read Intensive SFF SC Value SAS Multi Vendor SSD	P36997-B21
HPE 1.92TB SAS 12G MU SFF SC Value SAS Multi Vendor SSD	P37011-B21
HPE 960GB SAS 12G MU SFF SC Value SAS Multi Vendor SSD	P37005-B21
HPE 800GB SAS 12G MU SFF SC Multi Vendor SSD	P49046-B21
HPE 6.4TB SAS 12G MU SFF SC Multi Vendor SSD	P49056-B21
HPE 3.2TB SAS 12G MU SFF SC Multi Vendor SSD	P49052-B21
HPE 3.84TB SAS 12G MU SFF SC Value SAS Multi Vendor SSD	P37017-B21
HPE 1.6TB SAS 12G MU SFF SC Multi Vendor SSD	P49048-B21
NVMe drives	
HPE 7.68TB NVMe x4 lanes RI SFF (2.5 in) SCN 3-year warranty DS firmware SSD	P10218-B21
HPE 1.92TB NVMe Gen4 High Performance Read Intensive SFF SCN Self-encrypting FIPS U.3 CM6 SSD	P44572-B21
HPE 1.92TB NVMe Gen4 High Performance Read Intensive SFF SCN U.2 P5520 SSD	P51452-B21
HPE 7.68TB NVMe x4 lanes RI SFF (2.5 in) SCN 3-year warranty DS firmware SSD	P07196-B21
HPE 7.68TB NVMe Gen4 high performance RI SFF SCN U.3 CM6 SSD	P20021-B21
HPE 7.68TB NVMe Gen4 mainstream performance RI SFF SCN U.3 CD6 SSD	P20143-B21
HPE 7.68TB NVMe Gen4 high performance RI SFF SCN U.3 PM1733 SSD	P22280-B21
HPE 7.68TB NVMe Gen4 mainstream performance RI SFF SCN U.3 PE8010 SSD	P19821-B21
HPE 7.68TB NVMe Gen3 mainstream performance RI SFF SCN U.2 PE6011 SSD	P13682-B21

Description	Option Part Number
HPE 6.4TB NVMe x4 lanes MU SFF (2.5 in) SCN 3-year warranty DS firmware SSD	P10226-B21
HPE 6.4TB NVMe x4 lanes MU SFF (2.5 in) SCN 3-year warranty DS firmware SSD	P07185-B21
HPE 6.4TB NVMe Gen4 high performance MU SFF SCN U.3 CM6 SSD	P20100-B21
HPE 6.4TB NVMe Gen4 mainstream performance MU SFF SCN U.3 CD6 SSD	P20207-B21
HPE 6.4TB NVMe Gen4 high performance MU SFF SCN U.3 PM1735 SSD	P22272-B21
HPE 6.4TB NVMe Gen4 Mainstream Performance Mixed Use SFF SCN U.2 Multi Vendor SSD	P47822-B21
HPE 6.4TB NVMe Gen4 Mainstream Performance Mixed Use SFF SCN U.2 V2 Multi Vendor SSD	P64886-B21
HPE 6.4TB NVMe Gen4 High Performance Mixed Use SFF SCN U.2 P5620 SSD	P51462-B21
HPE 6.4TB NVMe Gen4 mainstream performance MU SFF SCN U.3 PE8030 SSD	P19837-B21
HPE 6.4TB NVMe Gen4 High Performance Mixed Use SFF SCN U.3 PM1735a SSD	P50231-B21
HPE 6.4TB NVMe Gen3 mainstream performance MU SFF SCN U.2 PE6031 SSD	P13674-B21
HPE 6.4TB NVMe Gen3 high performance MU SFF SCN U.2 P4610 SSD	P13703-B21
HPE 4TB NVMe Gen3 high performance RI SFF SCN U.2 P4510 SSD	P13697-B21
HPE 375GB NVMe Gen3 high performance low latency WI SFF SCN U.2 P4800X SSD	878014-B21
HPE 1.92TB NVMe x4 lanes RI SFF (2.5 in) SCN 3-year warranty DS firmware SSD	P10210-B21
HPE 1.92TB NVMe x4 lanes RI SFF (2.5 in) SCN 3-year warranty DS firmware SSD	P10214-B21
HPE 1.92TB NVMe x4 lanes RI SFF (2.5 in) SCN 3-year warranty DS firmware SSD	P07192-B21
HPE 1.92TB NVMe Gen4 high performance RI SFF SCN U.3 CM6 SSD	P20017-B21
HPE 1.92TB NVMe Gen4 mainstream performance RI SFF SCN U.3 CD6 SSD	P20139-B21

Description	Option Part Number
HPE 1.92TB NVMe Gen4 high performance RI SFF SCN U.3 PM1733 SSD	P22276-B21
HPE 1.92TB NVMe Gen4 Mainstream Performance Read Intensive SFF SCN U.2 Multi Vendor SSD	P47823-B21
HPE 1.92TB NVMe Gen4 mainstream performance RI SFF SCN U.3 PE8010 SSD	P19813-B21
HPE 1.92TB NVMe Gen4 Mainstream Performance Read Intensive SFF SCN U.2 V2 Multi Vendor SSD	P64874-B21
HPE 1.92TB NVMe Gen4 High Performance Read Intensive SFF SCN U.3 PM1733a SSD	P50214-B21
HPE 3.84TB NVMe Gen4 High Performance Read Intensive SFF SCN Self-encrypting FIPS U.3 CM6 SSD	P44580-B21
HPE 3.84TB NVMe Gen4 High Performance Read Intensive SFF SCN U.2 P5520 SSD	P51454-B21
HPE 1.92TB NVMe Gen3 mainstream performance RI SFF SCN U.2 PE6011 SSD	P13678-B21
HPE 15.36TB NVMe Gen4 mainstream performance RI SFF SCN U.3 CD6 SSD	P20145-B21
HPE 15.36TB NVMe Gen4 high performance RI SFF SCN U.3 PM1733 SSD	P22282-B21
HPE 15.36TB NVMe Gen3 high performance RI SFF SCN U.2 CM5 SSD	P07198-B21
HPE 1.6TB NVMe Gen4 Mainstream Performance Mixed Use SFF SCN U.2 Multi Vendor SSD	P47820-B21
HPE 1.6TB NVMe Gen4 Mainstream Performance Mixed Use SFF SCN U.2 V2 Multi Vendor SSD	P64870-B21
HPE 3.2TB NVMe Gen4 High Performance Mixed Use SFF SCN Self-encrypting FIPS U.3 CM6 SSD	P44596-B21
HPE 1.6TB NVMe Gen4 High Performance Mixed Use SFF SCN U.3 PM1735a SSD	P50225-B21
HPE 1.6TB NVMe Gen4 High Performance Mixed Use SFF SCN U.2 P5620 SSD	P51458-B21
HPE 12.8TB NVMe Gen4 mainstream performance MU SFF SCN U.3 CD6 SSD	P20209-B21
HPE 1.6TB NVMe Gen4 High Performance Mixed Use SFF SCN Self-encrypting FIPS U.3 CM6 SSD	P44588-B21
HPE 12.8TB NVMe Gen4 high performance MU SFF SCN U.3 PM1735 SSD	P22274-B21
HPE 3.84TB NVMe x4 lanes RI SFF (2.5 in) SCN 3-year warranty DS firmware SSD	P10212-B21

Description	Option Part Number
HPE 3.84TB NVMe x4 lanes RI SFF (2.5 in) SCN 3-year warranty DS firmware SSD	P10216-B21
HPE 3.84TB NVMe x4 lanes RI SFF (2.5 in) SCN 3-year warranty DS firmware SSD	P07194-B21
HPE 3.84TB NVMe Gen4 high performance RI SFF SCN U.3 CM6 SSD	P20019-B21
HPE 3.84TB NVMe Gen4 mainstream performance RI SFF SCN U.3 CD6 SSD	P20141-B21
HPE 3.84TB NVMe Gen4 high performance RI SFF SCN U.3 PM1733 SSD	P22278-B21
HPE 3.84TB NVMe Gen4 High Performance Read Intensive SFF SCN U.3 PM1733a SSD	P50217-B21
HPE 3.84TB NVMe Gen4 Mainstream Performance Read Intensive SFF SCN U.2 V2 Multi Vendor SSD	P64882-B21
HPE 7.68TB NVMe Gen4 High Performance Read Intensive SFF SCN U.2 P5520 SSD	P51456-B21
HPE 3.84TB NVMe Gen4 Mainstream Performance Read Intensive SFF SCN U.2 Multi Vendor SSD	P47824-B21
HPE 7.68TB NVMe Gen4 Mainstream Performance Read Intensive SFF SCN U.2 Multi Vendor SSD	P47825-B21
HPE 7.68TB NVMe Gen4 Mainstream Performance Read Intensive SFF SCN U.2 V2 Multi Vendor SSD	P64890-B21
HPE 3.84TB NVMe Gen4 mainstream performance RI SFF SCN U.3 PE8010 SSD	P19817-B21
HPE 7.68TB NVMe Gen4 High Performance Read Intensive SFF SCN U.3 PM1733a SSD	P50220-B21
HPE 3.84TB NVMe Gen3 mainstream performance RI SFF SCN U.2 PE6011 SSD	P13680-B21
HPE 3.2TB NVMe x4 lanes MU SFF (2.5 in) SCN 3-year warranty DS firmware SSD	P10224-B21
HPE 3.2TB NVMe x4 lanes MU SFF (2.5 in) SCN 3-year warranty DS firmware SSD	P07183-B21
HPE 3.2TB NVMe Gen4 high performance MU SFF SCN U.3 CM6 SSD	P20098-B21
HPE 3.2TB NVMe Gen4 mainstream performance MU SFF SCN U.3 CD6 SSD	P20205-B21
HPE 3.2TB NVMe Gen4 high performance MU SFF SCN U.3 PM1735 SSD	P22270-B21

Description	Option Part Number
HPE 3.2TB NVMe Gen4 Mainstream Performance Mixed Use SFF SCN U.2 V2 Multi Vendor SSD	P64878-B21
HPE 3.2TB NVMe Gen4 High Performance Mixed Use SFF SCN U.2 P5620 SSD	P51460-B21
HPE 3.2TB NVMe Gen4 Mainstream Performance Mixed Use SFF SCN U.2 Multi Vendor SSD	P47821-B21
HPE 3.2TB NVMe Gen4 High Performance Mixed Use SFF SCN U.3 PM1735a SSD	P50228-B21
HPE 3.2TB NVMe Gen4 mainstream performance MU SFF SC U.3 PE8030 SSD	P19833-B21
HPE 3.2TB NVMe Gen3 mainstream performance MU SFF SCN U.2 PE6031 SSD	P13672-B21
HPE 3.2TB NVMe Gen3 high performance MU SFF SCN U.2 P4610 SSD	P13701-B21
HPE 2TB NVMe Gen3 high performance RI SFF SCN U.2 P4510 SSD	P13695-B21
HPE 1.6TB NVMe x4 lanes MU SFF (2.5 in) SCN 3-year warranty DS firmware SSD	P10222-B21
HPE 1.6TB NVMe x4 lanes MU SFF (2.5 in) SCN 3-year warranty DS firmware SSD	P07181-B21
HPE 1.6TB NVMe Gen4 high performance MU SFF SCN U.3 CM6 SSD	P20096-B21
HPE 1.6TB NVMe Gen4 mainstream performance MU SFF SCN U.3 CD6 SSD	P20203-B21
HPE 1.6TB NVMe Gen4 high performance MU SFF SCN U.3 PM1735 SSD	P22268-B21
HPE 1.6TB NVMe Gen4 mainstream performance MU SFF SCN U.3 PE8030 SSD	P19829-B21
HPE 1.6TB NVMe Gen3 mainstream performance MU SFF SCN U.2 PE6031 SSD	P13670-B21
HPE 1.6TB NVMe Gen3 high performance MU SFF SCN U.2 P4610 SSD	P13699-B21
HPE 960GB NVMe x4 lanes RI SFF (2.5 in) SCN 3-year warranty DS firmware SSD	P10208-B21
HPE 960GB NVMe x4 lanes RI SFF (2.5 in) SCN 3-year warranty DS firmware SSD	P07190-B21
HPE 960GB NVMe Gen4 mainstream performance RI SFF SCN U.3 PE8010 SSD	P19809-B21

Description	Option Part Number
HPE 960GB NVMe Gen3 mainstream performance RI SFF SCN U.2 PE6011 SSD	P13676-B21
HPE 800GB NVMe x4 lanes MU SFF (2.5 in) SCN 3-year warranty DS firmware SSD	P07179-B21
HPE 800GB NVMe Gen4 high performance MU SFF SCN U.3 CM6 SSD	P20094-B21
HPE 800GB NVMe Gen4 mainstream performance MU SFF SCN U.3 CD6 SSD	P25953-B21
HPE 800GB NVMe Gen4 high performance MU SFF SCN U.3 PM1735 SSD	P22329-B21
HPE 800GB NVMe Gen4 mainstream performance MU SFF SCN U.3 PE8030 SSD	P19825-B21
HPE 800GB NVMe Gen3 mainstream performance MU SFF SCN U.2 PE6031 SSD	P13668-B21
HPE 750GB NVMe Gen3 high performance low latency WI SFF SCN U.2 P4800X SSD	P06952-B21

M.2 drive options

Description	Option Part Number
HPE Synergy 480 Gen10 M2 NGFF adapter kit	P38437-B21
HPE 240GB SATA 6G RI M.2 2280 5300B SSD	P19888-B21
HPE 480GB SATA 6G RI M.2 2280 5300P SSD	P19890-B21
HPE 960GB SATA 6G RI M.2 2280 5300P SSD	P19892-B21

HPE Security

Description	Option Part Number
HPE TPM 2.0 Gen10 option	864279-B21
HPE iLO common password FIO setting	P08040-B21

NOTE

- The TPM is a micro controller chip that can securely store artifacts used to authenticate the server platform. These artifacts can include passwords, certificates and encryption keys. Windows BitLocker drive encryption (BitLocker) is a data protection feature avail able in windows server 2012. BitLocker leverages the enhanced security capabilities of a TPM version 1.2. The TPM works with bitLocker to help protect user data and to en sure that a server running windows server 2012 has not been tampered with while the system was offline.
- **Click here to access the quickspecs page for TPM Options**.
- HPE Synergy OS pre-installed units will come with the partition required for TPM depl oyment.
- The TPM key is unique to every TPM deployed server and must be retained. Misplacing or losing the key could result in data loss.

Flash media kits

Description	Option Part Number
HPE 32GB microSD mainstream flash media kit	700139-B21
HPE dual 8GB microSD enterprise MDL USB kit	741279-B21

Click here to access the quickspecs for HPE Flash Media Kits for more information.

Synergy services

Description	Option Part Number
Deployment/installation and start-up services	
HPE Factory express Synergy initial frame package 4 service	HA454A1-300
HPE Factory express Synergy add-on frame package 4 service	HA454A1-301
HPE 5Y Tech Care Essential Service	HU4A6A5
HPE 5Y Tech Care Essential with Defective Media Retention Service	HU4A7A5
HPE Synergy first frame startup service	U8JM3E
HPE Synergy additional frame startup service	U8JM4E
Synergy proactive care services	
HPE 3-year proactive care 24x7 SY660 Gen10 SVC	H7ML8E
HPE 3-year proactive care 24x7 with DMR SY660 Gen10 SVC	H7ML9E
HPE 3-year proactive care advanced 24x7 synergy SY660 Gen10 service	H7MM1E
HPE 3-year proactive care advanced 24x7 with DMR SY660 Gen10	H7MM2E
Click here to access the HPE Support Services Central for more information.	

OS Compatibility

Feature	Description
Operating Systems (OS) and virtualization software support	• Microsoft Windows Server • Microsoft Hyper-V Server • Red Hat Enterprise Linux • SUSE Linux Enterprise Server (includes XEN & KVM)

Feature	Description
	• VMware ESXi • VMware vSphere



NOTE

Operating System support may change. To get the most updated information, go to the HP E OS support matrix page.

Click here to access the page for Server OS and Virtualization Software.

Useful Links

Descriptions	Direct Links
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