



HPE Synergy 480 Gen10 Compute Module - Overview

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Product description



The HPE Synergy 480 Gen10 compute module delivers superior capacity, efficiency, and flexibility in a two-socket, half-height form factor to support demanding workloads. Powered by the latest Intel Xeon scalable processors, HPE DDR4 SmartMemory supporting up to 3TB, flexible storage controller options, three I/O connectors, and designed to create a pool of flexible compute capacity within a composable infrastructure the HPE Synergy 480 Gen10 Compute Module is the ideal platform for General-Purpose enterprise workload performance now and in the future.

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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.

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Product features

Feature	Description				
Processors¹	Intel Xeon scalable processor family - 1st generation				
	Intel Xeon models	CPU Frequency	Cores	Power	DDR4
					Memory per socket
	Platinum processors				
	Platinum 8180M processor	2.5 GHz	28	205 W	2666 MT/s
	Platinum 8180 processor	2.5 GHz	28	205 W	2666 MT/s
	Platinum 8176 processor	2.1 GHz	28	165 W	2666 MT/s
	Platinum 8170 processor	2.1 GHz	26	165 W	2666 MT/s
	Platinum 8168 processor	2.7 GHz	24	205 W	2666 MT/s
	Platinum 8164 processor	2.0 GHz	26	150 W	2666 MT/s
	Platinum 8160M processor	2.1 GHz	24	150 W	2666 MT/s
	Platinum 8160 processor	2.1 GHz	24	150 W	2666 MT/s

Feature

Description

Intel Xeon models	CPU Frequency	Cores	Power	DDR4	Memory per socket
Platinum 8158 processor	3.0 GHz	12	150 W	2666 MT/s	768GB
Platinum 8156 processor	3.6 GHz	4	150 W	2666 MT/s	768GB
Platinum 8153 processor	2.0 GHz	16	125 W	2666 MT/s	768GB
Gold processors					
Gold 6154 processor	3.0 GHz	18	200 W	2666 MT/s	768GB
Gold 6152 processor	2.1 GHz	22	140 W	2666 MT/s	768GB
Gold 6150 processor	2.7 GHz	18	165 W	2666 MT/s	768GB
Gold 6148 processor	2.4 GHz	20	150 W	2666 MT/s	768GB
Gold 6146 processor	3.2 GHz	12	165 W	2666 MT/s	768GB
Gold 6144 processor	3.5 GHz	8	150 W	2666 MT/s	768GB
Gold 6142M processor	2.6 GHz	16	150 W	2666 MT/s	1.5TB
Gold 6142 processor	2.6 GHz	16	150 W	2666 MT/s	768GB
Gold 6140 processor	2.3 GHz	18	140 W	2666 MT/s	768GB
Gold 6138 processor	2.0 GHz	20	125 W	2666 MT/s	768GB
Gold 6136 processor	3.0 GHz	12	150 W	2666 MT/s	768GB
Gold 6134 processor	3.2 GHz	8	130 W	2666 MT/s	768GB
Gold 6132 processor	2.6 GHz	14	140 W	2666 MT/s	768GB
Gold 6130 processor	2.1 GHz	16	125 W	2666 MT/s	768GB
Gold 6128 processor	3.4 GHz	6	115 W	2666 MT/s	768GB
Gold 6126 processor	2.6 GHz	12	125 W	2666 MT/s	768GB
Gold 5122 processor	3.6 GHz	4	105 W	2666 MT/s	768GB
Gold 5120 processor	2.2 GHz	14	105 W	2400 MT/s	768GB
Gold 5118 processor	2.3 GHz	12	105 W	2400 MT/s	768GB
Gold 5115 processor	2.4 GHz	10	85 W	2400 MT/s	768GB
Silver processors					
Silver 4116 processor	2.1 GHz	12	85 W	2400 MT/s	768GB
Silver 4114 processor	2.2 GHz	10	85 W	2400 MT/s	768GB
Silver 4112 processor	2.6 GHz	4	85 W	2400 MT/s	768GB
Silver 4110 processor	2.1 GHz	8	85 W	2400 MT/s	768GB
Bronze processors					
Bronze 3104 processor	1.7 GHz	6	85 W	2133 MT/s	768GB

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 8280M processor	2.7 GHz	28	205 W	2933 MT/s	2TB	Yes
Platinum 8280 processor	2.7 GHz	28	205 W	2933 MT/s	1TB	Yes
Platinum 8276L processor	2.2 GHz	28	165 W	2933 MT/s	4.5TB	Yes

Feature	Description					
Intel Xeon models	CPU Frequency	Cores	Power	DDR4	Max memory per socket	Persistent memory support
Platinum 8276M processor	2.2 GHz	28	165 W	2933 MT/s	2TB	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	2.4 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 8260M processor	2.4 GHz	24	165 W	2933 MT/s	2TB	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
Gold 6258R processor	2.7 GHz	28	205 W	2666 MT/s	1TB	Yes
Gold 6254 processor	3.1 GHz	18	200 W	2933 MT/s	1TB	Yes
Gold 6252N processor	2.6 GHz	24	150 W	2933 MT/s	1TB	Yes
Gold 6252 processor	2.1 GHz	24	150 W	2933 MT/s	1TB	Yes
Gold 6248R processor	3.0 GHz	24	205 W	2666 MT/s	1TB	Yes
Gold 6248 processor	2.5 GHz	20	150 W	2933 MT/s	1TB	Yes
Gold 6246R processor	3.4 GHz	16	205 W	2666 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 6242R processor	3.1 GHz	20	205 W	2666 MT/s	1TB	Yes
Gold 6242 processor	2.8 GHz	16	150 W	2933 MT/s	1TB	Yes
Gold 6240R processor	2.4 GHz	24	165 W	2666 MT/s	1TB	Yes
Gold 6240Y processor	2.6 GHz	18	150 W	2933 MT/s	1TB	Yes
	2.8 GHz	14				
	3.1 GHz	8				

Feature	Description					
Intel Xeon models	CPU Frequency	Cores	Power	DDR4	Max memory per socket	Persistent memory support
Gold 6240L processor	2.6 GHz	18	150 W	2933 MT/s	4.5TB	Yes
Gold 6240M processor	2.6 GHz	18	150 W	2933 MT/s	2TB	Yes
Gold 6240 processor	2.6 GHz	18	150 W	2933 MT/s	1TB	Yes
Gold 6238R processor	2.2 GHz	28	165 W	2666 MT/s	1TB	Yes
Gold 6238L processor	2.1 GHz	22	140 W	2933 MT/s	4.5TB	Yes
Gold 6238M processor	2.1 GHz	22	140 W	2933 MT/s	2TB	Yes
Gold 6238 processor	2.1 GHz	22	140 W	2933 MT/s	1TB	Yes
Gold 6234 processor	3.3 GHz	8	130 W	2933 MT/s	1TB	Yes
Gold 6230R Processor	2.1 GHz	26	150 W	2666 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 6226R processor	2.9 GHz	16	150 W	2666 MT/s	1TB	Yes
Gold 6226 processor	2.8 GHz	12	125 W	2933 MT/s	1TB	Yes
Gold 6222V processor	1.8 GHz	20	115 W	2933 MT/s	1TB	Yes
Gold 6222V	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 5220R processor	2.2 GHz	24	150 W	2666 MT/s	1TB	Yes
Gold 5220S processor	2.6 GHz	18	125 W	2933 MT/s	1TB	Yes
Gold 5220 processor	2.2 GHz	18	125 W	2666 MT/s	1TB	Yes
Gold 5218R processor	2.1 GHz	20	125 W	2666 MT/s	1TB	1TB
Gold 5218B processor	2.3 GHz	16	125 W	2666 MT/s	1TB	Yes
Gold 5218N processor	2.3 GHz	16	105 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
Gold 5215M processor	2.6 GHz	10	85 W	2666 MT/s	1TB	Yes
Gold 5215 processor	2.6 GHz	10	85 W	2666 MT/s	1TB	Yes

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	<table border="1"> <thead> <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> </thead> <tbody> <tr> <td colspan="7">Silver processors</td> </tr> <tr> <td>Silver 4216 processor</td> <td>2.1 GHz</td> <td>16</td> <td>85 W</td> <td>2400 MT/s</td> <td>1TB</td> <td>No</td> </tr> <tr> <td>Silver 4215R processor</td> <td>3.2 GHz</td> <td>8</td> <td>130 W</td> <td>2400 MT/s</td> <td>1TB</td> <td>Yes</td> </tr> <tr> <td>Silver 4215 processor</td> <td>2.5 GHz</td> <td>8</td> <td>85 W</td> <td>2400 MT/s</td> <td>1TB</td> <td>Yes</td> </tr> <tr> <td>Silver 4214R processor</td> <td>2.4 GHz</td> <td>12</td> <td>100 W</td> <td>2400 MT/s</td> <td>1TB</td> <td>No</td> </tr> <tr> <td rowspan="3">Silver 4214Y processor</td> <td>2.2 GHz</td> <td>12</td> <td rowspan="3">85 W</td> <td rowspan="3">2400 MT/s</td> <td rowspan="3">1TB</td> <td rowspan="3">No</td> </tr> <tr> <td>2.3 GHz</td> <td>10</td> </tr> <tr> <td>2.4 GHz</td> <td>8</td> </tr> <tr> <td>Silver 4214 processor</td> <td>2.2 GHz</td> <td>12</td> <td>85 W</td> <td>2400 MT/s</td> <td>1TB</td> <td>No</td> </tr> <tr> <td>Silver 4210R processor</td> <td>2.4 GHz</td> <td>10</td> <td>100 W</td> <td>2400 MT/s</td> <td>1TB</td> <td>No</td> </tr> <tr> <td>Silver 4210 processor</td> <td>2.2 GHz</td> <td>10</td> <td>85 W</td> <td>2400 MT/s</td> <td>1TB</td> <td>No</td> </tr> <tr> <td>Silver 4208 processor</td> <td>2.1 GHz</td> <td>8</td> <td>85 W</td> <td>2400 MT/s</td> <td>1TB</td> <td>No</td> </tr> <tr> <td colspan="7">Bronze processors</td> </tr> <tr> <td>Bronze 3206R processor</td> <td>1.9 GHz</td> <td>8</td> <td>85 W</td> <td>2133 MT/s</td> <td>1TB</td> <td>No</td> </tr> <tr> <td>Bronze 3204 processor</td> <td>1.9 GHz</td> <td>6</td> <td>85 W</td> <td>2133 MT/s</td> <td>1TB</td> <td>No</td> </tr> </tbody> </table>	Intel Xeon models	CPU Frequency	Cores	Power	DDR4	Max memory per socket	Persistent memory support	Silver processors							Silver 4216 processor	2.1 GHz	16	85 W	2400 MT/s	1TB	No	Silver 4215R processor	3.2 GHz	8	130 W	2400 MT/s	1TB	Yes	Silver 4215 processor	2.5 GHz	8	85 W	2400 MT/s	1TB	Yes	Silver 4214R processor	2.4 GHz	12	100 W	2400 MT/s	1TB	No	Silver 4214Y processor	2.2 GHz	12	85 W	2400 MT/s	1TB	No	2.3 GHz	10	2.4 GHz	8	Silver 4214 processor	2.2 GHz	12	85 W	2400 MT/s	1TB	No	Silver 4210R processor	2.4 GHz	10	100 W	2400 MT/s	1TB	No	Silver 4210 processor	2.2 GHz	10	85 W	2400 MT/s	1TB	No	Silver 4208 processor	2.1 GHz	8	85 W	2400 MT/s	1TB	No	Bronze processors							Bronze 3206R processor	1.9 GHz	8	85 W	2133 MT/s	1TB	No	Bronze 3204 processor	1.9 GHz	6	85 W	2133 MT/s	1TB	No
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Chipset	Intel C621 series chipset ²																																																																																																						
Synergy management	HPE Composer powered by OneView																																																																																																						
Modes of operation	<p>New class of memory which can be configured as either large server memory or fast storage</p> <ul style="list-style-type: none"> Flexibility to deploy as dense memory or fast storage. Single technology used as memory or storage reducing datacenter complexity. 																																																																																																						
On compute management chipset	HPE iLO 5 ASIC																																																																																																						
Memory³	<p>One of the following depending on model</p> <p>The following memory supports Intel Xeon scalable family processors 2nd generation (Models x2xx)</p> <ul style="list-style-type: none"> HPE 8GB (1 x 8GB) single rank x8 DDR4-2933 CAS-21-21-21 registered memory kit HPE 16GB (1 x 16GB) single rank x4 DDR4-2933 CAS-21-21-21 registered memory kit HPE 16GB (1 x 16GB) dual rank x8 DDR4-2933 CAS-21-21-21 registered memory kit HPE 32GB (1 x 32GB) dual rank x4 DDR4-2933 CAS-21-21-21 registered memory kit HPE 64GB (1 x 64GB) dual rank x4 DDR4-2933 CAS-21-21-21 RDIMM memory kit HPE 64GB (1 x 64GB) quad rank x4 DDR4-2933 CAS-21-21-21 LRDIMM memory kit HPE 128GB (1 x 128GB) octal rank x4 DDR4-2933 CAS-24-21-21 LRDIMM memory kit <p>The following memory supports Intel Xeon scalable family processors 1st generation (Models x1xx)</p> <ul style="list-style-type: none"> HPE 8GB (1 x 8GB) single rank x8 DDR4-2666 CAS-4-19-19-19 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 32GB (1 x 32GB) dual rank x4 DDR4-2666 CAS-19-19-19 registered memory kit HPE 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 																																																																																																						



Feature	Description
	<p>HPE Persistent memory featuring Intel optane DC persistent memory</p> <ul style="list-style-type: none"> • HPE 128GB 2666 persistent memory kit featuring Intel optane DC persistent memory • HPE 256GB 2666 persistent memory kit featuring Intel optane DC persistent memory • HPE 512GB 2666 persistent memory kit featuring Intel optane DC persistent memory
	<p>Type HPE DDR4 SmartMemory, Registered (RDIMM), Load Reduced (LRDIMM)</p>
	<p>DIMM Slots available 24 (12 DIMM slots per processor, 6 channels per processor, 2 DIMMs per channel)</p>
	<p>Maximum capacity (LRDIMM) 3TB (24 x 128GB LRDIMM)</p>
	<p>Maximum capacity (RDIMM) 1.5TB (24 x 64GB RDIMM)</p>
	<p>Advanced ECC Advanced ECC uses single device data correction to detect and correct single and all multibit error that occurs within a single DRAM chip</p>
	<p>Online spare Memory online spare mode detects a rank that is degrading and switches operation to the spare rank</p>
Memory protection	<p>Online mode Memory online spare mode (Rank spare mode)</p>
	<p>For details on the HPE Server memory options RAS feature, please check the link below: Click here to access the page on How memory RAS technologies can enhance the uptime of HPE ProLiant servers .</p>
	<p>Three (3) I/O expansion mezzanine connectors:</p> <ul style="list-style-type: none"> • x16 PCIe 3.0 type D (Supports type C and type D mezzanine cards) (Mezzanine connector 1)⁴ • x16 PCIe 3.0 type D (Supports type C and type D mezzanine cards) (Mezzanine connector 2)⁵ • x16 PCIe 3.0 type C (Supports type C mezzanine cards) (Mezzanine connector 3)⁶
Mezzanine connectors	
	<p>Micro SDHC slot One (1) internal micro Secure Digital High Capacity (Micro SDHC) card slot⁷</p>
	<p>USB 3.0 Port</p> <ul style="list-style-type: none"> • One (1) internal USB 3.0 connector for USB flash media drive keys⁹ • One (1) external USB 3.0 connector for USB flash media drive keys
Interfaces	
	<p>iLO port One (1) external USB port for direct iLO access to compute</p>
	<p>Network and storage adapters or mezzanine options include:</p> <ul style="list-style-type: none"> • HPE Synergy 3820C 10/20Gb Converged Network Adapter (CNA) • HPE Synergy 2820C 10 GbE CNA • HPE Synergy 4820C 10/20/25Gb CNA • HPE Synergy 4610C 10/25Gb ethernet adapter • HPE Synergy 6810C 25/50Gb ethernet • HPE Synergy 6410C 25/50Gb ethernet • 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 HBA • HPE Synergy 3830C 16G FC HBA
Network and storage adapters	
	<p>HPE Synergy Compute ROM is used to configure the following:</p> <ul style="list-style-type: none"> • 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
HPE Compute module ROM	
	<p>One of the following depending on model:</p> <ul style="list-style-type: none"> • Software RAID • Essential RAID controller • Performance RAID controller • Premium backplane CTO compute module
Storage controllers	

Feature	Description																					
Maximum internal storage	<table border="1"> <thead> <tr> <th>Storage</th> <th>Capacity</th> <th>Configuration</th> </tr> </thead> <tbody> <tr> <td>Hot Plug SFF SAS SSD</td> <td>30.6TB</td> <td>2 x 15.3TB (With standard front SFF drive cage)</td> </tr> <tr> <td>Hot Plug SFF SATA SSD</td> <td>7.68TB</td> <td>2 x 3.84TB (With standard front SFF drive cage)</td> </tr> <tr> <td>Hot Plug SFF SATA/SAS HDD</td> <td>4.0TB</td> <td>2 x 2.0TB (With standard front SFF drive cage)</td> </tr> <tr> <td>Hot Plug SFF NVMe SSD</td> <td>15.6TB</td> <td>2 x 7.8TB (With Premium front SFF drive cage)</td> </tr> <tr> <td>Hot Plug uFF SATA SSD</td> <td>1.3TB</td> <td>2 x 340GB (With standard front SFF drive cage)</td> </tr> <tr> <td>M.2 SATA SSD Option Drives</td> <td>1.9TB</td> <td>2 x 960GB ATA M.2 Drives (Internal with adaptor)</td> </tr> </tbody> </table>	Storage	Capacity	Configuration	Hot Plug SFF SAS SSD	30.6TB	2 x 15.3TB (With standard front SFF drive cage)	Hot Plug SFF SATA SSD	7.68TB	2 x 3.84TB (With standard front SFF drive cage)	Hot Plug SFF SATA/SAS HDD	4.0TB	2 x 2.0TB (With standard front SFF drive cage)	Hot Plug SFF NVMe SSD	15.6TB	2 x 7.8TB (With Premium front SFF drive cage)	Hot Plug uFF SATA SSD	1.3TB	2 x 340GB (With standard front SFF drive cage)	M.2 SATA SSD Option Drives	1.9TB	2 x 960GB ATA M.2 Drives (Internal with adaptor)
	Storage	Capacity	Configuration																			
	Hot Plug SFF SAS SSD	30.6TB	2 x 15.3TB (With standard front SFF drive cage)																			
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M.2 SATA SSD Option Drives	1.9TB	2 x 960GB ATA M.2 Drives (Internal with adaptor)																				
Frames	<p>HPE Synergy 12000 frame, is the base for all Synergy products and supports:</p> <ul style="list-style-type: none"> 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 twelve (12) HPE Synergy 480 Gen9 compute modules 																					
Industry standard compliance	<ul style="list-style-type: none"> Microsoft logo certifications WOL enabled on some adaptors PXE support enabled USB 3.0 compliant iLO USB 2.0 compliant Trusted Platform Module (TPM) 2.0 support (ROM-Based Setup Utility (RBSU) support for TPM 1.2) IEEE (Specific IEEE standards depending on Ethernet adapter card(s) installed) Advanced Encryption Standard (AES) Triple Data Encryption Standard (3DES) SNMP v3 SSL 2.0 DMTF Systems Management Architecture for Server Hardware Command Line Protocol (SMASH CLP) Active directory v1.0 PCIe 3.0 compliant UEFI forum Redfish API (iLO5) ErP Lot9 																					
Graphics (iLo)	<ul style="list-style-type: none"> Integrated matrix G200eH2 video standard with 16MB of video RAM <ul style="list-style-type: none"> 1280 x 1024 (32 bp) 1920 x 1200 (16 bp) HPE iLO 5 on system management memory <ul style="list-style-type: none"> 32MB flash 512MB with ECC (224MB after ECC and video) 																					
HPE Server UEFI/legacy ROM⁸	<ul style="list-style-type: none"> 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 ProLiant 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 <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> 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 																					

Feature	Description
Embedded management	<ul style="list-style-type: none"> • HPE Synergy Composer powered by HPE OneView • HPE Integrated Lights-Out (HPE iLO) • UEFI • Intelligent provisioning • iLO RESTful API
Security	<p>Newest forms of security based on iLO 5 features</p> <ul style="list-style-type: none"> • 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 <hr/> <p>Standard security features</p> <ul style="list-style-type: none"> • 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 • Serial interface control • TPM 1.2 or 2.0 option • AES • Intel Advanced Encryption Standard-New Instructions (AES-NI)
Graphics accelerators	<p>Mezzanine GPU options for Synergy 480 compute module⁹</p> <ul style="list-style-type: none"> • HPE Synergy 480Tesla P6 GPU Mezzanine Graphics Card • HPE Synergy 480 NVIDIA Quadro M3000SE Mezzanine Card <hr/> <p>High-Density multi MXM expansion module GPU options</p> <ul style="list-style-type: none"> • HPE Synergy 480 Gen10 Multi MXM FIO expansion module • HPE Synergy 480 NVIDIA Tesla P6 Multi MXM option kit • HPE Synergy 480 NVIDIA M3000SE Multi MXM option kit <hr/> <p>Standard PCIe expansion module GPU options¹⁰</p> <ul style="list-style-type: none"> • HPE Synergy 480 Gen10 PCIe FIO expansion module • HPE NVIDIA Tesla P40 24GB computational accelerator • HPE NVIDIA Tesla V100 32GB PCIe module • HPE NVIDIA Quadro RTX6000 GPU module
FC support	<p>Up to two (2) optional FC mezzanine HBAs are supported on the HPE Synergy 480 Gen10</p> <ul style="list-style-type: none"> • HPE Synergy 3530C 16G FC HBA • HPE Synergy 3830C 16G FC HBA • HPE Synergy 5330C 32G FC HBA • HPE Synergy 5830C 32G FC HBA
Compatible SAN	<p>HPE Synergy 480 Gen10 compute modules are optimized for HPE MSA, EVA, 3PAR, XP, and Storevirtual VSA</p>
HPE virtual connect	<p>The HPE Virtual Connect SE 40Gb F8 module, master module, based on composable fabric is designed for composable infrastructure. Its disaggregated, Rack-Scale design uses a master/satellite architecture to consolidate data center network connections, reduce hardware and scales network bandwidth across multiple HPE Synergy frames.</p>
One config simple (SCE)	<p>SCE is a guided Self-Service tool to help sales and Non-Technical people provide end users with initial configurations in 3 to 5 minutes.</p>

Feature	Description
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NOTE:

- Platinum - 8100 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 - 2666 MT/s providing up to 768GB memory capacity (1.5TB On select processor skus). Intel turbo boost technology, Intel Hyper-Threading technology supported. Intel AVX-512 (2 x 512-Bit FMA), 48 lanes PCIe 3.0, advanced RAS.
 - Gold - 5100, 6100 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 - 2400 (51xx)/2666(61xx) MHz (SKU 5122=supports 2666) providing up to 768GB memory capacity (1.5TB On select skus). Intel turbo boost technology, Intel Hyper-Threading technology, Intel AVX-512 (1 x 512-Bit FMA) (SKU 5122 supports 2x 512-bit FMA), 48 lanes PCIe 3.0, advanced RAS supported.
 - Silver - 4100 series - Supports 2 socket (Synergy 480 Gen10) compute module, 2 socket supports 2UPI - 9.6 GT/s, 6- Channel DDR4 - 2400 MHz providing up to 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 supported.
 - Bronze - 3100 series - Supports 2 socket (Synergy 480 Gen10) compute module, 2 socket supports 2UPI - 9.6 GT/s, supports 6-Channel DDR4 - 2133 MHz providing up to 768GB memory capacity. Intel AVX-512 (1 x 512-bit FMA), 48 lanes PCIe 3.0, standard RAS supported.
 - Silver and bronze level processors are primarily designed for 2 socket compute modules and will have Synergy 480 Gen10 only in the processor names.
- For more information regarding Intel chipsets, please check the below link:
[Click here to access the page for Intel Server Chipsets](#) .
- 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.
 - LRDIMM and RDIMM are distinct memory technologies and cannot be mixed within a compute module.
- This mezzanine connector supports Dual-Port mezzanine cards: one port is routed to interconnect module bay 1 and the other to bay 4.
- This mezzanine connector supports dual-port mezzanine cards: one port is routed to interconnect module bay 2 and the other to bay 5.
 - A second processor must be installed (In processor slot 2) to have access to mezzanine connector 2.
- This mezzanine connector supports Dual-Port mezzanine cards: one port is routed to interconnect module bay 3 and the other to bay 6.
- The above options are intended for integrated hypervisor virtualization environments.
- The UEFI system utilities tool is analogous to the HPE RBSU of legacy BIOS. For more information please check the below link:
[Click here to access the page for Unified Extensible Firmware Interface \(UEFI\)](#) .
 - For UEFI boot mode, boot environment and OS image installations should be configured properly to support UEFI.
 - UEFI FIO setting (758959-B22) can be selected to configure the system in legacy mode in the factory for the HPE Synergy Gen10 Server.
- All MXM graphics card options are sold in pairs of GPUs. If there are GPU slots available in the Module, it can be field upgraded with additional GPUs. Note mixing GPUs is not supported.
- GRID license for use with NVIDIA Tesla M6 must be purchased separately through an NVIDIA verified virtualization partner at "NVIDIA design and visualization".
[Click here to access the NVIDIA design and visualization](#) .

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Software overview

Feature	Description
Operating Systems (OS) and virtualization software support¹	<ul style="list-style-type: none"> Microsoft Windows Server Microsoft Hyper-V Server Red Hat Enterprise Linux SUSE Linux Enterprise Server VMware ESXi VMware vSphere Citrix XenServer 7.0, 7.1 (Primary use for HPE GPU options/XENDesktop)
Client OS (With GPU options only)	<ul style="list-style-type: none"> Windows and Enterprise client OS Red Hat Enterprise Linux desktop/workstation SLES Desktop (64 bit - Includes XEN and KVM)

NOTE:

- OS Support may change. To get the most updated information, please go to the HPE OS support matrix:
[Click here to access the page for Server Operating Systems and Virtualization Software](#) .

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Link to product specifications

[Click here to view the product specifications.](#)

[top](#)

Link to driver, firmware, software and manuals

[Click here to access the drivers, firmware, software and user manuals.](#)

[top](#)

Link to warranty information

[Click here to check the warranty status.](#)

[Click here for detailed information regarding worldwide limited warranty and technical support.](#)

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Link to QuickSpecs

Information for this Overview is taken from the product QuickSpecs. To access the complete QuickSpecs for this product, select the desired link from the following list:

- [Click here to access the HPE Synergy 480 Gen10 Compute Module Worldwide QuickSpecs in html format.](#)
- [Click here to access the HPE Synergy 480 Gen10 Compute Module Worldwide QuickSpecs in pdf format.](#)
- [Click here to view the QuickSpecs homepage, which provides access to the QuickSpecs for other regions/countries.](#)

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Link to product related documents

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