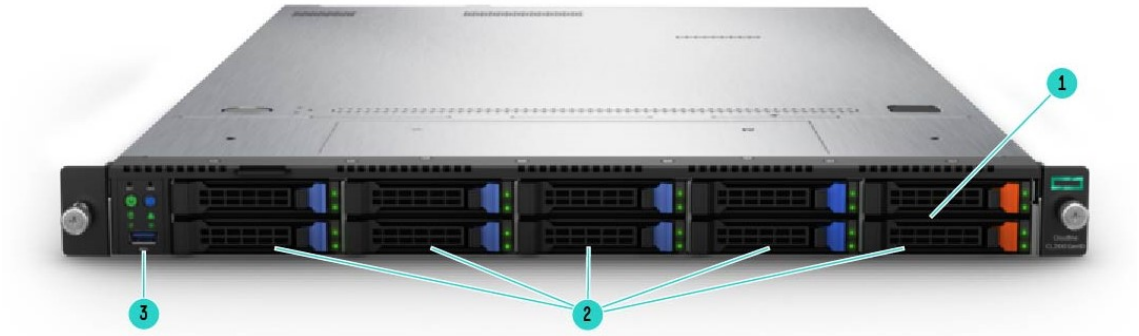
Overview

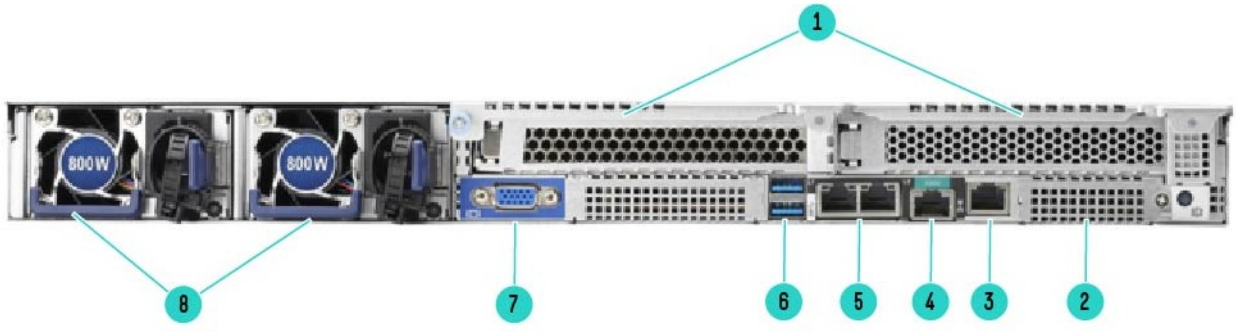
HPE Cloudline CL2100 Gen10 Server

The HPE Cloudline CL2100 Gen10 is a 2P 1U server focus on cost, flexibility and scalability. This Server is designed for cloud computing, cloud-scale application deployments for open compute system marketplace. CL2100 Gen10 server features the latest Intel® Xeon® Processor Scalable Family, support up to Gold Processors, up to 10 SFF hard disk drives at the front, 24 DDR4 DIMMs, and choices of 2x1GbE on board NIC, OCP mezz or PCIe 3.0 networking solutions. The HPE Cloudline CL2100 Gen10 Server offers redundant power supply and N+1 redundant fans to lower the operational risky requiremeints in today's data center. Cloudline server uses industrial standard BIOS and BMC firmware, as well as leverages commodity vendor's firmware to support easy management, clear integration for service provider data center.



Front View

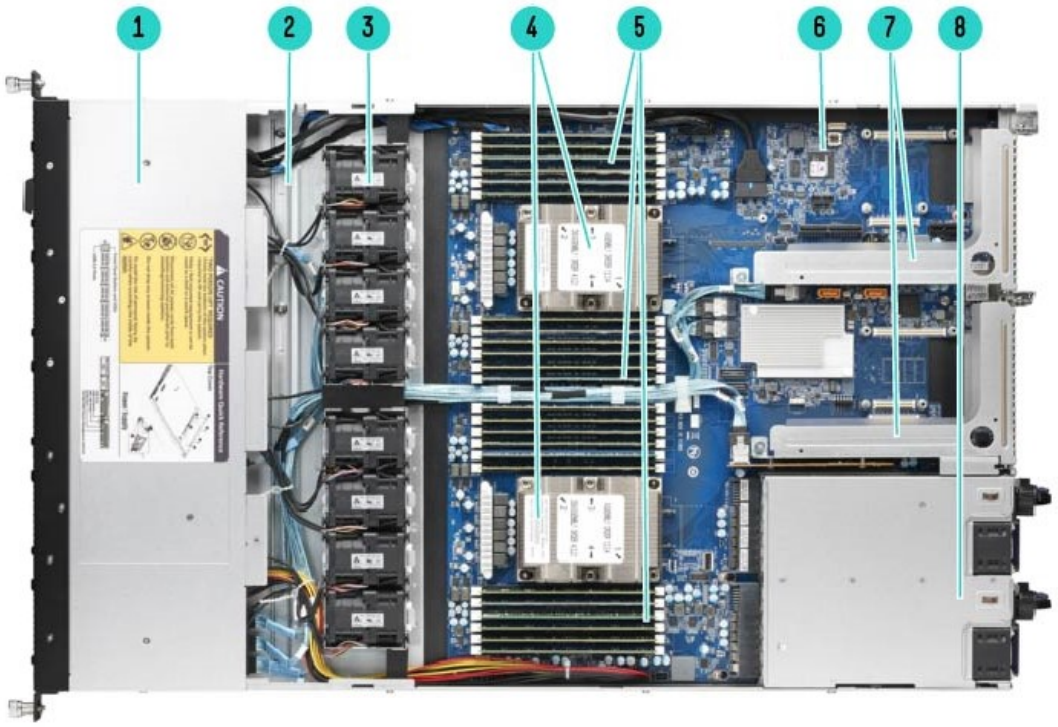
1. (2) SFF Tri-Mode (SAS/SATA/NVMe) Drive Bays.
2. (10) SFF hot plug SAS/SATA/SSD Drive Cage Bays.
3 Front Control Panel Module (1 x USB 3.0, Buttons for Power, reset, and UID / BMC reset)



Rear View

1. PCIe Slot (PROCESSOR 0 FHHL/ PROCESSOR 1 FHHL)
2. (1) OCP 2.0 Mezzanine Type 1 (from PROCESSOR 0)
3. (1) BMC Management Port
4.. (1) Serial Port (If DB9 connector interface is required, a RJ45 to DB9 cable is needed)
5. (2) 1GbE on borad NIC
6. (2) USB 3.0 Ports
7. (1) VGA Port
8. (2) 800W Platinum Hot Plug Redundant Power Supply

Overview



Internal View

1.	10 SFF hard drive bays	5	(24) DDR4 DIMMs
2.	(1) SAS or NVMe upgrade kit (optional)	6.	(1) ASPEED 2500 BMC
3	(7+1) N+1 Redundant no hot plug Fans	7	(2) PCIe Riser from Processors
4	(2) Intel® Xeon® Processors Scalable Family Processors	8	(2) 800W Platinum Hot Plug Redundant Power Supply

Standard Features

Processor

Processors - Up to 2 of the following

NOTE: For more information regarding Intel Xeon Processors, please see the following **http://www.intel.com/xeon**.

NOTE: Up to 2 Processors supported. Mixing different Processor models is not supported.

Intel® Xeon® Processor Scalable Family

Gold Processors

Intel Xeon Models	CPU Frequency	Cores	L3 Cache	Power	UPI	DDR4	Mamey per socket
Gold 6152 Processor	2.1 GHz	22	30.25MB	140W	3 @ 10.4 GT/s	2666 MT/s	768GB
Gold 6148 Processor	2.4 GHz	20	27.50MB	150W	3 @ 10.4 GT/s	2666 MT/s	768GB
Gold 6144 Processor	3.5 GHz	8	24.75MB	150W	3 @ 10.4 GT/s	2666 MT/s	768GB
Gold 6142 Processor	2.6 GHz	16	22.00MB	150W	3 @ 10.4 GT/s	2666 MT/s	768GB
Gold 6140 Processor	2.3 GHz	18	24.75MB	140W	3 @ 10.4 GT/s	2666 MT/s	768GB
Gold 6138 Processor	2.0 GHz	20	27.50MB	125W	3 @ 10.4 GT/s	2666 MT/s	768GB
Gold 6136 Processor	3.0 GHz	12	24.75MB	150W	3 @ 10.4 GT/s	2666 MT/s	768GB
Gold 6134 Processor	3.2 GHz	8	24.75MB	130W	3 @ 10.4 GT/s	2666 MT/s	768GB
Gold 6130 Processor	2.1 GHz	16	22.00MB	125W	3 @ 10.4 GT/s	2666 MT/s	768GB
Gold 6128 Processor	3.4 GHz	6	19.25MB	115W	3 @ 10.4 GT/s	2666 MT/s	768GB
Gold 6126 Processor	2.6 GHz	12	19.25MB	125W	3 @ 10.4 GT/s	2666 MT/s	768GB
Gold 5122 Processor	3.6 GHz	4	16.50MB	105W	2 @ 10.4 GT/s	2666 MT/s	768GB
Gold 5120 Processor	2.2 GHz	14	19.25MB	105W	2 @ 10.4 GT/s	2400 MT/s	768GB
Gold 5118 Processor	2.3 GHz	12	16.50MB	105W	2 @ 10.4 GT/s	2400 MT/s	768GB
Gold 5115 Processor	2.4 GHz	10	13.75MB	85W	2 @ 10.4 GT/s	2400 MT/s	768GB

NOTE: Gold - 5100, 6100 Series - 2 Socket supports 2UPI, supports 6-Channel DDR4 @ 2400 MHz (SKU 5122=supports 2666) providing up to 768GB memory capacity (1.5 TB on select skus). Intel 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.

Standard Features

Silver Processors							
Intel Xeon Models	**CPU Frequency**	**Cores**	**L3 Cache**	**Power**	**UPI**	**DDR4**	**Mamery per socket**
Silver 4116 Processor	2.1 GHz	12	16.50MB	85W	2 @ 9.6 GT/s	2400 MT/s	768GB
Silver 4114 Processor	2.2 GHz	10	13.75MB	85W	2 @ 9.6 GT/s	2400 MT/s	768GB
Silver 4112 Processor	2.6 GHz	4	8.25MB	85W	2 @ 9.6 GT/s	2400 MT/s	768GB
Silver 4110 Processor	2.1 GHz	8	11.00MB	85W	2 @ 9.6 GT/s	2400 MT/s	768GB
Silver 4108 Processor	1.8 GHz	8	11.00MB	85W	2 @ 9.6 GT/s	2400 MT/s	768GB

NOTE: Silver - 4100 Series - 2 Socket supports 2UPI @ 9.6 GT/s, 6-Channel DDR4 @ 2400 MHz providing up to 768 GB memory capacity. Intel Turbo Boost Technology, Intel Hyper-Threading Technology, Intel AVX-512(1x 512-bit FMA), 48 lanes PCIe 3.0, standard RAS supported.

Bronze Processors							
Intel Xeon Models	**CPU Frequency**	**Cores**	**L3 Cache**	**Power**	**UPI**	**DDR4**	**Mamery per socket**
Bronze 3106 Processor	1.7 GHz	8	11.00MB	85W	2 @ 9.6 GT/s	2133 MT/s	768GB
Bronze 3104 Processor	1.7 GHz	6	8.25MB	85W	2 @ 9.6 GT/s	2133 MT/s	768GB

NOTE: Bronze - 3100 Series - 2 Socket supports 2UPI @ 9.6 GT/s, supports 6-Channel DDR4 @ 2133 MHz providing up to 768GB memory capacity. Intel AVX-512(1x 512-bit FMA), 48 lanes PCIe 3.0, standard RAS supported.

Chipset
Intel® C621 Chipset
NOTE: For more information regarding Intel chipsets, please see the following URL: **http://www.intel.com/products/server/chipsets/**.

On System Management Chipset
iBMC ASPEED AST2500 with KVM Support

Memory
Industry Standard DDR4 Registered (RDIMM) and Load Reduced (LRDIMM)

DIMM Slots Available	24	(12 DIMM slots per Processor, 6 channels per Processor, 2 DIMMs per channel)
Maximum Capacity (LRDIMM)	1.5TB	24 x 64 GB LRDIMM @ 2666 MHz
Maximum Capacity (RDIMM)	768 GB	24 x 32 GB RDIMM @ 2666 MHz

Memory Protection
Memory Static Virtual Lockstep
Memory Mirror: Set entire 1LM/2LM memory in system to be mirrored, consequently reducing the memory capacity by half.
Memory Rank Sparing
Memory Correctable Error Threshold: Use for sparing, tagging, and leaky bucket
Memory SDDC Plus One

Standard Features

Expansion Slots

Expansion Slots #	Technology	Bus Width	Connector Width	Form Factor	Notes
Slot 1	PCIe 3.0	x16	x16	FHHL	Processor 0
OCP Mezz 1	PCIe 3.0	X16	X16	OCP Mezz Type 1	Processor 0, OCP Mezz 2.0
Slot 2	PCIe 3.0	x16	x16	FHHL	Processor 1
	PCIe 3.0	x8	x8	OCP Mezz	Processor 1, OCP Mezz 2.0

NOTE: All risers are included. Expansion slot will only be available if the processor is installed.
NOTE: Bus Width data indicates the number of physical electrical lanes running to the connector.

Storage Controllers

HPE CL LSI MegaRAID SAS 1G 9361-8i Kit
HPE CL LSI 9305-16i SAS HBA Card Kit
HPE CL LSI 9361-16i W Cache CVPM02 Kit
HPE CL Broadcom 9400-8i Tri-Mode Host Bus Adapter
HPE CL Broadcom 9400-16i Tri-Mode Host Bus Adapter
HPE CL Broadcom 9460-8i 2G with CVPM05 Tri-Mode RAID Controller
HPE CL Broadcom 9460-16i 4G with CVPM05 Tri-Mode RAID Controller

Internal Storage Devices

Optical Drive	None
Hard Drives	None ship standard, all drive carriers included
Drive Bays	10 SFF drives Optional 4 internal PCIe M.2 via PCIe card

Maximum Internal Storage

	Capacity	Configurations
Hot Plug SFF SAS	24TB	10x 2.4TB
Hot Plug SFF SATA SSD	38.4 TB	10x 3.84TB
Hot Plug SFF NVMe PCIe SSD	8TB	2x 4TB (with optional 8x front SAS/SATA drives and 2 front SFF NVMe drive)

Power Supply

(2) HPE CL2100 Gen10 800W Redundant Power Supply Unit

System Fans

7 N+1 Redundant Fans, non hot-swap

Interfaces

Video	1
Serial Port	1 (If DB9 connector interface is required, a RJ45 to DB9 cable is needed)
Network ports	2x 1GbE , OCP NIC ports 1 x OCP 2.0 Mezzanine Type 1 Card
IPMI management port	dedicated 1GbE LAN port
USB 3.0 Ports	Up to 3 total: 2 rear, 1 front

Standard Features

Operating Systems
Windows Server 2012 R2
Windows Server 2016
Red Hat Enterprise Linux 6.9
Red Hat Enterprise Linux 7.3, 7.4
SLES 11 SP4
SLES 12 SP2, SP3
VMware vSphere 6.0 U3
VMware vSphere 6.5 U1
NOTE: Tested for successful installation only, No Operating Systems certification done unless indicated.

Industry Standard Compliance
ACPI 6.1
PCIe 3.0
PXE Support
WOL Support
USB 3.0 Support
UEFI 2.5 Support
Redfish API Support
IPMI Support

Graphics
Integrated PCIe VGA/2D Controller via ASPEED 2500 BMC, 1920 x 1200 @ 60Hz (32 bpp)

Form Factor
1U Rack form factor
1.7" (4.3cm) Height x 17" (43.2cm) Width x 26.5" (67.4cm) Length

Security
Power-on password
Administrator's password
TPM 2.0 (Optional)
Secure Boot

Warranty
Hardware support is available for 3 years from date of purchase. Support for software and initial setup is available for 90 days from date of purchase. Hard drives have either a one year or three year warranty; refer to the HPE Cloudline Servers and Options Global Limited Warranty and Technical Support for details.
NOTE: Server Warranty includes 3 Years Parts with five (5) days response time, 0 Years Labor, and 0 Years Onsite Support. Additional information regarding worldwide limited warranty and technical support is available at
http://www.hpe.com/support/cloudline_warranty_en.
Response time: Response times are based on local standard business days and working hours. Unless otherwise stated, all responses are measured from the time the customer calls until Hewlett Packard Enterprise has either established a mutually acceptable time for support to be performed, or Hewlett Packard Enterprise has begun to provide support or remote diagnostics. Response time is based on commercially reasonable effort. In some countries and under certain supplier constraints, response time may vary. If your location is outside the customary service zone, response time may be longer or there may be an additional charge. Contact your local Hewlett Packard Enterprise service organization for response time availability in your area.

Service and Support

Protect your business beyond warranty with HPE Pointnext operational services

HPE Cloudline Support Services provide remote diagnosis and support, scheduled onsite hardware repair/troubleshooting, and coverage for replacement components, including defective media retention (DMR). With HPE Cloudline Support Services, you can purchase the services that meet your specific needs.

- HPE 2100 Parts + Remote Technical Support + Defective Media Retention
- HPE 2100 Parts + Remote Technical Support + Onsite Labor
- HPE 2100 Parts + Remote Technical Support + Onsite Labor + Defective Media Retention

Additional information regarding HPE packaged support services for Cloudline servers is available at:
https://h20195.www2.hpe.com/v2/GetPDF.aspx/4AA5-9207ENN.pdf.

Standard Support recommendation

Connect to Hewlett Packard Enterprise for faster problem resolution. Cloudline Carepack Services provides hardware onsite response. Simplify your support experience and make Hewlett Packard Enterprise your first call for hardware or software questions.

Parts and Materials

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

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

The defective media retention service feature option applies only to Disk or eligible SSD/Flash Drives replaced by HPE due to malfunction.

Datacenter Care for Hyperscale

DC for Hyperscale is available for Service Providers and HPC customers who use a scale out approach to computing with a high volume homogenous infrastructure and resilient architecture. Customers can take advantage of this environment support tailored to their operating model. More information at **https://h20195.www2.hpe.com/v2/GetPDF.aspx/4AA6-3460ENW.pdf**.

Spares Management Service

Provides customers with spare parts inventory for onsite stocking, and access to the HPE Spares Management Tool – an automated inventory management tool that helps enable real-time inventory management. More information at **https://h20195.www2.hpe.com/v2/GetPDF.aspx/4AA1-3116ENW.pdf**.

Advisory & Transformational Services

Design, strategy, road map, and other services to help enable the digital transformation journey, tuned to IT and business needs. Advisory Services helps customers on their journey to Hybrid IT, Big Data, and the Intelligent Edge. More information at **https://www.hpe.com/us/en/services/consulting.html**.

Lifecycle Event Services

Operational offerings to improve performance and securely handle retirement of customers' IT environments. More information at **https://h20195.www2.hpe.com/v2/GetPDF.aspx/5981-8521ENE.pdf**.

- Operate & Improve performance, minimize risk of downtime, and reduce security risks.
- Retire & Sanitize to safely and securely dispose of retired IT, and ensuring customer data cannot be compromised.

Professional Services

Integrate the new solution with project management, installation and startup, relocation services, and more. We help mitigate risk to the business so there is no interruption when new technology is being integrated in the existing IT environment. More information at **https://www.hpe.com/us/en/services/professional.html**.

Configuration Information

This section lists some of the steps required to configure a Factory Integrated Model. To ensure only valid configurations are ordered, Hewlett Packard Enterprise recommends the use of a Hewlett Packard Enterprise approved configurator. Contact your local sales representative for information on configurable product offerings and requirements.

1. Factory Integrated Models must start with a CTO Server.
2. FIO indicates that this option is only available as a factory installable option.
3. All Factory Integrated Models will be populated with sufficient hard drive blanks
4. Some options may not be integrated at the factory. Contact your local sales representative for additional information.

Step 1: Base Configuration (choose one of the following configurable models)

Chassis	**HPE Cloudline CL2100 Gen10 10SFF Configure-to-order Server**
SKU Number	880791-B21
Processor	2 (optional) up to 150W
DIMM Slots	24 DIMM slots for RDIMM/LRDIMM DDR4 Memory
Storage Controller	HPE CL LSI MegaRAID SAS 1G 9361-8i Kit HPE CL LSI 9305-16i SAS HBA Card Kit HPE CL LSI 9361-16i W Cache CVPM02 Kit HPE CL Broadcom 9400-8i Tri-Mode Host Bus Adapter HPE CL Broadcom 9400-16i Tri-Mode Host Bus Adapter HPE CL Broadcom 9460-8i 2G with CVPM05 Tri-Mode RAID Controller HPE CL Broadcom 9460-16i 4G with CVPM05 Tri-Mode RAID Controller
PCIe	2 PCIe 3.0 x16 for FH/HL 1 PCIe x16 Gen3 / OCP Mezzanine Type1 card slot for NIC
Drive Cage	10 SFF Hot Plug (include 2 tri mode for SAS/SATA/NVMe)
Network Controller	2 x 1GbE LOM / 1 x OCP mezzanine slot/PCIe 3.0
Fans	7 N+1 redundant, non-hot plug fans
Management	ASPEED AST2500, IPMI v2.0 compliant, KVM over IP, virtual media, Redfish API
Power Supply	2x 800W Platinum Redundant Hot Plug PSU (Included)
USB	3 USB Ports; 1 front (USB 3.0) / 2 rear (USB3.0)
Other	Standard rail kit included

NOTE: Embedded SATA 3.0 only support in Windows OS

Step 2: Choose Required Options (only one of the following from each list unless otherwise noted)

HPE Processor

Gold Processors – In stock

HPE CL Intel Xeon-Gold 6140 (2.3GHz/18-core/140W) FIO Processor Kit	P01904-L21
HPE CL Intel Xeon-Gold 6138 (2.0GHz/20-core/125W) FIO Processor Kit	P01903-L21
HPE CL Intel Xeon-Gold 6134 (3.2GHz/8-core/130W) FIO Processor Kit	P01906-L21
HPE CL Intel Xeon-Gold 6130 (2.1GHz/16-core/125W) FIO Processor Kit	P01902-L21
HPE CL Intel Xeon-Gold 6128 (3.4GHz/6-core/115W) FIO Processor Kit	P01742-L21
HPE CL Intel Xeon-Gold 5122 (3.6GHz/4-core/105W) FIO Processor Kit	P01741-L21
HPE CL Intel Xeon-Gold 5120 (2.2GHz/14-core/105W) FIO Processor Kit	P01901-L21
HPE CL Intel Xeon-Gold 5115 (2.4GHz/10-core/105W) FIO Processor Kit	P01795-L21

Silver Processors – In stock

HPE CL Intel Xeon-Silver 4112 (2.6GHz/4-core/85W) FIO Processor Kit	P01794-L21
HPE CL Intel Xeon-Silver 4110 (2.1GHz/8-core/85W) FIO Processor Kit	P01897-L21
HPE CL Intel Xeon-Silver 4108 (1.8GHz/8-core/85W) FIO Processor Kit	P01896-L21

Configuration Information

Bronze Processors – In stock	
HPE CL Intel Xeon-Bronze 3106 (1.7GHz/8-core/85W) FIO Processor Kit	P01895-L21
HPE CL Intel Xeon-Bronze 3104 (1.7GHz/6-core/85W) FIO Processor Kit	P01894-L21
Gold Processors – Add manufacturers' lead time	
HPE CL Intel Xeon-Gold 6152 (2.1GHz/22-core/140W) FIO Processor Kit	P01905-L21
HPE CL Intel Xeon-Gold 6148 (2.4GHz/20-core/150W) FIO Processor Kit	P01747-L21
HPE CL Intel Xeon-Gold 6144 (3.5GHz/8-core/150W) FIO Processor Kit	P01743-L21
HPE CL Intel Xeon-Gold 6142 (2.6GHz/16-core/150W) FIO Processor Kit	P01746-L21
HPE CL Intel Xeon-Gold 6136 (3.0GHz/12-core/150W) FIO Processor Kit	P01745-L21
HPE CL Intel Xeon-Gold 6126 (2.6GHz/12-core/125W) FIO Processor Kit	P01744-L21
HPE CL Intel Xeon-Gold 5118 (2.3GHz/12-core/105W) FIO Processor Kit	P01900-L21
Silver Processors – Add manufacturers' lead time	
HPE CL Intel Xeon-Silver 4116 (2.1GHz/12-core/85W) FIO Processor Kit	P01899-L21
HPE CL Intel Xeon-Silver 4114 (2.2GHz/10-core/85W) FIO Processor Kit	P01898-L21

HPE Memory	
HPE CL 16GB (1x16GB) Single Rank x8 DDR4-2666 CAS-19-19-19 Registered Memory FIO Kit	881067-B21
HPE CL 32GB (1x32GB) Dual Rank x4 DDR4-2666 CAS-19-19-19 Registered Memory FIO Kit	880841-B21
HPE CL 64GB (1x64GB) Quad Rank x4 DDR4-2666 CAS-19-19-19 Load Reduced Memory FIO Kit	880842-B21

NOTE: Select one or more memory. A minimum of two memory kits are required if server is configured with two Processors.
NOTE: If only one Processor is installed, only half of the total DIMM slots are available. When populating with two Processors, all DIMM slots are available.
NOTE: Depending on the memory configuration and Processor model, the memory speed may run at different speeds.

HPE Power Supplies	
800W 80 Plus Platinum Hot Plug Redundant Power Supplies	2x Included

Step 3: Choose Additional Options

NOTE: Some options may not be integrated at the factory. To ensure only valid configurations are ordered, Hewlett Packard Enterprise recommends the use of a Hewlett Packard Enterprise approved configurator. Contact your local sales representative for additional information.

HPE Storage Controllers	
SAS Array Controllers 12Gb/s	
HPE CL LSI MegaRAID SAS 1G 9361-8i Kit	859912-B21
HPE CL LSI 9361-16i W Cache CVPM02 Kit	857143-B21
HPE CL Broadcom 9460-8i 2G with CVPM05 Tri-Mode RAID Controller	P01726-B21
HPE CL Broadcom 9460-16i 4G with CVPM05 Tri-Mode RAID Controller	P01727-B21
SAS Host Bus Adapters 12Gb/s	
HPE CL LSI 9305-16i SAS HBA Card Kit	862627-B21
HPE CL Broadcom 9400-8i Tri-Mode Host Bus Adapter	880862-B21
HPE CL Broadcom 9400-16i Tri-Mode Host Bus Adapter	880861-B21
Other Storage Controller options	
HPE CL2100 Gen10 Supercap Clip FIO Kit	P08817-B21

Configuration Information

HPE Memory

HPE CL 16GB (1x16GB) Single Rank x8 DDR4-2666 CAS-19-19-19 Registered Memory FIO Kit	881067-B21
HPE CL 32GB (1x32GB) Dual Rank x4 DDR4-2666 CAS-19-19-19 Registered Memory FIO Kit	880841-B21
HPE CL 64GB (1x64GB) Quad Rank x4 DDR4-2666 CAS-19-19-19 Load Reduced Memory FIO Kit	880842-B21

NOTE: Select one or more memory. A minimum of two memory kits are required if server is configured with two processors.
NOTE: If only one processor is installed, only half of the total DIMM slots are available. When populating with two processors, all DIMM slots are available.
NOTE: Depending on the memory configuration and processor model, the memory speed may run at different speeds.

HPE Storage Devices

Hot Plug SFF (2.5-inch) 12Gb/s HDD – In stock

HPE CL 1.2TB 12G SAS 10K rpm SFF (2.5in) Enterprise Hard Drive	848505-B21
HPE CL 2.4TB 12G SAS 10K rpm SFF (2.5in) Seagate Enterprise Hard Drive	880853-B21
HPE CL 300GB 12G SAS 15K rpm SFF (2.5in) Seagate Hard Drive	P01660-B21

Hot Plug SFF (2.5-inch) SATA SSD – In stock

HPE CL 240GB SATA 6G Read Intensive SFF (2.5in) Intel S4510 FIO SSD	P08796-B21
HPE CL 480GB 6G SATA Read Intensive SFF (2.5in) Intel S4500SE Solid State Drive Kit	P01678-B21
HPE CL 960GB 6G SATA Read Intensive SFF (2.5in) Intel S4500SE Solid State Drive Kit	P01679-B21
HPE CL 3.84TB 6G SATA Read Intensive SFF (2.5in) Intel S4500SE Solid State Drive Kit	880860-B21
HPE CL 1.92TB 6G SATA Mixed Use SFF (2.5in) Intel S4600 Solid State Drive Kit	P01687-B21
HPE CL 1.92TB 6G SATA Mixed Use SFF (2.5in) Samsung SM863a 3yr Wty Solid State Drive Kit	880848-B21

Hot Plug SFF (2.5-inch) NVMe SSD – In stock

HPE CL 1TB NVMe Read Intensive SFF (2.5in) x 15mm Intel P4500 Solid State Drive Kit	880844-B21
HPE CL 2TB NVMe Read Intensive SFF (2.5in) x 15mm Intel P4500 FIO Solid State Drive Kit	880845-B21
HPE CL 4TB NVMe x4 Lanes Read Intensive SFF (2.5in) Intel P4500 FIO SSD	880858-B21
HPE CL 1TB NVMe Read Intensive SFF (2.5in) x 7mm Intel P4501 Solid State Drive Kit	P01672-B21
HPE CL 2TB NVMe Read Intensive SFF (2.5in) x 7mm Intel P4501 Solid State Drive Kit	P01673-B21
HPE CL 1.92TB NVMe Read Intensive SFF (2.5in) x 7mm Samsung PM963 3yr Wty Solid State Drive Kit	880846-B21
HPE CL 3.84TB NVMe Read Intensive SFF (2.5in) x 7mm Samsung PM963 Solid State Drive Kit	P01675-B21
HPE CL 3.2TB NVMe Mixed Use SFF (2.5in) x 15mm Samsung PM1725a Solid State Drive Kit	P00252-B21

Hot Plug SFF (2.5-inch) HDD 12Gb/s – Add manufacturers' lead time

HPE CL 600GB 12G SAS 10K rpm SFF (2.5in) Enterprise Hard Drive	848513-B21

Hot Plug SFF (2.5-inch) SATA SSD – Add manufacturers' lead time

HPE CL 960GB 6G SATA Mixed Use SFF (2.5in) Intel S4600 Solid State Drive Kit	P01685-B21
HPE CL 960GB 6G SATA Mixed Use SFF (2.5in) Micron 5100 Solid State Drive Kit	P01686-B21
HPE CL 3.84TB 6G SATA Read Intensive SFF (2.5in) Micron 5100 Solid State Drive Kit	P01681-B21

Hot Plug SFF (2.5-inch) NVMe SSD – Add manufacturers' lead time

HPE CL 3.2TB NVMe Mixed Use SFF (2.5in) x 15mm Intel P4600 Solid State Drive Kit	880859-B21
HPE CL 4TB NVMe Read Intensive SFF (2.5in) x 7mm Intel P4501 Solid State Drive Kit	P01674-B21

HPE M.2 Drives

HPE CL 256GB NVMe Read Intensive M.2 2280 Intel P3100 Solid State Drive Kit	P01661-B21

NOTE: HPE CL Rack M.2 Enablement FIO Kit P01491-B21 is required

Configuration Information

HPE Networking

OCP Mezzanine Adapters – In stock	
HPE CL Ethernet 10GBASE-T 2-port Q41132 OCP FIO Adapter	P08547-B21
HPE CL Ethernet 25Gb 2-port SFP28 Mellanox ConnectX-4 Lx OCP Mezzanine Adapter	847936-B21
HPE CL Ethernet 50Gb 1-port SFP28 Mellanox ConnectX-4 Lx OCP FIO Mezzanine Adapter	880843-B21
HPE CL Ethernet 25Gb 2-port SFP28 Intel XXV710-D1 OCP FIO Mezzanine Adapter	880149-B21
PCIe Ethernet Adapters – In stock	
HPE CL Ethernet 10Gb 2-port Base-T Q41112 PCIe FIO Adapter	P08550-B21
HPE CL Ethernet 10GBASE-T 2-port Intel X550 PCIe 3.0 Card	P01665-B21
HPE CL Ethernet 10Gb 2-port SFP+ Intel X710 PCIe 3.0 Card	P01666-B21
HPE CL Ethernet 25Gb 1-port SFP28 Intel XXV710 PCIe 3.0 Card	P01667-B21
HPE CL Ethernet 50Gb 2-port SFP28 Mellanox ConnectX-5 Single Host PCIe 3.0 Card	P01671-B21
OCP Mezzanine Adapters – Add manufacturers' lead time	
HPE CL Ethernet 10Gb 2-port Cavium Q41132 OCP Mezzanine Adapter	P01663-B21
HPE CL Ethernet 25Gb 2-port Cavium Q41232 OCP Mezzanine Adapter	P01664-B21
HPE CL Ethernet 25Gb 1-port SFP28 Intel XXV710-D1 OCP FIO Mezzanine Adapter	880148-B21
PCIe Ethernet Adapters – Add manufactures' lead time	
HPE CL Ethernet 10Gb 2-port Cavium Q41132 PCIe 3.0 Card	P01668-B21
HPE CL Ethernet 25Gb 2-port Cavium Q41212 PCIe 3.0 Card	P01669-B21
HPE CL Ethernet 25Gb 2-port SFP28 Mellanox ConnectX-4 Single Host PCIe 3.0 Card	P01670-B21
HPE CL Ethernet 100Gb 1-port QSFP28 Mellanox ConnectX-5 EN PCIe3 FIO Card	880150-B21

Other Options

HPE CL Rack M.2 FIO Enablement Kit	P01491-B21
HPE CL Rack Trusted Platform Module 2.0 FIO Kit	P01729-B21
HPE CL2100 Gen10 SAS FIO Enablement Kit	P01489-B21
HPE CL2100 Gen10 NVMe FIO Enablement Kit	P01490-B21

Additional Options

HPE Cloudline Support Services

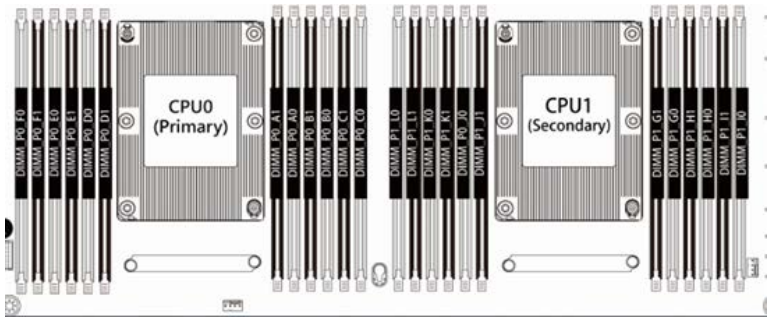
HPE Cloudline Parts + Remote Technical Support with DMR	H2NA8A3#WGB
HPE Cloudline Parts + Onsite Labor + Remote Technical Support	H0HF0A3#WGB
HPE Cloudline Parts + Onsite Labor + Remote Technical Support with DMR	H2NA9A3#WGB

Memory

Memory Subsystem Architecture

Each Intel® Xeon® Processor Scalable Family socket contains four memory channels per installed Processor with two DIMM per channel for a total of twelve (12) DIMMs or a grand total of twenty four (24) DIMMs for the server.

Memory Population guidelines



General Memory Population Rules and Guidelines

Install DIMMs only if the corresponding Processor is installed.
If only one Processor is installed in a two Processor system, only half of the DIMM slots are available.
To maximize performance, it is recommended to balance the total memory capacity between all installed Processors and load the channels similarly whenever possible.
When two Processors are installed, balance the DIMMs across the two Processors.
DIMMs of different speeds may be mixed in any order; the server will select a common optimal speed. The maximum memory speed is a function of the memory type, memory configuration, and Processor model.
The maximum memory capacity is a function of the memory type and number of installed Processors.

DIMM slot and configuration order

DIMM Slot #	1 DIMM	2 DIMM	3 DIMM	4 DIMM	5 DIMM	6 DIMM	7 DIMM	8 DIMM	9 DIMM	10 DIMM	11 DIMM	12 DIMM
DIMM_P0_A0	1	1	1	1	1	1	1	1	1	1	1	1
DIMM_P0_A1							7	7	7	7	7	7
DIMM_P0_B0		2	2	2	2	2	2	2	2	2	2	2
DIMM_P0_B1								8	8	8	8	8
DIMM_P0_C0			3	3	3	3	3	3	3	3	3	3
DIMM_P0_C1									9	9	9	9
DIMM_P0_D0				4	4	4	4	4	4	4	4	4
DIMM_P0_D1										10	10	10
DIMM_P0_E0					5	5	5	5	5	5	5	5
DIMM_P0_E1											11	11
DIMM_P0_F0						6	6	6	6	6	6	6
DIMM_P0_F1												12

Memory

Memory Bandwidth and Capacity

Type	Rank Per DIMM and Data Width	DIMM Capacity (GB)		Speed (MT/s); Voltage (V); Slots per Channel (SPC) & DIMMs per Channel (DPC)	
		DRAM Density		1DPC	2DPC
		4Gb	8Gb	1.2V	1.2V
RDIMM	SRx4	8GB	16GB	2666	2666
RDIMM	SRx8	4GB	8GB		
RDIMM	DRx8	8GB	16GB		
RDIMM	DRx4	16GB	32GB		
RDIMM 3DS	QRx4	N/A	2H-64GB		
	8Rx4	N/A	4H-128GB		
LRDIMM	QRx4	32GB	64GB		
LRDIMM 3DS	QRx4	N/A	2H-64GB		
	8Rx4	N/A	4H-128GB		

Memory Speed by Processor Models

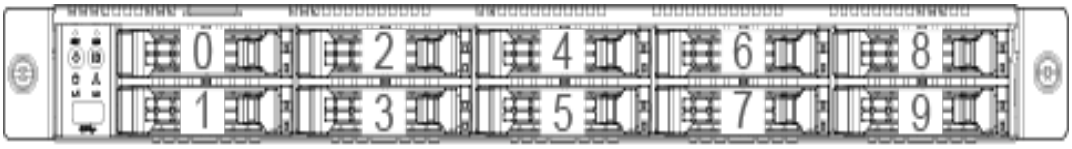
Processor Models	Supported Memory Speeds
Intel® Xeon® Processor Scalable Family Broze Series , Silver Series and Gold Series	2666MHz

NOTE: Capacity references are rounded to the common gigabyte (GB) values.

- 8GB = 8,192MB
- 16GB = 16,384MB
- 32GB = 32,768MB

Hard Drives

Front View HPE Cloudline CL2100 Gen10 Server



10 x SFF Hot Pluggable Hard Drive Bays (Include 2 optional Tri mode SAS/SATA/NVMe, Number 8 and 9)

Technical Specifications

System Unit		
Dimensions (H x W x D)	1.71" x 17.24" x 28.62" (34 cm x43.78 cm x72.69 cm)	
Weight (approximate)	Maximum: (all hard drives, power supplies, and Processors installed)	10SFF 30.75 lb (13.95 kg)
	Minimum: (one hard drive, power supply, and Processor installed)	10SFF 25.35 lb (11.5 kg)
Input Requirements	Rated Line Voltage	100 - 127Vac / 200 - 240Vac
	Rated Input Current	7A – 12A
	Rated Input Frequency	50 - 60Hz
	Rated Output Power	1000W @ 100-127Vac 1200W @ 200-240Vac
	Rated Input Power	100 – 127V @ 1,185W 200 – 240V @ 1,345W
	Rated Line Voltage	100 – 127V/ 200 – 240V @ 3,304.29 BTU/hour
BTU Rating	Maximum	100 – 127V @ 4040.85 BTU/hour 200 – 240V @ 4586.45 BTU/hour
System Inlet Temperature	Operating	10°C to 35°C (50°F to 95°F)
	Non-operating	-30°C to 50°C (-22°F to 122°F)
	NOTE: All temperature ratings shown are for sea level. An altitude derating of 1°C per 304.8 m (1.8°F per 1,000 ft) to 3048 m (10,000 ft) is applicable. No direct sunlight allowed. **NOTE:** System performance during standard operating support may be reduced if operating with a fan fault or above 30°C (86°F).	
Relative Humidity	Operating	10% to 80% relative humidity (Rh)
	Non-operating	20% to 95% relative humidity (Rh)
	NOTE: Storage maximum humidity of 95% is based on a maximum temperature of 45°C (113°F). Altitude maximum for storage corresponds to a pressure minimum of 70 KPa.	
Altitude	Operating	3050 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
	Non-operating	9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min).

Environment friendly Products and Approach

End-of-life Management and Recycling

Hewlett Packard Enterprise offers end-of-life Hewlett Packard Enterprise product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to: **http://www.hpe.com/recycle**. To recycle your product, please go to: **http://www.hpe.com/recycle** or contact your nearest Hewlett Packard Enterprise sales office. Products returned to Hewlett Packard Enterprise will be recycled, recovered or disposed of in a responsible manner.

The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard Enterprise web site at: **http://www.hpe.com/recycle**.

These instructions may be used by recyclers and other WEEE treatment facilities as well as Hewlett Packard Enterprise OEM customers who integrate and re-sell Hewlett Packard Enterprise equipment.

Summary of Changes

Date	Version History	Action	Description of Change
03-Dec-2018	Version 6	Changed	Standard Features and Configuration Information sections were updated
01-Oct-2018	Version 5	Changed	.Overview, Standard Features, Service and Support, Configuration information and Technical Specifications sections were updated.
04-Jun-2018	Version 4	Updated	Updates madre troughout the QuickSpecs
02-Apr-2018	Version 3	Updated	Add 880149-B21 / 880858-B21/ Correct Inlet Temperature information
05-Feb-2018	Version 2	Updated	Update the whole document and its sections.
04-Dec-2017	Version 1	Created	Create QuickSpecs for HPE Cloudline CL2100 Gen10 Server

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