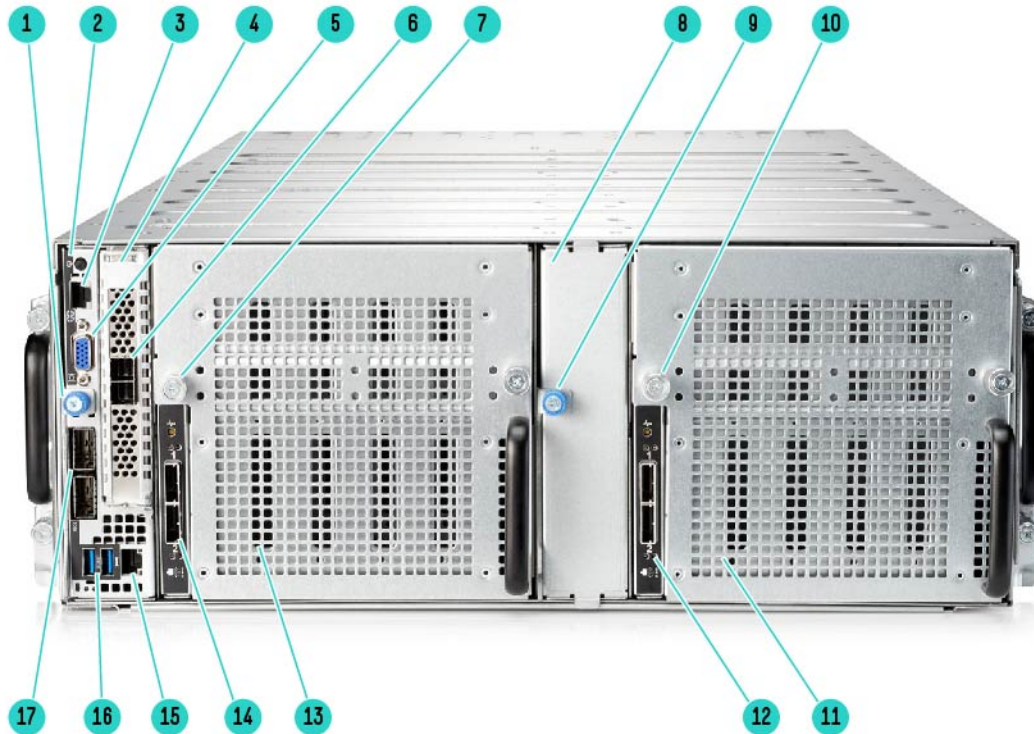


Overview

HPE Cloudline CL5200 Gen9 Server

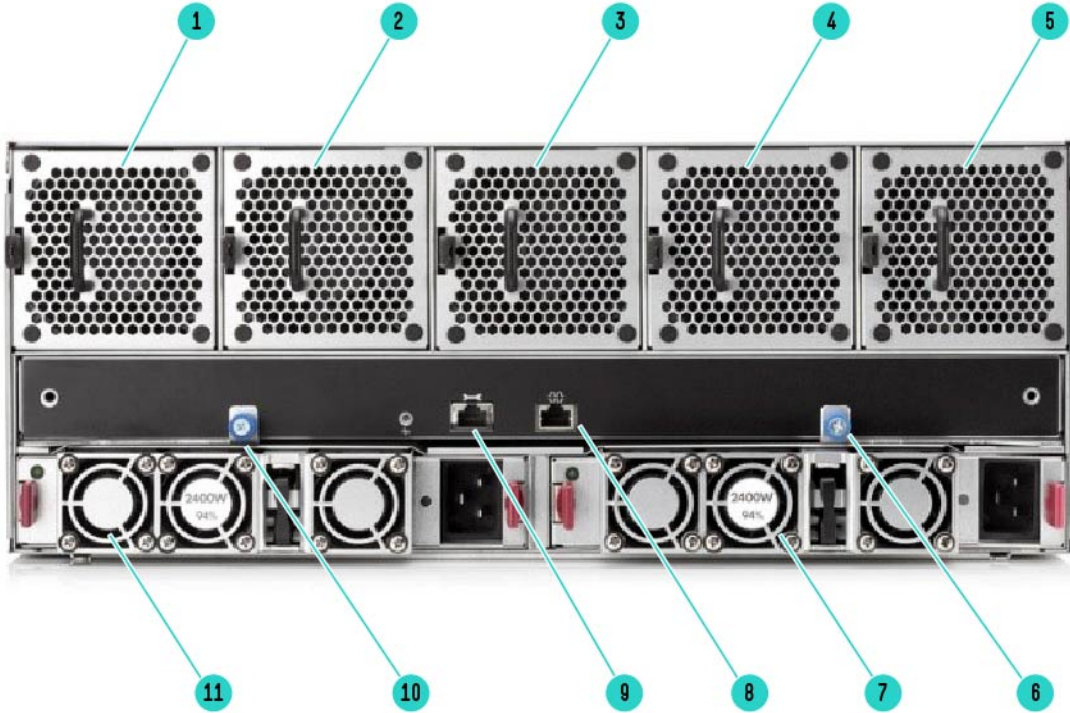
The HPE Cloudline CL5200 Gen9 Server is a 4U open-standards based storage server that is purpose built for cold storage, object storage, and data analytics applications. Supporting one or two compute nodes and up to 80 Large Form Factor (LFF) drives in a 4U form factor.



HPE Cloudline CL5200 Gen9 Server - Front View

- | | |
|--|---------------------------------|
| 1. Compute Node 1 Thumbscrew | 10. Storage Drawer 2 Thumbscrew |
| 2. Power Button | 11. Storage Drawer #2 |
| 3. Serial Port (require special cable) | 12. Storage Node 2 Port |
| 4. Compute Node #1 | 13. Storage Drawer #1 |
| 5. VGA Port | 14. Storage Node 1 Port |
| 6. HBA or RAID connector | 15. RJ45 Management port (IPMI) |
| 7. Storage Drawer 1 Thumbscrew | 16. USB3 Connector |
| 8. Compute Node #2 | 17. OCP Mezzanine Connector |
| 9. Compute Node 2 Thumbscrew | |

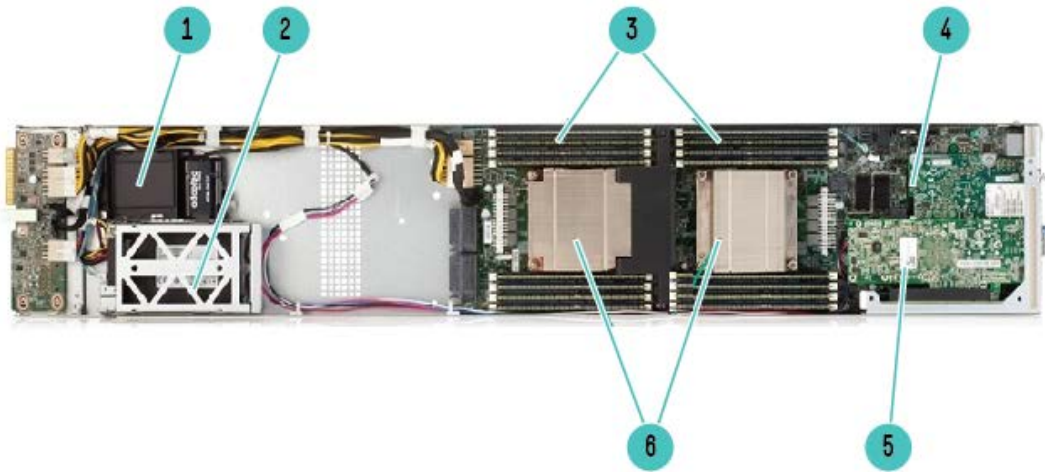
Overview



HPE Cloudline CL5200 Gen9 Server- Rear View

- | | |
|----------------------------------|-----------------------------------|
| 1. System Fan 5 | 7. Power Supply Unit 2 |
| 2. System Fan 4 | 8. RJ45 Serial Port |
| 3. System Fan 3 | 9. BMC Management Port |
| 4. System Fan 2 | 10. Fan Control Module Thumbscrew |
| 5. System Fan 1 | 11. Power Supply Unit 1 |
| 6. Fan Control Module Thumbscrew | |

Overview



HPE Cloudline CL5200 Gen9 Server- Internal View

- | | |
|----------------------------------|---|
| 1. Optional SuperCap Battery | 4. OCP form factor network mezzanine card |
| 2. (2) Small form factor HDD/SSD | 5. PCI-E x16 HBA/RAID Adapter |
| 3. (16) DDR-4 Memory Sockets | 6. (2) Intel Xeon E5 2600 Series CPUs |
-

Standard Features

Processor

One of the following depending on model

NOTE: For more information regarding Intel Xeon processors, please see the

following <http://www.intel.com/content/www/us/en/processors/xeon/xeon-processor-e5-family.html>

Intel® Xeon® processor E5-2600 v4 product family is designed to deliver the best combination of performance, built-in capabilities, and cost-effectiveness. One (or two) of the following Intel® Xeon® E5-2600 v4 processors based on the model.

Model	CPU frequency	Cores	L3 Cache	TDP	QPI	DDR4 Maximum Speed
E5-2620v4	2.1GHz	8	20MB	85W	8.0GT/s	2133 MT/s
E5-2630v4	2.2GHz	10	25MB	85W	8.0GT/s	2133 MT/s
E5-2640v4	2.4GHz	10	25MB	90W	8.0GT/s	2133 MT/s
E5-2650v4	2.2GHz	12	30MB	105W	9.6GT/s	2400 MT/s
E5-2680v4	2.4GHz	14	35MB	120W	9.6GT/s	2400 MT/s
E5-2695v4	2.1GHz	18	45MB	120W	9.6GT/s	2400 MT/s

Chipset

One of the following depending on model

Intel® C610 Series Chipset

Intel® E5-2600 v4 Processor Family

NOTE: For more information regarding Intel chipsets, please see the following

<http://www.intel.com/content/www/us/en/chipsets/x99-chipset-pch-spec-update.html>

On System Management Chipset

One of the following depending on model

ASPEED 2400 with KVM Support

Memory

One of the following depending on model

Type:

Industry Standard DDR4

DDR4 Registered (RDIMM)

DIMM Slots Available 16 slots available with 2 processors (4 channels per processor, 2 DIMMs per channel)

Maximum Capacity (RDIMM) 512GB (16 x 32GB RDIMM @2400MT/s)

Memory Protection

One of the following depending on model

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.

Online spare

Memory online spare mode detects a rank that is degrading and switches operation to the spare rank.

Standard Features

Expansion Slots

PCIe riser slots

Expansion Slots #	Technology	Bus Width	Connector Width	Form Factor	Notes
1	PCIe 3.0	X16	X16	Low profile	RAID/HBA
2	PCIe 3.0	x16	x16	OCP Mezz	Networking

NOTE: Bus Width data indicates the number of physical electrical lanes running to the connector.

Power Supply

HPE CL 2400W N+N Hot Plug PSU Redundant

System Fans

5 Hot Plug redundant fans

Interfaces

Video	1 VGA Port
IPMI Management Port	1 RJ-45 Management Port
USB	2 USB ports (Standard)
Serial Port	1 RJ-45 Port

Operating Systems Test for CL Servers

Cent OS

Red Hat Enterprise Linux (RHEL)

Suse Linux Enterprise Server

Ubuntu Server

Microsoft Windows Server 2012

For more information visit <http://www.hpe.com/info/ossupport>

Upgradeability

Upgradeable to two processors (36 cores)

up to 16 DIMM slots

NOTE: To take advantage of DIMMs 9-16, a second processor must be installed.

Industry Standard Compliance

ACPI 2.0b Compliant

PCIe 3.0 Compliant

PXE Support

WOL Support

IPMI

Redfish API

UEFI

Graphics

Integrated PCIe VGA/2D Controller via ASPEED 2400 BMC

1920 x 1200 @ 60Hz (32 bpp)

Standard Features

Form Factor

4U Rack form factor

All models ship with tool-less friction rail kits

6.93" x 17.64" x 42.05" (176mm x 448mm x 1068mm)

Security

Power-on password

Serial interface control

Administrator's password

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 5200 Parts + Remote Technical Support + Defective Media Retention
- HPE 5200 Parts + Remote Technical Support + Onsite Labor
- HPE 5200 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.

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>.

Parts and Materials

Hewlett Packard Enterprise 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 Hewlett Packard Enterprise due to malfunction.

Configuration Information

Step 1: Base Configuration (Base chassis with HDD drawers)

HPE Chassis – Cloudline CL5200 Gen9

HPE CL5200 G9 PMC Enclosure CTO Svr

P03813-B21

NOTE: Standard 5 hot-plug fan module included

NOTE: Standard 2400W N+N Redundant Power Supply Included

Step 1a: Select Nodes (choose one or two of the following configurable models)

HPE Server Nodes - Cloudline CL5200 Gen9

HPE Cloudline CL5200 Gen9 SFP+ Compute Node Configure-to-order Server

P03876-B21

NOTE: P03876-B21 is for use with SFP+ or QSFP NIC

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

HPE Processors

E5-2600v4 series Processors

HPE CL G3 Intel Xeon E5-2620 v4 (2.1GHz/8-core/85W) FIO Processor Kit

848499-L21

HPE CL G3 Intel Xeon E5-2630 v4 (2.2GHz/10-core/85W) FIO Processor Kit

847822-L21

HPE CL G3 Intel Xeon E5-2640 v4 (2.4GHz/10-core/90W) FIO Processor Kit

847812-L21

HPE CL G3 Intel Xeon E5-2650 v4 (2.2GHz/12-core/105W) FIO Processor Kit

847810-L21

HPE CL G3 Intel Xeon E5-2680 v4 (2.4GHz/14-core/35MB/120W) FIO Processor Kit

847792-L21

HPE CL G3 Intel Xeon E5-2695 v4 (2.1GHz/18-core/120W) FIO Processor Kit

857635-L21

NOTE: Choose 1 or 2 processors in each node

NOTE: Mixing of 2 different processor models are NOT allowed

HPE Memory

HPE CL 16GB (1x16GB) Dual Rank x4 DDR4-2400 CAS-15-15-15 Registered Memory Kit

851005-B21

HPE CL 32GB (1x32GB) Dual Rank x4 DDR4-2400 CAS-15-15-15 Registered Memory Kit

851007-B21

HPE CL 16GB (1x16GB) Dual Rank x8 DDR4-2666 CAS-19-19-19 Registered Memory FIO Kit

P07029-B21

HPE CL 32GB (1x32GB) Dual Rank x4 DDR4-2666 CAS-19-19-19 Registered Memory FIO Kit

880841-B21

NOTE: Select one or more memory from section above. 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 16 DIMM slots are available.

NOTE: Depending on the memory configuration and processor model, the memory speed may run at 2400MT/s, 2133MT/s or 1866MT/s.

Registered DIMMs (RDIMMs) for E5-2600 v4 Series

HPE RAID Controller (Data Drives)

HPE CL PMC-ASR-8885 RAID Adapter Kit

860004-B21

HPE CL PMC-AFM-700 Super Capacitor Flash Module Device for 8885e RAID Adapter

860046-B21

HPE CL Broadcom 9300-8e SAS 12G Host Bus Adapter

851320-B21

NOTE: One RAID or HBA card must be selected per compute node. For connection to LFF data hard drives.

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.

Configuration Information

HPE Networking

HPE CL 40GbE QSFP28 Dual Port Mellanox OCP Mezzanine Adapter	847934-B21
HPE CL Ethernet 25Gb 2-port SFP28 Mellanox ConnectX-4 Lx OCP Mezzanine Adapter	847936-B21
HPE CL Ethernet 10Gb 2-port X710-DA2 SFP+ OCP FIO Adapter	P06629-B21
HPE CL Ethernet 10Gb 2-port SFP+ Intel X520 OCP Mezzanine Adapter	851279-B21

NOTE: NIC card 847934-B21 and 847936-B21 only supported under Legacy mode

NOTE: TPM 2.0 only works when UEFI is set to default

SFF (2.5-inch) SSD Drives (Boot)

HPE CL 960GB 6G SATA Read Intensive SFF (2.5in) Intel S4500SE Solid State Drive Kit	P01679-B21
HPE CL 240GB SATA 6G Read Intensive SFF (2.5in) Intel S4510 FIO SSD	P08796-B21
HPE CL 960GB SATA 6G Read Intensive SFF (2.5in) Intel S4510 FIO SSD	P08802-B21

NOTE: Select 1 or 2 boot drives per compute node

HPE Drives

Hot Plug LFF (3.5-inch) Drives (Data)

HPE CL 6TB 6G SATA 7.2K rpm LFF (3.5in) Seagate Midline Hard Drive	847820-B21
HPE CL 8TB SATA 6G Enterprise 7.2K LFF (3.5in) Seagate 512e FIO HDD	848539-B21
HPE CL 10TB 6GB SATA 7.2K rpm LFF (3.5in) HGST Midline Hard Drive Kit	860036-B21
HPE CL 10TB 6GB SATA 7.2K rpm LFF (3.5in) Seagate Midline Hard Drive Kit	860038-B21
HPE CL 14TB SATA 6G Enterprise 7.2K LFF (3.5in) Hitachi ISE 512e FIO HDD	P08759-B21

NOTE: Select up to 80 LFF data drives per chassis (20 Minimum per storage tray)

Step 3: Choose Additional for Factory Integration from Core and Additional Options sections below.

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.

Additional Options

HPE Internal SAS Cable Kit

HPE CL5200 Gen9 1080mm Internal Mini SAS High Density to 2x SATA Cable Kit

867110-B21

NOTE: This optional mini-SAS cable should be selected when the internal boot drives need to be connected to the RAID card instead of the onboard PCH. This option is only available when selecting the PMC 8885 Raid Card.

HPE Cloudline Support Services

HPE Cloudline Parts + Remote Technical Support with DMR

H2NA8A3#WGD

HPE Cloudline Parts + Onsite Labor + Remote Technical Support

H0HF0A3#WGD

HPE Cloudline Parts + Onsite Labor + Remote Technical Support with DMR

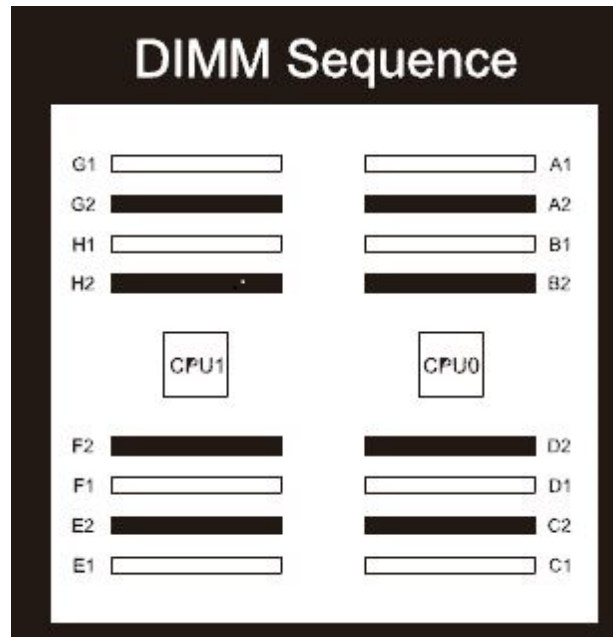
H2NA9A3#WGD

Memory

Memory Subsystem Architecture

Each Intel® Xeon® E5-2600v4 family processor socket contains four memory channels per installed processor with two DIMM per channel for a total of eight (8) DIMMs or a grand total of sixteen (16) 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.

Memory

DIMM Type	Registered Dimms (RDIMMs)
DIMM Rank	Dual Rank
DIMM Capacity	16GB, 32GB
Voltage	Standard Voltage 1.2V
16 slot servers	16
MAXIMUM CAPACITY (GB)	512
1 DIMM Per Channel	2133 MT/s or 2400 MT/s (Processor Dependent)
2 DIMM Per Channel	1866MT/s or 2133MT/s (Processor Dependent)
Processor Models	Supported Memory Speeds
E5-2620v4	2133MT/s
E5-2630v4	2133MT/s
E5-2640v4	2133MT/s
E5-2650v4	2400MT/s
E5-2680v4	2400MT/s
E5-2695v4	2400MT/s

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

- 16GB = 16384MB
- 32GB = 32768MB

Storage

Section Device Numbering:



Storage Node

Technical Specifications

System Unit

Dimensions (H x W x D)	6.93" x 17.64" x 42.05" (176mm x 448mm x 1068mm)	
Weight (approximate)	Maximum: (all hard drives, power supplies, and processors installed)	271 lbs. (122.8 kg)
Input Requirements	Rated Line Voltage	AC input: 200-240V DC input: 240V
	Rated Input Current	200-240Vac ~13.6A 240Vdc ~13.3A
	Rated Input Frequency	50/60Hz
	Rated Input Power	AC input: 2700W DC input: 2700W
BTU Rating	Maximum	8191BTU/hour at 220Vac
Power Supply Output	Rated Steady-State Power	2400W
	Maximum Peak Power	2640W
System Inlet Temperature	Standard Operating Support	10° to 35°C (50° to 95°F)
	Non-operating	-30° to 60°C.
Relative Humidity	Operating	50% to 80% relative humidity (Rh)
	Non-operating (non-condensing)	50% to 90% relative humidity (Rh)
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).

NOTE: Product conformance to cited product specifications is based on sample (type) testing, evaluation, or assessment. This product or family of products is eligible to bear the appropriate compliance logos and statements.

Summary of Changes

Date	Version History	Action	Description of Change
03-Dec-2018	Version 11	Changed	Configuration Information section was updated.
01-Oct-2018	Version 10	Changed	Configuration Information section was updated. SKU descriptions were updated. SKUs were added.
04-Sep-2018	Version 9	Changed	Overview, Standard Features and Additional Options sections were updated.,
07-May-2018	Version 8	Changed	Change product name from G3 to Gen9
23-Oct-2017	Version 7	Changed	Care Pack naming and Service and Support- Parts and Materials updated.
27-Mar-2017	Version 6	Updated	Update the pre-configured section
13-Feb-2017	Version 5	Changed	Add SATA SKUs
09-Dec-2016	Version 4	Updated	Updated commodities and corrections
06-Jun-2016	Version 3	Updated	Updated with new options for Xeon E5-2600v4
13-May-2016	Version 2	Updated	Update information for the CL5200 G3
31-Mar-2016	Version 1	New	New QuickSpecs



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Ubuntu and Canonical are registered trademarks of Canonical Ltd.
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For hard drives, 1GB = 1 billion bytes. Actual formatted capacity is less

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