Dell PowerEdge C6600 and C6620

Technical Guide

Regulatory Model: E81S
Regulatory Type: E81S001
February 2023
Rev. A00

DELL Technologies

Notes, cautions, and warnings

NOTE: A NOTE indicates important information that helps you make better use of your product.

CAUTION: A CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

WARNING: A WARNING indicates a potential for property damage, personal injury, or death.

Contents

1

System overview

The PowerEdge C6620 is Dell's latest 2-socket, 2U4N compute sled. It is designed to run complex workloads using highly scalable memory and capacity, I/O bandwidth, and network options.

The system features:

- Up to two 4th Generation Intel Xeon Scalable Processor (Socket P+LGA-4189) with optional Direct Liquid Cooling (DLC) support
- Up to 8 DDR5 DIMM slots per CPU (16 DDR5 DIMM slots per sled)
- 2x PCIe Gen5 enabled expansion slots
- Up to 16 x 2.5-inch SATA/SAS/NVMe hot-swappable hard drives or up to 8 x E3.s NVMe SSDs hard drives
- Network interface technologies to cover Network Interface Card (NIC) and OCP 3.0 Gen4 card

The PowerEdge C6620 is a general-purpose platform capable of handling demanding workloads and applications, such as data warehouses, eCommerce, databases, and high-performance computing (HPC).

WARNING: It is crucial that customers must use the Enterprise Infrastructure Planning Tool (EIPT) to determine the correct power supply size before making an order. See the EIPT webpage here for more information.

Topics:

Key workloads

The versatile C6620 is designed to address data-intensive, diverse workloads including:

- High performance computing
- Financial analysis /High frequency trading
- Hyper-performance compute

New technologies

Table 1. New technologies

Technology	Detailed Description
4th Generation Intel Xeon Scalable Processor	Core count: Up to 56 core processor
	UPI speed: Up to 16 GT/s
	Peripheral Controller Hub (PCH): Intel C741 Series Chipset
	Maximum TDP: 350 W
	High Bandwidth Memory processor — Xeon Max processor
4800 MT/s DDR5 Memory	8 x DDR5 channels per socket, 1 DIMM per channel (1DPC)
	Up to 4800 MT/s (configuration dependent)
	RDIMMs up to 256 GB supported
OCP 3.0 card	Supports standard OCP 3.0 connector with PCIe x16 bus Gen4
M.2 card	Supports M.2 SSD solution with PCIe interface. Form factor: 22 x 80 mm

Table 1. New technologies (continued)

Technology	Detailed Description
NVMe hard drives	Supports two types of hard drive backplane chassis: ● Up to 16x 2.5-inch SAS/SATA/NVMe hard drive backplane ● Up to 8x E3.s NVMe SSDs hard drive backplane
iDRAC9 w/ Lifecycle Controller	Each AMC includes iDRAC9 consistent with 15G behaviors. The embedded systems management solution for Dell Server features hardware and firmware inventory and alerting, in-depth memory alerting, faster performance, a dedicated gigabit port and many more features.

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System features and generational comparison

The following table shows the comparison between the PowerEdge C6620 with the PowerEdge C6520.

Table 2. Features comparison

Features	PowerEdge C6620	PowerEdge C6520
Processors	Up to two 4th Generation Intel Xeon Scalable processors with up to 56 cores	Up to two 3nd Generation Intel Xeon Scalable processors, up to 32 cores per processor
Memory	DIMM Speed: • Up to 4800 MT/s Memory Type: • High Bandwidth Memory • RDIMM Memory module slots: • 16 DDR5 DIMM slots • Supports registered ECC DDR5 DIMM slots only Maximum RAM: • RDIMM 4 TB	DIMM Speed: • Up to 3200 MT/s Memory Type: • RDIMM • LRDIMM Memory module slots: • 16 DDR4 DIMM slots • Supports registered ECC DDR4 DIMM slots only Maximum RAM: • RDIMM 4 TB • LRDIMM 4 TB
Storage Controllers	• Internal controllers: PERC H965i, PERC H755, HBA355, HBA355i • Internal Boot: Boot Optimized Storage Subsystem (BOSS-N1): HWRAID 2 x M.2 SSDs • Software RAID: S160	• Internal Controllers: PERC H350, PERC H345, PERC H750, PERC H745, HBA355I, and HBA345 • Internal Boot: Boot Optimized Storage Subsystem (BOSS-S1) - HWRAID 2 x M.2 SSDs 240 GB, 480 GB • Software RAID: S150
Drive Bays	The C6600 chassis supports up to: • 16 x 2.5-in SAS/SATA/NVMe (HDD/SSD) drives. • 8 x E3.s NVMe SSDs	The C6400 chassis supports up to: • 12 x 3.5-in HDDs - SAS/SATA • 24 x 2.5-in HDDs - SAS/SATA/NVMe
Power Supplies	• 1800 W Titanium AC/200 - 240 V autoranging • 1800 W DC/240 V • 2400 W Platinum AC/100 - 240 V • 2400 W DC/240 V • 2800 W Titanium AC/200 - 240 V autoranging • 2800 W DC/240 V • 3200 W AC/277 V • 3200 W DC336 V	• 1600 W Platinum AC/100 - 240 V autoranging • 2000 W Platinum AC/100 - 240 V autoranging • 2400 W Platinum AC/100 - 240 V autoranging • 2600 W Platinum AC/100 - 240 V autoranging
Cooling Options	• Air cooling • Liquid cooling	• Air cooling • Liquid cooling
Fans	• 80 mm high-efficiency fan • 60 mm high-efficiency fan • 40 mm high-efficiency fan	60 mm high-efficiency fan
	Up to four hot swap fans	Up to four hot swap fans
Dimension	Height: 40.0 mm (1.57 inches)	Height: 40.1 mm (1.58 inches)
	Width: 174.4 mm (6.86 inches)	Width: 174.4 mm (6.86 inches)

Table 2. Features comparison (continued)

Features	PowerEdge C6620	PowerEdge C6520
	Depth: 549.7 mm (21.64 inches) to rear lever hook	Depth: 570.34 mm (22.45 inches) to rear handle
Form Factor	2U4N compute sled	2U4N compute sled
Embedded Management	• iDRAC9 • iDRAC Direct • iDRAC RESTful with Redfish • iDRAC Service Module	• iDRAC9 • iDRAC Direct • iDRAC RESTful with Redfish • iDRAC Service Module
OpenManage Software	• OpenManage Enterprise • OpenManage Power Manager plug-in • OpenManage Update Manager plug-in • OpenManage SupportAssist plug-in	• OpenManage Enterprise • OpenManage Power Manager plug-in • OpenManage Update Manager plug-in • OpenManage SupportAssist plug-in
Mobility	OpenManage Mobile	OpenManage Mobile
Integrations and Connections	OpenManage Integrations • BMC TrueSight • Microsoft System Center • Red Hat Ansible Modules • VMware vCenter and vRealize Operations Manager OpenManage Connections • IBM Tivoli Netcool/ OMNIbus • IBM Tivoli Network Manager IP Edition • Micro Focus Operations Manager • Nagios Core • Nagios XI	OpenManage Integrations • BMC TrueSight • Microsoft System Center • Red Hat Ansible Modules • VMware vCenter • IBM Tivoli Netcool/ OMNIbus • IBM Tivoli Network Manager IP Edition • Micro Focus Operations Manager • Nagios Core • Nagios XI
Security	• Cover latch • Secure Boot mode • Power Off security • TPM 2.0 (not supported for China and Russia)	• Cover latch • Secure Boot mode • Power Off security • TPM 2.0 (not supported for China and Russia)
Embedded NIC	Broadcom BCM5720 Gigabit Ethernet controller	Broadcom BCM5720 Gigabit Ethernet controller
Networking Options	• Broadcom BCM5720 Gigabit Ethernet controller • OCP x16 Mezz 3.0	• Broadcom BCM5720 Gigabit Ethernet controller • OCP x16 Mezz 3.0
GPU Options	Up to two 75 W (Low-Profile) GPUs.	One 70 W (Low-Profile) GPUs.
Ports	Rear ports: • Power button with status LED • Mini Display port connector • 1G RJ45 port • 1x USB 3.0 • iDRAC Direct port (Micro AB-USB)	Rear Ports • Power button with status LED • Mini Display port connector • 1G RJ45 port • 1x USB 3.0 • iDRAC Direct port (Micro AB-USB)
	Internal Port: • 1x SWIFT port • 3x MCIO ports • 1x NPIO port	Internal Port: • 1x USB 2.0 port • 2x Slimline ports • 3x NPIO port
PCIe	2x PCIe Gen5 slot	3x PCIe Gen4 slots + 1x PCIe Gen3 slot
Operating System and Hypervisors	• Canonical Ubuntu Server LTS • Windows Server with Hyper-V • Red Hat Enterprise Linux • SUSE Linux Enterprise Server • VMware ESXi	• Citrix (R) Hypervisor (R) • Microsoft (R) Windows Server (R) with Hyper-V • Red Hat (R) Enterprise Linux • SUSE (R) Linux Enterprise server • VMware (R) ESXi (R)

Table 2. Features comparison (continued)

Features	PowerEdge C6620	PowerEdge C6520
	For specifications and interoperability details, see Dell EMC Enterprise Operating Systems on Servers, Storage, and Networking page at Dell.com/OSsupport.	For specifications and interoperability details, see Dell EMC Enterprise Operating Systems on Servers, Storage, and Networking page at Dell.com/OSsupport.

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Chassis views and features

The PowerEdge C6600 is a 2U enclosure that can support up to four independent two-socket (2S) C6620 sleds.

The C6600 enclosure supports the following features:

- Chassis Management Board (CM Board)
- Power Distribution Board (PD Board)
- Control panel with LED / LED board (ear board)
- Midplane board
- 2.5-inch SAS/SATA and 2.5-inch NVMe/E3.s backplanes
- Thermal sensor board
- Power supply unit (PSU)

Topics:

Chassis views

Front view of the system

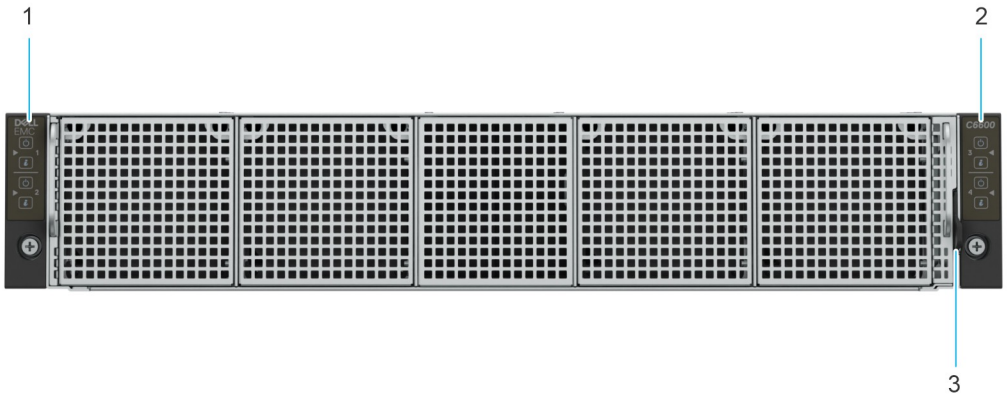

Figure 1. Chassis front view (diskless configuration)

1. Left control panel
2. Right control panel
3. Information tag

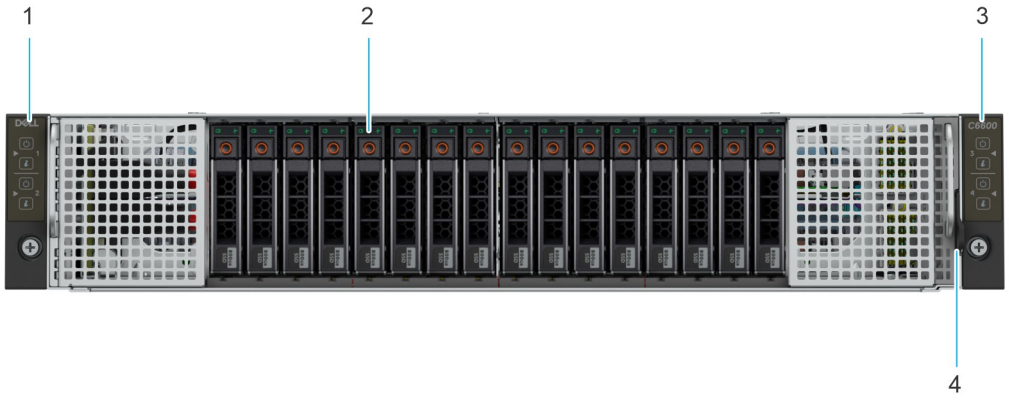

Figure 2. Chassis front view (16 x 2.5-inch drive configuration)

1. Left control panel
2. Drive bay
3. Right control panel
4. Information tag

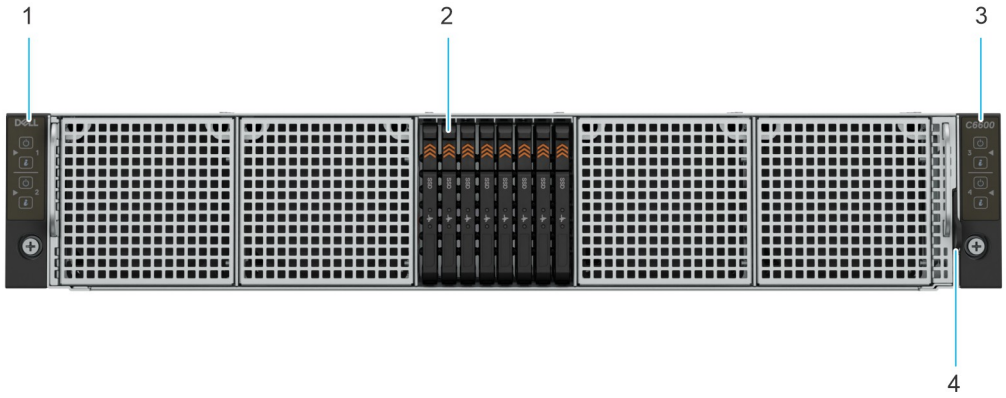

Figure 3. Chassis front view (8 x E3.s drive configuration)

1. Left control panel
2. Drive bay
3. Right control panel
4. Information tag

Rear view of the system

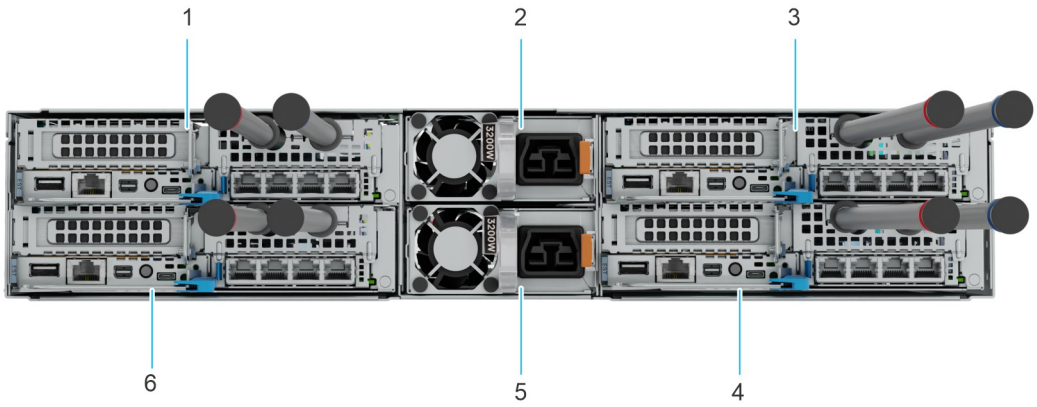

Figure 4. Rear view of the system (liquid cooling configuration)

1. Sled 3
2. Power supply unit 1
3. Sled 1
4. Sled 2
5. Power supply unit 2
6. Sled 4

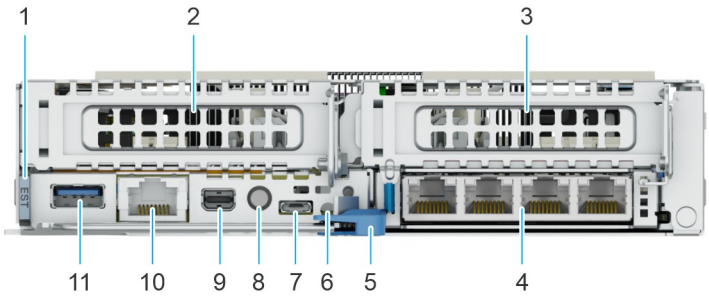

Figure 5. Rear view of the system (air cooling configuration)

1. Information tag
2. PCIe expansion card riser 1 (R1a)
3. PCIe expansion card riser 2 (R2a)
4. OCP 3.0
5. Lock release for sled handle
6. UID LED
7. iDRAC Direct port (Micro AB-USB)
8. Sled power button
9. Mini-DisplayPort
10. iDRAC or NIC or RJ45 port
11. USB 3.0 port

Inside the system

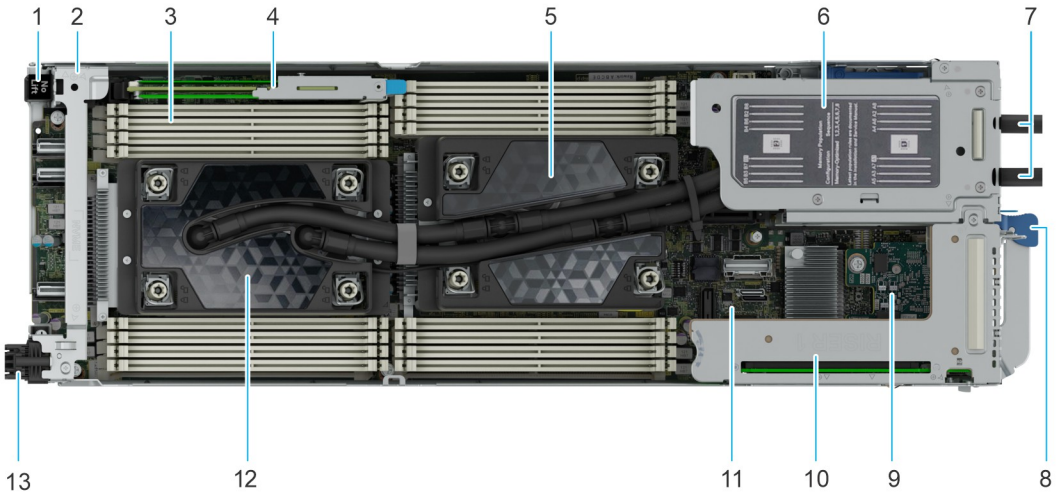

Figure 6. Inside the sled view - liquid cooling configuration

1. Power connector
2. Support bracket
3. DIMM slots for CPU 2
4. BOSS card connector
5. Liquid cooling cold plate with leak sensor for CPU 1
6. Rubber tube cover
7. Rubber tubes
8. Sled handle
9. LOM riser card
10. Riser 1
11. System board
12. Liquid cooling cold plate with leak sensor for CPU 2
13. EXAMAX connector

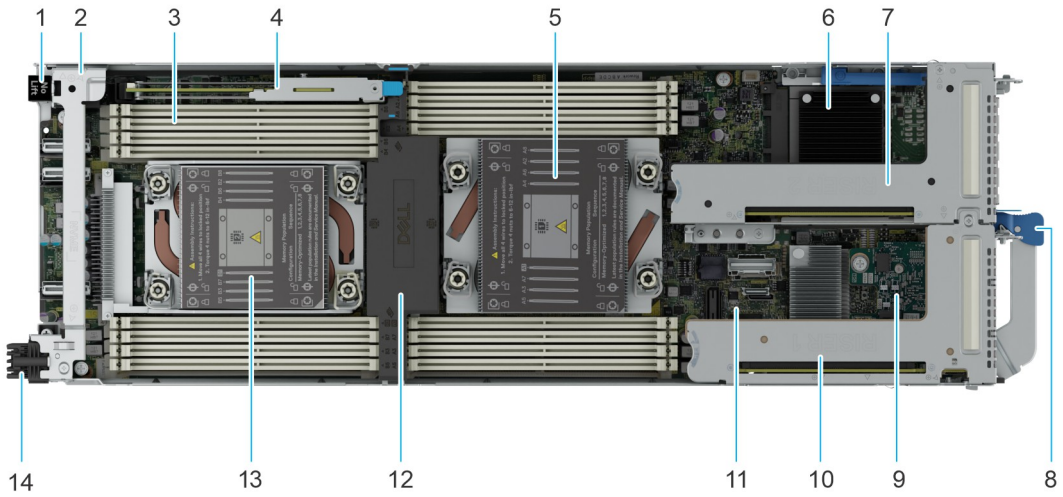

Figure 7. Inside the sled view - air cooling configuration

1. Power connector
2. Support bracket
3. DIMM slots for CPU 2
4. BOSS card connector
5. Heat sink for CPU 1
6. Optional OCP 3.0 card
7. Riser 2
8. Sled handle
9. LOM riser card
10. Riser 1
11. System board
12. Air shroud
13. Heat sink for CPU 1
14. EXAMAX connector

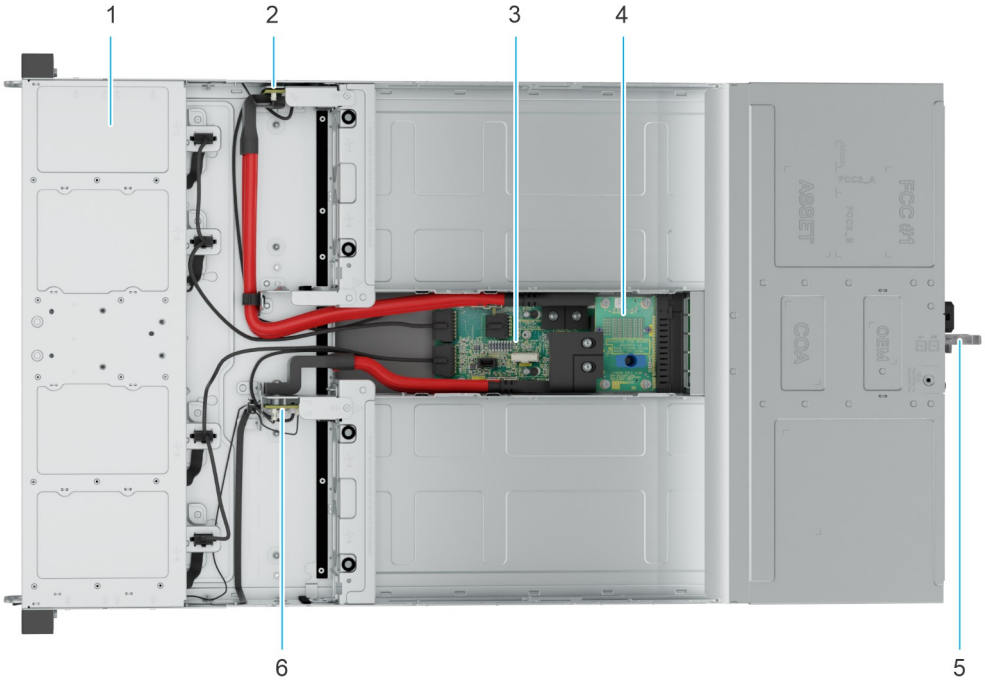

Figure 8. Inside view of the chassis

1. 80 mm fan cage
2. Left midplane
3. Chassis management board
4. Power distribution board (PDB)
5. Power supply unit (PSU)
6. Right midplane

Quick Resource Locator

Figure 9. Quick Resource Locator for C6620

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Processor

Topics:

Processor features

The 4th Generation Xeon® Scalable Processors stack is the next generation data center processor offering with the latest features, increased performance, and incremental memory options. This latest generation Xeon Scalable processor supports usages from entry designs that are based on Intel Xeon Silver processors to advanced capabilities offered in new Intel Xeon Platinum processor.

The following lists the features and functions that are in the upcoming 4th Generation Intel® Xeon Scalable Processor offering:

- Faster UPI with 3 Intel Ultra Path Interconnect (Intel UPI) at 16 GT/s (supported in gold and platinum options)
- More, faster I/O with PCI Express 5 and up to 80 lanes (per socket) at 16 GT/s
- Enhanced Memory Performance with support for up to 4800 MT/s in one DIMM per channel (1DPC)
- Increased memory capacity with up to eight channels and DDR5 DIMM support

Supported processors

Table 3. Supported processors

Proc	Clock Speed (GHz)	Cache (M)	UPI (GT/s)	Cores	Threads	Turbo	Memory Speed (MT/s)	Memory Capacity	TDP
9460	2.2	98	16	40	80	Turbo	4800	64 GB	350 W
9462	2.7	75	16	32	64	Turbo	4800	64 GB	350 W
9470	2.0	105	16	52	104	Turbo	4800	64 GB	350 W
9480	1.9	113	16	56	112	Turbo	4800	64 GB	330 W
8480+	2	105	16	56	112	Turbo	4800	6 TB	350 W
8470Q	2.1	98	16	52	104	Turbo	4800	6 TB	350 W
8470	2	98	16	52	104	Turbo	4800	6 TB	350 W
8468V	2.4	90	16	48	96	Turbo	4800	6 TB	330 W
8468	2.1	90	16	48	96	Turbo	4800	6 TB	350 W
8462Y+	2.8	60	16	32	64	Turbo	4800	6 TB	300 W
8461V	2.2	90	16	48	96	Turbo	4800	6 TB	300 W
8460Y+	2	75	16	40	80	Turbo	4800	6 TB	300 W
8458P	2.7	83	16	44	88	Turbo	4800	6 TB	350 W
8452Y	2	68	16	36	72	Turbo	4800	6 TB	300 W

Table 3. Supported processors (continued)

Proc	Clock Speed (GHz)	Cache (M)	UPI (GT/s)	Cores	Threads	Turbo	Memory Speed (MT/s)	Memory Capacity	TDP
6448Y	2.1	60	16	32	64	Turbo	4800	6 TB	225 W
6444Y	3.6	45	16	16	32	Turbo	4800	6 TB	270 W
6442Y	2.6	60	16	24	48	Turbo	4800	6 TB	225 W
6438Y+	2.0	60	16	32	64	Turbo	4800	6 TB	205 W
6438M	2.2	60	16	32	64	Turbo	4800	6 TB	205 W
6434	3.7	23	16	8	16	Turbo	4800	6 TB	205 W
6426Y	2.5	38	16	16	32	Turbo	4800	6 TB	185 W
6458Q	3.1	60	16	32	64	Turbo	4800	6 TB	350 W
6430	2.1	60	16	32	64	Turbo	4800	6 TB	270 W
6414U	2	60	16	32	64	Turbo	4800	6 TB	250 W
5420+	1.9	53	16	28	56	Turbo	4800	6 TB	205 W
5418Y	2.1	45	16	24	48	Turbo	4800	6 TB	185 W
5416S	2.1	30	16	16	32	Turbo	4800	6 TB	150 W
5415+	2.9	22.5	16	8	16	Turbo	4400	4 TB	150 W
5412U	2.10	45	16	24	48	Turbo	4400	4 TB	185 W
4416+	2.1	30	16	20	40	Turbo	4400	6 TB	165 W
4410Y	2	30	16	12	24	Turbo	4000	4 TB	150 W
3408U	1.8	23	16	8	16	Turbo	4400	6 TB	125 W

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Memory subsystem

Topics:

Supported memory

Table 4. Memory technology comparison

Feature	PowerEdge Model (DDR5)	Previous Model (DDR4)
DIMM type	RDIMM High Bandwidth Memory	RDIMM LRDIMM
Transfer speed	4800 MT/s 4400 MT/s 4000 MT/s	3200 MT/s 2933 MT/s 2666 MT/s
Voltage	1.1 V	1.2 V

The following table lists the supported DIMMs for the C6620.

Table 5. Supported DIMMs

DIMM PN	DIMM Speed (MT/s)	DIMM Type	DIMM Capacity (GB)	Ranks per DIMM
1V1N1	4800	RDIMM	16	1
W08W9	4800	RDIMM	32	2
J52K5	4800	RDIMM	64	2
MMWR9	4800	RDIMM	128	2

Memory speed

The following table lists the memory performance details for C6620 based on the quantity and type of DIMMs per memory channel.

Table 6. DIMM performance details

DIMM speed (MT/s)	DIMM type	DIMM capacity	Ranks per DIMM	Data width	DRAM density (Gb)	DRAM package type	SDDC support	DIMM voltage (V)
4800	RDIMM	16	1	x8	16	SDP	All modes	1.1
4800	RDIMM	32	2	x8	16	SDP	All modes	1.1

Table 6. DIMM performance details (continued)

DIMM speed (MT/s)	DIMM type	DIMM capacity	Ranks per DIMM	Data width	DRAM density (Gb)	DRAM package type	SDDC support	DIMM voltage (V)
4800	RDIMM	64	2	x8	16	SDP	All modes	1.1
4800	RDIMM	128	2	x8	16	SDP	All modes	1.1

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Storage

Topics:

- Storage controllers
- Supported Drives

Storage controllers

Dell's RAID controller options offer performance improvements, including the fPERC solution. fPERC provides a base RAID HW controller without consuming a PCIe slot by using a small form factor and high-density connector to the base planar.

16G Products have a wider offering of Internal Storage controllers compared to previous server generations. In order to reduce complexity and provide manageable permutations that still meet customer needs, the C6620 will support PERC11/12 version.

The following table shows the controllers used in PERC11/12 family:

Table 7. PERC Series controller offerings

Controller type	Description
Internal controllers	PERC H965, PERC H755, PERC H355
Internal boot	Boot Optimized Storage Subsystem (BOSS-N1): HWRAID 2 X M.2 SSDs, uSD card
External HBA (non-RAID)	HBA355i
Software RAID	S160

NOTE: For more information on the features of the Dell PowerEdge RAID controllers (PERC), Software RAID controllers, or BOSS card, and on deploying the cards, see the storage controller documentation at www.dell.com/storagecontrollermanuals.

Supported Drives

The table shown below lists the internal drives supported by C6620.

Table 8. Supported Drives

Form Factor	Type	Speed	Rotational Speed	Capacities
2.5-inch	SATA SSD	6 Gb	N/A	480 GB, 960 GB, 1.92 TB, 3.84 TB, 7.68 TB
	SAS	12 Gb	10 K	600 GB, 2.4 TB
	SAS	12 Gb	15 K	600 GB
	SAS SSD	12 Gb	N/A	800 GB, 960 GB, 1.6 TB, 1.92 TB, 2.4 TB, 3.84 TB, 7.68 TB
	SAS SSD	24 Gb	N/A	800 GB, 960 GB, 1.6 TB, 1.92 TB, 3.2 TB, 3.84 TB, 6.4 TB, 7.68 TB, 12.8 TB, 15.36 TB
E3.s	NVMe SSD	Gen5	N/A	3.84 TB, 7.68 TB
M.2	SATA SSD	6 Gb	N/A	480 GB
	NVMe SSD	N/A	N/A	480 GB, 960 GB, 1.92 TB

Table 8. Supported Drives (continued)

Form Factor	Type	Speed	Rotational Speed	Capacities
uSD	N/A	N/A	uSD	16 GB, 32 GB, 64 GB

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Networking

Topics:

Overview

PowerEdge offers a wide variety of options to get information moving to and from our servers. Industry best technologies are chosen, and systems management features are added by our partners to firmware to tie in with iDRAC. These adapters are rigorously validated for worry-free, fully supported use in Dell servers.

OCP 3.0 support

Table 9. OCP 3.0 feature list

Feature	OCP 3.0
Form factor	SFF
PCIe Gen	Gen4
Max PCIe width	x16
Max no.of ports	4
Port type	BT/SFP/SFP+/SFP28/SFP56
Max port speed	100 GbE
NC-SI	Yes
SNAPI	Yes
WoL	Yes
Power consumption	15 W - 150 W

Supported OCP cards

Table 10. OCP 3.0 NIC supported list

Form factor	Type	DPN	Speed (GbE)	Port type	Vendor
OCP 3.0	NIC	G9XC9	1	BT	Broadcom
OCP 3.0	NIC	VJWVJ	1	BT	Broadcom
OCP 3.0	NIC	F6X1R	10	BT	Intel
OCP 3.0	NIC	T6HR8	10	BT	Broadcom
OCP 3.0	NIC	RN1M5	10	BT	Broadcom
OCP 3.0	NIC	50RV4	10	BT	Intel

Table 10. OCP 3.0 NIC supported list (continued)

Form factor	Type	DPN	Speed (GbE)	Port type	Vendor
OCP 3.0	NIC	W5HC8	10	BT	Broadcom
OCP 3.0	NIC	61X09	25	SFP28	Intel
OCP 3.0	NIC	KHCTP	25	SFP28	Broadcom
OCP 3.0	NIC	24FG6	25	SFP28	Broadcom
OCP 3.0	NIC	DN78C	25	SFP28	Nvidia(Mellanox)
OCP 3.0	NIC	R1KTR	25	SFP28	Intel
OCP 3.0	NIC	JTK7F	25	SFP28	Broadcom
OCP 3.0	NIC	X1KR4	25	SFP28	Broadcom
OCP 3.0	NIC	3Y64D	25	SFP28	Broadcom

OCP NIC 3.0 vs. rack Network Daughter Card comparisons

Table 11. OCP 3.0, 2.0, and rNDC NIC comparison

Form Factor	Dell rNDC	OCP 2.0 (LOM Mezz)	OCP 3.0	Notes
PCIe Gen	Gen 3	Gen 3	Gen 4	Supported OCP3 are SFF (small form factor)
Max PCIe Lanes	x8	Up to x16	Up to x16	See server slot priority matrix
Shared LOM	Yes	Yes	Yes	This is iDRAC port redirect
Aux Power	Yes	Yes	Yes	Used for Shared LOM

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PCIe subsystem

Topics:

- PCIe risers

PCIe risers

Shown below are the riser offerings for the platform. For a full list of supported cards and Slot priority, please see the Slot Priority Matrix - found in the Agile tool (P/N: TVF5W)

Table 12. Supported riser offerings

Config	RSR configuration	Number of CPUs	PERC type supported	Rear storage possible	Liquid cooling	No backplane	x16 NVMe backplane	x16 SAS/ SATA backplane	x8 E3.s backplane
0	RCONF0, No RSR	CPU1/2	NA	No	Y	Y	Y	Y	Y
1	RCONF1, 1A	CPU1/2	Adapter PERC	No	Y	Y	Y	Y	Y
2	RCONF2, 1A+2A	CPU1/2	Adapter PERC	No	N	Y	Y	Y	Y
3	RCONF3, 1B	CPU2	NA	No	Y	Y	Y	Y	Y
4	RCONF4, 1B+2B	CPU2	NA	No	N	Y	Y	Y	Y
5	RCONF5, 1A+2B	CPU2	Adapter PERC	No	N	Y	Y	Y	Y
6	RCONF6, 1B+2A	CPU2	NA	No	N	Y	Y	Y	Y
7	RCONF7 2B	CPU2	NA	No	N	Y	Y	Y	Y

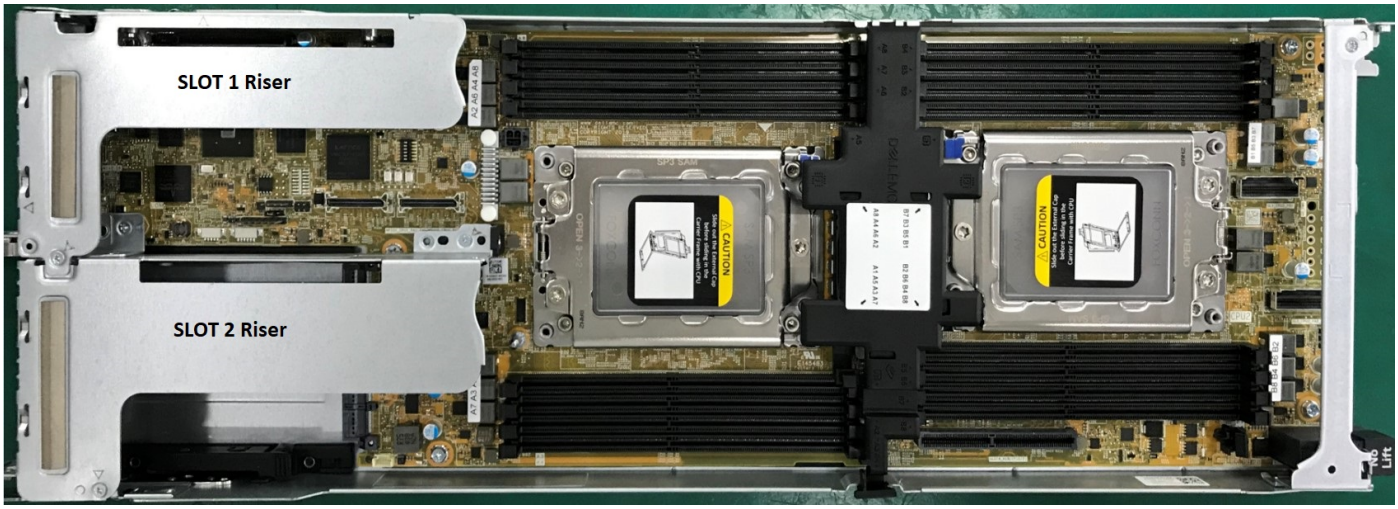

Figure 10. Riser Locations

Table 13. PCIe Riser Slot CPU Orientation Matrix

Riser	Slot	Form factor	Controlling CPU	Slot's electrical bandwidth/Physical connector	Power
Low profile PCIe slot 1	1	Low profile	CPU1	PCIe Gen5 x16 (through Riser 1A)	75 W
			CPU1/ CPU2	PCIe Gen5 x8 from CPU1, x8 from CPU2 (through Riser 1B to support SNAPI card)	25 W
Low profile PCIe slot 2	2	Low profile	CPU1/ CPU2	PCIe Gen4 x8 from CPU1 (through Riser 2A) or PCIe Gen5 x16 (through Riser 2B)	75 W
OCP 3.0 slot 3	3	Low profile	CPU1	PCIe Gen4 x16	80 W

Riser 1A

Major components

- Standard PCIe X16 connector, PCIe X16 source from CPU1, Smart NIC.
- GL3224-OYI04 USB3.0 SD 3.0 Single LUN Memory Card Reader Controller. Supported MicroSD card capacities at RTS - 16G (PDL AMC PDL_20220523).
- SAPI System API - the core of the Riser SAPI consists of the Silicon Labs EFM8BB1 microcontroller, and the MCU will periodically transmits pertinent riser data over a 1-wire UART to the host system (CPLD & BIOS).

The payload between riser MCU and host system includes two information: One is fixed riser information which is determined using a table structure that can be read through two MCU's ADC pin. Meanwhile, it is pre-programmed into the MCU code base. (e.g. riser type, slot width, slot source lanes, etc.). The other is dynamic riser information which can be read in through the MCU's GPIO pins and serialized down to the host system. (e.g. adapter presence detect, WAKE#, etc.). Besides, it also supported the SmartNIC card. It is a programmable network adapter card with a programmable accelerator and Ethernet connection, which can accelerate infrastructure applications running on the host.

GL3224 and EFM8BB1 features

- Support USB Mass Storage Class Bulk-Only Transport (BOT)
- Super Speed USB/USB 2.0transceiver macro (UTM), Serial Interface Engine (SIE), and embedded Power-On Reset (POR)
- Support Secure Digital v1.0 / v1.1 / v2.0/ SDHC / SDXC (Capacity up to 2TB)
- Support Serial Peripheral Interface (SPI) for firmware upgrade to SPI Flash Memory via USB interface

Riser 1A dimension

Board size: 144.39 x 30.92 mm, 8 layers.

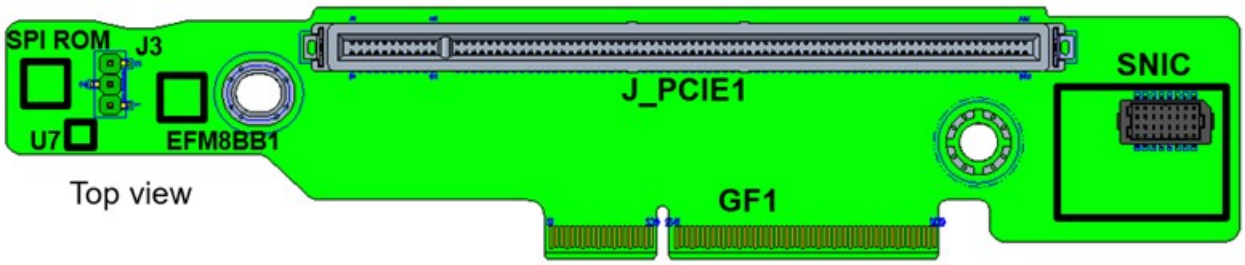

Figure 11. Riser 1A top view

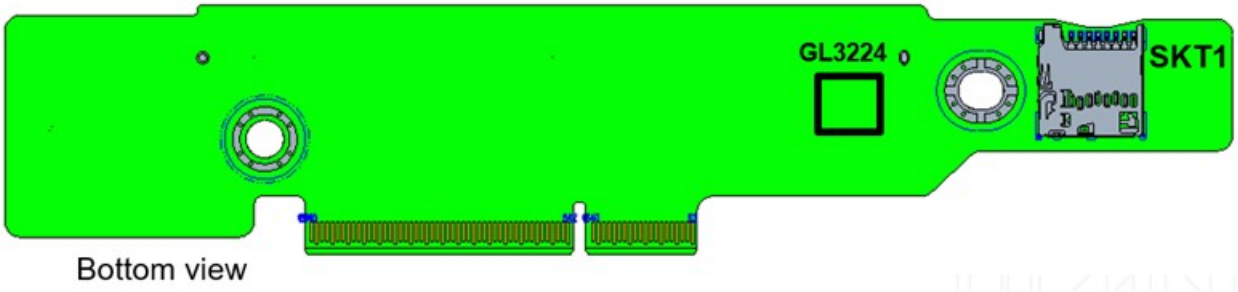

Figure 12. Riser 1A bottom view

Riser 1B

Major components

- Standard PCIe X16 connector, PCIe X16 source from CPU1 X8 and X8 from CPU2 by cable.
- SAPI System API - the core of the Riser SAPI consists of the Silicon Labs EFM8BB1 microcontroller, and the MCU will periodically transmits pertinent riser data over a 1-wire UART to the host system (CPLD & BIOS).

The payload between riser MCU and host system includes two information: One is fixed riser information which is determined using a table structure that can be read through two MCU's ADC pin. Meanwhile, it is pre-programmed into the MCU code base. (e.g., riser type, slot width, slot source lanes, etc.). The other is dynamic riser information which can be read in through the MCU's GPIO pins and serialized down to the host system. (e.g., adapter presences detect, WAKE#,etc.)

Riser 1B dimension

Board size: 144.38 x 31.45 mm, 8 layers.

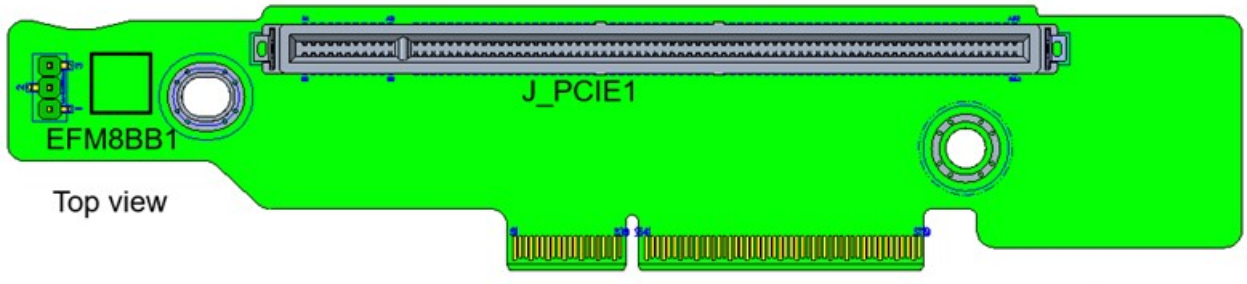

Figure 13. Riser 1B top view

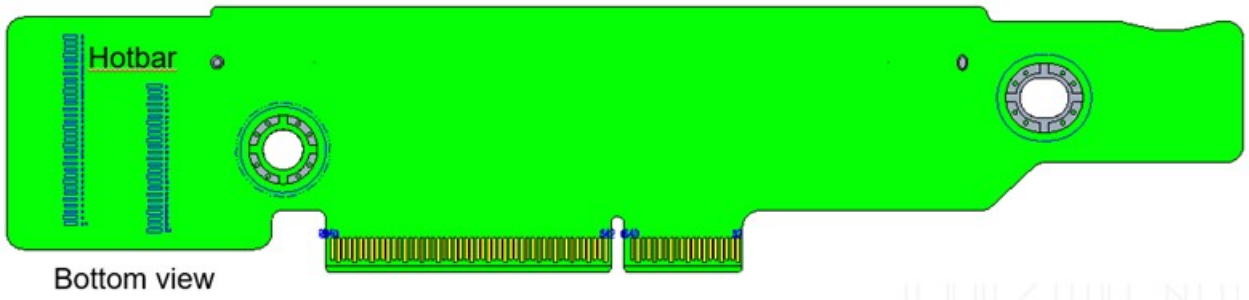

Figure 14. Riser 2B bottom view

Riser 2A

Major components

- Standard PCIe X16 connector, PCIe X8 source from CPU1.
- SAPI System API -the core of the Riser SAPI consists of the Silicon Labs EFM8BB1 microcontroller, and the MCU will periodically transmits pertinent riser data over a 1-wire UART to the host system (CPLD & BIOS).

The payload between riser MCU and host system includes two information: One is fixed riser information which is determined using a table structure that can be read through two MCU's ADC pin. Meanwhile, it is pre-programmed into the MCU code base. (e.g. riser type, slot width, slot source lanes, etc.). The other is dynamic riser information which can be read in through the MCU's GPIO pins and serialized down to the host system. (e.g., adapter presence detect, WAKE#, etc.)

Riser 2A dimension

Board Size: 159.71 x 29.87 mm, 8 Layers.

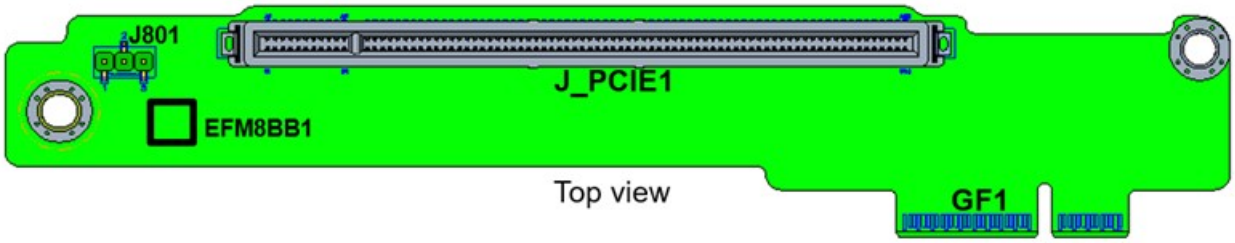

Figure 15. Riser 2A top view

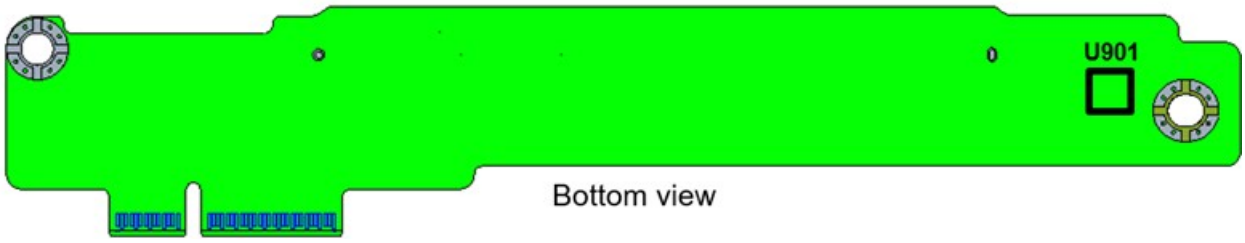

Figure 16. Riser 2A bottom view

Riser 2B

Major components

- Standard PCIe X16 connector, PCIe X16 source from CPU2.
- SAPI System API - the core of the Riser SAPI consists of the Silicon Labs EFM8BB1 microcontroller, and the MCU will periodically transmits pertinent riser data over a 1-wire UART to the host system (CPLD & BIOS).

The payload between riser MCU and host system includes two information: One is fixed riser information which is determined using a table structure that can be read through two MCU's ADC pin. Meanwhile, it is pre-programmed into the MCU code base. (e.g. riser type, slot width, slot source lanes, etc.). The other is dynamic riser information which can be read in through the MCU's GPIO pins and serialized down to the host system. (e.g. adapter presence detect, WAKE#, etc.)

Riser 2B dimension

Board size: 159.48 x 35.87 mm, 8 layers.

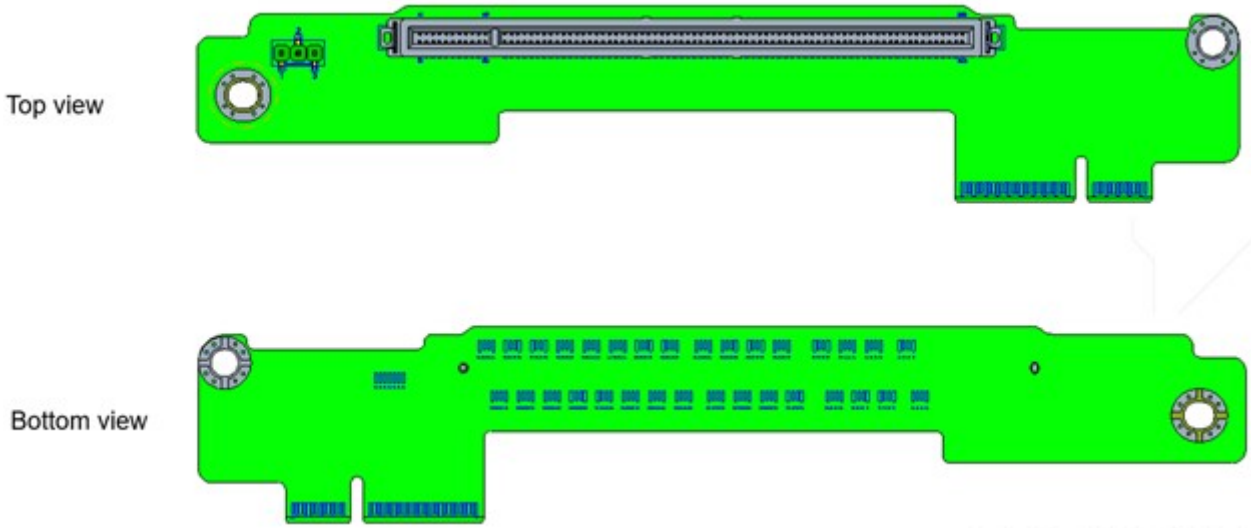

Figure 17. Riser 2B top and bottom view

9

Power, thermal, and acoustics

PowerEdge servers have an extensive collection of sensors that automatically track thermal activity, which helps regulate temperature thereby reducing server noise and power consumption. The table below lists the tools and technologies Dell offers to lower power consumption and increase energy efficiency.

Topics:

Power

Table 14. Power tools and technologies

Feature	Description
Power Supply Units(PSU) portfolio	Dell's PSU portfolio includes intelligent features such as dynamically optimizing efficiency while maintaining availability and redundancy. Find additional information in the Power supply units section.
Tools for right sizing	Enterprise Infrastructure Planning Tool (EIPT) is a tool that can help you determine the most efficient configuration possible. With Dell's EIPT, you can calculate the power consumption of your hardware, power infrastructure, and storage at a given workload. Learn more at www.dell.com/calc.
Industry Compliance	Dell's servers are compliant with all relevant industry certifications and guide lines, including 80 PLUS, Climate Savers and ENERGY STAR.
Power monitoring accuracy	PSU power monitoring improvements include: ● Dell's power monitoring accuracy is currently 1%, whereas the industry standard is 5% ● More accurate reporting of power ● Better performance under a power cap
Power capping	Use Dell's systems management to set the power cap limit for your systems to limit the output of a PSU and reduce system power consumption. Dell is the first hardware vendor to leverage Intel Node Manager for circuit-breaker fast capping.
Systems Management	iDRAC Enterprise and Datacenter provides server-level management that monitors, reports and controls power consumption at the processor, memory and system level. Dell OpenManage Power Center delivers group power management at the rack, row, and data center level for servers, power distribution units, and uninterruptible power supplies.
Active power management	Intel Node Manager is an embedded technology that provides individual server-level power reporting and power limiting functionality. Dell offers a complete power management solution comprised of Intel Node Manager accessed through Dell iDRAC9 Datacenter and OpenManage Power Center that allows policy-based management of power and thermal at the individual server, rack, and data center level. Hot spare reduces power consumption of redundant power supplies. Thermal control off a speed optimizes the thermal settings for your environment to reduce fan consumption and lower system power consumption. Idle power enables Dell servers to run as efficiently when idle as when at full workload.
Fresh Air cooling	Refer to ASHRAE A3/A4 Thermal Restriction.

Table 14. Power tools and technologies (continued)

Feature	Description
Rack infrastructure	Dell offers some of the industry's highest-efficiency power infrastructure solutions, including: • Power distribution units (PDUs) • Uninterruptible power supplies (UPSs) • Energy Smart containment rack enclosures Find additional information at: https://www.delltechnologies.com/en-us/servers/power-and-cooling.htm.

Power Supply Units

Energy Smart power supplies have intelligent features, such as the ability to dynamically optimize efficiency while maintaining availability and redundancy. Also featured are enhanced power-consumption reduction technologies, such as high-efficiency power conversion and advanced thermal-management techniques, and embedded power-management features, including high-accuracy power monitoring. The table below shows the power supply unit options that are available for C6600 enclosure.

Table 15. Power Supply Unit Options

Wattage	Frequency	Voltage	Class	Heat dissipation
3200 W	N/A	336 V DC	N/A	12000 BTU/hr
3200 W	50/60 Hz	277 V AC	N/A	12000 BTU/hr
2800 W	N/A	240 V DC	N/A	10500 BTU/hr
2800 W	50/60 Hz	200-240 V AC	Titanium	10500 BTU/hr
2400 W	N/A	240 V DC	N/A	9000 BTU/hr
2400 W	50/60 Hz	100-240 V AC	Platinum	9000 BTU/hr
1800 W	N/A	240 VDC	N/A	6750 BTU/hr
1800 W	50/60 Hz	200-240 V AC	Titanium	6750 BTU/hr

NOTE: Heat dissipation is calculated using the PSU wattage rating.

PSU power cords

Table 16. PSU power cords

Output	Power cord
3200 W	APP 2006G1
2800 W	C22
2400 W	C20
1800 W	C16

Thermal

PowerEdge servers have an extensive collection of sensors that automatically track thermal activity, which helps regulate temperature thereby reducing server noise and power consumption.

Thermal design

Thermal management of the platform helps deliver high performance with the right amount of cooling to components, while maintaining the lowest fan speeds possible. This is done across a wide range of ambient temperatures from 10°C to 35°C (50°F to 95°F) and to extended ambient temperature ranges (see Environmental Specifications).

Thermal restrictions

NOTE: Not available: Indicates the configuration is not offered by Dell Technologies.

NOTE: Not supported: Indicates the configuration is not thermally supported.

NOTE: All components including the DIMMs, communication cards, M.2 SATA, and PERC cards can be supported with sufficient thermal margin if the ambient temperature is equal to or below the maximum continuous operating temperature listed in these tables.

Processor/DIMM/HDD/M.2 blanks requirement

All component slots listed below must be fully populated or blanked.

- Sled slot
- HDD slot
- BOSS slot
- PSU slot
- EDSFF slot

Table 17. DIMM blank requirements

CPU installed	1x socket configuration		2x sockets configuration	
DIMM slots of	**CPU1 slot**	**CPU2 slot**	**CPU1 slot**	**CPU2 slot**
DIMM blank requirement	Yes	No	Yes	Yes

Table 18. DIMM blank requirements for Xeon Max CPU

Specific for Xeon Max only mode with liquid cooled chassis	2x sockets configuration	
	CPU1 slot	**CPU2 slot**
DIMM blank requirements	No	No

ASHRAE A3/A4 configuration restriction

- NVMe SSD and EDSFF are not supported
- A2 GPU is not supported
- 128GB and 256GB DIMM is not supported
- CPU TDP Restriction
  - Air cooled, 2.5-inch chassis
    - Maximum supported CPU TDP is 150W for 1x Processor configuration.
    - 2x Processors configuration is not supported.
  - Air cooled, no backplane chassis
    - Maximum supported CPU TDP is 250W for 1x Processor configuration
    - Maximum supported CPU TDP is 185W for 2x Processors configuration

Mixed sled restriction

Mix of 1P sled and 2P sled on same chassis is restricted. Only homogeneous 1P sleds or homogeneous 2P sleds can be supported.

Temperature restriction for air cooled 2.5-inch HDDs/2.5-inch NVMe/No backplane/EDSFF chassis without A2 GPU

Table 19. Supported ambient temperature (2P) - 2.5-inch chassis, air cooled

Processor	TDP	Core	Model	CPU1 HSK	CPU2 HSK	DIMM Capacity ≤ 64GB/ DIMM	DIMM Capacity = 128GB DIMM (Hynix)	DIMM Capacity = 128GB DIMM (Samaung)
8480+	350 W	56	XCC	N/A	N/A	N/A	N/A	N/A
9480	350 W	56	Xeon Max	N/A	N/A	N/A	N/A	N/A
8470Q	350 W	52	XCC	N/A	N/A	N/A	N/A	N/A
8470	350 W	52	XCC	N/A	N/A	N/A	N/A	N/A
9470	350 W	52	Xeon Max	N/A	N/A	N/A	N/A	N/A
8468	350 W	48	XCC	N/A	N/A	N/A	N/A	N/A
8458P	350 W	44	XCC	N/A	N/A	N/A	N/A	N/A
9460	350 W	40	Xeon Max	N/A	N/A	N/A	N/A	N/A
6458Q	350 W	32	MCC	N/A	N/A	N/A	N/A	N/A
9462	350 W	32	Xeon Max	N/A	N/A	N/A	N/A	N/A
8468V	330 W	48	XCC	N/A	N/A	N/A	N/A	N/A
8470N	300 W	52	XCC	N/A	N/A	N/A	N/A	N/A
8460Y+	300 W	40	XCC	N/A	N/A	N/A	N/A	N/A
8452Y	300 W	36	XCC	N/A	N/A	N/A	N/A	N/A
8462Y+	300 W	32	MCC	N/A	N/A	N/A	N/A	N/A
6454S	270 W	32	XCC	N/A	N/A	N/A	N/A	N/A
8454H	270 W	32	XCC	N/A	N/A	N/A	N/A	N/A
6430	270 W	32	XCC	N/A	N/A	N/A	N/A	N/A
6444Y	270 W	16	MCC	N/A	N/A	N/A	N/A	N/A
6448Y	225 W	32	MCC	N/A	N/A	N/A	N/A	N/A
6442Y	225 W	24	MCC	N/A	N/A	N/A	N/A	N/A
6438M	205 W	32	MCC	T0FVH (Extended)	V25GT	25	25	20
6438Y+	205 W	32	MCC	T0FVH (Extended)	V25GT	25	25	20
5420+	205 W	28	MCC	T0FVH (Extended)	V25GT	25	25	20
6434	195 W	8	MCC	T0FVH (Extended)	V25GT	20	20	20
5418Y	185 W	24	MCC	V3P2V (General)	V25GT	20*	20*	20*

Table 19. Supported ambient temperature (2P) - 2.5-inch chassis, air cooled (continued)

Processor	TDP	Core	Model	CPU1 HSK	CPU2 HSK	DIMM Capacity ≤ 64GB/ DIMM	DIMM Capacity = 128GB DIMM (Hynix)	DIMM Capacity = 128GB DIMM (Samaung)
6426Y	185 W	16	MCC	V3P2V (General)	V25GT	20*	20*	20*
4416+	165 W	20	MCC	V3P2V (General)	V25GT	30*	30*	25*
5416S	150 W	16	MCC	V3P2V (General)	V25GT	30*	30*	25*
4410Y	150 W	12	MCC	V3P2V (General)	V25GT	30*	30*	25*
5415+	150 W	8	MCC	V3P2V (General)	V25GT	30*	30*	25*

Table 20. Supported ambient temperature (1P) - 2.5-inch chassis, air cooled

Processor	TDP	Core	Model	CPU1 HSK	CPU2 HSK	DIMM Capacity ≤ 64GB/ DIMM	DIMM Capacity = 128GB DIMM (Hynix)	DIMM Capacity = 128GB DIMM (Samsung)
8480+	350 W	56	XCC	N/A	N/A	N/A	N/A	N/A
9480	350 W	56	Xeon Max	N/A	N/A	N/A	N/A	N/A
8470Q	350 W	52	XCC	N/A	N/A	N/A	N/A	N/A
8470	350 W	52	XCC	N/A	N/A	N/A	N/A	N/A
9470	350 W	52	Xeon Max	N/A	N/A	N/A	N/A	N/A
8468	350 W	48	XCC	N/A	N/A	N/A	N/A	N/A
8458P	350 W	44	XCC	N/A	N/A	N/A	N/A	N/A
9460	350 W	40	Xeon Max	N/A	N/A	N/A	N/A	N/A
6458Q	350 W	32	MCC	N/A	N/A	N/A	N/A	N/A
9462	350 W	32	Xeon Max	N/A	N/A	N/A	N/A	N/A
8468V	330 W	48	XCC	N/A	N/A	N/A	N/A	N/A
8461V	300 W	48	XCC	N/A	N/A	N/A	N/A	N/A
8460Y+	300 W	40	XCC	N/A	N/A	N/A	N/A	N/A
8452Y	300 W	36	XCC	N/A	N/A	N/A	N/A	N/A
8462Y+	300 W	32	MCC	N/A	N/A	N/A	N/A	N/A
6430	270 W	32	XCC	T0FVH (Extended)	N/A	25	25	25
6444Y	270 W	16	MCC	T0FVH (Extended)	N/A	25	25	25
6414U	250 W	32	XCC	T0FVH (Extended)	N/A	25	25	25
6448Y	225 W	32	MCC	V3P2V (General)	N/A	30*	30*	30
6442Y	225 W	24	MCC	V3P2V (General)	N/A	30*	30*	30

Table 20. Supported ambient temperature (1P) - 2.5-inch chassis, air cooled (continued)

Processor	TDP	Core	Model	CPU1 HSK	CPU2 HSK	DIMM Capacity ≤ 64GB/ DIMM	DIMM Capacity = 128GB DIMM (Hynix)	DIMM Capacity = 128GB DIMM (Samsung)
6438M	205 W	32	MCC	V3P2V (General)	N/A	30*	30*	30*
6438Y+	205 W	32	MCC	V3P2V (General)	N/A	30*	30*	30*
5420+	205 W	28	MCC	V3P2V (General)	N/A	30*	30*	30*
6434	195 W	8	MCC	V3P2V (General)	N/A	25	25	25
5418Y	185 W	24	MCC	V3P2V (General)	N/A	35	35	35
5412U	185 W	24	MCC	V3P2V (General)	N/A	35	35	35
6426Y	185 W	16	MCC	V3P2V (General)	N/A	35	35	35
4416+	165 W	20	MCC	V3P2V (General)	N/A	35	35	35
5416S	150 W	16	MCC	V3P2V (General)	N/A	35	35	35
4410Y	150 W	12	MCC	V3P2V (General)	N/A	35	35	35
5415+	150 W	8	MCC	V3P2V (General)	N/A	35	35	35
3408U	125 W	8	MCC	V3P2V (General)	N/A	35	35	35

Table 21. Supported ambient temperature (2P) - NVMe chassis, air cooled

Processor	TDP	Core	Model	CPU1 HSK	CPU2 HSK	DIMM Capacity ≤ 64GB/ DIMM	DIMM Capacity = 128GB DIMM (Hynix)	DIMM Capacity = 128GB DIMM (Samsung)
8480+	350 W	56	XCC	N/A	N/A	N/A	N/A	N/A
9480	350 W	56	Xeon Max	N/A	N/A	N/A	N/A	N/A
8470Q	350 W	52	XCC	N/A	N/A	N/A	N/A	N/A
8470	350 W	52	XCC	N/A	N/A	N/A	N/A	N/A
9470	350 W	52	Xeon Max	N/A	N/A	N/A	N/A	N/A
8468	350 W	48	XCC	N/A	N/A	N/A	N/A	N/A
8458P	350 W	44	XCC	N/A	N/A	N/A	N/A	N/A
9460	350 W	40	Xeon Max	N/A	N/A	N/A	N/A	N/A
6458Q	350 W	32	MCC	N/A	N/A	N/A	N/A	N/A
9462	350 W	32	Xeon Max	N/A	N/A	N/A	N/A	N/A
8468V	330 W	48	XCC	N/A	N/A	N/A	N/A	N/A
8460Y+	300 W	40	XCC	N/A	N/A	N/A	N/A	N/A

Table 21. Supported ambient temperature (2P) - NVMe chassis, air cooled (continued)

Processor	TDP	Core	Model	CPU1 HSK	CPU2 HSK	DIMM Capacity ≤ 64GB/ DIMM	DIMM Capacity = 128GB DIMM (Hynix)	DIMM Capacity = 128GB DIMM (Samsung)
8452Y	300 W	36	XCC	N/A	N/A	N/A	N/A	N/A
8462Y+	300 W	32	MCC	N/A	N/A	N/A	N/A	N/A
6430	270 W	32	XCC	N/A	N/A	N/A	N/A	N/A
6444Y	270 W	16	MCC	N/A	N/A	N/A	N/A	N/A
6448Y	225 W	32	MCC	N/A	N/A	N/A	N/A	N/A
6442Y	225 W	24	MCC	N/A	N/A	N/A	N/A	N/A
6438M	205 W	32	MCC	T0FVH (Extended)	V25GT	20	20	N/A
6438Y+	205 W	32	MCC	T0FVH (Extended)	V25GT	20	20	N/A
5420+	205 W	28	MCC	T0FVH (Extended)	V25GT	20	20	N/A
6434	195 W	8	MCC	N/A	N/A	N/A	N/A	N/A
5418Y	185 W	24	MCC	V3P2V (General)	V25GT	20*	20*	N/A
6426Y	185 W	16	MCC	V3P2V (General)	V25GT	20*	20*	N/A
4416+	165 W	20	MCC	V3P2V (General)	V25GT	25*	25*	N/A
5416S	150 W	16	MCC	V3P2V (General)	V25GT	25*	25*	N/A
4410Y	150 W	12	MCC	V3P2V (General)	V25GT	25*	25*	N/A
5415+	150 W	8	MCC	V3P2V (General)	V25GT	25*	25*	N/A

Table 22. Supported ambient temperature (1P) - NVMe chassis, air cooled

Processor	TDP	Core	Model	CPU1 HSK	CPU2 HSK	DIMM Capacity ≤ 64GB/ DIMM	DIMM Capacity = 128GB DIMM (Hynix)	DIMM Capacity = 128GB DIMM (Samsung)
8480+	350 W	56	XCC	N/A	N/A	N/A	N/A	N/A
9480	350 W	56	Xeon Max	N/A	N/A	N/A	N/A	N/A
8470Q	350 W	52	XCC	N/A	N/A	N/A	N/A	N/A
8470	350 W	52	XCC	N/A	N/A	N/A	N/A	N/A
9470	350 W	52	Xeon Max	N/A	N/A	N/A	N/A	N/A
8468	350 W	48	XCC	N/A	N/A	N/A	N/A	N/A
8458P	350 W	44	XCC	N/A	N/A	N/A	N/A	N/A
9460	350 W	40	Xeon Max	N/A	N/A	N/A	N/A	N/A
6458Q	350 W	32	MCC	N/A	N/A	N/A	N/A	N/A

Table 22. Supported ambient temperature (1P) - NVMe chassis, air cooled (continued)

Processor	TDP	Core	Model	CPU1 HSK	CPU2 HSK	DIMM Capacity ≤ 64GB/ DIMM	DIMM Capacity = 128GB DIMM (Hynix)	DIMM Capacity = 128GB DIMM (Samsung)
9462	350 W	32	Xeon Max	N/A	N/A	N/A	N/A	N/A
8468V	330 W	48	XCC	N/A	N/A	N/A	N/A	N/A
8461V	300 W	48	XCC	N/A	N/A	N/A	N/A	N/A
8460Y+	300 W	40	XCC	N/A	N/A	N/A	N/A	N/A
8452Y	300 W	36	XCC	N/A	N/A	N/A	N/A	N/A
8462Y+	300 W	32	MCC	N/A	N/A	N/A	N/A	N/A
6430	270 W	32	XCC	N/A	N/A	N/A	N/A	N/A
6444Y	270 W	16	MCC	N/A	N/A	N/A	N/A	N/A
6414U	250 W	32	XCC	N/A	N/A	N/A	N/A	N/A
6448Y	225 W	32	MCC	V3P2V (General)	N/A	25	25	25
6442Y	225 W	24	MCC	V3P2V (General)	N/A	25	25	25
6438M	205 W	32	MCC	V3P2V (General)	N/A	30	30	30
6438Y+	205 W	32	MCC	V3P2V (General)	N/A	30	30	30
5420+	205 W	28	MCC	V3P2V (General)	N/A	30	30	30
6434	195 W	8	MCC	V3P2V (General)	N/A	25	25	20
5418Y	185 W	24	MCC	V3P2V (General)	N/A	35	35	30
5412U	185 W	24	MCC	V3P2V (General)	N/A	35	35	30
6426Y	185 W	16	MCC	V3P2V (General)	N/A	35	35	30
4416+	165 W	20	MCC	V3P2V (General)	N/A	35	35	35
5416S	150 W	16	MCC	V3P2V (General)	N/A	35	35	35
4410Y	150 W	12	MCC	V3P2V (General)	N/A	35	35	35
5415+	150 W	8	MCC	V3P2V (General)	N/A	35	35	35
3408U	125 W	8	MCC	V3P2V (General)	N/A	35	35	35

Table 23. Supported ambient temperature (2P) - no backplane chassis and EDSFF chassis, air cooled

Processor	TDP	Core	Model	CPU1 HSK	CPU2 HSK	DIMM Capacity ≤ 64GB/ DIMM	DIMM Capacity = 128GB DIMM (Hynix)	DIMM Capacity = 128GB DIMM (Samsung)
8480+	350 W	56	XCC	N/A	N/A	N/A	N/A	N/A
9480	350 W	56	Xeon Max	N/A	N/A	N/A	N/A	N/A
8470Q	350 W	52	XCC	N/A	N/A	N/A	N/A	N/A
8470	350 W	52	XCC	N/A	N/A	N/A	N/A	N/A
9470	350 W	52	Xeon Max	N/A	N/A	N/A	N/A	N/A
8468	350 W	48	XCC	N/A	N/A	N/A	N/A	N/A
8458P	350 W	44	XCC	N/A	N/A	N/A	N/A	N/A
9460	350 W	40	Xeon Max	N/A	N/A	N/A	N/A	N/A
6458Q	350 W	32	MCC	N/A	N/A	N/A	N/A	N/A
9462	350 W	32	Xeon Max	N/A	N/A	N/A	N/A	N/A
8468V	330 W	48	XCC	N/A	N/A	N/A	N/A	N/A
8460Y+	300 W	40	XCC	T0FVH (Extended)	V25GT	20	20	20
8452Y	300 W	36	XCC	T0FVH (Extended)	V25GT	20	20	20
8462Y+	300 W	32	MCC	N/A	N/A	N/A	N/A	N/A
6430	270 W	32	XCC	T0FVH (Extended)	V25GT	25	25	25
6444Y	270 W	16	MCC	T0FVH (Extended)	V25GT	20	20	20
6448Y	225 W	32	MCC	V3P2V (General)	V25GT	30*	30*	30*
6442Y	225 W	24	MCC	V3P2V (General)	V25GT	30*	30*	30*
6438M	205 W	32	MCC	V3P2V (General)	V25GT	35	35	35
6438Y+	205 W	32	MCC	V3P2V (General)	V25GT	35	35	35
5420+	205 W	28	MCC	V3P2V (General)	V25GT	35	35	35
6434	195 W	8	MCC	V3P2V (General)	V25GT	35	35	35
5418Y	185 W	24	MCC	V3P2V (General)	V25GT	35	35	35
6426Y	185 W	16	MCC	V3P2V (General)	V25GT	35	35	35
4416+	165 W	20	MCC	V3P2V (General)	V25GT	35	35	35
5416S	150 W	16	MCC	V3P2V (General)	V25GT	35	35	35

Table 23. Supported ambient temperature (2P) - no backplane chassis and EDSFF chassis, air cooled (continued)

Processor	TDP	Core	Model	CPU1 HSK	CPU2 HSK	DIMM Capacity ≤ 64GB/ DIMM	DIMM Capacity = 128GB DIMM (Hynix)	DIMM Capacity = 128GB DIMM (Samsung)
4410Y	150 W	12	MCC	V3P2V (General)	V25GT	35	35	35
5415+	150 W	8	MCC	V3P2V (General)	V25GT	35	35	35

Table 24. Supported ambient temperature (1P) - no backplane chassis and EDSFF chassis, air cooled

Processor	TDP	Core	Model	CPU1 HSK	CPU2 HSK	DIMM Capacity ≤ 64GB/ DIMM	DIMM Capacity = 128GB DIMM (Hynix)	DIMM Capacity = 128GB DIMM (Samsung)
8480+	350 W	56	XCC	T0FVH (Extended)	N/A	30	30	30
9480	350 W	56	Xeon Max	N/A	N/A	N/A	N/A	N/A
8470Q	350 W	52	XCC	N/A	N/A	N/A	N/A	N/A
8470	350 W	52	XCC	T0FVH (Extended)	N/A	30	30	30
9470	350 W	52	Xeon Max	N/A	N/A	N/A	N/A	N/A
8468	350 W	48	XCC	T0FVH (Extended)	N/A	30	30	30
8458P	350 W	44	XCC	T0FVH (Extended)	N/A	30	30	30
9460	350 W	40	Xeon Max	T0FVH (Extended)	N/A	30	30	30
6458Q	350 W	32	MCC	N/A	N/A	N/A	N/A	N/A
9462	350 W	32	Xeon Max	T0FVH (Extended)	N/A	30	30	30
8468V	330 W	48	XCC	V3P2V (General)	N/A	25*	25*	25*
8461V	300 W	48	XCC	V3P2V (General)	N/A	35	35	35
8460Y+	300 W	40	XCC	V3P2V (General)	N/A	35	35	35
8452Y	300 W	36	XCC	V3P2V (General)	N/A	35	35	35
8462Y+	300 W	32	MCC	V3P2V (General)	N/A	35	35	35
6430	270 W	32	XCC	V3P2V (General)	N/A	35	35	35
6444Y	270 W	16	MCC	V3P2V (General)	N/A	35	35	35
6414U	250 W	32	XCC	V3P2V (General)	N/A	35	35	35

Table 24. Supported ambient temperature (1P) - no backplane chassis and EDSFF chassis, air cooled (continued)

Processor	TDP	Core	Model	CPU1 HSK	CPU2 HSK	DIMM Capacity ≤ 64GB/ DIMM	DIMM Capacity = 128GB DIMM (Hynix)	DIMM Capacity = 128GB DIMM (Samsung)
6448Y	225 W	32	MCC	V3P2V (General)	N/A	35	35	35
6442Y	225 W	24	MCC	V3P2V (General)	N/A	35	35	35
6438M	205 W	32	MCC	V3P2V (General)	N/A	35	35	35
6438Y+	205 W	32	MCC	V3P2V (General)	N/A	35	35	35
5420+	205 W	28	MCC	V3P2V (General)	N/A	35	35	35
6434	195 W	8	MCC	V3P2V (General)	N/A	35	35	35
5418Y	185 W	24	MCC	V3P2V (General)	N/A	35	35	35
5412U	185 W	24	MCC	V3P2V (General)	N/A	35	35	35
6426Y	185 W	16	MCC	V3P2V (General)	N/A	35	35	35
4416+	165 W	20	MCC	V3P2V (General)	N/A	35	35	35
5416S	150 W	16	MCC	V3P2V (General)	N/A	35	35	35
4410Y	150 W	12	MCC	V3P2V (General)	N/A	35	35	35
5415+	150 W	8	MCC	V3P2V (General)	N/A	35	35	35
3408U	125 W	8	MCC	V3P2V (General)	N/A	35	35	35

Temperature restriction for liquid cooled 2.5-inch HDDs/2.5-inch NVMe/No backplane/EDSFF chassis without A2 GPU

Table 25. Supported ambient temperature - no backplane chassis, EDSFF, and 2.5-inch HDD chassis, liquid cooled

Processor	TDP	Core	Model	CPU1 HSK	CPU2 HSK	DIMM Capacity ≤ 64GB/ DIMM	DIMM Capacity = 128GB DIMM (Hynix)	DIMM Capacity = 128GB DIMM (Samsung)
8480+	350 W	56	XCC	Cold plate	Cold plate	35	35	35
9480	350 W	56	Xeon Max	Cold plate	Cold plate	35	35	35
8470Q	350 W	52	XCC	Cold plate	Cold plate	35	35	35
8470	350 W	52	XCC	Cold plate	Cold plate	35	35	35

Table 25. Supported ambient temperature - no backplane chassis, EDSFF, and 2.5-inch HDD chassis, liquid cooled (continued)

Processor	TDP	Core	Model	CPU1 HSK	CPU2 HSK	DIMM Capacity ≤ 64GB/ DIMM	DIMM Capacity = 128GB DIMM (Hynix)	DIMM Capacity = 128GB DIMM (Samsung)
9470	350 W	52	Xeon Max	Cold plate	Cold plate	35	35	35
8468	350 W	48	XCC	Cold plate	Cold plate	35	35	35
8458P	350 W	44	XCC	Cold plate	Cold plate	35	35	35
9460	350 W	40	Xeon Max	Cold plate	Cold plate	35	35	35
6458Q	350 W	32	MCC	Cold plate	Cold plate	35	35	35
9462	350 W	32	Xeon Max	Cold plate	Cold plate	35	35	35
8468V	330 W	48	XCC	Cold plate	Cold plate	35	35	35
8460Y+	300 W	40	XCC	Cold plate	Cold plate	35	35	35
8452Y	300 W	36	XCC	Cold plate	Cold plate	35	35	35
8462Y+	300 W	32	MCC	Cold plate	Cold plate	35	35	35
6430	270 W	32	XCC	Cold plate	Cold plate	35	35	35
6444Y	270 W	16	MCC	Cold plate	Cold plate	35	35	35
6448Y	225 W	32	MCC	Cold plate	Cold plate	35	35	35
6442Y	225 W	24	MCC	Cold plate	Cold plate	35	35	35
6438M	205 W	32	MCC	Cold plate	Cold plate	35	35	35
6438Y+	205 W	32	MCC	Cold plate	Cold plate	35	35	35
5420+	205 W	28	MCC	Cold plate	Cold plate	35	35	35
6434	195 W	8	MCC	Cold plate	Cold plate	35	35	35
5418Y	185 W	24	MCC	Cold plate	Cold plate	35	35	35
6426Y	185 W	16	MCC	Cold plate	Cold plate	35	35	35
4416+	165 W	20	MCC	Cold plate	Cold plate	35	35	35
5416S	150 W	16	MCC	Cold plate	Cold plate	35	35	35
4410Y	150 W	12	MCC	Cold plate	Cold plate	35	35	35
5415+	150 W	8	MCC	Cold plate	Cold plate	35	35	35

Table 26. Supported ambient temperature - 2.5-inch NVMe chassis, liquid cooled without A2 GPU

Processor	TDP	Core	Model	CPU1 HSK	CPU2 HSK	DIMM Capacity ≤ 64GB/ DIMM	DIMM Capacity = 128GB DIMM (Hynix)	DIMM Capacity = 128GB DIMM (Samsung)
8480+	350 W	56	XCC	Cold plate	Cold plate	35	35	N/A
9480	350 W	56	Xeon Max	Cold plate	Cold plate	35	35	N/A
8470Q	350 W	52	XCC	Cold plate	Cold plate	35	35	N/A
8470	350 W	52	XCC	Cold plate	Cold plate	35	35	N/A
9470	350 W	52	Xeon Max	Cold plate	Cold plate	35	35	N/A
8468	350 W	48	XCC	Cold plate	Cold plate	35	35	N/A

Table 26. Supported ambient temperature - 2.5-inch NVMe chassis, liquid cooled without A2 GPU (continued)

Processor	TDP	Core	Model	CPU1 HSK	CPU2 HSK	DIMM Capacity ≤ 64GB/ DIMM	DIMM Capacity = 128GB DIMM (Hynix)	DIMM Capacity = 128GB DIMM (Samsung)
8458P	350 W	44	XCC	Cold plate	Cold plate	35	35	N/A
9460	350 W	40	Xeon Max	Cold plate	Cold plate	35	35	N/A
6458Q	350 W	32	MCC	Cold plate	Cold plate	35	35	N/A
9462	350 W	32	Xeon Max	Cold plate	Cold plate	35	35	N/A
8468V	330 W	48	XCC	Cold plate	Cold plate	35	35	N/A
8460Y+	300 W	40	XCC	Cold plate	Cold plate	35	35	N/A
8452Y	300 W	36	XCC	Cold plate	Cold plate	35	35	N/A
8462Y+	300 W	32	MCC	Cold plate	Cold plate	35	35	N/A
6430	270 W	32	XCC	Cold plate	Cold plate	35	35	N/A
6444Y	270 W	16	MCC	Cold plate	Cold plate	35	35	N/A
6448Y	225 W	32	MCC	Cold plate	Cold plate	35	35	N/A
6442Y	225 W	24	MCC	Cold plate	Cold plate	35	35	N/A
6438M	205 W	32	MCC	Cold plate	Cold plate	35	35	N/A
6438Y+	205 W	32	MCC	Cold plate	Cold plate	35	35	N/A
5420+	205 W	28	MCC	Cold plate	Cold plate	35	35	N/A
6434	195 W	8	MCC	Cold plate	Cold plate	35	35	N/A
5418Y	185 W	24	MCC	Cold plate	Cold plate	35	35	N/A
6426Y	185 W	16	MCC	Cold plate	Cold plate	35	35	N/A
4416+	165 W	20	MCC	Cold plate	Cold plate	35	35	N/A
5416S	150 W	16	MCC	Cold plate	Cold plate	35	35	N/A
4410Y	150 W	12	MCC	Cold plate	Cold plate	35	35	N/A
5415+	150 W	8	MCC	Cold plate	Cold plate	35	35	N/A

Temperature restrictions for air cooled and liquid cooled chassis with A2 GPU

Table 27. Supported ambient temperature (2P) - no backplane chassis and EDSFF chassis, liquid cooled with A2 GPU

Processor	TDP	Core	Model	CPU1 HSK	CPU2 HSK	DIMM Capacity ≤ 64GB/ DIMM	DIMM Capacity = 128GB DIMM (Hynix)	DIMM Capacity = 128GB DIMM (Samsung)
8480+	350 W	56	XCC	N/A	N/A	N/A	N/A	N/A
9480	350 W	56	Xeon Max	N/A	N/A	N/A	N/A	N/A
8470Q	350 W	52	XCC	N/A	N/A	N/A	N/A	N/A
8470	350 W	52	XCC	N/A	N/A	N/A	N/A	N/A
9470	350 W	52	Xeon Max	N/A	N/A	N/A	N/A	N/A

Table 27. Supported ambient temperature (2P) - no backplane chassis and EDSFF chassis, liquid cooled with A2 GPU (continued)

Processor	TDP	Core	Model	CPU1 HSK	CPU2 HSK	DIMM Capacity ≤ 64GB/ DIMM	DIMM Capacity = 128GB DIMM (Hynix)	DIMM Capacity = 128GB DIMM (Samsung)
8468	350 W	48	XCC	N/A	N/A	N/A	N/A	N/A
8458P	350 W	44	XCC	N/A	N/A	N/A	N/A	N/A
9460	350 W	40	Xeon Max	N/A	N/A	N/A	N/A	N/A
6458Q	350 W	32	MCC	N/A	N/A	N/A	N/A	N/A
9462	350 W	32	Xeon Max	N/A	N/A	N/A	N/A	N/A
8468V	330 W	48	XCC	N/A	N/A	N/A	N/A	N/A
8460Y+	300 W	40	XCC	T0FVH (Extended)	V25GT	20	20	20
8452Y	300 W	36	XCC	T0FVH (Extended)	V25GT	20	20	20
8462Y+	300 W	32	MCC	N/A	N/A	N/A	N/A	N/A
6430	270 W	32	XCC	T0FVH (Extended)	V25GT	20	20	20
6444Y	270 W	16	MCC	T0FVH (Extended)	V25GT	20	20	20
6448Y	225 W	32	MCC	V3P2V (General)	V25GT	30*	30*	30*
6442Y	225 W	24	MCC	V3P2V (General)	V25GT	30*	30*	30*
6438M	205 W	32	MCC	V3P2V (General)	V25GT	30*	30*	30*
6438Y+	205 W	32	MCC	V3P2V (General)	V25GT	30*	30*	30*
5420+	205 W	28	MCC	V3P2V (General)	V25GT	30*	30*	30*
6434	195 W	8	MCC	V3P2V (General)	V25GT	35	35	35
5418Y	185 W	24	MCC	V3P2V (General)	V25GT	35	35	35
6426Y	185 W	16	MCC	V3P2V (General)	V25GT	35	35	35
4416+	165 W	20	MCC	V3P2V (General)	V25GT	35	35	35
5416S	150 W	16	MCC	V3P2V (General)	V25GT	35	35	35
4410Y	150 W	12	MCC	V3P2V (General)	V25GT	35	35	35
5415+	150 W	8	MCC	V3P2V (General)	V25GT	35	35	35

Table 28. Supported ambient temperature (1P) - no backplane chassis and EDSFF chassis, liquid cooled with A2 GPU

Processor	TDP	Core	Model	CPU1 HSK	CPU2 HSK	DIMM Capacity ≤ 64GB/ DIMM	DIMM Capacity = 128GB DIMM (Hynix)	DIMM Capacity = 128GB DIMM (Samsung)
8480+	350 W	56	XCC	T0FVH (Extended)	N/A	30	30	30
9480	350 W	56	Xeon Max	N/A	N/A	N/A	N/A	N/A
8470Q	350 W	52	XCC	N/A	N/A	N/A	N/A	N/A
8470	350 W	52	XCC	T0FVH (Extended)	N/A	30	30	30
9470	350 W	52	Xeon Max	N/A	N/A	N/A	N/A	N/A
8468	350 W	48	XCC	T0FVH (Extended)	N/A	30	30	30
8458P	350 W	44	XCC	T0FVH (Extended)	N/A	30	30	30
9460	350 W	40	Xeon Max	T0FVH (Extended)	N/A	30	30	30
6458Q	350 W	32	MCC	N/A	N/A	N/A	N/A	N/A
9462	350 W	32	Xeon Max	N/A	N/A	30	30	30
8468V	330 W	48	XCC	V3P2V (General)	N/A	25*	25*	25*
8461V	300 W	48	XCC	V3P2V (General)	N/A	30	30	30
8460Y+	300 W	40	XCC	V3P2V (General)	N/A	30	30	30
8452Y	300 W	36	XCC	V3P2V (General)	N/A	30	30	30
8462Y+	300 W	32	MCC	V3P2V (General)	N/A	30	30	30
6430	270 W	32	XCC	V3P2V (General)	N/A	30	30	30
6444Y	270 W	16	MCC	V3P2V (General)	N/A	30	30	30
6414U	250 W	32	XCC	V3P2V (General)	N/A	35	35	35
6448Y	225 W	32	MCC	V3P2V (General)	N/A	35	35	35
6442Y	225 W	24	MCC	V3P2V (General)	N/A	35	35	35
6438M	205 W	32	MCC	V3P2V (General)	N/A	35	35	35
6438Y+	205 W	32	MCC	V3P2V (General)	N/A	35	35	35
5420+	205 W	28	MCC	V3P2V (General)	N/A	35	35	35

Table 28. Supported ambient temperature (1P) - no backplane chassis and EDSFF chassis, liquid cooled with A2 GPU (continued)

Processor	TDP	Core	Model	CPU1 HSK	CPU2 HSK	DIMM Capacity ≤ 64GB/ DIMM	DIMM Capacity = 128GB DIMM (Hynix)	DIMM Capacity = 128GB DIMM (Samsung)
6434	195 W	8	MCC	V3P2V (General)	N/A	35	35	35
5418Y	185 W	24	MCC	V3P2V (General)	N/A	35	35	35
5412U	185 W	24	MCC	V3P2V (General)	N/A	35	35	35
6426Y	185 W	16	MCC	V3P2V (General)	N/A	35	35	35
4416+	165 W	20	MCC	V3P2V (General)	N/A	35	35	35
5416S	150 W	16	MCC	V3P2V (General)	N/A	35	35	35
4410Y	150 W	12	MCC	V3P2V (General)	N/A	35	35	35
5415+	150 W	8	MCC	V3P2V (General)	N/A	35	35	35
3408U	125 W	8	MCC	V3P2V (General)	N/A	35	35	35

Table 29. Supported ambient temperature (1P) - 2.5-inch HDD, air cooled with A2 GPU

Processor	TDP	Core	Model	CPU1 HSK	CPU2 HSK	DIMM Capacity ≤ 64GB/ DIMM	DIMM Capacity = 128GB DIMM (Hynix)	DIMM Capacity = 128GB DIMM (Samsung)
8480+	350 W	56	XCC	N/A	N/A	N/A	N/A	N/A
9480	350 W	56	Xeon Max	N/A	N/A	N/A	N/A	N/A
8470Q	350 W	52	XCC	N/A	N/A	N/A	N/A	N/A
8470	350 W	52	XCC	N/A	N/A	N/A	N/A	N/A
9470	350 W	52	Xeon Max	N/A	N/A	N/A	N/A	N/A
8468	350 W	48	XCC	N/A	N/A	N/A	N/A	N/A
8458P	350 W	44	XCC	N/A	N/A	N/A	N/A	N/A
9460	350 W	40	Xeon Max	N/A	N/A	N/A	N/A	N/A
6458Q	350 W	32	MCC	N/A	N/A	N/A	N/A	N/A
9462	350 W	32	Xeon Max	N/A	N/A	N/A	N/A	N/A
8468V	330 W	48	XCC	N/A	N/A	N/A	N/A	N/A
8461V	300 W	48	XCC	N/A	N/A	N/A	N/A	N/A
8460Y+	300 W	40	XCC	N/A	N/A	N/A	N/A	N/A
8452Y	300 W	36	XCC	N/A	N/A	N/A	N/A	N/A
8462Y+	300 W	32	MCC	N/A	N/A	N/A	N/A	N/A
6430	270 W	32	XCC	N/A	N/A	N/A	N/A	N/A

Table 29. Supported ambient temperature (1P) - 2.5-inch HDD, air cooled with A2 GPU (continued)

Processor	TDP	Core	Model	CPU1 HSK	CPU2 HSK	DIMM Capacity ≤ 64GB/ DIMM	DIMM Capacity = 128GB DIMM (Hynix)	DIMM Capacity = 128GB DIMM (Samsung)
6444Y	270 W	16	MCC	N/A	N/A	N/A	N/A	N/A
6414U	250 W	32	XCC	T0FVH (Extended)	N/A	20	20	N/A
6448Y	225 W	32	MCC	T0FVH (Extended)	N/A	20	20	N/A
6442Y	225 W	24	MCC	T0FVH (Extended)	N/A	20	20	N/A
6438M	205 W	32	MCC	V3P2V (General)	N/A	20	20	20
6438Y+	205 W	32	MCC	V3P2V (General)	N/A	20	20	20
5420+	205 W	28	MCC	V3P2V (General)	N/A	20	20	20
6434	195 W	8	MCC	V3P2V (General)	N/A	20	20	20
5418Y	185 W	24	MCC	V3P2V (General)	N/A	20	20	20
5412U	185 W	24	MCC	V3P2V (General)	N/A	20	20	20
6426Y	185 W	16	MCC	V3P2V (General)	N/A	20	20	20
4416+	165 W	20	MCC	V3P2V (General)	N/A	20*	20*	20
5416S	150 W	16	MCC	V3P2V (General)	N/A	25	25	20
4410Y	150 W	12	MCC	V3P2V (General)	N/A	25	25	20
5415+	150 W	8	MCC	V3P2V (General)	N/A	25	25	20
3408U	125 W	8	MCC	V3P2V (General)	N/A	25*	25*	25

Table 30. Supported ambient temperature (1P) - NVMe chassis, air cooled with A2 GPU

Processor	TDP	Core	Model	CPU1 HSK	CPU2 HSK	DIMM Capacity ≤ 64GB/ DIMM	DIMM Capacity = 128GB DIMM (Hynix)	DIMM Capacity = 128GB DIMM (Samsung)
8480+	350 W	56	XCC	N/A	N/A	N/A	N/A	N/A
9480	350 W	56	Xeon Max	N/A	N/A	N/A	N/A	N/A
8470Q	350 W	52	XCC	N/A	N/A	N/A	N/A	N/A
8470	350 W	52	XCC	N/A	N/A	N/A	N/A	N/A
9470	350 W	52	Xeon Max	N/A	N/A	N/A	N/A	N/A
8468	350 W	48	XCC	N/A	N/A	N/A	N/A	N/A

Table 30. Supported ambient temperature (1P) - NVMe chassis, air cooled with A2 GPU (continued)

Processor	TDP	Core	Model	CPU1 HSK	CPU2 HSK	DIMM Capacity ≤ 64GB/ DIMM	DIMM Capacity = 128GB DIMM (Hynix)	DIMM Capacity = 128GB DIMM (Samsung)
8458P	350 W	44	XCC	N/A	N/A	N/A	N/A	N/A
9460	350 W	40	Xeon Max	N/A	N/A	N/A	N/A	N/A
6458Q	350 W	32	MCC	N/A	N/A	N/A	N/A	N/A
9462	350 W	32	Xeon Max	N/A	N/A	N/A	N/A	N/A
8468V	330 W	48	XCC	N/A	N/A	N/A	N/A	N/A
8461V	300 W	48	XCC	N/A	N/A	N/A	N/A	N/A
8460Y+	300 W	40	XCC	N/A	N/A	N/A	N/A	N/A
8452Y	300 W	36	XCC	N/A	N/A	N/A	N/A	N/A
8462Y+	300 W	32	MCC	N/A	N/A	N/A	N/A	N/A
6430	270 W	32	XCC	N/A	N/A	N/A	N/A	N/A
6444Y	270 W	16	MCC	N/A	N/A	N/A	N/A	N/A
6414U	250 W	32	XCC	N/A	N/A	N/A	N/A	N/A
6448Y	225 W	32	MCC	N/A	N/A	N/A	N/A	N/A
6442Y	225 W	24	MCC	N/A	N/A	N/A	N/A	N/A
6438M	205 W	32	MCC	N/A	N/A	N/A	N/A	N/A
6438Y+	205 W	32	MCC	N/A	N/A	N/A	N/A	N/A
5420+	205 W	28	MCC	N/A	N/A	N/A	N/A	N/A
6434	195 W	8	MCC	N/A	N/A	N/A	N/A	N/A
5418Y	185 W	24	MCC	V3P2V (General)	N/A	20	20	N/A
5412U	185 W	24	MCC	V3P2V (General)	N/A	20	20	N/A
6426Y	185 W	16	MCC	V3P2V (General)	N/A	20	20	N/A
4416+	165 W	20	MCC	V3P2V (General)	N/A	20	20	N/A
5416S	150 W	16	MCC	V3P2V (General)	N/A	25	25	20
4410Y	150 W	12	MCC	V3P2V (General)	N/A	25	25	20
5415+	150 W	8	MCC	V3P2V (General)	N/A	25	25	20
3408U	125 W	8	MCC	V3P2V (General)	N/A	25	25	20

Table 31. Supported ambient temperature (2P) - no backplane chassis and EDSFF chassis, liquid cooled with A2 GPU

Processor	TDP	Core	Model	CPU1 HSK	CPU2 HSK	DIMM Capacity ≤ 64GB/ DIMM	DIMM Capacity = 128GB DIMM (Hynix)	DIMM Capacity = 128GB DIMM (Samsung)
8480+	350 W	56	XCC	Cold plate	Cold plate	35	35	35
9480	350 W	56	Xeon Max	Cold plate	Cold plate	35	35	35
8470Q	350 W	52	XCC	Cold plate	Cold plate	35	35	35
8470	350 W	52	XCC	Cold plate	Cold plate	35	35	35
9470	350 W	52	Xeon Max	Cold plate	Cold plate	35	35	35
8468	350 W	48	XCC	Cold plate	Cold plate	35	35	35
8458P	350 W	44	XCC	Cold plate	Cold plate	35	35	35
9460	350 W	40	Xeon Max	Cold plate	Cold plate	35	35	35
6458Q	350 W	32	MCC	Cold plate	Cold plate	35	35	35
9462	350 W	32	Xeon Max	Cold plate	Cold plate	35	35	35
8468V	330 W	48	XCC	Cold plate	Cold plate	35	35	35
8460Y+	300 W	40	XCC	Cold plate	Cold plate	35	35	35
8452Y	300 W	36	XCC	Cold plate	Cold plate	35	35	35
8462Y+	300 W	32	MCC	Cold plate	Cold plate	35	35	35
6430	270 W	32	XCC	Cold plate	Cold plate	35	35	35
6444Y	270 W	16	MCC	Cold plate	Cold plate	35	35	35
6448Y	225 W	32	MCC	Cold plate	Cold plate	35	35	35
6442Y	225 W	24	MCC	Cold plate	Cold plate	35	35	35
6438M	205 W	32	MCC	Cold plate	Cold plate	35	35	35
6438Y+	205 W	32	MCC	Cold plate	Cold plate	35	35	35
5420+	205 W	28	MCC	Cold plate	Cold plate	35	35	35
6434	195 W	8	MCC	Cold plate	Cold plate	35	35	35
5418Y	185 W	24	MCC	Cold plate	Cold plate	35	35	35
6426Y	185 W	16	MCC	Cold plate	Cold plate	35	35	35
4416+	165 W	20	MCC	Cold plate	Cold plate	35	35	35
5416S	150 W	16	MCC	Cold plate	Cold plate	35	35	35
4410Y	150 W	12	MCC	Cold plate	Cold plate	35	35	35
5415+	150 W	8	MCC	Cold plate	Cold plate	35	35	35

Table 32. Supported ambient temperature (2P) - 2.5-inch HDD and NVMe chassis, liquid cooled with A2 GPU

Processor	TDP	Core	Model	CPU1 HSK	CPU2 HSK	DIMM Capacity ≤ 64GB/ DIMM	DIMM Capacity = 128GB DIMM (Hynix)	DIMM Capacity = 128GB DIMM (Samsung)
8480+	350 W	56	XCC	Cold plate	Cold plate	25	25	25

Table 32. Supported ambient temperature (2P) - 2.5-inch HDD and NVMe chassis, liquid cooled with A2 GPU (continued)

Processor	TDP	Core	Model	CPU1 HSK	CPU2 HSK	DIMM Capacity ≤ 64GB/ DIMM	DIMM Capacity = 128GB DIMM (Hynix)	DIMM Capacity = 128GB DIMM (Samsung)
9480	350 W	56	Xeon Max	Cold plate	Cold plate	25	25	25
8470Q	350 W	52	XCC	Cold plate	Cold plate	25	25	25
8470	350 W	52	XCC	Cold plate	Cold plate	25	25	25
9470	350 W	52	Xeon Max	Cold plate	Cold plate	25	25	25
8468	350 W	48	XCC	Cold plate	Cold plate	25	25	25
8458P	350 W	44	XCC	Cold plate	Cold plate	25	25	25
9460	350 W	40	Xeon Max	Cold plate	Cold plate	25	25	25
6458Q	350 W	32	MCC	Cold plate	Cold plate	25	25	25
9462	350 W	32	Xeon Max	Cold plate	Cold plate	25	25	25
8468V	330 W	48	XCC	Cold plate	Cold plate	25	25	25
8460Y+	300 W	40	XCC	Cold plate	Cold plate	25	25	25
8452Y	300 W	36	XCC	Cold plate	Cold plate	25	25	25
8462Y+	300 W	32	MCC	Cold plate	Cold plate	25	25	25
6430	270 W	32	XCC	Cold plate	Cold plate	25	25	25
6444Y	270 W	16	MCC	Cold plate	Cold plate	25	25	25
6448Y	225 W	32	MCC	Cold plate	Cold plate	25	25	25
6442Y	225 W	24	MCC	Cold plate	Cold plate	25	25	25
6438M	205 W	32	MCC	Cold plate	Cold plate	25	25	25
6438Y+	205 W	32	MCC	Cold plate	Cold plate	25	25	25
5420+	205 W	28	MCC	Cold plate	Cold plate	25	25	25
6434	195 W	8	MCC	Cold plate	Cold plate	25	25	25
5418Y	185 W	24	MCC	Cold plate	Cold plate	25	25	25
6426Y	185 W	16	MCC	Cold plate	Cold plate	25	25	25
4416+	165 W	20	MCC	Cold plate	Cold plate	25	25	25
5416S	150 W	16	MCC	Cold plate	Cold plate	25	25	25
4410Y	150 W	12	MCC	Cold plate	Cold plate	25	25	25
5415+	150 W	8	MCC	Cold plate	Cold plate	25	25	25

Acoustics

Acoustical performance

Acoustical performance is provided in terms of two configurations. HPC and Webtech configuration. The following tables show the acoustical configuration and performance for the C6620.

Table 33. Acoustical configuration for C6620

Configuration	HPC	Webtech
CPU Type	Intel	Intel
CPU TDP / Cores	185W / 24 cores	150W / 8 cores
CPU Quantity	8	8
RDIMM Memory	32GB RDIMM DDR5	16GB RDIMM DDR5
Memory Quantity	32	32
Backplane Type	None	16x 2.5" NVMe
HDD Type	None	N/A
HDD Quantity	0	0
PSU Type	2800 W	1800 W
PSU Quantity	2	2
OCP	2-port 25Gbe	2-port 25Gbe
PCI1	IB	25GBE 2P(NIC card)
PCI 2	None	None
BOSS	Modular BOSS NVMe x4	Modular BOSS NVMe x4
Others	None	None

Table 34. Acoustical performance for C6620

Configuration		HPC	Webtech
Acoustical Performance: Idle/ Operating @ 23 ± 2 °C Ambient			
$L_{wA,m}$(B)	Idle	TBA	TBA
	Operating	TBA	TBA
K_v(B)	Idle	0.4	0.4
	Operating	0.4	0.4
$L_{pA,m}$(dB)	Idle	TBA	TBA
	Operating	TBA	TBA
Prominent Tones		No prominent tones in idle and operating	
Acoustical Performance: Idle @ 28°C:			
$L_{wA,m}$(B)		TBA	TBA
K_v(B)		0.4	0.4
$L_{pA,m}$(dB)		TBA	TBA
Acoustical Performance: Idle @ 35°C:			
$L_{wA,m}$(B)		TBA	TBA
K_v(B)		0.4	0.4
$L_{pA,m}$(dB)		TBA	TBA

LwA,m: The declared mean A-weighted sound power level (LwA) is calculated per section 5.2 of ISO 9296 (2017) with data collected using the methods described in ISO 7779 (2010). Data presented here may not be fully compliant with ISO 7779.

LpA,m: The declared mean A-weighted emission sound pressure level is at the bystander position per section 5.3 of ISO 9296 (2017) and measured using methods described in ISO 7779 (2010). The system is placed on standard test table and in a 24U rack enclosure, 25cm above a reflective floor. Data presented here may not be fully compliant with ISO 7779.

Prominent tones: Criteria of D.6 and D.11 of ECMA-74 (17th ed., Dec. 2019) are followed to determine if discrete tones are prominent and to report them, if so.

Idle mode: The steady-state condition in which the server is energized but not operating any intended function.

Operating mode: The maximum of the steady state acoustical output at 50% of CPU TDP or active HDDs or 100% of GPUper C.9.3.2 in ECMA-74 (17th ed., Dec. 2019).

10

Rack, rails, and cable management

Key factors in selecting the proper rails include:

- Identifying the type of rack in which they will be installed.
- The spacing between the front and rear mounting flanges of the rack.
- The type and location of any equipment mounted in the back of the rack such as power distribution units (PDUs), and the overall depth of the rack.

See the Dell EMC Enterprise Systems Rail Sizing and Rack Compatibility Matrix for the following information:

- Specific details about rail types and their functionalities.
- Rail adjustability ranges for various rack mounting flange types.
- Rail depth with and without cable management accessories.
- Rack types supported for various rack mounting flange types.

Topics:

Rails information

The rack rail system for C6600 server provides tool-less support for 4-post racks with square or unthreaded round holes. There is no support for a cable management arm (CMA) or a strain relief bar (SRB). The static rails support a wide variety of racks.

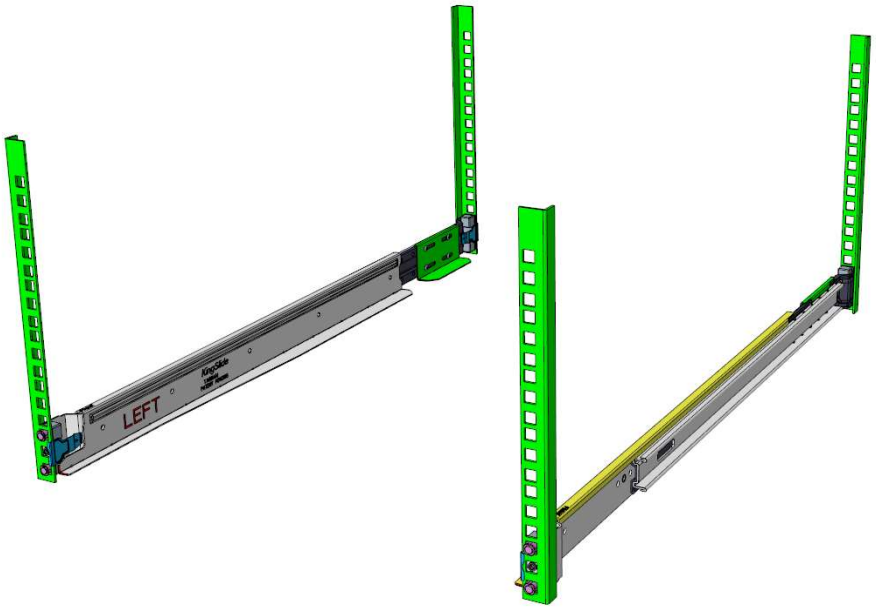

Figure 18. Static rail

The key factor in selecting the proper rails is identifying the type of rack in which they are installed. The static rail supports tool-less mounting in 19"-wide, EIA-310-E compliant square-hole and unthreaded round-hole 4-post racks. The static rail does not support mounting in threaded-hole racks.

NOTE: APC racks are also not supported.

Table 35. Rail adjustability range

Rail Adjustability range (mm)							
Product	**Rail Identifier**	**Mounting Interface**	**Rail Type**	**Square**		**Round**	
				Min	**Max**	**Min**	**Max**
C6600	N/A	Tool-less	Static	603 mm*	917 mm	603 mm*	917 mm

NOTE: * – minor conversion required

Other key factors governing proper rail selection include the spacing between the front and rear mounting flanges of the rack, the type and location of any equipment mounted in the back of the rack, such as power distribution units, and the overall depth of the rack. Due to their reduced complexity and lack of CMA and SRB support, the static rails offer a greater adjustability range and a smaller overall mounting footprint than sliding rails.

For information about installing the system in a rack, see the *Dell PowerEdge Rack Installation Guide* on Dell.com/Support/Manuals.

11

Supported Operating Systems

The PowerEdge system supports the following operating systems:

- Canonical® Ubuntu® Server LTS
- Microsoft® Windows Server® with Hyper-V
- Red Hat® Enterprise Linux
- SUSE® Linux Enterprise server
- VMware® ESXi®

Links to specific OS versions and editions, certification matrices, Hardware Compatibility Lists (HCL) portal, and Hypervisor support are available at Dell EMC Enterprise Operating Systems.

12

Dell OpenManage Systems Management

Dell delivers management solutions that help IT administrators effectively deploy, update, monitor, and manage IT assets. OpenManage solutions and tools enable you to quickly respond to problems by helping them to manage Dell servers efficiently; in physical, virtual, local, and remote environments; all without the need to install an agent in the operating system.

The OpenManage portfolio includes:

- Innovative embedded management tools - integrated Dell Remote Access Controller (iDRAC)
- Consoles - OpenManage Enterprise
- Extensible with plug-ins - OpenManage Power Manager
- Update tools - Repository Manager

Dell has developed comprehensive systems management solutions that are based on open standards and has integrated with management consoles from partners such as Microsoft and VMware, allowing advanced management of Dell servers. Dell management capabilities extend to offerings from the industry's top systems management vendors and frameworks such as Ansible, Splunk, and ServiceNow. OpenManage tools automate the full span of server life cycle management activities along with powerful RESTful APIs to script or integrate with your choice of frameworks.

For more information about the entire OpenManage portfolio, see:

- The latest Dell Systems Management Overview Guide.

Topics:

Integrated Dell Remote Access Controller (iDRAC)

iDRAC9 delivers advanced, agent-free, local and remote server administration. Embedded in every PowerEdge server, iDRAC9 provides a secure means to automate a multitude of common management tasks. Because iDRAC is embedded within every PowerEdge server, there is no additional software to install; just plug in power and network cables, and iDRAC is ready to go. Even before installing an operating system (operating system) or hypervisor, IT administrators have a complete set of server management features at their fingertips.

With iDRAC9 in-place across the Dell PowerEdge portfolio, the same IT administration techniques and tools can be applied throughout. This consistent management platform allows easy scaling of PowerEdge servers as an organization's infrastructure grows. Customers can use the iDRAC RESTful API for the latest in scalable administration methods of PowerEdge servers. With this API, iDRAC enables support for the Redfish standard and enhances it with Dell extensions to optimize at-scale management of PowerEdge servers. By having iDRAC at the core, the entire OpenManage portfolio of Systems Management tools allows every customer to tailor an effective, affordable solution for any size environment.

Zero Touch Provisioning (ZTP) is embedded in iDRAC. ZTP - Zero Touch Provisioning is Intelligent Automation Dell's agent-free management puts IT administrators in control. Once a PowerEdge server is connected to power and networking, that system can be monitored and fully managed, whether you're standing in front of the server or remotely over a network. In fact, with no need for software agents, an IT administrator can: · Monitor · Manage · Update · Troubleshoot and remediate Dell servers With features like zero-touch deployment and provisioning, iDRAC Group Manager, and System Lockdown, iDRAC9 is purpose-built to make server administration quick and easy. For those customers whose existing management platform utilizes in-band management, Dell does provide iDRAC Service Module, a lightweight service that can interact with both iDRAC9 and the host operating system to support legacy management platforms.

When ordered with DHCP enabled from the factory, PowerEdge servers can be automatically configured when they are initially powered up and connected to your network. This process uses profile-based configurations that ensure each server is configured per your specifications. This feature requires an iDRAC Enterprise license.

iDRAC9 offers following license tiers:

Table 36. iDRAC9 license tiers

License	Description
iDRAC9 Basic	• Available only on 100-500 series rack/tower • Basic instrumentation with iDRAC web UI • For cost conscious customers that see limited value in management
iDRAC9 Express	• Default on 600+ series rack/tower, modular, and XR series • Includes all features of Basic • Expanded remote management and server life-cycle features
iDRAC9 Enterprise	• Available as an upsell on all servers • Includes all features of Basic and Express. Includes key features such as virtual console, AD/LDAP support, and more • Remote presence features with advanced, Enterprise-class, management capabilities
iDRAC9 Datacenter	• Available as an upsell on all servers • Includes all features of Basic, Express, and Enterprise. Includes key features such as telemetry streaming, Thermal Manage, automated certificate management, and more • Extended remote insight into server details, focused on high end server options, granular power, and thermal management

For a full list of iDRAC features by license tier, see Integrated Dell Remote Access Controller 9 User's Guide at Dell.com.

For more details on iDRAC9 including white papers and videos, see:

- Support for Integrated Dell Remote Access Controller 9 (iDRAC9) on the Knowledge Base page at Dell.com

Systems Management software support matrix

Table 37. Systems Management software support matrix

Categories	Features	PE mainstream
Embedded Management and In-band Services	iDRAC9 (Express, Enterprise, and Datacenter licenses)	Supported
	OpenManage Mobile	Supported
	OM Server Administrator (OMSA)	Supported
	iDRAC Service Module (iSM)	Supported
	Driver Pack	Supported
Change Management	Update Tools (Repository Manager, DSU, Catalogs)	Supported
	Server Update Utility	Supported
	Lifecycle Controller Driver Pack	Supported
	Bootable ISO	Supported
Console and Plug-ins	OpenManage Enterprise	Supported
	Power Manager Plug-in	Supported
	Update Manager Plug-in	Supported
	SupportAssist Plug-in	Supported
	CloudIQ	Supported
Integrations and connections	OM Integration with VMware Vcenter/vROps	Supported
	OM Integration with Microsoft System Center (OMIMSC)	Supported
	Integrations with Microsoft System Center and Windows Admin Center (WAC)	Supported

Table 37. Systems Management software support matrix (continued)

Categories	Features	PE mainstream
	ServiceNow	Supported
	Ansible	Supported
	Third-party Connectors (Nagios, Tivoli, Microfocus)	Supported
Security	Secure Enterprise Key Management	Supported
	Secure Component Verification	Supported
Standard operating system	Red Hat Enterprise Linux, SUSE, Windows Server 2021 Ubuntu, CentOS	Supported (Tier-1)

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Appendix A. Additional specifications

Topics:

Chassis and sled dimension

The PowerEdge C6600 chassis has the following dimensions:

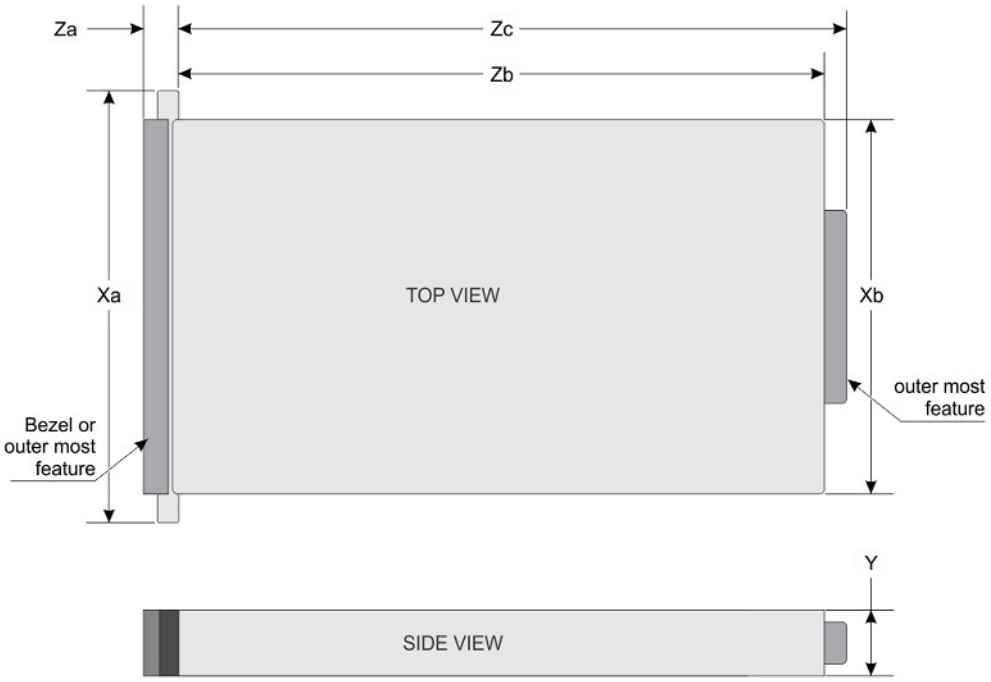

Figure 19. Chassis dimension

Table 38. PowerEdge C6600 chassis dimensions

Drives	Xa	Xb	Y	Za	Zb	Zc
Diskless/ 8 drives/ 16 drives	489.0 mm (19.25 inches)	448.0 mm (17.63 inches)	86.8 mm (3.41 inches)	42.0 mm (1.65 inches)	763.2 mm (30.04 inches) ear to rear wall	799.97 mm (31.49 inches) ear to PSU handle 802.4 mm (31.60 inches) ear to handle velcro

Sled dimension

The PowerEdge C6600 chassis has the following dimensions:

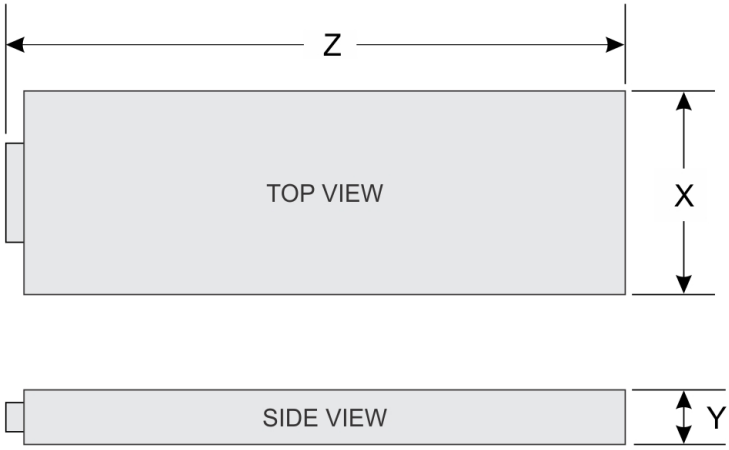

Figure 20. Sled dimension

Table 39. PowerEdge C6620 sled dimensions

X	Y	Z
174.4 mm (6.86 inches)	40.0 mm (1.57 inches)	549.7 mm (21.64 inches)

Chassis weight

Table 40. Chassis weight

System	Maximum Weight
8 x E3.s	41.1 kg (90.60 pound)
16 x 2.5-inch SAS/SATA	42.5 kg (93.69 pound)
16 x 2.5-inch NVMe	41.8 kg (92.15 pound)
Diskless	39.2 kg (86.42 pound)

Video specifications

The PowerEdge C6620 system supports integrated Matrox G200 graphics controller from mini-DP display port.

Table 41. Supported video resolution options

Resolution	Refresh rate (Hz)	Color depth (bits)
640 x 480	60	8, 16, 32
800 x 600	60	8, 16, 32
1024 x 768	60	8, 16, 32
1280 x 800	60	8, 16, 32
1280 x 1024	60	8, 16, 32
1360 x 768	60	8, 16, 32
1600 x 900	60	8, 16, 32
1600 x 900	60	8, 16, 32

Table 41. Supported video resolution options (continued)

Resolution	Refresh rate (Hz)	Color depth (bits)
1680 x 1050	60	8, 16, 32
1920 x 1080	60	8, 16, 32
1920 x 1200	60	8, 16, 32

PSU specifications

The PowerEdge C6620 system supports up to two AC or DC power supply units (PSUs).

Table 42. PSU specifications

PSU	Class	Heat dissipation (maximum) (BTU/hr)	Frequency (Hz)	Voltage	AC		DC	Current (A)
					High line wattage	Low line wattage		
3200 W	NA	12000 BTU/hr	NA	336 V DC	NA	NA	3200 W	11.5 A
3200 W	NA	12000 BTU/hr	50/60 Hz	277 V AC	3200 W	NA	NA	13.0 A
2800 W	NA	10500 BTU/hr	NA	240 V DC	NA	NA	2800 W	13.6 A
2800 W	Titanium	10500 BTU/hr	50/60 Hz	200-240 V AC	2800 W	NA	NA	15.6 A
2400 W	NA	9000 BTU/hr	NA	240 V DC	NA	NA	2400 W	11.2 A
2400 W	Platinum	9000 BTU/hr	50/60 Hz	100-240 V AC	2400 W	1400 W	NA	16-13.5 A
1800 W	NA	6750 BTU/hr	NA	240 VDC	NA	NA	1800 W	8.2 A
1800 W	Titanium	6750 BTU/hr	50/60 Hz	200-240 V AC	1800 W	NA	NA	10 A

NOTE: Heat dissipation is calculated using the PSU wattage rating.

NOTE: When selecting or upgrading the system configuration, to ensure optimum power utilization, verify the system power consumption with the Enterprise Infrastructure Planning Tool available at Dell.com/calc.

Environmental specifications

NOTE: For additional information about environmental certifications, refer to the *Product Environmental Datasheet* located with the *Documentation* on www.dell.com/support/home.

Table 43. Continuous Operation Specifications for ASHRAE A3

Allowable continuous operations	
Temperature range for altitudes <= 900 m (<= 2953 ft)	5–40°C (41–104°F) with no direct sunlight on the equipment
Humidity percent range (non-condensing at all times)	8% RH with -12°C minimum dew point to 85% RH with 24°C (75.2°F) maximum dew point
Operational altitude de-rating	Maximum temperature is reduced by 1°C/175 m (33.8°F/574 Ft) above 900 m (2953 Ft)

Table 44. Continuous Operation Specifications for ASHRAE A4

Allowable continuous operations	
Temperature range for altitudes <= 900 m (<= 2953 ft)	5–45°C (41–113°F) with no direct sunlight on the equipment

Table 44. Continuous Operation Specifications for ASHRAE A4 (continued)

Allowable continuous operations	
Humidity percent range (non-condensing at all times)	8% RH with -12°C minimum dew point to 90% RH with 24°C (75.2°F) maximum dew point
Operational altitude de-rating	Maximum temperature is reduced by 1°C/125 m (33.8°F/410 Ft) above 900 m (2953 Ft)

Table 45. Common Environmental Specifications for ASHRAE A3 and A4

Allowable continuous operations	
Maximum temperature gradient (applies to both operation and non-operation)	20°C in an hour* (36°F in an hour) and 5°C in 15 minutes (41°F in 15 minutes), 5°C in an hour* (41°F in an hour) for tape **NOTE:** * - Per ASHRAE thermal guidelines for tape hardware, these are not instantaneous rates of temperature change.
Non-operational temperature limits	-40 to 65°C (-104 to 149°F)
Non-operational humidity limits	5% to 95% RH with 27°C (80.6°F) maximum dew point
Maximum non-operational altitude	12,000 meters (39,370 feet)
Maximum operational altitude	3,048 meters (10,000 feet)

Table 46. Maximum vibration specifications

Maximum vibration	Specifications
Operating	0.21 G_{rms} at 5 Hz to 500 Hz (all operation orientations)
Storage	1.88 G_{rms} at 10 Hz to 500 Hz for 15 minutes (all six sides tested)

Table 47. Maximum shock pulse specifications

Maximum shock pulse	Specifications
Operating	Six consecutively executed shock pulses in the positive and negative x, y, and z axis of 6 G for up to 11 ms. (4 pulse on each side of system)
Storage	Six consecutively executed shock pulses in the positive and negative x, y, and z axis (one pulse on each side of the system) of 71 G for up to 2 ms.

Thermal air restrictions

ASHRAE A3/A4 configuration restrictions

- NVMe SSD and E3.s are not supported
- A2 GPU is not supported.
- 128 GB and 256 GB DIMM is not supported
- CPU TDP restrictions:
  - Air cooled 2.5-inch chassis:
    - Maximum supported CPU TDP is 150 W for one processor configuration
    - Two processor configuration is not supported
  - Air cooled with no backplane chassis
    - Maximum supported CPU TDP is 250 W for one processor configuration
    - Maximum supported CPU TDP is 205 W for two processor configuration

DIMM/HDD/M.2 Blanks Restriction

- **Table 48. DIMM blank requirements**

Requirements	1 socket configuration		2 socket configuration	
	CPU 1 slot	CPU 2 slot	CPU 1 slot	CPU 2 slot
DIMM blank requirement	Yes	No	Yes	Yes

- All sled slots must be fully populated or blanked.
- All HDD slots must be fully populated or blanked
- BOSS card slot must be populated or blanked
- All PSU slots must be fully populated or blanked
- All E3.s slots must be fully populated or blanked

Mixed Sled Restriction

Mix of 1P sled and 2P sled on the same chassis is restricted. Only homogeneous 1P sleds or homogeneous 2P sleds can be supported.

Thermal restriction matrix

Temperature restriction for 2.5-inch/2.5-inch PN chassis

Table 49. 2.5-inch chassis, air cooled, 2P (2 processors)

Processor	TDP	Core count	Model	CPU1 heat sink	CPU2 heat sink	All storage configuration
8470Q	350 W	52	XCC	N/A	N/A	N/A
8480+	350 W	56	XCC	N/A	N/A	N/A
8470	350 W	52	XCC	N/A	N/A	N/A
8468	350 W	48	XCC	N/A	N/A	N/A
8458P	350 W	44	XCC	N/A	N/A	N/A
8468V	330 W	48	XCC	N/A	N/A	N/A
8468H	330 W	48	XCC	N/A	N/A	N/A
8460H	330 W	40	XCC	N/A	N/A	N/A
8470N	300 W	52	XCC	N/A	N/A	N/A
8460Y+	300 W	40	XCC	N/A	N/A	N/A
8452Y	300 W	36	XCC	N/A	N/A	N/A
6454S	270 W	32	XCC	N/A	N/A	N/A
8454H	270 W	32	XCC	N/A	N/A	N/A
6430	270 W	32	XCC	N/A	N/A	N/A
8444H	270 W	16	XCC	N/A	N/A	N/A
8450H	250 W	28	XCC	N/A	N/A	N/A

Table 50. 2.5-inch chassis, air cooled, P (1 processors)

Processor	TDP	Core count	Model	CPU1 heat sink	CPU2 heat sink	All storage configuration
8470Q	350 W	52	XCC	N/A	N/A	N/A
8480+	350 W	56	XCC	N/A	N/A	N/A
8470	350 W	52	XCC	N/A	N/A	N/A
8468	350 W	48	XCC	N/A	N/A	N/A
8458P	350 W	44	XCC	N/A	N/A	N/A
8468V	330 W	48	XCC	N/A	N/A	N/A
8468H	330 W	48	XCC	N/A	N/A	N/A
8460H	330 W	40	XCC	N/A	N/A	N/A
8471N	300 W	52	XCC	N/A	N/A	N/A
8470N	300 W	52	XCC	N/A	N/A	N/A
8461V	300 W	48	XCC	N/A	N/A	N/A
8460Y+	300 W	40	XCC	N/A	N/A	N/A
8452Y	300 W	36	XCC	N/A	N/A	N/A
6454S	270 W	32	XCC	T0FVH (Extended)	N/A	25
8454H	270 W	32	XCC	T0FVH (Extended)	N/A	25
6430	270 W	32	XCC	T0FVH (Extended)	N/A	25
8444H	270 W	16	XCC	T0FVH (Extended)	N/A	25
6414U	250 W	32	XCC	T0FVH (Extended)	N/A	25
8450H	250 W	28	XCC	T0FVH (Extended)	N/A	25

Table 51. NVME chassis, air cooled, 2P

Processor	TDP	Core count	Model	CPU1 heat sink	CPU2 heat sink	All storage configuration
8470Q	350 W	52	XCC	N/A	N/A	N/A
8480+	350 W	56	XCC	N/A	N/A	N/A
8470	350 W	52	XCC	N/A	N/A	N/A
8468	350 W	48	XCC	N/A	N/A	N/A
8458P	350 W	44	XCC	N/A	N/A	N/A
8468V	330 W	48	XCC	N/A	N/A	N/A
8468H	330 W	48	XCC	N/A	N/A	N/A
8460H	330 W	40	XCC	N/A	N/A	N/A
8470N	300 W	52	XCC	N/A	N/A	N/A
8460Y+	300 W	40	XCC	N/A	N/A	N/A
8452Y	300 W	36	XCC	N/A	N/A	N/A

Table 51. NVME chassis, air cooled, 2P (continued)

Processor	TDP	Core count	Model	CPU1 heat sink	CPU2 heat sink	All storage configuration
6454S	270 W	32	XCC	N/A	N/A	N/A
8454H	270 W	32	XCC	N/A	N/A	N/A
6430	270 W	32	XCC	N/A	N/A	N/A
8444H	270 W	16	XCC	N/A	N/A	N/A
8450H	250 W	28	XCC	N/A	N/A	N/A

Table 52. NVME chassis, air cooled, 1P

Processor	TDP	Core count	Model	CPU1 heat sink	CPU2 heat sink	All storage configuration
8470Q	350 W	52	XCC	N/A	N/A	N/A
8480+	350 W	56	XCC	N/A	N/A	N/A
8470	350 W	52	XCC	N/A	N/A	N/A
8468	350 W	48	XCC	N/A	N/A	N/A
8458P	350 W	44	XCC	N/A	N/A	N/A
8468V	330 W	48	XCC	N/A	N/A	N/A
8468H	330 W	48	XCC	N/A	N/A	N/A
8460H	330 W	40	XCC	N/A	N/A	N/A
8471N	300 W	52	XCC	N/A	N/A	N/A
8470N	300 W	52	XCC	N/A	N/A	N/A
8461V	300 W	48	XCC	N/A	N/A	N/A
8460Y+	300 W	40	XCC	N/A	N/A	N/A
8452Y	300 W	36	XCC	N/A	N/A	N/A
6454S	270 W	32	XCC	T0FVH (Extended)	N/A	20
8454H	270 W	32	XCC	T0FVH (Extended)	N/A	20
6430	270 W	32	XCC	T0FVH (Extended)	N/A	20
8444H	270 W	16	XCC	T0FVH (Extended)	N/A	20
6414U	250 W	32	XCC	T0FVH (Extended)	N/A	25
8450H	250 W	28	XCC	T0FVH (Extended)	N/A	25

Temperature restrictions for no backplane board and E3.s chassis

Table 53. No backplane chassis and E3.s chassis, air cooled, 2P

Processor	TDP	Core count	Model	CPU1 heat sink	CPU2 heat sink	All storage configuration
8470Q	350 W	52	XCC	N/A	N/A	N/A

Table 53. No backplane chassis and E3.s chassis, air cooled, 2P (continued)

Processor	TDP	Core count	Model	CPU1 heat sink	CPU2 heat sink	All storage configuration
8480+	350 W	56	XCC	N/A	N/A	N/A
8470	350 W	52	XCC	N/A	N/A	N/A
8468	350 W	48	XCC	N/A	N/A	N/A
8458P	350 W	44	XCC	N/A	N/A	N/A
8468V	330 W	48	XCC	N/A	N/A	N/A
8468H	330 W	48	XCC	N/A	N/A	N/A
8460H	330 W	40	XCC	N/A	N/A	N/A
8470N	300 W	52	XCC	N/A	N/A	N/A
8460Y+	300 W	40	XCC	N/A	N/A	N/A
8452Y	300 W	36	XCC	N/A	N/A	N/A
6454S	270 W	32	XCC	T0FVH (Extended)	V25GT	25
8454H	270 W	32	XCC	T0FVH (Extended)	V25GT	25
6430	270 W	32	XCC	T0FVH (Extended)	V25GT	25
8444H	270 W	16	XCC	T0FVH (Extended)	V25GT	25
8450H	250 W	28	XCC	V3P2V (General)	V25GT	25*

Table 54. No backplane chassis and E3.s chassis, air cooled, 1P

Processor	TDP	Core count	Model	CPU1 heat sink	CPU2 heat sink	All storage configuration
8470Q	350 W	52	XCC	T0FVH (Extended)	N/A	30
8480+	350 W	56	XCC	T0FVH (Extended)	N/A	30
8470	350 W	52	XCC	T0FVH (Extended)	N/A	30
8468	350 W	48	XCC	T0FVH (Extended)	N/A	30
8458P	350 W	44	XCC	V3P2V (General)	N/A	25
8468V	330 W	48	XCC	V3P2V (General)	N/A	25
8468H	330 W	48	XCC	V3P2V (General)	N/A	25
8460H	330 W	40	XCC	V3P2V (General)	N/A	35
8471N	300 W	52	XCC	V3P2V (General)	N/A	35
8470N	300 W	52	XCC	V3P2V (General)	N/A	35

Table 54. No backplane chassis and E3.s chassis, air cooled, 1P (continued)

Processor	TDP	Core count	Model	CPU1 heat sink	CPU2 heat sink	All storage configuration
8461V	300 W	48	XCC	V3P2V (General)	N/A	35
8460Y+	300 W	40	XCC	V3P2V (General)	N/A	35
8452Y	300 W	36	XCC	V3P2V (General)	N/A	35
6454S	270 W	32	XCC	V3P2V (General)	N/A	35
8454H	270 W	32	XCC	V3P2V (General)	N/A	35
6430	270 W	32	XCC	V3P2V (General)	N/A	35
8444H	270 W	16	XCC	V3P2V (General)	N/A	35
6414U	250 W	32	XCC	V3P2V (General)	N/A	35
8450H	250 W	28	XCC	V3P2V (General)	N/A	35

Temperature restrictions for liquid cooled chassis

Table 55. All chassis, liquid cooled (no A2 GPU card)

Processor	TDP	Core count	Model	CPU1 heat sink	CPU2 heat sink	All storage configuration
8470Q	350 W	52	XCC	Cold plate	Cold plate	35
8480+	350 W	56	XCC	Cold plate	Cold plate	35
8470	350 W	52	XCC	Cold plate	Cold plate	35
8468	350 W	48	XCC	Cold plate	Cold plate	35
8458P	350 W	44	XCC	Cold plate	Cold plate	35
8468V	330 W	48	XCC	Cold plate	Cold plate	35
8468H	330 W	48	XCC	Cold plate	Cold plate	35
8460H	330 W	40	XCC	Cold plate	Cold plate	35
8470N	300 W	52	XCC	Cold plate	Cold plate	35
8460Y+	300 W	40	XCC	Cold plate	Cold plate	35
8452Y	300 W	36	XCC	Cold plate	Cold plate	35
6454S	270 W	32	XCC	Cold plate	Cold plate	35
8454H	270 W	32	XCC	Cold plate	Cold plate	35
6430	270 W	32	XCC	Cold plate	Cold plate	35
8444H	270 W	16	XCC	Cold plate	Cold plate	35
8450H	250 W	28	XCC	Cold plate	Cold plate	35

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Appendix B. Standards compliance

The system conforms to the following industry standards.

Table 56. Industry standard documents

Standard	URL for information and specifications
ACPIAdvance Configuration and Power Interface Specification, v2.0c	https://uefi.org/specsandtesttools
Ethernet IEEE 802.3-2005	https://standards.ieee.org/
HDGHardware Design Guide Version 3.0 for Microsoft Windows Server	microsoft.com/whdc/system/platform/pcdesign/desguide/serverdg.mspx
IPMI Intelligent Platform Management Interface, v2.0	intel.com/design/servers/ipmi
DDR4 Memory DDR4 SDRAM Specification	jedec.org/standards-documents/docs/jesd79-4.pdf
PCI Express PCI Express Base Specification Rev. 2.0 and 3.0	pcisig.com/specifications/pciexpress
PMBus Power System Management Protocol Specification, v1.2	http://pmbus.org/Assets/PDFS/Public/PMBus_Specification_Part_I_Rev_1-1_20070205.pdf
SAS Serial Attached SCSI, v1.1	http://www.t10.org/
SATA Serial ATA Rev. 2.6; SATA II, SATA 1.0a Extensions, Rev. 1.2	sata-io.org
SMBIOS System Management BIOS Reference Specification, v2.7	dmtf.org/standards/smbios
TPM Trusted Platform Module Specification, v1.2 and v2.0	trustedcomputinggroup.org
UEFI Unified Extensible Firmware Interface Specification, v2.1	uefi.org/specifications
USB Universal Serial Bus Specification, Rev. 2.7	usb.org/developers/docs

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Appendix C Additional resources

Table 57. Additional resources

Resource	Description of contents	Location
Installation and Service Manual	This manual, available in PDF format, provides the following information: • Chassis features • System Setup program • System indicator codes • System BIOS • Remove and replace procedures • Diagnostics • Jumpers and connectors	Dell.com/Support/Manuals
Getting Started Guide	This guide ships with the system, and is also available in PDF format. This guide provides the following information: • Initial setup steps	Dell.com/Support/Manuals
Rack Installation Guide	This document ships with the rack kits, and provides instructions for installing a server in a rack.	Dell.com/Support/Manuals
System Information Label	The system information label documents the system board layout and system jumper settings. Text is minimized due to space limitations and translation considerations. The label size is standardized across platforms.	Inside the system chassis cover
Quick Resource Locator (QRL)	This code on the chassis can be scanned by a phone application to access additional information and resources for the server, including videos, reference materials, service tag information, and Dell EMC contact information.	Inside the system chassis cover
Enterprise Infrastructure Planning Tool (EIPT)	The Dell EMC online EIPT enables easier and more meaningful estimates to help you determine the most efficient configuration possible. Use EIPT to calculate the power consumption of your hardware, power infrastructure, and storage.	Dell.com/calc

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Appendix D: Service and support

Topics:

Default support levels

This system offers 3 years Dell ProSupport Next Business Day (NBD), including 24x7 phone support and NBD parts and labor support.

Default deployment levels

This system is defaulted to the ProDeploy Dell Server C6620 Series Compute which includes onsite hardware installation and software configuration. C-series sleds require a deploy service on each sled purchased. Installation of the enclosure is included at no additional charges. Optionally, the customer may choose to any of the factory or field deployment offers listed below.

Other services and support information

Dell Technologies Services include a wide, customizable range of service options to simplify the assessment, design, implementation, management and maintenance of IT environments and to help transition from platform to platform.

Depending on the current business requirements and correct level of service for customers, we provide factory, onsite, remote, modular, and specialized services that fit the customer requirements and budget. We will help with a little or a lot, based on the customers choice, and provide access to our global resources.

Dell deployment services

Dell ProDeploy Infrastructure Suite

ProDeploy Infrastructure Suite provides a variety of deployment offerings that satisfy a customer's unique needs. It is made up of 5 offers: ProDeploy Configuration Services, ProDeploy Rack Integration Services, Basic Deployment, ProDeploy, and ProDeploy Plus.

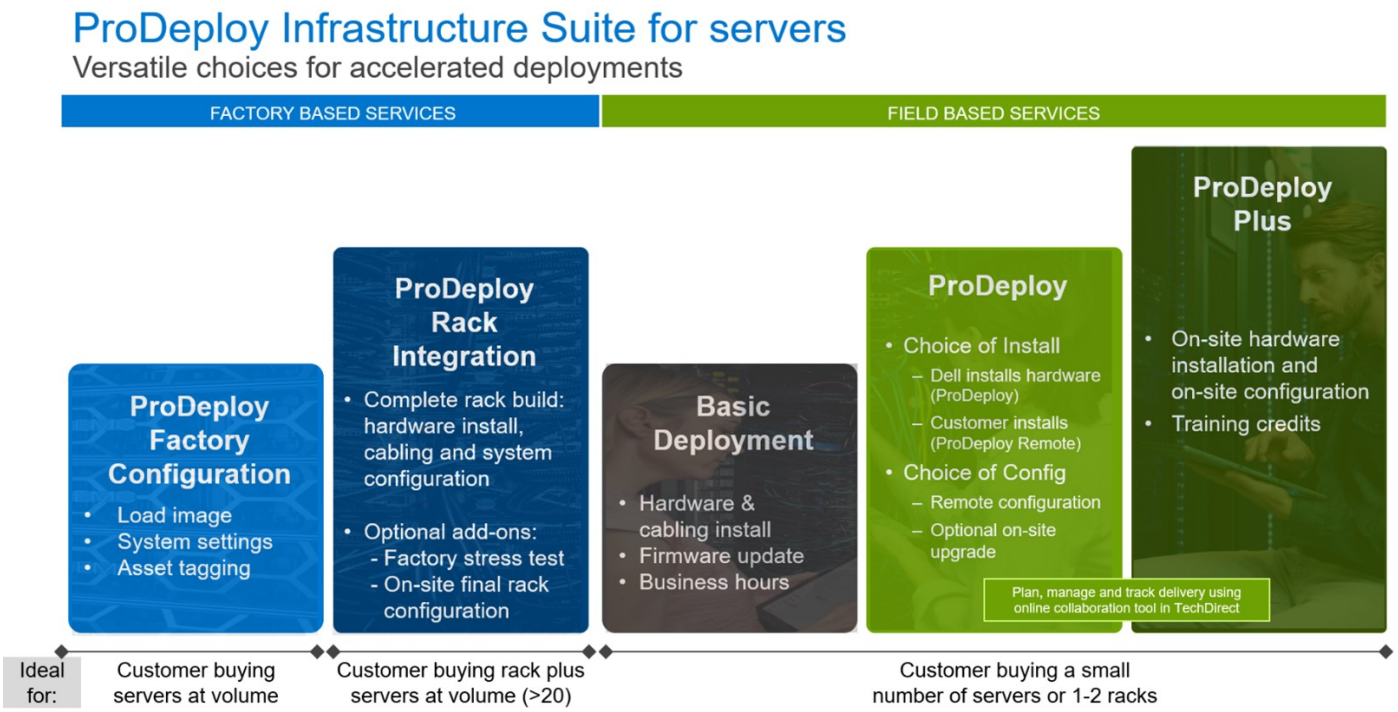


Figure 21. ProDeploy Infrastructure Suite for servers

The new Factory Services consist of two tiers of deployment that happen prior to shipping to the customer's site.

Factory Based Services:

- ProDeploy Factory Configuration - Ideal for customers buying servers in volume and seeking pre-configuration prior to shipping such as: custom image, system settings, and asset tagging so it arrives ready to use out of the box. Furthermore, servers can be packaged and bundled to meet specific shipping and distribution requirements for each customer location to facilitate the rollout process. Upsell one of the field based services (below) if a customer needs assistance with the final server installation.
- ProDeploy Rack Integration - Ideal for customers seeking to build out fully integrated racks prior to shipping. These rack builds include hardware install, cabling, and full system configuration. You can also add-on a factory stress test and optional on-site final rack configuration to complete the rack installation.
  - STANDARD SKUs for Rack Integration is available in US only and requires:
    - 20 or more devices (R and C series servers and all Dell or non-Dell switches). Use Informational SKUs for Dell switches or 3rd party products
    - Shipping to contiguous US
  - USE CUSTOM QUOTE for Rack Integration for:
    - All countries except USA
    - Racks containing less than 20 servers
    - Any rack that includes VxRail or Storage
    - Shipping outside contiguous US
    - Shipping to multiple locations

Field Based Services:

- Basic Deployment consists of the hardware installation, cabling and firmware update during normal standard business hours. Basic Deployment is traditionally sold to Competency Enabled Partners. Competency enabled partners often have Dell do the hardware installation while they complete the software configuration.
- ProDeploy consists of your hardware installation and configuration of the software using offshore resources. ProDeploy is great for customers who are price sensitive or who are remote from their data centers and don't require an onsite presence.
- ProDeploy Plus will give you in-region or onsite resources to complete the engagement for the customer. It also comes with additional features such as Post Deployment Configuration Assistance and Training Credits.

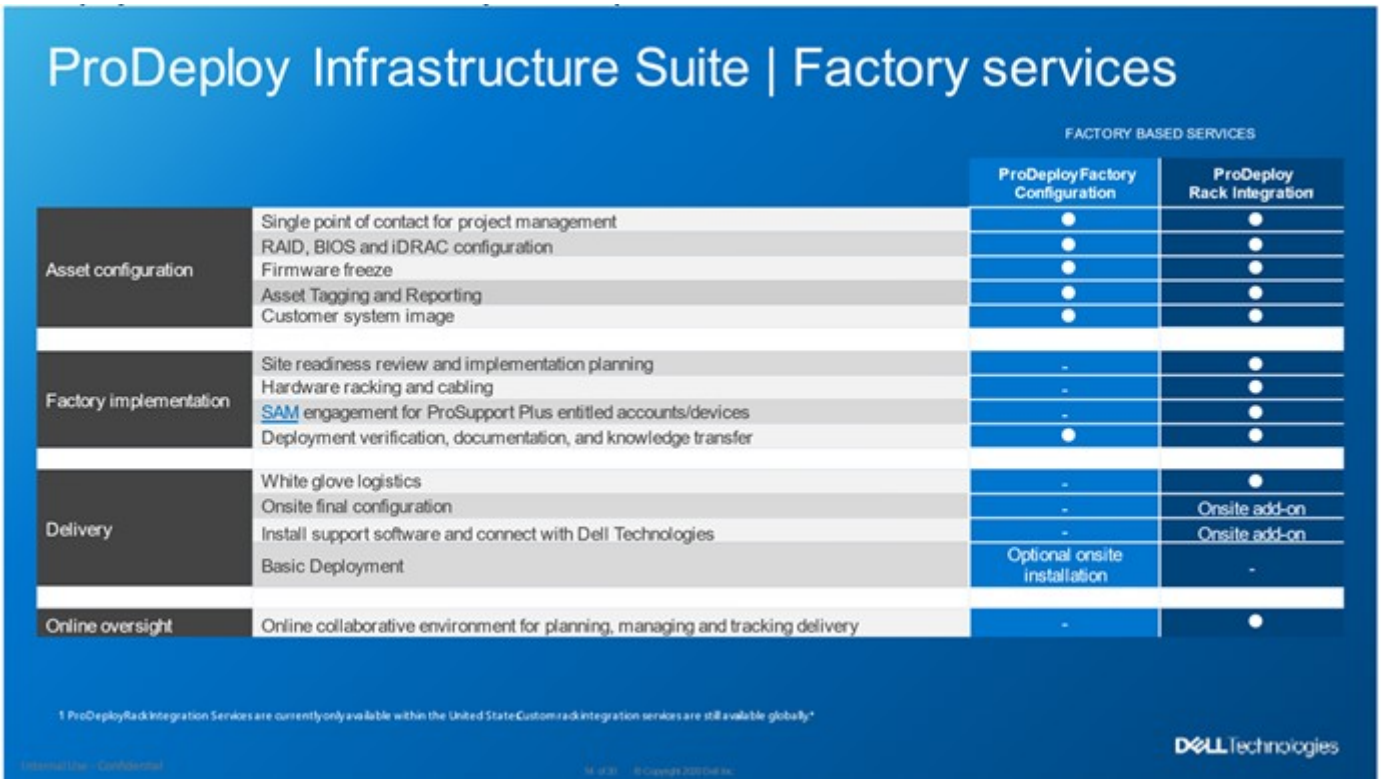


Figure 22. ProDeploy Infrastructure Suite - Factory services

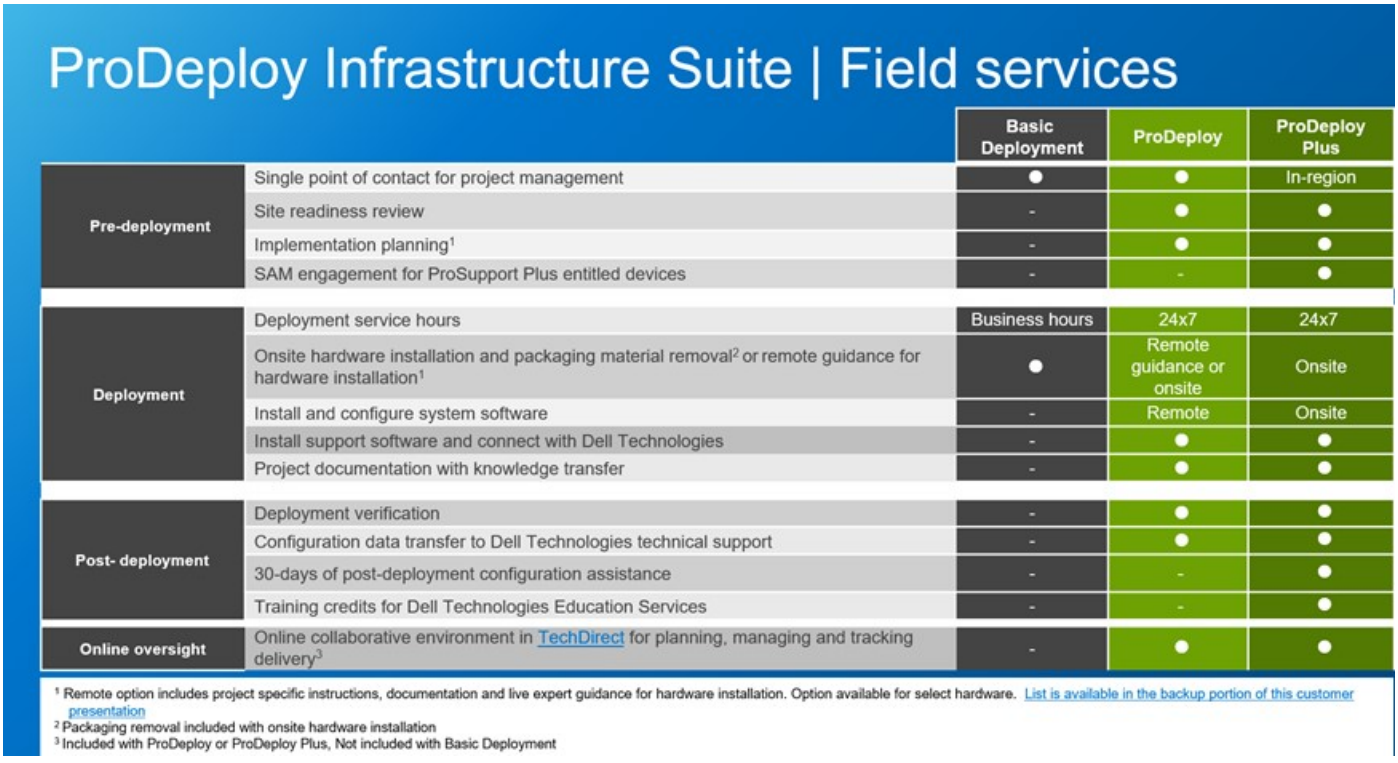


Figure 23. ProDeploy Infrastructure Suite - Field services

Dell ProDeploy Plus for Infrastructure

From beginning to end, ProDeploy Plus provides the skill and scale that is must successfully perform demanding deployments in today's complex IT environments. Certified Dell experts start with extensive environmental assessments and detailed migration

planning and recommendations. Software installation includes set up of our enterprise connectivity solution (secure connect gateway) and OpenManage system management utilities.

Postdeployment configuration assistance, testing, and product orientation services are also available.

Dell ProDeploy for Infrastructure

ProDeploy provides full-service installation and configuration of both server hardware and system software by certified deployment engineers including set up of leading operating systems and hypervisors as well our enterprise connectivity solution (secure connect gateway) and OpenManage system management utilities. To prepare for the deployment, we conduct a site readiness review and implementation planning exercise. System testing, validation, and full project documentation with knowledge transfer complete the process.

Dell Basic Deployment

Basic Deployment delivers worry-free professional installation by experienced technicians who know Dell servers inside and out.

Additional Deployment Services

You can tailor the ProDeploy Infrastructure Suite offer to meet your customer's unique needs by leveraging "Additional Deployment Time." ADT will cover additional tasks above the normal scope of the standard offers. ADT can be sold for Project Management or Technical Resources and is sold as blocks of four hours remote or eight hours on-site.

Dell ProDeploy for HPC (available in US/Canada only. All other regions use custom)

HPC deployments require specialists that understand that cutting edge is yesterday's news. Dell deploys the world 's fastest systems and understands the nuances that make them perform. ProDeploy for HPC provides:

- Global team of dedicated HPC specialists
- Proven track record, thousands of successful HPC deployments
- Design validation, benchmarking, and product orientation

Learn more at Dell.com/HPC-Services.

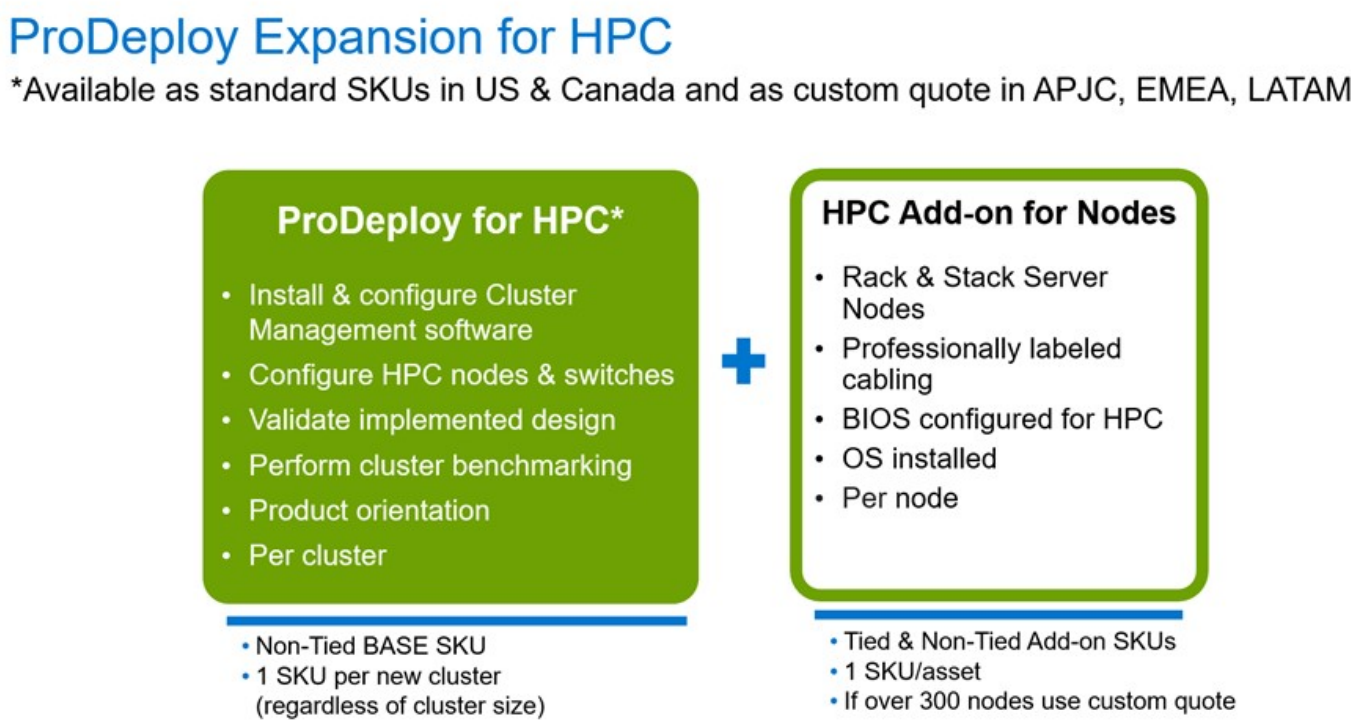


Figure 24. ProDeploy Expansion for HPC

Dell custom deployment Services

Dell custom rack integration and other Dell configuration services help customers save time by providing systems that are racked, cabled, tested, and ready to be integrated into the data center. Dell support preconfigure RAID, BIOS and iDRAC settings, install system images, and even install third-party hardware and software.

For more information, see Server Configuration Services.

Dell Residency Services

Residency Services help customers transition to new capabilities quickly with the assistance of onsite or remote Dell experts whose priorities and time they control.

Residency experts can provide post implementation management and knowledge transfer that is related to a new technology acquisition or day-to-day operational management of the IT infrastructure.

Dell Data Migration Services

Protect business and data of the customer with our single point of contact to manage data migration projects.

A customer project manager works with our experienced team of experts to create a plan using industry-leading tools and proven processes that are based on global best practices to migrate existing files and data, so business systems are up and running quickly and smoothly.

Dell Enterprise Support Services

Dell ProSupport Enterprise Suite

With the ProSupport Enterprise Suite, we help keep IT systems running smoothly, so customers can focus on running their business. We help maintain peak performance and availability of the most essential workloads. ProSupport Enterprise Suite is a suite of support services that enable customers to build the solution that is right for their organization. They choose support models that are based on how they use technology and where they want to allocate resources. From the desktop to the data center, address everyday IT challenges, such as unplanned downtime, mission-critical needs, data and asset protection, support planning, resource allocation, software application management and more. Optimize customer IT resources by choosing the right support model.

Table 58. ProSupport Enterprise Suite

Service	Support model	Description
ProSupport Enterprise Suite	ProSupport Plus for Enterprise	Proactive, predictive, and reactive support for systems that look after your business-critical applications and workloads
	ProSupport for Enterprise	Comprehensive 24 x 7 predictive and reactive support for hardware and software
	Basic hardware support	Reactive hardware support during normal business hours

Dell ProSupport Plus for Enterprise

When customers purchase PowerEdge server, we recommend ProSupport Plus, our proactive and preventative support service for business-critical systems. ProSupport Plus provides all the benefits of ProSupport, plus the following:

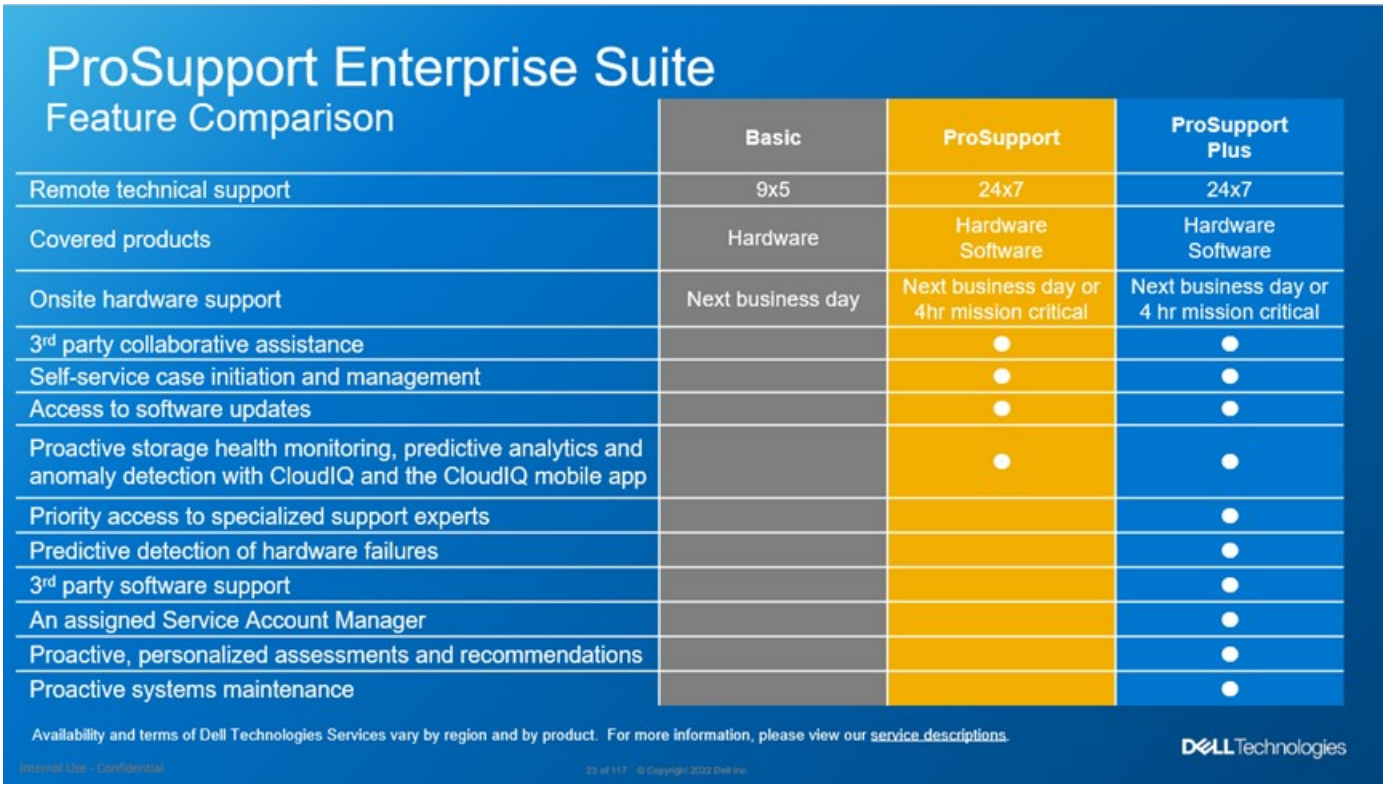
- An assigned Services Account Manager who knows their business and environment
- Immediate advanced troubleshooting from an engineer
- Personalized, preventive recommendations that are based on analysis of support trends and best practices from across the Dell Technologies infrastructure solutions customer base to reduce support issues and improve performance
- Predictive analysis for issue prevention and optimization that is enabled by secure connect gateway technology
- Proactive monitoring, issue detection, notification, and automated case creation for accelerated issue resolution enabled by secure connect gateway
- On-demand reporting and analytics-based recommendations that are enabled by secure connect gateway and TechDirect

Dell ProSupport for Enterprise

ProSupport service offers highly trained experts around the clock and around the globe to address IT needs. We help minimize disruptions and maximize availability of PowerEdge server workloads with:

- 24x7 support through phone, chat and online
- Predictive, automated tools and innovative technology
- A central point of accountability for all hardware and software issues
- Collaborative third-party support
- Hypervisor, operating system and application support
- Consistent experience regardless of where customers are located or what language they speak

  NOTE: Subject to service offer country or region availability.
- Optional onsite parts and labor response options including next business day or four-hour mission critical



ProSupport Enterprise Suite
Feature Comparison

	Basic	ProSupport	ProSupport Plus
Remote technical support	9x5	24x7	24x7
Covered products	Hardware	Hardware Software	Hardware Software
Onsite hardware support	Next business day	Next business day or 4hr mission critical	Next business day or 4 hr mission critical
3rd party collaborative assistance		●	●
Self-service case initiation and management		●	●
Access to software updates		●	●
Proactive storage health monitoring, predictive analytics and anomaly detection with CloudIQ and the CloudIQ mobile app		●	●
Priority access to specialized support experts			●
Predictive detection of hardware failures			●
3rd party software support			●
An assigned Service Account Manager			●
Proactive, personalized assessments and recommendations			●
Proactive systems maintenance			●

Availability and terms of Dell Technologies Services vary by region and by product. For more information, please view our service descriptions.

DELL Technologies

Figure 25. ProSupport Enterprise Suite

Dell ProSupport One for Data Center

ProSupport One for Data Center offers flexible site-wide support for large and distributed data centers with more than 1,000 assets. This offering is built on standard ProSupport components that leverage our global scale but are tailored to a customer's needs. While not for everyone, this service option offers a truly unique solution for Dell Technologies largest customers with the most complex environments.

- Team of assigned Services Account Managers with remote, on-site options
- Assigned ProSupport One technical and field engineers who are trained on the customer's environment and configurations
- On-demand reporting and analytics-based recommendations that are enabled by secure connect gateway and TechDirect
- Flexible on-site support and parts options that fit their operational model
- A tailored support plan and training for their operations staff

Dell ProSupport Add-on for HPC

The ProSupport Add-on for HPC provides solution-aware support including:

- Access to senior HPC experts
- Advanced HPC cluster assistance: performance, interoperability, and configuration
- Enhanced HPC solution level end-to-end support
- Remote presupport engagement with HPC Specialists during ProDeploy implementation

Learn more at Dell.com/HPC-Services.

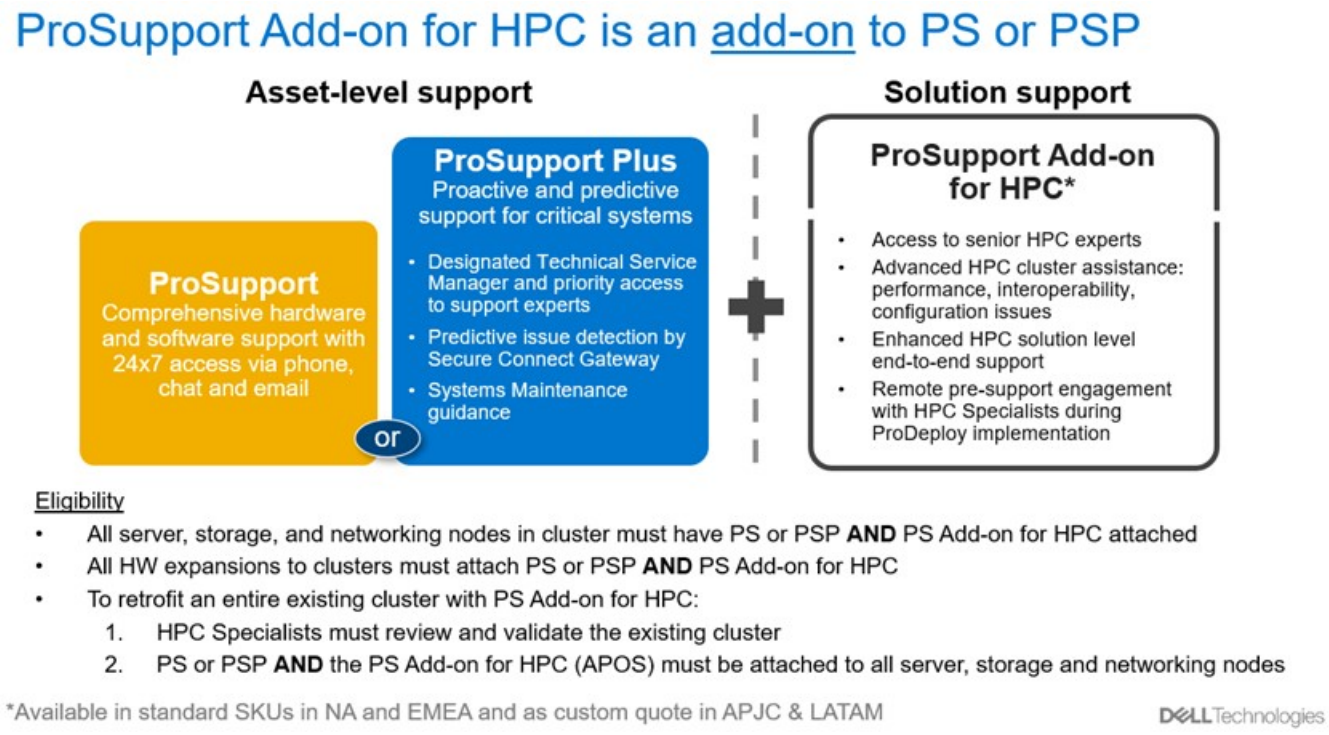


Figure 26. ProSupport Add-on for HPC is an add-on to PS or PSP

Support Technologies

Powering the support experience with predictive, data-driven technologies.

NOTE: SupportAssist Enterprise capabilities are now part of the secure connect gateway technology.

Enterprise connectivity

The best time to solve a problem is before it happens. The automated proactive and predictive support features enabled by the secure connect gateway technology helps reduce steps and time to resolution, often detecting issues before they become a crisis. The gateway technology is available in virtual and application editions. It is also implemented as a direct connect version for select Dell hardware and a Services plugin within OpenManage Enterprise for PowerEdge servers. The legacy SupportAssist Enterprise solution has been retired and is now replaced by the secure connect gateway solutions.

Benefits include:

- Value: Our connectivity solutions are available to all customers at no additional charge
- Improve productivity: Replace manual, high-effort routines with automated support
- Accelerate time to resolution: Receive issue alerts, automatic case creation, and proactive contact from Dell experts
- Gain insight and control: Optimize enterprise devices with insights in portals reporting like TechDirect, and get predictive issue detection before the problem starts

NOTE: Connect devices can access these features. Features vary depending on the service level agreement for the connected device. ProSupport Plus customers experience the full set of automated support capabilities.

Table 59. Features enabled by connectivity

—	Basic hardware warranty	ProSupport	ProSupport Plus
Automated issue detection and system state information collection	Supported	Supported	Supported
Proactive, automated case creation and notification	Not supported	Supported	Supported

Table 59. Features enabled by connectivity (continued)

—	Basic hardware warranty	ProSupport	ProSupport Plus
Predictive issue detection for failure prevention	Not supported	Not supported	Supported

Get started at DellTechnologies.com/secureconnectgateway.

Dell TechDirect

TechDirect helps boost IT team productivity when supporting Dell systems.

Boost your productivity with online servoce for Dell products from TechDirect. From deployment to technical support, TechDirect lets you do more with less effort and faster resolution. You can:

- OPen and manage support requests or in-warranty systems
- Execute online self-service for parts dispatch
- Collaborate on ProDeploy infrastructure deployment projects online
- Manage proactive and preditive alerts from secure connect gateway technology that help maximize uptime
- Integrate services functionality into your help desk with TechDirect APIs
- Join over 10,000 companies that choose TechDirect

Register at TechDirect.Dell.com.

Dell Technologies Consulting Services

Our expert consultants help customers transform faster, and quickly achieve business outcomes for the high value workloads Dell PowerEdge systems can handle. From strategy to full-scale implementation, Dell Technologies Consulting can help determine how to perform IT, workforce, or application transformation. We use prescriptive approaches and proven methodologies that are combined with portfolio and partner ecosystem of Dell Technologies to help achieve real business outcomes. From multi cloud, applications, DevOps, and infrastructure transformations, to business resiliency, data center modernization, analytics, workforce collaboration, and user experiences-we are here to help.

Dell Managed Services

Some customers prefer Dell to manage the complexity and risk of daily IT operations, Dell Managed Services utilizes proactive, AI enabled delivery operations and modern automation to help customers realize desired business outcomes from their infrastructure investments. With these technologies, our experts run, update and fine-tune customer environments aligned with service levels, while providing environment-wide and down-to-the-device visibility. There are two types of managed service offers. First the outsourcing model or CAPEX model where Dell manages the customer owned assets using our people and tools. The second is the as-a-Service model or OPEX model called APEX. In this service, Dell owns all technology and all the management of it. Many customers will have a blend of the two management types depending on the goals of the organization.

Figure 27. Dell Managed Services

Dell Technologies Education Services

Build the IT skills required to influence the transformational outcomes of the business. Enable talent and empower teams with the right skills to lead and perform transformational strategy that drives competitive advantage. Leverage the training and certification required for real transformation.

Dell Technologies Education Services offers PowerEdge server training and certifications that are designed to help customers achieve more from their hardware investment. The curriculum delivers the information and the practical, firsthand skills that their team must confidently install, configure, manage, and troubleshoot Dell servers.

To learn more or register for a class today, see Education.Dell.com.