Dell PowerEdge XE9785

Technical Guide

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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.

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1

PowerEdge XE9785 system overview

The PowerEdge XE9785 system is a 2-socket, 10U server that supports:

- Two 5th Generation AMD EPYC 9005 Series processor with up to 192 cores per processor.
- Up to 24 DDR5 DIMM slots
- 12 redundant AC power supply units
- Five standard cold-swap cooling fans on the mid tray for the HPM sled, and 15 standard hot-swap cooling fans on the rear of the system that is installed in the cooling fan sled designed to provide cooling for the GPU sled.
- 8 AMD Instinct™ MI355X 288 GB 1400 W OAM with AMD Infinity Fabric connectivity
- 8 NVIDIA HGX B300 NVL8 270 GB 1100 W SXM6 GPUs, fully interconnected with NVIDIA NVLink technology*
- Up to 12 x 75 W Gen5 x16 FHHL cards with AMD MI355X GPU configuration
- Up to 4 x 150 W Gen5 x16 FHHL cards with NVIDIA B300 GPU configuration*
- 16 x EDSFF E3.S NVMe (SSD) drives
- 10 x U.2 NVMe (SSD) drives*

NOTE: Feature not available at initial product launch. Refer to the product configurator page on Dell.com to confirm feature availability.

NOTE: For more information about how to hot swap NVMe PCIe SSD device, see the *Dell Express Flash NVMe PCIe SSD User's Guide* at Dell Support page **> Browse all products** > **Infrastructure** > **Data Center Infrastructure** > **Storage Adapters & Controllers** > **Dell PowerEdge Express Flash NVMe PCIe SSD** > **Select This Product** > **Documentation** > **Manuals and Documents**.

CAUTION: Do not install GPUs, network cards, or other PCIe devices on your system that are not validated and tested by Dell. Damage caused by unauthorized and invalidated hardware installation will null and void the system warranty.

CAUTION: This equipment is not suitable for use in locations where children are likely to be present.

Topics:

- Key workloads
- New technologies

Key workloads

The versatile XE9785 is designed to train the most demanding ML/DL large models including:

- Generative AI Training and Fine-Tuning
- Large natural language processing models, recommendation engines, speech recognition models, conversational AI, chatbots, and digital humans
- AI/ML/DL Training - especially large model training with large datasets
- HPC - Accelerate compute and simulation workloads

New technologies

The XE9785 features new technologies including the 5th Generation AMD EPYC 9005 Series Processor with up to 192 cores. The details of the new technologies are listed below.

Table 1. New technologies

Technology	Detailed Description
5th Generation AMD EPYC 9005 Series processor	Core count: Up to 192 core processor

Table 1. New technologies (continued)

Technology	Detailed Description
	5 nm process technology
	AMD Interchip global memory interconnect (xGMI) up to 160 lanes
	Speeds up to 3.6 GHz
	Maximum TDP: 500 W
6400 MT/s DDR5 Memory	Up to 12 channels with 1 DPC per CPU and 24 DIMMs in total
	Supports RDIMM DDR5 with ECC up to 6400 MT/s
PCIe Gen	Gen5 slots
PCIe slot	Up to twelve PCIe slots with x16 lanes in total
Embedded BOSS: HWRAID 1, 2 x M.2 NVMe SSDs	Support up to 2 x M.2 SSD drives with dedicated heat sinks and thermal pads.
Flex I/O	Front I/O with: ● 1 x USB 3.0 ● 1 x Mini-DisplayPort ● 1 x USB 2.0 Type-C port ● 2 x RJ45 dedicated iDRAC Ethernet port
Accelerator GPUs	8 AMD Instinct™ MI355X 288 GB 1400 W OAM with AMD Infinity Fabric connectivity or 8 NVIDIA HGX NVL8 270 GB 1100 W SXM6 GPUs, fully interconnected with NVIDIA NVLink technology*
Dedicated PERC	N/A
Power Supplies	73.5 mm dimension is the new PSU form factor design on a 17G 54 V design
	● 12 Titanium 3200 W AC with 6 + 6 PSU redundancy

NOTE: Feature not available at initial product launch. Refer to the product configurator page on Dell.com to confirm feature availability.

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System features

Table 2. Comparison of PowerEdge XE9785 and XE9680

Features	PowerEdge XE9785	PowerEdge XE9680
Processors	Two 5th Generation AMD EPYC 9005 Series processor up to 192 cores	• Two 5th Generation Intel Xeon Scalable processors with up to 64 cores or • Two 4th Generation Intel Xeon Scalable processors with up to 56 cores
Memory		
DIMM speed	Up to 6400 MT/s	Up to 5600 MT/s
Memory type	RDIMM	RDIMM
Memory module slots	24 DDR5 DIMM slots	32 DDR5 DIMM slots
	NOTE: Supports registered ECC DDR5 RDIMMs only.	**NOTE:** Supports registered ECC DDR5 RDIMMs only.
Storage Controllers	Direct-attach PCIe SSDs only	• PERC12 (SAS4/SATA) • Internal Boot: Boot Optimized Storage Subsystem (NVMe BOSS-N1): HWRAID 2 x M.2 SSDs **NOTE:** The XE9680-Gaudi3 configuration does not support PERC H965i or Software RAID.
Drive Bays	• 16 x E3.S NVMe direct drives • 10 x U.2 Gen5 NVMe SSD drives*	Front bays: • 16 x E3.S EDSFF direct from PSB (x4 Gen5) • 8 x U.2 SAS/SATA with fPERC • 8 x U.2 NVME direct from PSB **NOTE:** The XE9680-Gaudi3 configuration supports only 8 x 2.5-inch NVMe SSD drives.
Power Supplies	3200 W AC Titanium	• 3200 W AC Titanium (available only in the US & Canada) • 3000 W AC Titanium (Multi-rated, supports only XE9680-Gaudi3 configuration) • 2800 W AC Titanium
Cooling Options	• Air Cooling	• Air Cooling
Fans	15 Standard grade GPU fans, All are hot swap fans	High performance (HPR) Gold fans
	5 Standard grade CPU fans, All are cold swap fans	Six HPR fans on mid tray and Ten HPR GPU fans on the rear of the system (twelve rear GPU fans with Intel Gaudi3)
Dimension	Height: 439.5 mm (17.30 inches)	Height: 263.2 mm (10.36 inches)
	Width: 448.0 mm (17.63 inches)	Width: 482.0 mm (18.97 inches)
	Depth: 1044.7 mm (41.12 inches) with bezel	Depth: 1008.77 mm (39.71 inches) with bezel
	1023 mm (40.27 inches) without bezel	995 mm (39.17 inches) without bezel

Table 2. Comparison of PowerEdge XE9785 and XE9680 (continued)

Features	PowerEdge XE9785	PowerEdge XE9680
Weight	System fully populated with MI355X GPUs - 172.3 kg (379.86 pounds) System fully populated with B300 GPUs* - 163.65 kg (360.79 pounds)	H100/H200/H800/H20 with 16 x E3.S SSDs: 107.75 kg (237.55 pounds)
Form Factor	10U rack server	6U rack server
Embedded Management	• iDRAC10 • iDRAC Direct • iDRAC RESTful with Redfish • iDRAC Service Manual The iDRAC direct Type C USB port can be used by connecting Dell USB-C to 2.5 Gbps Ethernet Adapter dongle (DP/N : HYRGV). Once connected, laptop would be assigned IP 169.254.0.4 automatically and user will now be able to access idrac webGUI/ssh. **NOTE:** To configure the Type-C USB port as iDRAC management port see iDRAC10 User Guide.	• iDRAC9 • iDRAC Direct • iDRAC RESTful with Redfish • iDRAC Service Manual
Bezel	Optional security bezel	Optional LCD bezel or security bezel
OpenManage Software	• CloudIQ for PowerEdge plug-in • OpenManage Enterprise • OpenManage Power Manager plug-in • OpenManage Service plug-in • OpenManage Update Manager plug-in	• CloudIQ for PowerEdge plug-in • OpenManage Enterprise • OpenManage Power Manager plug-in • OpenManage Service plug-in • OpenManage Update Manager plug-in
Mobility	Not supported	Not supported
OpenManage Integrations	• BMC TrueSight • OpenManage Integration with ServiceNow • Red Hat Ansible Modules • Terraform Providers	• BMC TrueSight • OpenManage Integration with ServiceNow • Red Hat Ansible Modules • Terraform Providers
Security	• AMD Secure Encrypted Virtualization (SEV) • AMD Secure Memory Encryption (SME) • Cryptographically signed firmware • Data at Rest Encryption (SEDs with local or external key mgmt) • Secure Boot • Secured Component Verification (Hardware integrity check) • Secure Erase • Silicon Root of Trust • System Lockdown (requires iDRAC10 Enterprise or Datacenter) • Soldered down TPM on Mezzanine DC-SCM • Chassis Intrusion Detection	• Cryptographically signed firmware • Data at Rest Encryption (SEDs with local or external key mgmt) • Secure Boot • Secured Component Verification (Hardware integrity check) • Secure Erase • Silicon Root of Trust • System Lockdown (requires iDRAC9 Enterprise or Datacenter) • TPM 2.0 FIPS, CC-TCG certified, TPM 2.0 China
Embedded NIC	N/A	2 x 1 GbE LOM
Embedded OSFP	8 x OSFP with B300 GPU*	6 x 800 Gb (available only with Intel Gaudi3)
Networking Options	1 x OCP 2 x dedicated iDRAC RJ45 ports	OCP x8 Mezz 3.0

Table 2. Comparison of PowerEdge XE9785 and XE9680 (continued)

Features	PowerEdge XE9785		PowerEdge XE9680	
GPU Options	• 8 AMD Instinct™ MI355X 288GB 1400W OAM with AMD Infinity Fabric connectivity GPUs or • 8 NVIDIA HGX NVL8 270 GB 1100 W SXM6 GPUs, fully interconnected with NVIDIA NVLink technology GPUs*		• 8x NVIDIA HGX H100/H800 80GB 700W SXM5 GPUs or • 8x NVIDIA HGX H200 141GB 700W SXM5 GPUs or • 8x NVIDIA HGX H20 96GB 500W SXM5 GPUs or • 8x NVIDIA HGX A100 80GB 500W SXM4 GPUs or • 8x AMD INSTINCT MI300X 192GB 750W OAM GPUs or • 8x Intel Gaudi3 128GB 900W OAM GPUs	
Ports	• 1 x iDRAC Direct (USB C) port • 2 x RJ45 dedicated iDRAC Ethernet ports • 1 x USB A • 1 x Mini-DisplayPort **NOTE:** The iDRAC direct Type C USB port can be used by connecting Dell USB-C to 2.5 Gbps Ethernet Adapter dongle (DP/N : HYRGV). Once connected, laptop would be assigned IP 169.254.0.4 automatically and user will now be able to access idrac webGUI/ssh.	Internal ports • USB 2.0	Front Ports • 1 x USB 2.0 • 1 x iDRAC Direct (Micro-AB USB) port • 1 x VGA	Rear Ports • 1 x USB 2.0 • 1 x iDRAC Direct Ethernet port • 1 x USB 3.0 • 1 x VGA
PCIe	• Up to 12 x 75W Gen5 x16 FHHL cards with AMD MI355X GPU configuration • Up to 4 x 150W Gen5 x16 FHHL cards with NVIDIA B300 GPU configuration*		10 Gen5 PCIe slots • 8 x16 Gen5 (x16 PCIe) Full-height, Half-length • 2 x16 Gen5 (x16 PCIe) Full-height, Half-length for SmartNIC/DPU **NOTE:** 8 PCIe Gen5 slots with Intel Gaudi3. Slots 33 and 38 are unavailable due to thermal concerns.	
Operating System and Hypervisors	• Canonical Ubuntu Server LTS • Red Hat Enterprise Linux* For specifications and interoperability details, see Dell Enterprise Operating Systems on Servers, Storage, and Networking page at Dell.com/OSsupport.		• Canonical Ubuntu Server LTS • Red Hat Enterprise Linux • SUSE Linux Enterprise Server • VMware ESXi For specifications and interoperability details, see Dell Enterprise Operating Systems on Servers, Storage, and Networking page at Dell.com/OSsupport.	

NOTE: Feature not available at initial product launch. Refer to the product configurator page on Dell.com to confirm feature availability.

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Chassis views and features

Topics:

- Chassis views
- Electronic Piece Part Identification (ePPID)

Chassis views

Front view of the system

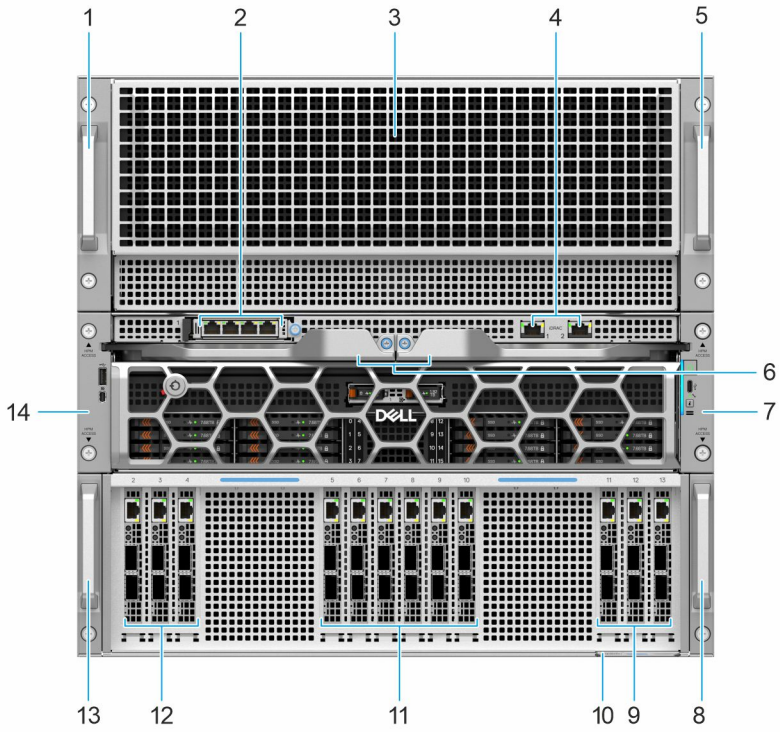

Figure 1. 16 x E3.S NVMe drives and MI355X GPUs

Table 3. Features available on the front view of the system with MI355X GPUs

Item	Ports, panels, and slots	Icon	Description
1	Handle	N/A	Handle used to move the chassis.
2	OCP NIC	N/A	This port supports OCP 3.0.
3	GPU sled	N/A	GPU sled which contains supported GPUs.
4	iDRAC dedicated RJ45 ports		Enables you to remotely access iDRAC. when the front iDRAC ports are connected with the network.
5	Handle	N/A	Handle used to move the chassis.

Table 3. Features available on the front view of the system with MI355X GPUs (continued)

Item	Ports, panels, and slots	Icon	Description
6	CAM handle	N/A	CAM handle enables you to slide the HPM sled out of the chassis.
7	Right control panel	N/A	Contains the system ID, power button, Type-C USB port, and the ambient sensor vent.
8	Handle	N/A	Handle used to move the chassis.
9	PCIe slots	N/A	Enables you to connect the PCI Express expansion cards. **NOTE:** For PowerEdge XE9785 with MI355X GPUs, slots 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13 can be used
10	Express Service Tag	N/A	The Express Service Tag is a slide-out label panel that contains system information such as Service Tag, NIC, MAC address, and so on. If you have opted for the secure default access to iDRAC, the Information tag will also contain the iDRAC secure default password.
11	PCIe slots	N/A	Enables you to connect the PCI Express expansion cards.
12	PCIe slots	N/A	Enables you to connect the PCI Express expansion cards.
13	Handle	N/A	Handle used to move the chassis.
14	Left control panel (LCP)	N/A	Contains the USB port and Mini-Displayport.

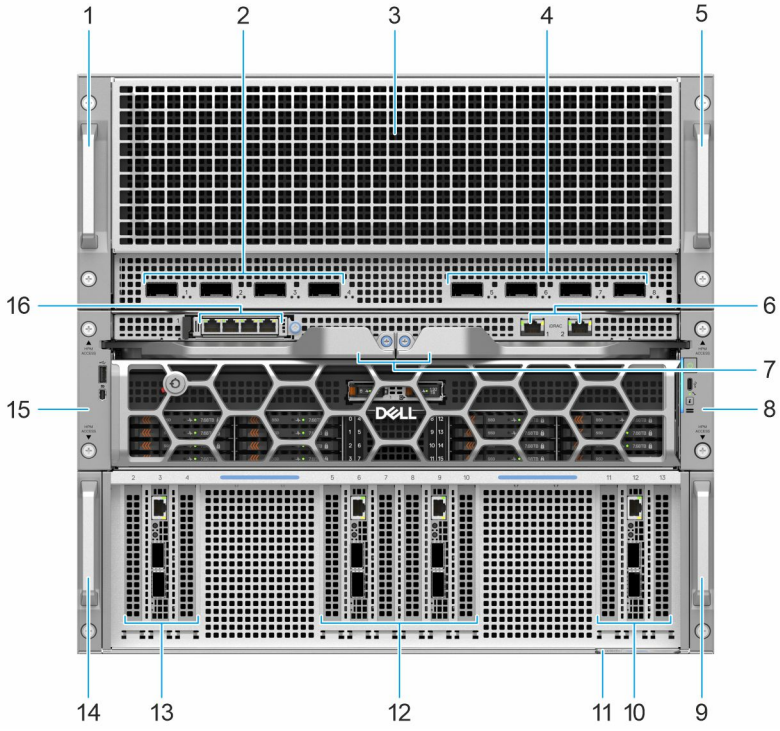

Figure 2. 16 x E3.S NVMe drives and B300 GPUs*

Table 4. Features available on the front view of the system with B300 GPUs*

Item	Ports, panels, and slots	Icon	Description
1	Handle	N/A	Handle used to move the chassis.
2	OSFP ports	N/A	OSFP ports for communication.
3	GPU sled	N/A	GPU sled which contains supported GPUs.
4	OSFP ports	N/A	OSFP ports for communication.

Table 4. Features available on the front view of the system with B300 GPUs* (continued)

Item	Ports, panels, and slots	Icon	Description
5	Handle	N/A	Handle used to move the chassis.
6	iDRAC dedicated RJ45 ports		Enables you to remotely access iDRAC. when the front iDRAC ports are connected with the network.
7	CAM handle	N/A	CAM handle enables you to slide the HPM sled out of the chassis.
8	Right control panel	N/A	Contains the system ID, power button, Type-C USB port, and the ambient sensor vent.
9	Handle	N/A	Handle used to move the chassis.
10	PCIe slots	N/A	Enables you to connect the PCI Express expansion cards. **NOTE:** For the XE9785 with B300* GPUs, slot 3, 6, 9 and 12 can be used.
11	Express Service Tag	N/A	The Express Service Tag is a slide-out label panel that contains system information such as Service Tag, NIC, MAC address, and so on. If you have opted for the secure default access to iDRAC, the Information tag will also contain the iDRAC secure default password.
12	PCIe slots	N/A	Enables you to connect the PCI Express expansion cards.
13	PCIe slots	N/A	Enables you to connect the PCI Express expansion cards.
14	Handle	N/A	Handle used to move the chassis.
15	Left control panel (LCP)	N/A	Contains the USB port and Mini-Displayport.
16	OCP NIC	N/A	This port supports OCP 3.0.

NOTE: Feature not available at initial product launch. Refer to the product configurator page on Dell.com to confirm feature availability.

Rear view of the system

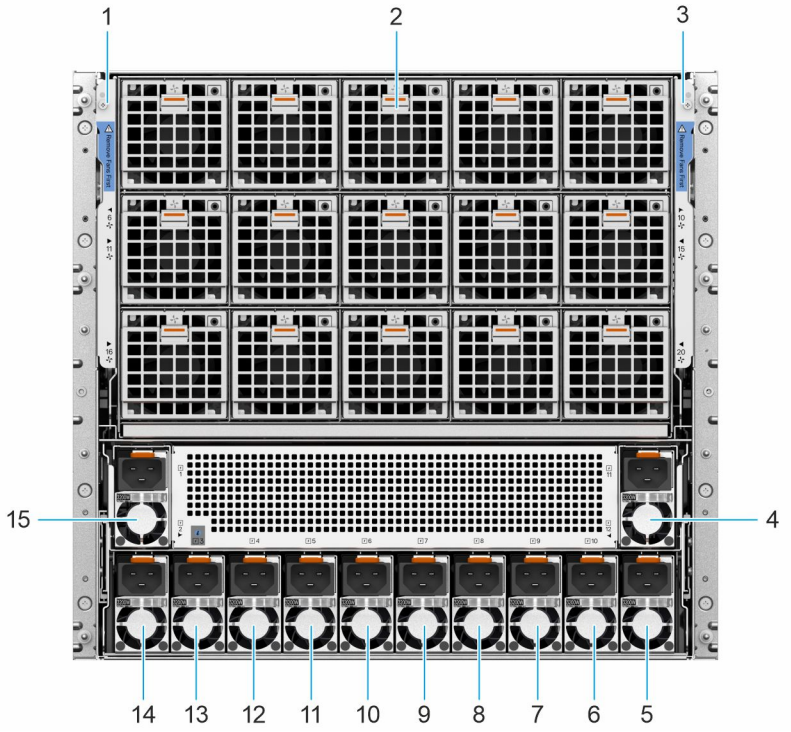

Figure 3. XE9785 system rear view

Table 5. Rear view of the system

Item	Ports, panels, or slots	Icon	Description
1	GPU fan cage handle	N/A	GPU fan cage that houses the GPU cooling fans. **NOTE:** The screws need to be removed in order to pull the GPU handle which enables to remove the GPU fan sled.
2	GPU cooling fan	N/A	Used to cool the GPU sled.
3	GPU fan cage handle	N/A	GPU fan cage that houses the GPU cooling fans. **NOTE:** The screws need to be removed in order to pull the GPU handle which enables to remove the GPU fan sled.
4	Power supply unit (PSU) 11		PSU 11 of the system
5	Power supply unit (PSU) 12		PSU 12 of the system
6	Power supply unit (PSU) 10		PSU 10 of the system
7	Power supply unit (PSU) 9		PSU 9 of the system
8	Power supply unit (PSU) 8		PSU 8 of the system
9	Power supply unit (PSU) 7		PSU 7 of the system
10	Power supply unit (PSU) 6		PSU 6 of the system
11	Power supply unit (PSU) 5		PSU 5 of the system
12	Power supply unit (PSU) 4		PSU 4 of the system

Table 5. Rear view of the system (continued)

Item	Ports, panels, or slots	Icon	Description
13	Power supply unit (PSU) 3		PSU 3 of the system
14	Power supply unit (PSU) 2		PSU 2 of the system
15	Power supply unit (PSU) 1		PSU 1 of the system

Inside the system

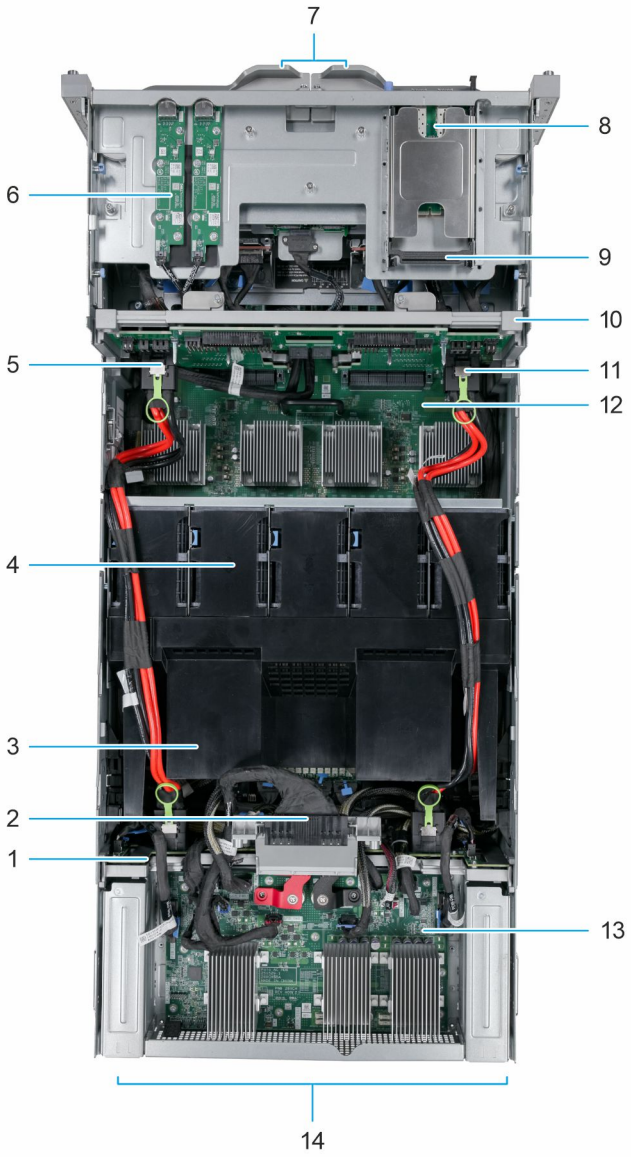

Figure 4. Inside view of the HPM sled

Table 6. Inside view of the HPM sled

Item	Description
1	Power Interposer Board (PIB)
2	GPU Fan Panel Mount Cable

Table 6. Inside view of the HPM sled (continued)

Item	Description
3	Air shroud
4	Cooling fan cage assembly
5	Bus bar cable
6	iDRAC RJ-45 dedicated ports
7	CAM lever to remove the HPM sled
8	OCP NIC
9	OCP tray
10	Mid plane
11	Bus bar cable
12	PCIe Switch Base Board (PSBB) for MI355X GPU PCIe Switch Retimer Base Board (PSRBB) for B300 GPU*
13	Power Distribution Board (PDB)
14	Power supply units (12)

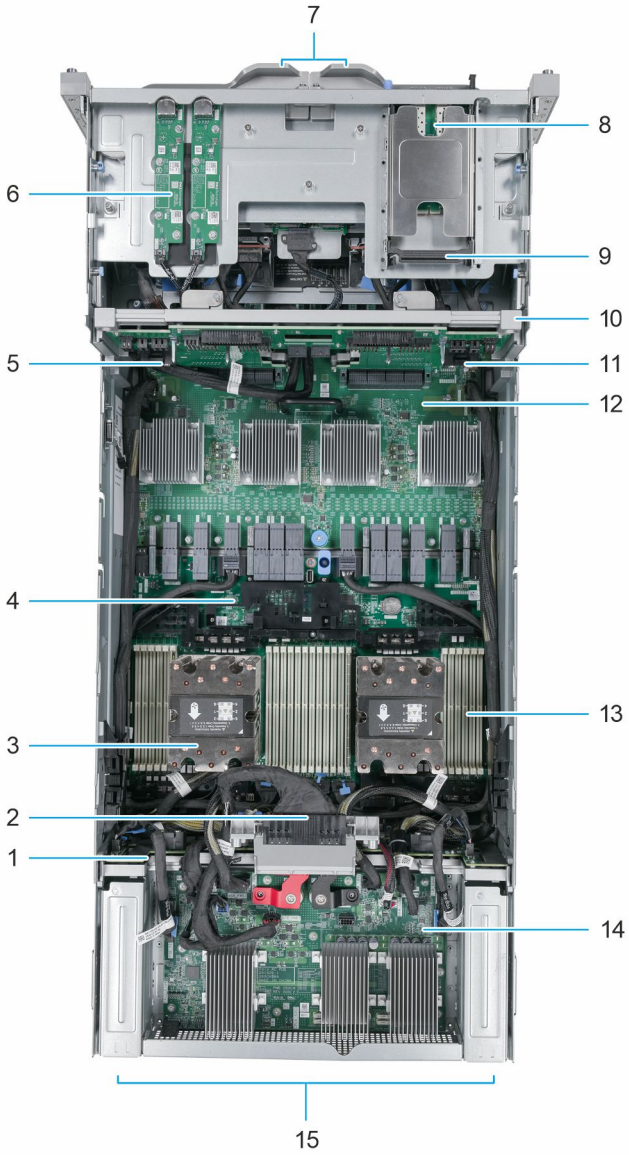

Figure 5. Inside view of the HPM sled

Table 7. Inside view of the HPM sled

Item	Description
1	Power Interposer Board (PIB)
2	GPU Fan Panel Mount Cable
3	Heat sink
4	Host Processor Module (HPM)
5	Bus bar connector
6	iDRAC RJ-45 dedicated ports
7	CAM lever to remove the HPM sled
8	OCP NIC
9	OCP tray
10	Mid plane
11	Bus bar connector

Table 7. Inside view of the HPM sled (continued)

Item	Description
12	PCIe Switch Base Board (PSBB) for MI355X GPU PCIe Switch Retimer Base Board (PSRBB) for B300 GPU*
13	DIMM/DIMM slots
14	Power Distribution Board (PDB)
15	Power supply units (12)

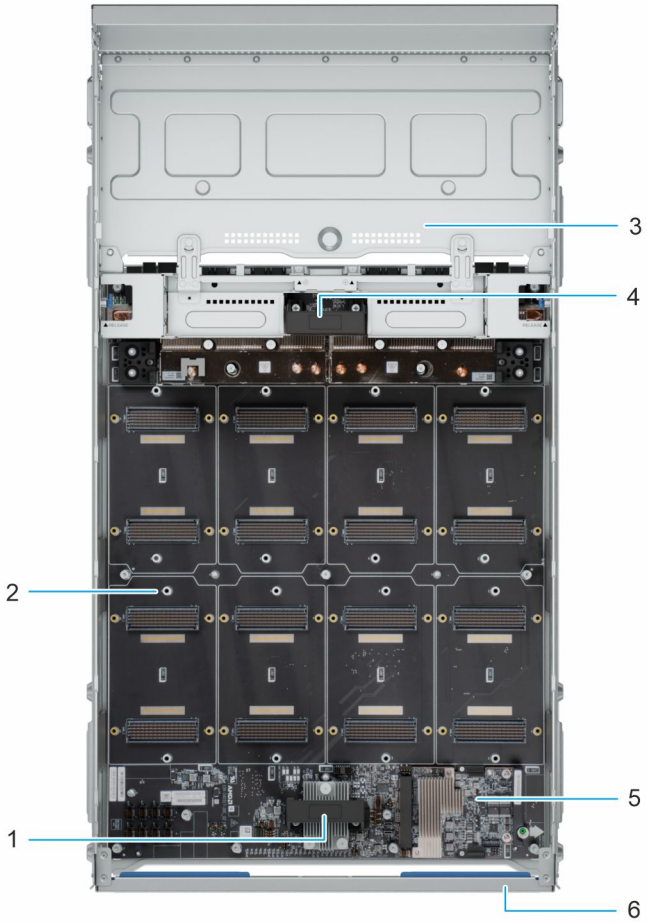

Figure 6. Inside view of the GPU sled with MI355X GPUs

Table 8. Inside view of the GPU sled with MI355X GPUs

Item	Description
1	Universal Base Board (UBB) handle
2	MI355X GPU module
3	GPU sled
4	Universal Base Board (UBB) handle
5	Universal Base Board (UBB)
6	GPU sled handle

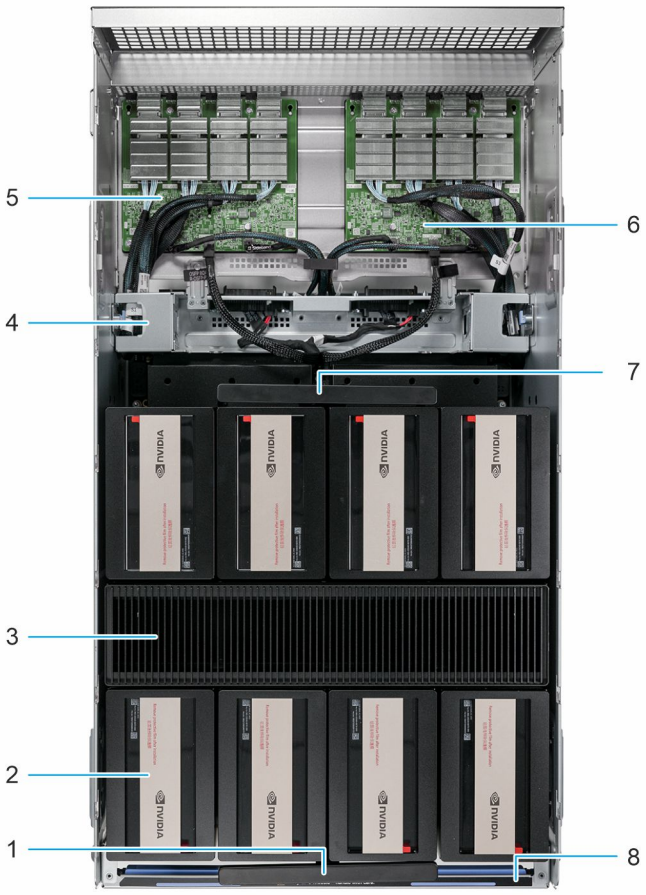

Figure 7. Inside view of the GPU sled with B300 GPUs*

Table 9. Inside view of the GPU sled with B300 GPUs*

Item	Description
1	GPU Baseboard handle
2	B300 GPU heatsink
3	NVSwitch Heatsink
4	Panel mount bracket support tray
5	OSFP board with cable assemby
6	OSFP board with cable assemby
7	GPU Baseboard handle
8	GPU sled

NOTE: Feature not available at initial product launch. Refer to the product configurator page on Dell.com to confirm feature availability.

Electronic Piece Part Identification (ePPID)

System components may contain non-volatile storage that is programmed with unique piece part identification information. This implementation is referred to as electronic Piece Part Identification (ePPID). When possible, the system collects this information and makes it available for viewing by customers and/or service personnel.

ePPID includes the following information:

- Dell Part Number (DPN)

- Part Revision Level
- Country of Origin
- Supplied ID Code
- Date Code (Date of Manufacture)
- Unique Sequence Number

4

Processor

Topics:

- Processor features

Processor features

The AMD EPYC™ 9005 system on a chip (SOC) is the next-generation data center CPU supporting socket compatibility with EPYC™ 9004 series in the SP5 socket infrastructure. Based on AMD's new enhanced Zen5 CPU cores with integrated I/O controllers, AMD EPYC™ SOC offers significant performance improvement from current generation production and the best performance per price and lowers TCO through an optimal balance of compute, memory, I/O, and security.

The following lists the features and functions in the AMD Family 1 Ah Models 00h-0Fh and 10H-1FH Socket SP5 processors:

- Compute
  - Zen5 cores:
    - Up to 192 cores with 2 x threads per socket up to 500 W TDP
    - Up to 32 MB L3 shared by 16 cores/CCD
    - 1 MB L2/core, 32/48 KB instruction/data L1 per core
- Memory
  - 24 DDR5 memory channels (12 channels per socket) up to 6400 MT/s
  - RDIMM
  - Dynamic PPR for non-Chipkill DIMMs
- Integrated I/O
  - PCIe5 supports, peak xGMI3 product speeds up to 32 Gbps.
  - Up to 128 lanes of High Speed I /O
  - Server Controller Hub (USB, UART, SPI, LPC, I2C, so on)

Supported processors

The following table shows the 5th Generation AMD EPYC 9005 Series processor SKUs that are supported on the XE9785.

Table 10. Supported processors list

Processor	Base Clock Speed (GHz)	Max Clock Speed (GHz)	Cache (M)	Cores	Threads	Turbo	Memory Speed (MT/s)	Memory Capacity (TB)	TDP (W)
9965	2.25	3.7	384	192	384	Turbo	6400	6	500
9755	2.7	4.1	512	128	256	Turbo	6400	6	500
9655	2.6	4.5	384	96	192	Turbo	6400	6	400
9575F	3.3	5.0	256	64	128	Turbo	6400	6	400
9845	2.1	3.7	320	160	320	Turbo	6400	6	390
9825	2.2	3.7	384	144	288	Turbo	6400	6	390
9475F	3.65	4.8	256	48	96	Turbo	6400	6	360
9455	3.15	4.4	256	48	96	Turbo	6400	6	300

5

Memory subsystem

Topics:

- Supported memory

Supported memory

The XE9785 supports up to 24 DIMMs (12 per socket), with up to 6 TB* of memory and speeds of up to 6400 MT/s.

The XE9785 support registered (RDIMMs) which use a buffer to reduce memory loading and provide greater density, allowing for the maximum platform memory capacity. Unbuffered DIMMs (UDIMMs) are not supported.

Table 11. Memory technology comparison

Feature	PowerEdge XE9785 (DDR5)
DIMM type	RDIMM
Transfer speed	Up to 6400 MT/s **NOTE:** Maximum DIMM transfer speed support dependent on CPU SKU and DIMM population.
Voltage	1.1 V

Table 12. Supported DIMMs

Rated DIMM Speed (MT/s)	DIMM Type	DIMM Capacity (GB)	Ranks per DIMM	Data Width	DIMM Volts (V)
6400	RDIMM	96	2	x4	1.1
6400	RDIMM	128	2	x4	1.1
6400	RDIMM	256*	8	x4	1.1

NOTE: Some CPUs/SKUs may reduce the performance of the rated DIMM speed.

NOTE: Feature not available at initial product launch. Refer to the product configurator page on Dell.com to confirm feature availability.

6

Storage

Topics:

- Drives
- Internal storage configuration

Drives

The PowerEdge XE9785 system supports:

- 16 x E3.S Gen5 NVMe direct SSD drives
- 10 x U.2 Gen5 NVMe SSD drives.*

NOTE: *Feature not available at product launch in November 2025. Refer to the product configurator page on Dell.com to confirm feature availability.

Internal storage configuration

Table 13. Internal Storage Configuration Matrix

Supported Options	Total HDD/ SSD (not BOSS)	NVMe	Front Storage	Rear Storage	PERC Qty	Storage Controller	CPU Qty
C01	16	Yes	16 x E3.S NVMe direct attached (S160)	N/A	0	Software RAID S160	2 CPU
C02	10	Yes	10 x 2.5-inch Gen 5 U.2 NVMe*	N/A	0	Software RAID S160	2 CPU

NOTE: Feature not available at initial product launch. Refer to the product configurator page on Dell.com to confirm feature availability.

7

Networking

Topics:

- Overview
- OCP 3.0 support

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 14. OCP 3.0 feature list

Feature	OCP 3.0
Form factor	SFF
PCIe Gen	Gen4
Max PCIe width	x8
Max no.of ports	4
Port type	BT/SFP/SFP+/SFP28
Max port speed	200 GbE
NC-SI	Yes
SNAPI	Yes
WoL	Yes
Power consumption	35 W

Supported OCP cards

OCP Cards

Table 15. Supported OCP cards

Form factor	Vendor	Port type	Port speed	Port count
OCP 3.0	Broadcom	Q56	100 GbE	2
	Broadcom	QSFP	200 GbE	2
	NVIDIA	QSFP	100 GbE	2
	Intel	Q56	100 GbE*	2

Table 15. Supported OCP cards (continued)

Form factor	Vendor	Port type	Port speed	Port count
	Broadcom	QSFP	25 GbE	4
	Intel	S28	25 GbE*	4
	Intel	S28	25 GbE*	2
	NVIDIA	QSFP	25 GbE	2
	Broadcom	QSFP	25 GbE	2
	Broadcom	BT	10 GbE	4
	Intel	BT	10 GbE*	4
	Intel	BT	10 GbE*	2
	Broadcom	QSFP	10 GbE	2

NOTE: Feature not available at initial product launch. Refer to the product configurator page on Dell.com to confirm feature availability.

OCP NIC 3.0 vs. rack Network Daughter Card comparisons

Table 16. 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

OCP form factors

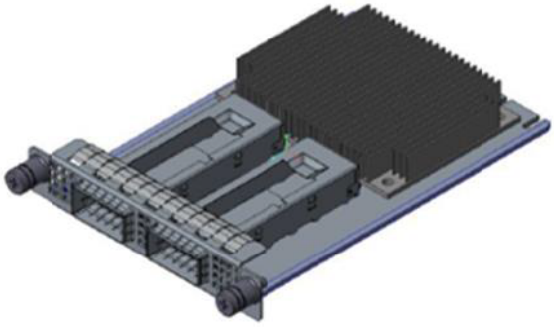

Figure 8. OCP 3.0 Small Card Form Factor (LS)

The process of installing the OCP card in the XE9785 system:

1. Slide the OCP card into the slot in the front of the system.
2. Push until the OCP card is fully connected to the connector on the system board.

3. Close the latch to lock the OCP card to the system.

8

PCIe subsystem

Topics:

- PCIe slot mechanical compatibility matrix

PCIe slot mechanical compatibility matrix

The PowerEdge XE9785 system support up to 4 FHHL (NVIDIA B300*) and 12 FHHL(AMD MI355X) slots. Designed with Broadcom's PCIe Gen5 switch with up to 12 PCIe Gen5x16 slots. All PCIe ports are 75W card edge delivered power per slot

NOTE: For XE9785 with MI355X GPUs, slots 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13 can be used

NOTE: For the XE9785 with B300* GPUs, slot 3, 6, 9 and 12 can be used.

Table 17. PCIe Riser Configurations

Config No.	Riser configuration	No. of Processors	PERC type supported	Rear storage possible
0	NO RSR	2	No	No

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
- Thermal
- Acoustics

Power

Table 18. 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 Dell EIPT.
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.
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 ● AC Blind Mate Find additional information at: Power and Cooling

PSU Specifications

The PowerEdge XE9785 system supports 12 AC power supply units (PSUs).

Table 19. PSU Specifications

PSU	Power Ratings	Class	Heat dissipation	Frequence (Hz)	Input Voltage	Current (A)
3200 W Mixed Mode (Multi-rated)	3200 W	Titanium	11,850 BTU/hr	50/60	216.1-240 VAC	16
		N/A	11,850	N/A	240 VDC	14.5
	2900 W	N/A	10,750	50/60	200-216 VAC	16

The power consumption of the system depends on its total power requirements, which vary based on the configuration (as in, number of GPUs, PSUs, and other components). Each PSU model (3200 W) can deliver power up to its rated capacity, but the actual power that is delivered will depend on the system's needs.

To determine how much power each PSU delivers, the total system power requirement is divided by the number of PSUs in the system. For detailed power usage information, refer to the iDRAC web GUI for real-time power metrics and system monitoring.

NOTE: The PowerEdge XE9785 supports up to 12 AC power supplies with 6+6 full redundant and A/B grid redundant options. Users can configure the power redundancy policy to PSU redundant or A/B grid redundant based on the data center infrastructure.

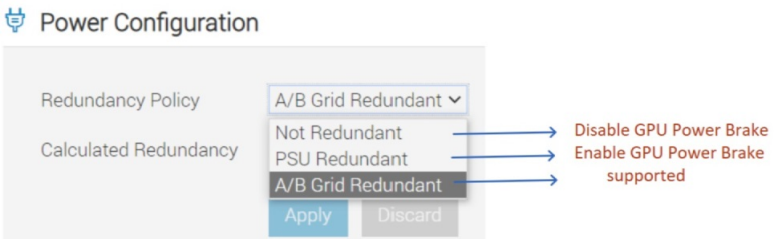

Figure 9. Power Configuration

The PowerEdge XE9785 system also supports 6+6 FTR redundancy. When the Redundancy policy is set to PSU redundant, and when the numbers of failed PSUs exceeds the number required for redundancy, a fault-tolerant redundant mode is activated. This mode triggers the GPU power brake, throttling GPU clocks to one-fourth their normal rate, and resulting in a GPU performance drop to around one-fifth. It is important to note that this feature is applicable only when the system is set to PSU redundant mode. In configurations where PSU redundancy is not enabled, the fault-tolerant redundant mode does not automatically trigger GPU Power Brake.

NOTE: This system is also designed to connect to the IT power systems with a phase-to-phase voltage not exceeding 240 V.

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

NOTE: Do not mix PSUs from different vendors within a single system configuration to ensure optimal performance and reliability.

Figure 10. PSU power cord

Table 20. PSU power cables

Form factor	Output	Power cable
Redundant 73.5 mm	3200 W mixed mode	C19

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 calc.

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.

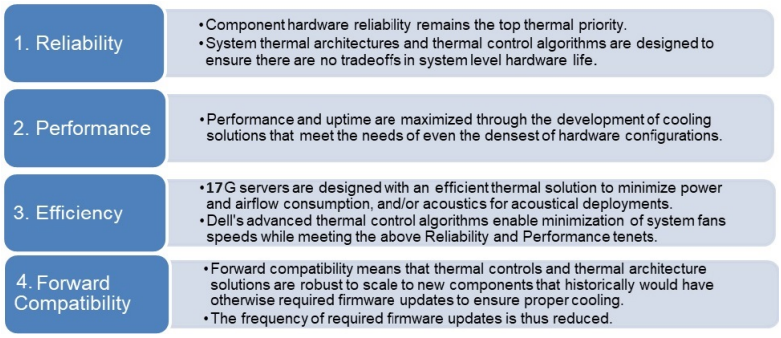

Figure 11. Thermal design characteristics

The thermal design of the PowerEdge XE9785 reflects the following:

- Optimized thermal design: The system layout is architected for optimum thermal design.
- System component placement and layout are designed to provide maximum airflow coverage to critical components with minimum expense of fan power.
- Comprehensive thermal management: The thermal control system regulates the fan speed based on several different responses from all system-component temperature sensors, and inventory for system configurations. Temperature monitoring includes components such as processors, DIMMs, chipset, the inlet air ambient, hard disk drives, and OCP.
- Open and closed loop thermal fan speed control: Open loop thermal control uses system configuration to determine fan speed based on inlet air ambient temperature. Closed loop thermal control method uses feedback temperatures to dynamically determine proper fan speeds.
- User-configurable settings: With the understanding and realization that every customer has unique set of circumstances or expectations from the system. For more information, see the Dell PowerEdge XE9785 Installation and Service Manual at PowerEdge Manuals and “Advanced Thermal Control: Optimizing across Environments and Power Goals” on Dell.com.
- Cooling redundancy: The XE9785 allows N+1 fan redundancy, allowing continuous operation with one fan failure in the system.
- Environmental Specifications: The optimized thermal management makes the XE9785 reliable under a wide range of operating environments.

Acoustics

Acoustical design

Dell PowerEdge delivers sound quality and smooth transient response in addition to sound power levels and sound pressure levels that are oriented to deployment environments.

The acoustical design of the platform includes the following features:

Dell PowerEdge delivers sound quality and smooth transient response in addition to sound power levels and sound pressure levels that are oriented to deployment environments. Sound quality describes how disturbing or pleasing a person finds a sound, as a function of various psychoacoustical metrics and thresholds. Tone prominence is one such metric. Transient response refers to how sound changes with time. Sound power level, sound pressure level, and loudness refer to amplitude of sound.

A reference for comparison to sound pressure levels and loudness for familiar noise sources is given in the table below.

NOTE: The Sound Cap feature is not supported; therefore, this option is not available in the BIOS setup menu.

Table 21. Acoustical Reference Points and Output Comparisons

Value measured at your ears	Equivalent familiar noise experience
LpA, dBA, re 20µPa	
90	Loud concert
75	Data center vacuum cleaner, voice must be elevated to be heard
60	Conversation levels
45	Whispering, open office layout, normal living room
35	Quiet office
30	Quiet library
20	Recording studio

For more information about PowerEdge acoustical design and metrics, see Understanding Acoustical Data and Causes of Sound in Dell Enterprise Products.

PowerEdge acoustical dependencies

PowerEdge acoustical dependencies are impacted by features such as ambient temperature, processor thermal design power, and system thermal profile selection.

Some product features impact acoustical server output more than others. The following features are considered strong drivers of acoustical response, thus configurations, or operating conditions that include these features may increase air mover speed and acoustical output of the server:

- Ambient temperature: Dell evaluates the acoustical performance of servers in a 23±2°C environment. Ambient temperatures more than 25°C has higher acoustical output and may experience larger fluctuations between state changes.
- GPU and Processor thermal design power (TDP): Higher-wattage GPUs and processors may require more airflows to cool under load and thus increase the potential acoustical output of the system.

10

Rack, rails, and cable management

Topics:

- Rails and cable management information

Rails and cable management information

The rail offerings for the PowerEdge XE9785 consist of only one type which is static. The cable management arm is not supported.

See the *Dell Enterprise Systems Rail Sizing and Rack Compatibility Matrix* available at rail-rack-matrix for information regarding:

- Specific details about rail types.
- Rail adjustability ranges for various rack mounting flange types
- Rail depth without cable management accessories
- Rack types that are supported for various rack mounting flange types.

Key factors governing proper rail selection include the following:

- 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 that is mounted in the back of the rack such as power distribution units (PDUs), and the overall depth of the rack.
- Overall depth of the rack

Rack Installation

Installing the rail for round and square hole racks

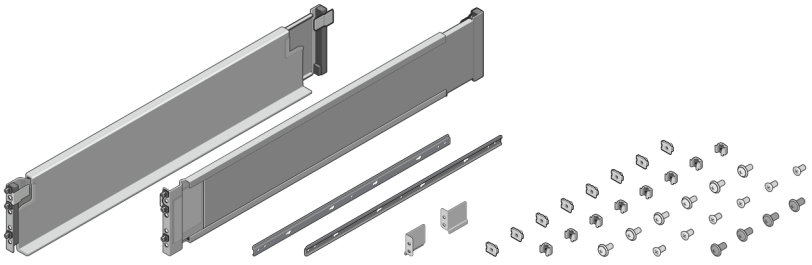

Figure 12. Rail components for round and square hole rack

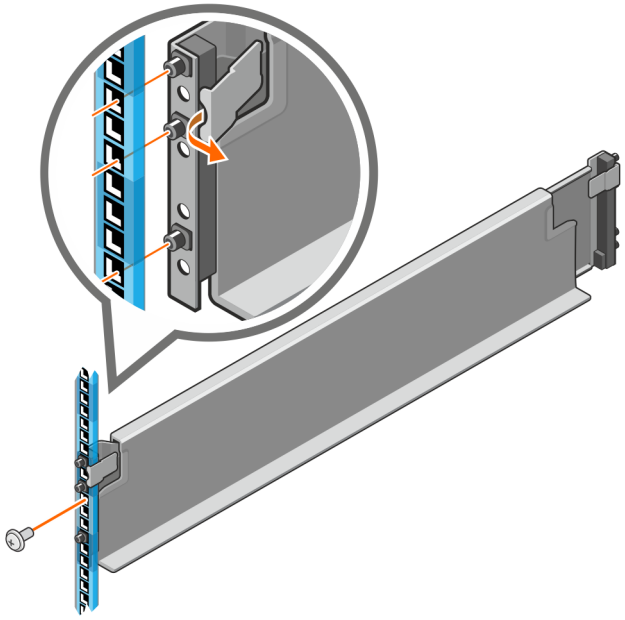

Figure 13. Installing the rail for square holes rack post front

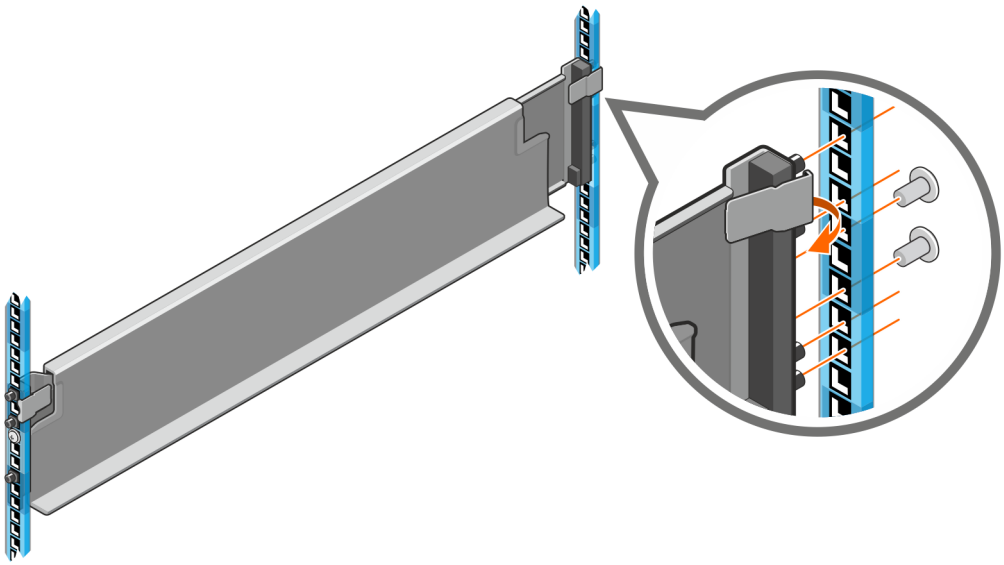

Figure 14. Installing the rail for rear rack post

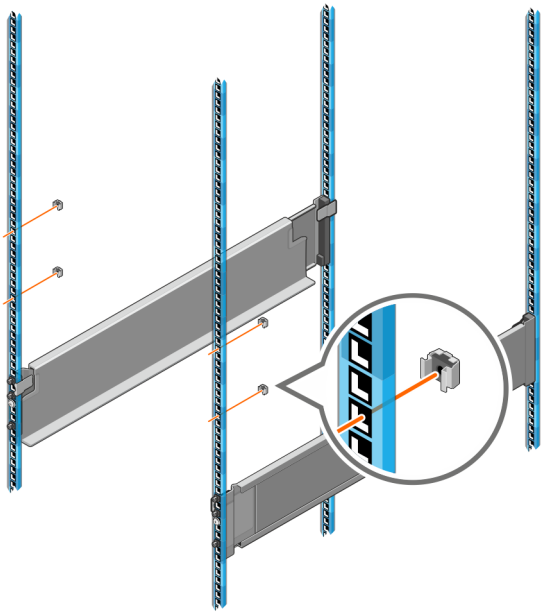

Figure 15. Installing clips

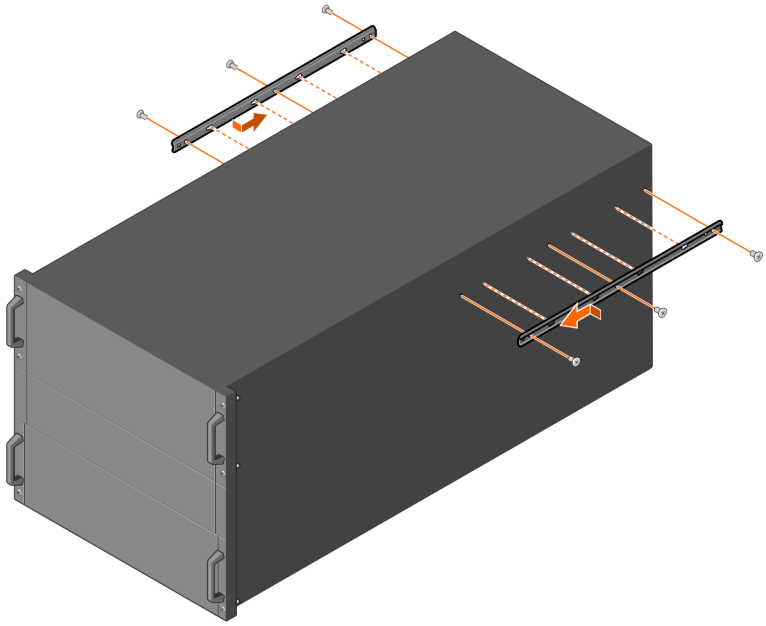

Figure 16. Installing upper chassis rail member

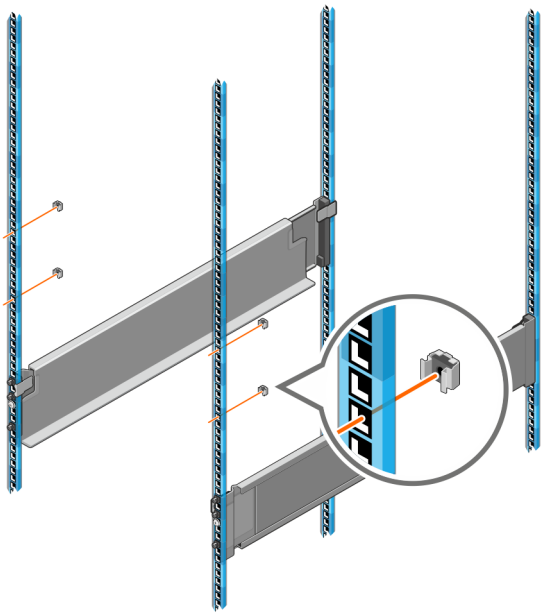

Figure 17. Installing the clips to post

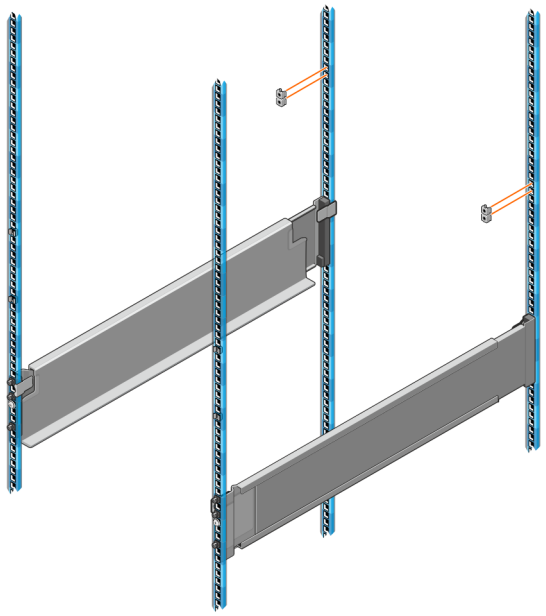

Figure 18. Installing the clips to post

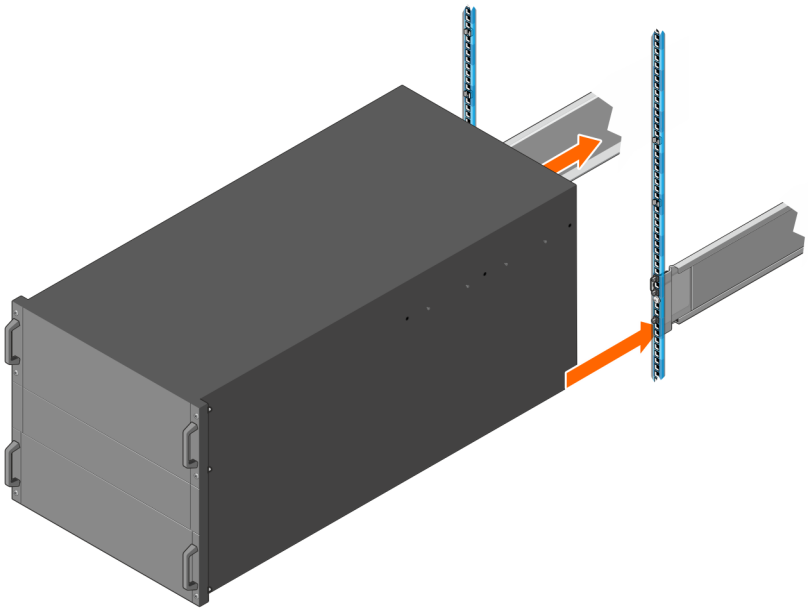

Figure 19. Installing system to rack

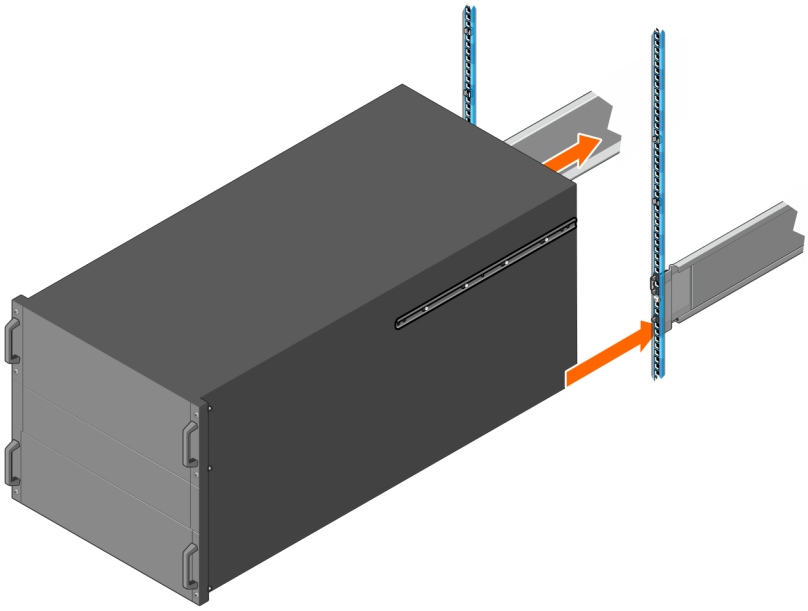

Figure 20. Shipping

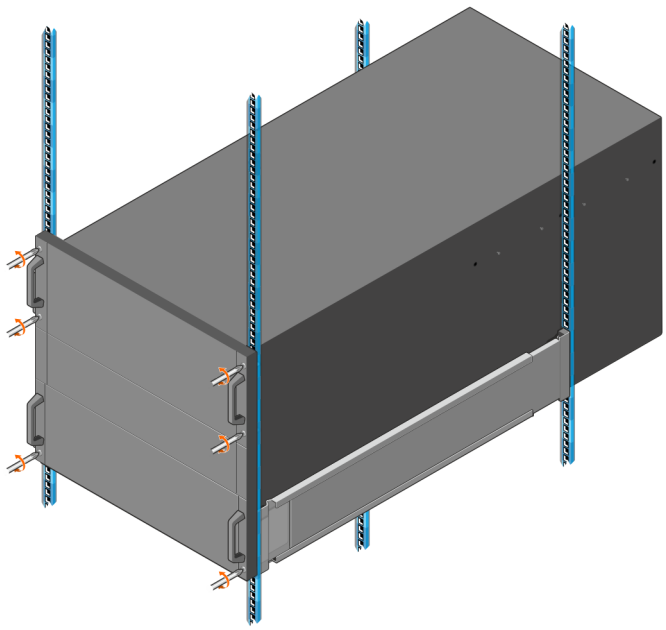

Figure 21. Installing shipping bracket and screws

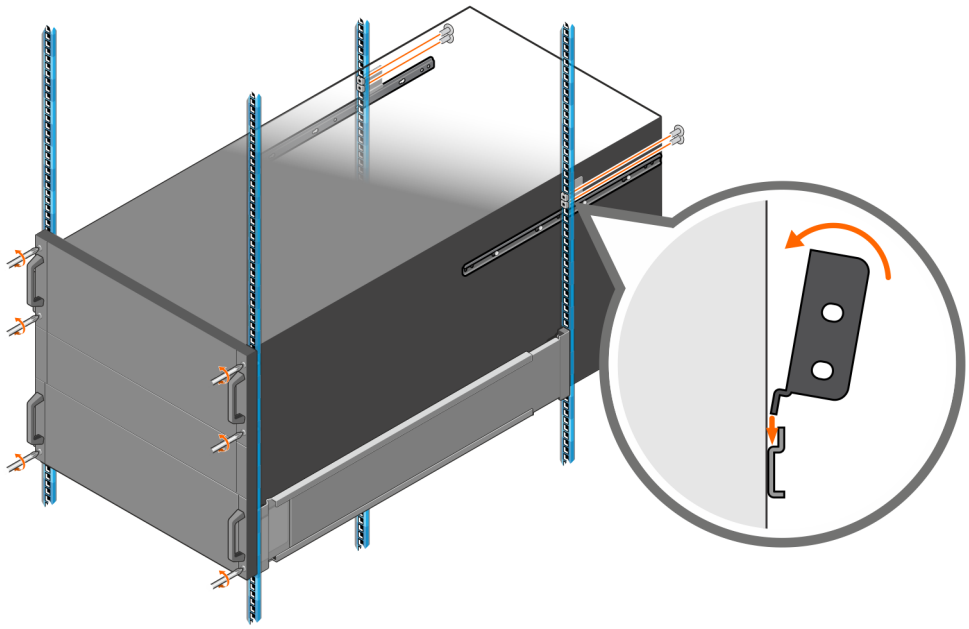

Figure 22. Shipping

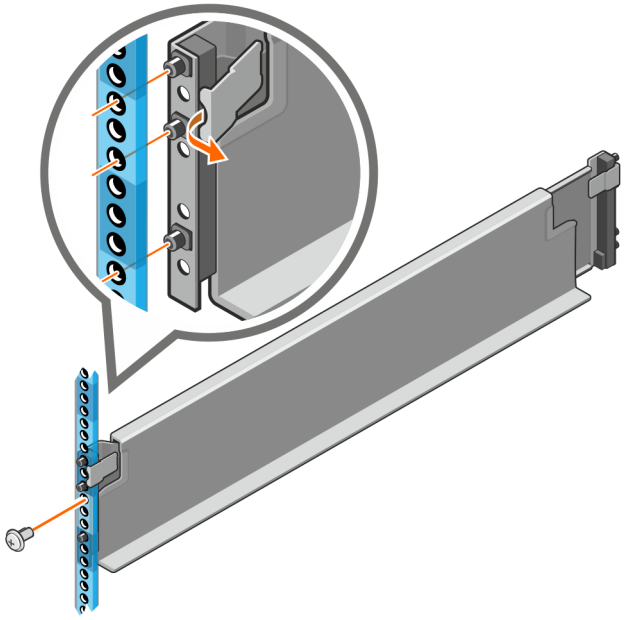

Figure 23. Installing rail for front round hole rack post

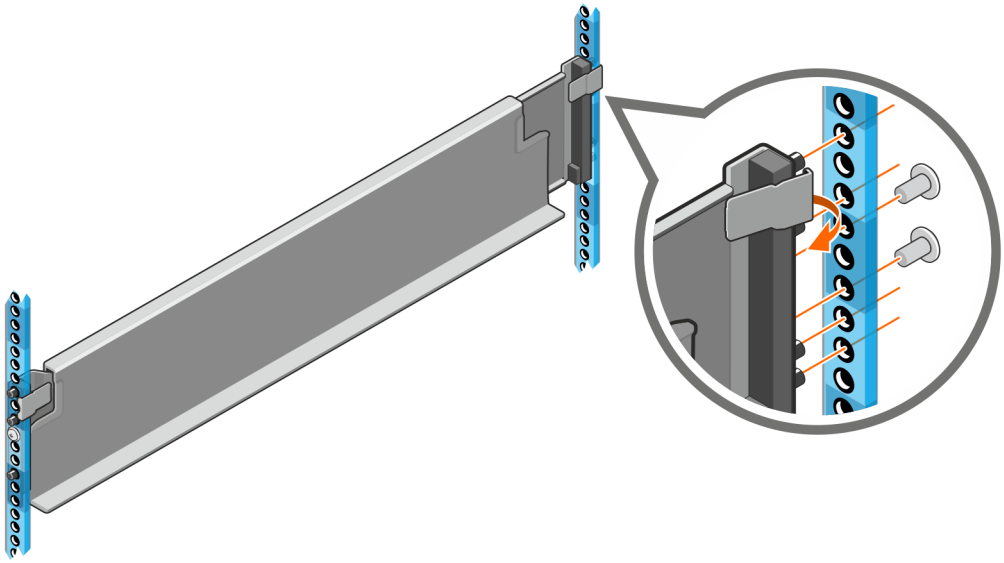

Figure 24. Installing the rail to the rear

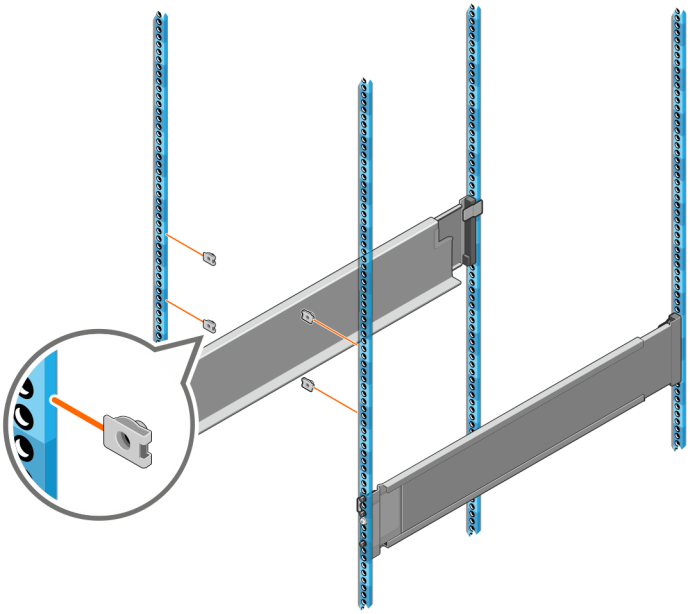

Figure 25. Installing clips

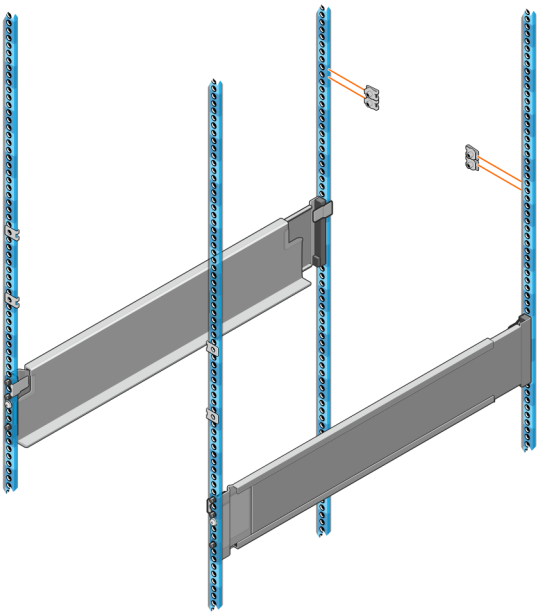

Figure 26. Shipping- Installing the clips

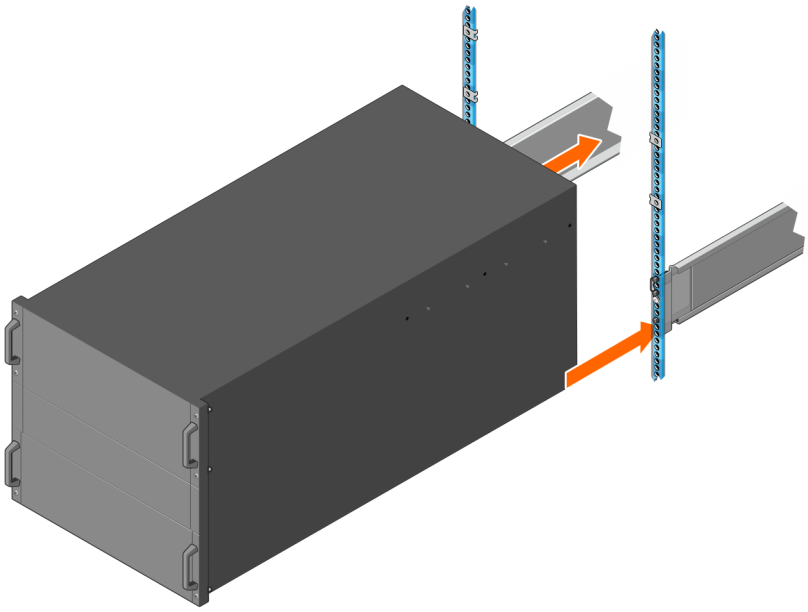

Figure 27. Installing system to the rack

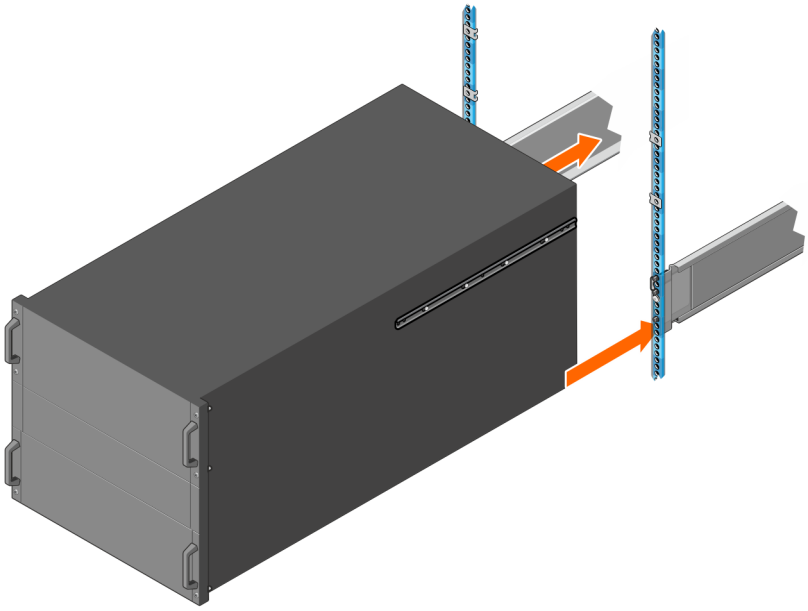

Figure 28. Shipping-Installing system to the rack

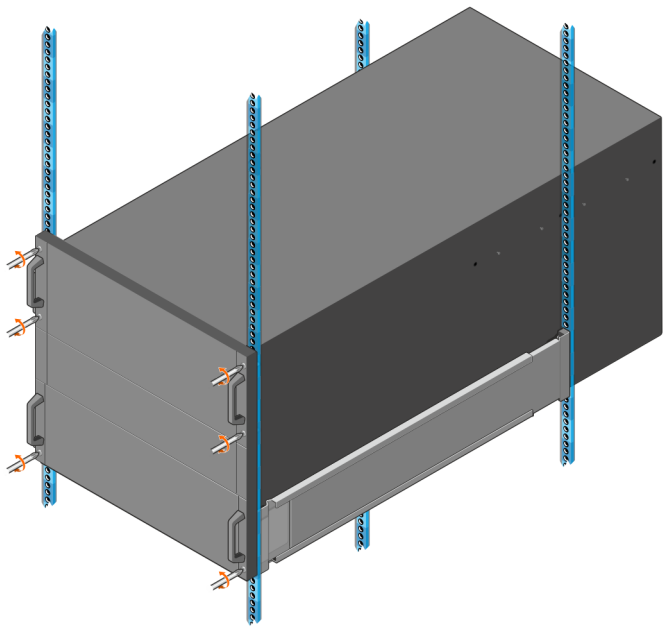

Figure 29. Installing shipping bracket and screws

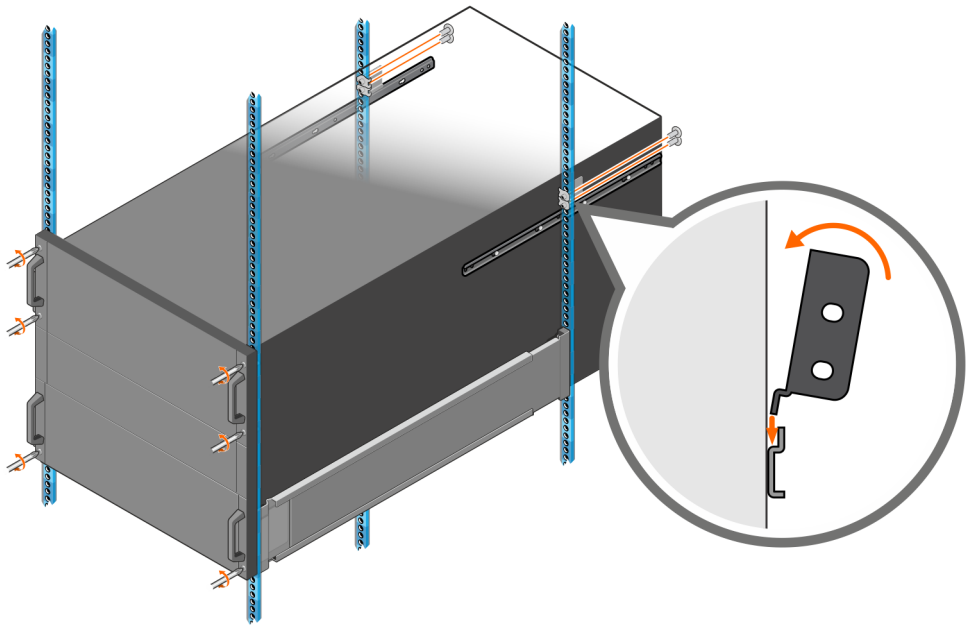

Figure 30. Shipping-Installing shippinng bracket and screws

11

Operating Systems and Virtualization

Topics:

- Supported operating systems

Supported operating systems

The PowerEdge XE9785 system supports the following operating systems:

- Canonical Ubuntu Server LTS
- Red Hat Enterprise Linux*
- SUSE Linux Enterprise Server*

For specifications and interoperability details, see OS support.

NOTE: Feature not available at initial product launch. Refer to the product configurator page on Dell.com to confirm feature availability.

12

Dell Systems Management

Dell delivers management solutions that help IT administrators effectively deploy, update, monitor, and manage IT assets. Dell 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)
- Systems Management software support matrix

Integrated Dell Remote Access Controller (iDRAC)

iDRAC10 delivers advanced, agent-free, local and remote server administration. Embedded in every PowerEdge server, iDRAC10 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; 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 iDRAC10 in-place across the Dell PowerEdge portfolio, the same IT administration techniques and tools can be applied throughout. This consistent management platform allows 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.

Zero-Touch Provisioning (ZTP) is embedded in iDRAC. ZTP is an Intelligent Automation Dell's agent-free management. Once a PowerEdge server is connected to power and networking that system can be monitored and fully managed, whether you are standing in front of the server or remotely over a network. 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, and System Lockdown, iDRAC10 is purpose-built to simplify server administration. For those customers whose existing management platform uses in-band management, Dell does provide iDRAC Service Module, a lightweight service that can interact with both iDRAC10 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.

iDRAC10 offers the following license tiers:

Table 22. iDRAC10 license tiers

License	Description
iDRAC10 Core	• Available for all servers. • Core system management features for users who are cost conscious.
iDRAC10 Enterprise	• Available as an upsell on all servers. • Includes all features of Core. Also, includes additional automation features and virtual console and security features. • Bundled with Secure Enterprise Key Management (SEKM) and Secure Component Verification (SCV) licenses.
iDRAC10 Datacenter	• Available as an upsell on all servers. • Includes all features of Core and Enterprise. • Includes key features such as telemetry streaming and thermal management. • Includes advanced accelerators (GPU and DPU) system management and advanced air and liquid cooling.

For a full list of iDRAC features by license tier, see the **Integrated Dell Remote Access Controller 10 User's Guide** at Dell.com.

For more details on iDRAC10 including white papers and videos, see:

- Support for Integrated Dell Remote Access Controller 10 (iDRAC10) is on the Knowledge Base page at Dell.com

Systems Management software support matrix

Table 23. Systems Management software support matrix

Categories	Features	PE mainstream
Embedded Management and In-band Service	iDRAC10 (Datacenter license)	Supported
	iDRAC Direct	Supported
	iDRAC RESTful API with Redfish	Supported
	iDRAC Service Module (iSM)	Supported
Tools	Dell System Update	Supported
	Dell Repository Manager	Supported
	Enterprise Catalogs	Supported
	iDRAC RESTful API with Redfish	Supported
	IPMI	Supported
	RACADM CLI	Supported
Console and Plug-ins	CloudIQ for PowerEdge plug in	Supported
	OpenManage Enterprise	Supported
	OpenManage Power Manager plugin	Supported
	OpenManage Service plugin	Supported
	OpenManage Update Manager plugin	Supported
Integrations and connections	BMC Truesight	Supported
	OpenManage Integration with ServiceNow	Supported
	RedHat Ansible Modules	Supported
	Terraform Providers	Supported
Security	AMD Secure Encrypted Virtualization (SEV)	Supported

Table 23. Systems Management software support matrix (continued)

Categories	Features	PE mainstream
	AMD Secure Memory Encryption (SME)	Supported
	Cryptographically signed firmware	Supported
	Data at Rest Encryption (SEDs with local or external key mgmt)	Supported
	Secure Boot	Supported
	Secured Component Verification (Hardware integrity check)	Supported
	Secure Erase	Supported
	Silicon Root of Trust	Supported
	System Lockdown (requires iDRAC10 Enterprise or Datacenter)	Supported
	Soldered down TPM 2.0 on Mezzanine DC-SCM	Supported
	Chassis Intrusion Detection	Supported
Standard operating system	Canonical Ubuntu Server LTS	Supported
	Red Hat Enterprise Linux*	Supported

NOTE: Feature not available at initial product launch. Refer to the product configurator page on Dell.com to confirm feature availability.

13

Appendix A. Additional specifications

Topics:

- Chassis dimensions
- System weight
- NIC port specifications
- Mini-DisplayPort specifications
- Video specifications
- USB ports specifications

Chassis dimensions

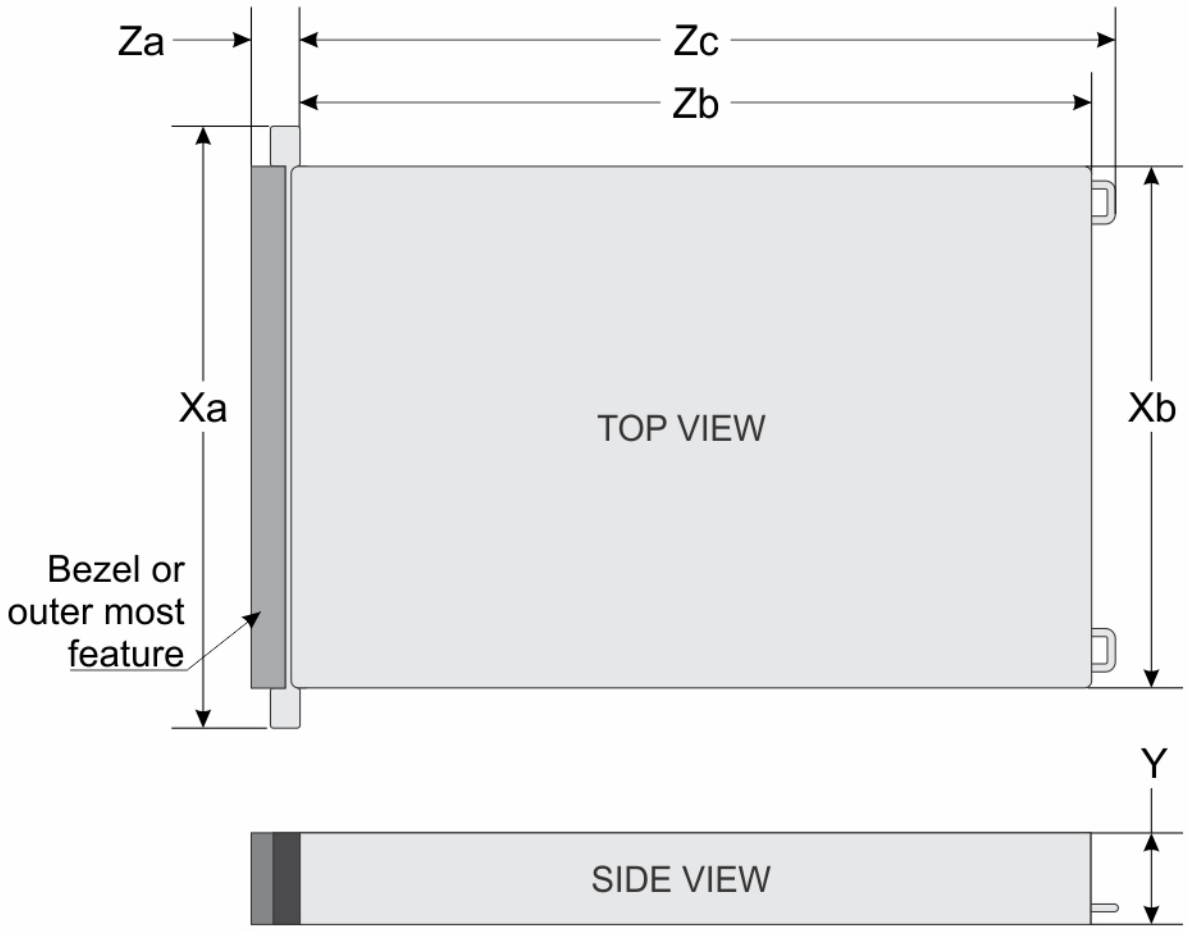

Figure 31. Chassis dimensions

Table 24. PowerEdge XE9785 chassis dimensions

Drives	Xa	Xb	Y	Za	Zb	Zc
16 x E3.S NVMe drives system U.2 NVMe drives system*	482.3 mm (18.98 inches)	448 mm (17.63 inches)	439.5 mm (17.30 inches)	43.7 mm (1.72 inches)With bezel 22 mm (0.87 inches)Without bezel	966 mm (38.03 inches) Ear to rear GPU fan	1001 mm (39.40 inches) Ear to Fan handle

NOTE: Zb is the nominal rear wall external surface where the system board I/O connectors reside.

NOTE: Feature not available at initial product launch. Refer to the product configurator page on Dell.com to confirm feature availability.

System weight

Table 25. PowerEdge XE9785 system weight

System configuration	Maximum weight (with all drives/SSDs)
System fully populated with MI355X GPUs	172.3 kg (379.86 pounds)
System fully populated with B300 GPUs*	163.65 kg (360.79 pounds)

Table 26. PowerEdge XE9785 weight handling recommendations

Chassis weight	Description
40–70 pounds	Recommend two people to lift
70–120 pounds	Recommend three people to lift
≥ 121 pounds	Recommend to use a server-lift

WARNING: The system is heavy, so ensure adequate support and balance during movement and installation; a lift is required for loads over 120 pounds, as the system can slide and cause damage when being installed or removed from a higher position on the rack.

CAUTION: Lift the system by using the provided lifting handles on the chassis and refrain from using clips or other chassis points to lift the system. Nondesignated lift-points on the chassis may cause system damage due to the inability to support the system weight while lifting.

NOTE: Feature not available at initial product launch. Refer to the product configurator page on Dell.com to confirm feature availability.

NIC port specifications

The PowerEdge XE9785 system supports up to two 10/100/1000 Mbps Network Interface Controller (NIC) ports on the front I/O card and an optional Open Compute Project (OCP) card.

Table 27. NIC port specification for the system

Feature	Specifications
Ethernet ports on the Front I/O board	2 x 1 Gb
OCP NIC 3.0 card	200 GbE x 2, 100 GbE x 2, 25 GbE x 4, 25 GbE x 2, 10 GbE x 4, 10G x 2
DPU card	400 GbE x 2*, 200 GbE x 2

Table 27. NIC port specification for the system (continued)

Feature	Specifications
PCIe Add-in Card (AIC) NIC	400 GbE x 1, 200 GbE x 2, 100 GbE x 2

NOTE: Feature not available at initial product launch. Refer to the product configurator page on Dell.com to confirm feature availability.

Mini-DisplayPort specifications

The PowerEdge XE9785 system supports One Mini-DisplayPort on left control panel of the system.

Video specifications

The system supports integrated Matrox G200 graphics controller with 16 MB of video frame buffer.

Table 28. Supported front video resolution options for the system

Resolution	Name	Refresh rate (Hz)	Horizontal frequency kHz	Pixel clock MHz
640 x 480	VGA	60	31.5 kHz	25.175 MHz
640 x 480	VGA	72	37.9 kHz	31.5 MHz
640 x 480	VGA	75	37.5 kHz	31.5 MHz
640 x 480	VGA	85	43.3 kHz	36.0 MHz
800 x 600	SVGA	60	37.0 kHz	40.0 MHz
800 x 600	SVGA	72	48.1 kHz	50.0 MHz
800 x 600	SVGA	75	46.9 kHz	49.5 MHz
800 x 600	SVGA	85	-	-
1024 x 768	XGA	60	48.4 kHz	65.0 MHz
1024 x 768	XGA	72	57.67 kHz	78.43 MHz
1024 x 768	XGA	75	60.0 kHz	78.75 MHz
1024 x 768	XGA	85	68.7 kHz	94.5 MHz
1152 x 864	XGA+	75	-	-
1280 x 800	WXGA	60 Hz	62.625 kHz	107.21 MHz
1280 x 800	WXGA	75	64.0 kHz	108.0 MHz
1280 x 1024	SXGA	60	64.0 kHz	108.0 MHz
1280 x 1024	SXGA	75	80.0 kHz	135.0 MHz
1280 x 1024	SXGA	85	-	-
1360 x 768	HD	60 Hz	55.9 kHz	106.5 MHz
1440 x 900	WXGA+	60 Hz	55.5 kHz	88.75 MHz
1440 x 900	WXGA+	60 Hz (RB)	-	-
1440 x 900	WXGA+	75 Hz	-	-
1440 x 900	WXGA+	85 Hz	55.54 kHz	97.75 MHz
1600 x 900	HD+	60 Hz (RB)	55.54 kHz	97.75 MHz

Table 28. Supported front video resolution options for the system (continued)

Resolution	Name	Refresh rate (Hz)	Horizontal frequency kHz	Pixel clock MHz
1600 x 900	HD+	60 Hz (RB)	60.00 kHz	108.0 MHz
1600 x 1200	UXGA	60 Hz	75.0 kHz	162.0 MHz
1600 x 1200	UXGA	60 Hz (RB)	74.01 kHz	130.25 MHz
1600 x 1200	UXGA	65	-	-
1600 x 1200	UXGA	70	-	-
1600 x 1200	UXGA	75	-	-
1600 x 1200	UXGA	85	-	-
1680 x 1050	WSXGA+	65 Hz (RB)	-	-
1680 x 1050	WSXGA+	70 Hz	-	-
1680 x 1050	WSXGA+	75 Hz	-	-
1680 x 1050	WSXGA+	85 Hz	-	-
1920 x 1080	FHD	60 Hz	67.158 kHz	-
1920 x 1080	FHD	60 Hz (RB)	66.587 kHz	138.5 MHz
1920 x 1200	WUXGA	60 Hz	74.556 kHz	193.25 MHz
1920 x 1200	WUXGA	60 Hz (RB)	74.038 kHz	154.00 MHz
1920 x 1200	WUXGA	75 Hz	-	-
1920 x 1200	WUXGA	85 Hz	74.038 kHz	~220.75 MHz VCO limit is ~244MHz

NOTE: (RB) - Reduced Blanking for Digital Displays requiring less blank time. This was introduced for Signal Integrity improvements by reducing Pixel Clock rates for VGA- Analog input devices.

USB ports specifications

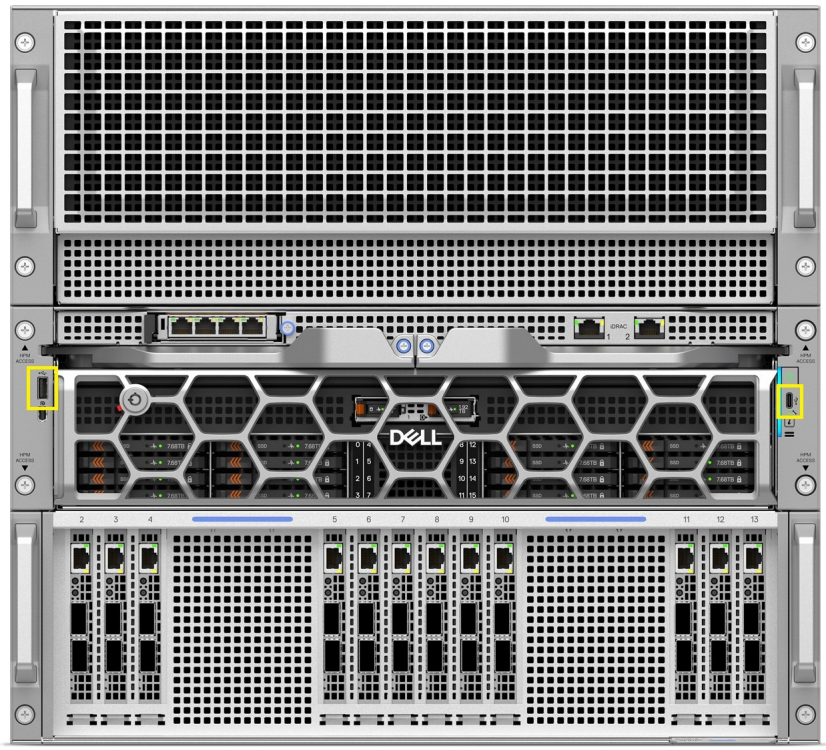

Figure 32. Front USB Ports

Table 29. PowerEdge XE9785 USB specifications

Front		Internal	
USB port type	**No. of ports**	**USB port type**	**No. of ports**
USB Type A	One	USB 3.1-compliant port	One
USB type C dual-mode host/BMC Direct port	One		

NOTE: The micro USB 2.0 compliant port can only be used as an iDRAC Direct or a management port.

NOTE: The iDRAC direct Type C USB port can be used by connecting Dell USB-C to 2.5 Gbps Ethernet Adapter dongle (DP/N : HYRGV). Once connected, laptop would be assigned IP 169.254.0.4 automatically and user will now be able to access idrac webGUI/ssh.

NOTE: Avoid connecting USB devices to the iDRAC Direct port of the XE9785 system during system initialization, POST, boot operations, or GPU firmware updates.

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Appendix B. Standards compliance

The system conforms to the following industry standards.

Table 30. Industry standard documents

Standard	URL for information and specifications
ACPIAdvance Configuration and Power Interface Specification, v6.4	ACPI
Ethernet IEEE Std 802.3-2022	IEEE Standards
MSFT WHQL Microsoft Windows Hardware Quality Labs	Windows Hardware Compatibility Program
IPMI Intelligent Platform Management Interface, v2.0	IPMI
DDR5 Memory DDR5 SDRAM Specification	DDR5 SDRAM
PCI Express PCI Express Base Specification, v5.0	PCIe specifications
PMBus Power System Management Protocol Specification, v1.2	PMBus specifications
SMBIOS System Management BIOS Reference Specification, v3.3.0	DMTF SMBIOS
TPM Trusted Platform Module Specification, v2.0	TPM specifications
UEFI Unified Extensible Firmware Interface Specification, v2.7	UEFI specifications
PI Platform Initialization Specification, v1.7	
USB Universal Serial Bus v2.0 and SuperSpeed v3.0 (USB 3.1 Gen1)	USB document library
NVMe Express Base Specification. Revision 2.0c	NVMe specifications
NVMe Command Set Specifications 1. NVM Express NVM Command Set Specification. Revision 1.1c 2. NVM Express Zoned Namespaces Command Set. Revision 1.0c 3. NVM Express® Key Value Command Set. Revision 1.0c	
NVMe Transport Specifications 1. NVM Express over PCIe Transport. Revision 1.0c 2. NVM Express RDMA Transport Revision. 1.0b 3. NVM Express TCP Transport. Revision 1.0c	
NVMe NVM Express Management Interface. Revision 1.2c	
NVMe NVMe Boot Specification. Revision 1.0	

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Appendix C Additional resources

Table 31. 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
QR code for system resources	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 contact information.	Inside the system chassis cover
Enterprise Infrastructure Planning Tool (EIPT)	The Dell 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:

- Why attach service contracts
- ProSupport Infrastructure Suite
- Specialty Support Services
- ProDeploy Infrastructure Suite
- Supplemental Deployment Services
- DAY 2 – Automation Services with Ansible
- Dell Technologies Consulting Services

Why attach service contracts

Dell PowerEdge XE servers include a standard three-year hardware warranty covering repair or replacement of defective components. This warranty reflects the commitment to product quality but is limited to hardware-related issues and does not include software support. For extended warranty coverage and comprehensive support of both hardware and software, choose the ProSupport Infrastructure Suite.

ProSupport Infrastructure Suite

Enterprise-class support that aligns with the criticality of your systems, the complexity of your environment, and how you allocate your IT resources. ProSupport Infrastructure Suite offers three service tiers: Basic Hardware Support, ProSupport for Infrastructure and ProSupport Plus for Infrastructure. These services extend hardware coverage, ensuring continued support beyond the standard warranty period. ProSupport and ProSupport Plus also address common software-related issues, ensuring comprehensive support for both hardware and software. ProSupport Plus offers enhanced capabilities, including support for third-party software, proactive system maintenance, and personalized guidance for performance optimization and other advanced needs. To ensure uninterrupted operation and optimal performance of Dell PowerEdge XE servers, it is recommended to evaluate and select the appropriate ProSupport Infrastructure Suite service based on the specific requirements of your environment.

	Basic Hardware Support[1]	ProSupport	BEST ProSupport Plus
Outcome Assistance and Advocacy *via assigned Technical Customer Success Manager* ⓘ			
Enjoy a frictionless customer experience with cross-functional lifecycle management aligned to your goals			✓
Accelerate time-to-value through onboarding assistance, education and success planning			✓
Turn challenges into opportunities with actionable strategies powered by data and AI-driven analytics			✓
Ensure coverage continuity while preparing to scale for future success			✓
Proactive Monitoring & Actionable Insights *via Dell's connectivity solutions and tools*			
Quickly visualize performance through a current system health score		✓	✓
Cybersecurity monitoring and mitigation recommendations provide another layer of protection		✓	✓
Predictive performance and capacity analysis address bottlenecks		✓	✓
Prevent or plan for downtime with predictive hardware anomaly detection		✓	✓
Energy consumption and carbon footprint forecasting support sustainability and stewardship initiatives		✓	✓
Get ahead of problems with proactive issue detection with automated case creation	✓	✓	✓
Streamline internal IT efforts with efficient service request and escalation management tools	✓	✓	✓
Minimize disruptions by self-dispatching eligible parts	✓	✓	✓
Support Essentials			
Receive an assigned incident manager for Sev 1 issues who will work your issue through to resolution		✓	✓
Count on Mission Critical Support during Sev 1 incidents and natural disasters ⓘ			✓
Keep systems code current and performing at peak through Proactive System Maintenance			✓
Get priority access to senior technical support engineers—skip the queues and callbacks			✓
Bringing your own software? We provide limited 3rd party software support ⓘ			✓
Choose onsite parts delivery and labor response that meets your needs	Next Business Day	NBD or 4-hour	4-hour
Select product coverage that best augments your internal resources	Hardware	Hardware & Software	Hardware & Software
Have an issue? We are here for you by phone, chat and online	Local business hours	24/7/365	24/7/365

Figure 33. ProSupport Infrastructure Suite

ProSupport Plus for Infrastructure

ProSupport Plus for Infrastructure is designed for customers who require proactive, predictive, and personalized support for business-critical systems. This service is ideal for environments managing essential applications and workloads where optimal performance and preventative maintenance are paramount. ProSupport Plus is recommended for PowerEdge XE servers to ensure comprehensive, preventative support for business-critical systems.

ProSupport Plus includes 4-hour onsite parts and labor response, all the features of ProSupport, and the following exclusive to ensure maximum uptime and system reliability:

1. **Priority Access to Senior Support Experts:** First in line access to Dell's most experienced support engineers for advanced troubleshooting and issue resolution.
2. **Mission Critical Support:** Rapid response and resolution for Severity 1 issues to minimize downtime and restore operations as quickly as possible.
3. **Technical Customer Success Manager (TCSM):** A dedicated advocate for cross-functional lifecycle management, advocacy, onboarding, and strategic planning throughout your technology journey.
4. **Proactive Systems Maintenance:** Semiannual updates to firmware, BIOS, and drivers to enhance system performance and availability.
5. **Third-Party Software Support:** Dell serves as a single point of accountability for eligible third-party software installed on ProSupport Plus systems, regardless of whether the software was purchased from Dell.

ProSupport for Infrastructure

ProSupport for Infrastructure provides comprehensive 24x7x365 support for hardware and software, ideal for production workloads and applications that are important but not business-critical. ProSupport for Infrastructure is designed to keep your IT environment running smoothly with expert assistance and proactive solutions. This service ensures minimized disruptions and maximized availability of PowerEdge XE server workloads through:

- **24x7x365 Support:** Immediate remote support routing to the next available technician (no waiting for a call back), with 4-hour and Next Business Day onsite parts and labor dispatch options.
- **Broad, Centralized Support:** A single point of contact for hardware and software assistance, covering hypervisors, operating systems, applications, and eligible third-party software purchased from Dell and installed on ProSupport-covered servers.
- **Incident Management:** A dedicated Incident Manager for Severity 1 issues, collaborating with Dell experts and staying engaged until resolution.
- **Enhanced Proactive and Predictive Tools:** AI-driven anomaly detection, automated case creation followed by proactive outreach from Dell support, and infrastructure health/cybersecurity/energy monitoring via Dell AIOps and connectivity platforms.
- **Global Consistency:** A seamless support experience, regardless of location or language.

Basic Hardware Support

Basic Hardware Support provides foundational support for hardware issues, including:

- Access to technical support during local business hours (phone, chat, online).
- Next Business Day (NBD) onsite parts and labor response.
- Hardware troubleshooting only (no software troubleshooting, unless it's to confirm hardware functionality).
- Proactive automated issue detection and automated case creation if the system is connected (customer receives notification and must contact Dell to proceed; unattended queue approach).

Specialty Support Services

Optional specialty support services complement the ProSupport Infrastructure Suite to provide additional expertise that are critical for modern data center operations.

Hardware coverage add-ons to ProSupport or ProSupport Plus

- **Keep Your Hard Drive (KYHD), Keep Your Component (KYC), or Keep Your GPU (KYGPU):**

Normally if a device fails under warranty, Dell replaces it using a one-for-one exchange process.KYHD/KYCC/KYGPU gives you the option to retain your device. It provides full control of sensitive data and minimizes security risk by letting you retain possession of failed drives, components, or GPU when receiving replacement parts without incurring additional cost.

- **Onsite Diagnosis Service:**

  Ideal for sites with non-technical staff. A Dell certified field technician performs initial troubleshooting diagnosis onsite and collaborates with remote Dell support engineers to resolve the issue. Customers can request dispatch of an onsite technician at any time for any severity support incident.

- **ProSupport Add-on for HPC (High Performance Computing):**

  The ProSupport Add-on for HPC enhances a ProSupport Infrastructure Suite service contract by providing solution-aware support tailored to the unique needs of maintaining an HPC environment. Key features include:

  - Access to Senior HPC Experts: Direct support from specialists with deep expertise in HPC systems.
  - Advanced HPC Cluster Assistance: Guidance on performance optimization, interoperability, and configuration.
  - Enhanced End-to-End Support: Comprehensive solution-level support for HPC environments.
  - Remote Pre-Support Engagement: Collaboration with HPC specialists during deployment implementation to ensure a smooth setup process.

- **Carrier-Grade Support:**

  Carrier-Grade Support service is designed for leading global telecommunications customers. It offers direct access to Dell solution experts specializing in telecommunications applications and outcomes. This service includes a hardware uptime guarantee, ensuring system restoration within 4 hours for Severity 1 issues. If service-level agreements (SLAs) are not met, Dell assumes penalties and fees, reinforcing its commitment to reliability and performance.

Personalized support and supplemental infrastructure expertise

- **Technical Account Manager (TAM):** The Dell TAM service provides a designated technology expert who monitors and manages the performance and configuration of specific technology sets. TAMs strive to gain deep knowledge of your environment and business goals in order to deliver recommendations for Dell solutions that optimize IT performance and resilience.
- **Designated Support Engineer (DSE):** The Dell DSE service provides an assigned technical expert that delivers personalized, hands-on troubleshooting expertise. Acting as your direct point of contact for all support needs, our DSEs ensure swift problem resolution, real-time communication and tailored recommendations to help you maintain a resilient and efficient IT environment.
- **Multivendor Support Service (MVS):** Support your non-Dell infrastructure devices under one support contract serviced by Dell. An MVS support contract can include coverage for Broadcom, Cisco, Fujitsu, HPE, Hitachi, Huawei, IBM, Lenovo, NetApp, Oracle, Quanta, Supermicro and others.

Services for Large Enterprises

- **ProSupport One for Data Center:**

  ProSupport One for Data Center is designed to deliver scalable, efficient, and reliable support for complex IT environments. ProSupport One for Data Center is available for large and distributed data centers with over 1,000 assets (including servers, storage, data protection, and networking devices) or a significant investment in Dell storage and HCI products. Built on the foundation of ProSupport, this support offer is designed for Dell's largest customers, enabling them to customize a support solution that meets their unique hardware and software needs. Key benefits include:

  - **Customized Support:** Tailor support services to address unique data center environments and existing IT systems and capabilities.
  - **Cost-Effective Options:** Choose support that aligns with technical support consumption and budget, optimizing investments while maintaining required service levels.
  - **Resource Augmentation:** Add a Technical Account Manager (TAM) or Designated Support Engineer (DSE) to augment your team. TAMs provide advanced knowledge and advice to help customers realize maximum value from their enterprise investments and the DSE is a designated product-focused troubleshooting expert who understands the environment to enhance overall health.
  - **Enhanced Infrastructure Management:** Leverage advanced automation, real-time infrastructure monitoring, and AI-powered analytics to streamline operations, reduce risks, and minimize downtime.

- **Onsite Parts Service (OPS)**

Ideal for large organizations that have their own staff to support their data center, OPS enables Dell and the customer to collaboratively manage parts inventory located at the customer's designated facility. Dell Logistics Online Inventory Solution (LOIS) software program is used to monitor and automate replenishment of inventory in the customer's onsite parts locker. As a replacement part is scanned out of inventory for use, the LOIS software automatically initiates a replenishment order with Dell that is either shipped the next day or delivered onsite by Dell during a scheduled onsite service visit. LOIS also allows customers to integrate their inventory system directly to Dell TechDirect using APIs to further streamline the support and parts management processes.

End-of-Life Services

- **Asset Recovery Services** are available on infrastructure products such as servers, storage and networking assets. The service provides secure disposition, regulatory compliance, value recovery, and environmental reporting—helping customers retire IT infrastructure with confidence while supporting sustainability goals.
- **Data Sanitization & Data Destruction** services render data unrecoverable on repurposed or retired products such as servers, storage and data protection hardware. Data Sanitization is performed according to NIST SP 800-88 r1 guidelines which ensures complete and irreversible removal of sensitive data from devices. When erasure is not feasible, Data Destruction services provide physical destruction of hard drives. All activities are documented, with detailed compliance reports provided for both data sanitization and data destruction outcomes—helping organizations retire infrastructure assets safely and in alignment with regulatory expectations.

ProDeploy Infrastructure Suite

ProDeploy Flex for factory rack integration and cluster services

For small or large opportunities desiring preconfigured servers and/or networking delivered in fully or partially populated racks, our services for AI infrastructure deployment deliver end-to-end, rack-scale deployment and validation for PowerEdge XE platforms paired with options for AI networking. These services include factory rack integration (L11), cluster build (L12), and acceptance testing to ensure Day-1 readiness and peak performance for AI workloads.

- Infrastructure Readiness Assessment to evaluate the data center prior to an AI deployment to include: datacenter layout, power/cooling (including liquid cooling), cabling, airflow, and site logistics.
- Factory rack integration (L11) of advanced PowerEdge XE servers integrated with NVIDIA InfiniBand switches or Ethernet options from Dell or NVIDIA are put through a set of strenuous tests to validate functionality of the solution prior to shipping.
- Rack placement, power connectivity, and liquid-cooling connectivity if applicable.
- Cluster build (L12) turns multiple integrated racks into a high-performance cluster: deploy all inter-rack cabling, configure the AI fabric, validate cluster, and perform acceptance testing.
- Knowledge transfer and project documentation to equip your team for Day-2 operations and ongoing improvements.

ProDeploy Flex for factory rack integration is the most effective method to deploy rack solutions and optimize at scale.

ProDeploy Plus for onsite builds

For smaller quantity solutions that don't require factory rack integration, ProDeploy Plus is ideal. This service provides expert onsite installation and configuration for complex PowerEdge XE platforms. All implementations are performed by Dell-badged employees, not 3rd parties, to ensure the utmost care and expertise is maintained through the entire process.

- Accelerate time to value with Dell engineers, site readiness and implementation planning, full onsite software installation and configuration, and validation prior to handoff.
- Proven speed: up to 3x faster planning and deployment versus in house admins with the ProDeploy Infrastructure Suite.
- Ideal for smaller XE deployments or unique proof-of-concept racks when factory services are not being used; complements rack integration for larger, rack scale AI builds.
- Reduce risk on GPU dense systems with Dell's specialized XE deployment practices and testing rigor built for AI servers.

Supplemental Deployment Services

Additional ways to expand scope or deploy for unique scenarios.

Residency Services

Certified technical professionals act like an extension of your IT staff to enhance internal capabilities and resources and help you realize faster adoption and maximized ROI of new technology. Residency Services help customers transition to new capabilities quickly by leveraging specific technology skill sets. 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.

- Global experts available to serve in-person (onsite) or virtual (remote).
- Engagements starting at 2 weeks with flexibility to adjust.
- Residency is available for project management needs, and many different technology skills sets such as: AI expertise, compute, storage, networking, security, multi-cloud, data management, and modern workforce applications.

Additional Deployment Time (ADT)

You can expand the scope of a ProDeploy engagement leveraging Additional Deployment Time (ADT). ADT covers additional non-complex tasks beyond the usual quantity of deliverables of the ProDeploy offers. ADT can also be used as a standalone service without ProDeploy, to accomplish tasks related to Project Management or Technical Resource Expertise. ADT is sold in blocks of four hours remote or eight hours onsite. The Dell delivery team can help scope the number of hours required for specific customer needs.

Data Migration Services

Migrating data sets is no easy task. Our experts use proven tools and processes to streamline data migrations and avoid compromising data. A customer project manager works with our experienced team of experts to create a migration plan. Data migration is part of every technology upgrade, platform change, and shift to the cloud. You can rely on Dell data migration services to perform a seamless transition while our customers can keep their focus on their core business.

DAY 2 – Automation Services with Ansible

Dell solutions are built as “automation ready” with integrated APIs (Application Programming Interfaces) to allow customers to programmatically call actions on the product through code. Although Dell has published Ansible automation use cases, some customers need additional assistance with GitOps. By the end of the service, the customer will have the foundational components required to accelerate automation and understand how the programming works together: Day 1 and Day 2 use case automation scripts (ansible modules), CI/CD tool (Jenkins), and Version control (Git).

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Dell Technologies Consulting Services

Accelerate Modernization Initiatives with Dell Consulting

When it comes to your IT and business goals, there are a ton of possible initiatives you can focus on and problems you can solve. But it can be confusing and complex when deciding what you should prioritize for your organization and where to start. The experts at Dell Technologies Consulting Services help you harmonize your business and IT needs with our outcome-focused approach. From strategy to full-scale implementation, we can deliver more, faster, so you and your organization can get back to innovating. We listen to and understand your unique needs, then collaborate with you to help you deliver the most value to your business. With decades of expertise and repeatable, proven processes, you get consistent outcomes and accelerated time-to-value. All with a holistic approach to your business outcomes. So whether you're looking to deliver cloud platforms, workforce experiences, data and applications, or achieve a resilient security posture for your business, you can be confident that your organization is heading in the right direction with Dell.

The first step: Half-day workshops.

Identify priorities to build your digital future. Our facilitated workshop discussions focus on the activities required to achieve your desired end state and conclude with next steps to further advance your business and IT strategies.

Available workshops: AI, Multicloud, Apps & Data, Modern Workforce, Security & Resiliency.

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 that are 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.

Cyber-Security Services

Managed Detection and Response (MDR)

Dell Managed Detection and Response Pro Plus is our fully-managed, 360º security operations solution comprised of our most cutting-edge, preventive and responsive cybersecurity services. MDR Pro Plus was designed with your top security concerns in mind, allowing you to focus on your core business goals while Dell handles your security operations. First, we have Vulnerability Management. With this service, we'll do ongoing scanning of the customer's environment looking for software that needs to be patched. Next is Pen Testing and Attack Simulation Management. This service will continuously validate security controls and policies with automated Breach and Attack Simulation (BAS), because a misconfiguration can lead to an exposure which an attacker can exploit. The service also includes an annual penetration test to determine if a skilled threat actor could exploit pathways leading to critical assets or data. Third, Managed Security Awareness Training. This service will educate the customer's end users so that they don't inadvertently put the customer at risk. If you think about our annual compliance training modules, there is always a security module. This is the same type of thing, but rather than once a year, it will be smaller, bite-size pieces of content delivered throughout the year. Fourth is our Managed Detection and Response service which provides 24x7 threat detection and investigation, analysis of end-to-end activity by threat actors, threat hunting, and quick initiation of cyber incident response when needed. Customers can choose between SecureWorks Taegis XDR, CrowdStrike Falcon XDR or Microsoft Defender XDR as the security analytics platform our analysts will use to monitor their environment. All four of these services are delivered by experienced, certified Dell security experts using advanced technology such as the SecureWorks Taegis XDR, CrowdStrike Falcon XDR or Microsoft Defender XDR security platforms.

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 that is required for real transformation.

Dell Technologies Learning Services offers training and certifications that are designed to help customers achieve more from their hardware investment. To learn more or register for a class today, see learning.dell.com.