

Dell PowerEdge XE8640

Technical Guide

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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System overview

The Dell PowerEdge XE8640 is Dell's latest 2-socket, 4U accelerated rack server designed to run complex, compute intensive workloads using the latest industry acceleration technology, as well as highly scalable memory, I/O, and network options.

The system features:

- Two 4th Generation Intel Xeon Scalable processors up to 56 cores or Two 5th Generation Intel Xeon Scalable processors up to 64 cores
- Sixteen or thirty two DDR5 DIMM slots
- Four redundant AC or DC power supply units
- Up to eight U.2 SAS/SATA/NVMe SSD drives
- Up to eight E3.S NVMe SSD drives

Topics:

- [Key workloads](#)
- [New technologies](#)

Key workloads

The purpose built XE8640 is designed for HPC and AI use cases:

- HPC Modeling and Simulation
- Artificial Intelligence and Machine Learning

New technologies

Table 1. New technologies

Technology	Detailed Description
4 th Generation Intel Xeon Scalable processors	Core count: Up to 56 core processor
5 th Generation Intel Xeon Scalable processors	Core count: Up to 64 core processor
4800 MT/s DDR5 Memory	Max 16 DIMM per processor and 32 DIMMs per system Supports DDR5 ECC RDIMM
5600 MT/s DDR5 Memory	Max 16 DIMM per processor and 32 DIMMs per system Supports DDR5 ECC RDIMM
Flex I/O	Optional LOM board, 2x1Gb with BCM5720 LAN controller Rear I/O with: <ul style="list-style-type: none"> • 1 x USB 3.0 • 1 x USB 2.0 • 1 x VGA port Optional Serial Port Optional OCP Mezz 3.0 Front I/O with: <ul style="list-style-type: none"> • 1 x USB 2.0 • 1x iDRAC Direct (Micro-AB USB) port • 1 x VGA port

Table 1. New technologies (continued)

Technology	Detailed Description
CPLD 1-wire	Support payload data of Front PERC, Riser, BP and Rear IO to BOSS-N1 and iDRAC
Dedicated PERC	Front Storage module PERC with Front PERC H965i
Software RAID	OS RAID / S160
Power Supplies	Four Titanium 2800 W AC or 3200 W AC with 3+1 PSU redundancy

System features and generational comparison

The following table shows the comparison between the PowerEdge XE8640 with the PowerEdge XE8545

Table 2. Features comparison

Features	PowerEdge XE8545	PowerEdge XE8640
Processor	<ul style="list-style-type: none"> 2x AMD Milan Processor (SP3) processor Interchip global memory interconnect (xGMI2). 	2x 4 th Generation Intel Xeon Scalable processors with up to 56 cores 2x 5 th Generation Intel Xeon Scalable processors with up to 64 cores
Accelerators/GPUs	<ul style="list-style-type: none"> 4x NVIDIA GPUs w/ NVLINK HGX A100 4-GPU 40GB/400W or HGX A100 4-GPU 80GB/500W 	<ul style="list-style-type: none"> 4x NVIDIA GPUs w/ NVLINK HGX H100 4-GPU 80 GB/700 W
Memory	<ul style="list-style-type: none"> 32x RDIMM, DDR4 with ECC, bandwidth up to 3200 MT/S 	<ul style="list-style-type: none"> 32x RDIMM, DDR5 with ECC, bandwidth up to 5600 MT/S
Disk Drives	<ul style="list-style-type: none"> 10x 2.5 inches 12 Gb SAS SSD or 12 Gb SATA SSD - or mixed, with up to 8x NVMe SSD 	<ul style="list-style-type: none"> 8x 2.5 inches U.2 NVMe SSD 8x 2.5 inches U.2 SAS/ SATA,SSD 8x E3.S NVMe SSD
Storage Controllers	<ul style="list-style-type: none"> BOSS S1.5, H745,H755 	<ul style="list-style-type: none"> BOSS N1, H965i
NVMe PCIe SSD	<ul style="list-style-type: none"> Up to 8x NVMe SSD 	<ul style="list-style-type: none"> Up to 8x NVMe SSD
PCIe Slots	<ul style="list-style-type: none"> Up to 4x PCIe Gen4 slots (3x 16 or 2 x16 + 2 x8) 	<ul style="list-style-type: none"> Up to 4x 16 PCIe Gen5 slots
LOM	<ul style="list-style-type: none"> 2x 1 GbE 	<ul style="list-style-type: none"> 2x 1 GbE
OCP 3.0	<ul style="list-style-type: none"> Max 1 x OCP 3.0 	<ul style="list-style-type: none"> Max 1 x OCP 3.0 (PCIe x8)
USB Ports	<ul style="list-style-type: none"> Front: 1 port (USB 2.0), dedicated for iDRAC Rear: 1 port (USB 3.0) + 1 port (USB 2.0 + Bison) 	<ul style="list-style-type: none"> Front: 1 port (USB 2.0), dedicated for iDRAC Rear: 1 port (USB 3.0) + 1 port (USB 2.0)
Rack Height	<ul style="list-style-type: none"> 4U 	<ul style="list-style-type: none"> 4U
Power Supplies	<ul style="list-style-type: none"> Platinum: 2400 W (Mixed Mode: AC 100 V~240 V input) Titanium: 2800 W (Mixed Mode: AC 200 V~240 V input) 2800 W (Mixed Mode: DC 240 V input) 	<ul style="list-style-type: none"> Titanium: 2800 W (Mixed Mode: 200-240 VAC or 240 VDC input) Titanium: 3200 W (Mixed Mode: 277 VAC or 336 VDC input)
System Management	<ul style="list-style-type: none"> iDRAC9 with Lifecycle Controller with feature additions. Front: 1 dedicated Micro USB for iDRAC Rear: 1 dedicated RJ45 for iDRAC 	<ul style="list-style-type: none"> iDRAC9 with Lifecycle Controller with feature additions. Front: 1 dedicated Micro USB for iDRAC
Availability	<ul style="list-style-type: none"> Hot-plug drives Hot-plug redundant cooling. Hot-plug redundant power supplies. BOSS-S1V5 	<ul style="list-style-type: none"> Hot-plug drives Hot-plug redundant cooling. Hot-plug redundant power supplies. BOSS-N1

Table 2. Features comparison (continued)

Features	PowerEdge XE8545	PowerEdge XE8640
Security	<ul style="list-style-type: none">• TPM 2.0	<ul style="list-style-type: none">• TPM 2.0

Chassis views and features

Topics:

- Chassis views

Chassis views

Front view of the system

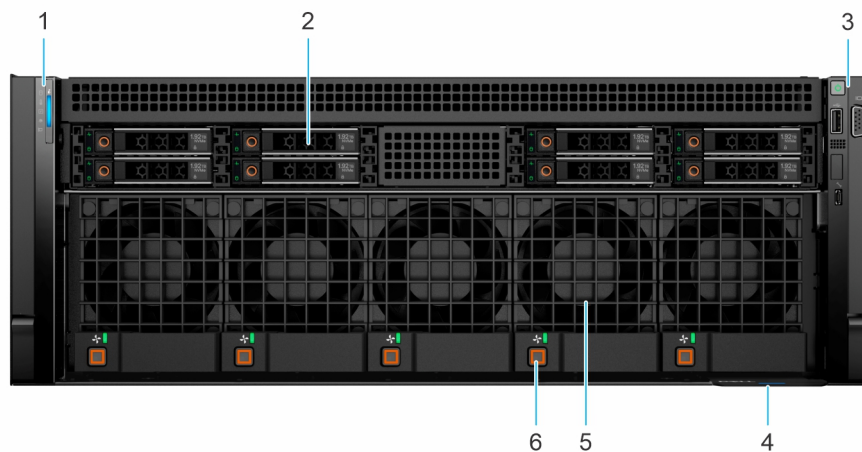


Figure 1. Front view 8 x u.2 drive system

Table 3. Features available on the front of the system

Item	Ports, panels, and slots	Description
1	Left control panel	Contains the system health, system ID, and the status LED indicator.
2	Drives	Enables you to install drives that are supported on your system.
3	Right control panel	Contains the power button, USB port, iDRAC Direct (Micro-AB USB) port.
4	Express Service Tag	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.
5	GPU fan	Enables you to install GPU fans for thermal regulation.
6	GPU fan release button	Press the release button to slide the GPU fan out of the system.

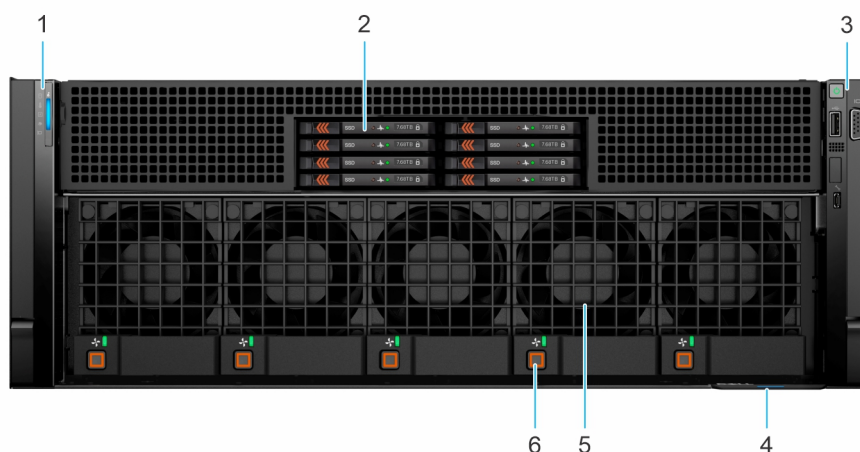


Figure 2. Front view 8 x E3.S drive system

Table 4. Features available on the front of the system

Item	Ports, panels, and slots	Description
1	Left control panel	Contains the system health, system ID, and the status LED indicator.
2	Drives	Enables you to install drives that are supported on your system.
3	Right control panel	Contains the power button, USB port, iDRAC Direct (Micro-AB USB) port.
4	Express Service Tag	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 Express Service Tag will also contain the iDRAC secure default password.
5	GPU fan	Enables you to install GPU fans for thermal regulation.
6	GPU fan release button	Press the release button to slide the GPU fan out of the system.

Rear view of the system

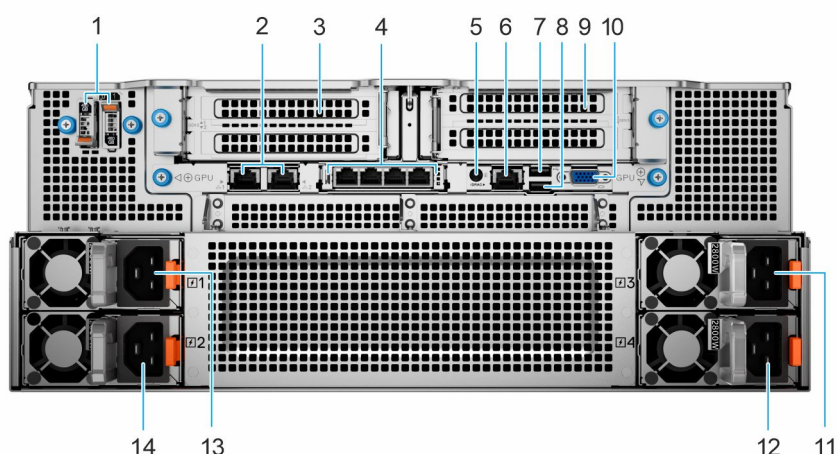












Figure 3. Rear view of XE8640 system

Table 5. Rear view of the system

Item	Ports, panels, or slots	Icon	Description
1	BOSS-N1	N/A	There are two M.2 connectors populated on the board and support two NVMe drives for boot.

Table 5. Rear view of the system (continued)

Item	Ports, panels, or slots	Icon	Description
2	NIC Ports		The NIC ports that are integrated on the LOM card provide network connectivity which is connected to the system board.
3	PCIe expansion card riser	N/A	The expansion card riser enables you to connect PCI Express expansion cards.
4	OCP NIC port (optional)	N/A	The OCP NIC card supports OCP 3.0. The NIC ports are integrated on the OCP card which is connected to the system board.
5	System Identification (ID) button		<p>The System Identification (ID) button is available on the front and back of the system. Press the button to identify a system in a rack by turning on the system ID button. You can also use the system ID button to reset iDRAC and to access BIOS using the step through mode. When pressed, the system ID LED in the back panel blinks until either the front or rear button is pressed again. Press the button to toggle between on or off mode.</p> <p>NOTE: If the server stops responding during POST, press and hold the System ID button for more than five seconds to enter the BIOS progress mode</p> <p>NOTE: To reset the iDRAC (if not disabled on the iDRAC setup page by pressing F2 during system boot), press and hold the System ID button for more than 15 seconds.</p>
6	iDRAC dedicated port		Enables you to remotely access iDRAC.
7	USB 2.0 port		The USB port is 4-pin, 2.0-compliant. This port enables you to connect USB devices to the system.
8	USB 3.0 port		The USB port is 9-pin and 3.0-compliant. This port enables you to connect USB devices to the system.
9	VGA port		Enables you to connect a display device to the system.
10	Power supply unit (PSU3)		Indicates the PSU3.
11	Power supply unit (PSU4)		Indicates the PSU4.
12	Power supply unit (PSU2)		Indicates the PSU1.
13	Power supply unit (PSU1)		Indicates the PSU2.

Inside the system

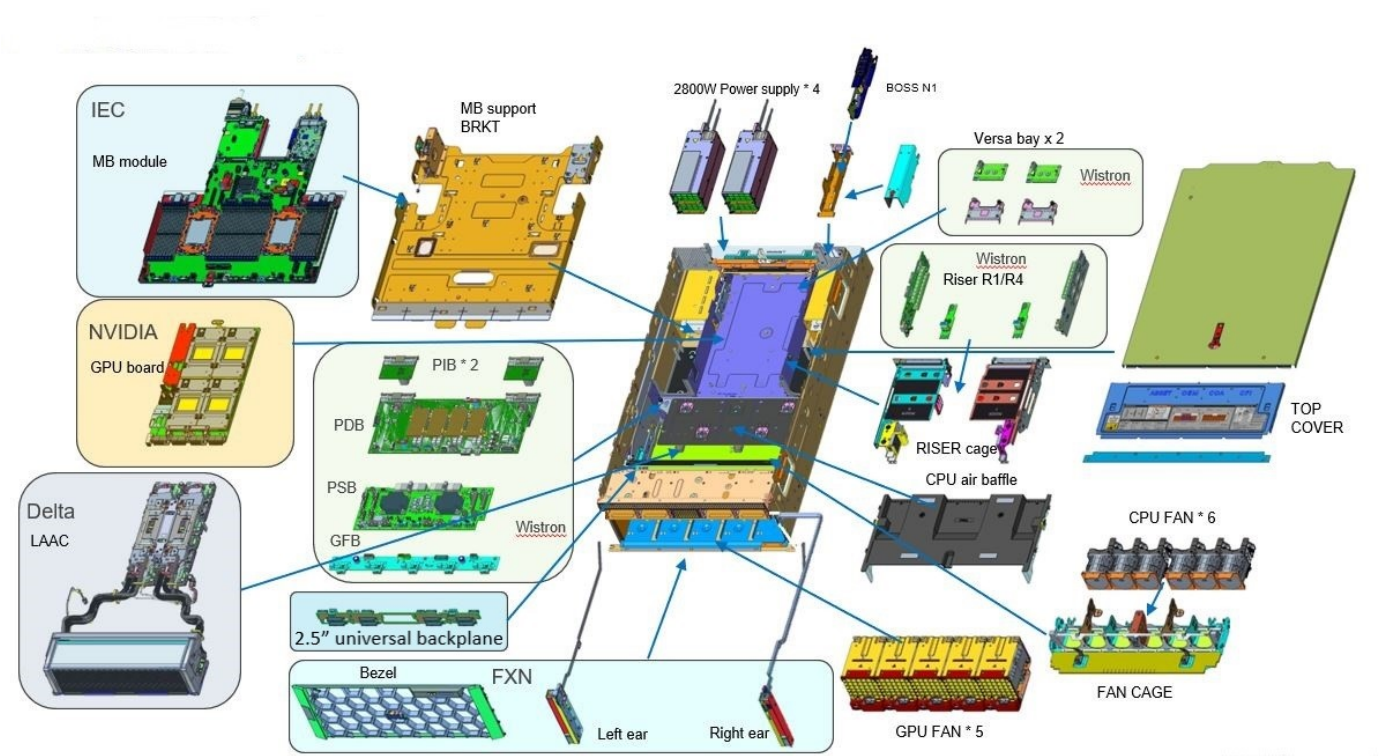


Figure 4. Inside the XE8640 system

Processor

Topics:

- [Processor features](#)
- [Chipset](#)

Processor features

The Intel 4th or 5th Generation Xeon® Scalable Processors stack is the next generation data center processor offering with significant performance increases, integrated acceleration, and next generation memory and I/O. Emerald Rapids accelerate customer usages with unique workload optimizations.

The following lists the features and functions that are in the upcoming 5th Generation Intel® Xeon Scalable Processor offering:

- Faster UPI with up to four Intel Ultra Path Interconnect (Intel UPI) at up to 16 GT/s, increasing multi-socket bandwidth
- More, faster I/O with PCI Express 5 and up to 80 lanes (per socket)
- Enhanced Memory Performance with DDR5 support and memory speed up to 5600 MT/s in one DIMM per channel (1DPC) and 4400 MT/s in two DIMM per channel (2DPC)
- New built-in accelerators for data analytics, networking, storage, crypto, and data compression

Supported processors

Table 6. Supported Processors for XE8640

Processor	Clock Speed (GHz)	Cache (M)	UPI (GT/s)	Cores	Threads	Turbo	Memory Speed (MT/s)	Memory Capacity	TDP	Release
8480+	2	105	16	56	112	Turbo	4800	6 TB	350 W	RTS
8468	2.1	90	16	48	96	Turbo	4800	6 TB	350 W	RTS
8462Y+	2.8	60	16	32	64	Turbo	4800	6 TB	300 W	RTS
8452Y	2	67.5	16	36	72	Turbo	4800	6 TB	300 W	RTS
8470	2	98	16	52	104	Turbo	4800	6 TB	350 W	RTS
8460Y+	2	75	16	40	80	Turbo	4800	6 TB	300 W	RTS
6448Y	2.2	60	16	32	64	Turbo	4800	6 TB	225 W	RTS
6442Y	2.6	45	16	24	48	Turbo	4800	6 TB	225 W	RTS
5418Y	2.0	45	16	24	48	Turbo	4400	4 TB	185 W	RTS
8592+	1.9	320	20	64	128	Turbo	5600	4 TB	350 W	RTS
8580	2	300	20	60	120	Turbo	5600	4 TB	350 W	RTS
8568Y+	2.3	300	20	48	96	Turbo	5600	4 TB	350 W	RTS
8562Y+	2.8	60	20	32	64	Turbo	5600	4 TB	300 W	RTS

Table 6. Supported Processors for XE8640 (continued)

Processor	Clock Speed (GHz)	Cache (M)	UPI (GT/s)	Cores	Threads	Turbo	Memory Speed (MT/s)	Memory Capacity	TDP	Release
6548Y +	2.5	60	20	32	64	Turbo	5200	4 TB	250 W	RTS
6542Y	2.9	60	20	24	48	Turbo	5200	4 TB	250 W	RTS

Chipset

The system supports Intel® C741 series chipset.

DMI - 3.0 speed (port width x8, x4)

USB ports - up to 10 superspeed (USB 3.1), 14 highspeed (USB 2.0)

SATA ports - up to 20 SATA port

PCIe Express - Up to 20 lanes, PCIe 3.0

Chipset features

- PCI-E interfaces
 - Integrated PCI Express Gen5 for improved bandwidth and connectivity
 - Up to 80 lanes per processor
 - Connect PCIe x1 to iDRAC- integrated VGA chip
- Integrated USB - maximum of 10 SuperSpeed (USB 3.1), 14 highspeed (USB 2.0)
 - One front port (USB 2.0 / Right front I/O)
 - Two rear ports (USB 2.0/3.0)

Memory subsystem

Topics:

- [System memory guidelines](#)
- [General memory module installation guidelines](#)

System memory guidelines

The PowerEdge XE8640 system supports DDR5 registered DIMMs (RDIMMs). System memory holds the instructions that are started by the processor.

Your system memory is organized into eight channels per processor (two memory sockets per channel), 16 memory sockets per processor and 32 memory sockets per system.

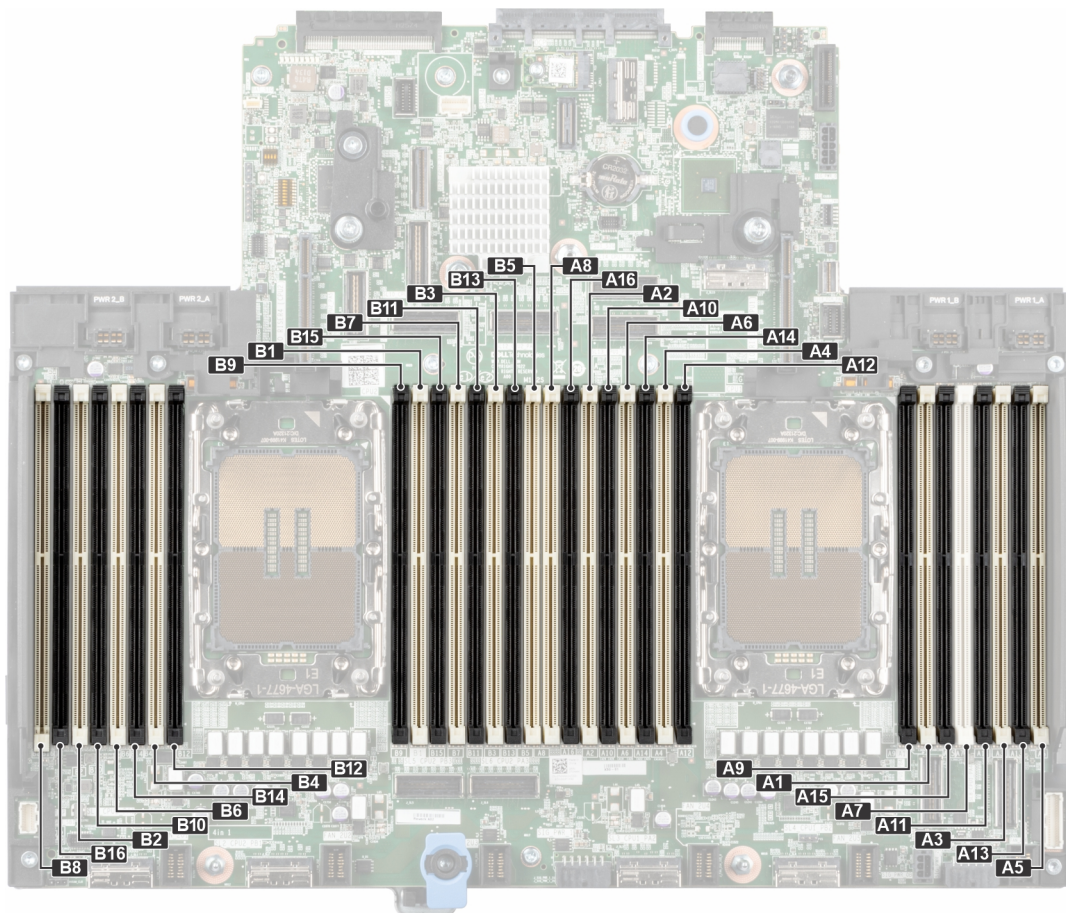


Figure 5. Memory channels

Memory channels are organized as follows:

Table 7. Memory channels

Processor	Channel A	Channel B	Channel C	Channel D	Channel E	Channel F	Channel G	Channel H
Processor 1	Slots A1 and A9	Slots A7 and A15	Slots A3 and A11	Slots A5 and A13	Slots A4 and A12	Slots A6 and A14	Slots A2 and A10	Slots A8 and A16
Processor 2	Slots B1 and B9	Slots B7 and B15	Slots B3 and B11	Slots B5 and B13	Slots B4 and B12	Slots B6 and B14	Slots B2 and B10	Slots B8 and B16

Table 8. Supported memory matrix

DIMM type	Rank per DIMM and Data Width	DIMM capacity (GB)	Speed (MT/s); Voltage (V); DIMM per channel (DPC)	
			1 DIMM per channel (DPC)	2 DIMMs per channel (DPC)
RDIMM	DR X 8	32 GB	4800 MT/s	4400 MT/s
RDIMM	DR X 4	64 GB	4800 MT/s	4400 MT/s
RDIMM 3DS	4R X 4	128 GB	4800 MT/s	4400 MT/s
RDIMM	DR X 8	32 GB	5600 MT/s	4400 MT/s
RDIMM	DR X 4	64 GB	5600 MT/s	4400 MT/s
RDIMM	DR X 4	96 GB	5600 MT/s	4400 MT/s
RDIMM 3DS	4R X 4	128 GB	5600 MT/s	4400 MT/s

NOTE: The processor may reduce the performance of the rated DIMM speed.

NOTE: Maximum DIMM transfer speed support dependent on CPU SKU and DIMM population.

General memory module installation guidelines

To ensure optimal performance of your system, observe the following general guidelines when configuring your system memory. If your system's memory configuration fails to observe these guidelines, your system might not boot, stop responding during memory configuration, or operate with reduced memory.

The memory bus may operate at speeds of 5600 MT/s, 4800 MT/s, or 4400 MT/s, depending on the following factors:

- System profile selected (for example, Performance, Performance Per Watt Optimized (OS), or Custom [can be run at high speed or lower])
- Maximum supported DIMM speed of the processors
- Maximum supported speed of the DIMMs

NOTE: MT/s indicates DIMM speed in MegaTransfers per second.

The following are the recommended guidelines for installing memory modules:

- All DIMMs must be DDR5
- If memory modules with different speeds are installed, they operate at the speed of the slowest installed memory module(s).
- Populate memory module sockets only if a processor is installed.
- For dual-processor systems, sockets A1 to A16 and sockets B1 to B16 are available.
- In **Optimizer Mode**, the DRAM controllers operate independently in the 64-bit mode and provide optimized memory performance.

Table 9. Memory population rules

Processor	Memory population	Memory population information
Dual processor (Start with processor1. Processor 1 and processor 2 population should match)	A{1}, B{1}, A{2}, B{2}, A{3}, B{3}, A{4}, B{4}, A{5}, B{5}, A{6}, B{6}, A{7}, B{7}, A{8}, B{8}	Odd amount of DIMMs per processor is allowed. DIMMs must be populated identically per processor

Storage

Topics:

- [Storage controllers](#)
- [Drives](#)

Storage controllers

Dell 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 PERC Controller offerings are a heavy leverage of 15G PERC family. The Value and Value Performance levels carry over to 16G from 15G. New to 16G is the Avenger-based Premium Performance tier offering. This high-end offering drives IOPs performance and enhanced SSD performance.



 **NOTE:** The size of the RAID 1 drives must be less than that of the second RAID container.

Table 10. PERC Series controller offerings

Performance Level	Controller and Description
Entry	Software RAID : S160
Premium Performance	Hardware RAID : H965i

 **NOTE:** For more information about 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 [Storage Controller Manuals](#).

Drives

The PowerEdge XE8640 system supports:

- 8 x 2.5 inch hot-swappable NVMe SSD drives.
- 8 x E3.S hot-swappable NVMe SSD drives.

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 11. 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/SFP56
Max port speed	100 GbE
NC-SI	Yes
SNAPI	Yes
WoL	Yes
Power consumption	15 W–35 W


Supported OCP cards

Table 12. Supported OCP cards

Form factor	DPN	Vendor	Port type	Port speed	Port count
OCP 3.0	61X09	Intel	SFP28	25GbE	2
	3Y64D	Broadcom	SFP28	25GbE	4
	50RV4	Intel	BT	10GbE	4
	W5HC8	Broadcom	BT	10GbE	4
	24FG6	Broadcom	SFP28	25GbE	2
	R1KTR	Intel	SFP28	25GbE	4

Table 12. Supported OCP cards (continued)

Form factor	DPN	Vendor	Port type	Port speed	Port count
	Y4VV5	Intel	SFP28	25GbE	4
	3Y64D	Broadcom	SFP28	25GbE	4
	R1KTR	Intel	SFP28	25GbE	4

 **NOTE:** RHEL9.2 does not support 3Y64D

OCP NIC 3.0 vs. rack Network Daughter Card comparisons


Table 13. 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	<ul style="list-style-type: none"> Up to x 8 Up to x16 (required additional cable to support) 	See server slot priority matrix
Shared LOM	Yes	Yes	Yes	This is iDRAC port redirect
Aux Power	Yes	Yes	Yes	Used for Shared LOM

Supported PCIe NIC

Table 14. Supported PCIe NIC

Form factor	DPN	Vendor	Port type	Port speed	Port count
PCIe	85F8F	Intel	SFP28	100GbE	2P
	CD16M	Intel	SFP28	25GbE	2P
	FPM6F	Broadcom	QSFP	100GbE	2P
	K84XJ	Mellanox	OSFP	200GbE	1P
	8P2T2	Mellanox	Q56	100GbE	2P
	H3T3V	Broadcom	SFP	25GbE	2P
	J3D14	Broadcom	SFP28	25GbE	4P
	VK88G	Intel	SFP28	25GbE	4P
	Y1T43	Mellanox	QSFP56	100GbE	1P
	1GK7G	Mellanox	QSFP56	200GbE	1P

 **NOTE:** RHEL9.2 does not support Y1T43 and H3T3V

PCIe subsystem

Topics:

- [PCIe slot mechanical compatibility matrix](#)
- [Slot priority matrix](#)

PCIe slot mechanical compatibility matrix

Table 15. PCIe Riser Configurations

Config No.	Riser configuration	No. of Processors	PERC type supported	Rear storage possible
1	R1A+R4A	2	With or Without fPERC	No

Table 16. Expansion card slots

Location	Height	Length	CPU1	CPU2
			Riser R1A	Riser R4A
PCIe Slot -1	FH	HL	PCIe Gen5 X16	N/A
PCIe Slot -2	FH	HL	PCIe Gen5 X16	N/A
PCIe Slot -3	FH	HL	N/A	PCIe Gen5 X16
PCIe Slot -4	FH	HL	N/A	PCIe Gen5 X16

Slot priority matrix

Table 17. Configuration 1: R1A+R4A

Supplier	Card type	Slot priority	Maximum number of cards	Slot generation
Intel	OCP:25Gb	INT	1	Gen4
Broadcom	OCP:25Gb	INT	1	Gen4
Intel	OCP:10Gb	INT	1	Gen3
Broadcom	OCP:10Gb	INT	1	Gen3
Broadcom	OCP:25Gb	INT	1	Gen3
Intel	OCP:25Gb	INT	1	Gen4
Intel	NIC:100Gb	1, 3, 2, 4	4	Gen4
Mellanox	NIC:100Gb	1, 3, 2, 4	4	Gen4
Mellanox	NIC:25Gb	1, 3, 2, 4	4	Gen4
Intel	NIC:25Gb	1, 3, 2, 4	4	Gen4
Broadcom	NIC:100Gb	1, 3, 2, 4	4	Gen4
Broadcom	NIC:25Gb	1, 3, 2, 4	4	Gen3

Table 17. Configuration 1: R1A+R4A (continued)

Supplier	Card type	Slot priority	Maximum number of cards	Slot generation
Broadcom	NIC:25Gb	1, 3, 2, 4	4	Gen4
Intel	NIC:25Gb	1, 3, 2, 4	4	Gen4
Mellanox	InfiniBand	1, 3, 2, 4	4	Gen5
Mellanox	InfiniBand	1, 3, 2, 4	4	Gen5
Mellanox	InfiniBand	1, 3, 2, 4	4	Gen4
Nvidia	H100 4-GPU SXM4 GPU Baseboard	21	1	Gen5
Nvidia	H100 4-GPU SXM4 GPU Baseboard	22	1	Gen5
Nvidia	H100 4-GPU SXM4 GPU Baseboard	23	1	Gen5
Nvidia	H100 4-GPU SXM4 GPU Baseboard	24	1	Gen5
FOXCONN	Front PERC	INT	1	Gen4
FOXCONN	BOSS	INT	1	Gen3
INVENTEC	LOM Card	INT	1	Gen2

For add-in cards that can be mapped to the XE8640 and guidelines for installing expansion cards, see the XE8640 slot priority matrix file on Sales Portal.

Link:[Sales Portal](#)

Power, thermal, and acoustics

PowerEdge servers have an extensive collection of sensors that automatically track thermal activity, which helps to regulate temperature by 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](#)
- [PowerEdge XE8640 acoustics](#)

Power

Table 18. Power tools and technologies

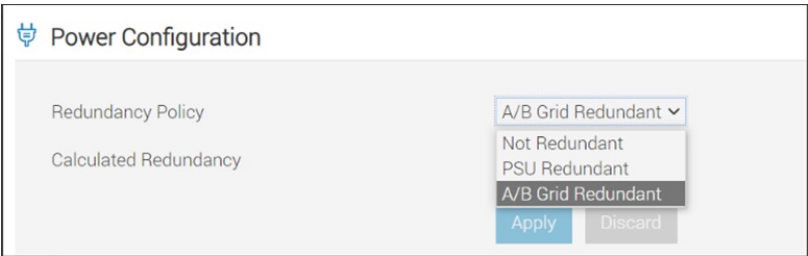

Feature	Description
Power Supply Units(PSU) portfolio	Dell's PSU portfolio includes intelligent features such as dynamically optimizing efficiency while maintaining availability and redundancy. Find additional information in the Power supply units section.
PSU redundancy options	<ul style="list-style-type: none"> • Not Redundant • PSU Redundant (3+1) FR (Full Redundant) • PSU Redundant (2+2) FTR (Fault Tolerance Redundant) • A/B Grid Redundant (Not supported in power configuration of iDRAC GUI) 
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 Enterprise Infrastructure Planning Tool .
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	<p>PSU power monitoring improvements include:</p> <ul style="list-style-type: none"> • 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.

Table 18. Power tools and technologies (continued)

Feature	Description
	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	<p>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.</p> <p>Idle power enables Dell servers to run as efficiently when idle as when at full workload.</p>
Rack infrastructure	<p>Dell offers some of the industry's highest-efficiency power infrastructure solutions, including:</p> <ul style="list-style-type: none"> • Power distribution units (PDUs) • Uninterruptible power supplies (UPSs) • Energy Smart containment rack enclosures <p>Find additional information at: Power and Cooling.</p>

The power cap policy setting in iDRAC configuration page controls CPU related power consumption. In XE8640 systems, most of the power is consumed by GPU which cannot be controlled by this setting. Enabling power cap feature will drive CPU to run at very low or lowest frequency speed.

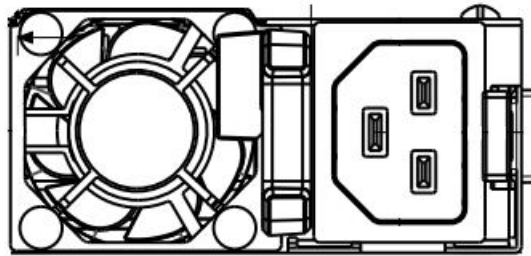
 **NOTE:** Dell recommends user to not enable Power Cap feature in iDRAC configuration page for XE8640 systems.

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 the XE8640.

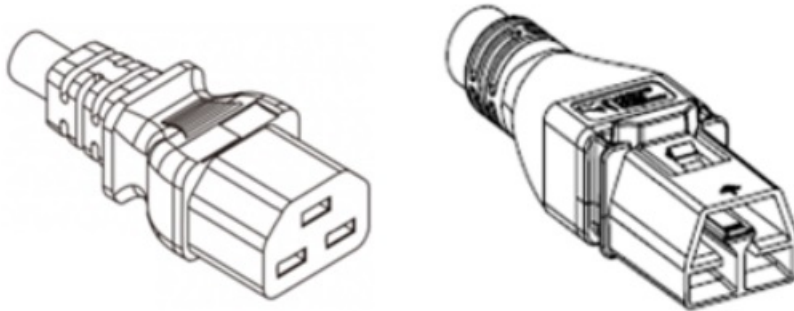
Table 19. PSU specifications for the PowerEdge XE8640 system

PSU	Class	Heat dissipation (maximum)	Frequency	Voltage	Current
2800 W Mixed Mode	Titanium	10500 BTU/hr	50/60 Hz	200 - 240 V AC	15.6 A
	N/A	10500 BTU/hr	N/A	240 V DC	13.6 A
3200 W Mixed Mode	Titanium	12000 BTU/hr	50/60 Hz	277 V AC	13 A
	N/A	12000 BTU/hr	N/A	336 V DC	11.5 A



C22

Figure 6. PSU C22 Input Socket



Power Cord C21

Power Cord APP

Figure 7. PSU power cord

Table 20. PSU power cord

Form factor	Output	Power cord
Redundant 86 mm	2800 W AC	C22/C21
Redundant 86 mm	3200 W AC	APP 2006G1

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

NOTE: 2800W 54V PSU has a C22 input socket that requires C21 to C20 jumper cord to connect it to PDU in the rack. Traditional high amperage power cords C20/C19 cannot be inserted into the PSU.

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.

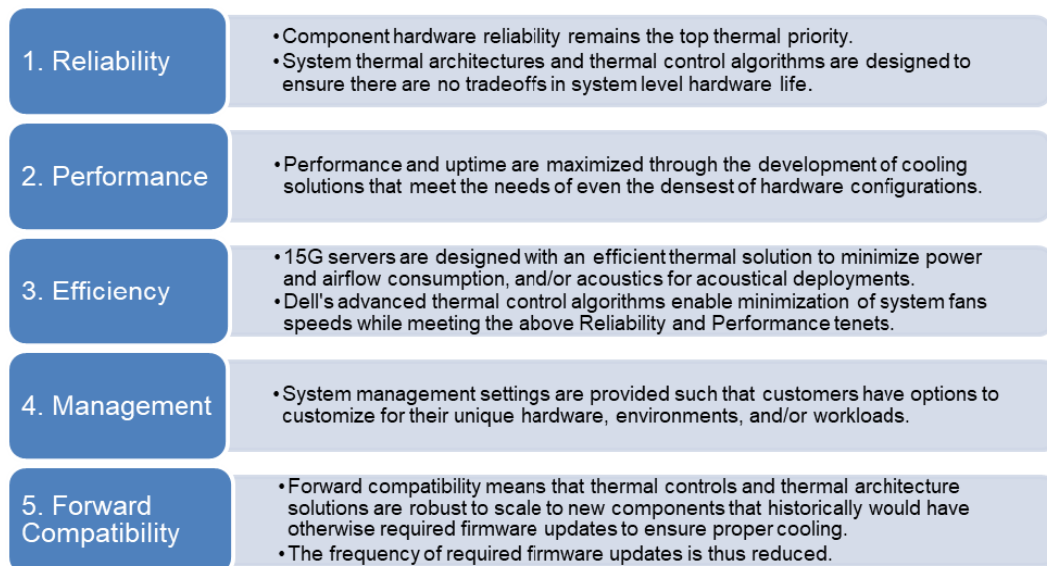


Figure 8. Thermal design characteristics

The thermal design of the PowerEdge XE8640 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, as well as 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, in this generation of servers, we have introduced limited user- configurable settings residing in the iDRAC BIOS setup screen. For more information, see the Dell PowerEdge XE8640 Installation and Service Manual at [PowerEdge Manuals](#) and “Advanced Thermal Control: Optimizing across Environments and Power Goals” on Dell.com.
- Cooling redundancy: The PowerEdge XE8640 allows N+1 fan redundancy, allowing continuous operation with one fan or pump failure in the system .
- Environmental Specifications: The optimized thermal management makes the PowerEdge XE8640 reliable under a wide range of operating environments.

PowerEdge XE8640 acoustics

Dell PowerEdge XE8640 is a rack-mount server appropriate for unattended data center environment, it is designed to meet However, lower acoustical output is attainable with proper hardware or software configurations. Configuration details are provided in the below table:

Acoustical performance data associated with each configuration of XE8640 is provided in the below table:

Table 21. Acoustical configurations of XE8640

Configuration	GPU rich configuration
Acoustical Target	Category 5
CPU	2x 350W Sapphire Rapids SP XCC Intel 8480+ 56c 2.0GHz
Memory	32x 128 GB DDR5 RDIMM
SSD	8x 15.36TB U.2 NVMe
	2x 480G M.2 NVMe

Table 21. Acoustical configurations of XE8640 (continued)

Configuration	GPU rich configuration
PSU	4x 2800W 54V PSU Liteon
PERC	None
PCI Card	2x100GBE 2P Intel PCIe FH Mellanox
OCP	1x 25GbE SFP28 2P OCP 3.0 Intel
GPU	1x HGX H100 4-GPU Nvidia
Cooling	Fan + LAAC(Close liquid cooling)

Table 22. Acoustical performance of XE8640

Configuration	Test Mode	GPU Rich Configuration
Acoustical Performance: Idle/ Operating @ 25 °C Ambient		
LwA,m(B)	Idle	6.4
	CPU Operating with 50% workload	6.4
	GPU Operating with 100% workload	8.7 (Report for reference)
Kv(B)	Idle	0.4
	Operating	0.4
LpA,m(dB)	Idle	48.1
	CPU Operating with 50% workload	49
	GPU Operating with 100% workload	71.2 (Report for reference)
Prominent tones	No prominent tones in Idle and Operating	
Acoustical Performance: Idle @ 28 °C Ambient		
LwA,m(B)	N/A	6.7
Kv(B)	N/A	0.4
LpA,m(dB)	N/A	52.3
Acoustical Performance: Max. Loading @ 35 °C Ambient		
LwA,m(B)	N/A	10
Kv(B)	N/A	0.4
LpA,m(dB)	N/A	83.9

- **LwA,m** : The declared mean A-weighted sound power level (LwA) is calculated per section 5.2 of ISO 9296 with data collected using the methods described in ISO 7779. 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 and measured using methods described in ISO 7779. The system is placed in a 24U rack enclosure, 25cm above a reflective floor. Engineering data presented here may not be fully compliant with ISO 7779 declaration requirements.
- **Prominent discrete tones**: Criteria of Annex D of ECMA-74 & Prominence Ratio method of ECMA-418 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**: Operating mode is represented by the maximum of the steady state acoustical output at 50% of CPU TDP or active storage drives for the respective sections of Annex C of ECMA-74.

Rack, rails, and cable management

Topics:

- [Rails and cable management information](#)

Rails and cable management information

The rail offerings for the PowerEdge XE8640 consist of only one type which is sliding. The cable management offerings consist of an optional cable management arm (CMA).

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 with and 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 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

Stab-in, Sliding features summary

The stab-in, sliding rail allow the system to be fully extended out of the rack for service. The stab-in, sliding rail are available with or without the optional cable management arm (CMA).

B27 Stab-in sliding rails for 4-post racks

- Supports stab-in installation of the chassis to the rails.
- Support for tool-less installation in 19" EIA-310-E compliant square, un-threaded round hole racks including all generations of the Dell racks. Also supports tool-less installation in threaded round hole 4-post racks.
- Support for tool-less installation in Dell Titan or Titan-D racks
- Support full extension of the system out of the rack to allow serviceability of key internal components.
- Support for optional cable management arm (CMA).
- The optional cable management arm (CMA) can be mounted on either the left side of the sliding rails without the use of tools for fast and easy deployment.
-  **NOTE:** For situations where CMA support is not required, the outer CMA mounting brackets can be uninstalled from the sliding rails. This reduces the overall length of the rails and eliminates the potential interferences with rear mounted PDUs or the rear rack door.

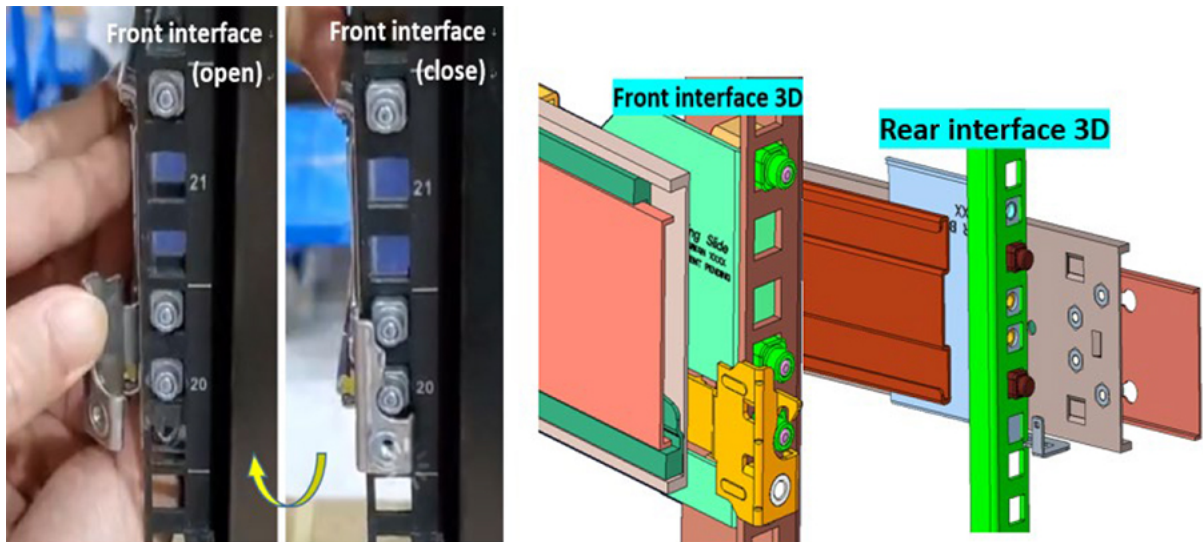


Figure 9. Stab-in Sliding Rail Mounting Interface

Cable management arm (CMA)

The optional cable management arm (CMA) organizes and secures the cords and cables exiting the back of the systems. It unfolds to allow the systems to extend out of the rack without having to detach the cables. Some key features of the CMA include:

- Large U-shaped baskets to support dense cable loads.
- Open vent pattern for optimal airflow.
- Ability to mount on either side by swinging the spring-loaded brackets from one side to the other.
- Utilizes hook-and-loop straps rather than plastic tie wraps to eliminate the risk of cable damage during cycling.
- Includes a low-profile fixed tray to both support and retain the CMA in its fully closed position.
- Both the CMA and the tray mount without the use of tools by simple and intuitive snap-in designs.

The CMA can be mounted to either side of the sliding rails without the use of tools or the need for conversion. For systems with one power supply unit (PSU), it is recommended to mount on the side opposite to that of the power supply to allow easier access to it and the rear drives (if applicable) for service or replacement.



Figure 10. Stab-in Sliding rails with CMA cabling

Rack Installation

Installing Stab-in Rails to the system

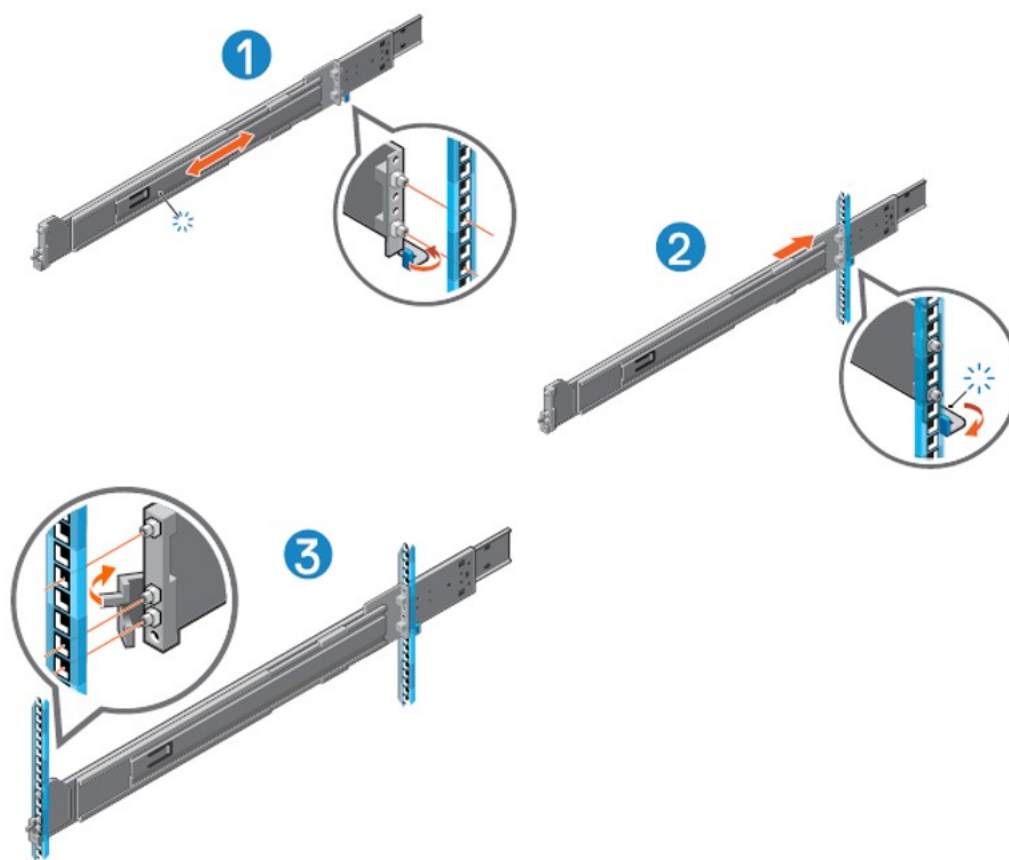


Figure 11. Installing the rail 4-POST racks

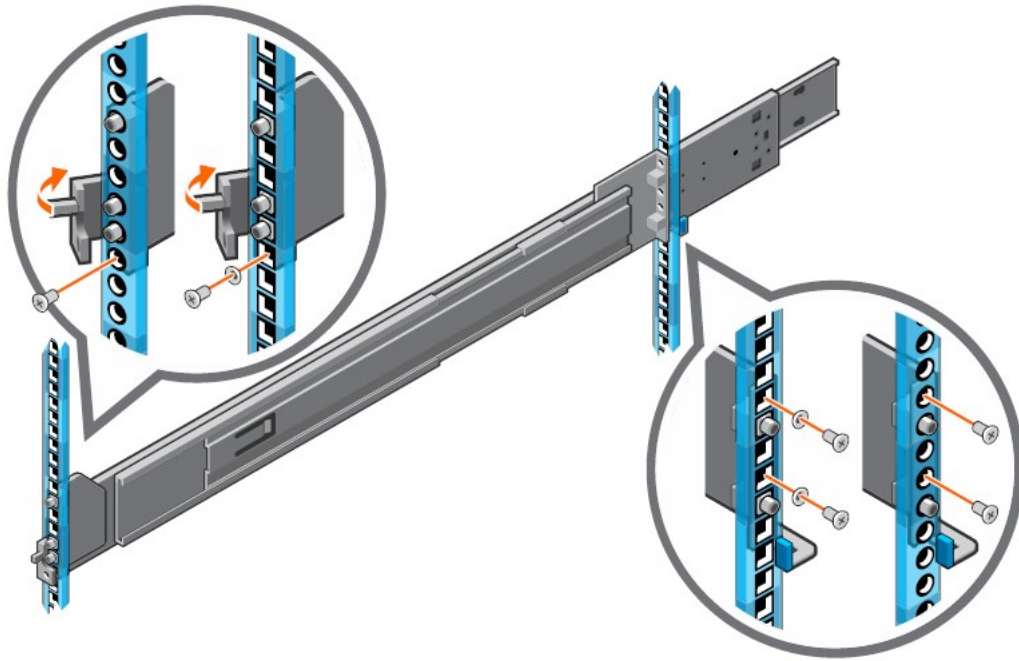


Figure 12. Optional: Install the supplied hardware to secure rails for the rack level shipping

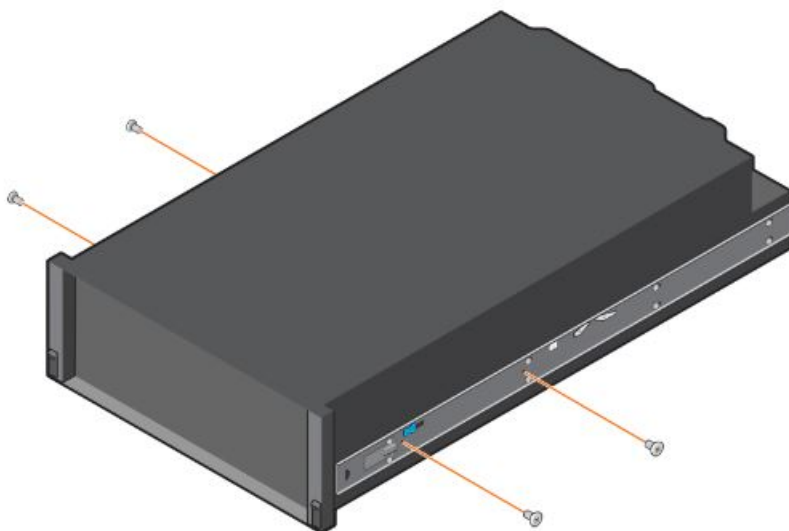


Figure 13. Shipping screws on the inner rails

NOTE: For rack level shipping, the shipping screws must be installed on the inner rails.

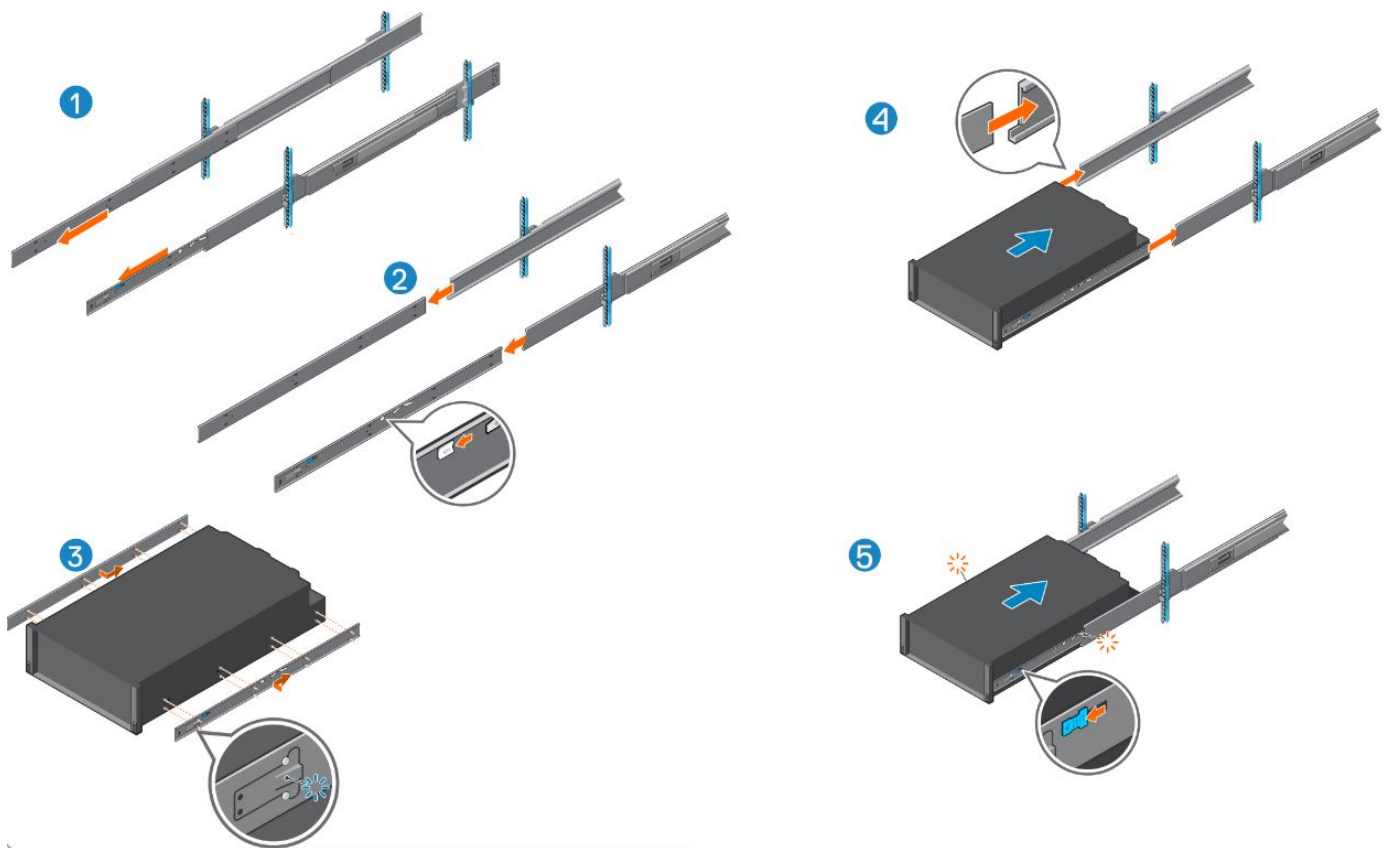


Figure 14. Installing Stab-in Rails to the system

Cable Management Arm Installation

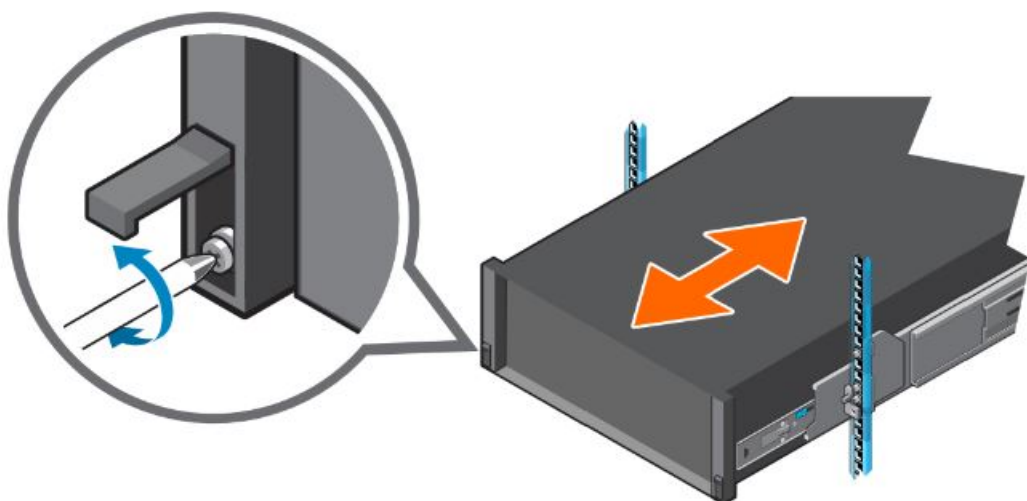


Figure 15. Securing the system to the rails

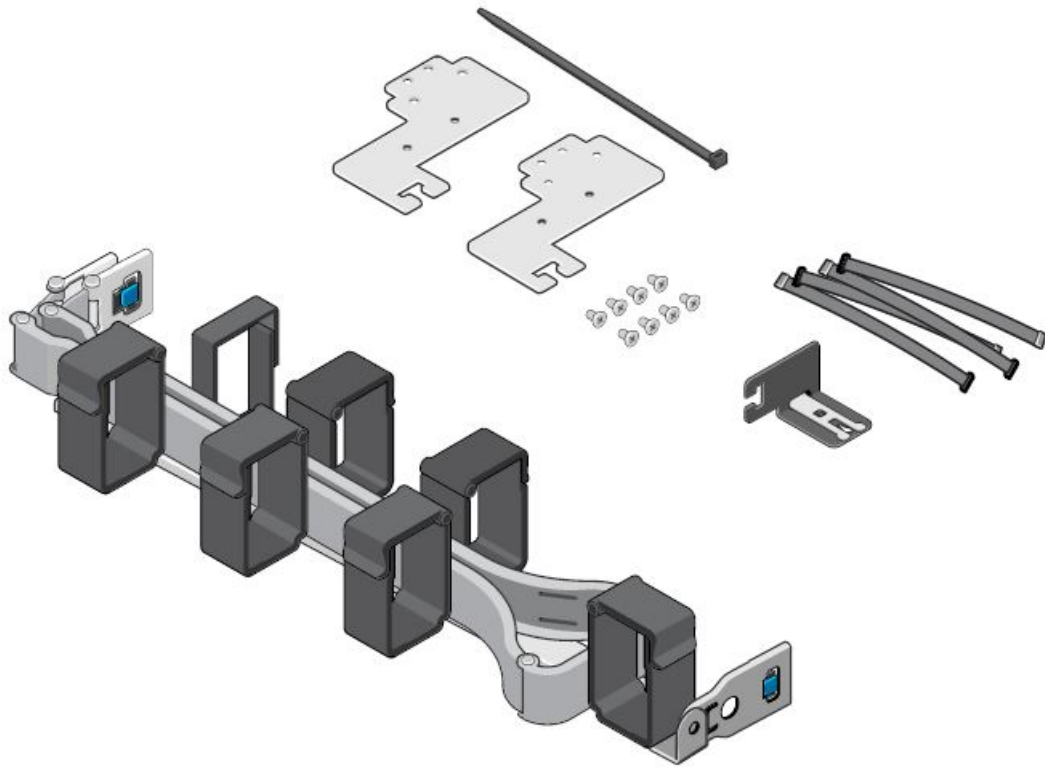


Figure 16. Identify the CMA kit contents

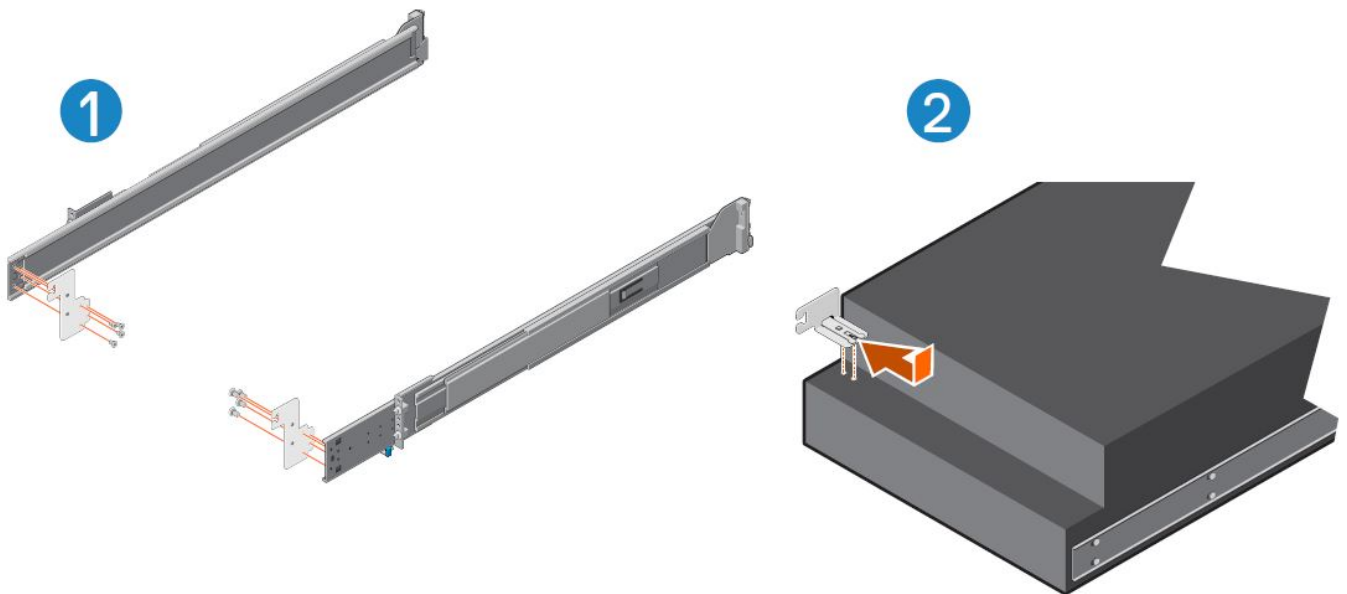


Figure 17. Install the CMA brackets before installing system into the rack

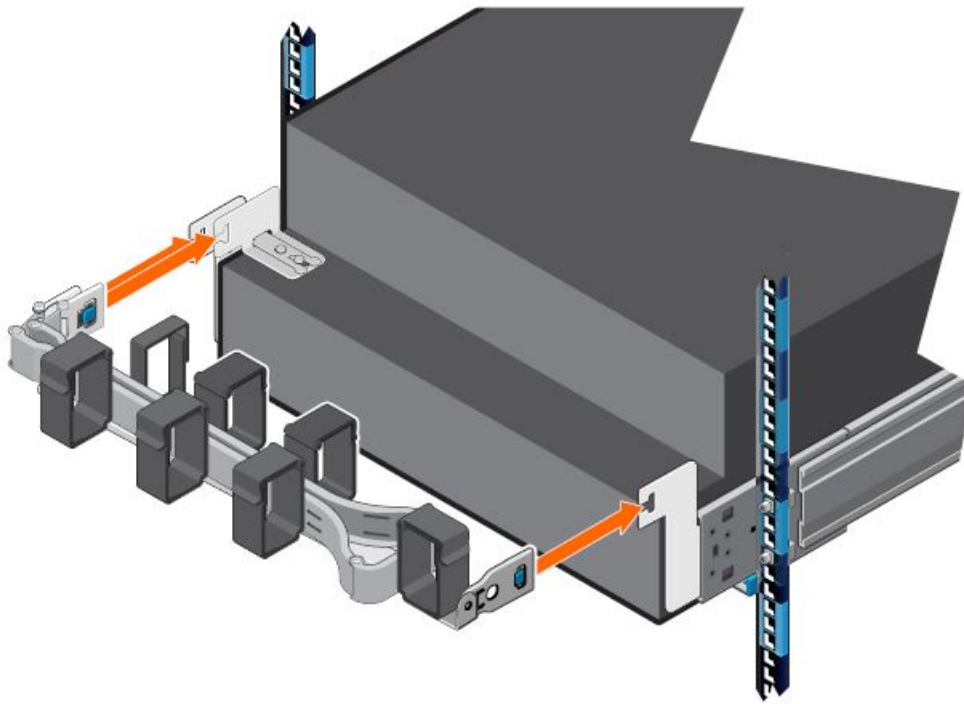


Figure 18. Install the CMA after installing system into the rack

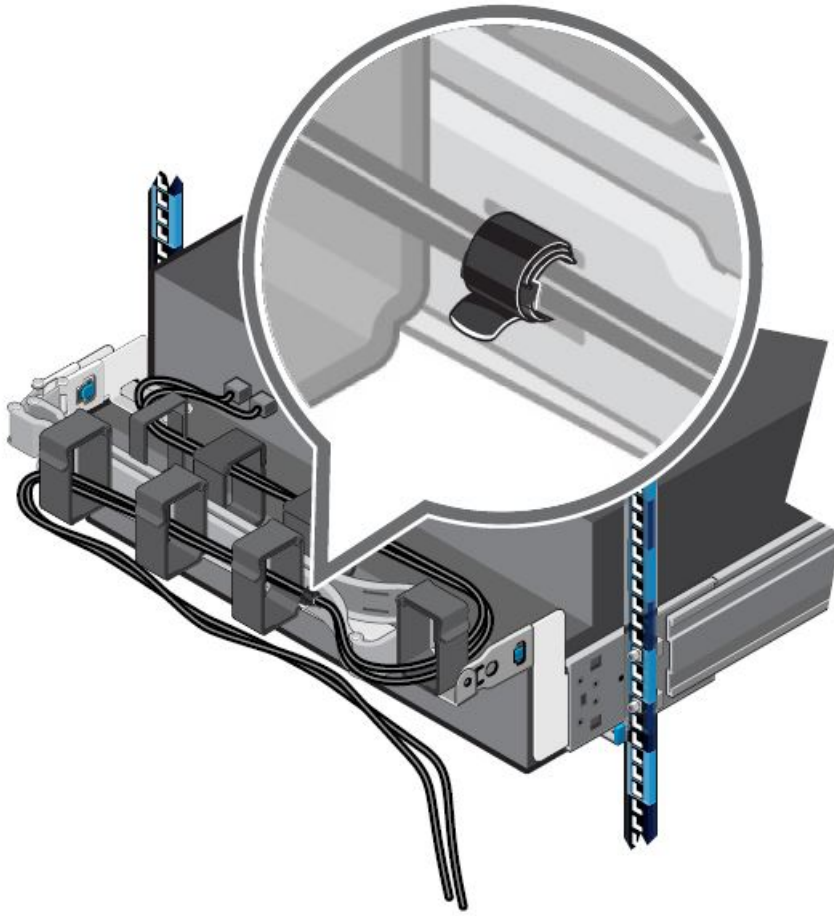


Figure 19. Route and tie the cable

NOTE: CMA attachment brackets are installed after installing system into the rack.

Operating Systems and Virtualization

Topics:

- [Supported Operating Systems](#)

Supported Operating Systems

The PowerEdge system supports the following operating systems:

- Canonical® Ubuntu® Server LTS
- Red Hat® Enterprise Linux
- SUSE® Linux Enterprise server

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

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.

Topics:

- [Integrated Dell Remote Access Controller \(iDRAC\)](#)
- [Systems Management software support matrix](#)

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 23. iDRAC9 license tiers

License	Description
iDRAC9 Basic	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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

Table 23. iDRAC9 license tiers (continued)

License	Description
iDRAC9 Datacenter	<ul style="list-style-type: none"> 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 24. 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
	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 2019 or 2022, Ubuntu, CentOS	Supported (Tier-1)

Appendix A. Additional specifications

Topics:

- Chassis dimensions
- System weight
- NIC port specifications
- Video specifications
- USB ports specifications
- PSU rating
- Environmental specifications

Chassis dimensions

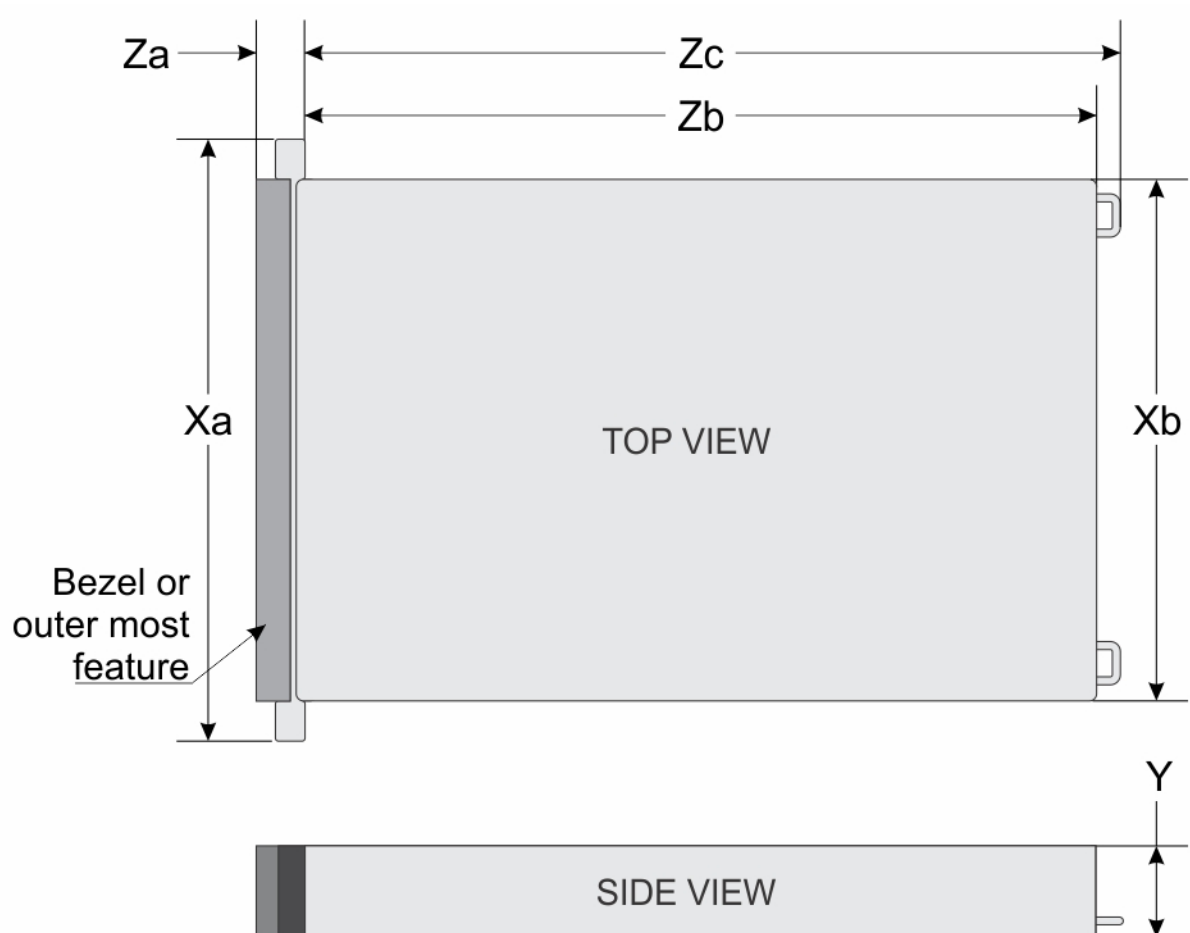



Figure 20. Chassis dimensions

Table 25. PowerEdge XE8640 chassis dimensions

Drives	Xa	Xb	Y	Za	Zb	Zc
8 x 2.5-inch	481.91 mm (18.97 inches)	447 mm (17.6 inches)	174.3 mm (6.86 inches)	34.70 mm (1.366 inches) With bezel	830.7 mm (32.7 inches) Ear to rear wall	865.54 mm (34.07 inches) Ear to PSU handle

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

System weight

Table 26. PowerEdge XE8640 system weight

System configuration	Maximum weight (with all drives/SSDs)
8 x 2.5 inch	61.4 kg (135.36 lb)

Table 27. PowerEdge system weight handling recommendations

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

NIC port specifications

The PowerEdge XE8640 system supports up to two 10/100/1000 Mbps Network Interface Controller (NIC) ports embedded on the LAN on Motherboard (LOM) and integrated on the optional Open Compute Project (OCP) cards.

Table 28. NIC port specification for the system

Feature	Specifications
LOM card	1 GbE x 2
OCP card (OCP 3.0)	10 GbE x 4, 25 GbE x 2, 25 GbE x 4

Video specifications

The PowerEdge XE8640 system supports integrated Matrox G200 graphics controller with 16 MB of video frame buffer.

Table 29. Supported video resolution options

Resolution	Refresh rate (Hz)	Color depth (bits)
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
1440 x 900	60	8, 16, 32
1600 x 900	60	8, 16, 32
1600 x 1200	60	8, 16, 32


Table 29. Supported video resolution options (continued)

Resolution	Refresh rate (Hz)	Color depth (bits)
1600 x 1200	60	8, 16, 32
1680 x 1050	60	8, 16, 32
1920 x 1080	60	8, 16, 32
1920 x 1200	60	8, 16, 32

USB ports specifications

Table 30. PowerEdge XE8640 USB specifications

Front		Rear	
USB port type	No. of ports	USB port type	No. of ports
USB 2.0-compliant port	One	USB 2.0-compliant port	One
iDRAC Direct port (Micro-AB USB 2.0-compliant port)	One	USB 3.0-compliant ports	One

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


PSU rating

Below table lists the power capacity the PSUs in high/low line operation mode.

Table 31. PSUs highline and lowline ratings

—	2800 W Titanium
Peak Power (Highline/-72 VDC)	4760 W
Highline/-72 VDC	2800 W
Peak Power (Lowline/-40 VDC)	N/A
Lowline/-40 VDC	N/A
Highline 240 VDC	2800 W
DC-48-60 V	N/A

The PowerEdge XE8640 system supports up to 4 AC or DC power supply units (PSUs) with 3+1 redundancy, autosensing, and auto-switching capability.

-  **NOTE:**
1. The wattage capacities of any two PSUs that are present during POST are compared. The larger of the two PSUs is activated if the PSU wattages don't match. A PSU mismatch alert is also visible in the BIOS, iDRAC, or on the system LCD.
 2. If a second PSU is installed during runtime, its wattage capacity must match that of the first PSU in order for it to be enabled. If not, the second PSU won't be activated and the PSU will be marked as mismatched in iDRAC.

Dell PSUs have achieved Platinum efficiency levels as shown in the table below.

Table 32. PSU Efficiency Levels

Efficiency Targets by Load PSU Efficiency Levels						
Form Factor	Output	Class	10%	20%	50%	100%

Table 32. PSU Efficiency Levels (continued)

Efficiency Targets by Load PSU Efficiency Levels						
Redundant 86 mm	2800 W (Input 240 AC)	Titanium	90.00%	94.00%	96.00%	94.00%

Environmental specifications

NOTE: For additional information about environmental certifications, refer to the **Product Environmental Datasheet** located with the **Documentation** on [Dell Support](#).

Table 33. Continuous Operation Specifications for ASHRAE A2

Operational climatic	Allowable continuous operations
Temperature range for altitudes <= 900 m (<= 2953 ft)	10–35°C (50–95°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 80% RH with 21°C (69.8°F) maximum dew point
Operational altitude de-rating	Maximum temperature is reduced by 1°C/300 m (1.8°F/984 Ft) above 900 m (2953 Ft)

Table 34. Common Environmental Specifications for ASHRAE A2, A3, A4 and Rugged

Shared requirements	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 (9°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 35. 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 36. 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.
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 restriction matrix

Table 37. Thermal restriction matrix

XE8640						
Front configuration				8x 2.5" U.2 / NVMe	8x 2.5" E.3	8x 2.5" U.2 / SAS SSD
Additional attributes				4 x Nvidia H100 700W	4 x Nvidia H100 700W	4 x Nvidia H100 700W
Rear configuration				4xFH	4xFH	4xFH
Fan type				HPR Gold fan	HPR Gold fan	HPR Gold fan
Heatsink type				Standard heatsink for CPU and LAAC for GPU	Standard heatsink for CPU and LAAC for GPU	Standard heatsink for CPU and LAAC for GPU
CPU TDP	Processor	TDP	Core count	35°C	35°C	35°C
	5418Y	185W	24	35°C	35°C	35°C
	6448Y/6442Y	225W	32/24	35°C	35°C	35°C
	8462Y+	300W	32	35°C	35°C	35°C
	8460Y+	300W	40	35°C	35°C	35°C
	8452Y	300W	36	35°C	35°C	35°C
	8480+/8470/8468	350W	56/52/48	35°C	35°C	35°C

Table 38. Memory Thermal restriction matrix

XE8640		1 DPC	2DPC	temperature
DIMM	128GB RDIMM 4800	13.8W	10.7W	35°C
	64GB RDIMM 4800	12.0W	8.5W	35°C
	32GB RDIMM 4800	NA	NA	35°C

Table 39. GPU Thermal restriction matrix

XE8640			
GPU	Nvidia	H100(4x GPU SKU)	35°C

 **NOTE:** All configurations support 35°C environment w/o performance degradation.

Appendix B. Standards compliance

The system conforms to the following industry standards.

Table 40. Industry standard documents

Standard	URL for information and specifications
ACPI Advance Configuration and Power Interface Specification, v6.4	Uefi specifications and tools
Ethernet IEEE Std 802.3-2022	ieee standards
MSFT WHQL Microsoft Windows Hardware Quality Labs	microsoft.com/whdc/system/platform/pcdesign/desguide/serverdg.msp
IPMI Intelligent Platform Management Interface, v2.0	intel.com/design/servers/ipmi
DDR5 Memory DDR5 SDRAM Specification	jedec.org/standards-documents/docs/jesd79-4.pdf
PCI Express PCI Express Base Specification, v5.0	pcisig.com/specifications/pciexpress
PMBus Power System Management Protocol Specification, v1.2	pmbus specification and revisions
SAS Serial Attached SCSI, 3 (SAS-3) (T10/INCITS 519)	SCSI storage interfaces information
SATA Serial ATA Rev. 3.3	sata-io.org page
SMBIOS System Management BIOS Reference Specification, v3.3.0	BIOS reference specification page
TPM Trusted Platform Module Specification, v1.2 and v2.0	trustedcomputinggroup.org page
UEFI Unified Extensible Firmware Interface Specification, v2.7	UEFIF specifications
PI Platform Initialization Specification, v1.7	
USB Universal Serial Bus v2.0 and SuperSpeed v3.0 (USB 3.1 Gen1)	USB Implementers Forum, Inc. USB document library
NVMe Express Base Specification. Revision 2.0c	NVME specifications
NVMe Command Set Specifications	
1. NVMe Express NVMe Command Set Specification. Revision 1.1c	
2. NVMe Express Zoned Namespaces Command Set. Revision 1.0c	
3. NVMe Express® Key Value Command Set. Revision 1.0c	
NVMe Transport Specifications	
1. NVMe Express over PCIe Transport. Revision 1.0c	
2. NVMe Express RDMA Transport Revision. 1.0b	
3. NVMe Express TCP Transport. Revision 1.0c	
NVMe NVMe Express Management Interface. Revision 1.2c	
NVMe NVMe Boot Specification. Revision 1.0	

Appendix C Additional resources

Table 41. Additional resources

Resource	Description of contents	Location
Installation and Service Manual	<p>This manual, available in PDF format, provides the following information:</p> <ul style="list-style-type: none"> • 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	<p>This guide ships with the system, and is also available in PDF format. This guide provides the following information:</p> <ul style="list-style-type: none"> • 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/calculator

Appendix D: Service and support

Topics:

- [Why attach service contracts](#)
- [ProSupport Infrastructure Suite](#)
- [Specialty Support Services](#)
- [Dell deployment services](#)
- [Supplemental Deployment Services](#)
- [Unique Deployment Scenarios](#)
- [DAY 2 – Automation Services with Ansible](#)
- [Dell Technologies Consulting Services](#)

Why attach service contracts

Dell PowerEdge servers include a standard hardware warranty that highlights our commitment to product quality by guaranteeing repair or replacement of defective components. While industry-leading, our warranties are limited to 1 or 3 years, depending on model, and do not cover software assistance. Call records show that failure rates for servers are roughly 1% and more commonly, customers seek Dell technical support for software-related issues like configuration guidance, troubleshooting, upgrade assistance, or performance tuning. Encourage customers to purchase ProSupport service contracts to supplement warranty coverage and ensure optimal support for both hardware and software. ProSupport provides a complete hardware guarantee beyond the original warranty period (up to 12 years: including seven years standard support and an additional five years of Post-Standard Support). Details of the ProSupport Suite and benefits are listed below.

ProSupport Infrastructure Suite

ProSupport Infrastructure Suite is a set of support services that enable customers to build the solution that is right for their organization. It is an industry-leading, enterprise-class support that aligns with the criticality of your systems, the complexity of your environment, and the allocation of your IT resources.

ProSupport Infrastructure Suite | Enhanced value across all offers!

	Basic Hardware Support	ProSupport for Infrastructure	ProSupport Plus for Infrastructure	Changes with August 2023 release
Technical support availability and response objective	9/5, immediate	24/7, immediate	24/7, immediate	No change
Covered products	Hardware	Hardware & Software	Hardware & Software	No change
Onsite response service level	NBD	NBD or 4-hour	4-hour	ProSupport Plus NBD is retired
ProSupport AIOps platforms	•	•	•	MyService360 and TechDirect (all offers) CloudIQ (ProSupport & ProSupport Plus)
Dell Security Advisories	•	•	•	Available on additional products
Proactive issue detection with automated case creation	•	•	•	New to Basic
Predictive hardware anomaly detection		•	•	New to ProSupport
Access to software updates		•	•	No change
CloudIQ health and cybersecurity monitoring & analytics		•	•	Enhanced features
Incident Manager for Severity 1 cases		•	•	No change
Mission Critical support			•	Enhanced features
Priority access to remote senior support engineers ¹			•	No change
Service Account Manager			•	No change
Proactive system maintenance			•	No change
Limited 3 rd party software support ²			•	No change

¹Based on availability

²Software license can be purchased through Dell or BYOL - see Service Descriptions for details.

DELL Technologies

Figure 21. ProSupport Enterprise Suite

ProSupport Plus for Infrastructure

ProSupport Plus for Infrastructure is the ultimate solution for customers seeking preventative maintenance and optimal performance on their business-critical assets. The service caters to customers who require proactive, predictive, and personalized support for systems that manage critical business applications and workloads. 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, including the following "Top five reasons to buy ProSupport Plus (PSP)"

- 1. Priority access to specialized support experts:** Immediate, advanced troubleshooting from an engineer that understands Dell infrastructure solutions.
- 2. Mission Critical Support:** When critical (Severity 1) support issues happen, the customer is assured that we do all that we can to get them back up and running as quickly as possible.
- 3. Service Account Manager:** A customer's #1 support advocate, ensuring they get the best possible proactive and predictive support experience.
- 4. Systems maintenance:** On a semiannual basis, we will keep a customer's ProSupport Plus system(s) up to date by installing the latest firmware, BIOS, and driver updates to improve performance and availability.
- 5. Third-party software support:** Dell is a customer's single point of accountability for any eligible third-party software that is installed on their ProSupport Plus system, whether they purchased the software from us or not.

ProSupport for Infrastructure

Comprehensive 24x7 support for hardware and software – best for production, but not critical, workloads and applications. The 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
- A central point of accountability for all hardware and software issues
- Hypervisor, operating system and application support
- Dell security advisories
- Onsite response service levels 4 hour or Next Business Day options
- Proactive issue detection with automated case creation

- Predictive hardware anomaly detection
- Incident Manager assigned for Severity 1 cases
- Collaborative third-party support
- Access to AIOps Platforms - (MyService360, TechDirect, and CloudIQ)
- Consistent experience regardless of where customers are located or what language that they speak.

Basic Hardware Support

Provides reactive hardware support during normal business hours, excluding local national holidays. No software support or software-related guidance. For improved levels of support, choose ProSupport or ProSupport Plus.

Specialty Support Services

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

Hardware coverage add-ons to ProSupport

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

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. Dell field technician performs initial troubleshooting diagnosis onsite and transfers to Dell remote engineers to resolve the issue.

- **ProSupport Add-on for HPC:**

Sold as an add-on to a ProSupport service contract, the ProSupport Add-on for HPC provides solution-aware support to cover the additional requirements that are required to maintain an HPC environment such as:

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

- **ProSupport Add-on for Telco (Respond & Restore):**

An add-on service designed for the top 31 TELCO customers globally, Respond & Restore provides direct access to Dell solution experts who specialize in TELCO carrier-grade support. This add-on also provides a hardware uptime guarantee, meaning if a system fails, Dell has it installed and operational within 4 hours for Severity 1 issues. Dell incurs penalties and fees if SLAs are not met.

Personalized Support and Supplemental Site-wide Expertise

- **Technical Account Manager:**

Designated technology lead who monitors and manages the performance and configuration of specific technology sets.

- **Designated Remote Support:**

Personalized support expert who manages all troubleshooting and resolution of IT assets.

- **Multivendor Support Service:**

Support your third-party devices as one service plan for servers, storage, and networking (includes 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 offers flexible site-wide support for large and distributed data centers with more than 1,000 assets (combined total of server, storage, networking, so forth). This offering is built on standard ProSupport features that leverage our global scale and are tailored to specific customer needs. While not for everyone, this service option offers a truly unique solution for our largest customers with the most complex environments.

- Team of assigned Services Account Managers with remote or onsite options
- Assigned technical and field engineers who are trained on the customer's environment and configurations.
- On-demand reporting and recommendations that are enabled by ProSupport AIOps tools (MyService360, TechDirect, and CloudIQ)
- Flexible onsite support and parts options that fit their operational model
- A tailored support plan and training for their operations staff

- **ProSupport One for CSPs (Cloud Serviced Providers)**

ProSupport One for CSPs is a unique offer that is designed for a limited set of Dell accounts purchasing Gen AI computing solutions greater than 1,000 servers and \$250M in sales. PS1 for CSPs improves the entire services experience combining support, deployment (rack integration), residency services, a designated support engineer and the LOIS parts locker as one holistic bundle. Special pricing has been determined to compete effectively against competitors and provide the best customer experience. PS1 for CSPs can only be sold with XE Servers and all networking platforms (Dell and NVIDIA). All other products would be eligible for the standard PS1DC not this special bundle offer. More details on PS1 for CSPs [here](#).

- **Logistics Online Inventory Solution (LOIS)**

Ideal for large organizations that have their own staff to support their data center. Dell offers a service that is called Logistics Online Inventory Solution which is an onsite parts locker that provides self-maintainers with a local inventory of common replacement components. Having access to these parts lockers allows the self-maintainer to replace a failed component immediately without delay. Each replacement part would automatically initiate a replenishment of the parts inventory that is shipped the next day or delivered onsite by Dell during a regular scheduled visit (called Scheduled Onsite Service). As part of the LOIS system, customers can integrate their systems directly to Dell TechDirect using APIs to help streamline the support management process.

End-of-Life Services

- **Post Standard Support (PSS)**

Extend service life beyond the initial seven years of ProSupport, adding up to five more additional years of hardware coverage.

- **Data Sanitization & Data Destruction**

Renders data unrecoverable on repurposed or retired products, ensuring security of sensitive data and enabling compliance and provides NIST-compliant certification.

- **Asset Recovery Services**

Recycle, resale, and disposal of hardware. Helps you securely and responsibly retire IT assets that are no longer needed while protecting both your business and the planet.

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.

ProDeploy Infrastructure Suite for servers

Versatile choices for accelerated deployments

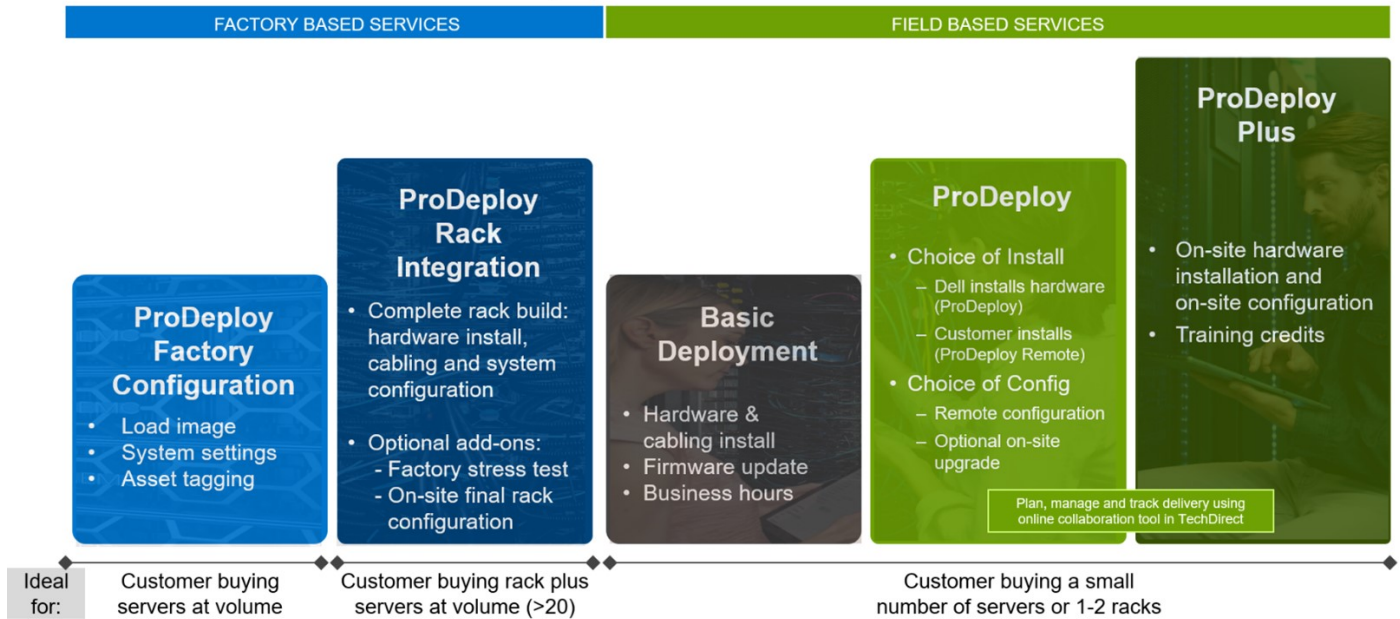


Figure 22. ProDeploy Infrastructure Suite for servers

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.

ProDeploy Infrastructure Suite Factory services		FACTORY BASED SERVICES	
		ProDeployFactory Configuration	ProDeploy Rack Integration
Asset configuration	Single point of contact for project management	●	●
	RAID, BIOS and iDRAC configuration	●	●
	Firmware freeze	●	●
	Asset Tagging and Reporting	●	●
	Customer system image	●	●
Factory implementation	Site readiness review and implementation planning	-	●
	Hardware racking and cabling	-	●
	SAM engagement for ProSupport Plus entitled accounts/devices	-	●
	Deployment verification, documentation, and knowledge transfer	●	●
Delivery	White glove logistics	-	●
	Onsite final configuration	-	Onsite add-on
	Install support software and connect with Dell Technologies	-	Onsite add-on
	Basic Deployment	Optional onsite installation	-
Online oversight	Online collaborative environment for planning, managing and tracking delivery	-	●

1 ProDeployRack Integration Services are currently only available within the United States. Custom rack integration services are still available globally*

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Figure 23. ProDeploy Infrastructure Suite - Factory services

ProDeploy Infrastructure Suite Field services		Basic Deployment	ProDeploy	ProDeploy Plus
Pre-deployment	Single point of contact for project management	●	●	In-region
	Site readiness review	-	●	●
	Implementation planning ¹	-	●	●
	SAM engagement for ProSupport Plus entitled devices	-	-	●
Deployment	Deployment service hours	Business hours	24x7	24x7
	Onsite hardware installation and packaging material removal ² or remote guidance for hardware installation ¹	●	Remote guidance or onsite	Onsite
	Install and configure system software	-	Remote	Onsite
	Install support software and connect with Dell Technologies	-	●	●
	Project documentation with knowledge transfer	-	●	●
Post-deployment	Deployment verification	-	●	●
	Configuration data transfer to Dell Technologies technical support	-	●	●
	30-days of post-deployment configuration assistance	-	-	●
	Training credits for Dell Technologies Education Services	-	-	●
Online oversight	Online collaborative environment in TechDirect for planning, managing and tracking delivery ³	-	●	●

¹ Remote option includes project specific instructions, documentation and live expert guidance for hardware installation. Option available for select hardware. [List is available in the backup portion of this customer presentation](#)

² Packaging removal included with onsite hardware installation

³ Included with ProDeploy or ProDeploy Plus, Not included with Basic Deployment

Figure 24. 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.

ProDeploy Expansion for HPC

*Available as standard SKUs in US & Canada and as custom quote in APJC, EMEA, LATAM

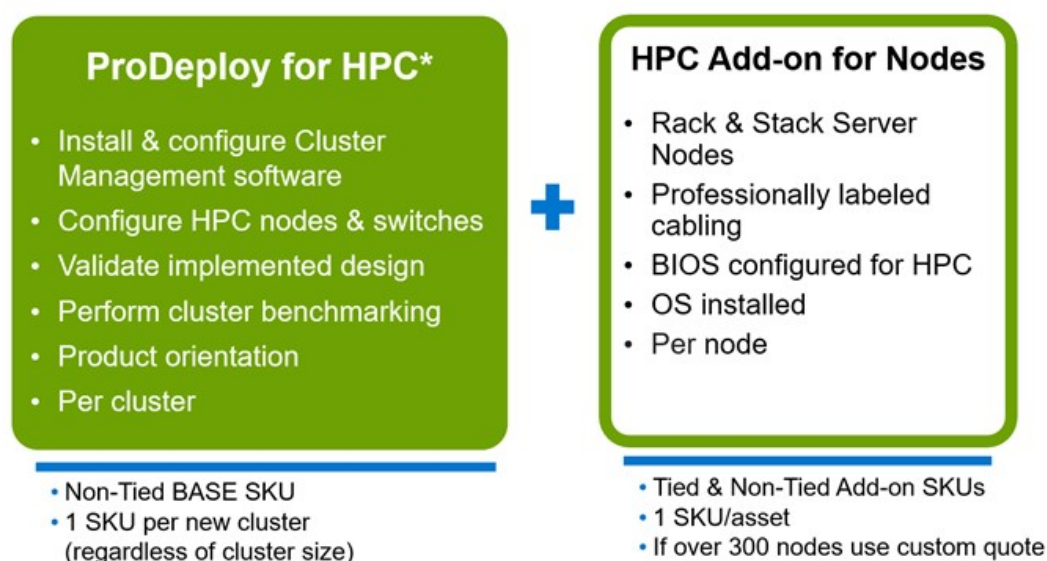


Figure 25. ProDeploy Expansion for HPC

Supplemental Deployment Services

Additional ways to expand scope or deploy for unique scenarios.

Two Host Adder (requires PD/PDP)

Deploying new storage, compute, or networking devices may require interconnection to other servers (also called hosts). The Dell delivery team will set up four hosts per device as part of every ProDeploy service. For example, if the customer is buying two storage arrays the ProDeploy service will automatically include connectivity of four hosts each (4x2=8 total hosts per project since there are two devices). This supplemental “Two Host Adder” service provides for the configuration of additional hosts above what is already provided as part of the ProDeploy service. In many cases, customers can work with us while we set up the included hosts, so they may understand how to do the rest themselves. Always ask the customer how many hosts are being connected and sell the host adder depending on the customer’s technology skillset. Note that this service applies to the connectivity of Dell devices not 3rd party devices.

Additional Deployment Services (ADT) – sold with or without PD/PDP

You can expand the scope of a ProDeploy engagement leveraging Additional Deployment Time (ADT). ADT covers additional tasks above the normal deliverables of the ProDeploy offers. ADT can also be used as a standalone service without ProDeploy. SKUs are available for both Project Management and Technical Resource Expertise. SKUs are sold as blocks of four hours remote or eight hours onsite. The delivery team can help in scoping the number of hours required for additional tasks.

Data Migration Services

Migrating data sets is no easy task. Our experts use proven tools and process 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.

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: Server, storage, Gen AI, networking, security, multi-cloud, data mgmt., and modern workforce application residents

Unique Deployment Scenarios

Custom Deployment Services

When a deployment is beyond the scope of the ProDeploy Infrastructure Suite, you can turn to the custom deployment services team to address complex implementation scenarios and customer unique requirements. The Dell custom deployment team is staffed with solution architects who will assist with customer scoping calls to define the project and develop the statement of work. Custom services can handle a wide range of deployments that can be performed in the factory or onsite. All custom engagement services are requested through SFDC.

ProDeploy FLEX


ProDeploy Flex is a modular service and a powerful tool for you to attach more services and improve revenue and margins. The ProDeploy Flex modular offer allows sales teams to build and better tailor services by mixing factory and field delivery options. You can also select special deployment scenarios without going to the custom order desk. FLEX is ideal for unique deployments where ProDeploy or ProDeploy Plus are not an adequate answer to the customer needs. Key features of ProDeploy FLEX :

- Build deployment quotes using modular, selectable features for both hardware and software.
- The system automatically scales pricing based on volume.
- Ideal for customers who require NativeEdge Orchestrator or edge deployments.
- Ability to add deployment services to third-party networking devices.

Deployment of HPC

High-Performance Computing (HPC) implementations require specialists that understand advanced feature sets. Dell deploys the world 's fastest systems and understands the nuances that make them perform. HPC deployments are most often scoped as custom service engagements, however we can do smaller HPC clusters under 300 nodes using a standard ProDeploy SKU. Any standard SKU for HPC deployment will be sold as one base SKU per cluster (ProDeploy for HPC Base) along with one ProDeploy for HPC Add-on for each device in the cluster (server nodes and switches).

Scope of ProDeploy for HPC:

 **NOTE:** Available as standard SKUs in US and Canada. Custom Service would be required for all other regions.

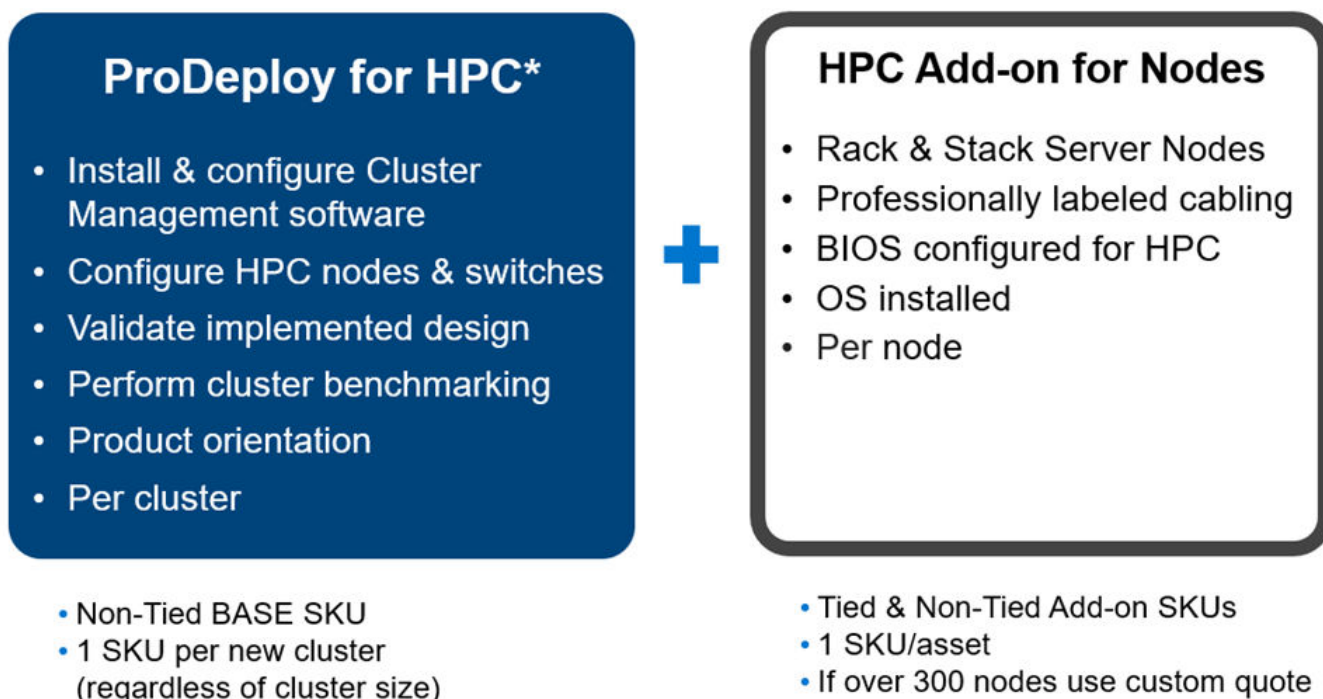
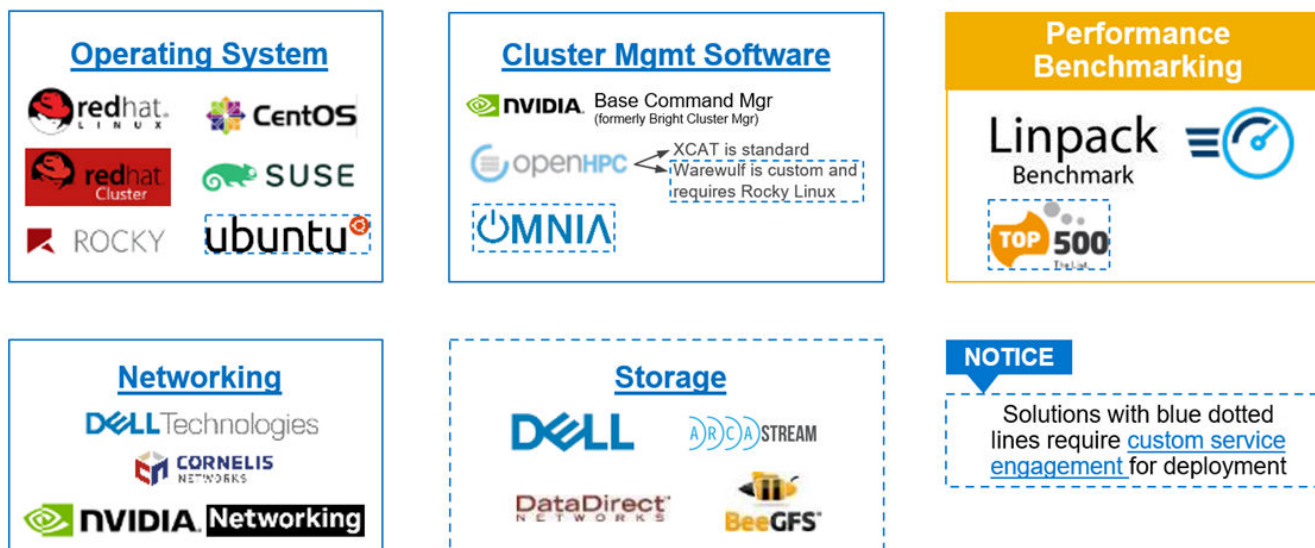


Figure 26. Standard deliverables of ProDeploy for HPC

Build HPC solutions for your unique requirements

Choose ProDeploy for HPC or Custom deploy

ProDeploy service includes configuration of most OS, cluster mgmt., networking and benchmarking



Notes related to networking above: Omni-Path is no longer an Intel Product, but is now distributed by a company called Cornelis, and Mellanox was purchased by Nvidia, and now goes by Nvidia Networking.

Figure 27. Visual view of HPC deployment options to include hardware and software

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).

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.

Managed	Outsourcing or CAPEX model	APEX	as-a-Service or OPEX model
<p>We manage your technology using our people and tools.¹</p> <ul style="list-style-type: none">• Managed detection and response*• Technology Infrastructure• End-user (PC/desktop)• Service desk operations• Cloud Managed (Pub/Private)• Office365 or Microsoft Endpoint		<p>We own all technology so you can off-load all IT decisions.</p> <ul style="list-style-type: none">• APEX Cloud Services• APEX Flex on Demand elastic capacity• APEX Data Center Utility pay-per-use model	

1 – Some minimum device counts may apply. Order via: ClientManagedServices.sales@dell.com

* Managed detection and response covers the security monitoring of laptops, servers, & virtual servers. Min. 50 devices combined. No Networking or Storage-only systems [SAN/NAS]. Available in 32 countries. [Details here](#)

Figure 28. 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.

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