# Dell PowerEdge R7725xd

## Technical Guide

Part Number: E112S
Regulatory Type: E112S001
June 2025
Rev. A00

DELL Technologies

## Notes, cautions, and warnings

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

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

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

# Contents

# 1

# PowerEdge R7725xd system configurations and features

The PowerEdge R7725xd system is a 2U server that supports:

- Two 5th Generation AMD EPYC 9005 Series processors with up to 192* cores per processor.
- Air cooling
- 24 DIMM slots
- Two redundant AC power supply units
- 24 x 2.5-inch U.2 Gen5 NVMe drives

**NOTE:** "This document provides a comprehensive list of product features. However, features marked with an asterisk (*) may not be available at launch but introduced in future updates. Please note that this document does not confirm the availability or release timeline of any feature. For the most accurate and up-to-date information on feature availability, please refer to the product configurator page on dell.com."

**NOTE:** *Feature not available at product launch in June 2025. Please 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**.

**NOTE:** The system board is known as the Host Processor Module (HPM) board in this document.

**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.**

**Topics:**



## Key workloads

The Dell PowerEdge R7725xd delivers the most storage-dense offering paired with rich I/O capability. Ideal for:

- Object Storage

## New technologies

**Table 1. New technologies**

| Technology | Detailed Description |
|---|---|
| AMD EPYC 5th Generation 9005 Series | Core count: Up to 192* cores for Zen5 processor |
| | CXL 2.0: Extending support to Type 3 memory |
| | PCIe link encryption and PCIe hotplug port reconfiguration |
| | Maximum TDP: 500 W |

**Table 1. New technologies (continued)**

| Technology | Detailed Description |
|---|---|
| 6400 MT/s DDR5 Memory | Up to 12 channels per CPU and 24 DIMMs in total |
| | Supports RDIMM with ECC up to 6400 MT/s. |
| PCIe Gen | Gen5 slots |
| PCIe Slot | Up to five* PCIe slots with x16 lanes |
| Rear I/O | Rear OCP FLOP with DC-MHS compliant |
| | BOSS-N1 DC-MHS |
| FPGA PESTI | Support payload data of BOSS N1-DC-MHS |
| DC-SCM | Datacenter-ready Secure Control Module |
| Software RAID | N/A |
| Power supplies | M-CRPS 73.5 mm and 60 mm support |

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

# 2

# Product comparison

**Table 2. Comparison of PowerEdge R7725xd and R7625**

| Feature | PowerEdge R7725xd | PowerEdge R7625 |
|---|---|---|
| **Processor** | Two 5th Generation AMD EPYC 9005 Series processors, with up to 192* cores for the Zen5 processor | Two 4th Generation AMD EPYC Genoa (SP5) series processors, with up to 128 cores for the Zen4c processor |
| **Chipset** | AMD chipset | AMD chipset |
| **Accelerators** | N/A | Up to two double-widths 300 W, or six single-width 75 W GPUs |
| **Memory** | | |
| DIMM speed | Up to 6400 MT/s | Up to 4800 MT/s |
| Memory type | RDIMM | RDIMM |
| Memory module slots | 24 DDR5 DIMM slots | 24 DDR5 DIMM slots |
| | **NOTE:** Supports registered ECC DDR5 DIMMs only. | **NOTE:** Supports registered ECC DDR5 DIMMs only. |
| **Storage** | | |
| Front bays | Up to 24 x 2.5-inch U.2 Gen5 NVMe drives | • Up to 8 x 3.5-inch SAS4/SATA (HDD/SSD) max 160 TB<br>• Up to 12 x 3.5-inch SAS/SATA (HDD/SSD) max 240 TB<br>• Up to 8 x 2.5-inch SAS/SATA/NVMe (HDD/SSD) max 122.88 TB<br>• Up to 16 x 2.5-inch SAS/SATA/ NVMe (HDD/SSD) max 245.76 TB<br>• Up to 24 x 2.5-inch SAS/SATA/ NVMe (HDD/SSD) max 368.64 TB<br>• Up to 8 x EDSFF E3.S Gen5 NVMe max 61.44 TB<br>• Up to 16 x EDSFF E3.S Gen5 NVMe max 122.88 TB<br>• Up to 32 x EDSFF E3.S Gen5 NVMe max 245.76 TB |
| Rear bays | N/A | • Up to 2 x 2.5-inch SAS4/SATA/ NVMe (HDD/SSD) max 30.72 TB<br>• Up to 4 x 2.5-inch SAS4/SATA/ NVMe (HDD/SSD) max 61.44 TB<br>• Up to 4 x EDSFF E3.S Gen5 NVMe max 30.72 TB |
| **Storage controllers** | | |
| Internal controllers | N/A | HBA355i, H355, H755, H755N, H965i, HBA465i |
| External controllers | N/A | HBA355e, HBA465e, H965e |
| Software RAID | N/A | S160 |

**Table 2. Comparison of PowerEdge R7725xd and R7625 (continued)**

| Feature | PowerEdge R7725xd | PowerEdge R7625 |
|---|---|---|
| Internal boot | Boot Optimized Storage Subsystem (BOSS-N1 DC-MHS) | Boot Optimized Storage Subsystem (BOSS): HW RAID 2 x M.2 SSDs 480 GB or 960 GB |
| | Internal USB | Internal USB |
| **Power supply** | • 3200 W Titanium 200-240 VAC or 240 HVDC, hot swap redundant<br>• 2400 W Titanium 100-240 VAC or 240 HVDC, hot swap redundant*<br>• 1800 W Titanium 200-240 VAC or 240 HVDC, hot swap redundant*<br>• 1500 W Titanium 100-240 VAC or 240 HVDC, hot swap redundant<br>• 1500 W Titanium 277 VAC or 336 VDC, hot swap redundant | • 3200 W Titanium 277 VAC or 336 VDC<br>• 2800 W Titanium 200—240 VAC or 240 HVDC<br>• 2400 W Platinum 100—240 VAC or 240 HVDC<br>• 1800 W Titanium 200—240 VAC or 240 HVDC<br>• 1400 W Titanium 100—240 VAC or 240 HVDC<br>• 1400 W Platinum 100—240 VAC or 240 HVDC<br>• 1400 W Titanium 277 VAC or 336 HVDC<br>• 1100 W Titanium 100—240 VAC or 240 HVDC<br>• 1100 W LVDC -48—-60 VDC<br>• 800 W Platinum 100—240 VAC or 240 HVDC |
| **Cooling Options** | • Air cooling | • Air Cooling<br>• Optional Direct Liquid Cooling (DLC) |
| **Fans** | Up to six High-Performance Silver/ High-Performance Gold/High-Performance Platinum hot plug fans | Up to six High-Performance Silver/High-Performance Gold hot plug fans |
| **Ports** | | |
| **Network options** | • 1 Gb dedicated BMC Ethernet port<br>• 1 x OCP NIC 3.0 Gen3 x4 card (optional) | • 2 x 1 GbE LOM card (optional)<br>• 1 x OCP card 3.0 (optional)<br>**NOTE:** The system allows either LOM card or OCP card or both to be installed in the system. |
| **Front ports** | • 1 x USB 2.0 (optional LCP-Secondary KVM)<br>• 1 x USB 2.0 (HOST/BMC Direct)<br>• 1 x Mini-Display port (optional LCP-Secondary KVM) | • 1 x Dedicated iDRAC Micro-USB<br>• 1 x USB 2.0<br>• 1 x VGA |
| **Rear ports** | • 1 Gb dedicated BMC Ethernet port<br>• 2 x USB 3.1 Type A ports<br>• 1 x VGA | • 1 x USB 2.0<br>• 1 x iDRAC Direct/Ethernet port<br>• 1 x USB 3.0<br>• 1 x VGA (optional for liquid cooling configuration) |
| **Internal ports** | 1 x USB 3.1 (optional) | 1 x USB 3.0 (optional) |
| **Slots** | | |
| PCIe | Up to five* PCIe Gen5 slots | Up to four PCIe Gen5 slots |
| **Form factor** | 2U rack server | 2U rack server |
| **Dimensions and weight** | | |

**Table 2. Comparison of PowerEdge R7725xd and R7625 (continued)**

| Feature | PowerEdge R7725xd | PowerEdge R7625 |
|---|---|---|
| Height | 86.8 mm (3.42 inches) | 86.8 mm (3.41 inches) |
| Width | 482.0 mm (18.98 inches) | 482 mm (18.97 inches) |
| Depth | 802.4 mm (31.59 inches) with bezel | 772.13 mm (30.39 inches) with bezel |
| | 801.51 mm (31.55 inches) without bezel | 758.29 mm (29.85 inches) without bezel |
| Weight | Max 26.95 kg (59.41 pounds) | Max 34.4 kg (75.84 pound) |
| **Bezel** | Optional Metal Bezel* | Optional LCD bezel or security bezel |
| **System management** | | |
| Embedded management | • iDRAC10<br>• iDRAC Direct<br>• iDRAC RESTful API with Redfish<br>• Racadm CLI<br>• Quick Sync 2 wireless module | • iDRAC9<br>• iDRAC Direct<br>• iDRAC RESTful API with Redfish<br>• iDRAC Service Manual<br>• Quick Sync 2 wireless module |
| OpenManage console | • OpenManage Enterprise (OME)<br>• OME Power Manager<br>• OME Services<br>• OME Update Manager<br>• OME APEX AIOps Observability<br>• OME Integration for VMware vCenter (with VMware Aria Operations)<br>• OME Integration for Microsoft System Center<br>• OpenManage Integration for Windows Admin Center | • OpenManage Enterprise<br>• OpenManage Power Manager plug-in<br>• OpenManage Services plug-in<br>• OpenManage Update Manager plug-in |
| Mobility | N/A | OpenManage Mobile |
| Tools | IPMI | IPMI |
| Change Management | • Dell Repository Manager<br>• Dell System Update<br>• Enterprise Catalogs<br>• Server Update Utility (SUU) | N/A |
| OpenManage Integrations | • Red Hat Ansible Collections<br>• Terraform Providers | • BMC True sight<br>• Microsoft System Center<br>• OpenManage Integration with ServiceNow<br>• Red Hat Ansible Modules<br>• Terraform Providers<br>• VMware vCenter and vRealize Operations Manager |
| Security | • AMD Secure Encrypted Virtualization (SEV)<br>• AMD Secure Memory Encryption (SME)<br>• Cryptographically signed firmware<br>• Data at Rest Encryption (SEDs with local or external key mgmt)<br>• Secure Boot<br>• Secured Component Verification (Hardware integrity check)<br>• Secure Erase | • AMD Secure Encrypted Virtualization (SEV)<br>• AMD Secure Memory Encryption (SME)<br>• Cryptographically signed firmware<br>• Data at Rest Encryption (SEDs with local or external key mgmt<br>• Secure Boot<br>• Secured Component Verification (Hardware integrity check)<br>• Secure Erase |

**Table 2. Comparison of PowerEdge R7725xd and R7625 (continued)**

| Feature | PowerEdge R7725xd | PowerEdge R7625 |
|---|---|---|
| | • Silicon Root of Trust<br>• System Lockdown (requires iDRAC10 Enterprise or Datacener)<br>• TPM 2.0 FIPS, CC-TCG certified<br>• Chassis Intrusion Detection | • Silicon Root of Trust<br>• System Lockdown (requires iDRAC9 Enterprise or Datacenter)<br>• TPM 2.0 FIPS, CC-TCG certified, TPM 2.0 China NationZ<br>• Chassis Intrusion Detection |
| **Operating System and Hypervisors** | • Canonical Ubuntu Server LTS<br>• Microsoft Windows Server with Hyper-V*<br>• RedHat Enterprise Linux<br>• VMware ESXi*<br>• SUSE Linux Enterprise Server<br>For specifications and interoperability details, see Dell Enterprise Operating Systems on Servers, Storage, and Networking page at OSsupport | • Canonical Ubuntu Server LTS<br>• Microsoft Windows Server with Hyper-V<br>• Red Hat Enterprise Linux<br>• SUSE Linux Enterprise Server<br>• VMware ESXi<br>For specifications and interoperability details, see Dell Enterprise Operating Systems on Servers, Storage, and Networking page at OSsupport |

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

# 3

# Chassis views and features

**Topics:**

- System configurations - front view for PowerEdge R7725xd system
- System configurations - rear view for PowerEdge R7725xd system
- System configurations - inside view for PowerEdge R7725xd system

## System configurations - front view for PowerEdge R7725xd system

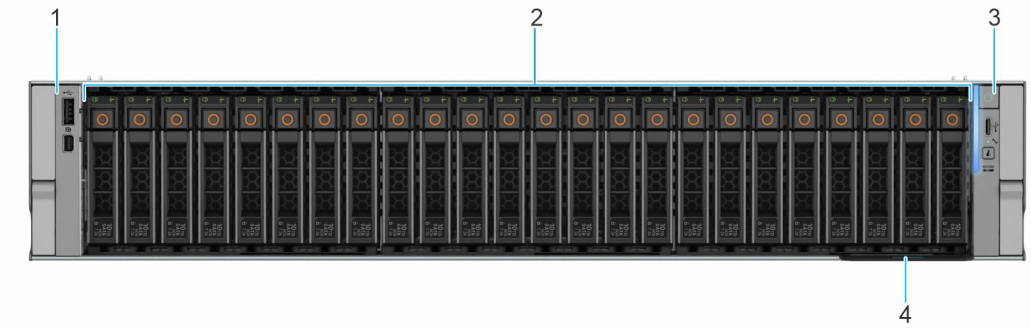


**Figure 1. Front view of the 24 x 2.5-inch U.2 Gen5 NVMe drive system**

**Table 3. Features are available on the front of the system**

| Item | Ports, panels, and slots | Icon | Description |
|---|---|---|---|
| 1 | Left Control Panel (LCP) - Secondary | N/A | Contains the USB 2.0 Type-A port (optional LCP - Secondary KVM) and the Mini DisplayPort (optional LCP - Secondary KVM).<br>• USB 2.0 Type-A port (optional LCP - Secondary KVM): This port is USB 2.0-compliant with optional LCP - Secondary KVM functions.<br>• Mini DisplayPort: Enables you to connect a display device to the system.<br>**NOTE:** Use a certified Mini DisplayPort to DisplayPort cable complying with VESA DisplayPort standards for video output with a monitor. |

**Table 3. Features are available on the front of the system (continued)**

| Item | Ports, panels, and slots | Icon | Description |
|---|---|---|---|
| | | | **NOTE:** Mini DisplayPort to VGA or Mini DisplayPort to HDMI adapters are not recommended. |
| 2 | Drive | N/A | Enables you to install drives that are supported on your system. |
| 3 | Right Control Panel (RCP) - Primary | N/A | Contains the power button, USB 2.0 Type-C port (HOST/BMC Direct), and the system identification button. |
| 4 | 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 Express service tag also contains the iDRAC secure default password. |

**NOTE:** For more information about the ports, see the **Technical Specifications section** in the *Installation and Service Manual* available on the PowerEdge Manuals.

# System configurations - rear view for PowerEdge R7725xd system

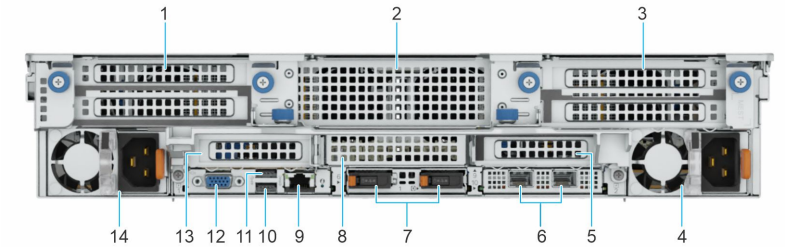


**Figure 2. Rear view of the system with Riser 1 + Riser 2 + Riser 4 + Riser 5 (RC1)**

**Table 4. Rear view of the system with Riser 1 + Riser 2 + Riser 4 + Riser 5 (RC1)**

| Item | Ports, panels, or slots | Icon | Description |
|---|---|---|---|
| 1 | PCIe expansion card riser 1 | N/A | Enables you to connect PCI Express expansion cards. |
| 2 | PCIe expansion card riser 3 blank | N/A | Riser blank is installed in the expansion card riser bay. |
| 3 | PCIe expansion card riser 5 | N/A | Enables you to connect PCI Express expansion cards. |
| 4 | Power supply unit (PSU 2) | 2 | Indicates the PSU 2. |

**Table 4. Rear view of the system with Riser 1 + Riser 2 + Riser 4 + Riser 5 (RC1) (continued)**

| Item | Ports, panels, or slots | Icon | Description |
|---|---|---|---|
| 5 | PCIe expansion card riser 4 | N/A | Enables you to connect PCI Express expansion cards. |
| 6 | OCP 3.0 Gen3 x4 NIC ports | N/A | This port supports OCP 3.0. |
| 7 | BOSS-N1 DC-MHS | N/A | Enables you to install the BOSS-N1 Datacenter Modular Hardware System (DC-MHS) module. |
| 8 | PCIe expansion card riser 2 mid blank | N/A | Riser blank is installed in the expansion card riser bay. |
| 9 | Dedicated BMC Ethernet port | | Enables you to remotely access Open Server Manager. |
| 10 | USB 3.1 port | | The USB port is 9-pin and 3.0-compliant. This port enables you to connect USB devices to the system. |
| 11 | USB 3.1 port | | The USB port is 9-pin and 3.0-compliant. This port enables you to connect USB devices to the system. |
| 12 | VGA port | | Enables you to connect a display device to the system. |
| 13 | PCIe expansion card riser 2 blank | N/A | Riser blank is installed in the expansion card riser bay. |
| 14 | Power supply unit (PSU 1) | 1 | Indicates the PSU 1. |

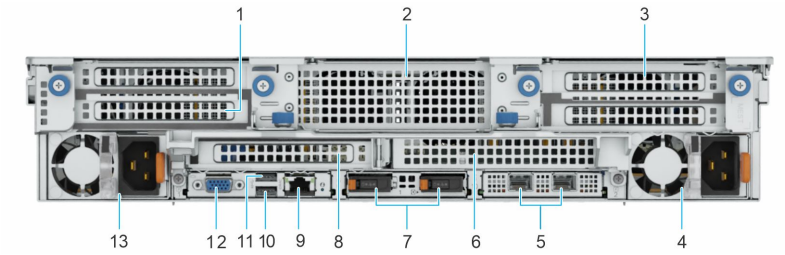


**Figure 3. Rear view of the system with Riser 1 + Riser 2 + Riser 5 (RC3)**

**Table 5. Rear view of the system with Riser 1 + Riser 2 + Riser 5 (RC3)**

| Item | Ports, panels, or slots | Icon | Description |
|---|---|---|---|
| 1 | PCIe expansion card riser 1 | N/A | Enables you to connect PCI Express expansion cards. |
| 2 | PCIe expansion card riser 3 blank | N/A | Riser blank is installed in the expansion card riser bay. |
| 3 | PCIe expansion card riser 5 | N/A | Enables you to connect PCI Express expansion cards. |
| 4 | Power supply unit (PSU 2) | 2 | Indicates the PSU 2. |
| 5 | OCP 3.0 Gen3 x4 NIC ports | N/A | This port supports OCP 3.0. |
| 6 | PCIe expansion card riser 4 blank | N/A | Riser blank is installed in the expansion card riser bay. |

### Table 5. Rear view of the system with Riser 1 + Riser 2 + Riser 5 (RC3) (continued)

| Item | Ports, panels, or slots | Icon | Description |
|---|---|---|---|
| 7 | BOSS-N1 DC-MHS | N/A | Enables you to install the BOSS-N1 Datacenter Modular Hardware System (DC-MHS) module. |
| 8 | PCIe expansion card riser 2 | N/A | Enables you to connect PCI Express expansion cards. |
| 9 | Dedicated BMC Ethernet port | | Enables you to remotely access Open Server Manager. |
| 10 | USB 3.1 port | | The USB port is 9-pin and 3.0-compliant. This port enables you to connect USB devices to the system. |
| 11 | USB 3.1 port | | The USB port is 9-pin and 3.0-compliant. This port enables you to connect USB devices to the system. |
| 12 | VGA port | | Enables you to connect a display device to the system. |
| 13 | Power supply unit (PSU 1) | 1 | Indicates the PSU 1. |

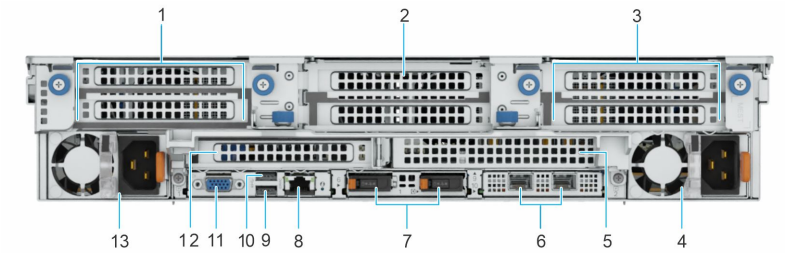


**Figure 4. Rear view of the system with Riser 1 + Riser 2 + Riser 3 + Riser 5 (RC4)***

### Table 6. Rear view of the system with Riser 1 + Riser 2 + Riser 3 + Riser 5 (RC4)*

| Item | Ports, panels, or slots | Icon | Description |
|---|---|---|---|
| 1 | PCIe expansion card riser 1 | N/A | Enables you to connect PCI Express expansion cards. |
| 2 | PCIe expansion card riser 3 | N/A | Enables you to connect PCI Express expansion cards. |
| 3 | PCIe expansion card riser 5 | N/A | Enables you to connect PCI Express expansion cards. |
| 4 | Power supply unit (PSU 2) | 2 | Indicates the PSU 2. |
| 5 | PCIe expansion card riser 4 blank | N/A | Riser blank is installed in the expansion card riser bay. |
| 6 | OCP 3.0 Gen3 x4 NIC ports | N/A | This port supports OCP 3.0. |
| 7 | BOSS-N1 DC-MHS | N/A | Enables you to install the BOSS-N1 Datacenter Modular Hardware System (DC-MHS) module. |
| 8 | Dedicated BMC Ethernet port | | Enables you to remotely access Open Server Manager. |

**Table 6. Rear view of the system with Riser 1 + Riser 2 + Riser 3 + Riser 5 (RC4)* (continued)**

| Item | Ports, panels, or slots | Icon | Description |
|---|---|---|---|
| 9 | USB 3.1 port | | The USB port is 9-pin and 3.0-compliant. This port enables you to connect USB devices to the system. |
| 10 | USB 3.1 port | | The USB port is 9-pin and 3.0-compliant. This port enables you to connect USB devices to the system. |
| 11 | VGA port | | Enables you to connect a display device to the system. |
| 12 | PCIe expansion card riser 2 | N/A | Enables you to connect PCI Express expansion cards. |
| 13 | Power supply unit (PSU 1) | 1 | Indicates the PSU 1. |

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

# System configurations - inside view for PowerEdge R7725xd system

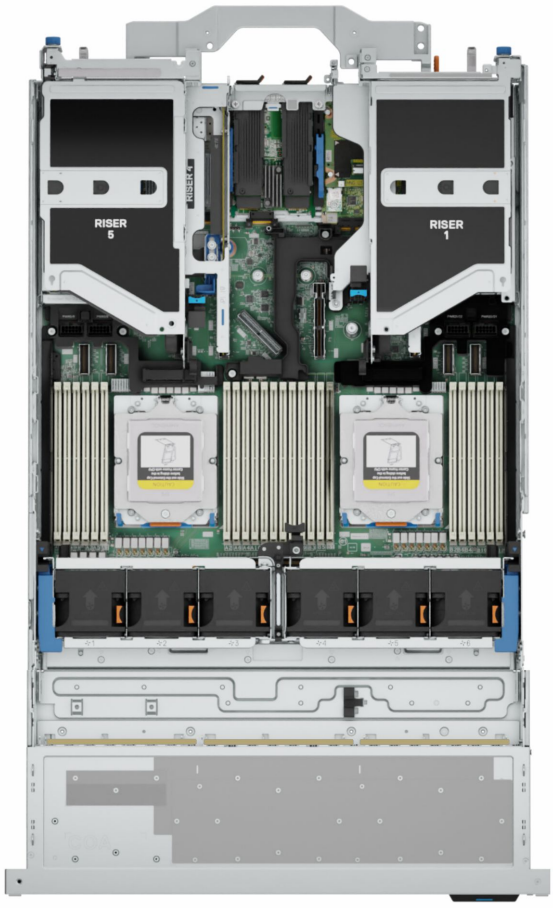


**Figure 5. Inside the system with Riser 1 + Riser 2 + Riser 4 + Riser 5 (RC1)**

1. Chassis handle
2. Riser 2
3. Datacenter Secure Control Module (DC-SCM)
4. Riser 1
5. Intrusion Switch
6. Host Processor Module (HPM) board
7. Processor heat sink module for processor 1
8. Memory DIMM sockets for processor 1
9. Cooling fans
10. Backplane
11. Express service tag
12. Cooling fan cage
13. Memory DIMM sockets for processor 0
14. Processor heat sink module for processor 0
15. Riser 5
16. Riser 4
17. BOSS-N1 module

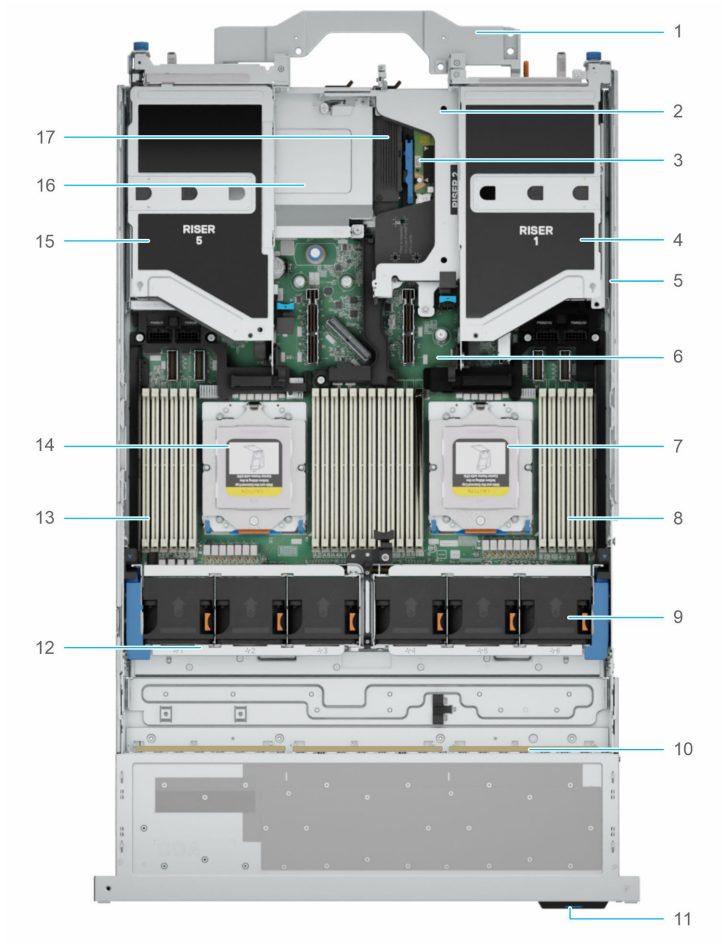


**Figure 6. Inside the system with Riser 1 + Riser 2 + Riser 5 (RC3)**

1. Chassis handle
2. Riser 2
3. Datacenter Secure Control Module (DC-SCM)
4. Riser 1
5. Intrusion Switch
6. Host Processor Module (HPM) board
7. Processor heat sink module for processor 1
8. Memory DIMM sockets for processor 1

9. Cooling fans
10. Backplane
11. Express service tag
12. Cooling fan cage
13. Memory DIMM sockets for processor 0
14. Processor heat sink module for processor 0
15. Riser 5
16. Riser 4 blank
17. BOSS-N1 module

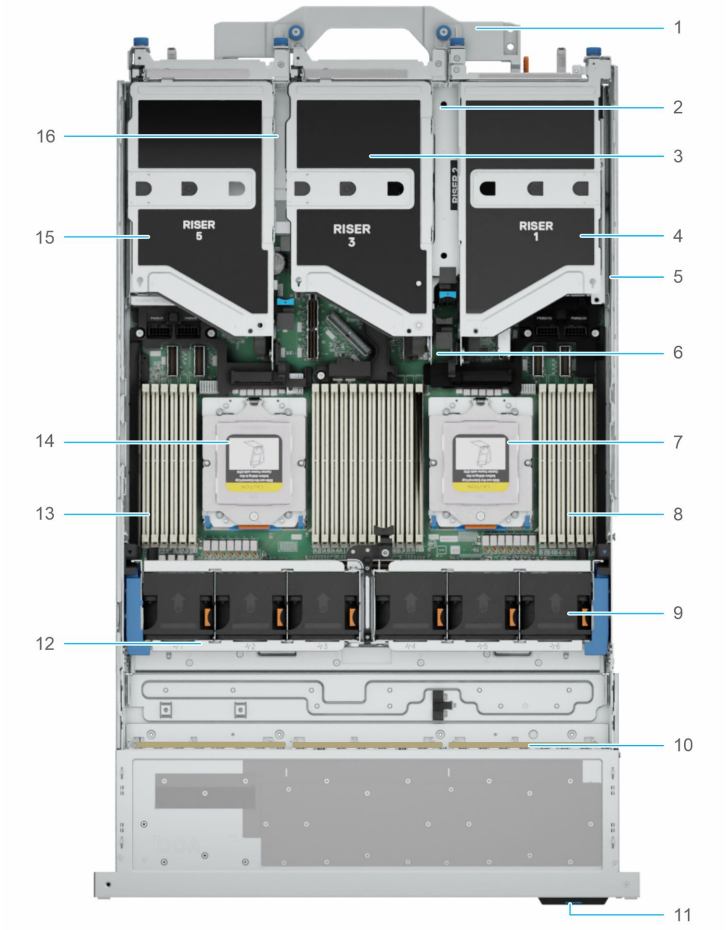


**Figure 7. Inside the system with Riser 1 + Riser 2 + Riser 3 + Riser 5 (RC4)***

1. Chassis handle
2. Riser 2
3. Riser 3
4. Riser 1
5. Intrusion Switch
6. Host Processor Module (HPM) board
7. Processor heat sink module for processor 1
8. Memory DIMM sockets for processor 1
9. Cooling fans
10. Backplane
11. Express service tag
12. Cooling fan cage
13. Memory DIMM sockets for processor 0
14. Processor heat sink module for processor 0
15. Riser 5
16. Riser 4 blank

**NOTE:** The system board is known as the Host Processor Module (HPM) board in this document.

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

# 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
  - 12 DDR5 memory channels 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)

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

## Supported processors

The following table shows the 5th Generation AMD EPYC 9005 Series processor SKUs that are supported on the R7725xd.

**Table 7. supported Processor list**

| Processor | Base Clock Speed (GHz) | Max Clock Speed (GHz) | Cache (M) | Cores | Threads | Turbo | Memory Speed (MT/s) | Memory Capacity (TB) | TDP (W) |
|---|---|---|---|---|---|---|---|---|---|
| 9655 | 2.6 | 4.5 | 384 | 96 | 192 | Turbo | 6400 | 6 | 400 |
| 9575F | 3.3 | 5.0 | 256 | 64 | 128 | Turbo | 6400 | 6 | 400 |
| 9555 | 3.2 | 4.4 | 256 | 64 | 128 | Turbo | 6400 | 6 | 360 |

# 5

# Memory subsystem

**Topics:**



## Supported memory

The R7725xd supports up to 24 DIMMs (12 per socket), with up to 3 TB* of memory and speeds of up to 6400 MT/s.

The R7725xd 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 8. Memory technology comparison**

| Feature | PowerEdge R7725xd (DDR5) |
|---|---|
| DIMM type | RDIMM |
| Transfer speed | Up to 6400 MT/s<br>**NOTE:** Maximum DIMM transfer speed support dependent on CPU SKU and DIMM population. |
| Voltage | 1.1 V |

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

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

## System memory guidelines

The PowerEdge R7725xd system supports DDR5 registered DIMMs (RDIMMs). System memory holds the instructions that are started by the processor.

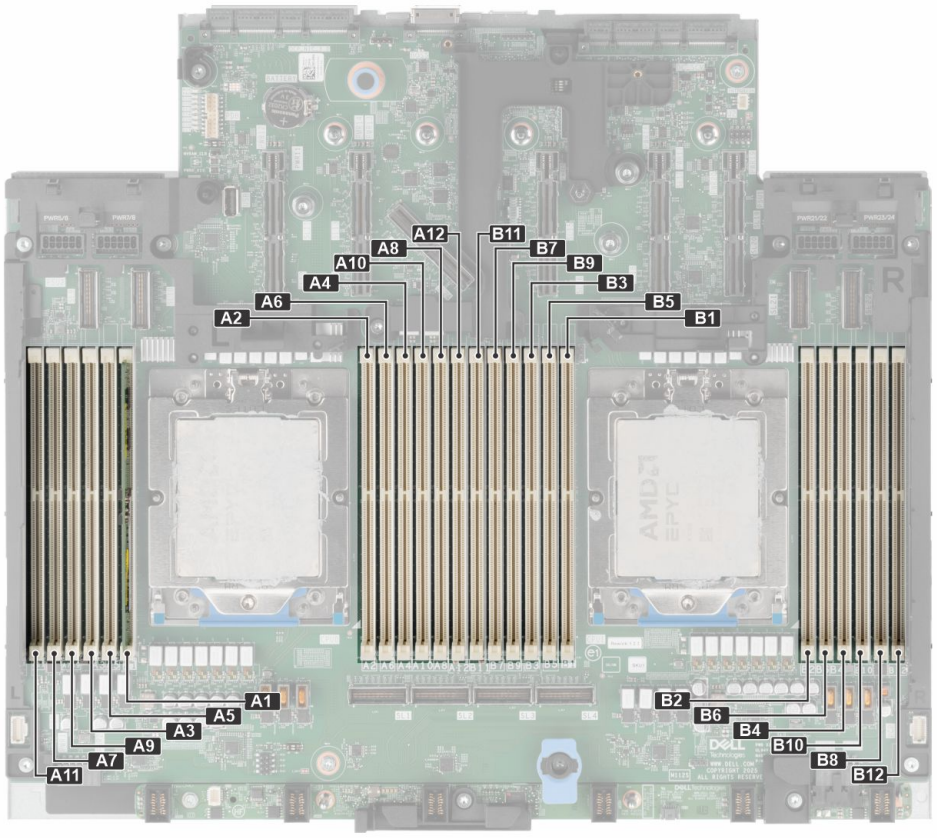


**Figure 8. Memory channels**

Memory channels are organized as follows:

### Table 9. Memory channels A through F

| Processor | Channel A | Channel B | Channel C | Channel D | Channel E | Channel F |
|---|---|---|---|---|---|---|
| Processor 0 | Slots A1 | Slots A5 | Slots A3 | Slots A9 | Slots A7 | Slots A11 |
| Processor 1 | Slots B1 | Slots B5 | Slots B3 | Slots B9 | Slots B7 | Slots B11 |

### Table 10. Memory channels G through L

| Processor | Channel G | Channel H | Channel I | Channel J | Channel K | Channel L |
|---|---|---|---|---|---|---|
| Processor 0 | Slots A2 | Slots A6 | Slots A4 | Slots A10 | Slots A8 | Slots A12 |
| Processor 1 | Slots B2 | Slots B6 | Slots B4 | Slots B10 | Slots B8 | Slots B12 |

### Table 11. Supported memory matrix

| DIMM type | Rank | Capacity | DIMM rated voltage and speed | Operating Speed |
|---|---|---|---|---|
| | | | | 1 DIMM per channel (DPC) |
| RDIMM | 2 R | 32 GB, 64 GB | DDR5 (1.1 V), 6400 MT/s | 6400 MT/s |

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

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

# 6

# Storage

**Topics:**



## Supported Drives

The table that is shown below lists the internal drives that are supported in R7725xd. See Agile for the latest SDL.

**Table 12. Supported drives**

| Form Factor | Type | Capacities |
|---|---|---|
| 2.5-inch NVMe | Ent. MU | 1.6 TB, 3.2 TB, 6.4 TB |
| | Ent. RI | 1.92 TB, 3.84 TB, 7.68 TB, 15.36 TB, 30.72 TB, 61.44 TB, 122 TB* |
| | DC MU | 800 GB, 1.6 TB, 3.2 TB |
| | DC RI | 1.92 TB, 3.84 TB, 7.68 TB, 15.36 TB |
| M.2 NVMe | NVMe | 480 GB, 960 GB |

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

## Solid State Drives (SSDs)

### SSD Facts

Unlike hard disk drives (HDDs) which use a spinning platter to store data, solid state drives (SSDs) use solid state memory NAND flash. HDDs have several different mechanical moving parts which make them susceptible to vibrational and handling interference. Solid state drives, on the other hand have no moving parts and are less susceptible to vibrational or handling damage even when impacted during use.

SSDs deliver high-performance I/O operations per second (IOPS), and low latency for transaction - intensive server and storage applications. Properly used in systems, they reduce total cost of ownership (TCO) through low power consumption and low operating temperature.

Dell offers different solid state drive (SSD) solutions to meet different customer needs. Enterprise & Data Center SSDs, as a class, are unique compared to client or consumer-based SSD in terms of reliability, performance, and architecture. While consumer-based SSDs, such as those utilized in notebooks are designed with a focus on consumer-based workloads, rigidity and battery life, enterprise-class SSDs are designed around enterprise application I/O (I/O) requirements with focus points of random I/O performance, reliability, and protection of data during a sudden power-down.

Understanding the basics of enterprise-class SSDs allow customers to make informed decisions when comparing solutions:

- Over-provisioning: The Achilles' heel of SSDs are their write characteristics. To rewrite an area of an SSD that has already been written, the data must be erased and then written. In order to overcome a portion of the write performance penalty, Dell enterprise SSDs found across Dell PowerEdge products, all employ a practice that is known as over-provisioning of Flash. This practice keeps native Flash capacity beyond the user-defined capacity and uses the additional space as a scratch pad of sorts to quickly put down application write data on areas of Flash that are already in an erased state. The

SSDs perform cleanup functions of this over-provisioned Flash space during time periods typically not impacting application performance.

- Write Endurance: Write endurance is the number of program/erase (P/E or write cycles) that can be applied to a block of flash memory before the storage media becomes unreliable. Due to different data center workloads and read/write needs, Dell offers different enterprise SSDs with different endurance ratings so customers can design the right solution for their needs.

Below are the different categories (swim lanes) of enterprise SSDs Dell offers:

- Mixed Use (MU, 3 WPD): 70/30 read/write workloads with medium endurance. E-mail/messaging, OLTP, and Ecommerce are example workloads.
- Read Intensive (RI, 1 WPD): 90/10 read/write workloads with lower endurance. Database warehousing, media streaming, and VOD solutions are example workloads.

Dell enterprise SSDs support two kinds of host interface options:

- NVMe SSD: NVMe SSDs are a mainstream, high-performance, high reliability solid-state storage device that enables IOPS performance of up to 2000x more than conventional rotating hard drives.
- SATA SSD: SATA SSDs are based on the industry-standard SATA interface. SATA SSDs provide reasonable performance for enterprise servers.

There are two classes of NVMe drives used in servers: Enterprise NVMe and Data Center NVMe SSDs:

- Data Center NVMe SSDs: This class features a balance of various factors, including performance, latency, data protection, power consumption, and affordability.
- Enterprise NVMe SSDs: Representing the premium option, this class boasts the best performance, lowest latency, robust data protection, wide capacity ranges, and extensive firmware features. However, this comes at the expense of higher power consumption and a higher price point.

Together, Dell's Enterprise and Data Center NVMe drive portfolio offers a diverse range of options for customers, covering everything from high-performance drives to cost-optimized solutions. Additionally, these drives challenge the existence of any interface other than NVMe for SSDs.

Dell Enterprise SSDs support E3.S form factor:

- E3.S: Part of the EDSFF family, E3.S is targeted to NVMe SSDs with x4 PCIe link widths. It supports power profiles up to 25 W and is positioned to be a primary form factor for mainstream NVMe server storage subsystems as it can be used across a wide variety of platforms including modular and short depth chassis.

## SSD Feature Matrix

The following table shows the types of SSD configurations on the PowerEdge R7725xd:

### Table 13. SSD feature matrix

| Type | Model | Interface | Class | Speed | From Factor | Endurance | Security | Capacity |
|---|---|---|---|---|---|---|---|---|
| SSD | Agnostic | NVMe | Data Center | Gen5 | 2.5 | RI | ISE | 15.36 TB |
| SSD | Agnostic | NVMe | Enterprise | Gen5 | 2.5 | RI | ISE | 15.36 TB |
| SSD | Agnostic | NVMe | Enterprise | Gen4 | 2.5 | VRI | ISE | 122.88 TB* |
| SSD | Agnostic | NVMe | Enterprise | Gen5 | 2.5 | VRI | ISE | 122.88 TB* |
| SSD | Agnostic | NVMe | Enterprise | Gen4 | 2.5 | VRI | ISE | 30.72 TB |
| SSD | Agnostic | NVMe | Enterprise | Gen5 | 2.5 | VRI | ISE | 30.72 TB |
| SSD | Agnostic | NVMe | Enterprise | Gen4 | 2.5 | VRI | ISE | 61.44 TB |
| SSD | Agnostic | NVMe | Enterprise | Gen5 | 2.5 | VRI | ISE | 61.44 TB |
| SSD | Agnostic | NVMe | Enterprise | Gen5 | 2.5 | RI | ISE | 1.92 TB |
| SSD | Agnostic | NVMe | Enterprise | Gen5 | 2.5 | RI | ISE | 3.84 TB |
| SSD | Agnostic | NVMe | Enterprise | Gen5 | 2.5 | RI | ISE | 7.68 TB |
| SSD | Agnostic | NVMe | Enterprise | Gen4 | 2.5 | MU | ISE | 1.6 TB |

**Table 13. SSD feature matrix (continued)**

| Type | Model | Interface | Class | Speed | From Factor | Endurance | Security | Capacity |
|---|---|---|---|---|---|---|---|---|
| SSD | Agnostic | NVMe | Enterprise | Gen4 | 2.5 | MU | ISE | 3.2 TB |
| SSD | Agnostic | NVMe | Enterprise | Gen4 | 2.5 | MU | ISE | 6.4 TB |
| SSD | Agnostic | NVMe | Enterprise | Gen5 | 2.5 | MU | ISE | 3.2 TB |
| SSD | Agnostic | NVMe | Enterprise | Gen5 | 2.5 | MU | ISE | 6.4 TB |
| SSD | Agnostic | NVMe | Enterprise | Gen5 | 2.5 | RI | ISE | 3.84 TB |
| SSD | Agnostic | NVMe | Enterprise | Gen5 | 2.5 | RI | ISE | 7.68 TB |
| SSD | Agnostic | NVMe | Data Center | Gen5 | 2.5 | RI | ISE | 1.92 TB |
| SSD | Agnostic | NVMe | Data Center | Gen5 | 2.5 | RI | ISE | 3.84 TB |
| SSD | Agnostic | NVMe | Data Center | Gen5 | 2.5 | RI | ISE | 7.68 TB |
| SSD | Agnostic | NVMe | Data Center | Gen5 | 2.5 | MU | ISE | 1.6 TB |
| SSD | Agnostic | NVMe | Data Center | Gen5 | 2.5 | MU | ISE | 3.2 TB |
| SSD | Agnostic | NVMe | Data Center | Gen5 | 2.5 | MU | ISE | 800 GB |

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

This document is updated as changes happen, so be sure to bookmark it rather than downloading an offline copy to stay with the latest information or see the Drive and Platform Matrix.

# Internal storage configuration

R7725xd available internal storage configurations:

- 24 x 2.5-inch U.2 Gen5 NVMe

# Boot Optimized Storage Solution (BOSS)

BOSS is a RAID solution that is designed to boot operating systems and segregate operating system boot drives from data on server-internal storage.

## BOSS feature matrix

**Table 14. BOSS feature matrix**

| BOSS card | Drive Size | RAID levels | Stripe size | Virtual disk cache function | Maximum number of virtual disks | Maximum number of drives supported | Drive types | PCIe support | Disk cache policy | Support for Non-RAID disks | Cryptographic digital signature to verify firmware payload | Hot Plug |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BOSS-N1 DC-MHS | M.2 devices are read- | RAID 1 and RAID 0 | Supports default 64 K | None | 1 | 2 | M.2 NVMe | Gen3 | Drive default | No | Yes | No |

### Table 14. BOSS feature matrix

| BOSS card | Drive Size | RAID levels | Stripe size | Virtual disk cache function | Maximum number of virtual disks | Maximum number of drives supported | Drive types | PCIe support | Disk cache policy | Support for Non-RAID disks | Cryptographic digital signature to verify firmware payload | Hot Plug |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flatbread | intensive with 480 GB or 960 GB capacity. | | stripe size only. | | | | | | | | | |

**NOTE:** The system can support BOSS in the rear of the system.

# 7

# Networking

**Topics:**



## Overview

PowerEdge offers a wide variety of options to get information moving to and from our servers. Industry best technologies are chosen and these adapters are rigorously validated for worry-free, fully supported use in Dell servers.

## OCP 3.0 support

**Table 15. OCP 3.0 feature list**

| Feature | OCP 3.0 |
|---|---|
| Form factor | SFF |
| PCIe Gen | Gen5 |
| Max PCIe width | x16 |
| Max number of ports | 4 |
| Port type | BT/SFP/SFP28/QSFP56/QSFP112 |
| Max port speed | 400 GbE |
| NC-SI | Yes, support on embedded slot (slot 5) only. |
| SNAP I/O | N/A |
| WoL | Yes |
| Power consumption | 15 W–35 W |

## Supported OCP cards

**Table 16. Supported OCP cards**

| Form factor | Vendor | Port type | Port speed | Port count |
|---|---|---|---|---|
| OCP 3.0 | Broadcom* | BT | 1 GbE | 4 |
| | Broadcom | BT | 10 GbE | 2 |

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

# OCP NIC 3.0 vs 2.0

**Table 17. OCP 3.0 and 2.0 NIC comparison**

| Form Factor | OCP 3.0 | OCP 2.0 (LOM Mezz) | Notes |
|---|---|---|---|
| PCIe Gen | Gen5 | Gen3 | Supported OCP3 is SFF (small form factor). |
| Max PCIe Lanes | Up to x16 | Up to x16 | See server slot priority matrix. |
| Shared LOM/DC-SCM | Yes | Yes | Only OCP on slot 10 (embedded OCP slot) can support BMC port redirect as shared NIC. |
| Aux Power | Yes | Yes | Used for Shared LOM |

# 8

# PCIe subsystem

**Topics:**

- PCIe risers

## PCIe risers

Shown below are the riser offerings for the platform.

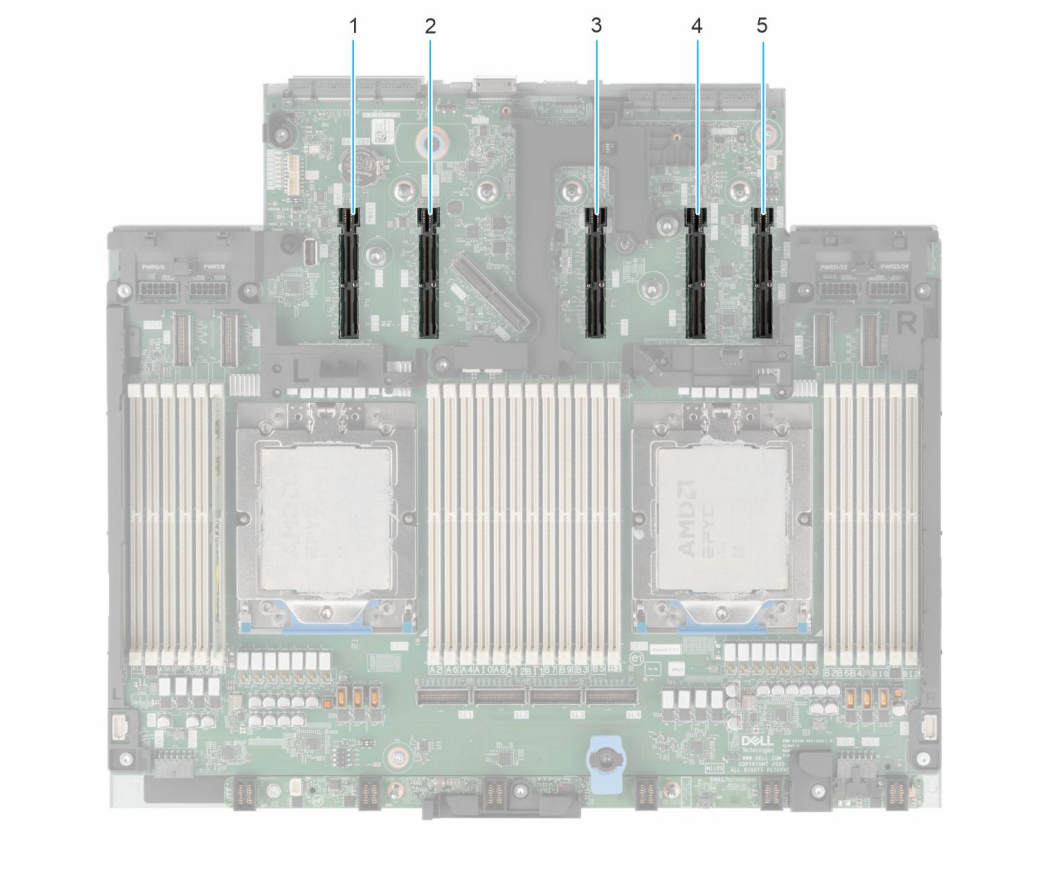


**Figure 9. Riser connector location on the HPM board**

1. Riser Connector 5
2. Riser Connector 4
3. Riser Connector 3
4. Riser Connector 1
5. Riser Connector 2

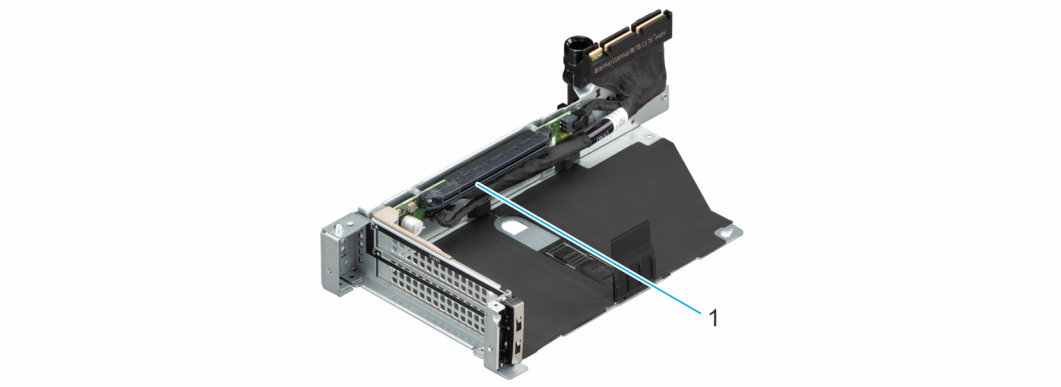


**Figure 10. Riser 1b**

1. Slot 2

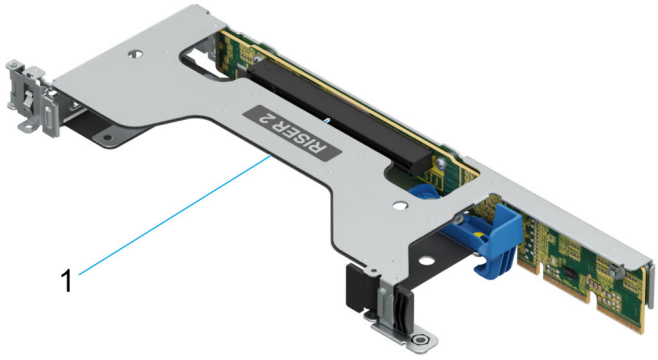


**Figure 11. Riser 2a**

1. Slot 3

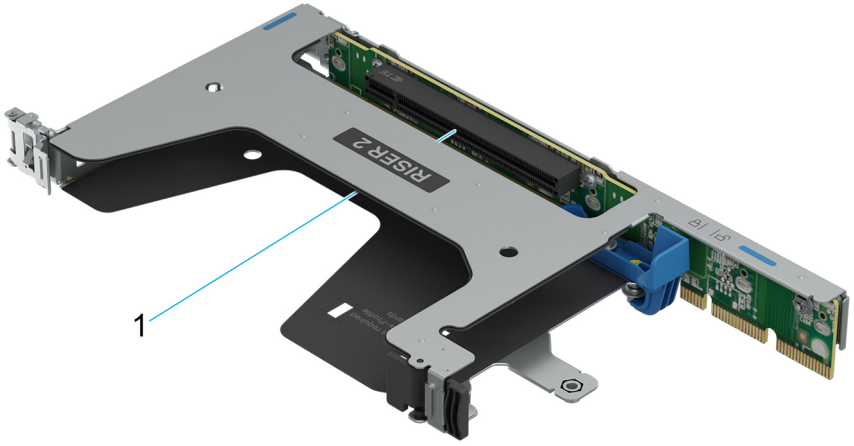


**Figure 12. Riser 2b**

1. Slot 3

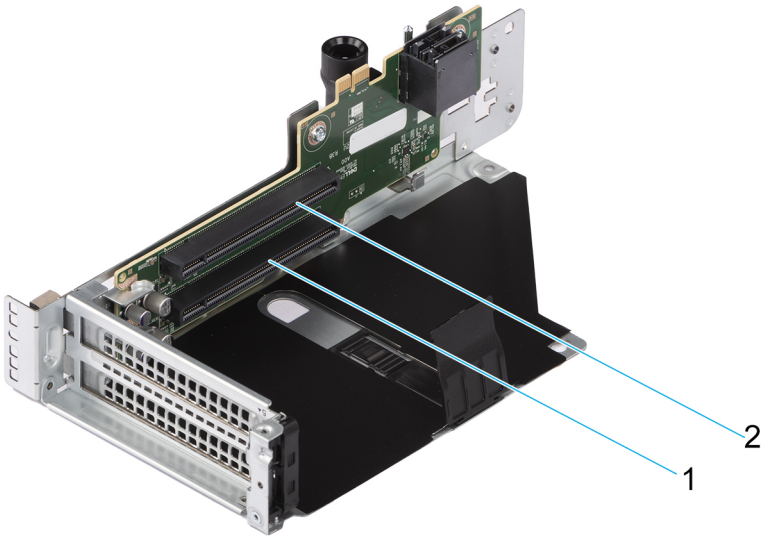


**Figure 13. Riser 3b***

1. Slot 4

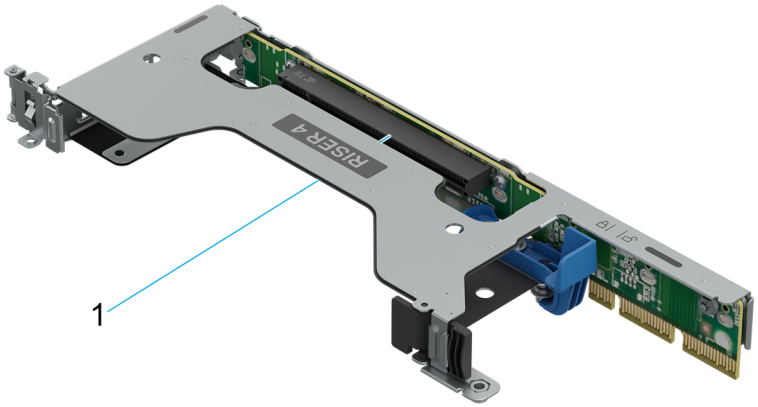


**Figure 14. Riser 4a**

1. Slot 9

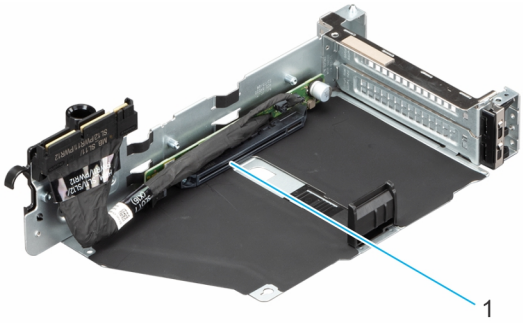


**Figure 15. Riser 5b**

1. Slot 7

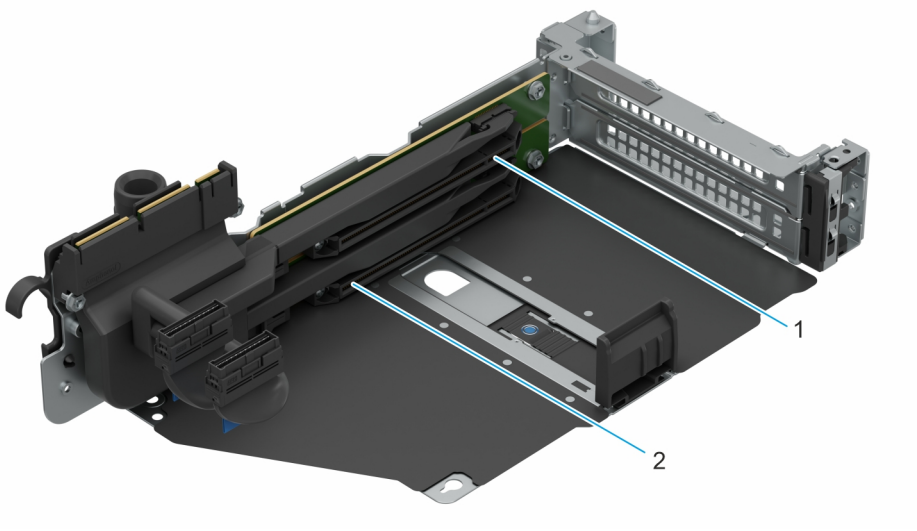


**Figure 16. Riser 5e**

1. Slot 7
2. Slot 8

### Table 18. PCIe Riser Configurations

| Config No. | Riser configuration | No. of Processors | PERC type supported | Rear storage possible |
|---|---|---|---|---|
| 1 | R1b+R2a+R4a+R5b | 2 | N/A | No |
| 3 | R1b+R2b+R5e | 2 | N/A | No |
| 4* | R1b+R2b+R3b+R5e | 2 | N/A | No |

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

# 9

# 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

**Table 19. 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:<br>● Dell's power monitoring accuracy is currently 1%, whereas the industry standard is 5%<br>● More accurate reporting of power |
| Rack infrastructure | Dell offers some of the industry's highest-efficiency power infrastructure solutions, including:<br>● Power distribution units (PDUs)<br>● Uninterruptible power supplies (UPSs)<br>● Energy Smart containment rack enclosures<br>● AC Blind Mate<br>Find additional information at: Power and Cooling |

## 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 system.

### Table 20. PSU specifications

| PSU | Class | Heat dissipation (maximum) (BTU/hr) | Frequency (Hz) | Input voltage | AC Voltage | | | DC Voltage | | Current (A) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | High line 200–240 V | Low line 100–120 V | 277 V | 240 V | 336 V | |
| 1500 W mixed mode | Titanium | 5625 | 50/60 | 100-240 Vac | 1500 W | 1050 W | N/A | N/A | N/A | 12-8.2 |
| | N/A | 5625 | N/A | 240 Vdc | N/A | N/A | N/A | 1500 W | N/A | 6.8 |
| 1800 W mixed mode* | Titanium | 6750 | 50/60 | 200-240 Vac | 1800 W | N/A | N/A | N/A | N/A | 9.8-8.2 |
| | N/A | 6750 | N/A | 240 Vdc | N/A | N/A | N/A | 1800 W | N/A | 8.2 |
| 2400 W mixed mode* | Titanium | 9000 | 50/60 | 100-240 Vac | 2400 W | 1400 W | N/A | N/A | N/A | 16-13.2 |
| | N/A | 9000 | N/A | 240 Vdc | N/A | N/A | N/A | 2400 W | N/A | 10.9 |
| 3200 W mixed mode | Titanium | 12000 | 50/60 | 200-240 Vac | 2900 W[1] / 3200 W[2] | N/A | N/A | N/A | N/A | 16 |
| | N/A | 12000 | N/A | 240 Vdc | N/A | N/A | N/A | 3200 W | N/A | 14.5 |

**NOTE:** [1] indicates the power rating for 200–220 Vac and [2] indicates the power rating for 220.1–240 Vac.

**NOTE:** If a system with AC 1500 W PSUs operates at low line 100-120 Vac, then the power rating per PSU is degraded to 1050 W.

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

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


**Figure 17. C13 power cord**

### Table 21. PSU power cables

| Form factor | Output | Power Cord |
|---|---|---|
| 73.5 mm | 2400 W mixed mode* | C19 |
| | 3200 W mixed mode | C19 |
| 60 mm | 1500 W mixed mode | C13 |
| | 1800 W mixed mode* | C15 |

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

# 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.

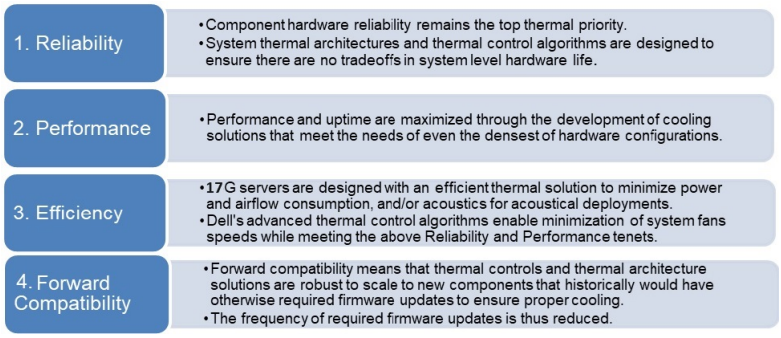


**Figure 18. Thermal design characteristics**

The thermal design of the PowerEdge R7725xd 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 R7725xd Installation and Service Manual at PowerEdge Manuals and “Advanced Thermal Control: Optimizing across Environments and Power Goals” on Dell.com.
- Cooling redundancy: The R7725xd allows N+1 fan redundancy, allowing continuous operation with one fan failure in the system.
- Environmental Specifications: The optimized thermal management makes the R7725xd reliable under a wide range of operating environments.

# Acoustics

## Acoustical configurations of R7725xd

Dell PowerEdge R7725xd is a rack or tower server appropriate for attended data center environment. However, lower acoustical output is attainable with proper hardware or software configurations.

**Table 22. Configurations tested for acoustical experience**

| Configuration | NVMe |
|---|---|
| CPU TDP | 360 W, 400 W |
| CPU Quantity | 2 |

### Table 22. Configurations tested for acoustical experience (continued)

| Configuration | NVMe |
|---|---|
| RDIMM Memory | 64, 96* GB DDR5 |
| Memory Quantity | 24 |
| Backplane Type | 8 x 2.5-inch |
| HDD/SSD | 24 x 2.5-inch U.2 Gen5 NVMe |
| PSU Type | 1500 W |
| PSU Quantity | 2 |
| BOSS | 17G BOSS |
| OCP | None |
| Bezel* | Yes |
| PCI 1 | N/A |
| PCI 2 | N/A |
| PCI 3 | N/A |
| PERC | Not supported |

### Table 23. Acoustical experience of R7725xd configurations

| Configuration | | NVMe |
|---|---|---|
| Acoustical Performance: Idle/ Operating @ 25 °C Ambient | | |
| $L_{wA,m}$(B) | Idle(4) | 7.4 |
| | Operating / Customer Usage Operating (5)(6) | 7.4 |
| $K_v$(B) | Idle(4) | 0.4 |
| | Operating / Customer Usage Operating (5)(6) | 0.4 |
| $L_{pA,m}$(dB) | Idle(4) | 60 |
| | Operating / Customer Usage Operating (5)(6) | 60 |
| Prominent discrete tones (3) | | Prominence ratio < 15 dB |
| Acoustical Performance: Idle @ 28 °C Ambient | | |
| $L_{wA,m}$(1)(B) | | 7.5 |
| $K_v$ (B) | | 0.4 |
| $L_{pA,m}$(2)(dB) | | 60 |
| Acoustical Performance: Max. Loading @ 35 °C Ambient | | |
| $L_{wA,m}$(1)(B) | | 8.9 |
| $K_v$ (B) | | 0.4 |
| $L_{pA,m}$(2)(dB) | | 73 |

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

LpA, m: The declared mean A-weighted emission sound pressure level is at the bystander position per section 5.3 of ISO 9296 (2017) and measured using methods that are described in ISO 7779 (2010). The system is placed in a 24U rack enclosure, 75 cm above a reflective floor. Engineering data presented here may not be fully compliant with the ISO 7779 declaration requirement.

Prominent tones: Criteria of Annex D of ECMA-74, Section 12.6, and the 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: The maximum of the steady state acoustical output at 50% of CPU TDP or active storage drives per C.9.3.2 in ECMA-74 (17$^{th}$ ed., Dec. 2019)

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

# 10

# Rack, rails, and cable management

**Topics:**



## Rails and cable management information

The rail offerings for the PowerEdge R7725xd varies with the configuration and is listed below.

- For 2.5-inch storage module configuration - Sliding and Static types

The cable management offerings consist of an optional cable management arm (CMA) and an optional strain relief bar (SRB).

See the *Enterprise Systems Rail Sizing and Rack Compatibility Matrix* available at Dell Technologies Enterprise Systems Rail Sizing and Rack Compatibility 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:

- Spacing between the front and rear mounting flanges of the rack.
- Type and location of any equipment that is mounted in the back of the rack such as power distribution units (PDUs).
- Overall depth of the rack.

### Sliding rails features summary for 2.5-inch storage module configuration

The sliding rails allow the system to be fully extended out of the rack for service. There are two types of sliding rails available, ReadyRails II sliding rails and Stab-in/Drop-in sliding rails. The sliding rails are available with or without the optional cable management arm (CMA) or strain relief bar (SRB).

**B21 ReadyRails sliding rails for 4-post racks**

- Supports drop-in installation of the chassis to the rails.
- Support for tool-less installation in 19" EIA-310-E compliant square or unthreaded round hole 4-post racks including all generations of the Dell racks.
- Support for tooled installation in 19" EIA-310-E compliant threaded hole 4-post racks.
- Support full extension of the system out of the rack to allow serviceability of key internal components.
- Support for optional strain relief bar (SRB).
- Support for an optional cable management arm (CMA).

> **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 interference with rear-mounted PDUs or the rear rack door.

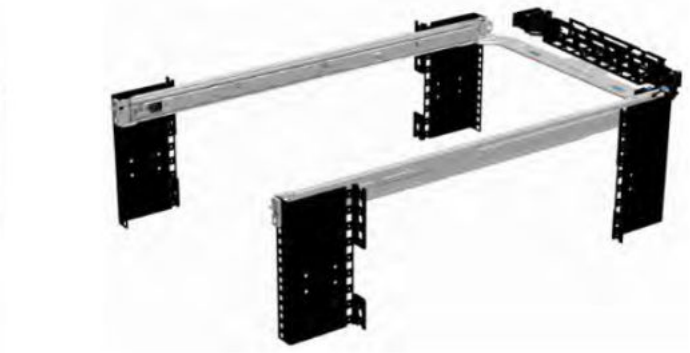

**Figure 19. Sliding rails with optional CMA**

**Figure 20. Sliding rails with optional SRB**

### B22 Stab-in/Drop-in sliding rails for 4-post racks

- Supports drop-in or stab-in installation of the chassis to the rails.
- Support for tool-less installation in 19" EIA-310-E compliant square, unthreaded round hole racks including all generations of the Dell racks. Also, support 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 an optional cable management arm (CMA).
- Support for optional strain relief bar (SRB).

**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 interference with rear-mounted PDUs or the rear rack door.

# B20 static rails summary

The static rails offer a greater adjustability range and a smaller overall mounting footprint than the sliding rails because of their reduced complexity and lack of need for CMA support. The static rails support a wider variety of racks than the sliding rails. However, they do not support serviceability in the rack and are thus not compatible with the CMA. The static rails are also not compatible with SRB.

**Figure 21. Static rails**

### Static rails features summary

Static rails for 4-post and 2-post racks:

- Supports Stab-in installation of the chassis to the rails.
- Support tool-less installation in 19" EIA-310-E compliant square or unthreaded round hole 4-post racks including all generations of Dell racks.
- Support tooled installation in 19" EIA-310-E compliant threaded hole 4-post and 2-post racks.
- Support for tooled installation in Dell Titan or Titan-D rack.

**NOTE:**

- Screws are not included with the static rail kit since racks are offered with various thread types. The screws are provided for mounting static rails in racks with threaded mounting flanges.
- Screw head diameter should be 10 mm or less.

### 2-Post racks installation

If installing to 2-Post (Telco) racks, the ReadyRails II static rails (B20) must be used. Sliding rails support mounting in 4-post racks only.

**Figure 22. Static rails in 2-post center mount configuration**

#### Installation in the Dell Titan or Titan-D racks

For tool-less installation in the Dell Titan or Titan-D racks, the Stab-in/Drop-in sliding rails (B22) must be used. This rail collapses down sufficiently to fit in the rack with mounting flanges that are spaced about 24 inches apart from front to back. The Stab-in/Drop-in sliding rail allows bezels of the servers and storage systems to be aligned when installed in these racks. For tooled installation, Stab-in Static rails (B20) must be used for bezel alignment with storage systems.

## 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.

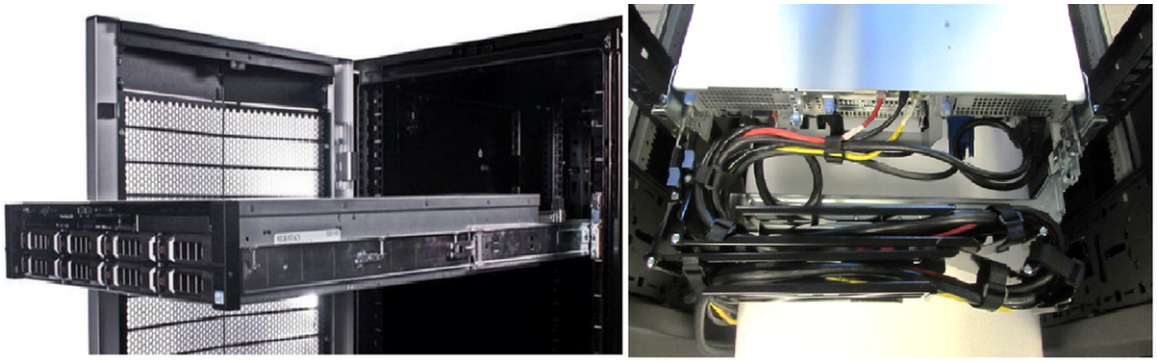

**Figure 23. Sliding rails with CMA**

## Strain Relief Bar (SRB)

The optional strain relief bar (SRB) for the PowerEdge R7725xd organizes and supports cable connections at the rear end of the server to avoid damage from bending.

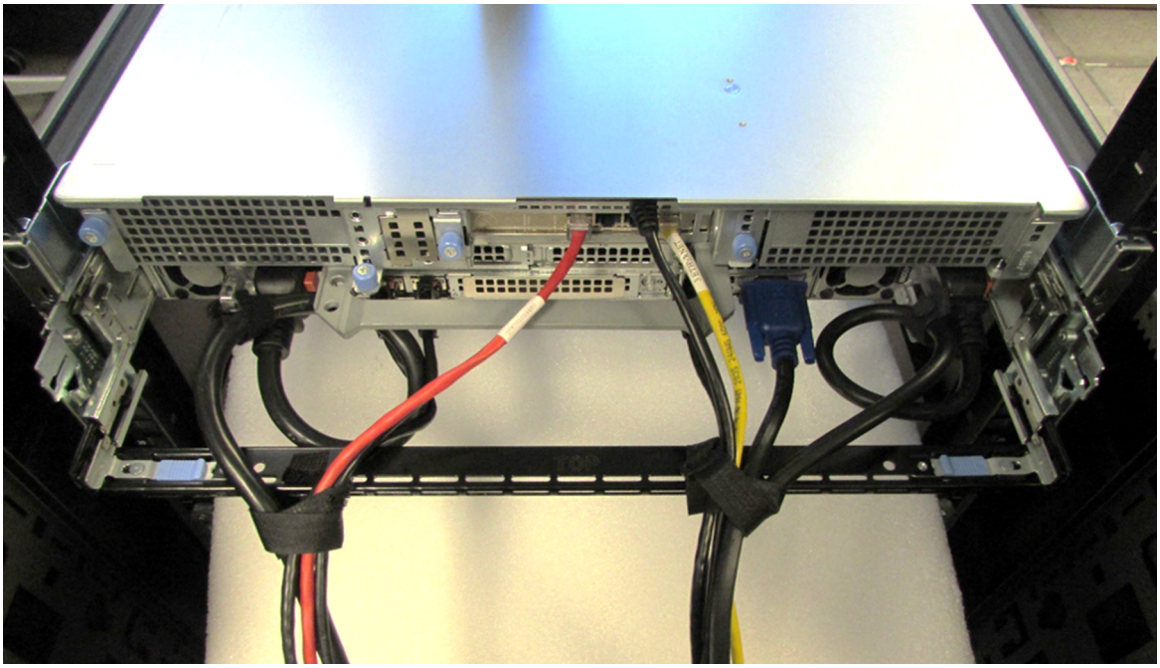

**Figure 24. Cabled strain relief bar**

- Tool-less attachment to the rails
- Two depth positions to accommodate various cable loads and rack depths.
- Supports cable loads and controls stresses on server connectors.
- Cables can be segregated into discrete purpose-specific bundles.

## Rack Installation

Drop-in design means that the system is installed vertically into the rails by inserting the standoffs on the sides of the system into the J-slots in the inner rail members with the rails in the fully extended position. The recommended method of installation is to first insert the rear standoffs on the system into the rear J-slots on the rails to free up a hand and then rotate the system down into the remaining J-slots while using the free hand to hold the rail against the side of the system.

Stab-in design means that the inner (chassis) rail members must first be attached to the sides of the system and then inserted into the outer (cabinet) members installed in the rack.

## Installing the system into the rack (option A: Drop-In)

1. Pull the inner rails out of the rack until they lock into place.

**Figure 25. Pull out inner rail**

2. Locate the rear rail standoff on each side of the system and lower them into the rear J-slots on the slide assemblies.
3. Rotate the system downward until all the rail standoffs are seated in the J-slots.

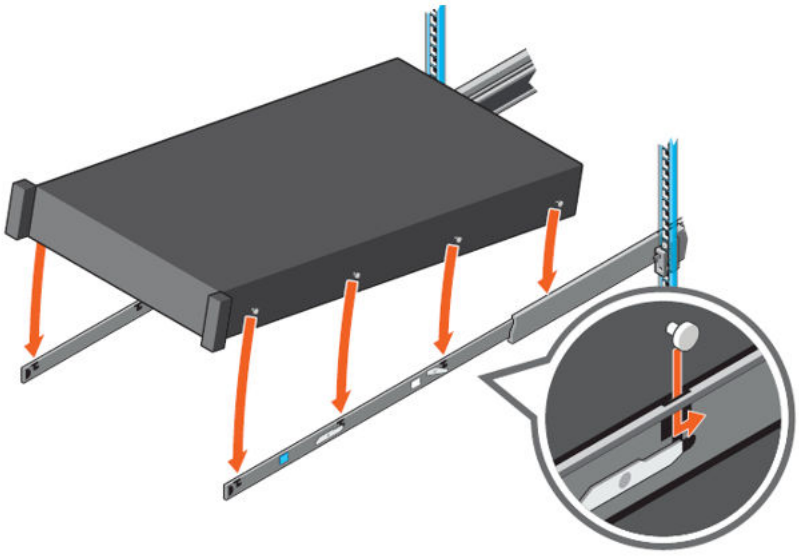

**Figure 26. Rail standoffs seated in J-slots**

4. Push the system inward until the lock levers click into place.
5. Pull the blue side release lock tabs forward or backward on both rails and slide the system into the rack until the system is in the rack.

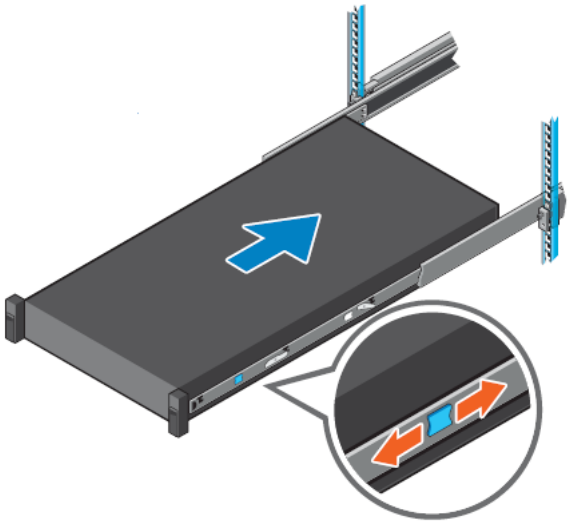

**Figure 27. Slide system into the rack**

## Installing the system into the rack (option B: Stab-In)

1. Pull the intermediate rails out of the rack until they lock into place.
2. Release the inner rail lock by pulling forward on the white tabs and sliding the inner rail out of the intermediate rails.

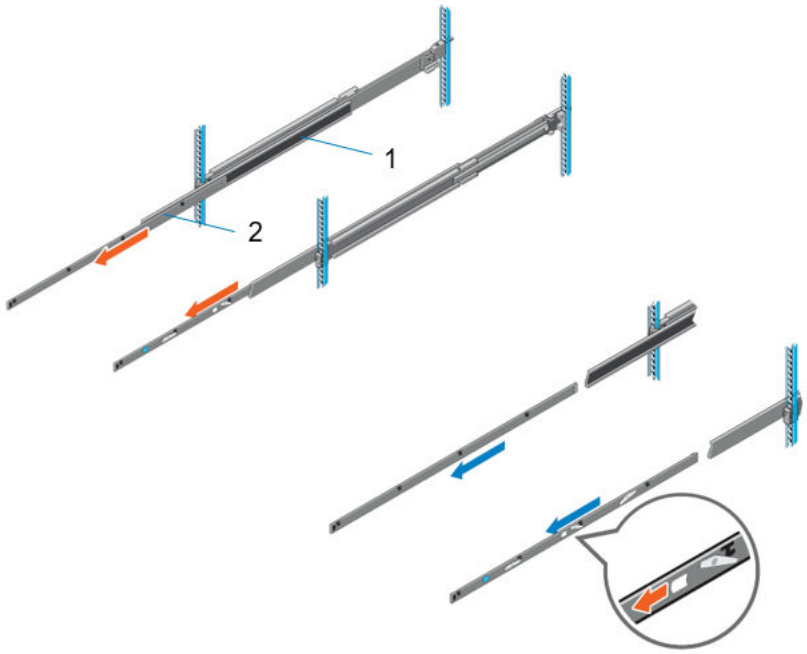


**Figure 28. Pull out the intermediate rail**

**Table 24. Rail component label**

| Number | Component |
|---|---|
| 1 | Intermediate rail |
| 2 | Inner rail |

3. Attach the inner rails to the sides of the system by aligning the J-slots on the rail with the standoffs on the system and sliding forward on the system until they lock into place.

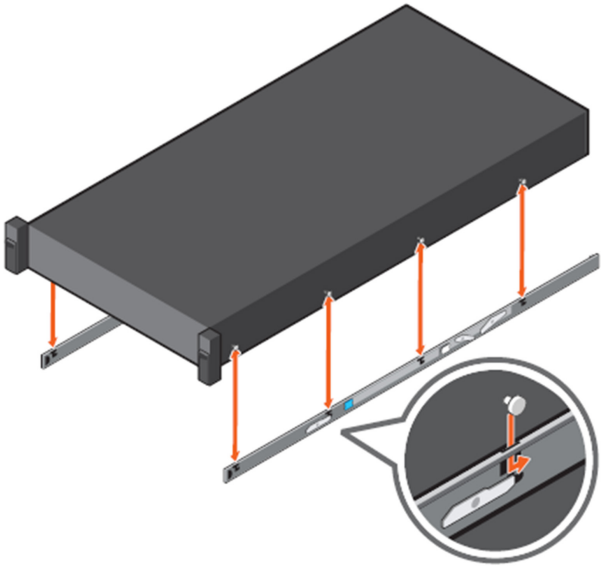

**Figure 29. Attach the inner rails to the system**

4. With the intermediate rails extended, install the system into the extended rails.

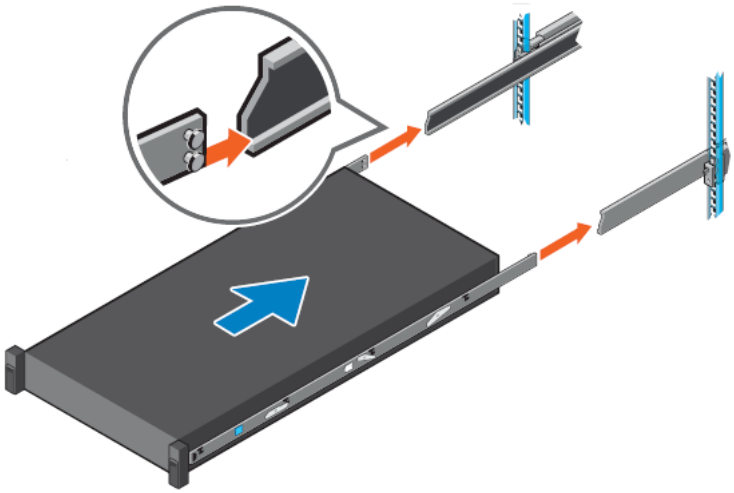

**Figure 30. Install system into the extended rails**

5. Pull blue slide release lock tabs forward or backward on both rails, and slide the system into the rack.

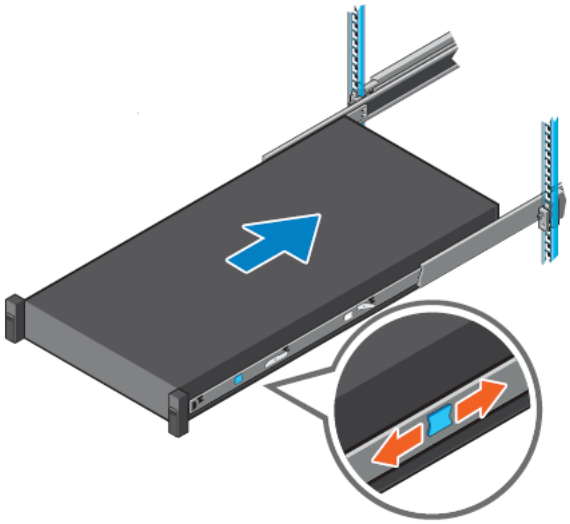

**Figure 31. Slide system into the rack**

# 11

# Operating Systems and Virtualization

**Topics:**

- Supported operating systems

## Supported operating systems

The PowerEdge R7725xd system supports the following operating systems:

- Microsoft Windows Server with Hyper-V*
- Canonical Ubuntu Server LTS
- RedHat Enterprise Linux
- SUSE Linux Enterprise Server
- VMware ESXi*

For specifications and interoperability details, see OS support.

**NOTE:** *Feature not available at product launch in June 2025. Please 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 deploy, update, monitor, and manage IT assets. OpenManage solutions and tools enable you to solve and respond to problems quickly by manage Dell servers efficiently in physical and remote environments, and operating in-band and out-of-band (agent-free).

The OpenManage portfolio includes innovative embedded management tools such as the integrated Dell Remote Access Controller (iDRAC) and consoles like OpenManage Enterprise, OpenManage Power Manager Plugin, and tools like Repository Manager. Dell has developed comprehensive systems management solutions that are based on open standards by connecting and/or integrating it's offers with top system management vendors and frameworks such as Ansible, Microsoft, and VMware, enabling advanced management of Dell hardware. The key tools for managing Dell PowerEdge servers are iDRAC and OpenManage Enterprise (OME) console. OpenManage Enterprise helps the system administrators with the life cycle management of multiple generations of PowerEdge servers. OME has additional functions that can be added with plugins like OpenManage Enterprise Services, Update Manager, APEX AIOps Observability (formerly CloudIQ), and Power Manager. It also offers integration with VMware vCenter and Microsoft System Center, and a set of tools, including Repository Manager, enabling easy management of PowerEdge hardware. The four main pillars of Dell systems management closely align with the issues and business challenges that are faced by many IT departments.

- Automating IT management.
  - Comprehensive automation management for reducing OPEX and increasing uptime and overall efficiency of systems.
  - Comprehensive suite of tools to automate according to your needs.
- Management made simple.
  - Simple but powerful tools for managing your Dell servers.
  - Integrated tools that streamline support engagements.
  - Innovative at-the-box management features.
- Secure by default.
  - Dell servers offer robust security defenses to prevent the next generation of malicious attacks.
  - Security is designed deep into the hardware and firmware architecture for optimal protection.
- Smarter infrastructure management.
  - It offers a next-generation 1-to-many console to manage your IT and server infrastructure.
  - Embedded intelligence that is infrastructure-aware to optimize troubleshooting and deployment.

This document provides an overview of the OpenManage Systems Management offerings to help IT administrators choose the appropriate tools to completely manage Dell PowerEdge servers.

- The latest Dell Systems Management Overview Guide.

**Topics:**



# 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 25. iDRAC10 license tiers**

| License | Description |
|---|---|
| iDRAC10 Core | • Available for all servers.<br>• Core system management features for users who are cost conscious. |
| iDRAC10 Enterprise | • Available as an upsell on all servers.<br>• Includes all features of Core. Also, includes additional automation features and virtual console and security features.<br>• Bundled with Secure Enterprise Key Management (SEKM) and Secure Component Verification (SCV) licenses. |
| iDRAC10 Datacenter | • Available as an upsell on all servers.<br>• Includes all features of Core and Enterprise.<br>• Includes key features such as telemetry streaming and thermal management.<br>• 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 26. Systems Management software support matrix**

| Categories | Features | PE mainstream |
|---|---|---|
| Embedded Management | iDRAC | Supported |
| | iDRAC Direct | Supported |
| | iDRAC RESTful API with Redfish | Supported |
| | Racadm CLI | Supported |
| | iDRAC Service Module (iSM) | Supported |
| Change Management | Dell Repository Manager | Supported |
| | Dell System Update | Supported |
| | Enterprise Catalogs | Supported |
| | Server Update Utility (SUU) | Supported |

**Table 26. Systems Management software support matrix (continued)**

| Categories | Features | PE mainstream |
|---|---|---|
| OpenManage console | OpenManage Enterprise (OME) | Supported |
| | OME Power Manager | Supported |
| | OME Services | Supported |
| | OME Update Manager | Supported |
| | OME APEX AIOps Observability | Supported |
| | OME Integration for VMware vCenter (with VMware Aria Operations) | Supported |
| | OME integration for Microsoft System Center | Supported |
| | OpenManage Integration for Windows Admin Center | Supported |
| Mobility | OME Mobile with Quick Sync 2 wireless module | Supported |
| Tools | IPMI | Supported |
| OpenManage Integrations | Red Hat Ansible Collections | Supported |
| | Terraform Providers | Supported |
| Security | 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 | Supported |
| | TPM 2.0 FIPS, CC-TCG certified | Supported |
| | Chassis Intrusion Detection | Supported |
| | AMD Secure Memory Encryption (SME) | Supported |
| | AMD Secure Encrypted Virtualization (SEV) | Supported |
| Operating system | Canonical Ubuntu Server LTS | Supported |
| | Microsoft Windows Server with Hyper-V | Supported |
| | Red Hat Enterprise Linux | Supported |
| | SUSE Linux Enterprise Server | Supported |
| | VMware ESXi | Supported |
| | SUSE Linux Enterprise Server | Supported |

13

# Appendix A: Additional specifications

**Topics:**



## Chassis dimensions

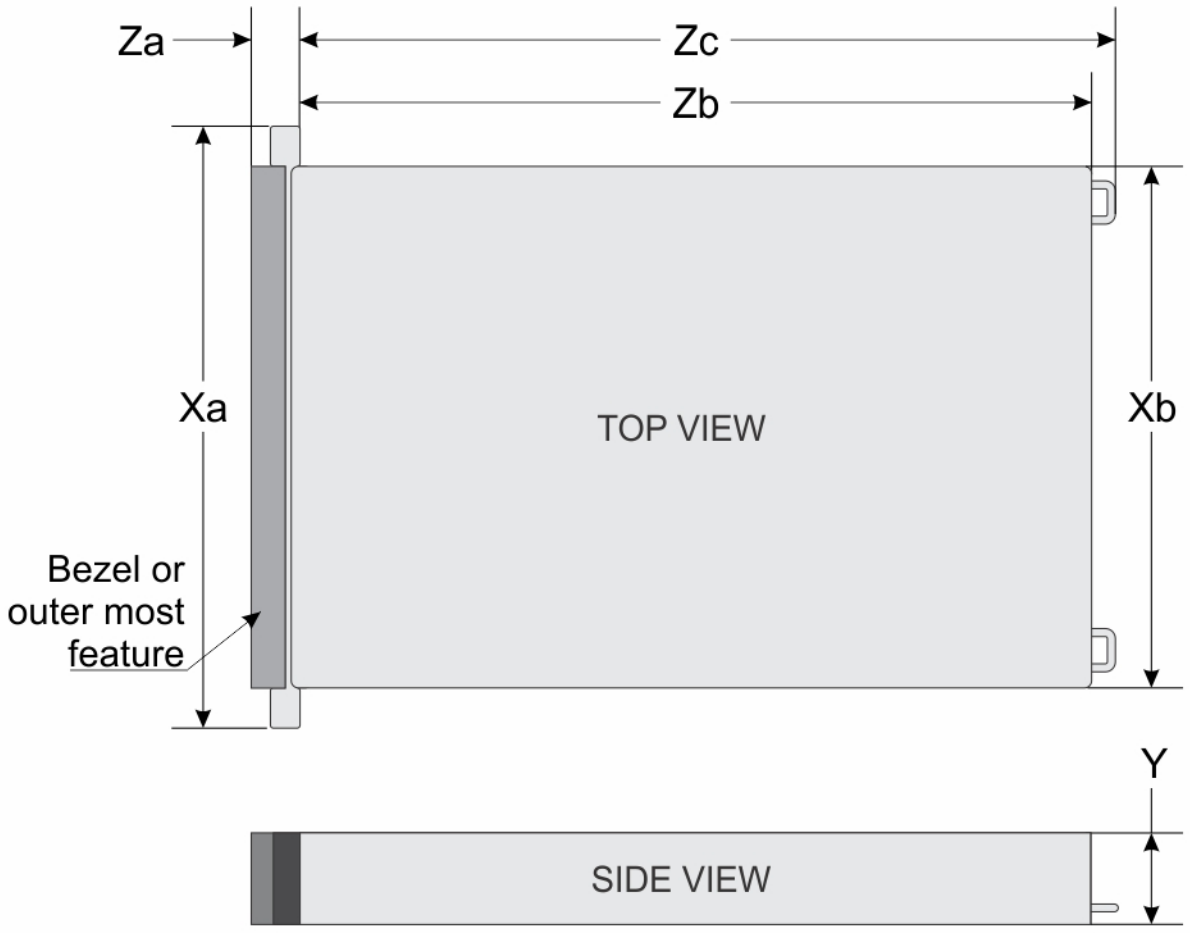


**Figure 32. Chassis dimensions**

### Table 27. PowerEdge R7725xd chassis dimensions

| Drives | Xa | Xb | Y | Za | Zb | Zc |
|---|---|---|---|---|---|---|
| 24 x 2.5-inch U.2 NVMe drives | 482.0 mm (18.98 inches) | 434.0 mm (17.09 inches) | 86.8 mm (3.42 inches) | 30.78 mm (1.21 inches)With bezel<br>29.89 mm (1.18 inches)Without bezel | 700.7 mm (27.59 inches)<br>Ear to rear wall | 771.62 mm (30.38 inches)<br>Ear to PSU handle |

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

# System weight

### Table 28. PowerEdge R7725xd system weight

| System configuration | Maximum weight (with all drives/SSDs) |
|---|---|
| 24 x 2.5-inch U.2 NVMe G5x4 RC1 | 26.74 kg (58.95 pounds) |
| 24 x 2.5-inch U.2 NVMe G5x4 RC3 | 26.95 kg (59.41 pounds) |

### Table 29. PowerEdge R7725xd 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. |

# NIC port specifications

The PowerEdge R7725xd system supports one 10/100/1000 Mbps Network BMC Ethernet port and one optional Open Compute Project (OCP) card.

### Table 30. NIC port specification for the system

| Feature | Specifications |
|---|---|
| Datacenter-Secure Control Module (DC-SCM) | 1 Gb x 1 |
| OCP NIC 3.0 Gen3 x4 card | 10 GbE x 2 |

**NOTE:** The system allows either DC-SCM card or an OCP NIC card or both to be installed in the system.

# Video specifications

The PowerEdge R7725xd system supports integrated Matrox G200 graphics controller with 16 MB of video frame buffer.

### Table 31. Supported video resolution options

| Resolution | Refresh rate (Hz) | Color depth (bits) |
|---|---|---|
| 640 x 480 | 60 | 8, 16, 32 |
| 800 x 600 | 60 | 8, 16, 32 |
| 1024 x 768 | 60 | 8, 16, 32 |

**Table 31. Supported video resolution options (continued)**

| Resolution | Refresh rate (Hz) | Color depth (bits) |
|---|---|---|
| 1152 x 864 | 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 |
| 1400 x 1050 | 60 | 8, 16, 32 |
| 1440 x 900 | 60 | 8, 16, 32 |
| 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

**Figure 33. Front USB Port**

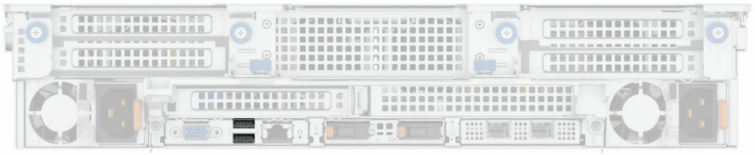

**Figure 34. Rear USB Port**

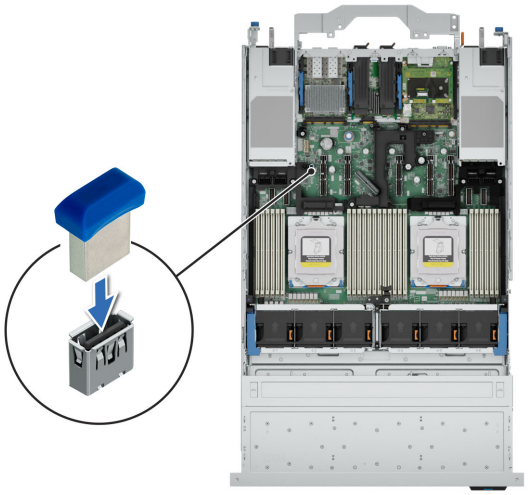

**Figure 35. Internal USB Port**

### Table 32. PowerEdge R7725xd USB specifications

| Front | | Rear | | Internal (Optional) | |
|---|---|---|---|---|---|
| **USB port type** | **No. of ports** | **USB port type** | **No. of ports** | **USB port type** | **No. of ports** |
| USB 2.0-compliant port (optional) | One | USB 3.1-compliant port | Two | Internal USB 3.1-compliant port | One |
| USB type C dual-mode host/BMC Direct port | One | | | | |

# PSU rating

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

### Table 33. PSU highline and lowline rating

| PSU | 1500 W Titanium | 1800 W Titanium* | 2400 Titanium* | 3200 W Titanium |
|---|---|---|---|---|
| Peak Power (Highline) | 2325 W | 2790 W | 3720 W | 5440 W |
| Highline | 1500 W | 1800 W | 2400 W | 3200 W |
| Peak Power (Lowline) | 1627 W | N/A | 2170 W | N/A |
| Lowline | 1050 W | N/A | 1400 W | N/A |
| Highline 240 VDC | 1500 W | 1800 W | 2400 W | 3200 W |

The PowerEdge R7725xd supports up to two AC power supplies with 1+1 redundancy, autosensing, and auto switching capability.

If two PSUs are present during POST, a comparison is made between the wattage capacities of the PSUs. In case the PSU wattages do not match, the larger of the two PSUs is enabled. Also, there is a PSU mismatch warning that is displayed in the BIOS or iDRAC.

If a second PSU is added at run-time, in order for that particular PSU to be enabled, the wattage capacity of the first PSU must equal the second PSU. Otherwise, the PSU is identified as unmatched in iDRAC and the second PSU is not enabled.

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

### Table 34. PSU efficiency level

| Efficiency Targets by Load | | | | | | |
|---|---|---|---|---|---|---|
| **Form factor** | **Output** | **Class** | **10%** | **20%** | **50%** | **100%** |
| Redundant 60 mm | 1500 W mixed mode | Titanium | 90.00% | 94.00% | 96.00% | 91.00% |
| | 1800 W* | Titanium | 90.00% | 94.00% | 96.00% | 91.00% |
| Redundant 73.5 mm | 2400 W* | Titanium | 90.00% | 94.00% | 96.00% | 91.00% |
| | 3200 W mixed mode | Titanium | 90.00% | 94.00% | 96.00% | 91.00% |

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

# Environmental specifications

**NOTE:** For additional information about environmental certifications, refer to the Product Environmental Datasheet located with the **Manuals & Documents** on Dell Support.

### Table 35. Continuous Operation Specifications for ASHRAE A2

| Parameters | 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 (33.8°F/984 Ft) above 900 m (2953 Ft) |

### Table 36. Continuous Operation Specifications for ASHRAE A3

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

### Table 37. Continuous Operation Specifications for ASHRAE A4

| Parameters | Allowable continuous operations |
|---|---|
| Temperature range for altitudes <= 900 m (<= 2953 ft) | 5–45°C (41–113°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 90% RH with 24°C (75.2°F) maximum dew point |
| Operational altitude de-rating | Maximum temperature is reduced by 1°C/125 m (33.8°F/410 Ft) above 900 m (2953 Ft) |

### Table 38. Common Environmental Specifications for ASHRAE A2, A3, and A4

| Parameters | Allowable continuous operations |
|---|---|
| Maximum temperature gradient (applies to both operation and non-operation) | 20°C in an hour* (36°F in an hour) and 5°C in 15 minutes (41°F in 15 minutes), 5°C in an hour* (41°F in an hour) for tape<br>**NOTE:** * - Per ASHRAE thermal guidelines for tape hardware, these are not instantaneous rates of temperature change. |
| Non-operational temperature limits | -40°C to 65°C (-40°F 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 ft) |
| Maximum operational altitude | 3,048 meters (10,000 ft) |

### Table 39. Maximum vibration specifications

| Maximum vibration | Specifications |
|---|---|
| Operating | 0.21 $G_{rms}$ at 5 Hz to 500 Hz for 10 min (all x, y, and z axes) |
| Storage | 1.38 $G_{rms}$ at 7 Hz to 250 Hz for 15 minutes (all six sides tested) |

### Table 40. Maximum shock pulse specifications

| Maximum shock pulse | Specifications |
|---|---|
| Operating | Six consecutively performed shock pulses in the positive and negative x, y, and z axis of 6 G for up to 11 ms. |

**Table 40. Maximum shock pulse specifications (continued)**

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

# Thermal air restrictions

## Fresh air environment

- Two PSUs are required in redundant mode, however a single PSU failure is not supported.
- PCIe SSD is not supported.
- GPU and FPGA are not supported.
- CPU TDP equal or greater than 180 W are not supported.
- Rear drives are not supported.
- Non-Dell qualified peripheral cards and/or peripheral cards greater than 25 W are not supported.

**Table 41. Air cooling configuration thermal restriction for AHSRAE A2, A3, and A4 for all configurations**

| ASHRAE | A2 | A3/40 °C (104 °F) | A4/45 °C (113 °F) |
|---|---|---|---|
| CPU | T-wing HSK and HPR platinum fan are required for CPU >401 W. | CPUs > 240 W are not supported | CPUs > 195 W are not supported |
| PSU | N/A | Two PSUs are required in redundant mode. If there is a PSU failure, system performance may be reduced. | |
| PCIe card | N/A | Non-Dell qualified peripheral cards and peripheral cards greater than 25 W are not supported. | |
| GPU/FPGA | N/A | Not supported | |
| DIMM | 256 GB DIMMs are not supported | DIMMs ≥ 64 GB are not supported. | |
| Drives | N/A | | |
| OCP | N/A | Supported with 85 °C (185 °F) active optic cable. | OCP NICs are not supported. 85 °C (185 °F) active optics or DAC cable is required. |
| BOSS | N/A | N/A | BOS-N1 is not supported. |

## Other thermal restrictions

- 25 Gb and above 25 Gb PCIe/OCP cards require DAC or 85 °C active optics, M14MK (SFP28) or 4WGYD (QSFP+).

# Thermal restriction matrix

**Table 42. Label reference**

| Label | Description |
|---|---|
| STD | Standard |
| HPR Silver | High-performance (HPR) Silver fan |
| HPR Gold | High-Performance (HPR) Gold fan |
| HPR Pltm | High-Performance Platinum (HPR Pltm) fan |

### Table 42. Label reference (continued)

| Label | Description |
|---|---|
| HSK | Heat sink |
| LP | Low profile |
| FH | Full height |
| EXT | Extended |

### Table 43. Processor and heat sink matrix

| Heat sink | Processor TDP |
|---|---|
| STD HSK | <= 400 W |
| 2U T-wing HSK | 401 W~500 W |

**NOTE:** The configuration's ambient temperature is dictated by its critical component. For example, if the processor's ambient temperature is 35°C, the DIMM is 35°C, and the GPU is 30°C, the configuration's ambient temperature can only be 30°C.

### Table 44. Thermal restriction matrix for air cooling

| Configuration | | | | 24x2.5" U.2 Gen5 | Ambient temperature |
|---|---|---|---|---|---|
| Rear storage | | | | No rear drives | |
| Shroud | | | | CPU ≤400W Regular Shroud<br>CPU 500W T-wing Shroud | |
| GPU | | | | No GPU | |
| TDP | cTDP Max | Processor | Cores | HSK/Fan | |
| 360 W | 400 W | 9555 | 64 | HPR Gold fan<br>STD HSK | 35 °C |
| 320 W | 400 W | 9575F | 64 | HPR Gold fan<br>STD HSK | 35 °C |
| 400 W | 400 W | 9655 | 96 | HPR Gold fan<br>STD HSK | 35 °C |
| Memory | | | | Ambient Temperature | |
| 32 GB RDIMM | | | | 35 °C | |
| 64 GB RDIMM | | | | 35 °C | |

**NOTE:** Six fan modules are required for a dual-processor system.

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# Appendix B. Standards compliance

The system conforms to the following industry standards.

**Table 45. Industry standard documents**

| Standard | URL for information and specifications |
|---|---|
| **ACPI**Advance 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<br>1. NVM Express NVM Command Set Specification. Revision 1.1c<br>2. NVM Express Zoned Namespaces Command Set. Revision 1.0c<br>3. NVM Express® Key Value Command Set. Revision 1.0c | |
| **NVMe** Transport Specifications<br>1. NVM Express over PCIe Transport. Revision 1.0c<br>2. NVM Express RDMA Transport Revision. 1.0b<br>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 46. Additional resources**

| Resource | Description of contents | Location |
|---|---|---|
| Installation and Service Manual | This manual, available in PDF format, provides the following information:<br>• Chassis features<br>• System Setup program<br>• System indicator codes<br>• System BIOS<br>• Remove and replace procedures<br>• Diagnostics<br>• 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:<br>• 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 HPM 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 |
| MyDell label | 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: Services

**Topics:**



## 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 customers are most often seeking 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.

## 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.

**Figure 36. ProSupport Enterprise Suite**

| | Basic Hardware Support | ProSupport | BEST ProSupport Plus |
|---|---|---|---|
| **Customer Advocacy** *via assigned Services Account Manager* ⓘ | | | |
| Benefit from personalized services assistance that aligns with your business goals. | | | ✓ |
| Stay ahead of challenges with actionable insights gained through comprehensive service intelligence. | | | ✓ |
| Experience fast critical issue resolution through coordinated team response and executive escalation paths. | | | ✓ |
| Ensure **coverage continuity** by planning effectively for technology lifecycle transitions. | | | ✓ |
| **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** | | | |
| Keep systems code current and performing at peak through Proactive System Maintenance | | | ✓ |
| Count on Mission Critical Support during Sev 1 incidents and natural disasters ⓘ | | | ✓ |
| Enjoy priority access to senior technical support engineers | | | ✓ |
| 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 |

## 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 (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. 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.

# ProDeploy Infrastructure Suite

ProDeploy Infrastructure Suite provides various deployment offerings that satisfy a customer's unique needs. It is made up of various sub-offers: Factory Configuration Services, Rack Integration, Basic Deployment, ProDeploy, ProDeploy Plus, and optionally ProDeploy FLEX which allows for some customization of the features listed.

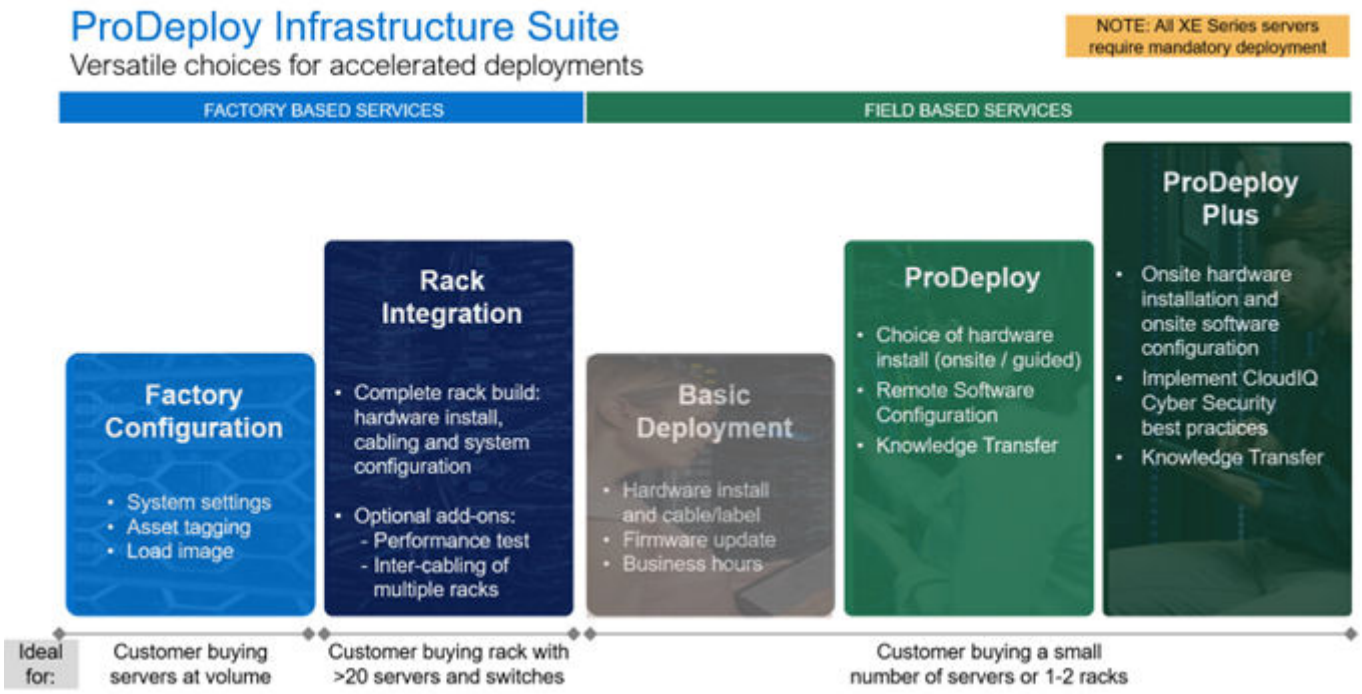


**Figure 37. ProDeploy Infrastructure Suite**

# Factory-based Services

Pre-configured systems or complete racks, customized prior to shipping to the customer's site.

**Rack Integration or ProDeploy FLEX Rack Integration**

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 are packaged and bundled to meet specific shipping and distribution requirements for each customer location to facilitate the rollout process. Once the server is onsite, Dell can install and configure the server to the environment using any of the field-based deployment services outlined in the next section.

- STANDARD SKUs for Rack Integration is available in then USA only and requires:
  - 20 or more devices (XE, R and C series servers, VxRail and all Dell or non-Dell switches).
  - Shipping to contiguous USA.
- USE CUSTOM QUOTE for Rack Integration scenarios that require:
  - Any Direct Liquid Cooling (DLC) implementation
  - Shipping to multiple locations or shipment to any country outside USA or shipping outside contiguous USA
  - Air-cooled racks containing less than 20 servers
  - Any rack that includes Storage

**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 are packaged and bundled to meet specific shipping and distribution requirements for each customer location to facilitate the rollout process. Once the server is onsite, Dell can install and configure the server to the environment using any of the field-based deployment services outlined in the next section.

## ProDeploy Flex | Modular deployment (built in factory, onsite or remote)

| | | |
|---|---|---|
| Pre -deployment | Single point of contact for project management | ● |
| | Expanded end-to-end project management | Selectable |
| | Site readiness review and implementation planning | ● |
| Deployment | Deployment service hours | 24/7 |
| | Hardware installation options [1] | Onsite, factory[2,5] or remote[3] |
| | System software installation and configuration options [1] | Onsite, factory[2,5] or remote[3] |
| | Multivendor networking deployment [4] | Onsite, factory[2,5] or remote[3] |
| | Onsite Deployment in remote locations | Selectable |
| | Onsite Deployment in challenging environments | Selectable |
| | Onsite Deployment with special site-based protocols or requirements | Selectable |
| | Install connectivity software based on Secure Connect Gateway technology | ● |
| | Dell NativeEdge Orchestrator deployment | Selectable |
| | Configure 3rd party software applications and workloads [4] | Selectable |
| Post -deployment | Deployment verification, documentation, and knowledge transfer | ● |
| | Configuration data transfer to Dell support | ● |
| Online collaboration | Online collaborative environment - Planning, managing and tracking delivery process | ● |

[1] Hardware and Software delivery methods can be independently chosen; selecting Rack integration for software requires hardware Rack integration to also be selected.
[2] Factory Rack Integration for server and VxRail; includes associated Dell network switches; final onsite rack installation available.
[3] Remote hardware option includes project specific instructions, documentation and live expert guidance for hardware installation.
[4] Select 3rd party multivendor networking and software applications.
[5] Pair with Field Onsite Hardware service for final installation.

**Figure 38. ProDeploy Flex modular services**

## Field-based services

Put PowerEdge servers to work faster with Dell field-based deployment services. Whether we are deploying one server to one thousand – we have you covered. Dell provides versatile delivery options to fit every budget and operating model.

- **ProDeploy Plus:** Elevate Infrastructure deployments with our most complete service from planning through onsite hardware installation and software configuration including the implementation of cybersecurity best practices. ProDeploy Plus provides the skill and scale that is needed to successfully execute demanding deployments in today's complex IT environments. The deployment starts with a site readiness review and implementation plan. Certified deployment experts perform the software configuration to include setup of leading operating systems and hypervisors. Dell will also configure PowerEdge software tools to include iDRAC and OpenManage system utilities as well as support AIOps platforms: MyService360, TechDirect, and CloudIQ. Unique to ProDeploy Plus, the cybersecurity implementation helps customers understand potential security risks and make recommendations for reducing product attack surfaces. The system is tested, validated prior to completion. The customer will also receive full project documentation and knowledge transfer to complete the process.
- **ProDeploy:** ProDeploy provides remote software configuration and choice of hardware installation (onsite or guided). ProDeploy is great for customers who are price sensitive or willing to participate in some portion of the deployment to include providing remote access to their network. The ProDeploy remote software includes everything mentioned in ProDeploy Plus except it does not include the added value, cybersecurity implementation, and implementatiod best practices.
- **Basic Deployment:** Basic Deployment delivers worry-free professional installation by experienced technicians. This service is often sold to Competency Enabled Partners who will have Dell do the hardware installation while they complete the software configuration. Furthermore, Basic Deployment tends to be purchased by large enterprises who have smart technical staff. These companies just need Dell to install the hardware, and they will perform the software configuration. The last use case for Basic Deployment is when paired with Factory Configuration services. The servers are preconfigured in the factory, and the basic deployment service will install the system into the rack to finalize the deployment.

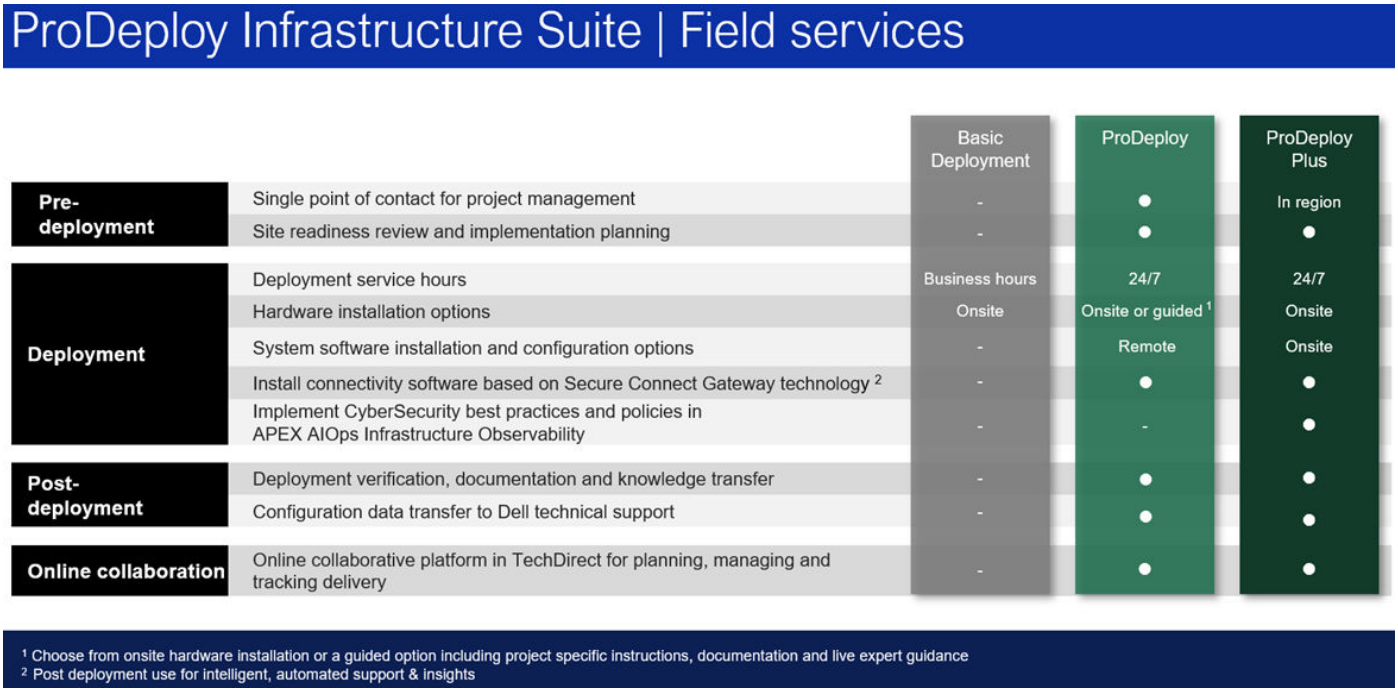


**Figure 39. ProDeploy Infrastructure Suite - Field services**

# 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.

## Deployment of AI or HPC

Dell provides a number of deploy options for Artificial Intelligence (AI) or High-Performance Computing (HPC) implementations. These complex environments require specialists that understand advanced feature sets. Dell deploys and understands the complexities to optimize the environment. AI and HPC deployments are always scoped as custom service engagements.

### Deployment choices for cluster implementation

Approaches, Best Practices, and Key Considerations

| Custom deploy | IRSS 7000 Solution (Product Design) + Choose one → | GOOD | BETTER | BEST |
|---|---|---|---|---|
| **Scope** | **Rack Integration Services** | **Baseline Cluster Configuration** | **Custom Deploy of Fabric and Cluster** | **Design AI Strategy & Deploy Cluster** |
| Factory rack build, cabling & cooling | ● | Rack arrives from factory | Rack arrives from factory | Rack arrives from factory |
| Configure devices per requirement | ● | | | |
| Rack ship & select testing onsite | ● | | | |
| 80 hours consulting to define workload strategy & design network | | | | ● |
| Onsite Infrastructure Assessment | | | ● | ● |
| Review system design and plan | | ● | ● | ● |
| Configure servers and switches | | ● | ● | ● |
| Inter-rack cabling and labeling | | | ● | ● |
| Liquid connectivity and leak test[1] | | | ● | ● |
| Cluster Configuration | | ● | ● | ● |
| Cluster acceptance testing | | ● | ● | ● |
| **Ideal for** | Customers seeking fully integrated racks and will configure the cluster themselves | Customers who will do inter-rack cabling and need assistance with configuration and testing of cluster | Customers who have a solid AI strategy and will outsource the entire implementation to Dell | Customers seeking design strategy for GPU optimization, scaling, and connectivity with full deployment |

**Figure 40. Deployment choices for cluster implementation**

# 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 Anisble 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 you determine how to perform IT, workforce, or application transformation. We use prescriptive approaches and proven methodologies that are combined with the portfolio and partner ecosystem of Dell Technologies to help achieve real business outcomes. From multicloud, 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 uses 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.

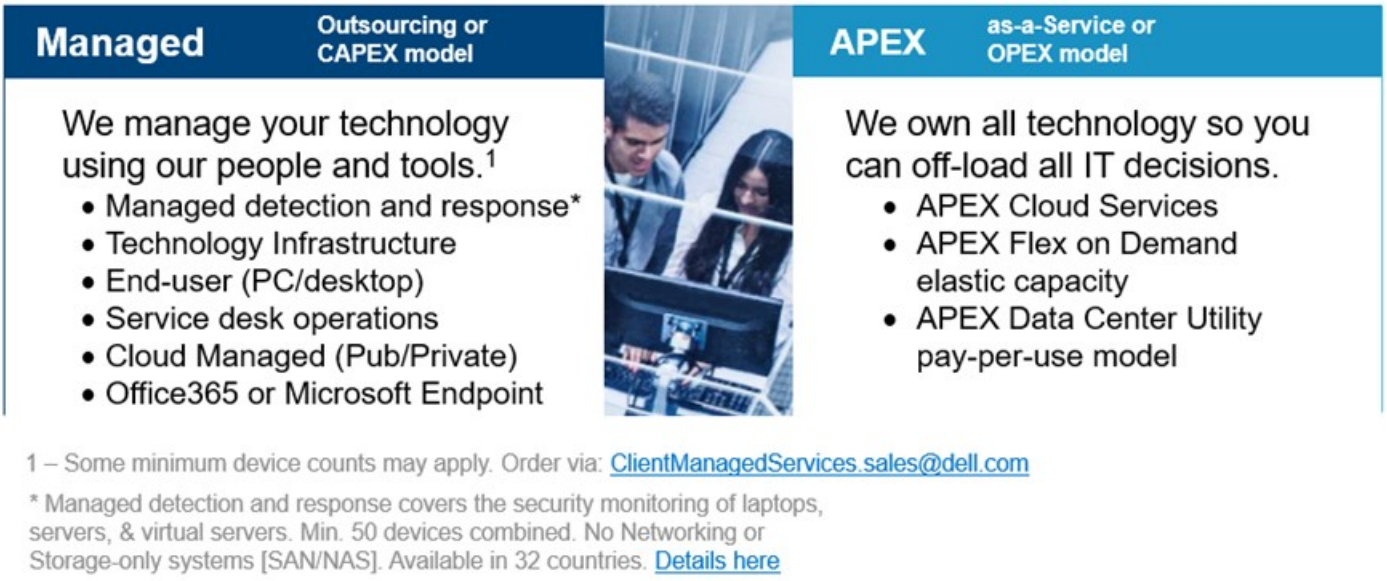


**Figure 41. Dell Managed Services**

## Managed Detection and Response (MDR)

Dell Technologies Managed Detection and Response (MDR) is powered by Secureworks Taegis XDR software platform. MDR is a managed service that secures the customer's IT environment against malicious actors and provides remediation if and when a threat is identified. When a customer purchases MDR, they receive the following features from our team:

- Dell badge resources
- Agent rollout assistance to help deploy the Secureworks Endpoint Agent
- 24x7 threat detection & investigation
- Up to 40 hrs per quarter of response and active remediation activities
- If the customer experiences a breach, we will provide up to 40 hrs per year of Cyber incident response initiation
- Quarterly reviews with the customer to review the data

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

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

# 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 the portfolio and partner ecosystem of Dell Technologies to help achieve real business outcomes. From multicloud, 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 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.


**Figure 42. Dell Managed Services**

## Managed Detection and Response (MDR)

Dell Technologies Managed Detection and Response (MDR) is powered by Secureworks Taegis XDR software platform. MDR is a managed service that secures the customer's IT environment against malicious actors and provides remediation if and when a threat is identified. When a customer purchases MDR, they will receive the following features from our team:

- Dell badge resources

- Agent rollout assistance to help deploy the Secureworks Endpoint Agent
- 24x7 threat detection and investigation
- Up to 40 hrs per quarter of response and active remediation activities
- If the customer experiences a breach, we will provide up to 40 hrs per year of Cyber incident response initiation
- Quarterly reviews with the customer to review the data

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## Resources

Service for powerEdge