

Dell EMC PowerEdge R750xs

Technical Specifications

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.

Chapter 1: Technical specifications.....	4
Chassis dimensions.....	5
System weight.....	5
Processor specifications.....	6
PSU specifications.....	6
Supported operating systems.....	7
Cooling fan specifications.....	7
System battery specifications.....	9
Expansion card riser specifications.....	9
Memory specifications.....	10
Storage controller specifications.....	10
Drives.....	10
Ports and connectors specifications.....	11
USB ports specifications.....	11
Serial connector specifications.....	11
NIC port specifications.....	11
VGA ports specifications.....	11
Video specifications.....	11
Environmental specifications.....	12
Particulate and gaseous contamination specifications.....	13
Thermal restriction matrix.....	14

Technical specifications

The technical and environmental specifications of your system are outlined in this section.

Topics:

- [Chassis dimensions](#)
- [System weight](#)
- [Processor specifications](#)
- [PSU specifications](#)
- [Supported operating systems](#)
- [Cooling fan specifications](#)
- [System battery specifications](#)
- [Expansion card riser specifications](#)
- [Memory specifications](#)
- [Storage controller specifications](#)
- [Drives](#)
- [Ports and connectors specifications](#)
- [Video specifications](#)
- [Environmental specifications](#)

Chassis dimensions

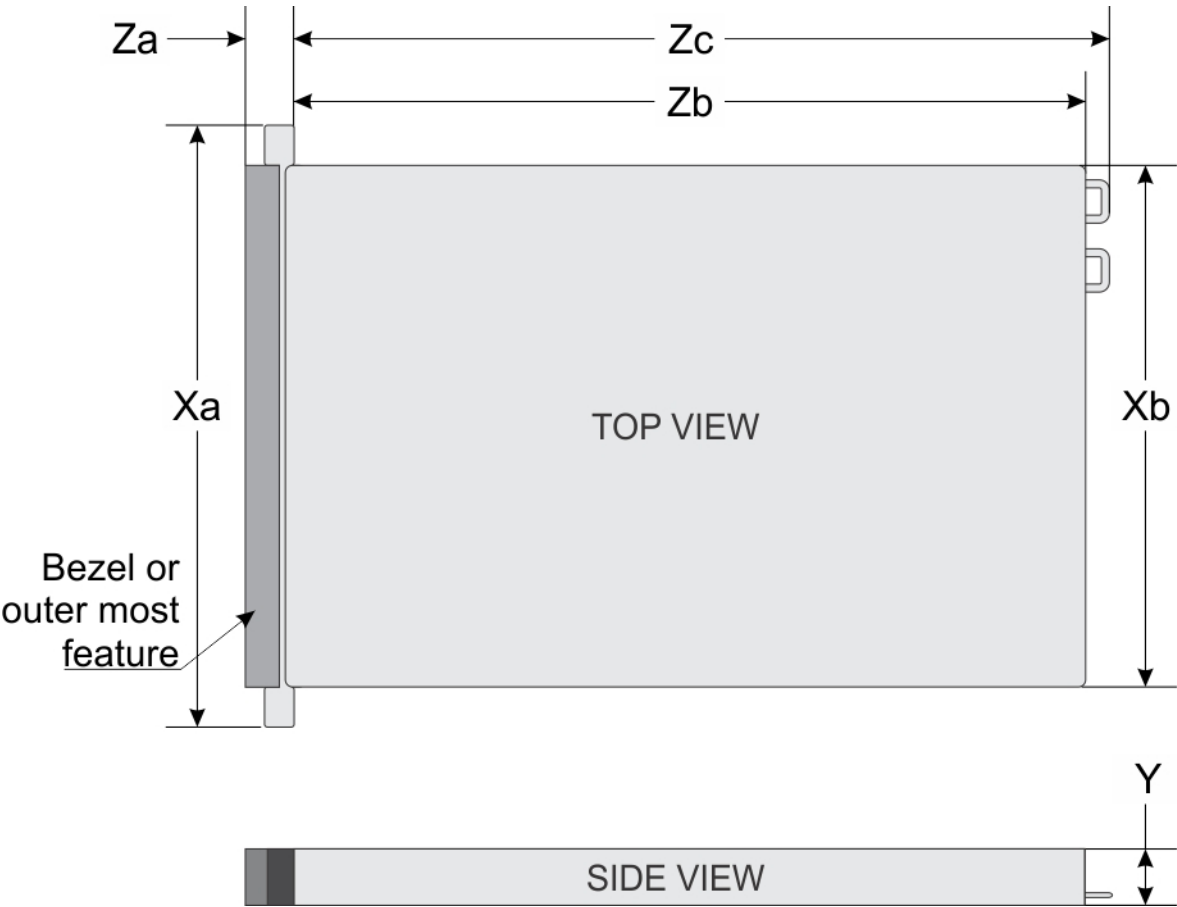


Figure 1. Chassis dimensions

Table 1. Chassis dimensions

Drives	Xa	Xb	Y	Za	Zb	Zc
24 drives	482.0 mm (18.97 inches)	434.0 mm (17.08 inches)	86.8 mm (3.41 inches)	22.0 mm (0.86 inches) Without bezel 35.84 mm (1.41 inches) With bezel	675.04 mm (26.57 inches) Ear to L bracket housing 650.24 mm (25.6 inches) Ear to PSU surface	685.78 mm (26.99 inches) Ear to PSU handle without velcro strap
12 drives						
16 drives						
8 drives						
No backplane configuration						

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

System weight

Table 2. PowerEdge R750xs system weight

System configuration	Maximum weight (with all drives/SSDs/bezel)
24 x 2.5-inch (16 SAS/SATA + 8 NVMe)	23.84 kg (52.55 lb)

Table 2. PowerEdge R750xs system weight (continued)

System configuration	Maximum weight (with all drives/SSDs/bezel)
16 x 2.5-inch	21.94 kg (48.36 lb)
12 x 3.5-inch	28.76 kg (63.40 lb)
8 x 3.5-inch	24.80 kg (54.67 lb)
8 x 2.5-inch	20.44 kg (45.06 lb)
No backplane configuration	18.54 kg (40.87 lb)

Processor specifications

Table 3. PowerEdge R750xs Processor specifications

Supported processor	Number of processors supported
3 rd Generation Intel Xeon Scalable processors with up to 32 cores	Up to two

PSU specifications

The PowerEdge R750xs system supports up to two AC or DC power supply units (PSUs).

Table 4. PSU specifications

PSU	Class	Heat dissipation (maximum) BTU/hr	Frequency Hz	Voltage	AC		DC	Current
					High line 200–240 V	Low line 100–120 V		
1400 W Mixed Mode	Platinum	5406	50/60	100–240 V AC, autoranging	1400 W	1050 W	NA	12 A–8 A
	NA	5406	NA	240 V DC, autoranging	NA	NA	1400 W	6.6 A
1100 W Mixed Mode	Titanium	4299	50/60	100–240 V AC, autoranging	1100 W	1050 W	NA	12 A–6.3 A
	NA	4299	NA	240 V DC, autoranging	NA	NA	1100 W	5.2 A
1100 W DC	NA	4265	NA	–48–(–60) V	NA	NA	1100 W	26.1 A
800 W Mixed Mode	Platinum	3000	50/60	100–240 V AC, autoranging	800 W	800 W	NA	9.2 A–4.7 A
	NA	3000	NA	240 V DC, autoranging	NA	NA	800 W	3.8 A
600 W Mixed Mode	Platinum	2250	50/60	100–240 V AC, autoranging	600 W	600 W	NA	7.1 A–3.6 A
	NA	2250	NA	240 V DC, autoranging	NA	NA	600 W	2.9 A

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

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

NOTE: When selecting or upgrading the system configuration, to ensure optimum power utilization, verify the system power consumption with the Dell Energy Smart Solution Advisor available at Dell.com/ESSA.

Supported operating systems

The PowerEdge R750xs system supports the following operating systems:

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

For more information, go to www.dell.com/ossupport.

Cooling fan specifications

Cooling fan specifications

The PowerEdge R750xs system supports up to six Standard fans, High performance Silver Grade fans, or High performance Gold Grade fans .

Table 5. Cooling fan specifications

Fan type	Abbreviation	Also known as	Label color	Label image
Standard fan	STD	STD	No label	
High-performance fan (Silver grade) fan	HPR SLVR	HPR	Silver	NOTE: New cooling fans come with the High-Performance Silver Grade label. While the older cooling fans have the High-Performance label.

Table 5. Cooling fan specifications (continued)

Fan type	Abbreviation	Also known as	Label color	Label image
				 A black cooling fan with a white label at the bottom that reads "HIGH PERFORMANCE". The fan has a large upward-pointing arrow and the word "AIRFLOW" embossed on its face. Figure 2. High performance fan  A black cooling fan with a white label at the bottom that reads "HIGH PERFORMANCE" and "Silver Grade". The fan has a large upward-pointing arrow and the word "AIRFLOW" embossed on its face. Figure 3. High performance (Silver grade) fan
High-performance fan (Gold grade) fan	HPR GOLD	VHPR - Very High Performance	Gold	NOTE: New cooling fans come with the High-Performance Gold Grade label. While the older cooling fans have the High-Performance label.  A black cooling fan with a gold label at the bottom that reads "HIGH PERFORMANCE". The fan has a large upward-pointing arrow and the word "AIRFLOW" embossed on its face. Figure 4. Very high performance fan

Table 5. Cooling fan specifications (continued)

Fan type	Abbreviation	Also known as	Label color	Label image
				 Figure 5. High performance (Gold grade) fan

NOTE: Mixing of STD, HPR SLVR, or HPR GOLD fan is not supported.

NOTE: The STD, HPR SLVR, or HPR GOLD fan installation depends on the system configuration. For more information about the supported fan configuration or matrix, see [Thermal restriction matrix](#).

System battery specifications

The PowerEdge R750xs system supports CR 2032 3.0-V lithium coin cell system battery.

Expansion card riser specifications

The PowerEdge R750xs system supports up to six PCI express (PCIe) Gen 4 expansion cards.

Table 6. Expansion card slots supported on the system board

PCIe slot	Expansion card riser	Processor connection	Height	Length	Slot width
Slot 1	N/A	Processor 1	Low Profile	Half Length	x16
Slot 2	N/A	PCH	Low Profile	Half Length	x8 (x4-Link)
Slot 3	Riser 1A	Processor 1	Low Profile	Half Length	x16
Slot 4		Processor 2	Low Profile	Half Length	x16
Slot 3	Riser 1B (SNAPI)	Processor 1 and 2	Low Profile	Half Length	x16
Slot 4		Processor 2	Low Profile	Half Length	x16 (x8-Link)
Slot 5	N/A	Processor 2	Low Profile	Half Length	x16
Slot 6	N/A	Processor 2	Low Profile	Half Length	x16

NOTE: Only one cable riser can be installed at a time for any given configuration.

Memory specifications

The PowerEdge R750xs system supports the following memory specifications for optimized operation.

Table 7. Memory specifications

DIMM type	DIMM rank	DIMM capacity	Single processor		Dual processors	
			Minimum DIMM capacity	Maximum DIMM capacity	Minimum DIMM capacity	Maximum DIMM capacity
RDIMM	Single rank	8 GB	8 GB	64 GB	16 GB	128 GB
	Dual rank	16 GB	16 GB	128 GB	32 GB	256 GB
		32 GB	32 GB	256 GB	64 GB	512 GB
		64 GB	64 GB	512 GB	128 GB	1 TB

Table 8. Memory module sockets

Memory module sockets	Speed
16, 288-pin	3200 MT/s, 2933 MT/s, 2666 MT/s

Storage controller specifications

The PowerEdge R750xs system supports the following controller cards:

Table 9. Storage controller cards for the system

Internal controllers	External controllers
- PERC H755 - PERC H755N - PERC H745 - PERC H345 - HBA355i - S150 - Boot Optimized Storage Subsystem (BOSS-S2): HWRAID 2 x M.2 SSDs	- HBA355e - PERC H840

NOTE: The software RAID controller S150 is supported on either SATA drives with chipset SATA only backplane, or NVMe drives in universal slots with processor direct PCIe cable connected backplane.

Drives

The PowerEdge R750xs system supports:

- 24 x 2.5-inch (16 SAS/SATA + 8 NVMe) drives
- 16 x 2.5-inch SAS or SATA drives
- 12 x 3.5-inch SAS or SATA drives
- 8 x 2.5-inch SAS or SATA drives
- 8 x 2.5-inch NVMe drives
- 8 x 3.5-inch SAS or SATA drives

NOTE: For more information about how to hot swap NVMe PCIe SSD U.2 device, see the *Dell Express Flash NVMe PCIe SSD User's Guide* at <https://www.dell.com/support> **Browse all Products > Data Center Infrastructure > Storage Adapters & Controllers > Dell PowerEdge Express Flash NVMe PCIe SSD > Documentation > Manuals and Documents.**

Ports and connectors specifications

USB ports specifications

Table 10. PowerEdge R750xs 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	One	USB 2.0-compliant port	One	Internal USB 3.0-compliant port	One
Micro-USB 2.0 iDRAC Direct	One	USB 3.0-compliant port	One		

- NOTE:** The micro USB 2.0 compliant port can only be used as an iDRAC Direct or a management port.
- NOTE:** The USB 2.0 specifications provide a 5 V supply on a single wire to power connected USB devices. A unit load is defined as 100 mA in USB 2.0, and 150 mA in USB 3.0. A device may draw a maximum of 5 unit loads (500 mA) from a port in USB 2.0; 6 (900 mA) in USB 3.0.
- NOTE:** The USB 2.0 interface can provide power to low-power peripherals but must adhere to USB specification. An external power source is required for higher-power peripherals to function, such as external CD/DVD Drives.

Serial connector specifications

The PowerEdge R750xs system supports one optional card type serial connector on rear of the system, which is a 9-pin connector, Data Terminal Equipment (DTE), 16550-compliant .

The process to install the optional serial connector card is similar to an expansion card filler bracket.

NIC port specifications

The PowerEdge R750xs system supports up to two 10/100/1000 Mbps Network Interface Controller (NIC) ports embedded on the LAN on Motherboard (LOM) and integrated on the optional Open Compute Project (OCP) cards.

Table 11. NIC port specification for the system

Feature	Specifications
LOM	1 GB x 2
OCP card (OCP 3.0)	1 GbE x 4, 10 GbE x 2, 25 GbE x 2, 25 GbE x 4, 50 GbE x 2, 100 GbE x 2

VGA ports specifications

The PowerEdge R750xs system supports two DB-15 VGA ports, one each on the front and rear panels of the system.

Video specifications

The Dell EMC PowerEdge R750xs system supports integrated Matrox G200 graphics controller with 16 MB of video frame buffer.

Table 12. Supported video resolution options for the system

Resolution	Refresh rate (Hz)	Color depth (bits)
1024 x 768	60	8, 16, 32
1280 x 800	60	8, 16, 32
1280 x 1024	60	8, 16, 32
1360 x 768	60	8, 16, 32
1440 x 900	60	8, 16, 32
1600 x 900	60	8, 16, 32
1600 x 1200	60	8, 16, 32
1680 x 1050	60	8, 16, 32
1920 x 1080	60	8, 16, 32
1920 x 1200	60	8, 16, 32

Environmental specifications

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

Table 13. Operational climatic range category A2

Temperature	Specifications
Allowable continuous operations	
Temperature ranges for altitudes <= 900 m (<= 2953 ft)	10–35°C (50–95°F) with no direct sunlight on the equipment
Humidity percent ranges (non-condensing at all times)	8% RH with -12°C minimum dew point to 80% RH with 21°C (69.8°F) maximum dew point
Operational altitude de-rating	Maximum temperature is reduced by 1°C/300 m (1.8°F/984 Ft) above 900 m (2953 Ft)

Table 14. Operational climatic range category A3

Temperature	Specifications
Allowable continuous operations	
Temperature ranges for altitudes <= 900 m (<= 2953 ft)	5–40°C (41–104°F) with no direct sunlight on the equipment
Humidity percent ranges (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 (1.8°F/574 Ft) above 900 m (2953 Ft)

Table 15. Operational climatic range category A4

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

Table 15. Operational climatic range category A4 (continued)

Temperature	Specifications
Operational altitude de-rating	Maximum temperature is reduced by 1°C/125 m (1.8°F/410 Ft) above 900 m (2953 Ft)

Table 16. Shared requirements across all categories

Temperature	Specifications
Allowable continuous operations	
Maximum temperature gradient (applies to both operation and non-operation)	20°C in an hour* (36°F in an hour) and 5°C in 15 minutes (9°F in 15 minutes), 5°C in an hour* (9°F in an hour) for tape <i>i</i> NOTE: * - Per ASHRAE thermal guidelines for tape hardware, these are not instantaneous rates of temperature change.
Non-operational temperature limits	-40 to 65°C (-104 to 149°F)
Non-operational humidity limits (Non-Condensing at all times)	5% to 95% RH with 27°C (80.6°F) maximum dew point
Maximum non-operational altitude	12,000 meters (39,370 feet)
Maximum operational altitude	3,048 meters (10,000 feet)

Table 17. Maximum vibration specifications

Maximum vibration	Specifications
Operating	0.21Grms at 5Hz to 500Hz for 10min (all x, y, and z axes)
Storage	1.88Grms at 10Hz to 500Hz for 15min (all six sides tested)

Table 18. Maximum shock pulse specifications

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

Particulate and gaseous contamination specifications

The following table defines the limitations that help avoid any damages to the IT equipment and/or, or both failure from particulate and gaseous contamination. If the levels of particulate or gaseous pollution exceed the specified limitations and results in equipment damage or failure, you must rectify the environmental conditions. Remediation of environmental conditions is the responsibility of the customer.

Table 19. Particulate contamination specifications

Particulate contamination	Specifications
Air filtration	Data center air filtration as defined by ISO Class 8 per ISO 14644-1 with a 95% upper confidence limit. <i>i</i> NOTE: This condition applies to data center environments only. Air filtration requirements do not apply to IT equipment designed to be used outside a data center, in environments such as an office or factory floor. <i>i</i> NOTE: Air entering the data center must have MERV11 or MERV13 filtration.

Table 19. Particulate contamination specifications (continued)

Particulate contamination	Specifications
Conductive dust	Air must be free of conductive dust, zinc whiskers, or other conductive particles. <i>i</i> NOTE: This condition applies to data center and non-data center environments.
Corrosive dust	- Air must be free of corrosive dust. - Residual dust present in the air must have a deliquescent point less than 60% relative humidity. <i>i</i> NOTE: This condition applies to data center and non-data center environments.

Table 20. Gaseous contamination specifications

Gaseous contamination	Specifications
Copper Coupon Corrosion rate	<300 Å/month per Class G1 as defined by ANSI/ISA71.04-2013
Silver Coupon Corrosion rate	<200 Å/month as defined by ANSI/ISA71.04-2013

i **NOTE:** Maximum corrosive contaminant levels measured at ≤50% relative humidity.

Thermal restriction matrix

Table 21. Thermal restriction matrix

Configuration		8 x 2.5-inch NVMe	16 x 2.5-inch SAS/ SATA + 8 x 2.5-inch NVMe	12 x 3.5-inch SAS/ SATA	Ambient temperature
Rear storage		No Rear Drives	No Rear Drives	No Rear Drives	
CPU TDP/cTDP	105 W	5 x HPR fan 2U STD HSK	5 x HPR silver fan 2U STD HSK	5 x HPR silver fan 2U HPR HSK	35°C
	120 W	5 x HPR fan 2U STD HSK	5 x HPR silver fan 2U STD HSK	5 x HPR silver fan 2U HPR HSK	35°C
	135 W	5 x HPR fan 2U STD HSK	5 x HPR silver fan 2U STD HSK	5 x HPR silver fan 2U HPR HSK	35°C
	150 W	5 x HPR fan 2U STD HSK	5 x HPR silver fan 2U STD HSK	5 x HPR silver fan 2U HPR HSK	35°C
	165 W	5 x HPR fan 2U HPR HSK	5 x HPR silver fan 2U HPR HSK	5 x HPR silver fan 2U HPR HSK	35°C
	185 W	5 x HPR fan 2U HPR HSK	5 x HPR silver fan 2U HPR HSK	5 x HPR silver fan 2U HPR HSK	35°C
	205 W	5 x HPR fan 2U HPR HSK	5 x HPR silver fan 2U HPR HSK	5 x HPR silver fan 2U HPR HSK	35°C
	220 W	5 x HPR fan	5 x HPR silver fan	5 x HPR silver fan	35°C

Table 21. Thermal restriction matrix (continued)

Configuration		8 x 2.5-inch NVMe	16 x 2.5-inch SAS/ SATA + 8 x 2.5-inch NVMe	12 x 3.5-inch SAS/ SATA	Ambient temperature
Rear storage		No Rear Drives	No Rear Drives	No Rear Drives	
		2U HPR HSK	2U HPR HSK	2U HPR HSK	

NOTE: Fan blank is required to be installed in Fan 1 slot for five standard fan, and five high performance fan configurations. One high-performance fan (Gold Grade) is required to be installed in Fan 1 slot when rear drives are installed.

NOTE: GPU is not supported in any of the configurations.

NOTE: OCP shroud is required if riser module is not installed.

NOTE: Processor blank is required for one processor configuration. DIMM blank is required in the CPU2 location irrespective of the air shroud.

Table 22. Processor and heat sink matrix

Heat sink	Processor TDP
2U STD HSK	< 165 W
2U HPR HSK	>= 165 W

Table 23. Label reference

Label	Description
STD	Standard
HPR (Silver)	High performance (silver grade)
HPR (Gold)	High performance (gold grade)
HSK	Heat sink
LP	Low profile
FH	Full height