Dell EMC PowerEdge R550

Technical Specifications

DELLTechnologies

Notes, cautions, and warnings

(i) **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

Technical specifications

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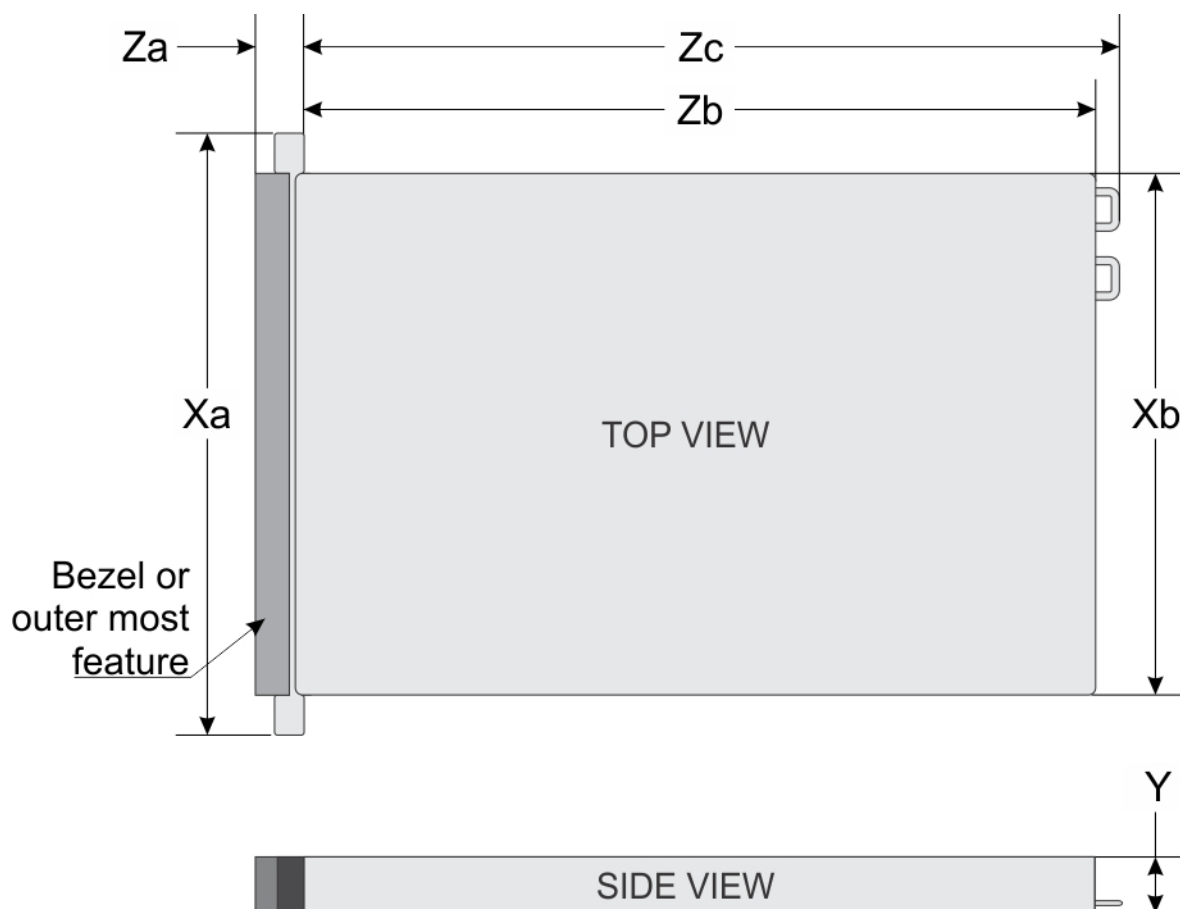
Topics:

Chassis dimensions

Figure 1. Chassis dimensions

Table 1. PowerEdge R550 chassis dimensions

Drives	Xa	Xb	Y	Za	Zb	Zc
16 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
8 drives						

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

Chassis weight

Table 2. PowerEdge R550 chassis weight

System configuration	Maximum weight (with all drives/SSDs/bezel)
16 x 2.5-inch	21.94 kg (48.36 lb)
8 x 2.5-inch	20.44 kg (45.06 lb)
8 x 3.5-inch	24.80 kg (54.67 lb)

Processor specifications

Table 3. PowerEdge R550 processor specifications

Supported processor	Number of processors supported
3rd Generation Intel Xeon Scalable processors with up to 24 cores	Up to two

PSU specifications

The PowerEdge R550 system supports up to two AC or DC power supply units (PSUs).

Table 4. PSU specifications

PSU	Class	Heat dissipation (maximum)	Frequency	Voltage	AC		DC	Current
					High line 200–240 V	Low line 100–120 V		
1100 W DC	NA	4265 BTU/hr	NA	-48–(-60) V	NA	NA	1100 W	27 A
800 W Mixed Mode	Platinum	3000 BTU/hr	50/60 Hz	100 - 240 V AC, autoranging	800 W	800 W	NA	9.2 - 4.7 A
	NA	3000 BTU/hr	NA	240 V DC, autoranging	NA	NA	800 W	3.8 A
600 W Mixed Mode	Platinum	2250 BTU/hr	50/60 Hz	100 - 240 V AC, autoranging	600 W	600 W	NA	7.1 - 3.6 A
	NA	2250 BTU/hr	NA	240 V DC, autoranging	NA	NA	600 W	2.9 A

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

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

(i) **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 R550 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

The PowerEdge R550 system supports up to five standard (STD) cooling 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)	HPR SLVR	HPR	Silver	(i) **NOTE:** New cooling fans come with the High-Performance Silver Grade label. While the older cooling fans have the High-Performance label. **Figure 2. High performance fan**

System battery specifications

The PowerEdge R550 system supports CR 2032 3.0-V lithium coin cell system battery.

Expansion card riser specifications

The PowerEdge R550 supports up to four PCI express (PCIe) slots (3 Gen4 and 1 Gen3 slots) on the system board.

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 5	N/A	Processor 2	Low Profile	Half Length	x16
Slot 6	N/A	Processor 2	Low Profile	Half Length	x16

Memory specifications

The PowerEdge R550 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	2933 MT/s

Storage controller specifications

The PowerEdge R550 system supports the following controller cards:

Table 9. Storage controller cards for the system

Internal controllers	External controllers
● S150 ● PERC H345 ● PERC H355 ● PERC H745 ● PERC H755 ● HBA355i	● PERC H840 ● HBA355e

Table 9. Storage controller cards for the system

Internal controllers	External controllers
● Boot Optimized Storage Subsystem (BOSS-S2): HWRAID 2 x M.2 SSDs 240 GB or 480 GB	

Drives

The PowerEdge R550 system supports:
- 16 x 2.5-inch SAS/SATA HDD/SSD.
- 8 x 2.5-inch SAS/SATA HDD/SSD.
- 8 x 3.5-inch SAS/SATA HDD/SSD.

Ports and connectors specifications

USB ports specifications

Table 10. PowerEdge R550 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
iDRAC Direct port (Micro-AB USB 2.0-compliant port)	One	USB 3.0-compliant ports USB 3.0-compliant port	One		

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

NIC port specifications

The PowerEdge R550 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 card	1 GbE x 2
OCP card (OCP 3.0)	1 GbE x 4, 10 GbE x 2, 25 GbE x 2

Serial connector specifications

The PowerEdge R550 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.

VGA ports specifications

The PowerEdge R550 system supports two DB-15 VGA ports, one each on the front and rear panels of the system.

Video specifications

The PowerEdge R550 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

(i) **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	

Table 15. Operational climatic range category A4 (continued)

Temperature	Specifications
Temperature ranges for altitudes <= 900 m (<= 2953 ft)	5–45ºC (41–113ºF) with no direct sunlight on the equipment
Humidity percent ranges (non-condensing at all times)	8% RH with -12ºC minimum dew point to 90% RH with 24ºC (75.2ºF) maximum dew point
Operational altitude de-rating	Maximum temperature is reduced by 1ºC/125 m (1.8ºF/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)	20ºC in an hour* (36ºF in an hour) and 5ºC in 15 minutes (9ºF in 15 minutes), 5ºC in an hour* (9ºF in an hour) for tape ⓘ **NOTE:** * - Per ASHRAE thermal guidelines for tape hardware, these are not instantaneous rates of temperature change.
Non-operational temperature limits	-40 to 65ºC (-104 to 149ºF)
Non-operational humidity limits (Non-Condensing at all times)	5% to 95% RH with 27ºC (80.6ºF) 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.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. ⓘ **NOTE:** This condition applies to data center environments only. Air filtration requirements do not apply to IT

Table 19. Particulate contamination specifications (continued)

Particulate contamination	Specifications
	equipment designed to be used outside a data center, in environments such as an office or factory floor. (i) **NOTE:** Air entering the data center must have MERV11 or MERV13 filtration.
Conductive dust	Air must be free of conductive dust, zinc whiskers, or other conductive particles. (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) **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. Label reference

Label	Description
STD	Standard
HSK	Heat sink
LP	Low profile
FH	Full height

Table 22. Thermal restriction matrix

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

(i) **NOTE:** Fan blank is required for five standard fan configurations.

(i) **NOTE:** GPU is not supported in any of the configurations.

(i) **NOTE:** OCP shroud is required if riser module is not installed.

(i) **NOTE:** Processor blank is required for one processor configuration.

PCIe adapter cards and other slot restrictions

- Can support Mellanox CX6-DX with Finisar 100G QSFP28 optical transceiver for all the slots.
- Mellanox Starlord CX6 Dx DP 100GbE with QSFP56 (MFS1S00-V003E) restricted to slot1, slot3 and slot6 in all the configurations.

Table 23. Processor and heat sink matrix

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

ASHRAE A3 and A4 environment thermal restriction

- Two PSUs are required in redundant mode. If there is PSU failure, system performance may be reduced.
- Processor TDP greater than or equal to 185 W are not supported.
- Front storage is not supported in 12x3.5-inch SAS/SATA configuration.
- Non-Dell qualified peripheral cards and/or peripheral cards greater than 25 W are not supported.
- OCP transceiver specification greater than or equal to 70°C is not supported.
- OCP card with transmission rate greater than 25 GB is not supported.
- PCIe SSD is not supported.
- BOSS (M.2) card is not supported.