Dell EMC PowerEdge XR2

Technical Specifications

Regulatory Model: E48S Series
Regulatory Type: E48S001

May 2020
Rev. A04

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

Dell EMC PowerEdge XR2 overview

The PowerEdge XR2 is a 1U, dual socket rack system with 8 x 2.5-inch drives and supports up to:

- Two Intel ® Xeon ® Processor Scalable Family processors
- 16 DIMM slots
- Integrated M.2 module
- Optional M.2 based Boot Optimized Storage Solution module
- Two redundant power supply units (PSU)

NOTE: All instances of SAS/SATA hard drives/SSDs and NVMe SSDs are referred to as drives in this document, unless specified otherwise.

2

PowerEdge XR2 technical specifications

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

Topics:

System dimensions

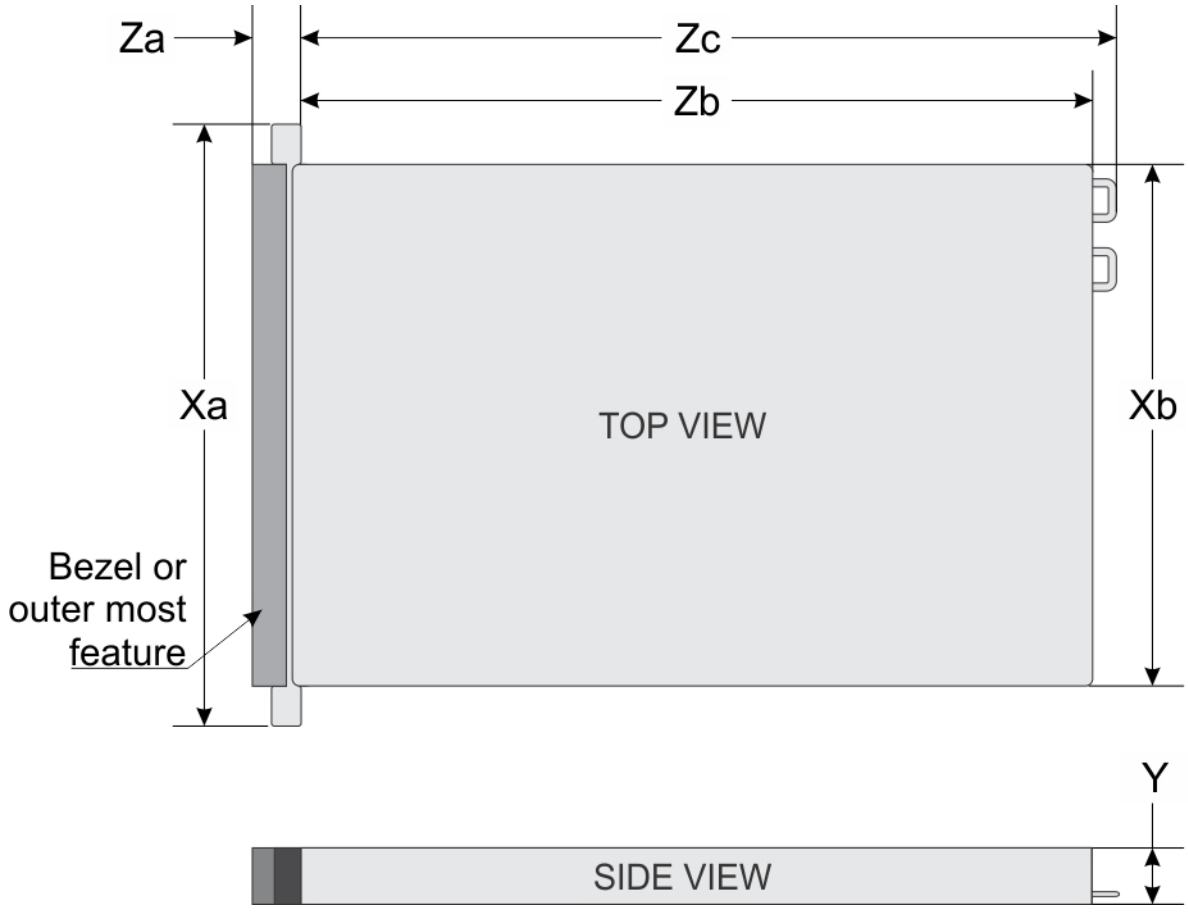

Figure 1. Dimensions of the PowerEdge XR2 system

Table 1. Dimensions of the PowerEdge XR2 system

Xa	Xb	Y	Za (with bezel)	Za (without bezel)	Zb	Zc
482.6 mm (19 inches)	434.0 mm (17.08 inches)	42.8 mm (1.68 inches)	63.15 mm (2.46 inches)	33.9 mm (1.32 inches)	514.35 mm (20.06 inches)	547.4 mm (21.35 inches)

Chassis weight

Table 2. Chassis weight

System	Maximum weight (with all drives/SSDs)
8 x 2.5 inch drive system	13.00 Kg (28 lb)

Processor specifications

The PowerEdge XR2 system supports up to two Intel Xeon Processor Scalable Family processors.

GPU specifications

The PowerEdge XR2 system supports one low profile, 75 W(single wide) GPU.

NOTE: Due to thermal limitations, the GPU is only supported in Riser 2.

NOTE: Due to thermal limitations, the GPU is only supported with Performance Fans.

Supported Operating Systems

The PowerEdge XR2 supports the following operating systems:

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

For more information on the specific versions and additions, see https://www.dell.com/support/home/Drivers/SupportedOS/oth-r440-xr.

PSU specifications

The PowerEdge XR2 system supports the following AC and DC power supplies units (PSU):

Table 3. PSU specifications

PSU	Class	Heat dissipation (maximum)	Frequency	Voltage
550 W AC	Platinum	2108 BTU/hr	50/60 Hz	115–230 V AC
600 W DC	NA	2016 BTU/hr	NA	-48 V DC

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

NOTE: This system is also designed to connect to the IT power systems with a phase-to-phase voltage not exceeding 230 V for an AC power supply unit.

System battery specifications

The PowerEdge XR2 system supports CR 2032 3.0-V lithium coin cell system battery.

Expansion bus specifications

The PowerEdge XR2 system supports PCI express (PCIe) generation four expansion cards, which must be installed on the system board using expansion card risers. The XR2 system supports four types of expansion card risers.

Table 4. PCIe expansion card riser configurations

Expansion card riser	PCIe slots on the riser	Height	Length	Link
LOM riser	Slot 1	Unique to Dell	Unique to Dell	x8
Right riser	Slot 2	Low Profile	Half Length	x16
	Slot 2	Full Height	Half Length	x16
Internal riser	Slot-integrated	Platform specific	Platform specific	x8
Left riser	Slot 3	Low Profile	Half Length	x16

Memory specifications

The PowerEdge XR2 system supports 16 DDR4 registered DIMM (RDIMMs) slots. Supported memory bus frequencies are 2666 MT/s, 2400 MT/s, 2133 MT/s, and 1866 MT/s.

Table 5. Memory specifications

DIMM type	DIMM rank	DIMM capacity	Single processor		Dual processors	
			Minimum RAM	Maximum RAM	Minimum RAM	Maximum RAM
RDIMM	Single rank	8 GB	8 GB	80 GB	16 GB	128 GB
RDIMM	Dual rank	16 GB	16 GB	160 GB	32 GB	256 GB
RDIMM	Dual rank	32 GB	32 GB	320 GB	64 GB	512 GB
LRDIMM	Quad rank	64 GB	64 GB	640 GB	128 GB	1024 GB
LRDIMM	Quad rank	128 GB	128 GB	1024 GB	256 GB	2048 GB

Storage controller specifications

The Dell EMC PowerEdge XR2 system supports:

- **Internal controllers**: PowerEdge Expandable RAID Controller (PERC) H330, H730P, HBA330
- **Boot Optimized Storage Subsystem (BOSS)**: HWRAID 2 x M.2 SSDs 480 GB with 6 Gbps
  - x8 connector using PCIe gen 2.0 x2 lanes, available only in the low-profile and half-height form factor
- **On board controller**: Software RAID (SWRAID) S140

Drive specifications

Drives

The PowerEdge XR2 system supports:

- Up to 8 x 2.5-inch drives with drive adapter, internal, hot swappable SAS, SATA SSDs
- Up to 4 x 2.5-inch drives with drive adapter, internal, hot swappable NVMe drives

Ports and connectors specifications

Common Access Card (CAC)

The integrated Common Access Card (CAC) reader or Smart card reader allows for an additional form of authentication for data encryption. The PowerEdge XR2 system supports one CAC on the front panel.

USB ports

The PowerEdge XR2 system supports:

- USB 2.0-compliant port on the front panel
- USB 3.0-compliant port on the back panel

The following table provides more information about the USB specifications:

Table 6. USB specifications

Front panel	Back panel	Internal USB
• One USB 2.0-compliant port • One iDRAC Direct (Micro-AB USB) port	• Two USB 3.0-compliant port	• One internal USB 2.0 port on the FIO board

eSATA port

The PowerEdge XR2 system supports one eSATA port on the front panel of the system.

NIC ports

The PowerEdge XR2 system supports two 1 Gbps Network Interface Controller (NIC) ports on the back panel.

Serial connector

The serial connector connects a serial device to the system. The PowerEdge XR2 system supports one serial connector on the back panel, which is a 9-pin connector, Data Terminal Equipment (DTE), 16550-compliant.

VGA ports

The Video Graphic Array (VGA) port enables you to connect the system to a VGA display. The PowerEdge XR2 system supports two 15-pin VGA ports on the front and back panels .

Internal Dual MicroSD Module

The PowerEdge XR2 system supports two optional flash memory card slots with an internal dual MicroSD module.

NOTE: One card slot is dedicated for redundancy.

Video specifications

The PowerEdge XR2 system supports Matrox G200eR2 graphics card with 16 MB capacity.

Table 7. Supported video resolution options

Resolution	Refresh rate (Hz)	Color depth (bits)
640 x 480	60, 70	8, 16, 32
800 x 600	60, 75, 85	8, 16, 32
1024 x 768	60, 75, 85	8, 16, 32
1152 x 864	60, 75, 85	8, 16, 32
1280 x 1024	60, 75	8, 16, 32
1440 x 900	60	8, 16, 32

Environmental specifications

NOTE: For additional information about environmental certifications, please refer to the Product Environmental Datasheet located with the Manuals & Documents on www.dell.com/poweredgemanuals

Table 8. Temperature specifications

Temperature	Specifications
Storage	–40°C–70°C (–40°F–158°F) per Mil-Std 810G Method 501.6, Proc 1
Continuous operation (for altitude less than 950 m or 3117 ft)	5°C–45°C (41°F–104°F), with no direct sunlight on the equipment
Fresh air	For information about fresh air, see Expanded Operating Temperature section.
Excursion temperature	55°C per Mil-Std 810G Method 501.6 Proc II **NOTE: Configuration restrictions will apply. For more information, contact DellEMC sales support representative.**
Maximum temperature gradient (operating and storage)	20°C/h (68°F/h)

Table 9. Relative humidity specifications

Relative humidity	Specifications
Storage	5% to 95% RH with 33°C (91°F) maximum dew point Atmosphere must be noncondensing at all times.
Operating	5% to 85% relative humidity with 29°C (842°F) maximum dew point

Table 10. Maximum vibration specifications

Maximum vibration	Specifications
Operating	Random vibration per Mil-Std 810G method 514.7, 0.00220783 g^2/Hz at 10 Hz to 500 Hz (overall 1.04 $_{rms}$), all 3 axes, 1 hour per axis
Storage	Mil-Std 810G Procedure I, Cat 4, Fig 514.7 C-1 (US highway truck vibration), 1 hour per axes

Table 11. Maximum shock specifications

Maximum shock	Specifications
Operating	Mil-Std 810G method 516.7, Proc I, 40G, 11 ms, 3 shocks in +/- directions in 3 axes (total 18 shocks)
Storage	Mil-Std 810G method 516.7, Proc I, 40G, 11 ms, 3 shocks in +/- directions in 3 axes (total 18 shocks)

Table 12. Maximum altitude specifications

Maximum altitude	Specifications
Operating	Mil-Std 810G method 500.6, Proc. II, air carriage, 15,000 ft for 1 hour after stabilization
Storage	Mil-Std 810G method 500.6, Proc. I, 40,000 ft for 1 hour after stabilization

Standard operating temperature

Table 13. Standard operating temperature specifications

Standard operating temperature	Specifications
Continuous operation (for altitude less than 950 m or 3117 ft)	+5°C–45°C (41°F–113°F) with no direct sunlight on the equipment **NOTE: The 150W CPU support is only up to 35°C.** **NOTE: GPU continuous operation is supported up to 30°C.** **NOTE: GPU continuous operation is supported up to 45°C with optional fan booster kit.**

Expanded operating temperature

Table 14. Expanded operating temperature specifications

Expanded operating temperature	Specifications
Continuous operation	5°C to 45°C at 5% to 85% RH with 29°C dew point. **NOTE: Outside the standard operating temperature (10°C to 35°C), the system can operate continuously in temperatures as low as 5°C and as high as 45°C.** For temperatures between 35°C and 45°C, de-rate maximum allowable temperature by 1°C per 175 m above 950 m (1°F per 319 ft).
≤ 1% of annual operating hours	–5°C to 55°C at 5% to 90% RH with 29°C dew point. **NOTE: Outside the standard operating temperature (10°C to 35°C), the system can operate down to –5°C or up to 55°C for a maximum of 1% of its annual operating hours.** **NOTE: GPU expanded operating temperatures is up to 37°C for selected configurations.** **NOTE: GPU expanded operating temperatures is up to 50°C for selected configurations with optional fan booster kit.** For temperatures between 45°C and 55°C, de-rate maximum allowable temperature by 1°C per 125 m above 950 m (1°F per 228 ft).

NOTE: When operating in the expanded temperature range, system performance may be impacted.

NOTE: When operating in the expanded temperature range, ambient temperature warnings may be reported on the LCD panel and in the System Event Log.

Expanded operating temperature restrictions

- Do not perform cold start below -15C Per IEC 60945.
- The operating temperature specified is for a maximum altitude of 950 m.
- Redundant power supplies are required.

- Non-Dell qualified peripheral cards and/or peripheral cards greater than 25 W require engineering analysis to see if they can be supported. For more information or support on non-Dell validated components, contact the OEM sales team.

Particulate and gaseous contamination specifications

The following table defines the limitations that help avoid any equipment damage or failure from particulates and gaseous contamination. If the levels of particulates or gaseous pollution exceed the specified limitations and result in equipment damage or failure, you may need to rectify the environmental conditions. Re-mediation of environmental conditions is the responsibility of the customer.

Table 15. 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 equipment designed to be used outside a data center, in environments such as an office or factory floor.** **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. **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. **NOTE: This condition applies to data center and non-data center environments.**

Table 16. Gaseous contamination specifications

Gaseous contamination	Specifications
Copper coupon corrosion rate	<300 Å/month per Class G1 as defined by ANSI/ISA71.04-1985.
Silver coupon corrosion rate	<200 Å/month as defined by AHSRAE TC9.9.

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

3

Documentation resources

This section provides information about the documentation resources for your system.

To view the document that is listed in the documentation resources table:

- From the Dell EMC support site:
  1. Click the documentation link that is provided in the Location column in the table.
  2. Click the required product or product version.

     NOTE: To locate the product name and model, see the front of your system.
  3. On the Product Support page, click **Manuals & documents**.
- Using search engines:
  - Type the name and version of the document in the search box.

Table 17. Additional documentation resources for your system

Task	Document	Location
Setting up your system	For more information about installing and securing the system into a rack, see the Rail Installation Guide included with your rack solution. For information about setting up your system, see the *Getting Started Guide* document that is shipped with your system.	www.dell.com/poweredgemanuals
Configuring your system	For information about the iDRAC features, configuring and logging in to iDRAC, and managing your system remotely, see the Integrated Dell Remote Access Controller User's Guide. For information about understanding Remote Access Controller Admin (RACADM) subcommands and supported RACADM interfaces, see the RACADM CLI Guide for iDRAC. For information about Redfish and its protocol, supported schema, and Redfish Eventing are implemented in iDRAC, see the Redfish API Guide. For information about iDRAC property database group and object descriptions, see the Attribute Registry Guide.	www.dell.com/poweredgemanuals
	For information about earlier versions of the iDRAC documents, see the iDRAC documentation. To identify the version of iDRAC available on your system, on the iDRAC web interface, click **?** > **About**.	www.dell.com/idracmanuals
	For information about installing the operating system, see the operating system documentation.	www.dell.com/operatingsystemmanuals
	For information about updating drivers and firmware, see the Methods to download firmware and drivers section in this document.	www.dell.com/support/drivers
Managing your system	For information about systems management software offered by Dell, see the Dell	www.dell.com/poweredgemanuals

Table 17. Additional documentation resources for your system(continued)

Task	Document	Location
	OpenManage Systems Management Overview Guide.	
	For information about setting up, using, and troubleshooting OpenManage, see the Dell OpenManage Server Administrator User's Guide.	www.dell.com/openmanagemanuals > OpenManage Server Administrator
	For information about installing, using, and troubleshooting Dell OpenManage Essentials, see the Dell OpenManage Essentials User's Guide.	www.dell.com/openmanagemanuals > OpenManage Essentials
	For information about installing, using, and troubleshooting Dell OpenManage Enterprise, see the Dell OpenManage Enterprise User's Guide.	www.dell.com/openmanagemanuals > OpenManage Enterprise
	For information about installing and using Dell SupportAssist, see the Dell EMC SupportAssist Enterprise User's Guide.	https://www.dell.com/serviceabilitytools
	For information about partner programs enterprise systems management, see the OpenManage Connections Enterprise Systems Management documents.	www.dell.com/openmanagemanuals
Working with the Dell PowerEdge RAID controllers	For information about understanding the features of the Dell PowerEdge RAID controllers (PERC), Software RAID controllers, or BOSS card and deploying the cards, see the Storage controller documentation.	www.dell.com/storagecontrollermanuals
Understanding event and error messages	For information about the event and error messages that are generated by the system firmware and agents that monitor system components, see the Error Code Lookup.	www.dell.com/qrl
Troubleshooting your system	For information about identifying and troubleshooting the PowerEdge server issues, see the Server Troubleshooting Guide.	www.dell.com/poweredgemanuals

4

Getting help

Topics:

Contacting Dell

Dell provides several online and telephone based support and service options. If you do not have an active internet connection, you can find contact information about your purchase invoice, packing slip, bill, or Dell product catalog. Availability varies by country and product, and some services may not be available in your area. To contact Dell for sales, technical assistance, or customer service issues:

Steps

1. Go to www.dell.com/support/home
2. Select your country from the drop-down menu on the lower right corner of the page.
3. For customized support:
   a. Enter your system Service Tag in the **Enter your Service Tag** field.
   b. Click **Submit**.
   The support page that lists the various support categories is displayed.
4. For general support:
   a. Select your product category.
   b. Select your product segment.
   c. Select your product.
   The support page that lists the various support categories is displayed.
5. For contact details of Dell Global Technical Support:
   a. Click Global Technical Support
   b. The **Contact Technical Support** page is displayed with details to call, chat, or e-mail the Dell Global Technical Support team.

Documentation feedback

You can rate the documentation or write your feedback on any of our Dell EMC documentation pages and click **Send Feedback** to send your feedback.

Accessing system information by using QRL

You can use the Quick Resource Locator (QRL) located on the information tag in the front of the PowerEdge R930, to access the information about the PowerEdge R930.

Prerequisites

Ensure that your smartphone or tablet has the QR code scanner installed.

The QRL includes the following information about your system:

- How-to videos
- Reference materials, including the Installtion and Service Manual, LCD diagnostics, and mechanical overview
- Your system service tag to quickly access your specific hardware configuration and warranty information
- A direct link to Dell to contact technical assistance and sales teams

Steps

1. Go to www.dell.com/qrl and navigate to your specific product or
2. Use your smartphone or tablet to scan the model-specific Quick Resource (QR) code on your system or in the Quick Resource Locator section.

Quick Resource Locator for PowerEdge XR2

Figure 2. Quick Resource Locator

Receiving automated support with SupportAssist

Dell EMC SupportAssist is an optional Dell EMC Services offering that automates technical support for your Dell EMC server, storage, and networking devices. By installing and setting up a SupportAssist application in your IT environment, you can receive the following benefits:

- **Automated issue detection** — SupportAssist monitors your Dell EMC devices and automatically detects hardware issues, both proactively and predictively.
- **Automated case creation** — When an issue is detected, SupportAssist automatically opens a support case with Dell EMC Technical Support.
- **Automated diagnostic collection** — SupportAssist automatically collects system state information from your devices and uploads it securely to Dell EMC. This information is used by Dell EMC Technical Support to troubleshoot the issue.
- **Proactive contact** — A Dell EMC Technical Support agent contacts you about the support case and helps you resolve the issue.

The available benefits vary depending on the Dell EMC Service entitlement purchased for your device. For more information about SupportAssist, go to www.dell.com/supportassist.

Recycling or End-of-Life service information

Take back and recycling services are offered for this product in certain countries. If you want to dispose of system components, visit www.dell.com/recyclingworldwide and select the relevant country.