

Dell EMC PowerEdge XE7440

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.


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PowerEdge XE7440 overview

The PowerEdge XE7440 server is a 1U server that supports:

- Two Intel Xeon Cascade Lake scalable processors (up to 150 W) with 26 cores per processor
- 16 DDR4 RDIMM and Load Reduced DIMM
- Full-width full-height (FWFH) and full-width low-profile (FWLP) system configurations are now available
- In FWFH, FE1 card is for increased flash tiering and GPGPU card is for intelligent video analytics
- In FWLP, flexible PCIe options are available to support GPGPU card (for media streaming) and NIC
- PCIe and Open Compute Project (OCP) adapters for expansion and connectivity

 **NOTE:** The Intel Xeon Processor Scalable processor with fabric connector is also known as Native Omnipath.

 **NOTE:** The PowerEdge XE7440 system is used for intelligent video analytics and media streaming.

Technical specifications

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

Topics:

- [Dimensions of the PowerEdge XE7440 sled](#)
- [Chassis weight](#)
- [Processor specifications](#)
- [Cooling specifications](#)
- [Supported operating systems](#)
- [System battery](#)
- [Expansion bus specifications](#)
- [Memory specifications](#)
- [Drives and storage specifications](#)
- [Video specifications](#)
- [Environmental specifications](#)

Dimensions of the PowerEdge XE7440 sled

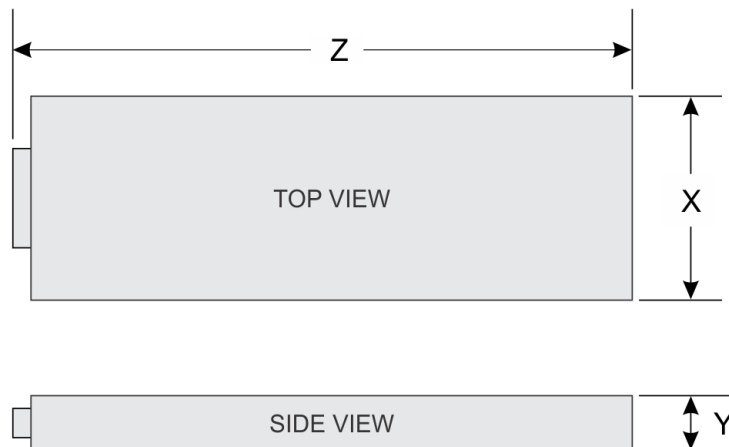


Figure 1. Dimensions of the PowerEdge XE7440 sled

Table 1. Dimensions of the PowerEdge XE7440 sled

X	Y	Z
373.4 mm (14.74 inches)	56.65 mm (2.23 inches)	691 mm (27.20 inches)

Chassis weight

Table 2. Chassis weight of the PowerEdge XE7100 enclosure with PowerEdge XE7440 and XE7420 sleds

System	Maximum weight (with all sleds and drives)
Chassis weight without sled	132.26 Kg (291.58 lb)
Chassis weight with half-width sled (XE7420)	137.12 Kg (302.29 lb)
Chassis weight with full- width full-height sled (XE7440).	140.93 Kg (310.69 lb)
Chassis weight with full- width low-profile sled (XE7440)	142.81 Kg (341.84 lb)

Processor specifications

The PowerEdge XE7440 sled supports up to two Intel Xeon Scalable processor in each independent sled. Each processor supports up to 26 cores.

Cooling specifications

The PowerEdge XE7100 chassis with two PowerEdge XE7420 nodes/sleds or one PowerEdge XE7440 node/sled has 18 fans. These are divided into three fan zones (Chassis, Node_A, and Node_B), and each zone has six fans.

The chassis fans are single rotor fans, and sled fans are dual rotor fans.

For Half-Width (HW) sled, sled 1 is Node 1 and sled 2 is Node 2.

Table 3. Fan numbering

PowerEdge systems	Fan numbering
XE7100 - Chassis	1–6
XE7440 (Single sled)	7–12 , 13-18
XE7420 (Dual sleds)	Node_A: 7–12 , Node_B: 13-18

NOTE: The reading and reporting of fan sensors are in the order of chassis fans, Node_A and Node_B fans, and sensors numbering is 1-6, 7-12 and 13-18 respectively.

- For XE7420, the sled 1/ node 1 reports six chassis fan sensors (1-6) and sled 1 fan sensors (7-12).
- For XE7420, the sled 2/ node 2 reports six chassis fan sensors (1-6) and sled 2 fan sensors (13-18).


Cooling fan-mapping

Table 4. Cooling fan-mapping

Fan name and configuration	iDRAC sensor number
(Chassis) FAN 1	38
FAN 2	39
FAN 3	3A
FAN 4	3B
FAN 5	3C
FAN 6	3D


Table 4. Cooling fan-mapping (continued)

Fan name and configuration	iDRAC sensor number
(Node_A) FAN 7	3E
FAN 8	3F
FAN 9	40
FAN 10	41
FAN 11	42
FAN 12	43
(Node_B) FAN 13	44
FAN 14	45
FAN 15	46
FAN 16	47
FAN 17	E2
FAN 18	E3

 **NOTE:** All the numbering are embossed on each fan.

Thermal recommendations


- After one fan rotor failure, you must estimate the fan service time while the system is under steady state.
- It is recommended to limit the minimum service time under 500 seconds.

 **NOTE:** For PSU and hard drive no limit is required for the service time.

Supported operating systems


The PowerEdge XE7440 supports the following operating systems:

- Canonical® Ubuntu®
- VMware® ESXi®
- Microsoft® Windows Server®
- Red Hat® Enterprise Linux
- SUSE® Linux Enterprise Server

 **NOTE:** For more information about the specific versions and additions, see <https://www.dell.com/ossupport>.

System battery

The PowerEdge XE7440 sled uses a CR 2032 3V replaceable lithium coin cell battery.

 **NOTE:** There is a system battery in each of the sleds.

Expansion bus specifications

The PowerEdge XE7440 sled supports four Generation 3 capable PCIe slots.

Table 5. Expansion bus specifications

PCIe Slots	Description	Form factor
x8 DCS Mezz PCIe riser	Slot 1: x8 PCIe Gen3 from processor 1	Mini PERC form factor
x8+x8 OCP Mezz riser	Slot 2: x8 PCIe Gen3 from processor 1	Standard Open Compute Project (OCP) form factor
	Slot 3: x8 PCIe Gen3 from processor 1	
x16 PCIe main riser	Slot 4: x16 PCIe Gen3 processor 1 (for FWFH configuration)	Standard PCIe form factor
	Slot 7: x16 PCIe Gen3 processor 1 (for FWLP configuration)	
	Slot 8: x16 PCIe Gen3 processor 1 (for FWLP configuration)	
	Slot 9: x16 PCIe Gen3 processor 1 (for FWLP configuration)	
	Slot 10: x16 PCIe Gen3 processor 1 (for FWLP configuration)	
x16 M.2 riser	Slot 5 and 6: x16 PCIe Gen3 from processor 2	Custom form factor (PERC card)

Memory specifications

Table 6. Memory specifications

Memory module sockets	DIMM type	DIMM rank	DIMM capacity	Single processor		Dual processors	
				Minimum RAM	Maximum RAM	Minimum RAM	Maximum RAM
Sixteen 288-pins	LRDIMM	Octal rank	128 GB	128 GB	1024 GB	256 GB	2048 GB
	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	1024 GB

Drives and storage specifications

The PowerEdge XE7440 enclosure supports SAS and SATA hard drives and Solid State Drives (SSDs).

Table 7. Supported drive options for the PowerEdge XE7440 sled with enclosure

Maximum number of drives in the enclosure	Maximum number of drives assigned per sled
100 x 3.5-inch drive systems	100 SAS or SATA hard drives and SSDs per sled
4 x 2.5-inch drive systems with NVMe	The NVMe backplane supports either of these configurations: <ul style="list-style-type: none"> Two NVMe drives and two SAS or SATA hard drives or SSDs per sled
Upto 20 x M.2 NVMe drive (for FE1 card)	The supported each M.2 NVMe capacity in FE1 card is up to 1.92 TB <i>i</i> NOTE: The FE1 card is installed on the x16 riser slot (slot 4).
Micro-SD card (optional) for boot (up to 64 GB)	One on each PCIe riser of the sled

Video specifications

The PowerEdge XE7440 sled supports a Matrox G200 integrated graphics card with 16 MB RAM.

Table 8. Supported video resolution options

Resolution	Refresh rate (Hz)	Color depth (bits)
1024 x 768	60	up to 24
1280 x 800	60	up to 24
1280 x 1024	60	up to 24
1360 x 768	60	up to 24
1440 x 900	60	up to 24

Environmental specifications

The sections below contains information about the environmental specifications of the system.

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

Standard operating temperature specifications

NOTE: All components including the DIMMs, communication cards, M.2 SATA, and PERC cards can be supported with sufficient thermal margin if the ambient temperature is equal to or below to the maximum continuous operating temperature listed in these tables except for the Mellanox DP LP card and Intel Rush Creek card.

Table 9. Standard operating temperature specifications

Standard operating temperature	Specifications
Temperature ranges (for altitude less than 900 m or 2953 ft)	10°C–35°C (50°F–95°F) with no direct sunlight on the equipment.

Expanded operating temperature specifications

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 in the System Event Log.

Operating temperature derating specifications

Table 10. Operating temperature

Operating temperature derating	Specifications
≤ 35°C (95°F)	Maximum temperature is reduced by 1°C/300 m (1.8°F/984 ft) above 900 meters (2953 ft).
35°C–40°C (95°F–104°F)	Maximum temperature is reduced by 1°C/175 m (1.8°F/574 ft) above 900 meters (2953 ft).
40°C–45°C (104°F–113°F)	Maximum temperature is reduced by 1°C/125 m (1.8°F/410 ft) above 900 meters (2953 ft).

Relative humidity specifications


Table 11. Relative humidity specifications

Relative humidity	Specifications
Storage	5% to 95% RH with 27°C (80.6°F) maximum dew point. Atmosphere must be noncondensing always.
Operating	<ul style="list-style-type: none">• < 35°C (95°F): 8% RH with -12°C minimum dew point to 80% RH with 21°C (69.8°F) maximum dew point.• 35°C–40°C (95°F–104°F): 8% RH with -12°C minimum dew point to 85% RH with 24°C (75.2°F) maximum dew point.• 40°C– 45°C(104°F–113°F): 8% RH with -12°C minimum dew point to 90% RH with 24°C (75.2°F) maximum dew point

Temperature specifications

Table 12. Temperature specifications

Temperature	Specifications
Storage	–40°C–65°C (–40°F to 149°F)
Continuous operation (for altitude less than 950 m or 3117 ft)	10°C–35°C (50°F to 95°F) with no direct sunlight on the equipment.
Expanded operating temperature	For information about expanded operating temperature, see Expanded Operating Temperature section.
Maximum temperature gradient (operating and storage)	20°C/h (68°F/h)

 **NOTE:** Some configurations require a lower ambient temperature for more information, see the [Standard operating temperature specifications](#).

Particulate and gaseous contamination specifications

Table 13. 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 only to data center environments. 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 14. 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 per Class G1 as defined by ANSI/ISA71.04-2013
 NOTE: Maximum corrosive contaminant levels measured at ≤50% relative humidity.	

Maximum vibration specifications

Table 15. Maximum vibration specifications

Maximum vibration	Specifications
Operating	0.26 Grms at 5 Hz to 350 Hz (all operation orientations).
Storage	1.88 Grms at 10 Hz to 500 Hz for 15 min (all six sides tested).

Maximum shock specifications

Table 16. Maximum shock specifications

Maximum shock	Specifications
Operating	24 executed shock pulses 6 G in the positive and negative x, y, z axis for up to 11 ms (four pulses on each side of the system).
Storage	6 consecutively executed shock pulses of 71 G in the positive and negative x, y, z axes for up to 2 ms (one pulse on each side of the system).

Maximum altitude specifications

Table 17. Maximum altitude specifications

Maximum altitude	Specifications
Operating	3048 m (10,000 ft)
Storage	12,000 m (39,370 ft)

System diagnostics and indicator codes

This section describes the diagnostic indicators on the system front panel that displays the system status during system startup.

Topics:

- [NIC indicator codes](#)
- [Using system diagnostics](#)

NIC indicator codes

Each NIC on the back of the system has indicators that provide information about the activity and link status. The activity LED indicator indicates if data is flowing through the NIC, and the link LED indicator indicates the speed of the connected network.

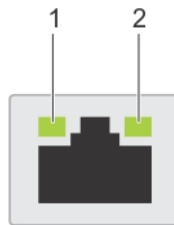


Figure 2. NIC indicator codes

1. Link LED indicator
2. Activity LED indicator


Table 18. NIC indicator codes

NIC indicator codes	Condition
Link and activity indicators are off.	Indicates that the NIC is not connected to the network.
Link indicator is green, and activity indicator is blinking green.	Indicates that the NIC is connected to a valid network at its maximum port speed, and data is being sent or received.
Link indicator is amber, and activity indicator is blinking green.	Indicates that the NIC is connected to a valid network at less than its maximum port speed, and data is being sent or received.
Link indicator is green, and activity indicator is off.	Indicates that the NIC is connected to a valid network at its maximum port speed, and data is not being sent or received.
Link indicator is amber, and activity indicator is off.	Indicates that the NIC is connected to a valid network at less than its maximum port speed, and data is not being sent or received.
Link indicator is blinking green, and activity is off.	Indicates that the NIC identify is enabled through the NIC configuration utility.

Using system diagnostics

If you experience an issue with the system, run the system diagnostics before contacting Dell for technical assistance. The purpose of running system diagnostics is to test the system hardware without using additional equipment or risking data loss. If you are unable to fix the issue yourself, service and support personnel can use the diagnostics results to help you solve the issue.

Dell Embedded System Diagnostics

 **NOTE:** The Dell Embedded System Diagnostics is also known as Enhanced Pre-boot System Assessment (ePSA) diagnostics.

The Embedded System Diagnostics provide a set of options for particular device groups or devices allowing you to:

- Run tests automatically or in an interactive mode
- Repeat tests
- Display or save test results
- Run thorough tests to introduce additional test options to provide extra information about the failed device(s)
- View status messages that inform you if tests are completed successfully
- View error messages that inform you of issues encountered during testing

Running the Embedded System Diagnostics from the Dell Lifecycle Controller

Steps

1. As the system boots, press F10.
2. Select **Hardware Diagnostics** → **Run Hardware Diagnostics**.
The **ePSA Pre-boot System Assessment** window is displayed, listing all devices detected in the system. The diagnostics starts executing the tests on all the detected devices.

Running the Embedded System Diagnostics from Boot Manager

Run the Embedded System Diagnostics (ePSA) if your system does not boot.

Steps

1. When the system is booting, press F11.
2. Use the up arrow and down arrow keys to select **System Utilities** > **Launch Diagnostics**.
3. Alternatively, when the system is booting, press F10, select **Hardware Diagnostics** > **Run Hardware Diagnostics**.
The **ePSA Pre-boot System Assessment** window is displayed, listing all devices detected in the system. The diagnostics starts executing the tests on all the detected devices.

Results

System diagnostic controls

Table 19. System diagnostic controls

Menu	Description
Configuration	Displays the configuration and status information of all detected devices.
Results	Displays the results of all tests that are run.
System health	Provides the current overview of the system performance.
Event log	Displays a time-stamped log of the results of all tests run on the system. This is displayed if at least one event description is recorded.

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 20. Additional documentation resources for your system

Task	Document	Location
Setting up your system	<p>For more information about installing and securing the system into a rack, see the Rail Installation Guide included with your rail solution.</p> <p>For information about setting up your system, see the <i>Getting Started Guide</i> document that is shipped with your system.</p>	www.dell.com/xemanuals
Configuring your system	<p>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.</p> <p>For information about understanding Remote Access Controller Admin (RACADM) subcommands and supported RACADM interfaces, see the RACADM CLI Guide for iDRAC.</p> <p>For information about Redfish and its protocol, supported schema, and Redfish Eventing implemented in iDRAC, see the Redfish API Guide.</p> <p>For information about iDRAC property database group and object descriptions, see the Attribute Registry Guide.</p> <p>For information about Intel QuickAssist Technology, see the Integrated Dell Remote Access Controller User's Guide.</p>	www.dell.com/poweredgemanuals
	<p>For information about earlier versions of the iDRAC documents.</p> <p>To identify the version of iDRAC available on your system, on the iDRAC web interface, click ? > About.</p>	www.dell.com/idracmanuals

Table 20. Additional documentation resources for your system (continued)

Task	Document	Location
	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 OpenManage Systems Management Overview Guide.	www.dell.com/poweredgemanuals
	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 Enterprise, see the Dell OpenManage Enterprise User's Guide.	https://www.dell.com/openmanagemanuals
	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 generated by the system firmware and agents that monitor system components, go to qrl.dell.com > Look Up > Error Code , type the error code, and then click Look it up .	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

Getting help

Topics:

- [Contacting Dell EMC](#)
- [Documentation feedback](#)
- [Accessing system information by using QRL](#)
- [Receiving automated support with SupportAssist](#)
- [Recycling or End-of-Life service information](#)

Contacting Dell EMC

Dell EMC 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 EMC product catalog. Availability varies by country and product, and some services may not be available in your area. To contact Dell EMC 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 EMC Global Technical Support:
 - a. Click [Contact Technical Support](#).
 - b. Enter your system Service Tag in the **Enter your Service Tag** field on the Contact Us webpage.

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 system, to access the information about the PowerEdge system.

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 Installation 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 XE7100, XE7420 and XE7440 systems



Figure 3. Quick Resource Locator for PowerEdge XE7100, XE7420 and XE7440 systems

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.