Dell EMC PowerEdge T440

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.

Contents

Dell EMC PowerEdge T440 overview

The PowerEdge T440 is a dual-socket, 5U rackable tower server that supports up to:

- Two Intel Xeon Scalable Processor Family processors
- Sixteen DIMM slots supporting up to a total of 16 x 64 GB = 1024GB of memory
- Five PCIe Gen 3 expansion cards, plus a dedicated PERC slot
- 4 or 8 x 3.5 inch SAS/SATA-hard drive or SSD, or 16 x 2.5 inch SAS/SATA drive bays (up to 12 Gbps SAS and 6 Gbps SATA)
- Redundant power supply units (PSUs)
- Cabled power supply units (PSUs)

Technical specifications

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

Topics:

- System dimensions
- Chassis weight
- Processor specifications
- PSU specifications
- System battery specifications
- Expansion bus specifications
- Memory specifications
- Storage controller specifications
- Drive specifications
- Ports and connectors specifications
- Video specifications
- Environmental specifications

System dimensions
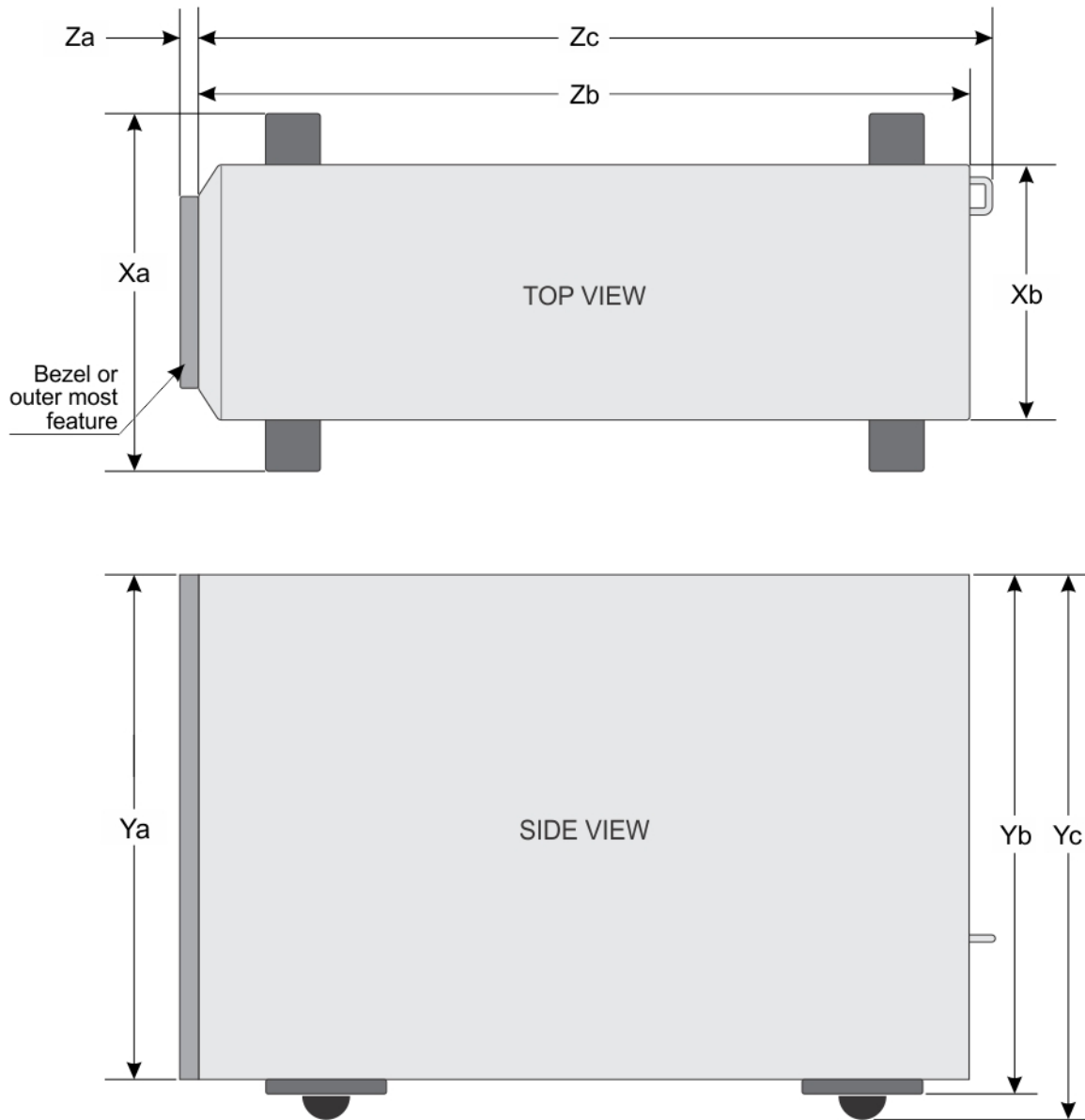
Figure 1. Details the dimensions of the PowerEdge T440 system

Table 1. Dimensions of PowerEdge T440 system

Xa	Xb	Ya	Yb	Yc	Za	Zb	Zc
218 mm (8.58 in)	307.9 mm (12.12 in)	430.3 mm (16.94 in)	464.362 mm (18.28 in)	471.333 mm (17.37 in)	(with bezel) 37.065 mm (1.45 in) (without bezel) 21.165 mm (0.83 in)	538.4 mm (21.19 in)	573.636 mm (22.58 in)

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Chassis weight

System configuration	Maximum weight
4 x 3.5 inch drive system	23.9 Kg (52.69 lb)
8 x 3.5 inch drive system	29.5 Kg (65.03 lb)
16 x 2.5 inch drive system	27.7 Kg (61.06 lb)

Processor specifications

The PowerEdge T440 system supports up to two Intel Xeon Processor Scalable Family processors.

PSU specifications

The PowerEdge T440 system supports the following AC redundant power supply units (PSU).

Table 3. PSU specifications

PSU	Class	Heat dissipation (maximum)	Frequency	Voltage
1100 W AC	Platinum	4100 BTU/hr	50/60 Hz	100–240 V AC, autoranging
750 W AC	Platinum	2891 BTU/hr	50/60 Hz	100–240 V AC, autoranging
495 W AC	Platinum	1908 BTU/hr	50/60 Hz	100–240 V AC, autoranging

ⓘ NOTE: **This system is also designed to connect to the IT power systems with a phase to phase voltage not exceeding 230 V.**

System battery specifications

The PowerEdge T440 system supports CR 2032 3.0-V lithium coin cell system battery.

Expansion bus specifications

The PowerEdge T440 system supports five PCI express (PCIe) generation 3 expansion cards.

Memory specifications

The PowerEdge T440 system supports DDR4 registered DIMM slots (RDIMMs) and load-reduced DIMM slots (LRDIMMs). Supported memory bus frequencies are 1866 MT/s, 2133 MT/s, 2400 MT/s, and 2666 MT/s.

CPU1 supports up to 10 DIMM slots and CPU 2 supports up to 6 DIMM slots.

Table 4. Memory specifications

Memory module sockets	Memory capacity	Minimum RAM	Maximum RAM
Sixteen 288-pin	• 8 GB, 16 GB, or 32 GB single rank or dual rank (RDIMMs) • 64 GB quad rank (LRDIMMs)	8 GB with dual processors (minimum one memory module per processor)	• Up to 512 GB RDIMM • Up to 1 TB LRDIMM

Storage controller specifications

The T440 system supports:

- Internal storage controller cards: PowerEdge RAID Controller (PERC) H740P, H730P, H330, and S140
    - HBA330, 12Gbps SAS HBA, and BOSS-S1
- External storage controller cards: PERC H840
    - 12Gbps SAS HBA

Drive specifications

Drives

The PowerEdge T440 system supports:

- Up to 4 x 3.5 inch cabled drives with drive adapter, internal, SATA, or Nearline SAS drives
  or
- Up to 8 x 3.5 inch hot swappable drives with drive adapter, internal, hot swappable SAS/SATA drives
  or
- Up to 16 x 2.5 inch hot swappable drives with drive adapter, internal, hot swappable SAS/SATA drives

Optical drive

The T440 system supports one optional slim SATA DVD-ROM drive or DVD +/-RW drive.

Ports and connectors specifications

USB ports

The table provides information about the supported USB port specifications.

Table 5. USB specifications

System	Front panel	Back panel
PowerEdge T440	• One USB 2.0-compliant port • One USB 3.0-compliant port	• Four USB 2.0-compliant rear ports • Two USB 3.0-compliant rear ports

NIC ports

The PowerEdge T440 system supports two Network Interface Controller (NIC) ports on the back panel each with 1 Gbps configuration.

(i) NOTE: You can install up to six PCIe add-on NIC cards.

VGA ports

The Video Graphic Array (VGA) port enables you to connect the system to a VGA display. The T440 system supports one 15-pin VGA ports on the back of the system.

Serial connector

The T440 system supports one serial connector on the back panel, which is a 9-pin connector, Data Terminal Equipment (DTE), 16550-compliant.

Internal Dual microSD Module or vFlash card

The T440 system supports Internal Dual microSD module (IDSDM) and vFlash card. In 14th generation of PowerEdge servers, IDSDM and vFlash card are combined into a single card module, and are available in these configurations:

- vFlash or
- IDSDM or
- vFlash and IDSDM

The IDSDM/vFlash card sits in the back of the system, in a Dell-proprietary slot. IDSDM/vFlash card supports three micro SD cards (two cards for IDSDM and one card for vFlash). MicroSD cards capacity for IDSDM are 16/32/64 GB while for vFlash the microSD card capacity is 16 GB.

Micro SD cards are supported only on IDSDM SD card slots.

Video specifications

The PowerEdge T440 system supports Matrox G200eR2 graphics card with 16 MB capacity.

Table 6. Supported video resolution options

Resolution	Refresh rate (Hz)	Color depth (bits)
640x480	60,70	8, 16, 32
800x600	60,75, 85	8, 16, 32
1024x768	60,75, 85	8, 16, 32
1152x864	60,75, 85	8, 16, 32
1280x1024	60,75	8, 16, 32
1440x900	60	8, 16, 32

Environmental specifications

ⓘ NOTE: For additional information about environmental measurements for specific system configurations, see Dell.com/environmental_datasheets.

Table 7. Temperature specifications

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

Table 8. Relative humidity specifications

Relative humidity	Specifications
Storage	5% to 95% RH with 33°C (91°F) maximum dew point. Atmosphere must be non-condensing at all times.
Operating	10% to 80% relative humidity with 29°C (84.2°F) maximum dew point.

Table 9. Maximum vibration specifications

Maximum vibration	Specifications
Operating	0.26 G_{rms} at 5 Hz to 350 Hz (all three axes).
Storage	1.88 G_{rms} at 10 Hz to 500 Hz for 15 min (all six sides tested).

Table 10. Maximum shock specifications

Maximum shock	Specifications
Operating	Six consecutively executed shock pulses in the positive and negative x, y, and z axes of 6 G for up to 11 ms.
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.

Table 11. Maximum altitude specifications

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

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Table 12. Operating temperature de-rating specifications

Operating temperature de-rating	Specifications
Up to 35°C (95°F)	Maximum temperature is reduced by 1°C/300 m (1°F/547 ft) above 950 m (3,117 ft).
35°C to 40°C (95°F to 104°F)	Maximum temperature is reduced by 1°C/175 m (1°F/319 ft) above 950 m (3,117 ft).
40°C to 45°C (104°F to 113°F)	Maximum temperature is reduced by 1°C/125 m (1°F/228 ft) above 950 m (3,117 ft).

Standard operating temperature

Table 13. Standard operating temperature specifications

Standard operating temperature	Specifications
Continuous operation (for altitude less than 950 m or 3117 ft)	10°C to 35°C (50°F to 95°F) with no direct sunlight on the equipment.

Expanded operating temperature

Table 14. Expanded operating temperature specifications

Expanded operating temperature	Specifications
Continuous operation	5°C to 40°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 40°C.**
	For temperatures between 35°C to 40°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 45°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 45°C for a maximum of 1% of its annual operating hours.**
	For temperatures between 40°C and 45°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 in the System Event Log.**

Expanded operating temperature restrictions

- Do not perform a cold startup below 5°C.

- The operating temperature specified is for a maximum altitude of 3048 m (10,000 ft).
- Two non-redundant power supply units are required.
- Two non-redundant system fans are required.
- Non-Dell qualified peripheral cards and/or peripheral cards greater than 25 W are not supported.
- GPU is not supported.
- Tape backup unit is not supported.

Particulate and gaseous contamination specifications

The following table defines the limitations that help avoid any equipment damage or failure from particulate and gaseous contamination. If the levels of particulate or gaseous pollution exceed the specified limitations and result in equipment damage or failure, you may need to rectify the environmental conditions. Remediation 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.
	(i) **NOTE: The ISO Class 8 condition applies to data center environments only. This air filtration requirement does not apply to IT 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 16. 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.**

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Documentation resources

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

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 rack documentation included with your rack solution.	Dell.com/poweredgemanuals
	For information about setting up and turning on the system, see the *Getting Started Guide* document that is shipped with your system.	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.	Dell.com/idracmanuals
	For information about installing the operating system, see the operating system documentation.	Dell.com/operatingsystemmanuals
	For information about understanding Remote Access Controller Admin (RACADM) subcommands and supported RACADM interfaces, see the RACADM Command Line Reference Guide for iDRAC.	Dell.com/idracmanuals
	For information about updating drivers and firmware, see the Methods to download firmware and drivers section in this document.	To download drivers: Dell.com/support/drivers
Managing your system	For information about systems management software offered by Dell, see the Dell OpenManage Systems Management Overview Guide.	Dell.com/openmanagemanuals
	For information about setting up, using, and troubleshooting OpenManage, see the Dell OpenManage Server Administrator User's Guide.	Dell.com/openmanagemanuals
	For information about installing, using, and troubleshooting Dell OpenManage Essentials, see the Dell OpenManage Essentials User's Guide.	Dell.com/openmanagemanuals
	For information about installing and using Dell SupportAssist, see the Dell EMC SupportAssist Enterprise User's Guide.	Dell.com/serviceabilitytools
	For understanding the features of Dell Lifecycle Controller, see the Dell Lifecycle Controller User's Guide.	Dell.com/idracmanuals

Task	Document	Location
	For information about partner programs enterprise systems management, see the OpenManage Connections Enterprise Systems Management documents.	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.	Dell.com/storagecontrollermanuals
Understanding event and error messages	For information about checking the event and error messages generated by the system firmware and agents that monitor system components, see the Dell Event and Error Messages Reference Guide.	Dell.com/openmanagemanuals > OpenManage software
Troubleshooting your system	For information about identifying and troubleshooting the PowerEdge server issues, see the Server Troubleshooting Guide.	Dell.com/poweredgemanuals

Getting help

Topics:

- Contacting Dell
- Documentation feedback
- Accessing system information by using QRL
- Receiving automated support with SupportAssist

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:

1   Go to Dell.com/support.
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 documentation pages and click **Send Feedback** to send your feedback.

Accessing system information by using QRL

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 Owner's 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 **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 Dell PowerEdge system or in the Quick Resource Locator section.

Quick Resource Locator for T440

Quick Resource Locator for PowerEdge T440
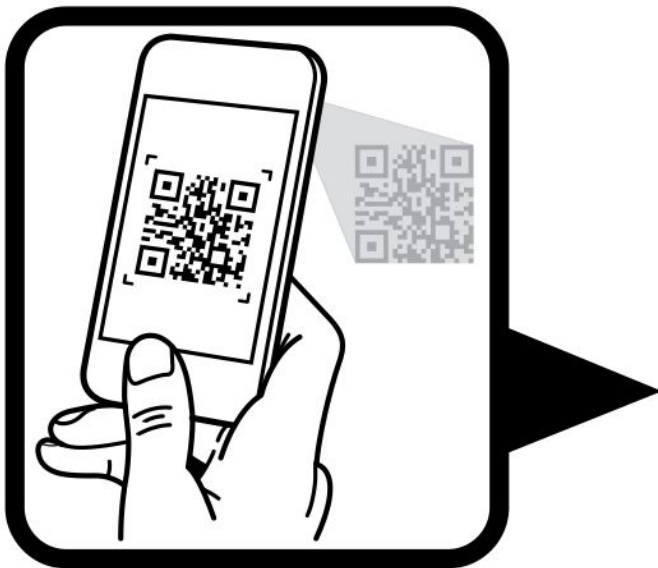
Receiving automated support with SupportAssist

Dell SupportAssist is an optional Dell Services offering that automates technical support for your Dell 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 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 Technical Support.
- **Automated diagnostic collection** — SupportAssist automatically collects system state information from your devices and uploads it securely to Dell. This information is used by Dell Technical Support to troubleshoot the issue.
- **Proactive contact** — A Dell Technical Support agent contacts you about the support case and helps you resolve the issue.

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

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