Dell EMC PowerEdge XE2420

Technical Specifications

Regulatory Model: B23S
Regulatory Type: B23S001
June 2020
Rev. A00

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

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PowerEdge XE2420 system overview

The PowerEdge XE2420 system is a 2U server that supports:

- Two Intel Xeon Cascade Lake scalable processors up to 150 W
- 16 DDR4 RDIMM and Load Reduced DIMM
- Two, or four, 2.5-inch SATA, SAS, NVMe, or six EDSFF E1.L drives configuration.
- BOSS dual SATA M.2 boot card
- Two redundant 2000 W AC PSUs and 1100 W DC PSUs

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.

NOTE: All instances of SAS, SATA drives are seen as drives in this document, unless specified otherwise.

NOTE: In 2C configuration, hard drive slots 2 and 3 do not support NVMe drives if only processor 1 is installed.

For more information about supported drives, see the Drive specifications section.

NOTE: The PowerEdge XE2420 system is suitable for installation in Network Telecommunications Facilities (NTF), and locations where the National Electrical Code (NEC) applies.

NOTE: The PowerEdge XE2420 system is suitable for Common Bonding Networks (CBNs).

Topics:

- Front view of the System
- Rear view of the system

Front view of the System

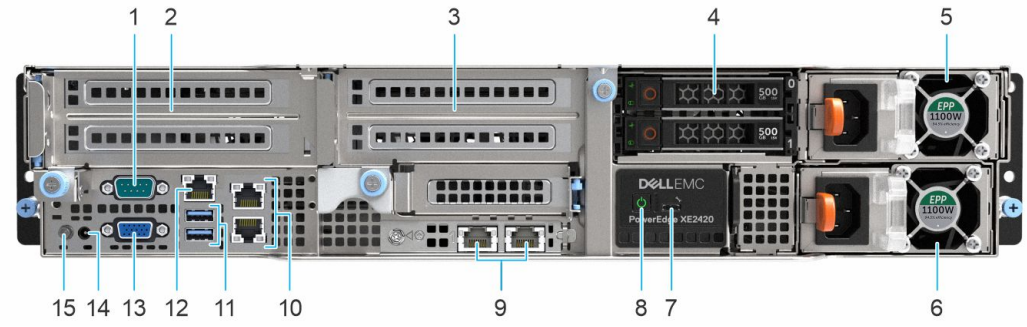

Figure 1. Front view of 2 x 2.5-inch drive system

Table 1. Front view of 2 x 2.5-inch drive system

Item	Ports, panels, and slots	Icon	Description
1	Serial port	IOIOI	Enables you to connect a serial device to the system. For more information, see the Technical specifications section.
2	GPU riser 1 slots	N/A	The GPU card slot (riser 1) connects up to two full-height

Table 1. Front view of 2 x 2.5-inch drive system (continued)

Item	Ports, panels, and slots	Icon	Description
			GPUs. For more information, see the Expansion card installation guidelines section.
3	GPU riser 2 slots	N/A	The GPU card slot (riser 2) connects up to two full-height GPUs. For more information, see the Expansion card installation guidelines section.
4	Drive slots	N/A	Enable you to install drives that are supported on your system. For more information about drives, see Technical specifications section.
5	Power supply unit (1)	N/A	For more information, see Technical specifications section.
6	Power supply unit (2)	N/A	For more information, see Technical specifications section.
7	iDRAC Direct port		The iDRAC Direct port is micro USB 2.0-compliant. This port enables you to access the iDRAC Direct features. For more information, see the iDRAC User's Guide at https://www.dell.com/idracmanuals
8	Power button		Indicates if the system is turned on or off. Press the power button to manually turn on or off the system. **NOTE: Press the power button to gracefully shut down an ACPI-compliant operating system.**
9	OCP ports		The NIC ports that are integrated on the network daughter card (NDC) provide network connectivity. For more information about the supported configurations, see Technical specifications section.
10	Ethernet ports		Use the Ethernet ports to connect Local Area Networks (LANs) to the system. For more information about the supported Ethernet ports, see Technical specifications section.
11	USB 3.0 port		The USB ports are 9-pin and 3.0-compliant. These ports enable you to connect USB devices to the system.
12	iDRAC9 dedicated port		Enables you to remotely access iDRAC. For more information, see the iDRAC User's Guide at

Table 1. Front view of 2 x 2.5-inch drive system (continued)

Item	Ports, panels, and slots	Icon	Description
			https://www.dell.com/idracmanuals
13	VGA port		Enables you to connect a display device to the system. For more information, see the Technical specifications section.
14	System status indicator cable port	N/A	Enables you to connect the status indicator cable and view system status when the CMA is installed.
15	System identification button		The System Identification (ID) button is available on the front to identify a system in a rack by turning on the system ID button to reset iDRAC and to access BIOS using the step through mode.

For more information about the ports, see the Technical Specifications section.

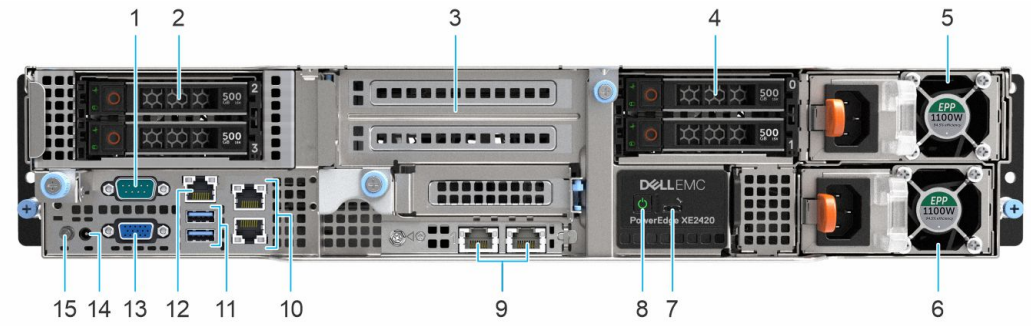

Figure 2. Front view of 4 x 2.5-inch drive system

Table 2. Front view of 4 x 2.5-inch drive system

Item	Ports, panels, and slots	Icon	Description
1	Serial port	**IOIOI**	Enables you to connect a serial device to the system. For more information, see the Technical specifications section.
2	Drive slots (2,3)	N/A	Enable you to install drives that are supported on your system. For more information about drives, see Technical specifications section.
3	GPU riser 2 slots	N/A	The GPU card slot (riser 2) connects up to two full-height GPUs. For more information, see the Expansion card installation guidelines section.
4	Drive slots (0,1)	N/A	Enable you to install drives that are supported on your system. For more information about drives, see Technical specifications section.

Table 2. Front view of 4 x 2.5-inch drive system (continued)

Item	Ports, panels, and slots	Icon	Description
5	Power supply unit (1)	N/A	For more information, see Technical specifications section.
6	Power supply unit (2)	N/A	For more information, see Technical specifications section.
7	iDRAC Direct port		The iDRAC Direct port is micro USB 2.0-compliant. This port enables you to access the iDRAC Direct features. For more information, see the iDRAC User's Guide at https://www.dell.com/idracmanuals.
8	Power button		Indicates if the system is turned on or off. Press the power button to manually turn on or off the system. **NOTE: Press the power button to gracefully shut down an ACPI-compliant operating system.**
9	OCP ports		The NIC ports that are integrated on the network daughter card (NDC) provide network connectivity. For more information about the supported configurations, see Technical specifications section.
10	Ethernet ports		Use the Ethernet ports to connect Local Area Networks (LANs) to the system. For more information about the supported Ethernet ports, see Technical specifications section.
11	USB 3.0 port		The USB ports are 9-pin and 3.0-compliant. These ports enable you to connect USB devices to the system.
12	iDRAC9 dedicated port		Enables you to remotely access iDRAC. For more information, see the iDRAC User's Guide at https://www.dell.com/idracmanuals
13	VGA port		Enables you to connect a display device to the system. For more information, see the Technical specifications section.
14	System status indicator cable port	N/A	Enables you to connect the status indicator cable and view system status when CMA is installed.
15	System identification button		The System Identification (ID) button is available on the front to identify a system in a rack by turning on the system ID button

Table 2. Front view of 4 x 2.5-inch drive system (continued)

Item	Ports, panels, and slots	Icon	Description
			to reset iDRAC and to access BIOS using the step through mode.

For more information about the ports, see the Technical Specifications section.

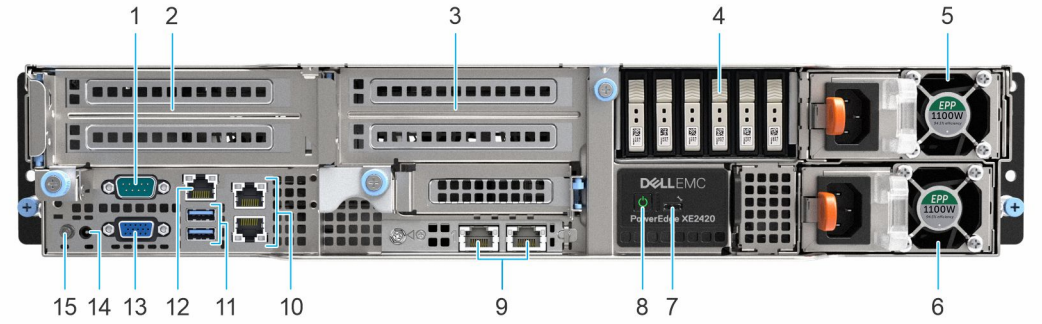

Figure 3. Front view of 6 x EDSFF drive system

Table 3. Front view of 6 x EDSFF drive system

Item	Ports, panels, and slots	Icon	Description
1	Serial port	IOIOI	Enables you to connect a serial device to the system. For more information, see the Technical specifications section.
2	GPU riser 1 slots	N/A	The GPU card slot (riser 1) connects up to two full-height GPUs. For more information, see the Expansion card installation guidelines section.
3	GPU riser 2 slots	N/A	The GPU card slot (riser 2) connects up to two full-height GPUs. For more information, see the Expansion card installation guidelines section.
4	EDSFF drive bay assembly	N/A	Enable you to install drives that are supported on your system. For more information about drives, see Technical specifications section.
5	Power supply unit (1)	N/A	For more information, see Technical specifications section.
6	Power supply unit (2)	N/A	For more information, see Technical specifications section.
7	iDRAC Direct port		The iDRAC Direct port is micro USB 2.0-compliant. This port enables you to access the iDRAC Direct features. For more information, see the iDRAC User's Guide at https://www.dell.com/idracmanuals.
8	Power button		Indicates if the system is turned on or off. Press the power

Table 3. Front view of 6 x EDSFF drive system (continued)

Item	Ports, panels, and slots	Icon	Description
			button to manually turn on or off the system. **NOTE: Press the power button to gracefully shut down an ACPI-compliant operating system.**
9	OCP ports		The NIC ports that are integrated on the network daughter card (NDC) provide network connectivity. For more information about the supported configurations, see Technical specifications section.
10	Ethernet ports		Use the Ethernet ports to connect Local Area Networks (LANs) to the system. For more information about the supported Ethernet ports, see Technical specifications section.
11	USB 3.0 port		The USB ports are 9-pin and 3.0-compliant. These ports enable you to connect USB devices to the system.
12	iDRAC9 dedicated port		Enables you to remotely access iDRAC. For more information, see the iDRAC User's Guide at https://www.dell.com/idracmanuals
13	VGA port		Enables you to connect a display device to the system. For more information, see the Technical specifications section.
14	System status indicator cable port	N/A	Enables you to connect the status indicator cable and view system status when CMA is installed.
15	System identification button		The System Identification (ID) button is available on the front to identify a system in a rack by turning on the system ID button to reset iDRAC and to access BIOS using the step through mode.

For more information about the ports, see the Technical Specifications section.

Rear view of the system

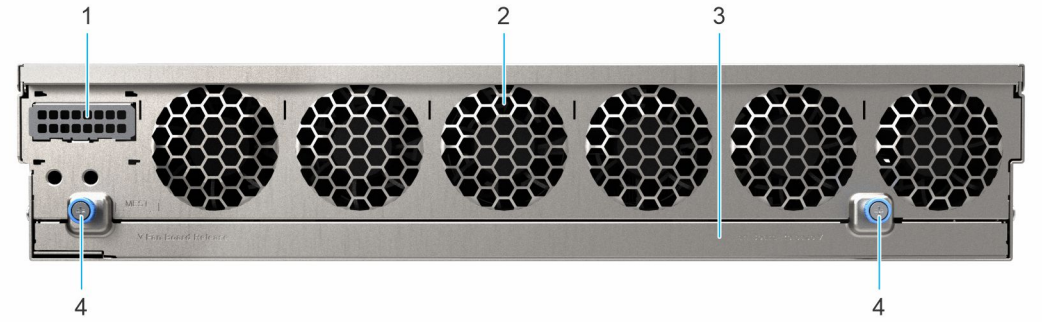

Figure 4. Rear view of the system

Table 4. Rear view of the system

Item	Ports, panels and slots	Icon	Description
1	Blank filler	N/A	This is a blank filler.
2	Cooling fan vents	N/A	These are the cooling fan vents.
3	Fan board tray	N/A	This is the tray which has the fan backplane. All the six fans are connected on the fan backplane.
4	Fan board securing thumbscrews	N/A	This is a thumbscrew that secures the fan board.

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Technical specifications

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

Topics:

Chassis dimensions

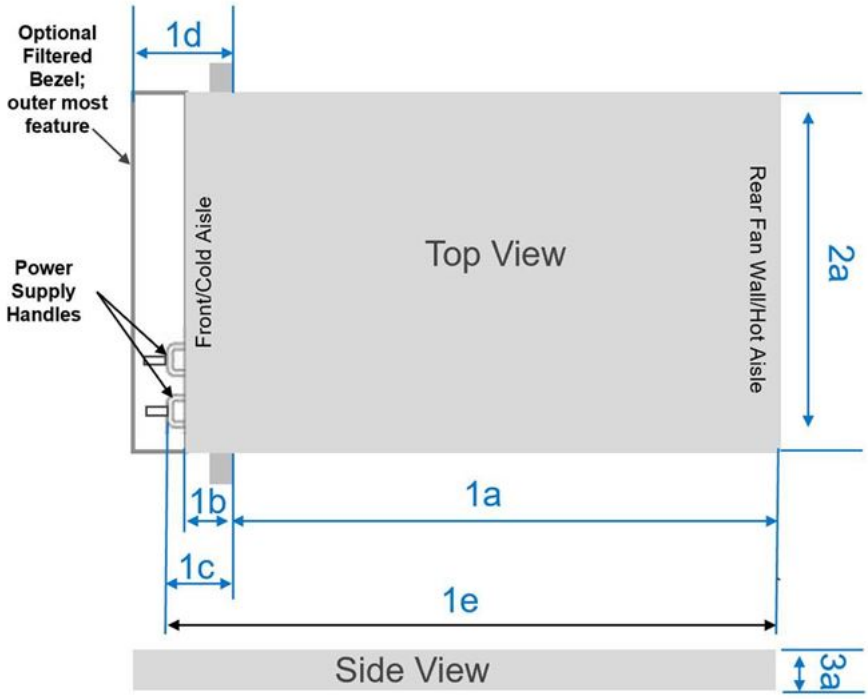

Figure 5. Chassis dimensions

Table 5. PowerEdge XE2420 chassis dimensions

System configurations	1a	1b	1c	1d	1e	2a	3a
2 x 2.5-inches or 4 x 2.5-inches	410.5 mm	73.45 mm (2.89-inch)	85.6 mm (3.37-inch)	152.15 mm 5.99-inch	496.1 mm (19.53-inch)	444 mm (17.48-inch)	86.92 mm (3.42-inch)

Table 5. PowerEdge XE2420 chassis dimensions

System configurations	1a	1b	1c	1d	1e	2a	3a
	(16.16-inch)						

System weight

Table 6. PowerEdge XE2420 system weight

System configuration	Maximum weight (with all drives)
2 x 2.5-inch configuration	17.36 kg (38.19 lb)
4 x 2.5-inch configuration	16.65 kg (36.63 lb)
6 x EDSFF E1.L configuration	18.93 kg (41.65 lb)

Processor specifications

Table 7. PowerEdge XE2420 processor specifications

Supported processor	Number of processors supported
Intel® Xeon® Scalable processors with up to 24 cores per processor	Two

PSU specifications

Table 8. PowerEdge XE2420 PSU specifications

PSU	Class	Heat dissipation (maximum)	Frequency	Voltage	Current
1100 W DC	N/A	4416 BTU/hr	N/A	-(48 V to 60 V DC),autoranging	32 A
2000 W AC	Platinum	7500 BTU/hr	50/60 Hz	100-240 V AC, autoranging	12 A- 10 A

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

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.

Cooling fans specifications

The PowerEdge XE2420 system supports up to six dual rotor fans.

System battery specifications

The PowerEdge XE2420 system supports CR 2032 3.0-V lithium coin cell system battery.

Expansion card riser specifications

The PowerEdge XE2420 system supports up to two PCI express (PCIe) expansion cards:

Table 9. Expansion card slots supported on the system board

Configurations	PCIe slot	Riser	PCIe slot height	PCIe slot length	Slot width
1A	Cabled riser	Slot 1 Riser	Full-height	Half-length or Full-length	Double-wide x16 (Gen 3) or 2 Single-wide x 8(Gen 3)
2C	Cabled riser	Slot 1 Riser(PERC)	Full-height	Half-length	Single-wide x 8 (Gen 3)
3A	Cabled riser	Slot 1 Riser	Full-height	Half-length or Full-length	Double-wide x16 (Gen 3) or 2 Single-wide x 8(Gen 3)
All	Slot 4	Slot 4 Riser	Full-height	Half-length or Full-height	Double-wide x16 (Gen 3) or 2 Single-wide x 8(Gen 3)

Memory specifications

The PowerEdge XE2420 system supports the following memory specifications for optimized operation.

Table 10. Memory specifications

DIMM type	DIMM rank	DIMM capacity	Single processor		Dual processor	
			Minimum RAM	Maximum RAM	Minimum RAM	Maximum RAM
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
LRDIMM	Quad rank	64 GB	64 GB	512 GB	128 GB	1 TB
	Octa rank	128 GB	128 GB	1 TB	256 GB	1792 GB

Table 11. Memory module sockets

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

Storage controller specifications

The PowerEdge XE2420 system supports the following controller cards:

Table 12. PowerEdge XE2420 system controller cards

Internal controllers	External controllers
• PERC H740P • PERC H730P+ • PERC H330+ • S140 • HBA330 • Boot Optimized Storage Subsystem (BOSS-S1): HWRAID 2 x M.2 SSDs	External controller is not supported.

Drive specifications

Drives

The PowerEdge XE2420 system supports the following drive configurations:

Table 13. Supported drives

Configuration	Number of drives	Drive types
1A	up to 2 x 2.5-inch	SATA/NVME
2C	up to 4 x 2.5-inch	SATA/NVME/SAS
3A	up to 6 x SSDs	Enterprise and Data Center SSD Form Factor (EDSFF)

NOTE: In 2C configuration, hard drive slots 2 and 3 do not support NVMe drives if only one processor is installed.

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

Ports and connectors specifications

USB ports specifications

Table 14. PowerEdge XE2420 system USB specifications

Front		Rear		Internal	
USB port type	**No. of ports**	**USB port type**	**No. of ports**	**USB port type**	**No. of ports**
USB 3.0-compliant port	Two	N/A	N/A	Internal USB 3.0-compliant port	One
Micro USB 2.0-compliant port for iDRAC Direct	One				

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

NIC ports specifications

The PowerEdge XE2420 system supports up to two 1 Gb LAN on motherboard with 10/100/1000 Mbps Network Interface Controller (NIC) ports that are located on the front panel. The system also supports LAN on Motherboard (LOM) on an optional riser card.

Serial connector specifications

The PowerEdge XE2420 system supports one serial connector on the front panel, which is a 9-pin connector, Data Terminal Equipment (DTE), 16550-compliant.

VGA ports specifications

The PowerEdge XE2420 system supports one 15-pin VGA ports on the front panel.

IDSDM

The PowerEdge XE2420 system supports Internal Dual SD module (IDSDM) with the below storage capacity:

- 16 GB
- 64 GB

NOTE: One IDSDM card slot is dedicated for redundancy.

NOTE: Use Dell EMC branded microSD cards that are associated with the IDSDM configured systems.

Video specifications

The PowerEdge XE2420 system supports integrated Matrox G200eR2 graphics controller with 16 MB of video frame buffer.

Table 15. Supported front video resolution options

Resolution	Refresh rate (Hz)
1600 x 900 (HD+)	60
1366 x 768 (HD)	60
1680 x 1050 (WSXGA+)	60
1280 x 1024 (SXGA)	60
1440 x 900 (WXGA+)	60
1920 x 1080 (FHD)	60
1280 x 800 (WXGA)	60

Environmental specifications

NOTE: For additional information about environmental certifications, see the *Product Environmental Datasheet* located with the Manuals and Documents on https://www.dell.com/support.

Operational climatic range category A2

Table 16. Operational climatic range category A2

Allowable continuous operations	
Temperature ranges for altitude ≤900 meters (≤2,953 ft.	10°C–35°C (50°F–95°F) with no direct sunlight on the platform
Humidity percent ranges (Noncondensing always)	8% RH with -12°C minimum dew hover over 80% RH with 21°C (69.8°F) maximum dew point
Operational altitude derating	Maximum temperature is reduced by 1°C/300 meters (1.8°F/984 ft) above 900 meters (2,953 ft)

Operational climatic range category A3

Table 17. Operational climatic range category A3

Allowable continuous operations	
Temperature ranges for altitude ≤900 meters (≤2,953 ft)	5°C–40°C (41°F–104°F) with no direct sunlight on the platform
Humidity percent ranges (Noncondensing always)	8% RH with -12°C minimum dew hover over 85% RH with 24°C (75.2°F) maximum dew point

Table 17. Operational climatic range category A3 (continued)

Allowable continuous operations	
Operational altitude derating	Maximum temperature is reduced by 1°C/175 meters (1.8°F/574 ft) above 900 meters (2,953 feet)

Thermal restriction for ASHRAE A3/Environment

- CPU TDP greater than 150 W are not supported.

Shared requirements across all categories

Table 18. Shared requirements across all categories

Allowable operations	
Maximum temperature gradient (applies to both operation and nonoperation)	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 hardware
Non-operational temperature limits	-40°C to 65°C (-40°F to 149°F)
Non-operational humidity limits	5% to 95% RH with 27°C (80.6°F) maximum dew point Atmosphere must be noncondensing always.
Maximum Non-operational altitude	12,000 meters (39,370 ft)
Maximum operational altitude	3,048 meters (10,000 ft)

*: Per ASHRAE thermal guidelines, these are not instantaneous rates of temperature change.

Table 19. Temperature specifications

Temperature	Specifications
Storage	-40–65°C (-40–149°F)
Continuous operation (for altitude less than 900 m or 2953 ft)	10–35°C (50–95°F) with no direct sunlight on the equipment
Expanded operating temperature	For information about Expanded operating temperature, see the Expanded operating temprature section.
Maximum temperature gradient (operating and storage)	20°C/h (68°F/h)

Table 20. Maximum vibration specifications

Maximum vibration	Specifications
Operating	0.21 G_{rms} at 5 Hz to 500 Hz (all operation orientations)
Storage	1.88 G_{rms} at 10 Hz to 500 Hz for 15 minutes (all six sides tested)

Table 21. 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 6 G for up to 11 ms.(4 pulse on each side of the system)
Storage	Six consecutively executed shock pulses in the positive and negative x, y, and z axis (one pulse on each side of the system) of 71 G for up to 2 ms.

Table 22. Maximum altitude specifications

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

Table 23. Operating temperature derating specifications

Operating temperature derating	Specifications
Up to 35°C (95°F)	Maximum temperature is reduced by 1°C/300 m (1°F/547 ft), above 900 m (2,953 ft).
35–40°C (95–104°F)	Maximum temperature is reduced by 1°C/175 m (1°F/319 ft), above 900 m (2,953 ft).
40–45°C (104–113°F)	Maximum temperature is reduced by 1°C/125 m (1°F/228 ft), above 900 m (2,953 ft).

Standard operating temperature

Table 24. Standard operating temperature specifications

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

Expanded operating temperature

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

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

Expanded operating temperature restrictions

Thermal Restriction for ASHRAE A4 Environment

- CPU TDP greater than 150 W are not supported within A4.
- Capacity greater than 128 GB of LRDIMMs are not supported within A4.
- Processor with TDP=150 W and 18 cores is not supported within A4.
- Processor with TDP=130 W and 8 cores is not supported within A4.
- PCIe card with TDP greater than 25 W is not supported.
- Intel N3000 FPGA card is not supported above 35°C ambient temperature.
- NVIDIA V100 is not supported above 40°C ambient temperature.
- Single PSU failure is not supported. Two PSUs are required in redundant mode.

Thermal Restriction for ASHRAE A3 Environment

- CPU TDP greater than 150 W are not supported within A3.
- Greater than 128 GB capacity LRDIMMs are not supported within A3.
- Processor with TDP=150 W and 24 cores is not supported within A3.
- Processor with TDP=150 W and 8 cores is not supported within A3.
- PCIe card with TDP greater than 25 W is not supported.
- Intel N3000 FPGA card is not supported above 35°C ambient temperature.
- Single PSU failure is not supported. Two PSUs are required in redundant mode.

Thermal Restriction for ASHRAE A2 Environment

- CPU TDP greater than 150 W are not supported within A2.
- Greater than 128 GB capacity LRDIMMs are not supported within A2.

- Processor with TDP=150 W and 8 cores is supported to ASHRAE A2 when turbo boost is disabled.
- Processor with TDP=150 W and 8 cores, with turbo boost will have over temperature event at 35°C ambient temperature. This is because the CPU's power consumption is instantly raised up to 160 W to 170 W.
- PCIe card with TDP greater than 25 W is not supported.
- Single PSU failure is not supported. Two PSUs are required in redundant mode.

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 25. 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.** **NOTE: Air filtering can also be accomplished by filtering room air with MERV8 filter per ANSI/ASHARE Standard 127.**
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.** **NOTE: Common sources of conductive dust include manufacturing processes, and zinc whiskers from the plating on the bottom of raised floor tiles.**
Corrosive dust	• Air must be free of corrosive dust. • Any remaining dust present in the air shall have a deliquescent point less than 60% relative humidity. **NOTE: This condition applies to data center and non-data center environments.**

Table 26. 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

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

Thermal restriction matrix

Table 27. Thermal restriction matrix for processor and fans

Features, processor type and specifications	Configuration type, and ambient temperature support		
Storage configuration	**2 x 2.5-inch drives**	**4 x 2.5-inch drives**	**6 x SSDs (EDSFF E1.L)**
	Fan type: Very High Performance fan (VHP fan)		
TDP (W)	**Ambient = 35°C**	**Ambient = 35°C**	
150	Yes (VHP fan)	Yes (VHP fan)	

Table 28. Thermal restriction matrix for GPGPU

Riser configurations	Configuration type and ambient temperature support		
	2 x 2.5-inch drives	**4 x 2.5-inch drives**	**6 x SSDs (EDSFF E1.L)**
	Fan type: Very High Performance fan (VHP fan)		
	Ambient = 30°C		
1A (Slot 1 Riser)	VHP fan	VHP fan	
2C (Slot 1 Riser_PERC)	VHP fan	VHP fan	
3A (Slot 1 Riser)	VHP fan	VHP fan	
All (Slot 4 Riser)	VHP fan	VHP fan	

Table 29. Thermal limitations of supported processors

CPU TDP	HSK type	Fan type	Config 1A			Config 2C			Config 3A		
			ASHARE A4	ASHARE A3	ASHARE A2	ASHARE A4	ASHARE A3	ASHARE A2	ASHARE A4	ASHARE A3	ASHARE A2
6525 N, 24 Core, 150 W	High performance	Very high performance	Not supported		Max 35°C	Not supported		Max 35°C	Not supported		Max 35°C
6244, 8 Core, 150 W											
6240 Y, 18 Core, 150 W			Not supported	Max 40°C		Not supported	Max 40°C		Not supported	Max 40°C	
6252, 24 Core, 150 W			Max 45°C			Max 45°C			Max 45°C		
6238, 22 Core, 140 W											
6262 V, 8 Core, 135 W											

Table 29. Thermal limitations of supported processors (continued)

CPU TDP	HSK type	Fan type	Config 1A			Config 2C			Config 3A		
			ASHARE A4	ASHARE A3	ASHARE A2	ASHARE A4	ASHARE A3	ASHARE A2	ASHARE A4	ASHARE A3	ASHARE A2
6234, 8 Core, 130 W			Not supported			Not supported			Not supported		
125 W			Max 45°C			Max 45°C			Max 45°C		
110 W											
100 W											
85 W											

Table 30. Thermal limitations of PCI-E cards

PCI-E card type	Config 1A			Config 2C			Config 3A		
	ASHARE A4	ASHARE A3	ASHARE A2	ASHARE A4	ASHARE A3	ASHARE A2	ASHARE A4	ASHARE A3	ASHARE A2
nVIDIA V100 GPU	Not supported	Max 40°C	Max 35°C	Not supported	Max 40°C	Max 35°C	Not supported	Max 40°C	Max 35°C
nVIDIA T4 GPU	Max 45°C			Max 45°C			Max 45°C		
nVIDIA RTX6000 passive GPU									
Intel N3000 FPGA	Not supported		Max 35°C	Not supported		Max 35°C	Not supported		Max 35°C
U200 FPGA	Max 45°C	Max 40°C		Max 45°C	Max 40°C		Max 45°C	Max 40°C	

3

Expansion card installation guidelines

The PowerEdge XE2420 system supports up to two PCI express (PCIe) expansion cards:

Table 31. Expansion card slots supported on the system board

Configurations	PCIe slot	Riser	PCIe slot height	PCIe slot length	Slot width
1A	1	OCP (Signal x8)	NA	NA	NA
	2, 3	One x16 (Signal x16)	Full	Half/Full	Double
		Two x16 (Signal x8)	Full	Half/Full	Single
	4, 5	One x16 (Signal x16)	Full	Half/Full	Double
		Two x16 (Signal x8)	Full	Half/Full	Single
	6	x8 PCIe	LP	Half	Single
	7	BOSS (Signal x4)	NA	NA	NA
2C	1	OCP (Signal x8)	NA	NA	NA
	Slot 2: One x8 LP PERC (with FH bracket)	x16 (Signal x8)	Full	Half	Single
	4, 5	One x16 (Signal x16)	Full	Half/Full	Double
		Two x16 (Signal x8)	Full	Half/Full	Single
	6	x8 PCIe	LP	Half	Single
	7	BOSS (Signal x4)	NA	NA	NA
3A	1	OCP (Signal x8)	NA	NA	NA
	2, 3	One x16 (Signal x16)	Full	Half/Full	Double
		Two x16 (Signal x8)			
	4, 5	One x16 (Signal x16)	Full	Half/Full	Single
		Two x16 (Signal x8)			
	6	x8 PCIe	LP	Half	Single

Table 31. Expansion card slots supported on the system board (continued)

Configurations	PCIe slot	Riser	PCIe slot height	PCIe slot length	Slot width
	7	BOSS (Signal x4)	NA	NA	NA

NOTE: The expansion-card slots are not hot-swappable.

Table 32. Riser configuration 1A

Card type	Slot priority	Maximum number of cards
Intel (Adapter card)	3, 5, 4, 2	4
Xilinx (Adapter card)	3, 5	2
Dell PCIe (Controller card)	3, 5	2
Intel FPGA programmable accelerator card N3000 (Network card)	3, 5, 4, 2	4
Intel NVMe PCIe SSD	6	1
Broadcom (25 G PCIe FH)	3, 5, 4, 2	4
Broadcom (25 G PCIe LP)	6	1
Intel 25 G (SFP)	3, 5, 4, 2	4
Intel 25 G (SFP LP)	6	1
Mellanox 100 G (CX6 H100)	3, 5	2
Internal storage (BOSS)	7	1
Nvidia GPU DW	3, 5	2
Nvidia T4 GPU SW	3, 5, 4, 2	4
OCP (2x10 G)/(2x25 G)	1	1

Table 33. Riser configuration 2C

Card type	Slot priority	Maximum number of cards
Dell PCIe RAID (HBA330, H330+, H730P+, H740P)	2	1
Intel (Adapter card)	5, 4	2
Xilinx (Adapter card)	5	1
Dell PCIe (Controller card)	5	1
Intel FPGA programmable accelerator card N3000 (Network card)	5, 4	2
Intel NVMe PCIe SSD	6	1
Broadcom (25 G PCIe FH)	5, 4	2
Broadcom (25 G PCIe LP)	6	1
Intel 25 G (SFP)	5, 4	2
Intel 25 G (SFP LP)	6	1
Mellanox 100 G (CX6 H100)	5, 4	2
Internal storage (BOSS)	7	1
Nvidia GPU DW	5	1

Table 33. Riser configuration 2C (continued)

Card type	Slot priority	Maximum number of cards
Nvidia T4 GPU SW	5, 4	2
OCP (2x10 G)/(2x25 G)	1	1

Table 34. Riser configuration 3A

Card type	Slot priority	Maximum number of cards
Intel (Adapter card)	3, 5, 4, 2	4
Xilinx (Adapter card)	3, 5	2
Dell PCIe (Controller card)	3, 5	2
Intel FPGA programmable accelerator card N3000 (Network card)	3, 5, 4, 2	4
Intel NVMe PCIe SSD	6	1
Broadcom (25 G PCIe FH)	3, 5, 4, 2	4
Broadcom (25 G PCIe LP)	6	1
Intel 25 G (SFP)	3, 5, 4, 2	4
Intel 25 G (SFP LP)	6	1
Mellanox 100 G (CX6 H100)	3, 5	2
Internal storage (BOSS)	7	1
Nvidia GPU DW	3, 5	2
Nvidia T4 GPU SW	3, 5, 4, 2	4
OCP (2x10 G)/(2x25 G)	1	1

4

System diagnostics and indicator codes

The diagnostic indicators on the system front panel display system status during system startup.

Topics:

System health and system ID indicator codes

The system health and system ID indicator is located on the left control panel of the system.

Figure 6. System health and system ID indicator

1. System health and system ID indicator

Table 35. System health and system ID indicator codes

System health and system ID indicator code	Condition
Solid blue	Indicates that the system is powered on, is healthy, and system ID mode is not active. Press the system health and system ID button to switch to system ID mode.
Blinking blue	Indicates that the system ID mode is active. Press the system health and system ID button to switch to system health mode.
Solid amber	Indicates that the system is in fail-safe mode. If the problem persists, see the Getting help section.
Blinking amber	Indicates that the system is experiencing a fault. Check the System Event Log for specific 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**.

iDRAC Direct LED indicator codes

The iDRAC Direct LED indicator lights up to indicate that the port is connected and is being used as a part of the iDRAC subsystem.

You can configure iDRAC Direct by using a USB to micro USB (type AB) cable, which you can connect to your laptop or tablet. Cable length should not exceed 3 feet (0.91 meters). Performance could be affected by cable quality. The following table describes iDRAC Direct activity when the iDRAC Direct port is active:

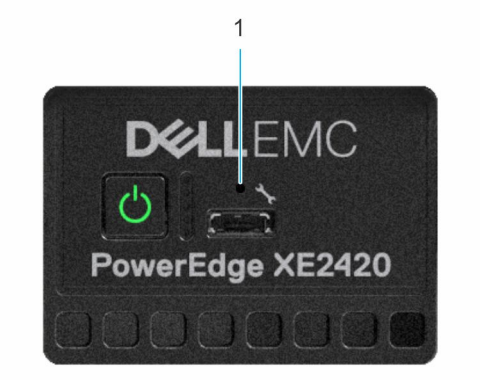

Figure 7. iDRAC Direct LED indicator

1. iDRAC Direct LED indicator

Table 36. iDRAC Direct LED indicator codes

iDRAC Direct LED indicator code	Condition
Solid green for two seconds	Indicates that the laptop or tablet is connected.
Blinking green (on for two seconds and off for two seconds)	Indicates that the laptop or tablet connected is recognized.
Powers off	Indicates that the laptop or tablet is unplugged.

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.

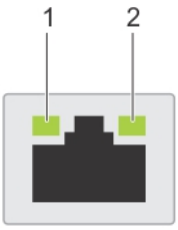

Figure 8. NIC indicator codes

1. Link LED indicator
2. Activity LED indicator

Table 37. 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 mot being sent or received.

Table 37. NIC indicator codes (continued)

NIC indicator codes	Condition
Link indicator is blinking green, and activity is off.	Indicates that the NIC identify is enabled through the NIC configuration utility.

Power supply unit indicator codes

AC power supply units (PSUs) have an illuminated translucent handle that serves as an indicator. The indicator shows if power is present or if a power fault has occurred.

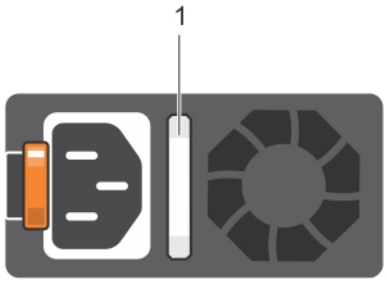

Figure 9. AC PSU status indicator

1. AC PSU status indicator/handle

Table 38. AC PSU status indicator codes

Power indicator codes	Condition
Green	Indicates that a valid power source is connected to the PSU and the PSU is operational.
Blinking amber	Indicates an issue with the PSU.
Not powered on	Indicates that the power is not connected to the PSU.
Blinking green	Indicates that the firmware of the PSU is being updated. **CAUTION: Do not disconnect the power cord or unplug the PSU when updating firmware. If firmware update is interrupted, the PSUs do not function.**
Blinking green and powers off	When hot-plugging a PSU, it blinks green five times at a rate of 4 Hz and powers off. This indicates a PSU mismatch due to efficiency, feature set, health status, or supported voltage. **CAUTION: If two PSUs are installed, both the PSUs must have the same type of label; for example, Extended Power Performance (EPP) label. Mixing PSUs from previous generations of PowerEdge servers is not supported, even if the PSUs have the same power rating. This results in a PSU mismatch condition or failure to power on the system.** **CAUTION: If two PSUs are used, they must be of the same type and have the same maximum output power.** **CAUTION: When correcting a PSU mismatch, replace the PSU with the blinking indicator. Swapping the PSU to make a matched pair can result in an error condition and an unexpected system shutdown. To change from a high output configuration to a low output configuration or vice versa, you must power off the system.** **CAUTION: AC PSUs support both 240 V and 120 V input voltages with the exception of Titanium PSUs, which support only 240 V. When two identical PSUs receive different input voltages, they can output different wattages, and trigger a mismatch.**

Table 39. DC PSU status indicator codes

Power indicator codes	Condition
Green	Indicates that a valid power source is connected to the PSU, and the PSU is operational.

Table 39. DC PSU status indicator codes (continued)

Power indicator codes	Condition
Blinking amber	Indicates an issue with the PSU.
Not powered on	Indicates that the power is not connected to the PSU.
Blinking green	When hot-plugging a PSU, it blinks green five times at a rate of 4 Hz and powers off. This indicates a PSU mismatch due to efficiency, feature set, health status, or supported voltage. **CAUTION: If two PSUs are installed, both the PSUs must have the same type of label; for example, Extended Power Performance (EPP) label. Mixing PSUs from previous generations of PowerEdge servers is not supported, even if the PSUs have the same power rating. This results in a PSU mismatch condition, or failure to power on the system.** **CAUTION: If two PSUs are used, they must be of the same type and have the same maximum output power.** **CAUTION: When correcting a PSU mismatch, replace the PSU with the blinking indicator. Swapping the PSU to make a matched pair can result in an error condition and an unexpected system shutdown. To change from a High Output configuration to a Low Output configuration or conversely, you must power off the system.** **CAUTION: Combining AC and DC PSUs is not supported.**

Drive indicator codes

The LEDs on the drive carrier indicates the state of each drive. Each drive carrier has two LEDs: an activity LED (green) and a status LED (bicolor, green/amber). The activity LED blinks whenever the drive is accessed.

Figure 10. Drive indicators

1. Drive activity LED indicator
2. Drive status LED indicator
3. Drive capacity label

NOTE: If the drive is in the Advanced Host Controller Interface (AHCI) mode, the status LED indicator does not power on.

NOTE: Drive status indicator behavior is managed by Storage Spaces Direct. Not all drive status indicators may be used.

Table 40. Drive indicator codes

Drive status indicator code	Condition
Blinks green twice per second	Indicates that the drive is being identified or preparing for removal.

Table 40. Drive indicator codes (continued)

Drive status indicator code	Condition
Off	Indicates that the drive is ready for removal. **NOTE: The drive status indicator remains off until all drives are initialized after the system is powered on. Drives are not ready for removal during this time.**
Blinks green, amber, and then powers off	Indicates that there is an expected drive failure.
Blinks amber four times per second	Indicates that the drive has failed.
Blinks green slowly	Indicates that the drive is rebuilding.
Solid green	Indicates that the drive is online.
Blinks green for three seconds, amber for three seconds, and then powers off after six seconds	Indicates that the rebuild has stopped.

EDSFF LED indicators

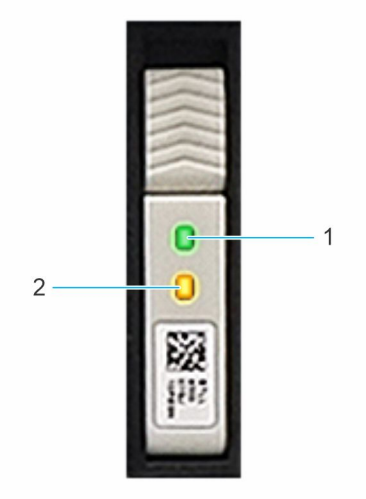

Figure 11. EDSFF LED indicators

1. Drive activity LED indicator
2. Drive status LED indicator

Table 41. EDSFF LED indicators

Green status indicator code	Amber status indicator code	Drive condition
OFF	OFF	Indicates that the drive is offline.
ON	OFF	Indicates that the drive is online.
4Hz flashing	OFF	Indicates that there is activity on the drive.
NA	4Hz flashing	Indicates that the drive is being identified or preparing for removal.
	ON	Indicates that the drive has failed.
	Two fast blinks at 4Hz and pause for 0.5 seconds	Indicates that there is an expected drive failure (SMART) .
	1Hz flashing	Indicates that the drives rebuilding is aborted.
	1Hz flashing	Indicates that the drive is rebuilding.

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

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.

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.

System diagnostic controls

Table 42. 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.

5

Getting help

Topics:

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.

Contacting Dell

Dell provides online and telephone based support and service options. If you do not have an active internet connection, you can find Dell contact information on your purchase invoice, packing slip, bill or Dell product catalog. The availability of services varies depending on the 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 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 the system Service Tag in the **Enter a Service Tag, Serial Number, Service Request, Model, or Keyword** 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.

Accessing system information by using QRL

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, and mechanical overview
- The system service tag to quickly access the specific hardware configuration and warranty information
- A direct link to Dell to contact technical assistance and sales teams

1. Go to www.dell.com/qrl, and navigate to your specific product or
2. Use your smart phone 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 XE2420 system

Figure 12. Quick Resource Locator for PowerEdge XE2420 system

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.