Dell XC Core Support Matrix

XC450, XC650, XC750, XC750xa, XC6520, XC7525, XC4000r, XC4510c, XC4520c, XC4000z, and XC 4000w Core

A15

December 2024
Rev. A15

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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Contents

Revision history

Table 1. Revision history

Date	Document revision	Description of changes
December 2024	A15	Added XC4000w
June 2024	A14	Updated NICs
March 2024	A13	Added XC4000z
December 2023	A12	Added the following models: ● XC4000r ● XC4510c ● XC4520c
August 2023	A11	Updated the Hypervisor operating systems section with NICs for Windows Server
March 2023	A10	Updated tFRU-less cards
February 2023	A9	Updated 15G GPU support matrix section and Disk drives section
January 2023	A8	Technical updates
November 2022	A7	Updated the Power supply support matrix section and the Disk drives section
September 2022	A6	Updated the following sections: ● Supported hardware, firmware, and software ● Network interface card section ● 15G GPU support matrix ● Memory ● Management software ● Hypervisor operating systems
May 2022	A5	Updated the Disk drives section
April 2022	A4	Updated the following sections: ● AMD CPU Matrix ● Intel CPU Matrix ● 15G GPU Support Matrix
March 2022	A3	Updated the Network interface cards section
December 2021	A2	Added the XC6520 and XC7525 platforms
September 2021	A1	Initial release

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Introduction

This document provides information about the supported software, firmware, hardware versions and technical specifications.

NOTE: This Support Matrix contains the latest compatibility and interoperability information. If you observe inconsistencies between this information and other documentation or references, this document supersedes all other documentation.

Supported hardware, firmware, and software

This chapter provides information about supported software, firmware, and hardware versions for the XC450, XC650, XC750, XC750xa, XC6520, XC7525, XC4000r, XC4000z, XC4510c, and XC4520c models of the Dell XC Core Hyper-Converged Appliance.

NOTE: Future updates to this document may remove firmware versions because Nutanix LCM is the prescribed method to update the appliance.

Intel® CPU matrix

This chapter provides information about supported software, firmware, and hardware versions for the XC450, XC650, XC750, XC750xa, XC6520, XC7525, XC4000r, XC4000z, XC4510c, and XC4520c models of the Dell XC Core Hyper-Converged Appliance. Refer to the XC4000w Technical specification section in this document for supported hardware on XC4000w. CPU support.

NOTE: Future updates to this document may remove firmware versions because Nutanix LCM is the prescribed method to update the appliance.

Table 2. Intel® CPU support

Watts	Model	#Cores	XC450-4 XC450-4S	XC650-10 XC650-10N	XC750-14 XC750-16N XC750-24	XC750xa-8	XC6520-6	XC6520-6N	XC4510c XC4520c	XC
105	4309Y	8	X	X	X					
120	4310	12	X	X	X	X	X	X		
135	4314	16	X	X	X	X	X	X		
150	4316	20	X	X	X	X	X	X		
140	5315Y	8	X	X	X					
150	5317	12	X	X	X	X	X	X		
165	5318S	24				X				
165	5318Y	24	X	X	X		X	X		
185	5320	26		X	X	X	X	X		
185	6326	16		X	X	X	X	X		
205	6330	28		X	X	X	X	X		
165	6330N	28	X	X	X					
165	6334	8		X	X					
185	6336Y	24		X	X		X	X		
205	6338	32		X	X	X	X	X		
185	8352M	32		X	X	X				
185	6338N	32		X	X					
230	6342	32		X	X	X				

Table 2. Intel® CPU support (continued)

Watts	Model	#Cores	XC450-4 XC450-4S	XC650-10 XC650-10N	XC750-14 XC750-16N XC750-24	XC750xa-8	XC6520-6	XC6520-6N	XC4510c XC4520c
205	6346	16		X	X				
235	6348	28		X	X				
205	6354	18		X	X				
205	8352S	32		X	X	X			
195	8352V	32		X	X		X	X	
205	8352Y	32		X	X		X	X	
250	8358	32		X	X	X			
240	8358P	32		X	X	X			
250	8360Y	36		X	X				
265	8362	32		X	X	X			
270	8368	38		X	X	X			
270	8380	40		X	X	X			
87	82YHVX	12							X
117	GPK0WDH	16							X
80	GV1HJ78	8							X
120	GX062RE	20							X

AMD CPU matrix

This table displays AMD CPU support.

Table 3. AMD CPU support

Watts	Model	#Cores	XC7525
280	75F3	32	X
280	7763	64	X
240	74F3	24	X
240	73F3	16	X
225	7713	64	X
225	7543	32	X
200	7513	32	X
225	7453	28	X
200	7443	24	X
180	7413	24	X
190	7343	16	X
180	72F3	8	X

Table 3. AMD CPU support (continued)

Watts	Model	#Cores	XC7525
155	7313	16	X

Table 4. Milan-X support

Watts	Model	#Cores	XC7525
240	7373X	16	X
240	7473X	24	X
280	7573X	32	X
280	7773X	64	X

Supported Networking

This section provides information about networking supported by your hardware and supported NICs on the Dell XC Series Hyper-Converged Appliance.

Intel OCP3 and Network Interface Cards (NIC) specify the use of only Intel branded SFP+ optical modules for use with optical cables. When ordering a system with optics, the appropriate Intel branded SFP+ optical modules are included with your order. If you already have SFP+ optical modules, ensure that they are the Intel branded modules before inserting into the OCP3 or NIC. Twinax cables are also the supported network cables for Intel OCP3 and NIC.

⚠ **CAUTION: Using any brand of SFP+ module other than Intel during deployment disables the 10 GbE ports. Call Dell Support to recover port functionality.**

⚠ **WARNING: Hot-plugging an unsupported SFP+ module causes ESXi host to fail with purple diagnostic screen. Call Dell Support to recover from this situation.**

Network interface cards

The tables in this topic specify which network interface cards are supported.

Table 5. XC450

Vendor	Description	Chipset
Intel	CRD,NTWK,INTL,LP,25G,2P,S28	E810
	CRD,NTWK,INTL,LP,10G,2P,BT	X710
	CRD,NTWK,10G,SFP+,DP FVL,LP,V2	X710
	CRD,NTWK,INTL,OCP3,25G,2P,S28	E810
	CRD,NTWK,INTL,OCP3,10G,2P,BT	X710
	CRD,NTWK,INTL,OCP3,10G,2P,SF+	X710
Mellanox	CRD,NTWK,MLNX,LP,25G,2P,S28	CX5
	CRD,NTWK,MLNX,LP,25G,2P,S28,F1	CX5
	CRD,NTWK,MLNX,OCP3,25G,2P,S28	CX6-LX
	CRD,NTWK,MLNX,LP,25G,2P,S28	CX6-LX
	CRD,NTWK,MLNX,OCP3,25G,2P,S28	CX5
Broadcom	CRD,NTWK,PCIE,DP,25G,57414,LP2	57414
	CRD,NTWK,PCIE,DP,10G,57416,LP	57416
	CRD,NTWK,BCME,OCP3,25G,2P,V2	57414

Table 5. XC450 (continued)

Vendor	Description	Chipset
	CRD,NTWK,BCME,OCP3,10G,2P,BT	57416
	CRD,NTWK,BCME,OCP3,10G,2P,V2	57412

Table 6. XC650

Vendor	Description	Chipset
Intel	CRD,NTWK,INTL,PCIEL,10G,4P,BT	X710
	CRD,NTWK,INTL,LP,25G,2P,S28	E810
	CRD,NTWK,INTL,LP,10G,2P,BT	X710
	CRD,NTWK,INTL,OCP3,25G,2P,S28	E810
	CRD,NTWK,INTL,OCP3,10G,2P,BT	X710
	CRD,NTWK,INTL,OCP3,10G,2P,SF+	X710
	CRD,NTWK,INTL,OCP3,10G,4P,BT	X710
	CRD,NTWK,INTL,OCP3,10G,4P,SF+	X710
	CRD,NTWK,4X10G,SFP+,INTEL,V2	X710
	CRD,NTWK,10G,SFP+,DP FVL,LP,V2	X710
Mellanox	CRD,NTWK,MLNX,LP,100G,2P,Q56	CX6-DX
	CRD,NTWK,MLNX,LP,25G,2P,S28	CX5
	CRD,NTWK,MLNX,OCP3,25G,2P,S28	CX5
	CRD,NTWK,MLNX,LP,25G,2P,S28,F1	CX5
	CRD,NTWK,MLNX,OCP3,25G,2P,S28	CX6-LX
	CRD,NTWK,MLNX,LP,25G,2P,S28	CX6-LX
Broadcom	CRD,NTWK,PCIE,DP,25G,57414,LP	57414
	CRD,NTWK,PCIE,DP,10G,57416,LP	57416
	CRD,NTWK,BCME,OCP3,25G,2P,V2	57414
	CRD,NTWK,BCME,OCP3,10G,2P,BT	57416
	CRD,NTWK,BCME,OCP3,10G,2P,V2	57412

Table 7. XC750

Vendor	Description	Chipset
Intel	CRD,NTWK,INTL,PCIEL,10G,4P,BT	X710
	CRD,NTWK,INTL,LP,25G,2P,S28	E810
	CRD,NTWK,10G,SFP+,DP FVL,IN,LP	X710
	CRD,NTWK,INTL,FH,25G,2P,S28	E810
	CRD,NTWK,INTL,FH,10G,2P,BT	X710
	CRD,NTWK,10G,SFP+,DP FVL,INTEL	X710
	CRD,NTWK,4X10G,SFP+,INTEL	X710
	CRD,NTWK,INTL,FH,10G,4P,BT	X710
	CRD,NTWK,INTL,OCP3,25G,2P,S28	E810
	CRD,NTWK,INTL,OCP3,10G,2P,BT	X710

Table 7. XC750 (continued)

Vendor	Description	Chipset
	CRD,NTWK,INTL,OCP3,10G,2P,SF+	X710
	CRD,NTWK,INTL,OCP3,10G,4P,BT	X710
	CRD,NTWK,INTL,OCP3,10G,4P,SF+	X710
Mellanox	CRD,NTWK,MLNX,LP,100G,2P,Q56	CX6-DX
	CRD,NTWK,MLNX,LP,25G,2P,S28	CX5
	CRD,NTWK,MLNX,FH,100G,2P,Q56	CX6-DX
	CRD,NTWK,MLNX,FH,25G,2P,S28	CX5
	CRD,NTWK,MLNX,OCP3,25G,2P,S2	CX5
	CRD,NTWK,MLNX,OCP3,25G,2P,S28	CX6-LX
	CRD,NTWK,MLNX,FH,25G,2P,S28	CX6-LX
Broadcom	CRD,NTWK,PCIE,DP,25G,57414,LP	57414
	CRD,NTWK,PCIE,DP,10G,57416,LP	57416
	CRD,NTWK,PCIE,DP,25G,57414,FH	57414
	CRD,NTWK,PCIE,DP,10G,57416,FH	57416
	CRD,NTWK,BCME,OCP3,25G,4P,S28	57504
	CRD,NTWK,BCME,OCP3,25G,2P,V2	57414
	CRD,NTWK,BCME,OCP3,10G,2P,BT	57416
	CRD,NTWK,BCME,OCP3,10G,2P,V2	57412

Table 8. XC750xa

Vendor	Description	Chipset
Intel	CRD,NTWK,INTL,PCIEL,10G,4P,BT	X710
	CRD,NTWK,INTL,LP,25G,2P,S28	E810
	CRD,NTWK,10G,SFP+,DP FVL,IN,LP	X710
	CRD,NTWK,INTL,FH,25G,2P,S28	E810
	CRD,NTWK,INTL,FH,10G,2P,BT	X710
	CRD,NTWK,10G,SFP+,DP FVL,INTEL	X710
	CRD,NTWK,4X10G,SFP+,INTEL	X710
	CRD,NTWK,INTL,FH,10G,4P,BT	X710
	CRD,NTWK,INTL,OCP3,25G,2P,S28	E810
	CRD,NTWK,INTL,OCP3,10G,2P,BT	X710
	CRD,NTWK,INTL,OCP3,10G,2P,SF+	X710
	CRD,NTWK,INTL,OCP3,10G,4P,BT	X710
	CRD,NTWK,INTL,OCP3,10G,4P,SF+	X710
Mellanox	CRD,NTWK,MLNX,LP,100G,2P,Q56	CX6-DX
	CRD,NTWK,MLNX,LP,25G,2P,S28	CX5
	CRD,NTWK,MLNX,FH,100G,2P,Q56	CX6-DX
	CRD,NTWK,MLNX,FH,25G,2P,S28	CX5

Table 8. XC750xa (continued)

Vendor	Description	Chipset
	CRD,NTWK,MLNX,OCP3,25G,2P,S2	CX5
	CRD,NTWK,MLNX,OCP3,25G,2P,S28	CX6-LX
	CRD,NTWK,MLNX,LP,25G,2P,S28	CX6-LX
Broadcom	CRD,NTWK,PCIE,DP,25G,57414,LP	57414
	CRD,NTWK,PCIE,DP,10G,57416,LP	57416
	CRD,NTWK,PCIE,DP,25G,57414,FH	57414
	CRD,NTWK,PCIE,DP,10G,57416,FH	57416
	CRD,NTWK,BCME,OCP3,25G,4P,S28	57504
	CRD,NTWK,BCME,OCP3,25G,2P,V2	57414
	CRD,NTWK,BCME,OCP3,10G,2P,BT	57416
	CRD,NTWK,BCME,OCP3,10G,2P,V2	57412

Table 9. XC6520

Vendor	Description	Chipset
Intel	CRD,NTWK,INTL,LP,10G,2P,BT	X710
	CRD,NTWK,INTL,LP,10G,4P,BT	X710
	CRD,NTWK,INTL,LP,25G,2P,S28	E810
	CRD,NTWK,INTL,OCP3,10G,2P,BT	X710
	CRD,NTWK,INTL,OCP3,25G,2P,S28	E810
	CRD,NTWK,INTL,OCP3,10G,4P,SF+	X710
	CRD,NTWK,INTL,OCP3,10G,2P,SF+	X710
	CRD,NTWK,INTL,OCP3,10G,4P,BT	X710
	CRD,NTWK,10G,SFP+,DP FVL,IN,LP	X710
Mellanox	CRD,NTWK,MLNX,LP,100G,2P,Q56	CX5
	CRD,NTWK,MLNX,LP,25G,2P,S28	CX5
	CRD,NTWK,MLNX,OCP3,25G,2P,S28	CX5
	CRD,NTWK,PCIE,H100,CX6,SP,L,ML	CX5
	CRD,NTWK,MLNX,OCP3,25G,2P,S28	CX6-LX
	CRD,NTWK,MLNX,LP,25G,2P,S28	CX6-LX
Broadcom	CRD,NTWK,PCIE,DP,25G,57414,LP	57414
	CRD,NTWK,PCIE,DP,10G,57416,LP	57416
	CRD,NTWK,BCME,OCP3,25G,4P,S28	57504
	CRD,NTWK,BCME,OCP3,25G,2P,V2	57414
	CRD,NTWK,BCME,OCP3,10G,2P,BT	57416
	CRD,NTWK,BCME,OCP3,10G,2P,V2	57412

Table 10. XC7525

Vendor	Description	Chipset
Intel	CRD,NTWK,10G,SFP+,DP FVL,IN,V2	X710

Table 10. XC7525 (continued)

Vendor	Description	Chipset
	CRD,NTWK,DP,INTEL,25G,SFP,LP	XXV710
	CRD,NTWK,DP,INTEL,25G,SFP	XXV710
	CRD,NTWK,INTL,FH,10G,2P,BT	X710
	CRD,NTWK,INTL,FH,10G,4P,BT	X710
	CRD,NTWK,INTL,FH,25G,2P,S28	E810
	CRD,NTWK,INTL,LP,10G,2P,BT	X710
	CRD,NTWK,INTL,LP,10G,4P,BT	X710
	CRD,NTWK,INTL,LP,25G,2P,S28	E810
	CRD,NTWK,INTL,OCP3,10G,2P,BT	X710
	CRD,NTWK,INTL,OCP3,25G,2P,S28	E810
	CRD,NTWK,INTL,OCP3,10G,2P,SF+	X710
	CRD,NTWK,INTL,OCP3,10G,4P,SF+	X710
	CRD,NTWK,INTL,OCP3,10G,4P,BT	X710
	CRD,NTWK,4X10G,SFP+,INTEL,V2	X710
	CRD,NTWK,10G,SFP+,DP FVL,LP,V2	X710
Mellanox	CRD,NTWK,MLNX,LP,25G,2P,S28	CX5
	CRD,NTWK,MLNX,LP,25G,2P,S28,F1	CX5
	CRD,NTWK,MLNX,FH,25G,2P,S28,F1	CX6-DX
	CRD,NTWK,MLNX,FH,25G,2P,S28	CX5
	CRD,NTWK,MLNX,OCP3,25G,2P,S2	CX5
	CRD,NTWK,MLNX,FH,HDRV,1P,Q56	CX6-DX
	CRD,NTWK,MLNX,OCP3,25G,2P,S28	CX6-LX
	CRD,NTWK,MLNX,LP,25G,2P,S28	CX6-LX
	CRD,NTWK,MLNX,FH,25G,2P,S28	CX6-LX
	CRD, NTWK, MLNX, FH, 100G, 2P,Q56	CX6-LX
	CRD, NTWK, MLNX, LP, 100G, 2P, Q56	CX6-LX
	CRD,NTWK,MLNX,FH,100G,2P,Q56	CX6-DX
	CRD,NTWK,MLNX,LP,100G,2P,Q56	CX6-DX
Broadcom	CRD,NTWK,PCIE,DP,25G,57414,LP2	57414
	CRD,NTWK,PCIE,DP,10G,57416,LP	57416
	CRD,NTWK,PCIE,DP,10G,57416,FH	57416
	CRD,NTWK,BCME,OCP3,25G,2P,V2	57414
	CRD,NTWK,BCME,OCP3,10G,2P,BT	57416
	CRD,NTWK,BCME,OCP3,10G,2P,V2	57412
	CRD,NTWK,BCME,OCP3,25G,4P,V2	57504
	CRD,NTWK,PCIE,DP,10G,57412,FH	57412
	CRD,NTWK,PCIE,DP,25G,57414,FH2	57414

Table 10. XC7525 (continued)

Vendor	Description	Chipset
	CRD,NTWK,PCIE,DP,10G,57412,LP	57412

Table 11. XC4520c

Vendor	Description	Chipset
Intel	CRD,NTWK,INTL,FH,10G,2P,BT	X710
	CRD,NTWK,INTL,FH,10G,4P,BT	X710
	CRD,NTWK,INTL,FH,25G,2P,S28	E810
Broadcom	CRD,NTWK,BCME,FH,10G,4P,BT	57454
	CRD,NTWK,BCME,FH,25G,4P,S28	57504
	CRD,NTWK,PCIE,DP,10G,57416,FH	57416
	CRD,NTWK,PCIE,DP,25G,57414,FH2	57414

15G GPU support matrix

The table in this topic specifies the supported GPUs. Platforms not listed in the table do not support GPUs.

Table 12. Supported GPUs

GPU	XC650-10 XC650-10N	XC750-24	XC750xa-8	XC7525-24	XC4520c
M10 (DW, FL)	N/A	Max 2	Max 2	Max 3	N/A
A2 (SW, HL)	Max 3	Max 4	Max 4	N/A	Max 2
A10 (SW, FL)	N/A	Max 2	Max 4	Max 3	N/A
A16 (DW, FL)	N/A	Max 2	Max 4	Max 3	N/a
A30 (DW, FL)	N/A	Max 2	Max 4	Max 3	Max 1
A40 (DW, FL)	N/A	Max 2	Max 4	Max 3	N/A
A100 (DW, FL)	N/A	Max 2	Max 4	Max 3	N/A
H100 (DW, FL)	N/A	Max 2	Max 4	Max 3	N/A
T4 (SW, HL)	Max 3	Max 4	Max 6	Max 2	N/A
L4 (SW, HL)	Max 3	Max 4	Max 6	Max 2	Max 2
L40 (DW, FL)	N/A	Max 2	Max 4	Max 3	N/A
L40S (DW, FL)	N/A	N/A	Max 4	N/A	N/A

Memory

In general, the models all support 16, 32, 64 RDIMM GB Ice Lake RDIMM memory. This memory operates at 3,200 MT per second.

Disk drives

The following tables provide information about the disk drives supported by your hardware for your model.

Table 13. SAS 2.5" HDD

Capacity	650	750-24	750xa	6520	7525-24
1200GB	X	X	X	X	X
2400GB	X	X	X	X	X

Table 14. SAS 3.5" HDD

Capacity	750-14	450	7525-12
4000GB	X	N/A	X
8000GB	X	X	X
12000GB	X	X	X
16000GB	X	X	X
18000GB	X	X	X
20000GB	X	X	X
22000GB	X	X	X

Management software

The XC450, XC650, XC750, XC750xa, XC6520, and XC7525 models all support the management software described in the following table.

Table 15. Management software

Name	AOS version (Ice lake)
AHV	6.5.3.5 or later
ESXi 6.7 U3	6.5.3.5 or later
ESXi 7.0 U2	6.5.3.5 or later
ESXi 7.0 U3	6.5.3.5 or later
ESXi 8.0 U1c	6.7.1.5 or later

The XC4000r, XC4000z, XC4510c, and XC4520c models support:

- AOS 6.7 minimum or later
- ESXi 7.0 U3 or later

Encryption Restrictions

This section describes encryption restrictions for disks on the Dell XC Series Hyper-Converged Appliance.

- If encryption has never been enabled and you do not plan to use it in the future, secure encrypted drives (SED) can be mixed with unencrypted (non-SED) drives in the same node.
- If encryption was never enabled and remains disabled, encrypted nodes can be mixed with unencrypted nodes in the same cluster.
- Encryption is not supported for NVMe drives.
- All nodes in the cluster must have SED capable drives to use Data at Rest encryption.

NOTE: If SED drives are mixed with non-SED drives, the encryption cannot be enabled for that cluster.

An encryption key must be removed from the SED drives from Prism before you format (clear) the SED drives.

A key server is required for Data at Rest Encrpytion in a cluster.

Technical specifications

XC450 technical specifications

Specifications for the components of the XC450 are provided.

The following XC450 specifications are provided:

- Chassis dimensions
- System weight
- Processor specifications
- PSU specifications
- Supported operating systems
- Cooling fan specifications
- System battery specifications
- Expansion card riser specifications
- Memory specifications
- Storage controller specifications
- Disk drives
- USB port specifications
- NIC port specifications
- Serial connector specifications
- VGA port specifications
- Video specifications
- Environment specifications
- Particulate and gaseous contamination specifications
- Thermal restrictions

Chassis dimensions

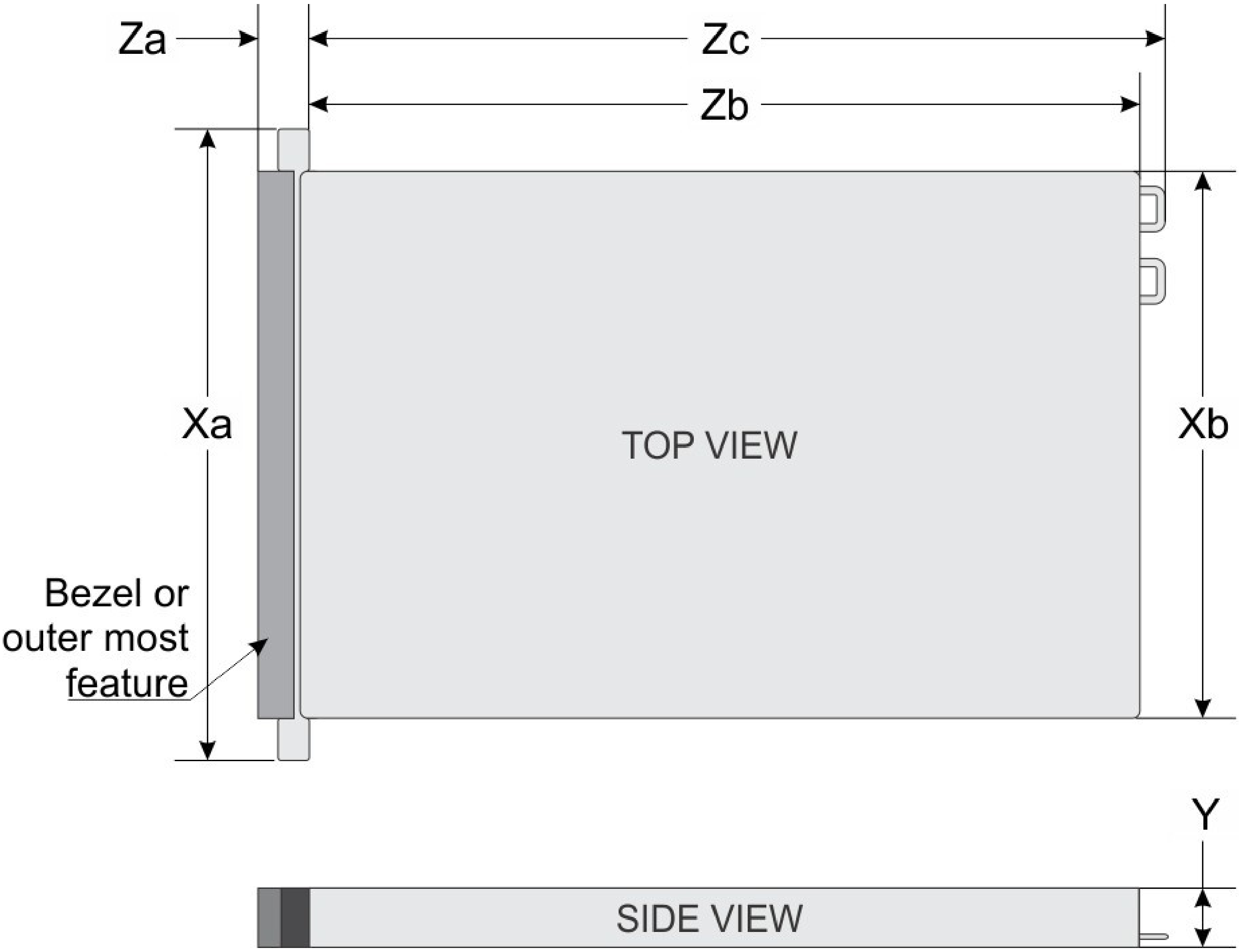


Figure 1. Chassis dimensions

The following table provides the chassis dimensions for the XC Core XC450:

Table 16. Chassis dimensions for the XC Core XC450

Drives	Xa	Xb	Y	Za	Zb	Zc
4 x 3.5 in	482 mm (18.976 in)	434 mm (17.08 in)	42.8 mm (1.685 in)	22 mm (0.866 in) without bezel 35.84 mm (1.41 in) with bezel	677.8 mm (26.685 in) (Ear to PSU surface) 691.07mm (27.207 in) (Ear to butterfly L bracket housing)	712.95 mm (28.069 in) (Ear to PSU handle without velcro strap)

System weight

The following table provides the XC Core XC450 weight:

Table 17. XC Core XC450 weight

System configuration	Maximum weight (with all drives/SSDs/bezel)
4 x 3.5-inch system	18.62 kg (41.05 pound)

Processor specifications

The following table provides the processor specifications for the XC Core XC450:

Table 18. Processor specifications for the XC Core XC450

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

Table 19. PSU specifications

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

This XC Core XC450 is also designed to connect to the IT power systems with a phase-to-phase voltage not exceeding 240 V.

Heat dissipation is calculated using the PSU wattage rating.

When selecting or upgrading the system configuration, to ensure optimum power utilization, verify the system power consumption with the Dell Enterprise Infrastructure Planning Tool available at Dell Enterprise Infrastructure Planning Tool.

Supported operating systems

The XC Core XC450 supports the following operating systems:

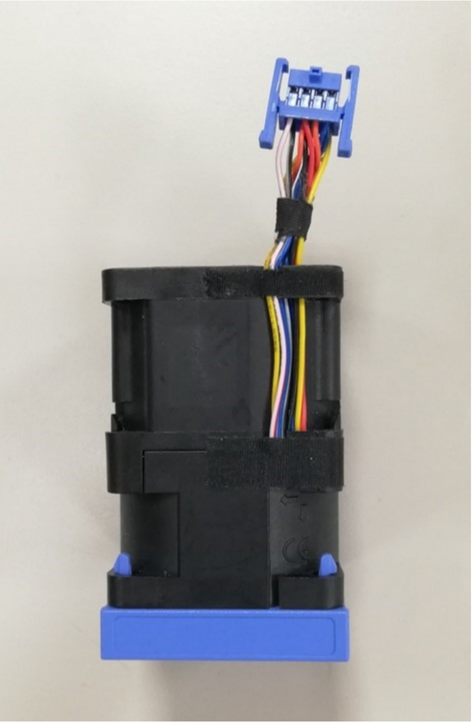
- VMware ESXi
- AHV

For more information, go to Dell | Server Operating System Support.

Table 20. Cooling fans specifications

Fan type	Abbreviation	Also known as	Label color	Label image
Standard fan	STD	STD	No label	Standard fan

Table 20. Cooling fans specifications (continued)

Fan type	Abbreviation	Also known as	Label color	Label image
				
High performance (Silver grade) fan	HPR (SLVR)	HPR	Silver	New cooling fans comes with the High Performance Silver Grade label. The older cooling fans have the High Performance label.  High performance (Silver grade) fan

System battery specifications

The XC Core XC450 supports CR 2032 3.0-V lithium coin cell system battery.

Expansion card riser specifications

The XC Core XC450 supports up to two PCI express (PCIe) Gen 4 expansion cards.

The following table provides details on the supported expansion card risers:

Table 21. Supported expansion card risers

PCIe slot	Riser	PCIe slot height	PCIe slot length	PCIe slot width
Slot 1	Riser 1 (4 and 4S)	Low Profile	Half length	x16
Slot 3	Riser 2c (4 only)	Low Profile	Half length	x16

For information on the expansion card installation guidelines, see the system-specific installation and service manual available at Dell Support (**Browse all Products** > **Infrastructure**, then go to the system.)

The XC Core XC450 supports the following memory specifications for optimized operation:

Table 22. Memory specifications

DIMM type	DIMM rank	DIMM capacity	Single processor		Dual processors	
			Minimum DIMM capacity	Maximum DIMM capacity		
RDIMM	Dual rank	16 GB	16 GB	128 GB	32 GB	256 GB
RDIMM	Dual rank	32 GB	32 GB	256 GB	64 GB	512 GB
RDIMM	Dual rank	64 GB	64 GB	512 GB	128 GB	1 TB

The following table memory module specifications:

Table 23. Memory module specifications

Memory module sockets	Speed
16, 288-pin	2933 MT/s, 2666 MT/s

Storage controller specifications

The XC Core XC450 supports the following controller cards:

- HBA355i
- Boot Optimized Storage Subsystem (BOSS-S1): HWRAID 2 x M.2 SSDs

Disk drives

The XC Core XC450 supports 4 x 3.5-in hot-swappable SAS, SATA (HDD/SSD) drives.

USB ports specifications

The XC Core XC450 supports the USB ports listed in the following table:

Table 24. Supported USB ports

Front	Front	Rear	Rear	Internal (Optional)	Internal (Optional)
USB port type	**No. of ports**	**USB port type**	**No. of ports**	**USB port type**	**No. of ports**
USB 3.0-compliant port	One	USB 2.0-compliant port	One	Internal USB 3.0-compliant port	One
Micro-USB 2.0-compliant port for iDRAC Direct	One	USB 3.0-compliant port	One		

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

NIC port specifications

The XC Core XC450 supports up to two 10/100/1000 Mbps Network Interface Controller (NIC) ports embedded on the LAN on Motherboard (LOM) and integrated on the optional Open Compute Project (OCP) cards. The following table provides details:

Table 25. NIC port specifications

Feature	Specifications
LOM card	1 GbE x 2
OCP card (OCP 3.0)	1 GbE x 4, 10 GbE x 2, 25 GbE x 2, 25 GbE x 4

Serial connector specifications

The XC Core XC450 supports one optional card type serial connector on rear of the system. The connector is a 9-pin connector, Data Terminal Equipment (DTE), 16550-compliant .

The process to install the optional serial connector card is similar to an expansion card filler bracket.

VGA ports specifications

The XC Core XC450 supports two DB-15 VGA ports, one each on the front and rear panels of the system.

Video specifications

The XC Core XC450 supports an integrated Matrox G200 graphics controller with 16 MB of video frame buffer. Details are provided in the following table:

Table 26. Video specifications

Resolution	Refresh rate (Hz)	Color depth (bits)
1024 x 768	60	8, 16, 32
1280 x 800	60	8, 16, 32
1280 x 1024	60	8, 16, 32
1360 x 768	60	8, 16, 32
1440 x 900	60	8, 16, 32
1600 x 900	60	8, 16, 32
1600 x 1200	60	8, 16, 32
1680 x 1050	60	8, 16, 32

Table 26. Video specifications (continued)

Resolution	Refresh rate (Hz)	Color depth (bits)
1920 x 1080	60	8, 16, 32
1920 x 1200	60	8, 16, 32

Environmental specifications

NOTE: For additional information about environmental certifications, see the product environmental datasheet that is located with the **Manuals & Documents** on Dell Support.

The following table provides information for operational climatic range, category A2:

Table 27. Operational climatic range

Temperature	Specifications
Allowable continuous operations	
Temperature ranges for altitudes <= 900 m (<= 2,953 ft)	10–35°C (50–95°F) with no direct sunlight on the equipment
Humidity percent ranges (non-condensing at all times)	8% RH with -12°C minimum dew point to 80% RH with 21°C (69.8°F) maximum dew point
Operational altitude de-rating	Maximum temperature is reduced by 1°C/300 m (1.8°F/984 Ft) above 900 m (2953 Ft)

The following table provides information for shared requirements across all categories:

Table 28. Shared requirements

Temperature	Specifications
Allowable continuous operations	
Maximum temperature gradient (applies to both operation and non-operation)	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 **NOTE:** Per ASHRAE thermal guidelines for tape hardware, these are not instantaneous rates of temperature change.
Non-operational temperature limits	-40 to 65°C (-40 to 149°F)
Non-operational humidity limits	5% to 95% RH with 27°C (80.6°F) maximum dew point
Maximum non-operational altitude	12,000 meters (39,370 feet)
Maximum operational altitude	3,048 meters (10,000 feet)

The following table specifies the maximum allowed vibration:

Table 29. Maximum allowed vibration

Maximum vibration	Specifications
Operating	0.26 G_{rms} at 5 Hz to 350 Hz (all operation orientations)
Storage	1.88 G_{rms} at 10 Hz to 500 Hz for 15 minutes (all six sides tested)

The following table specifies the shock pulse maxima:

Table 30. Shock pulse maxima

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

Particulate and gaseous contamination specifications

This section defines the limitations that prevent damage to the IT equipment 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 must rectify the environmental conditions. Remediation of environmental conditions is the responsibility of the customer.

The following table contains particulate contamination specifications:

Table 31. 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. 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. 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. 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. This condition applies to data center and non-data center environments.

The following table contains gaseous contamination specifications:

Table 32. 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

Thermal restrictions

The following table provides the thermal restriction matrix for processors and fans.

Table 33. Thermal restriction matrix

Configuration / Processor TDP	4 x 3.5-inch configuration	8 x 2.5-inch SAS/SATA configuration	Maximum Ambient Temperature
Rear Storage	Rear 3 LP	Rear 3 LP	N/A
105 W	STD fan STD HSK	STD fan STD HSK	40°C

Table 33. Thermal restriction matrix (continued)

Configuration / Processor TDP	4 x 3.5-inch configuration	8 x 2.5-inch SAS/SATA configuration	Maximum Ambient Temperature
120 W	STD fan STD HSK	STD fan STD HSK	40°C
135 W	STD fan STD HSK	STD fan STD HSK	40°C
150 W	STD fan STD HSK	STD fan STD HSK	40°C
165 W	STD fan STD HSK	STD fan STD HSK	35°C
165 W 8 cores, 3.6 GHz	HPR (SLVR) fan HPR HSK	HPR (SLVR) fan HPR HSK	35°C
185 W / 190 W	HPR (SLVR) fan HPR HSK	HPR (SLVR) fan HPR HSK	35°C

Processor blank is required for single processor configuration.

Two fan blanks are required to be installed on fan slot 1 and fan slot 2 for 5 fans configuration.

The following table provides label reference information:

Table 34. Label reference information

Label	Description
LP	Low Profile
HPR (SLVR)	High performance (silver grade)
HPR	High Performance
HSK	Heat sink

DIMM blank is not required.

XC650 technical specifications

Specifications for the components of the XC650 are provided.

The following XC650 specifications are provided:

- Chassis dimensions
- Chassis weight
- Processor specifications
- PSU specifications
- Supported operating systems
- Cooling specifications
- System battery specifications
- Expansion card riser specifications
- Memory specifications
- Storage controller specifications
- Disk drive specifications
- USB port specifications

- NIC port specifications
- Serial port specifications
- IDSDM specifications
- Video specifications
- Environmental specifications
- Thermal restrictions for air cooling
- Particulate and gaseous contamination

Chassis dimensions

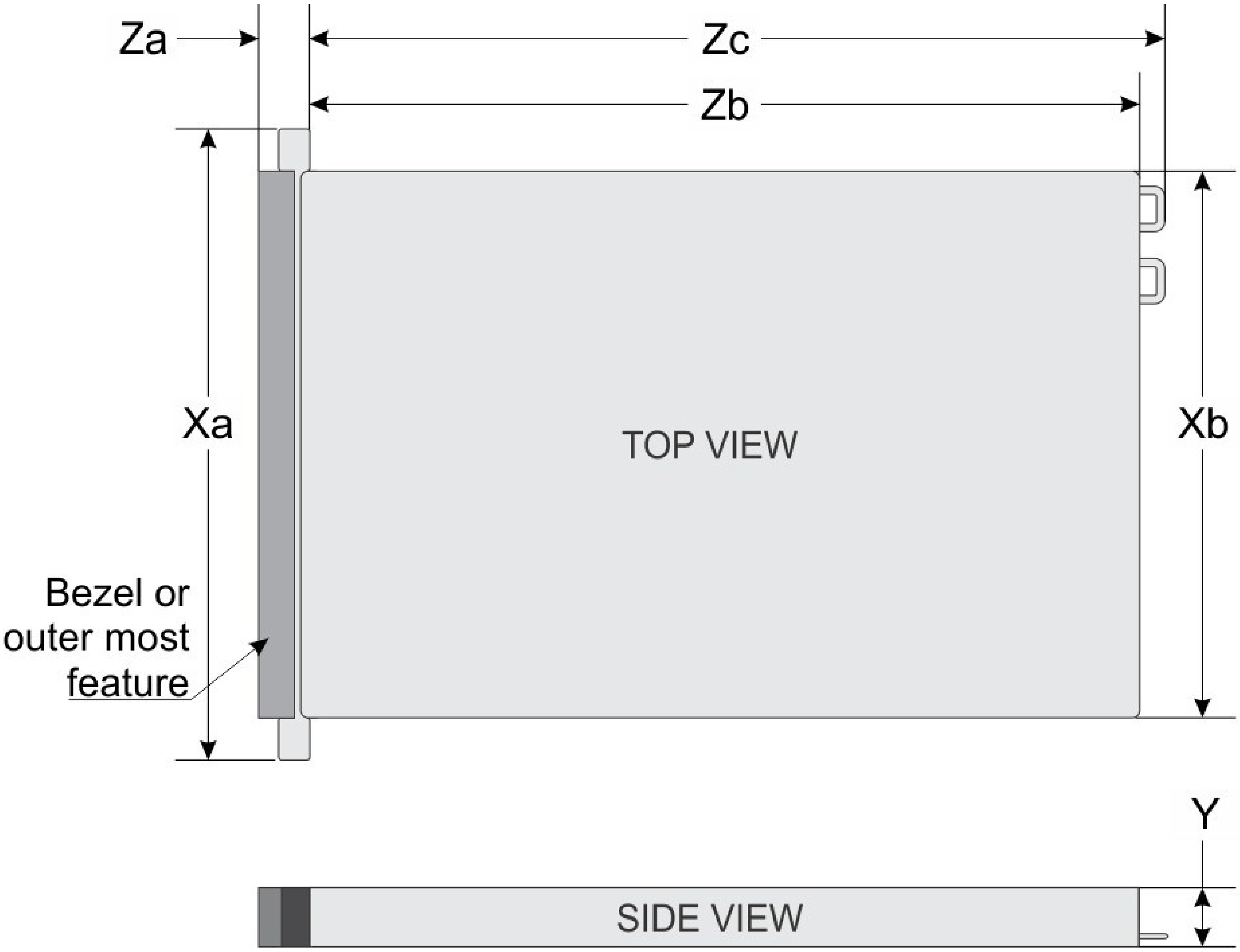


Figure 2. Chassis dimensions

The following table provides the chassis dimensions for the XC Core XC650:

Table 35. XC Core XC650

Drives	Xa	Xb	Y	Za	Zb	Zc
10 drives	482 mm (18.97 in)	434 mm (17.08 in)	42.8 mm (1.68 in)	35.84 mm (1.4 in) with bezel 22 mm (0.86 in) without bezel	751.48 mm (29.58 in) Ear to rear wall	787.05 mm (31 in) Ear to PSU handle

Zb is the nominal rear wall external surface where the XC Core XC650 board I/O connectors reside.

Chassis weight

The following table provides the XC Core XC650 weight specifications:

Table 36. XC Core XC650 weight specifications

System configuration	Maximum weight (with all drives/SSDs)
10 x 2.5-inch	21.0 kg (46.2 lb)

Processor specifications

The following table provides processor specifications for the XC Core XC650.

Table 37. XC Core XC650 processor specifications

Supported processor	Number of processors supported
Third-Generation Intel Xeon Scalable processors with up to 40 cores	Two

PSU specifications

The XC Core XC650 supports up to two AC or DC power supply units (PSUs).

WARNING: **Instructions for qualified electricians only:**

- **System using -(48-60) V DC or 240 V DC power supplies are intended for restricted access locations. See Articles 110-5, 110-6, 110-11, 110-14, and 110-17 of the National Electrical Code, American National Standards Institute (ANSI)/National Fire Protection Association (NFPA) 70.**
- **If applicable in country or region of use, 240 V DC power supplies shall be connected to the 240 V DC outlet from certified power distribution units.**
- **Power supply cords and jumper cords and the associated plugs, inlets, and connectors shall have appropriate electrical ratings. The ratings must reference the rating label on the system when used for connection.**

Table 38. PSU specifications

PSU	Class	Heat dissipation (maximum BTU/hr)	Frequency (Hz)	Voltage	AC					Current
					High line 200–240 V			Low line 100–120 V		
					Peak Power	-		Peak Power	-	
					-72 VDC	-72 VDC	240 VDC	-40 VDC	40 VDC	
1100 W AC	Titanium	4299	50/60 Hz	100-240 V	1870 W	1100 W	1100 W	1785 W	1050 W	12 - 6.3 A
1100 W Mixed mode	N/A	4299	N/A	240 VAC						5.2 A
1100 W DC	N/A	4265	N/A	-48 –(-60) V	1870 W	1100 W	N/A	1870 W	1100 W	27.0 A
1400 W AC	Platinum	5459	50/60 Hz	100-240 V	2380 W	1400 W	1400 W	1785 W	1050 W	12–8 A

Table 38. PSU specifications (continued)

PSU	Class	Heat dissipation (maximum BTU/hr)	Frequency (Hz)	Voltage	AC					Current
					High line 200–240 V			Low line 100–120 V		
					Peak Power	-		Peak Power	-	
					-72 VDC	-72 VDC	240 VDC	-40 VDC	40 VDC	
1400 W Mixed mode	N/A	5459	N/A	240 V						6.6 A

Supported operating systems

The XC Core XC650 supports the following operating systems:

- VMware ESXi
- AHV

Cooling options

Maintain optimum thermal performance on the XC Core XC650 using cooling components that are based on the following:

- CPU TDP
- Storage modules and rear drives
- GPU
- Persistent memory

The XC Core XC650 uses air cooling with up to four of the following:

- Standard (STD), high performance silver grade (HPR SLVR) fan modules
- High performance gold grade (HPR (Gold)) dual cooling fan modules

The choice of fan is based on the following:

- CPU TDP
- Drive configurations
- GPU

High performance SLVR and GOLD fans provide higher air flow rate through the system. For certain single CPU configurations, only three sets of fan modules are required. In such configurations, a fan blank is required to block fan bay 1.

Cooling fan specifications

The XC Core XC650 is adapting to dual fans module form factor. One set of fan module includes two fan body with one fan connector.

The following table provides the specifications for the fans that are used in the XC Core XC650:

Table 39. XC Core XC650 fan specifications

Fan type	Abbreviation	Also known as	Label color	Label image
Standard fan	STD	STD	No label	 Standard fan
High performance (Silver grade) fan	HPR (SLVR)	HPR	Silver	New cooling fans come with the High Performance Silver Grade label. The older cooling fans have the High Performance label. 

Table 39. XC Core XC650 fan specifications (continued)

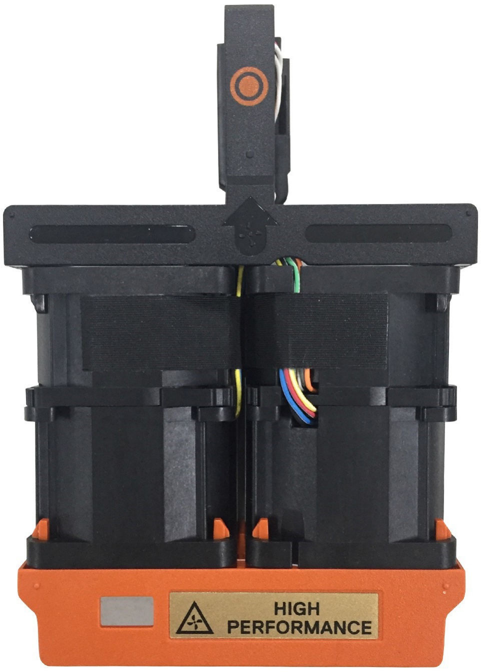
Fan type	Abbreviation	Also known as	Label color	Label image
				 High performance (Silver grade) fan
High performance (Gold grade) fan	HPR (Gold)	VHP - Very High Performance	Gold	New cooling fans come with the High Performance Gold Grade label. The older cooling fans have the High Performance label. 

Table 39. XC Core XC650 fan specifications (continued)

Fan type	Abbreviation	Also known as	Label color	Label image
				 High performance fan High performance (Gold grade) fan

The STD and HPR fans installation depends on the XC Core XC650 configuration. For more information about the fan support configuration or matrix, see Thermal restriction matrix.

System battery specifications

The XC Core XC650 supports CR 2032 3.0-V lithium coin cell system battery.

Expansion card riser specifications

The XC Core XC650 supports up to three slots and all PCI express (PCIe) Gen 4 expansion cards.

Table 40. Expansion card riser specifications

PCIe slot	With Regular shroud	R1a	R2a	R2b	R3a	R4c+R4d
Slot 1	Low profile- Half length	x16 (FH-3/4L)	x16	x16 (optional SNAPI support)	N/A	N/A
Slot 2	Low profile- Half length	N/A	x16	x8	N/A	x16 (FH-3/4L)
Slot 3	Low profile- Half length	N/A	N/A	N/A	x16	N/A

Memory specifications

The XC Core XC650 supports the following memory specifications for optimized operation:

Table 41. Memory specifications

DIMM type	DIMM rank	DIMM capacity	Single processor		Dual processor	
			Minimum RAM	Maximum RAM	Minimum RAM	Maximum RAM
RDIMM	Dual rank	16 GB	16 GB	256 GB	32 GB	512 GB
		32 GB	32 GB	512 GB	64 GB	1 TB
		64 GB	64 GB	1 TB	128 GB	2 TB
LRDIMM	Quad rank	128 GB	128 GB	2 TB	256 GB	4 TB
	Octa rank	256 GB	256 GB	4 TB	512 GB	8 TB

The following table describes the memory module socket specifications:

Table 42. Memory module socket specifications

Memory module sockets	Speed
32, 288-pin	3200 MT/s, 2933 MT/s, 2666 MT/s

Storage controller specifications

The XC Core XC650 supports the following storage controller cards in the following table:

- HBA355I
- Boot Optimized Storage Subsystem (BOSS-S2): HW RAID 2 x M.2 SSDs 240 GB or 480 GB
- Boot Optimized Storage Subsystem (BOSS-S1 Adapter): HW RAID 2 x M.2 SSDs 240 GB or 480 GB

The software RAID S150 is supported on either of the following:

- SATA drives with chipset SATA only backplane
- NVMe drives in universal slots with processor direct PCIe cable connected backplane

The XC Core XC650 supports either BOSS-S1 or BOSS-S2.

M.2 hotplug is not supported on BOSS-S1.

Disk drive specifications

The XC Core XC650 supports 10 x 2.5-inch hot-swappable SAS, SATA , or NVMe drives.

For more information about how to hot swap an NVMe PCIe SSD U.2 device, see the *Dell Express Flash NVMe PCIe SSD User's Guide* at Dell Support (**Browse all Products** > **Infrastructure** > **Data Center Infrastructure** > **Storage Adapters & Controllers** > **Dell PowerEdge Express Flash NVMe PCIe SSD** > **Select this product** > **Documentation** > **Manuals and Documents**).

USB ports specifications

The following table provides specifications for the XC Core XC650 USB ports:

Table 43. XC Core XC650 USB ports specifications

Front	Front	Rear	Rear	Internal (Optional)	Internal (Optional)
USB port type	**No. of ports**	**USB port type**	**No. of ports**	**USB port type**	**No. of ports**
USB 2.0-compliant port	One	USB 2.0-compliant port	One	Internal USB 3.0-compliant port	One
Micro-USB, iDRAC Direct	One	USB 3.0-compliant port	One	Internal USB 3.0-compliant port	One

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

The USB 2.0 specifications provide a 5 V supply on a single wire to power connected USB devices. A unit load is defined as 100 mA in USB 2.0, and 150 mA in USB 3.0. A device may draw a maximum of five unit loads (500 mA) from a port in USB 2.0; 6 (900 mA) in USB 3.0.

The USB 2.0 interface can provide power to low-power peripherals but must adhere to USB specification. An external power source is required for higher-power peripherals to function, such as external CD or DVD drives.

NIC port specifications

The XC Core XC650 supports up to two 10 Mbps, 100 Mbps, or 1000 Mbps Network Interface Controller (NIC) ports. The ports are embedded on the LAN on Motherboard (LOM) and integrated on the optional OCP cards.

Table 44. NIC port specifications

Feature	Specifications
LOM card	1 GB x 2
OCP card (OCP 3.0)	10 GbE x 2, 25 GbE x 2, 25 GbE x 4, 100 GbE x 2

Serial connector specifications

The XC Core XC650 supports one optional card type serial connector, which is a 9-pin connector, Data Terminal Equipment (DTE), 16550-compliant .

The optional serial connector card is installed similar to an expansion card filler bracket.

Video specifications

The XC Core XC650 supports integrated Matrox G200 graphics controller with 16 MB of video frame buffer. The following table describes the supported video resolutions:

Table 45. Video specifications

Resolution	Refresh rate (Hz)	Color depth (bits)
1024 x 768	60	8, 16, 32
1280 x 800	60	8, 16, 32
1280 x 1024	60	8, 16, 32
1360 x 768	60	8, 16, 32
1440 x 900	60	8, 16, 32
1600 x 900	60	8, 16, 32
1600 x 1200	60	8, 16, 32
1680 x 1050	60	8, 16, 32
1920 x 1080	60	8, 16, 32
1920 x 1200	60	8, 16, 32

Environmental specifications

NOTE: For additional information about environmental certifications, see the product environmental datasheet that is located with the **Manuals & Documents** on Dell Support.

The following table provides information for operational climatic range, category A2:

Table 46. Environmental specifications

Temperature	Specifications
Allowable continuous operations	
Temperature ranges for altitudes <= 900 m (<= 2,953 ft)	10–35°C (50–95°F) with no direct sunlight on the equipment
Humidity percent ranges (noncondensing always)	Minimum: 8% RH with -12°C (10°F) minimum dew point Maximum: 80% RH with 21°C (69.8°F) dew point
Operational altitude derating	Reduce the maximum temperature by 1°C/300 m (1.8°F/984 ft) above 900 m (2953 ft)

The following table provides information for operational climatic range category A3:

Table 47. Operational climatic range

Temperature	Specifications
Allowable continuous operations	
Temperature ranges for altitudes <= 900 m (<= 2953 ft)	5–40°C (41–104°F) with no direct sunlight on the equipment
Humidity percent ranges (noncondensing always)	Minimum: 8% RH with -12°C (10°F) dew point Maximum: 85% RH with 24°C (75.2°F) dew point
Operational altitude derating	Reduce the maximum temperature by 1°C/175 m (33.8°F/574 ft) above 900 m (2953 ft)

The following table provides information for operational climatic range category A4:

Table 48. Operational climatic range

Temperature	Specifications
Allowable continuous operations	
Temperature ranges for altitudes <= 900 m (<= 2953 ft)	5–45°C (41–113°F) with no direct sunlight on the equipment
Humidity percent ranges (noncondensing always)	Minimum: 8% RH with -12°C (10°F) dew point Maximum: 90% RH with 24°C (75.2°F) dew point
Operational altitude derating	Reduce the maximum temperature by 1°C/125 m (33.8°F/410 ft) above 900 m (2953 ft)

The following table provides information for shared requirements across all categories:

Table 49. Shared requirements

Temperature	Specifications
Allowable continuous operations	
Maximum temperature gradient (applies to both operation and nonoperation)	20°C (36°F) in an hour* and 5°C (9°F) in 15 minutes For tape: 5°C (9°F) in 15 minutes ⓘ **NOTE:** Per ASHRAE thermal guidelines for tape hardware, these rates are not instantaneous.
Nonoperational temperature limits	-40°C to 65°C (-40°F to 149°F)
Nonoperational humidity limits	5% to 95% RH with 27°C (80.6°F) maximum dew point
Maximum nonoperational altitude	12,000 meters (39,370 ft)

Table 49. Shared requirements (continued)

Temperature	Specifications
Maximum operational altitude	3,048 meters (10,000 ft)

The following table specifies the maximum allowed vibration:

Table 50. Maximum allowed vibration

Maximum vibration	Specifications
Operating	0.26 G_{rms} at 5 Hz to 350 Hz (all operation orientations)
Storage	1.88 G_{rms} at 10 Hz to 500 Hz for 15 minutes (all six sides tested)

The following table specifies the shock pulse maxima:

Table 51. Shock pulse maxima specifications

Maximum shock pulse	Specifications
Operating	Six consecutive shock pulses in the positive and negative x, y, and z axis of 6 G for up to 11 milliseconds
Storage	Six consecutive 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 two milliseconds.

Thermal restrictions matrix for air cooling

The following table describes label references:

Table 52. Label references

Label	Explanation
STD	Standard
HPR	High Performance
HSK	Heat sink
LP	Low Profile (Riser)
FH	Full Height (Riser)
DW	Double Wide (Xilinx FPGA accelerator)

The following table provides the cooling fan matrix for air cooling:

Table 53. Cooling fan matrix

Configuration	10 x 2.5-inch SAS		10 x 2.5-inch NVMe	
Rear storage	3 LP / 2 FH	Rear 2 x 2.5-inch SAS	3 LP / 2 FH	Rear 2 x 2.5-inch NVMe
CPU TDP				
105 W / 120 W 135 W / 140 W	HPR SLVR fan		HPR Gold fan	
150 W				
165 W				
185 W /				

Table 53. Cooling fan matrix (continued)

Configuration	10 x 2.5-inch SAS		10 x 2.5-inch NVMe	
Rear storage CPU TDP	3 LP / 2 FH	Rear 2 x 2.5-inch SAS	3 LP / 2 FH	Rear 2 x 2.5-inch NVMe
195 W				
205 W				
225 W / 230 W / 235 W	HPR Gold fan			
240 W / 250 W			HPR Gold fan	HPR Gold fan
265 W / 270 W				Not supported

The following table provides the processor and heat sink matrix:

Table 54. Processor and heat sink matrix

Heat sink	Processor TDP
STD HSK	<= 165 W
T-type HSK	Processor 1 > 165 W
T-type HSK	Processor 2 > 165 W

The following table provides the T4 GPU support restrictions:

Table 55. T4 GPU support restrictions

Slots	2.5-inch x 10	
Rear Config	3 x LP	2 x FH
Slot 2	Supported	Supported
Slot 3	Supported	N/A

The following are thermal restrictions for non-GPU, non-BPS configurations at 35°C (95°F) environment:

- For 3.5-–inch configuration:
  - No support for CPU > 225 W in 35°C (95°F) environment.
- For 2.5-–inch configuration:
  - No support for CPU > 250 W in rear NVMe configuration in 35°C (95°F) environment.
  - No support for LRDIMM >=128 GB if CPU >= 240 W for 10 x 2.5–inch hard drive or NVMe in 35°C (95°F) environment.

Thermal restrictions for T4 GPU at 35°C (95°F) environment:

- For 3.5-–inch configuration:
  - No support for LRDIMM >= 128 GB with T4 GPU.
  - T4 GPU not supported when CPU TDP > 205 W.
  - HPR SLVR fan is required.
- For 2.5-–inch configuration:
  - No support for LRDIMM >=128 GB with T4 GPU if CPU > 205 W.
  - HPR GOLD fan is required

30°C (86°F) configuration support for 2.5-inch storage module configuration

- For non-GPU or non-BPS configuration:

  - Up to 30°C (86°F) ambient temperature support for CPU TDP 250 W - 270 W with 128 GB LRDIMM in rear drive configuration.
  - Up to 30°C (86°F) ambient temperature support for CPU TDP 260 W - 270 W with 64 GB RDIMM in rear NVMe configuration.
- With GPU configuration:
  - Up to 30°C (86°F) ambient temperature support for CPU TDP 210 W - 270 W with GPU and 128 GB LRDIMM.
  - Up to 30°C (86°F) ambient temperature support for CPU TDP 260 W - 270 W with GPU and 64 GB RDIMM in rear NVMe configuration.

Other restrictions for air cooling

- HPR GOLD fan is required for NVDIMM support.
- Kioxia CM6 or CD6, Intel P5500, P5600, P4800, and PM1735 NVMe in rear drive slot are not supported.
- PCIe/OCP cards >= 25 Gb require 85°C (185°F) active optic cable.
- CPU, DIMM, or hard drive Blanks:
  - If a slot does not contain a hard drive, a hard drive blank is required
  - DIMM blank is required, but partial configurations with EXT HS (CPU > 165 W) support to remove DIMM blanks.
  - Single CPU config: Fan module #1 is not required, but CPU and DIMM blank are required.
- For 1 processor configuration, fan module 1 is not required but fan blank is required.
- Intel® Xeon® Platinum 8368Q_ICX XCC_ with 270 W and 38C processor is not supported in air cooling system.
- Exception for heatsink application rule: Intel® Xeon® Gold 6334_ICX HCC with 165 W and 8C CPU require T-type EXT HTSNK, not STD HTSNK.

ASHRAE A3 and A4 thermal restrictions for air cooling

ASHRAE A3 environment

- Two PSUs are required in redundant mode, however PSU failure is not supported.
- PCIe SSD is not supported.
- NVMe drives are not supported.
- 128 GB or greater capacity DIMMs are not supported.
- Intel Persistent Memory 200 series (BPS) and NVDIMM are not supported.
- GPU and FPGA are not supported.
- CPU TDP >185 W are not supported.
- Rear drives are not supported.
- Non-Dell qualified peripheral cards and peripheral cards greater than 25 W are not supported.
- BOSS 1.5 is not supported.
- Supports OCP, cooling tier <= 5°C (41°F) and 85°C (185°F) active optic cable is required.

ASHRAE A4 environment

- Two PSUs are required in redundant mode, however PSU failure is not supported.
- PCIe SSD is not supported.
- NVMe drives are not supported.
- 128 GB or greater capacity DIMMs are not supported.
- GPU and FPGA are not supported.
- CPU TDP > 105 W are not supported.
- Rear drives are not supported.
- BOSS 1.5 is not supported.
- Supports OCP, cooling tier ? 4°C and 85°C active optic cable is required.
- Non-Dell qualified peripheral cards and peripheral cards greater than 25 W are not supported.
- Intel Persistent Memory 200 series (BPS) and NVDIMM are not supported.

Particulate and gaseous contamination specifications

This section defines the limitations that prevent damage to the IT equipment 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 must rectify the environmental conditions. Remediation of environmental conditions is the responsibility of the customer.

The following table contains particulate contamination specifications:

Table 56. 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. 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. Air entering the data center must have MERV11 or MERV13 filtration. Air filtering can also be accomplished by filtering room air with MERV8 filter per ANSI and ASHRAE Standard 127.
Conductive dust	Air must be free of conductive dust, zinc whiskers, or other conductive particles. This condition applies to data center and nondata center environments. 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. Residual dust present in the air must have a deliquescent point less than 60% relative humidity. This condition applies to data center and nondata center environments.

The following table contains gaseous contamination specifications:

Table 57. 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

Maximum corrosive contaminant levels measured at <=50% relative humidity.

XC750 technical specifications

Specifications for the components of the XC750 are provided.

The following XC750 specifications are provided:

- Chassis dimensions
- Weight
- Processor
- Power supply units
- Supported operating systems
- Cooling fans
- System battery
- Expansion card risers
- Memory
- Storage controller
- Disk drives
- USB ports
- NIC ports
- Serial ports
- VGA ports
- Video

- Environment
- Particulate and gaseous contamination
- Thermal restrictions

Chassis dimensions

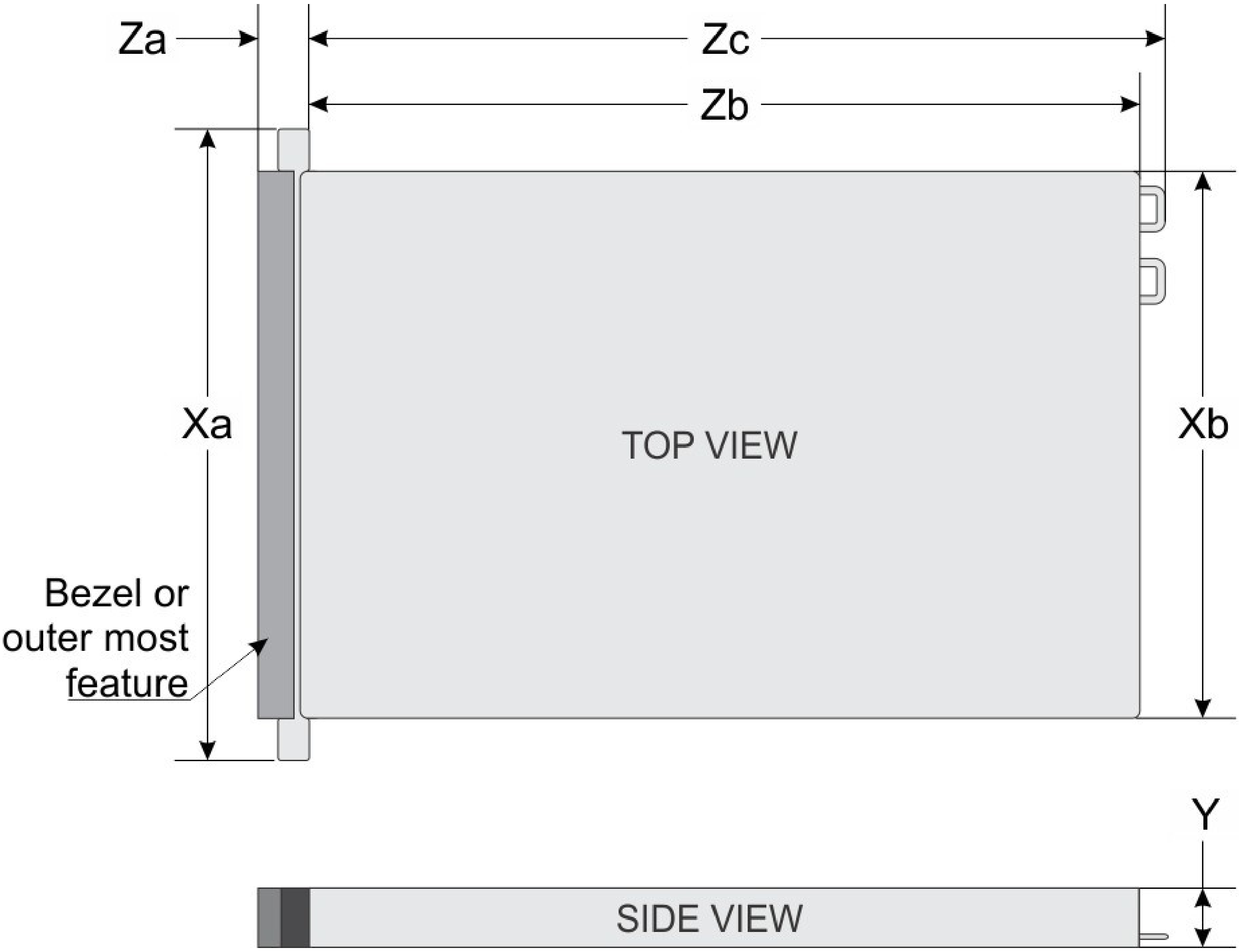


Figure 3. Chassis dimensions

The following table provides the chassis dimensions for the XC Core XC750:

Table 58. Chassis dimensions

Drives	Xa	Xb	Y	Za	Zb	Zc
0/8/12/16/24 drives	482 mm (18.97 in)	434 mm (17.08 in)	86.8 mm (3.41 in)	35.84 mm (1.4 in) with bezel 22 mm (0.86 in) without bezel	700.7 mm (27.58 in) Ear to rear wall	736.29 mm (28.92 in) Ear to PSU handle

Zb is the nominal rear wall external surface where the XC Core XC750 board I/O connectors reside.

Chassis weight

The following table provides the XC Core XC750 weight specifications:

Table 59. Chassis weight specifications

System configuration	Maximum weight (with all drives/SSDs)
12 x 3.5-inch	35.3 kg (77.82 lb)
16 x 2.5-inch	32.6 kg (71.87 lb)
24 x 2.5-inch	35.2 kg (77.60 lb)

Processor specifications

The following table provides processor specifications for the XC Core XC750.

Table 60. Processor specifications

Supported processor	Number of processors supported
Third-generation Intel Xeon Scalable processors with up to 40 cores	Two

PSU specifications

The XC Core XC750 supports up to two AC or DC power supply units (PSUs).

WARNING: Instructions for the qualified electricians only:

System using -(48-60) V DC or 240 V DC power supplies are intended for restricted access locations. See Articles 110-5, 110-6, 110-11, 110-14, and 110-17 of the National Electrical Code, American National Standards Institute (ANSI)/National Fire Protection Association (NFPA) 70.

If applicable in the country or region of use, 240 V DC power supplies shall be connected to the 240 V DC outlet from certified power distribution units.

Power supply cords and jumper cords and the associated plugs, inlets, and connectors shall have appropriate electrical ratings. The rating shall reference the rating label on the system when used for connection.

Table 61. PSU specifications

PSU	Class	Heat dissipation (maximum BTU/hr)	Frequency (Hz)	Voltage	AC					Current
					High line 200–240 V			Low line 100–120 V		
					Peak Power	-		Peak Power	-	
					-72 VDC	-72 VDC	240 VDC	-40 VDC	40 VDC	
800 W AC	Platinum	3139	50/60	100–240 V	1360 W	800 W	800 W	1360 W	800 W	9.2 - 4.7 A
800 W Mixed mode	N/A	3139	N/A	240 V						3.8 A
1100 W AC	Titanium	4299	50/60 Hz	100-240 V	1870 W	1100 W	1100 W	1785 W	1050 W	12 - 6.3 A
1100 W	N/A	4299	N/A	240 VAC						5.2 A

Table 61. PSU specifications (continued)

PSU	Class	Heat dissipation (maximum BTU/hr)	Frequency (Hz)	Voltage	AC					Current
					High line 200–240 V			Low line 100–120 V		
					Peak Power	-		Peak Power	-	
					-72 VDC	-72 VDC	240 VDC	-40 VDC	40 VDC	
Mixed mode										
1100 W DC	N/A	4265	N/A	-48 – (-60) V	1870 W	1100 W	N/A	1870 W	1100 W	27.0 A
1400 W AC	Platinum	5459	50/60 Hz	100-240 V	2380 W	1400 W	1400 W	1785 W	1050 W	12–8 A
1400 W Mixed mode	N/A	5459	N/A	240 V						6.6 A

Supported operating systems

The XC Core XC750 supports the following operating systems:

- Windows Server with Hyper-V (XC750-14 only)
- VMware ESXi
- AHV

For more information, go to Dell | Server Operating System Support.

Cooling options

Maintain optimum thermal performance on the XC Core XC750 using various cooling components based on the following:

- CPU TDP
- Storage modules and rear drives
- GPU
- Persistent memory.

The Dell XC Core XC750 offers air cooling.

Cooling fan specifications

The Dell XC Core XC750 supports up to six standard (STD), high-performance silver grade (HPR SLVR), or high-performance gold grade (HPR GOLD) cooling fans.

The following table provides the specifications for the fans that are used in the XC Core XC750:

Table 62. Cooling fan specifications

Fan type	Abbreviation	Also known as	Label color	Label image
Standard fan	STD	STD	No label	 Standard fan
High performance (Silver grade) fan	HPR (SLVR)	HPR	Silver	New cooling fans come with the High Performance Silver Grade label. The older cooling fans have the High Performance label.  High performance (Silver grade) fan
High performance (Gold grade) fan	HPR (Gold)	VHP - Very High Performance	Gold	New cooling fans come with the High Performance Gold Grade label. The older cooling fans have the High Performance label.

Table 62. Cooling fan specifications (continued)

Fan type	Abbreviation	Also known as	Label color	Label image
				 High performance fan High performance (Gold grade) fan

Mixing of STD, HPR SLVR, or HPR GOLD fan is not supported.

The STD, HPR SLVR, or HPR GOLD fan installation depends on the XC Core XC750 configuration. For more information about the supported fan configuration or matrix, see Thermal restriction matrix.

System battery specifications

The XC Core XC750 supports CR 2032 3.0-V lithium coin cell system battery.

Expansion card riser specifications

The XC Core XC750 supports up to three slots and all PCI express (PCIe) Gen 4 expansion cards.

Table 63. Expansion card riser specifications

PCIe slot	With Regular shroud	With GPGPU shroud	R1a	R1b	R1c	R2a	R2b	R3a	R3b	R4a	Rb
Slot 1	Full height Half length	Full height Full length	-	x8	x16 (single-width (SW) GPU)	-	-	-	-	-	-
Slot 2	Full height Half length	Full height Full length	x16 (double-width (DW) GPU)	x8	x16 (SW GPU)	-	-	-	-	-	-

Table 63. Expansion card riser specifications (continued)

PCIe slot	With Regular shroud	With GPGPU shroud	R1a	R1b	R1c	R2a	R2b	R3a	R3b	R4a	Rb
Slot 3	Low profile Half length	Low profile Half length	N/A	-	-	x16	-	-	-	-	-
Slot 3 SNAPI	Low profile Half length	Low profile Half length	-	-	-	-	x16	-	-	-	-
Slot 4	Full height Half length	N/A	-	-	-	-	-	-	x8	-	-
Slot 5	Full height Half length	Full height Half length	-	-	-	-	-	x16	x8	-	-
Slot 6	Low profile Half length	Low profile Half length	-	-	-	x16	x8	-	-	-	-
Slot 7	Full height Half length	Full height Full length	-	-	-	-	-	-	-	x16 (DW GPU	x8
Slot 8	Full height Half length	N/A	-	-	-	-	-	-	-	-	x8

⚠ **WARNING: Do not install or use a consumer-grade GPU in the Enterprise Server products.**

Memory specifications

The XC Core XC750 supports the following memory specifications for optimized operation:

Table 64. 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	128 GB	16 GB	256 GB
	Dual rank	16 GB	16 GB	256 GB	32 GB	512 GB
		32 GB	32 GB	512 GB	64 GB	1 TB
		64 GB	64 GB	1 TB	128 GB	2 TB
LRDIMM	Quad rank	128 GB	128 GB	2 TB	256 GB	4 TB
	Octa rank	256 GB	256 GB	4 TB	512 GB	8 TB

The following table describes the memory module socket specifications:

Table 65. Memory module socket specifications

Memory module sockets	Speed
32, 288-pin	3200 MT/s, 2933 MT/s

Storage controller specifications

The XC Core XC750 supports the storage controller card in the following table:

Table 66. Storage controller specifications

Internal controllers
● HBA355I ● Boot Optimized Storage Subsystem (BOSS-S2): HW RAID 2 x M.2 SSDs 240 GB or 480 GB ● Boot Optimized Storage Subsystem (BOSS-S1): HW RAID 2 x M.2 SSDs 240 GB or 480 GB

The software RAID S150 is supported on either of the following:

- SATA drives with chipset SATA only backplane
- NVMe drives in universal slots with processor direct PCIe cable connected backplane

Disk drive specifications

The XC Core XC750 supports the following disk drives:

- 12 x 3.5-inch hot-swappable SAS or SATA drives
- 24 x 2.5-inch hot-swappable SAS, SATA, or NVMe drives
- 2 x 2.5-inch rear hot-swappable SAS, SATA, or NVMe drives
- 16 x 2.5-inch hot-swappable NVMe drives

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 Dell Support (**Browse all Products** > **Infrastructure** > **Data Center Infrastructure** > **Storage Adapters & Controllers** > **Dell PowerEdge Express Flash NVMe PCIe SSD** > **Select this product** > **Documentation** > **Manuals and Documents**).

USB ports specifications

The following table provides specifications for the XC Core XC750 USB ports:

Table 67. USB ports specifications

Front	Front	Rear	Rear	Internal (Optional)	Internal (Optional)
USB port type	**No. of ports**	**USB port type**	**No. of ports**	**USB port type**	**No. of ports**
USB 2.0-compliant port	One	USB 2.0-compliant port	One	Internal USB 3.0-compliant port	One
Micro-USB, iDRAC Direct	One	USB 3.0-compliant port	One	Internal USB 3.0-compliant port	One

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

The USB 2.0 specifications provide a 5 V supply on a single wire to power connected USB devices. A unit load is defined as 100 mA in USB 2.0, and 150 mA in USB 3.0. A device may draw a maximum of five unit loads (500 mA) from a port in USB 2.0; 6 (900 mA) in USB 3.0.

The USB 2.0 interface can provide power to low-power peripherals but must adhere to USB specification. An external power source is required for higher-power peripherals to function, such as external CD or DVD drives.

NIC port specifications

The XC Core XC750 supports up to two 10/100/1000 Mbps Network Interface Controller (NIC) ports. The ports are embedded on the LAN on Motherboard (LOM) and integrated on the optional OCP cards.

Table 68. NIC port specifications

Feature	Specifications
LOM card	1 GB x 2
OCP card (OCP 3.0)	10 GbE x 2, 10 x GbE x 4, 25 GbE x 2, 25 GbE x 4

Serial connector specifications

The XC Core XC750 supports one optional card type serial connector, which is a 9-pin connector, Data Terminal Equipment (DTE), 16550-compliant .

The optional serial connector card is installed similar to an expansion card filler bracket.

VGA ports specifications

The Dell XC Core XC750 supports One DB-15 VGA port one each on the front and back (optional for liquid cooling) panels.

Video specifications

The XC Core XC750 supports integrated Matrox G200 graphics controller with 16 MB of video frame buffer. The following table describes the supported video resolutions:

Table 69. Video specifications

Resolution	Refresh rate (Hz)	Color depth (bits)
1024 x 768	60	8, 16, 32
1280 x 800	60	8, 16, 32
1280 x 1024	60	8, 16, 32
1360 x 768	60	8, 16, 32
1440 x 900	60	8, 16, 32
1600 x 900	60	8, 16, 32
1600 x 1200	60	8, 16, 32
1680 x 1050	60	8, 16, 32
1920 x 1080	60	8, 16, 32
1920 x 1200	60	8, 16, 32

Environmental specifications

NOTE: For additional information about environmental certifications, see the product environmental datasheet that is located with the **Manuals & Documents** on Dell Support.

The following table provides information for operational climatic range, category A2:

Table 70. Environmental specifications

Temperature	Specifications
Allowable continuous operations	
Temperature ranges for altitudes <= 900 m (<= 2,953 ft)	10–35°C (50–95°F) with no direct sunlight on the equipment

Table 70. Environmental specifications (continued)

Temperature	Specifications
Humidity percent ranges (noncondensing always)	Minimum: 8% RH with -12°C (10.4°F) dew point Maximum: 80% RH with 21°C (69.8°F) dew point
Operational altitude derating	Reduce the maximum temperature by 1°C/300 m (1.8°F/984 ft) above 900 m (2953 ft)

The following table provides information for operational climatic range, category A3:

Table 71. Operational climatic range, category A3

Temperature	Specifications
Allowable continuous operations	
Temperature ranges for altitudes <= 900 m (<= 2953 ft)	5–40°C (41–104°F) with no direct sunlight on the equipment
Humidity percent ranges (noncondensing always)	Minimum: 8% RH with -12°C (10.4°F) dew point Maximum: 85% RH with 24°C (75.2°F) dew point
Operational altitude derating	Reduce the maximum temperature by 1°C/175 m (33.8°F/574 ft) above 900 m (2953 ft)

The following table provides information for operational climatic range, category A4:

Table 72. Operational climatic range, category A4

Temperature	Specifications
Allowable continuous operations	
Temperature ranges for altitudes <= 900 m (<= 2953 ft)	5–45°C (41–113°F) with no direct sunlight on the equipment
Humidity percent ranges (noncondensing always)	Minimum: 8% RH with -12°C (10.4°F) dew point Maximum: 90% RH with 24°C (75.2°F) dew point
Operational altitude derating	Reduce the maximum temperature by 1°C/125 m (33.8°F/410 ft) above 900 m (2953 ft)

The following table provides information for shared requirements across all categories:

Table 73. Shared requirements

Temperature	Specifications
Allowable continuous operations	
Maximum temperature gradient (applies to both operation and nonoperation)	20°C (36°F) in an hour* and 5°C (9°F) in 15 minutes For tape: 5°C (9°F) in an hour* ⓘ **NOTE:** Per ASHRAE thermal guidelines for tape hardware these rates are not instantaneous.
Nonoperational temperature limits	-40°C to 65°C (-40°F to 149°F)
Nonoperational humidity limits	5% to 95% RH with 27°C (80.6°F) maximum dew point

Table 73. Shared requirements (continued)

Temperature	Specifications
Maximum nonoperational altitude	12,000 meters (39,370 ft)
Maximum operational altitude	3,048 meters (10,000 ft)

The following table specifies the maximum allowed vibration:

Table 74. Maximum allowed vibration

Maximum vibration	Specifications
Operating	0.26 G_{rms} at 5 Hz to 350 Hz (all operation orientations)
Storage	1.88 G_{rms} at 10 Hz to 500 Hz for 15 minutes (all six sides tested)

The following table specifies the shock pulse maxima:

Table 75. Shock pulse maxima

Maximum shock pulse	Specifications
Operating	Six consecutive shock pulses in the positive and negative x, y, and z axis of 6 G for up to 11 milliseconds
Storage	Six consecutive 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 milliseconds

Thermal restriction matrix

The following table describes label references:

Table 76. Thermal restriction matrix

Label	Explanation
STD	Standard
HPR	High Performance
HSK	Heat sink
LP	Low Profile (Riser)
FH	Full Height (Riser)
DW	Double Wide (Xilinx FPGA accelerator)

The following table provides the processor and heat sink matrix:

Table 77. Processor and heat sink matrix

Heat sink	Processor TDP
1U STD HSK	<= 165 W (for non-GPU)
T-Type HSK	For all TDP with GPU, and 256 GB LRDIMM configurations
2U HPR HSK	>165 W (for non-GPU configurations)

The following table provides the thermal restriction matrix with <= 64 GB RDIMM (non-GPU)

Table 78. Thermal restriction matrix with <= 64 GB RDIMM

Configuration		24 x 2.5-inch SAS or SATA			16 x 2.5-inch SAS + 8 x 2.5-inch NVMe	12 x 3.5-inch SAS or SATA	-	-	Ambient temperature
Rear storage		**No Rear Drives**	**2 x Rear 2.5-inch, no rear fan**	**4 x Rear 2.5-inch with fan**	**No Rear Drives**	**No Rear Drives**	**2 x Rear 2.5-inch, no rear fan**	**4 x Rear 2.5-inch with fan**	**-**
CPU TDP or cTDP	105 W	-	HPR SLVR fan		STD fan	HPR SLVR fan		HPR SLVR fan	35°C (95°F)
	120 W								35°C (95°F)
	125 W								35°C (95°F)
	135 W								35°C (95°F)
	140 W								35°C (95°F)
	150 W								35°C (95°F)
	165 W								35°C (95°F)
	185 W				HPR SLVR fan				35°C (95°F)
	195 W								35°C (95°F)
	205 W		HPR Gold fan						35°C (95°F)
	225 W								35°C (95°F)
	230 W							HPR SLVR fan *	30°C (86°F)
	235 W								30°C (86°F)
	240 W								30°C (86°F)
	250 W								30°C (86°F)
	265 W	-				HPR SLVR fan			30°C (86°F)
	270 W	-				HPR SLVR fan			30°C (86°F)

* Supported ambient temperature is 30°C (86°F).

The following table provides the thermal restriction matrix with 128 GB LRDIMM (Non-GPU).

Table 79. Thermal restriction matrix with 128 GB LRDIMM

Configuration		8 x 2.5-inch NVMe	16 x 2.5-inch SAS or SATA	16 x 2.5-inch NVMe	24 x 2.5-inch SAS or SATA			16 x 2.5-inch SAS + 8 x 2.5-inch NVMe	24 x 2.5-inch NVMe	12 x 3.5-inch SAS or SATA	-	-	Ambient temperature
Rear storage		**No Rear Drives**	**No Rear Drives**	**No Rear Drives**	**No Rear Drives**	**2 x Rear 2.5-inch, no rear fan**	**4 x Rear 2.5-inch with fan**	**No Rear Drives**	**No Rear Drives**	**No Rear Drives**	**2 x Rear 2.5-inch, no rear fan**	**4 x Rear 2.5-inch with fan**	**-**
CPU TDP or cTDP	105 W	STD fan		HPR SLVR fan		HPR SLVR fan		HPR SLVR fan	HPR Gold fan	HPR SLVR fan		HPR SLVR fan *	35°C (95°F)
-	120 W												35°C (95°F)
-	125 W												35°C (95°F)
-	135 W												35°C (95°F)
-	140 W												35°C (95°F)
-	150 W												35°C (95°F)
-	165 W												35°C (95°F)
-	185 W												30°C (86°F)
-	195 W												30°C (86°F)
-	205 W					HPR Gold fan							30°C (86°F)
-	225 W											Not supported	30°C (86°F)
-	230 W												30°C (86°F)
-	235 W												30°C (86°F)
-	240 W												30°C (86°F)
-	250 W												30°C (86°F)
-	265 W	STD fan	HPR SLVR fan							Not supported			30°C (86°F)
-	270 W	STD fan	HPR SLVR fan							Not supported			30°C (86°F)

* Supported ambient temperature is 30°C (86°F).

The following table provides the thermal restriction matrix with 256 GB LRDIMM (Non-GPU)

Table 80. Thermal restriction matrix with 256 GB LRDIMM

Configuration		**8 x 2.5-inch NVMe**	**16 x 2.5-inch SAS or SATA**	**16 x 2.5-inch NVMe**	**24 x 2.5-inch SAS/ SATA**			**16 x 2.5-inch SAS + 8 x 2.5-inch NVMe**	**24 x 2.5-inch NVMe**	**12 x 3.5-inch SAS or SATA**	**-**	**-**	**Ambient temperature**
Rear storage		**No Rear Drives**	**No Rear Drives**	**No Rear Drives**	**No Rear Drives**	**2 x Rear 2.5-inch, no rear fan**	**4 x Rear 2.5-inch with fan**	**No Rear Drives**	**No Rear Drives**	**No Rear Drives**	**2 x Rear 2.5-inch, no rear fan**	**4 x Rear 2.5-inch with fan**	**-**
CPU TDP or cTDP	105 W	1DPC / 2 DPC HPR			1DPC				1DPC	Not supported			35°C (95°F)
-	120 W												35°C (95°F)
-	125 W												35°C (95°F)
-	135 W												35°C (95°F)
-	140 W												35°C (95°F)
-	150 W												35°C (95°F)
-	165 W												35°C (95°F)
-	185 W												30°C (86°F)
-	195 W												30°C (86°F)
-	205 W												30°C (86°F)
-	225 W												30°C (86°F)
-	230 W												30°C (86°F)
-	235 W												30°C (86°F)
-	240 W												30°C (86°F)
-	250 W												30°C (86°F)
-	265 W												30°C (86°F)
-	270 W												30°C (86°F)

For all CPU TDP (105 W- 270 W) request HPR GOLD fan, T-Type HSK and processor HSK blank for 2.5-inch configurations.

For CPU TDP >165 W and riser configuration 1, 2, 3, or 4 supports maximum of four PCIe cards in Riser 1 or 2. This restriction is applicable for 8 x 2.5-inch NVMe, 16 x 2.5-inch SAS or SATA and 16 x 2.5-inch NVMe system configurations.

The following table provides the thermal restriction with <=128 GB DIMM (GPU):

Table 81. Thermal restriction

Configuration (Front storage)	Fan type	CPU TDP or cTDP	GPU (Ambient temperature)						
			A100 (80G)	A100	A40 (max 2)	A30	A10	M10 (max 2)	T4 (max 6)
24 x 2.5-inch SAS	HPR GOLD fan	270 W	35°C (95°F)	35°C (95°F)	35°C (95°F)	35°C (95°F)	35°C (95°F)	35°C (95°F)	30°C (86°F)
16 x 2.5-inch SAS + 8 x 2.5-inch NVMe	HPR SLVR fan	270 W	35°C (95°F)	35°C (95°F)	35°C (95°F)	35°C (95°F)	35°C (95°F)	35°C (95°F)	30°C (86°F)

GPU cards are not supported in 12 x 3.5-inch drive and rear drive configuration systems.

All GPU cards require 1U T-type HSK and GPU shroud.

T4 GPU is not supported on riser 2 in 8 x 3.5-inch configuration.

Other restrictions for air cooling configurations

- Kioxia CM6/CD6 NVMeSSD are not supported on rear drive module.
- Samsung 1733v2/1735v2 NVMeSSD are not supported on 12 x 3.5-inch rear drive module.
- ICX XCC Platinum 8368Q 270W-38C CPU in air cooling system is not supported.
- 25 Gb and above PCIe or OCP cards require high temperature (85°C (185°F)) active optics cable.
- Requires 2U-HPR HSK(8F34X) to support "ICX HCC Gold 6334 165W-8C CPU" in non-GPU configuration.
- Requires HPR GOLD fan to support BOSS-S1 on 2.5-inch configuration and not supported on 3.5-inch configuration.

Shroud, heat sink, and riser cage restriction

The following table provides the restrictions with shroud, heat sink, and riser cage:

Table 82. PCIe card type

PCIe card type	Form factor	Fan	Processor heat sink	Shroud	Riser cage
GPU	FL	Configuration dependency	T-type (1U-EXT)	GPU shroud	long
-	HL				short
Non-GPU	FL				long
-					short
-					long
-	HL		1U-STD or 2U-HPR	STD shroud	short

Thermal air restrictions

ASHRAE A3 environment for air cooling configuration

- Two PSUs are required in redundant mode. If there is PSU failure, system performance may be reduced.
- PCIe SSD is not supported.
- BPS, 128 GB, or greater capacity DIMMs are not supported.
- GPU and FPGA are not supported.
- Processor TDP greater than 165 W are not supported.

- HPR SLVR fans are required.
- Front storage is not supported in 12 x 3.5-inch SAS configuration.
- Rear drives are not supported.
- Non-Dell qualified peripheral cards and peripheral cards greater than 25 W are not supported.
- OCP 3.0 card is supported with 85°C (185°F) active optic cable.
- BOSS 1.5 card is supported.

ASHRAE A4 environment for air cooling configuration

- Two PSUs are required in redundant mode. If there is PSU failure, system performance may be reduced.
- PCIe SSD is not supported.
- BPS, 128 GB, or greater capacity DIMMs are not supported.
- GPU and FPGA are not supported.
- Processor TDP greater than 120 W are not supported.
- HPR SLVR fans are required.
- Front storage is not supported in 12 x 3.5-inch SAS configuration.
- Rear drives are not supported.
- BOSS 1.5 is not supported.
- OCP 3.0 card is supported with 85°C (185°F) active optic cable and cards tier ?4.
- Non-Dell qualified peripheral cards and peripheral cards greater than 25 W are not supported.

Particulate and gaseous contamination specifications

If the levels of particulate or gaseous pollution exceed the specified limitations and result in equipment damage or failure, you must rectify the environmental conditions. Remediation of environmental conditions is the responsibility of the customer. The following table defines the limitations that help avoid any equipment damage or failure from particulate and gaseous contamination:

Table 83. 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. 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. For example, the requirement does not apply in environments such as an office or factory floor. 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. This condition applies to data center and nondata 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. This condition applies to data center and nondata center environments.

The following table provides the gaseous contamination specifications:

Table 84. Gaseous contamination specifications

Gaseous contamination	Specifications
Copper coupon corrosion rate	<300 Å/month per Class G1 as defined by ANSI/ISA71.04-2013.

Table 84. Gaseous contamination specifications (continued)

Gaseous contamination	Specifications
Silver coupon corrosion rate	<200 Å/month as defined by ANSI/ISA71.04-2013.

XC750xa technical specifications

Specifications for the components of the XC750xa are provided.

The following XC750xa specifications are provided:

- Chassis dimensions
- Weight
- Processor
- Power supply units
- Supported operating systems
- Cooling fans
- System battery
- Expansion card risers
- Memory
- Storage controller
- Disk drives
- USB ports
- NIC ports
- Serial ports
- VGA ports
- Video
- Environment
- Particulate and gaseous contamination
- Thermal restrictions

Chassis dimensions

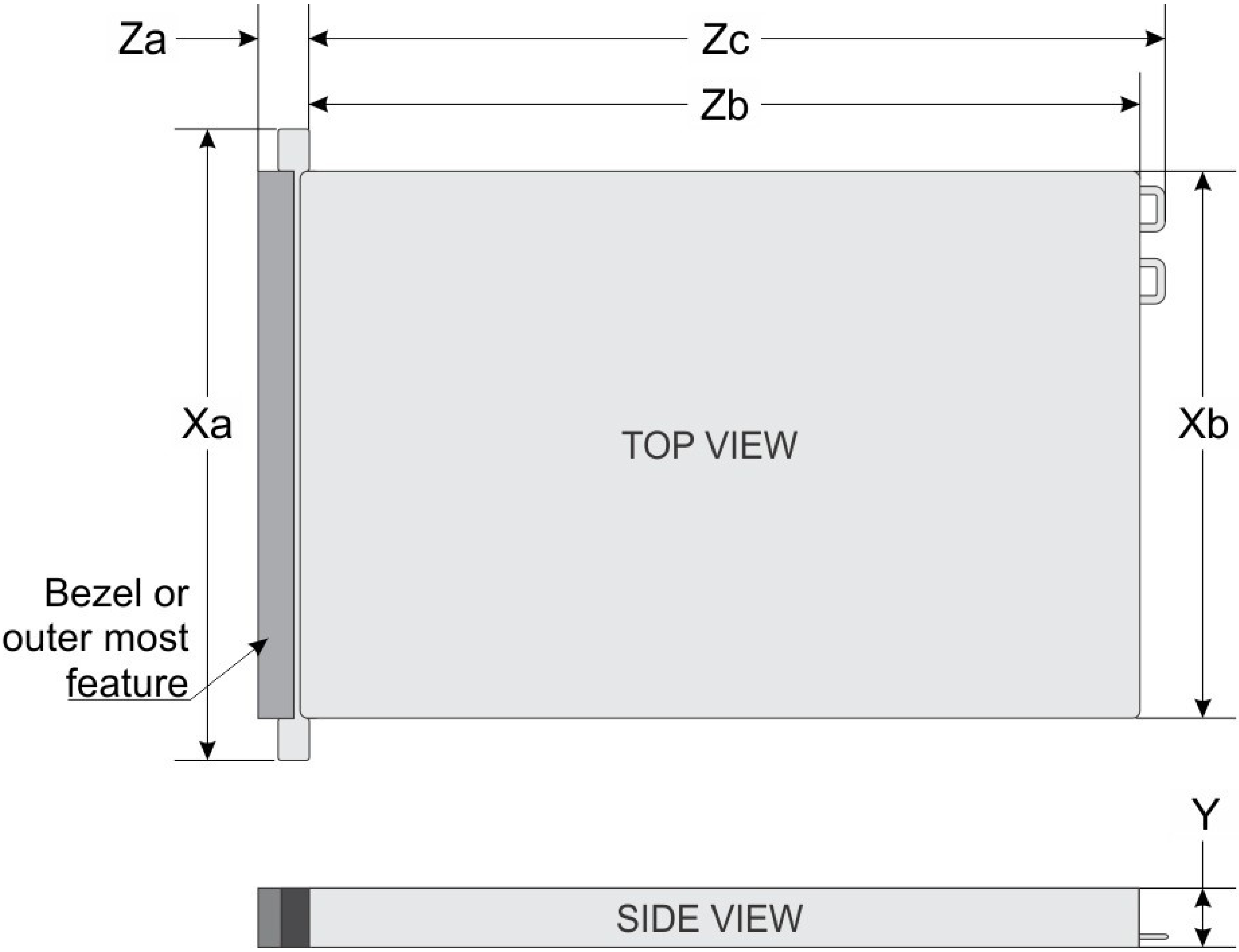


Figure 4. Chassis dimensions

The following table provides the chassis dimensions for the XC Core XC750xa:

Table 85. Chassis dimensions for the XC Core XC750xa

Drives	Xa	Xb	Y	Za	Zb	Zc
Eight drives	482 mm (18.97 in)	434 mm (17.08 in)	86.8 mm (3.41 in)	35.84 mm (1.4 in) with bezel 22 mm (0.86 in) without bezel	837.2 mm (32.96 in) Ear to rear wall	872.8 mm (34.36 in) Ear to PSU handle

Zb is the nominal rear wall external surface where the system board I/O connectors reside.

Chassis weight

The following table provides the XC Core XC750xa weight specifications:

Table 86. Chassis weight

System configuration	Maximum weight (with all drives/SSDs)
8 x 2.5-inch + 4 x DW-FL cards (front) + 4 x PCIe cards (rear)	34.9 kg (76.94 lb)

Processor specifications

The XC Core XC750xa supports two 3rd Generation Intel Xeon Scalable processors with up to 40 cores.

PSU specifications

The XC Core XC750xa supports up to two AC or DC power supply units (PSUs).

> **WARNING: Instructions for the qualified electricians only:**
>
> **Systems using -(48-60) V DC or 240 V DC power supplies are intended for restricted access locations. See Articles 110-5, 110-6, 110-11, 110-14, and 110-17 of the National Electrical Code, American National Standards Institute (ANSI)/National Fire Protection Association (NFPA) 70. If applicable in the country or region of use, 240 V DC power supplies shall be connected to the 240 V DC outlet from certified power distribution units.**
>
> **Power supply cords and jumper cords and the associated plugs, inlets, and connectors shall have appropriate electrical ratings. The ratings shall reference the rating label on the system when used for connection.**

The following table provides PSU specifications for the XC Core XC750xa:

Table 87. PSU specifications

PSU	Class	Heat dissipation (maximum)	Frequency	Voltage	Peak power	N/A	N/A	Peak Power	N/A	Current
					High line/-72 VDC	High line/-72 VDC	High line 240 VDC	Low line/-40 VDC	Low line/-40 VDC	
1400 W AC	Platinum	5459 BTU/hr	50/60 Hz	100–240 V	2380 W	1400 W	1400 W	1785 W	1050 W	12–8 A
1400 W Mixed Mode HVDC (for China only)	N/A	5459 BTU/hr	N/A	240 V	2380 W	1400 W	1400 W	1785 W	1050 W	6.6 A
2400 W AC	Platinum	9213 BTU/hr	50/60 Hz	100–240 V	4080 W	2400 W	2400 W	2380 W	1400 W	16–13.5 A
2400 W Mixed Mode HVDC (for China only)	N/A	9213 BTU/hr	N/A	240 V	2380 W	1400 W	1400 W	1785 W	1050 W	11.2 A

Supported operating systems

The XC Core XC750xa supports the following operating systems:

- VMware ESXi
- AHV

For more information, go to Dell | Server Operating System Support.

Cooling fan specifications

Cooling options

Maintain optimum thermal performance using cooling components that are based on the following:

- Processor TDP
- Storage modules
- Graphical processing unit (GPU)
- Persistent memory

The XC Core XC750xa uses air cooling.

Cooling fan specifications

The XC Core XC750xa supports up to six cooling fans. The following table provides details:

Table 88. Cooling fan specifications

Fan type	Abbreviation	Also known as	Label color	Label image
High performance GOLD fan	HPR GOLD	VHP - Very High Performance	Gold	New cooling fans come with the High-Performance Gold Grade label. The older cooling fans have the High-Performance label.  Very high performance fan

System battery specifications

The XC Core XC750xa supports the CR 2032 3.0-V lithium coin cell system battery.

Expansion card riser specifications

The XC Core XC750xa supports up to four full height, or eight low profile riser slots with PCI express (PCIe) Gen 4 expansion cards.

The following table describes the supported expansion card slots on the XC Core XC750xa system board:

Table 89. Expansion card riser specifications

PCIe slot	With GPGPU shroud	GPU riser module right with R1 paddle card	R2a (Riser 2)	GPU riser module left with R4 paddle card
Slot 3	Low profile Half length	-	x16	-
Slot 4	Full height Half length	-	-	-

Table 89. Expansion card riser specifications (continued)

PCIe slot	With GPGPU shroud	GPU riser module right with R1 paddle card	R2a (Riser 2)	GPU riser module left with R4 paddle card
Slot 5	Full height Half length	-	-	-
Slot 6	Low profile Half length	-	x16	-
Slot 31	Single width/ Dual width Full height-Full length(with Dell custom bracket)	-	-	x16
Slot 32	Single width/ Dual width Full height-Full length(with Dell custom bracket)	-	-	x16
Slot 33	Single width/ Dual width Full height-Full length(with Dell custom bracket)	x16	-	-
Slot 34	Single width/ Dual width Full height-Full length(with Dell custom bracket)	x16	-	-

Memory specifications

The XC Core XC750xa supports the following memory specifications for optimized operation.

Table 90. 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	128 GB	16 GB	256 GB
	Dual rank	16 GB	16 GB	256 GB	32 GB	512 GB
		32 GB	32 GB	512 GB	64 GB	1 TB
		64 GB	64 GB	1 TB	128 GB	2 TB
LRDIMM	Quad rank	128 GB	128 GB	2 TB	256 GB	4 TB

8 GB RDIMM is not supported with Intel Persistent Memory 200 series (BPS).

Storage controller specifications

The XC Core XC750xa supports the following storage controller cards:

- HBA355I
- Boot Optimized Storage Subsystem (BOSS-S2): HWRAID 2 x M.2 SSDs 240 GB or 480 GB
- Boot Optimized Storage Subsystem (BOSS-S1): HWRAID 2 x M.2 SSDs 240 GB or 480 GB

Disk drive specifications

The XC Core XC750xa supports 8 x 2.5-inch hot-swappable SAS, SATA drives, or NVMe drives.

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 Dell Support (**Browse all Products** > **Infrastructure** > **Data Center Infrastructure** > **Storage Adapters & Controllers** > **Dell PowerEdge Express Flash NVMe PCIe SSD** > **Select this product** > **Documentation** > **Manuals and Documents**).

USB ports specifications

The XC Core XC750xa supports the USB port types that are described in the following table:

Table 91. USB ports specifications

Front	Front	Rear	Rear	Internal (Optional)	Internal (Optional)
USB port type	**No. of ports**	**USB port type**	**No. of ports**	**USB port type**	**No. of ports**
USB 2.0-compliant port	One	USB 2.0-compliant port	One	Internal USB 3.0-compliant port	One
Micro-USB 2.0, iDRAC Direct	One	USB 3.0-compliant ports	One	-	-

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

The USB 2.0 specifications provide a 5 V supply on a single wire to power connected USB devices. A unit load is defined as 100 mA in USB 2.0, and 150 mA in USB 3.0. A device may draw a maximum of five unit loads (500 mA) from a port in USB 2.0; 6 (900 mA) in USB 3.0.

The USB 2.0 interface can provide power to low-power peripherals but must adhere to USB specification. An external power source is required for higher-power peripherals to function, such as external CD or DVD drives.

NIC ports specifications

The XC Core XC750xa supports up to two Network Interface Controller (NIC) ports. The ports are embedded on the LAN on the Motherboard (LOM) and integrated on the optional OCP cards. Details are provided in the following table:

Table 92. NIC ports specifications

Feature	Specifications
LOM card	1 GbE x 2
OCP card (OCP 3.0)	10 GbE x 2, 10 GbE x 4, 25 GbE x 2, 25 GbE x 4

Serial connector specifications

The XC Core XC750xa supports one optional card type serial connector, which is a 9-pin connector, Data Terminal Equipment (DTE), 16550-compliant .

The optional serial connector card is installed similar to an expansion card filler bracket.

VGA port specifications

The XC Core XC750xa supports one DB-15 VGA.

Video specifications

The XC Core XC750xa supports an integrated Matrox G200 graphics controller with 16 MB of video frame buffer.

The following table describes the supported video resolutions:

Table 93. Supported video resolutions

Resolution	Refresh rate (Hz)	Color depth (bits)
1024 x 768	60	8, 16, 32
1280 x 800	60	8, 16, 32
1280 x 1024	60	8, 16, 32
1360 x 768	60	8, 16, 32
1440 x 900	60	8, 16, 32
1600 x 900	60	8, 16, 32
1600 x 1200	60	8, 16, 32
1680 x 1050	60	8, 16, 32
1920 x 1080	60	8, 16, 32
1920 x 1200	60	8, 16, 32

Environmental specifications

> **NOTE:** For additional information about environmental certifications, see the product environmental datasheet that is located with the **Manuals & Documents** on Dell Support.

The following table provides specifications for operational climatic range, category A2:

Table 94. Operational climatic range specifications, category A2

Temperature	Specifications
Allowable continuous operations	
Temperature ranges for altitudes <900 m (<2953 ft)	10–-35°C (50–-95°F) with no direct sunlight on the equipment
Humidity percent ranges (noncondensing always)	Minimum: 8% RH with -12°C (53.6°F) dew point Maximum: 80% RH with 21°C (69.8°F) dew point
Operational altitude derating	Reduce the maximum temperature by 1°C/300 m (33.8°F/984 ft) above 900 m (2953 ft).

The following table provides specifications for operational climatic range, category A3:

Table 95. Operational climatic range specifications, category A3

Temperature	Specifications
Allowable continuous operations	
Temperature ranges for altitudes <900 m (< 2953 ft)	5–40°C (41–104°F) with no direct sunlight on the equipment

Table 95. Operational climatic range specifications, category A3 (continued)

Temperature	Specifications
Humidity percent ranges (noncondensing always)	Minimum: 8% RH with -12°C (10.4°F) dew point Maximum: 85% RH with 24°C (75.2°F) dew point
Operational altitude derating	Reduce the maximum temperature by 1°C/175 m (33.8°F/574 ft) above 900 m (2953 ft) .

The following table provides specifications for operational climatic range category A4:

Table 96. Operational climatic range specifications, category A4

Temperature	Specifications
Allowable continuous operations	
Temperature ranges for altitudes <900 m (<2953 ft)	5–45°C (41–113°F) with no direct sunlight on the equipment
Humidity percent ranges (noncondensing always)	Minimum: 8% RH with -12°C (10.4°F) dew point Maximum: 90% RH with 24°C (75.2°F) dew point
Operational altitude derating	Reduce the maximum temperature by 1°C/125 m (33.8°F/410 ft) above 900 m (2953 ft).

The following table provides specifications for shared requirements across all categories:

Table 97. Shared requirements

Temperature	Specifications
Allowable continuous operations	
Maximum temperature gradient (applies to both operation and nonoperation)	20°C (36°F) in an hour* and 5°C (9°F) in 15 minutes For tape: 5°C (9°F) in an hour* (9°F in an hour) ⓘ **NOTE:** Per ASHRAE thermal guidelines for tape hardware these rates are not instantaneous temperature changes.
Nonoperational temperature limits	-40°C to 65°C (-104°F to 149°F)
Nonoperational humidity limits	5% to 95% RH with 27°C (80.6°F) maximum dew point
Maximum nonoperational altitude	12,000 m (39,370 ft)
Maximum operational altitude	3,048 meters (10,000 ft)

The following table provides the maximum vibration specifications:

Table 98. Maximum vibration specifications

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

The following table provides the maximum shock pulse specifications:

Table 99. Maximum shock pulse specifications

Maximum shock pulse	Specifications
Operating	Six consecutive shock pulses in the positive and negative x, y, and z axis of 6 G for up to 11 milliseconds.

Table 99. Maximum shock pulse specifications (continued)

Maximum shock pulse	Specifications
Storage	Six consecutive 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 milliseconds.

The following table describes label references:

Table 100. Label references

Label	Explanation
STD	Standard
HPR	High Performance
HSK	Heat sink
LP	Low Profile (Riser)
FH	Full Height (Riser)
DW	Double Wide (Xilinx FPGA accelerator)

The following table provides the processor and heat sink matrix:

Table 101. Processor and heat sink matrix

Heat sink	Processor TDP
2U HPR HSK	For all processor TDP

The following table provides the thermal restriction matrix:

Table 102. Thermal restriction matrix

Configuration		Minimum	Typical	Maximum	Ambient temperature
Front GPU TDP		**70 W SW x 4**	**250 W DW x 4**	**300 W DW x 4**	
Front drives		**x1 SAS or SATA**	**x8 SAS or SATA**	**x8 NVMe**	
CPU TDP/ cTDP	105 W	HPR GOLD fan with 2U HPR HSK			35°C (95°F)
	120 W				
	135 W				
	150 W				
	165 W				
	185 W				
	205 W				
	220 W				
	250 W				
	270 W				

Six fans are required for all the configurations.

T4 GPU card is supported on riser 2 (R2a slot 3/6) with maximum power loading.

Only ASHRAE A2 category ambient temperature is supported.

For all memory configurations, only HPR GOLD fan with 2U HPR HSK is used.

128 GB LRDIMM, 64 GB RDIMM, 32 GB RDIMM, and 16 GB RDIMM support at 35°C (95°F) ambient temperature.

Particulate and gaseous contamination specifications

If the levels of particulate or gaseous pollution exceed the specified limitations and result in equipment damage or failure, you must rectify the environmental conditions. Remediation of environmental conditions is the responsibility of the customer. The following table defines the limitations that help avoid any equipment damage or failure from particulate and gaseous contamination:

Table 103. 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. 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. For example, the requirement does not apply in environments such as an office or factory floor. 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. This condition applies to data center and nondata 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. This condition applies to data center and nondata center environments.

The following table provides the gaseous contamination specifications:

Table 104. 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.

XC6520 technical specifications

Specifications for the components of the XC6520 are provided.

The following XC6520 specifications are provided:

- Sled dimensions
- Sled weight
- Processor specifications
- PSU specifications
- Supported operating systems
- System battery specifications
- Expansion card riser specifications
- Memory specifications

- Drives
- Storage specifications
- Ports and connectors specifications
- Video specifications
- Environmental specifications

Sled dimensions

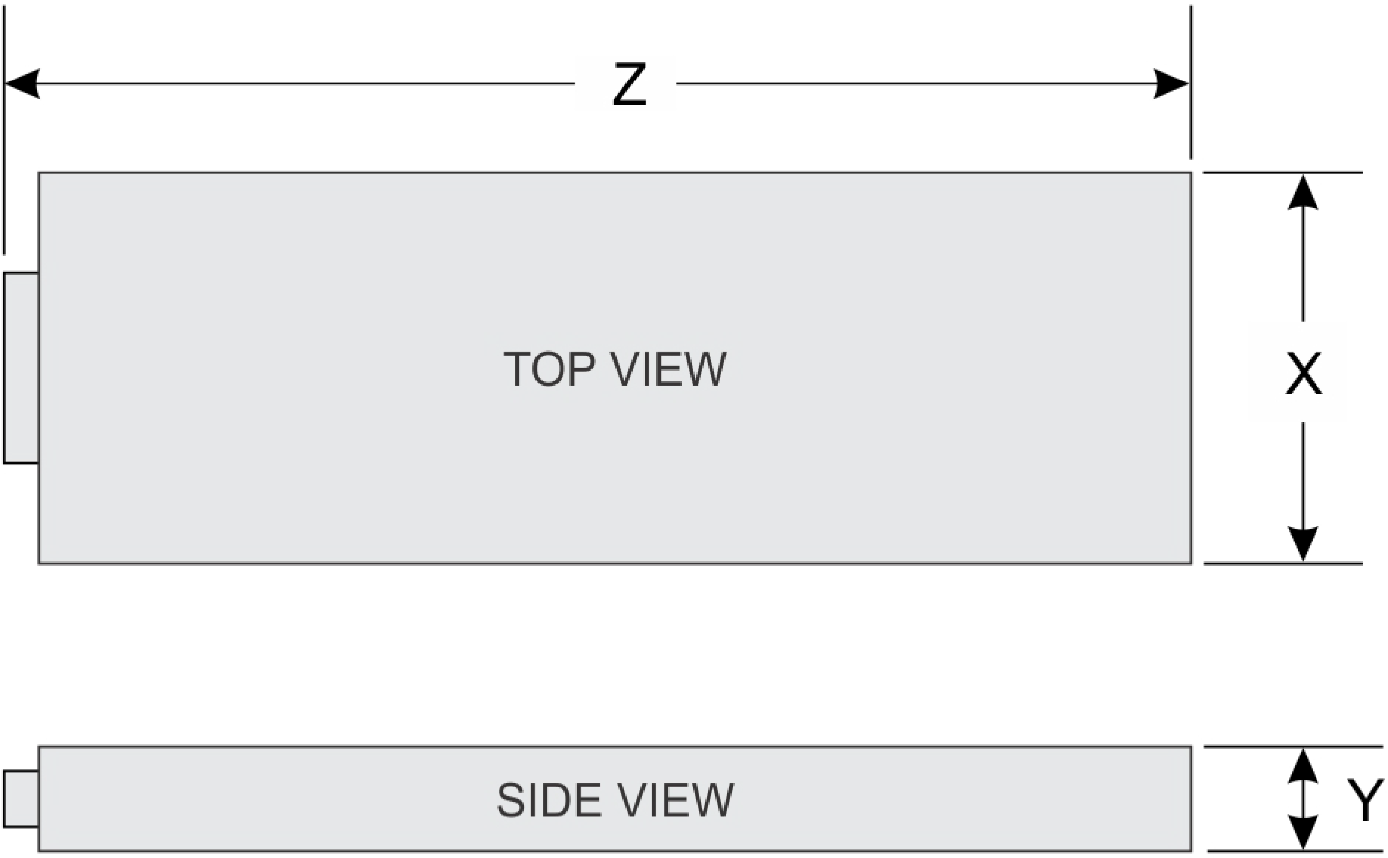


Figure 5. Sled dimensions

The following table provides the sled dimensions for the XC Core XC6520:

Table 105. Sled dimensions for the XC Core XC6520

X	Y	Z
174.4 mm (6.86 in)	40.1 mm (1.58 in)	570.34 mm (22.45 in)

Sled weight

The following table provides the XC Core XC6520 sled weight specifications:

Table 106. Sled weight specifications

System configuration	Maximum weight (with all sleds and drives)
12 x 3.5-inch	45.6 kg (100.53 lb)
24 x 2.5-inch	41.4 kg (91.27 lb)
System with no backplane	35 kg (77.16 lb)

Processor specifications

The following table provides processor specifications for the XC Core XC6520.

Table 107. Processor specifications

Supported processor	Number of processors supported
Third-Generation Intel Xeon Scalable processors with up to 40 cores	Two

PSU specifications

The XC Core XC6520 supports up to two AC power supply units (PSUs).

WARNING: Instructions for the qualified electricians only:

System using -(48-60) V DC or 240 V DC power supplies are intended for restricted access locations. See Articles 110-5, 110-6, 110-11, 110-14, and 110-17 of the National Electrical Code, American National Standards Institute (ANSI)/National Fire Protection Association (NFPA) 70.

If applicable in country or region of use, 240 V DC power supplies shall be connected to the 240 V DC outlet from certified power distribution units.

Power supply cords and jumper cords and the associated plugs, inlets, and connectors shall have appropriate electrical ratings. The ratings must reference the rating label on the system when used for connection.

Table 108. PSU specifications

PSU	Class	Heat dissipation (maximum BTU/hr)	Frequency (Hz)	Voltage	AC		Current
					High line	Low line 100–120 V	
2400 W	Platinum	9000	50/60	100-240 V autoranging	2400 W (200-240 V)	1400 W	16 A
2000 W	Platinum	7500	50/60	100-240 V autorangin	2000 W (200-240 V)	1000 W	11.5 A
1600 W	Platinum	6000	50/60	100-240 V autorangin	1600 W (200-240 V)	800 W	10 A

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

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

NOTE: When selecting or upgrading the system configuration, to ensure optimum power utilization, verify the system power consumption with the Dell Dell Enterprise Infrastructure Planning Tool available at Dell Enterprise Infrastructure Planning Tool.

Supported operating systems

The XC Core XC6520 supports the following operating systems:

- Canonical Ubuntu Server LTS
- Citrix Hypervisor
- Red Hat Enterprise Linux
- SUSE Linux Enterprise Server
- VMware ESXi/vSAN
- CentOS
- Windows Preinstallation Environment (WinPE) 64-bit drivers

For more information, go to Dell | Server Operating System Support.

System battery specifications

The XC Core XC6520 supports CR 2032 3.0-V lithium coin cell system battery.

Expansion card riser specifications

The XC Core XC6520 supports up to four PCI express (PCIe) Gen 4 expansion cards.

Memory specifications

The XC Core XC6520 supports the following memory specifications for optimized operation:

Table 109. Memory specifications

DIMM type	DIMM rank	DIMM capacity	Single processor		Dual processor	
			Minimum system capacity	Maximum system capacity	Minimum system capacity	Maximum system capacity
RDIMM	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	2 TB

The following table describes the memory module socket specifications:

Table 110. Memory module socket specifications

Memory module sockets	Speed
16, 288-pin	3200 MT/s, 2933 MT/s, 2666 MT/s

Drives

The XC Core XC6520 supports 24 x 2.5-inch SAS/SATA (HDD/SDD)/NVMe drives.

Table 111. Drives

Maximum number of drives in the sled	Maximum number of drives assigned per sled
24 x 2.5-inch Non-NVMe drives configuration	Six SAS or SATA drives and SATA SSDs per sled
8 x 2.5-inch NVMe drives configuration (2 NVMe drives per sled / 8 NVMe drives per chassis)	The NVMe backplane supports either of these configurations: • Two NVMe drives and four SAS or SATA drives and SATA SSDs per sled. **NOTE:** NVMe drives are limited to PCIe Gen3 speed. • Six SAS or SATA drives and SATA SSDs per sled
M.2 SATA drive (optional)	The supported capacity of the M.2 SATA card is up to 960 GB. **NOTE:** The M.2 SATA card can be installed on the M.2 riser or on the BOSS card.

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 Dell Support (**Browse all Products** > **Infrastructure** > **Data Center Infrastructure** > **Storage Adapters & Controllers** > **Dell PowerEdge Express Flash NVMe PCIe SSD** > **Select this product** > **Documentation** > **Manuals and Documents**).

Storage specifications

The XC Core XC6520 sled supports the storage controllers and drives described in the following tables:

Table 112. Supported controller cards

Internal controllers	External controllers
HBA355	12 Gbps SAS external HBA
Boot Optimized Storage Controller (BOSS-S1): HWRAID2 x M.2 SSDs	-

Table 113. Supported RAID options with M.2 SATA drives

Options	Dual M.2 SATA drives with hardware RAID
Hardware RAID	Yes
RAID mode	RAID 1
Number of drives supported	2
Supported CPUs	CPU 1

Ports and connectors specifications

USB ports specifications

The XC Core XC6520 sled supports USB 3.0 on the rear of the system.

Display port specifications

The XC Core XC6520 sled supports a single Mini-Display port.

The XC Core XC6520 sled supports 1 x iDRAC Direct port (Micro-AB USB) that is located on the rear of the system.

NIC port specifications

The XC Core XC6520 sled supports one 10/100/1000 Mbps Network Interface Controller (NIC) ports embedded on the LAN on Motherboard (LOM) and integrated on the optional Open Compute Project (OCP) cards.

Table 114. NIC port specifications

Feature	Specifications
LOM card	1 GbE
OCP 3.0 card	10 GbE x 2, 25 GbE x 2, 25 GbE x 4, 10 GbE x 4

Video specifications

The XC Core XC6520 supports integrated Matrox G200 graphics controller with 16 MB of video frame buffer. The following table describes the supported video resolutions:

Table 115. Video specifications

Resolution	Refresh rate (Hz)	Color depth (bits)
1024 x 768	60	8, 16, 32
1280 x 800	60	8, 16, 32

Table 115. Video specifications (continued)

Resolution	Refresh rate (Hz)	Color depth (bits)
1280 x 1024	60	8, 16, 32
1360 x 768	60	8, 16, 32
1440 x 900	60	8, 16, 32
1600 x 900	60	8, 16, 32
1600 x 1200	60	8, 16, 32
1680 x 1050	60	8, 16, 32
1920 x 1080	60	8, 16, 32
1920 x 1200	60	8, 16, 32

Environmental specifications

ⓘ **NOTE:** For additional information about environmental certifications, see the product environmental datasheet that is located with the **Manuals & Documents** on Dell Support.

The following table provides information for operational climatic range, category A3:

Table 116. Operational climatic range, category A3

Temperature	Specifications
Allowable continuous operations	
Temperature ranges for altitudes <= 900 m (<= 2953 ft)	5–40°C (41–104°F) with no direct sunlight on the equipment
Humidity percent ranges (noncondensing always)	Minimum: 8% RH with -12°C (10°F) dew point Maximum: 85% RH with 24°C (75.2°F) dew point
Operational altitude derating	Reduce the maximum temperature by 1°C/175 m (33.8°F/574 ft) above 900 m (2953 ft)

The following table provides information for shared requirements across all categories:

Table 117. Shared requirements

Temperature	Specifications
Allowable continuous operations	
Maximum temperature gradient (applies to both operation and nonoperation)	20°C (36°F) in an hour* and 5°C (9°F) in 15 minutes For tape: 5°C (9°F) in 15 minutes ⓘ **NOTE:** Per ASHRAE thermal guidelines for tape hardware, these rates are not instantaneous.
Nonoperational temperature limits	-40°C to 65°C (-40°F to 149°F)
Nonoperational humidity limits	5% to 95% RH with 27°C (80.6°F) maximum dew point
Maximum nonoperational altitude	12,000 meters (39,370 ft)
Maximum operational altitude	3,048 meters (10,000 ft)

Maximum vibration specifications

The following table specifies the maximum allowed vibration:

Table 118. Maximum vibration specifications

Maximum vibration	Specifications
Operating	0.26 G_{rms} at 5 Hz to 350 Hz (all operation orientations)
Storage	1.88 G_{rms} at 10 Hz to 500 Hz for 15 minutes (all six sides tested)

Maximum shock pulse specifications

The following table specifies the shock pulse maxima:

Table 119. Maximum shock pulse specifications

Maximum shock pulse	Specifications
Operating	Six consecutive shock pulses in the positive and negative x, y, and z axis of 6 G for up to 11 milliseconds
Storage	Six consecutive 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 two milliseconds.

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 120. 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. 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. Air entering the data center must have MERV11 or MERV13 filtration. Air filtering can also be accomplished by filtering room air with MERV8 filter per ANSI and ASHRAE Standard 127.
Conductive dust	Air must be free of conductive dust, zinc whiskers, or other conductive particles. This condition applies to data center and nondata center environments. 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. Residual dust present in the air must have a deliquescent point less than 60% relative humidity. This condition applies to data center and nondata center environments.

The following table contains gaseous contamination specifications:

Table 121. 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

Maximum corrosive contaminant levels measured at <=50% relative humidity.

Thermal restrictions

NOTE:
1. Not available: Indicates that the configuration is not offered by Dell.
2. Not supported: Indicates that the configuration is not thermally supported.

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 the maximum continuous operating temperature listed in these tables.

NOTE: Some of the system hardware configurations require a lowered upper temperature limit. For more information about the operating temperature requirement, contact technical support.

Some configurations require a lower ambient temperature. For more information, see the following tables.

The following tables list key restrictions on ambient temperature based on which CPU is configured in the system. All inlet temperatures that are provided below are in continuous degrees centigrade.

Table 122. Maximum continuous operating temperature for dual processor with 2.5-inch direct / 2.5-inch NVMe drive configuration - Air cooled

Processors	TDP (W)	Cores	6 x drives per sled
8380	270	40	Not supported
8368	270	38	Not supported
8368Q	270	38	Not supported
8362	265	32	Not supported
8360Y	250	36	Not supported
8358	250	32	Not supported
8358P	240	32	Not supported
6348	235	28	Not supported
6342	230	24	Not supported
8352Y	205	32	20
8352S	205	32	20
6338	205	32	20
6330	205	28	20
6354	205	18	Not supported
6346	205	16	Not supported
8352V	195	36	20
8352M	185	32	20*
6338N	185	32	20*

Table 122. Maximum continuous operating temperature for dual processor with 2.5-inch direct / 2.5-inch NVMe drive configuration - Air cooled (continued)

Processors	TDP (W)	Cores	6 x drives per sled
5320	185	26	20*
6336Y	185	24	20*
6326	185	16	20*
6330N	165	28	25
6338T	165	24	25
5318Y	165	24	25
5318S	165	24	25
6334	165	8	25
5318N	150	24	25*
5320T	150	20	25*
4316	150	20	25*
5317	150	12	25*
5315Y	140	8	30
4314	135	16	30*
4310	120	12	35
4310T	105	10	35
4309Y	105	8	35

NOTE:

1. Data with * mark means it can have a temperature offset by +5°C, if using extended processor 1 with HSK on this configuration.
2. Additional thermal restrictions are required for PCIE > 25 Watts, 128GB LRDIMM and GPU configuration.

XC7525 technical specifications

Specifications for the components of the XC7525 are provided.

The following XC7525 specifications are provided:

- Chassis dimensions
- Chassis weight
- Processor specifications
- PSU specifications
- Supported operating systems
- Cooling fan specifications
- System battery specifications
- Expansion card riser specifications
- Memory specifications
- Storage controller specifications
- Drive specifications
- Ports and connectors specifications
- Video specifications
- Environment specifications

Chassis dimensions

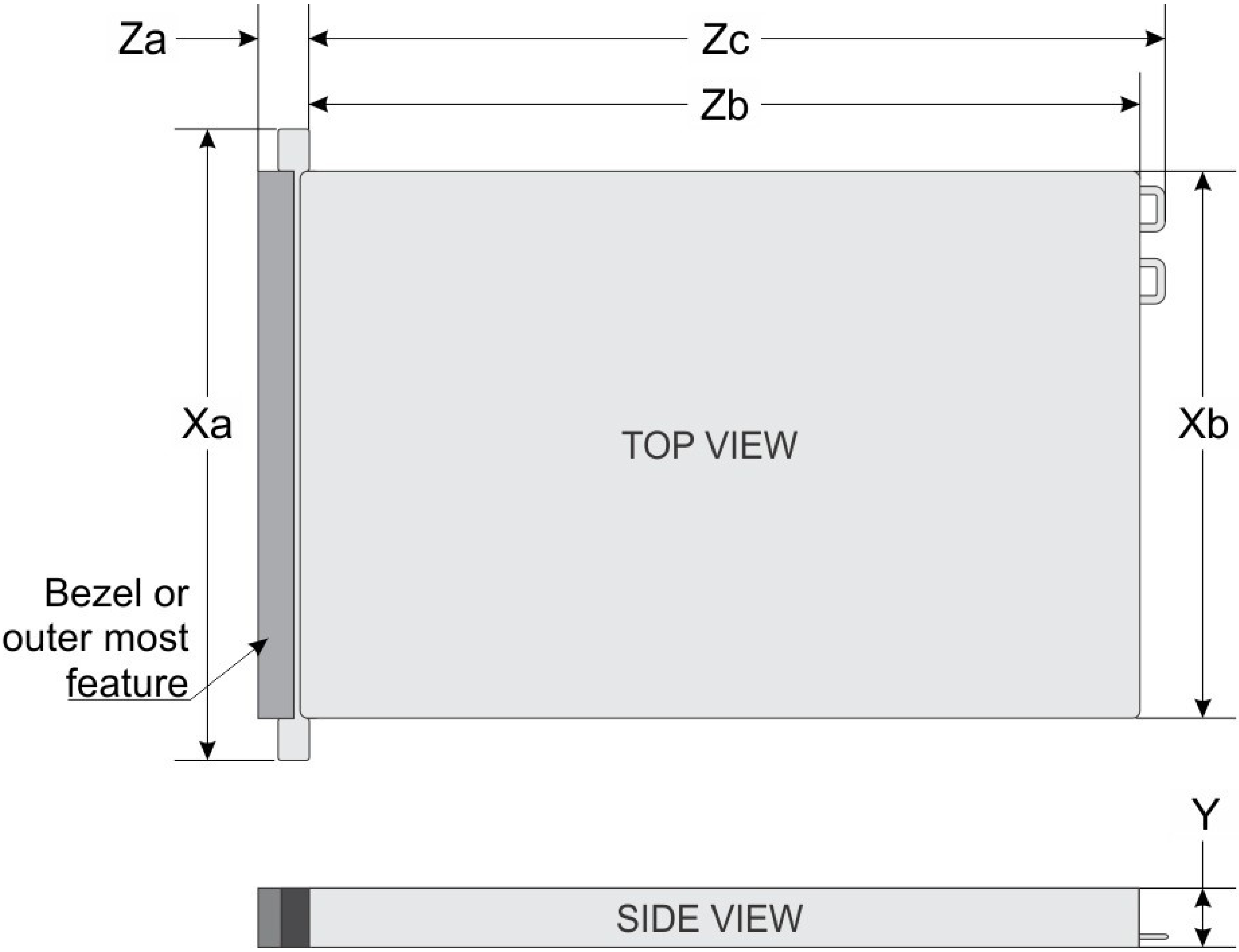


Figure 6. Chassis dimensions

The following table provides the chassis dimensions for the XC Core XC7525:

Table 123. Chassis dimensions for the XC Core XC7525

Drives	Xa	Xb	Y	Za	Zb	Zc
12 drives	482.0 mm (18.97 inches)	434.0 mm (17.08 inches)	86.8 mm (3.41 in)	35.84 mm (1.4 in) with bezel 22 mm (0.86 in) without bezel	837.2 mm (32.96 in) Ear to rear wall	872.8 mm (34.36 in) Ear to PSU handle
24 drives	482 mm (18.97 in)	434 mm (17.08 in)	86.8 mm (3.41 in)	35.84 mm (1.4 in) with bezel 22 mm (0.86 in) without bezel	837.2 mm (32.96 in) Ear to rear wall	872.8 mm (34.36 in) Ear to PSU handle

Zb is the nominal rear wall external surface where the system board I/O connectors reside.

Chassis weight

The following table provides the XC Core XC7525 weight specifications:

Table 124. Chassis weight

System configuration	Maximum weight (with all drives/SSDs)
12 x 3.5-inch	36.3 kg (80.02 lb)
24 x 2.5-inch	28.6 kg (63.05 lb)

Processor specifications

The XC Core XC7525 supports an AMD EPY 7003 series processor.

PSU specifications

The XC Core XC7525 supports up to two AC or DC power supply units (PSUs).

WARNING: Instructions for the qualified electricians only:

Systems using -(48-60) V DC or 240 V DC power supplies are intended for restricted access locations. See Articles 110-5, 110-6, 110-11, 110-14, and 110-17 of the National Electrical Code, American National Standards Institute (ANSI)/National Fire Protection Association (NFPA) 70. If applicable in the country or region of use, 240 V DC power supplies shall be connected to the 240 V DC outlet from certified power distribution units.

Power supply cords and jumper cords and the associated plugs, inlets, and connectors shall have appropriate electrical ratings. The ratings shall reference the rating label on the system when used for connection.

The following table provides PSU specifications for the XC Core XC7525:

Table 125. PSU specifications for the XC Core XC7525

PSU	Class	Heat dissipation (maximum)	Frequency	Voltage	Current
800 W Mixed Mode	Platinum	3000 BTU/hr	50/60 Hz	100–240 V	9.2-4.7 A
	N/A		DC	240 VDC	3.8 A
1100 W Mixed Mode	Titanium	4100 BTU/hr	50/60 Hz	100–240 V	12-6.3 A (X2)
	N/A		DC	240 VDC	5.2 ADC
1100 W (-48 VDC)	N/A	4265 BTU/hr	DC	(-48)-(-60) VDC	27 A
1400 W Mixed Mode	Platinum	5250 BTU/hr	50/60 Hz	100–240 V	12-8 A
	N/A		DC	240 VDC	6.6 ADC
2400 W Mixed Mode	Platinum	9000 BTU/hr	50/60 Hz	100–240 V	13.5-11 A
	N/A		DC	240 VDC	11.2 ADC

NOTE: If a system with AC 1400 W PSU operate at low line 100-120 V AC, then the power rating per PSU is derated to 1050 W.

NOTE: If a system with AC 2400 W PSU operate at low line 100-120 V AC, then the power rating per PSU is derated to 1400 W.

NOTE: When selecting or upgrading the system configuration, to ensure optimum power utilization, verify the system power consumption with the Dell Enterprise Infrastructure Planning Tool available at Dell Enterprise Infrastructure Planning Tool.

Supported operating systems

The XC Core XC7525 supports the following operating systems:

- VMware ESXi
- Nutanix AHV

For more information, go to Dell | Server Operating System Support.

Cooling fan specifications

Cooling options

Maintain optimum thermal performance using cooling components that are based on the following:

- Processor TDP
- Storage modules
- Graphical processing unit (GPU)
- Persistent memory

The XC Core XC7525 uses air cooling.

Cooling fan specifications

The XC Core XC7525 supports up to six cooling fans. The following table provides details:

Table 126. Cooling fan specifications

Fan type	Abbreviation	Also known as	Label color	Label image
Standard fan	STD	STD	No label	
High performance fan (Silver grade)	HPR Silver	HPR	Silver	**NOTE:** New cooling fans come with the High Performance Silver Grade label. Older cooling fans have the High Performance label  

Table 126. Cooling fan specifications (continued)

Fan type	Abbreviation	Also known as	Label color	Label image
High performance GOLD fan	HPR GOLD	VHP - Very High Performance	Gold	New cooling fans come with the High-Performance Gold Grade label. The older cooling fans have the High-Performance label.  Very high performance fan 

NOTE: Mixing of STD, HPR (Silver), or HPR (Gold) fan is not supported.

NOTE: The STD, HPR (Silver), or HPR (Gold) fan installation depends on the system configuration. For more information about the supported fan configuration or matrix, see Thermal restriction matrix.

System battery specifications

The XC Core XC7525 supports the CR 2032 3.0-V lithium coin cell system battery.

Expansion card riser specifications

WARNING: Consumer-Grade GPU should not be installed or used in the Enterprise Server products.

The XC Core XC7525 supports up to eight PCI express (PCIe) Gen 4 expansion cards.

The following table describes the supported expansion card slots on the XC Core XC7525 system board:

Table 127. Expansion card riser specifications

PCIe slot	With GPGPU shroud	GPU riser module right with R1 paddle card	R2a (Riser 2)	GPU riser module left with R4 paddle card
Slot 3	Low profile Half length	-	x16	-
Slot 4	Full height Half length	-	-	-

Table 127. Expansion card riser specifications (continued)

PCIe slot	With GPGPU shroud	GPU riser module right with R1 paddle card	R2a (Riser 2)	GPU riser module left with R4 paddle card
Slot 5	Full height Half length	-	-	-
Slot 6	Low profile Half length	-	x16	-
Slot 31	Single width/ Dual width Full height-Full length(with Dell custom bracket)	-	-	x16
Slot 32	Single width/ Dual width Full height-Full length(with Dell custom bracket)	-	-	x16
Slot 33	Single width/ Dual width Full height-Full length(with Dell custom bracket)	x16	-	-
Slot 34	Single width/ Dual width Full height-Full length(with Dell custom bracket)	x16	-	-

Memory specifications

The XC Core XC7525 supports the following memory specifications for optimized operation.

Table 128. Memory specifications

DIMM type	DIMM rank	DIMM capacity	Single processor		Dual processor	
			Minimum RAM	Maximum RAM	Minimum RAM	Maximum RAM
RDIMM	Dual rank	16 GB	16 GB	256 GB	32 GB	512 GB
		32 GB	32 GB	512 GB	64 GB	1 TB
		64 GB	64 GB	1 TB	128 GB	2 TB
LRDIMM	Quad rank	128 GB	128 GB	2 TB	256 GB	4 TB
	Octa rank	128 GB	128 GB	2 TB	256 GB	4 TB

The following table provides information about memory module sockets:

Table 129. Memory module sockets

Memory module sockets	Speed
32, 288-pin	3200 MT/s, 2933 MT/s, 2666 MT/s

Storage controller specifications

The XC Core XC7525 system supports the following internal storage controller cards:

- HBA355I
- Boot Optimized Storage Subsystem (BOSS-S1): HWRAID 2 x M.2 SSDs
- Boot Optimized Storage Subsystem (BOSS-S2): HWRAID 2 x M.2 SSDs

The following table provides information on front PERC and adapter PEWRC support on backplanes:

Table 130. Front PERC and adapter PEWRC support

Front PERC	Adapter PERC
24 x 2.5 inches (16 SAS/SATA X 2.5 inches + 8 X 2.5 inches NVME)	12 x 3.5 inches SAS/SATA

Disk drive specifications

The XC Core XC7525 supports the following:

- 12 x 3.5-inch hot-swappable SAS, SATA drives.
- 24 x 2.5-inch hot-swappable SAS, SATA , or NVMe drives. Backplane
- Up to 8 x 2.5 inch NVMe drives.
- Up to 12 x 3.5-inch SAS, SATA drives.
- Up to 16 x 2.5-inch SAS, SATA drives.

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 Dell Support (**Browse all Products** > **Infrastructure** > **Data Center Infrastructure** > **Storage Adapters & Controllers** > **Dell PowerEdge Express Flash NVMe PCIe SSD** > **Select this product** > **Documentation** > **Manuals and Documents**).

Ports and connectors specifications

USB ports specifications

The XC Core XC7525 system supports the USB port types that are described in the following table:

Table 131. USB ports specifications

Front		Rear		Internal (Optional)	
USB port type	**No. of ports**	**USB port type**	**No. of ports**	**USB port type**	**No. of ports**
USB 2.0-compliant port	One	USB 2.0-compliant port	One	Internal USB 3.0-compliant port	One
Micro-USB 2.0, iDRAC Direct	One	USB 3.0-compliant ports	One		

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

The USB 2.0 specifications provide a 5 V supply on a single wire to power connected USB devices. A unit load is defined as 100 mA in USB 2.0, and 150 mA in USB 3.0. A device may draw a maximum of five unit loads (500 mA) from a port in USB 2.0; 6 (900 mA) in USB 3.0.

The USB 2.0 interface can provide power to low-power peripherals but must adhere to USB specification. An external power source is required for higher-power peripherals to function, such as external CD or DVD drives.

NIC port specifications

The XC Core XC7525 system supports up to two 10/100/1000 Mbps Network Interface Controller (NIC) ports. The ports are embedded on the LAN on the Motherboard (LOM) and integrated on the optional OCP cards. Details are provided in the following table:

Table 132. NIC port specifications

Feature	Specifications
LOM card	1 GbE x 2
OCP card (OCP 3.0)	10 GbE x 2, 25 GbE x 2, 25 GbE x 4

Serial connector specifications

The XC Core XC7525 system supports one optional card type serial connector, which is a 9-pin connector, Data Terminal Equipment (DTE), 16550-compliant .

The optional serial connector card is installed similar to an expansion card filler bracket.

VGA port specifications

The XC Core XC7525 system supports two DB-15 VGA ports, one on the front panel and one on the back panel.

IDSDM specifications

The XC Core XC7525 system supports Internal Dual SD module (IDSDM).

The IDSDM supports two SD cards and is available in the following configurations:

Video specifications

The XC Core XC7525 supports an integrated Matrox G200 graphics controller with 16 MB of video frame buffer.

The following table describes the supported video resolutions for the front VGA port:

Table 133. Video specifications

Resolution	Refresh rate (Hz)	Color depth (bits)
1024 x 768	60	8, 16, 32
1280 x 800	60	8, 16, 32
1280 x 1024	60	8, 16, 32
1360 x 768	60	8, 16, 32
1440 x 900	60	8, 16, 32

The following table describes the supported resolutions for the rear VGA port:

Table 134. Supported resolutions for the rear VGA port

Resolution	Refresh rate (Hz)	Color depth (bits)
1024 x 768	60	8, 16, 32

Table 134. Supported resolutions for the rear VGA port (continued)

Resolution	Refresh rate (Hz)	Color depth (bits)
1280 x 800	60	8, 16, 32
1280 x 1024	60	8, 16, 32
1360 x 768	60	8, 16, 32
1440 x 900	60	8, 16, 32
1600 x 900	60	8, 16, 32
1600 x 1200	60	8, 16, 32
1680 x 1050	60	8, 16, 32
1920 x 1080	60	8, 16, 32
1920 x 1200	60	8, 16, 32

Environmental specifications

ⓘ **NOTE:** For additional information about environmental certifications, see the product environmental datasheet that is located with the **Manuals & Documents** on Dell Support.

The following table provides specifications for operational climatic range, category A2:

Table 135. Specifications for operational climatic range, category A2

Temperature	Specifications
Allowable continuous operations	
Temperature ranges for altitudes <900 m (<2953 ft)	10–-35°C (50–-95°F) with no direct sunlight on the equipment
Humidity percent ranges (noncondensing always)	Minimum: 8% RH with -12°C (53.6°F) dew point Maximum: 80% RH with 21°C (69.8°F) dew point
Operational altitude derating	Reduce the maximum temperature by 1°C/300 m (33.8°F/984 ft) above 900 m (2953 ft).

The following table provides specifications for operational climatic range, category A3:

Table 136. Specifications for operational climatic range, category A3

Temperature	Specifications
Allowable continuous operations	
Temperature ranges for altitudes <900 m (< 2953 ft)	5–40°C (41–104°F) with no direct sunlight on the equipment
Humidity percent ranges (noncondensing always)	Minimum: 8% RH with -12°C (10.4°F) dew point Maximum: 85% RH with 24°C (75.2°F) dew point
Operational altitude derating	Reduce the maximum temperature by 1°C/175 m (33.8°F/574 ft) above 900 m (2953 ft) .

The following table provides specifications for operational climatic range, category A4:

Table 137. Specifications for operational climatic range, category A4

Temperature	Specifications
Allowable continuous operations	
Temperature ranges for altitudes <900 m (<2953 ft)	5–45°C (41–113°F) with no direct sunlight on the equipment
Humidity percent ranges (noncondensing always)	Minimum: 8% RH with -12°C (10.4°F) dew point Maximum: 90% RH with 24°C (75.2°F) dew point
Operational altitude derating	Reduce the maximum temperature by 1°C/125 m (33.8°F/410 ft) above 900 m (2953 ft).

The following table provides specifications for shared requirements across all categories:

Table 138. Shared requirements

Temperature	Specifications
Allowable continuous operations	
Maximum temperature gradient (applies to both operation and nonoperation)	20°C (36°F) in an hour* and 5°C (9°F) in 15 minutes For tape: 5°C (9°F) in an hour* (9°F in an hour) ⓘ **NOTE:** Per ASHRAE thermal guidelines for tape hardware these rates are not instantaneous temperature changes.
Nonoperational temperature limits	-40°C to 65°C (-104°F to 149°F)
Nonoperational humidity limits	5% to 95% RH with 27°C (80.6°F) maximum dew point
Maximum nonoperational altitude	12,000 m (39,370 ft)
Maximum operational altitude	3,048 meters (10,000 ft)

The following table provides the maximum vibration specifications:

Table 139. Maximum vibration specifications

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

The following table provides the maximum shock pulse specifications:

Table 140. Maximum shock pulse specifications

Maximum shock pulse	Specifications
Operating	Six consecutive shock pulses in the positive and negative x, y, and z axis of 6 G for up to 11 milliseconds.
Storage	Six consecutive 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 milliseconds.

Thermal air restrictions

Fresh air environment

- Two PSUs are required in redundant mode, however single PSU failure is not supported.
- NVMe drive is not supported.
- 128 GB or greater capacity DIMMs are not supported.
- Both SW and DW GPGPU/FPGA are not supported.

- CPU TDP equal or greater than 180 W are not supported.
- Rear drives are not supported.
- PCIe card TDP more than 25 W is not supported

Thermal restriction matrix

The following table provides thermal restriction matrix information:

Table 141. Thermal restriction matrix

Configuration		**8 x 2.5-inch NVMe**	**16 x 2.5-inch SAS**	**16 x 2.5-inch NVMe**	**16 x 2.5-inch SAS + 8 x 2.5-inch NVMe**	**24 x 2.5-inch NVMe**	**8 x 3.5-inch**	**12 x 3.5-inch**		**Ambient temperature**
Rear storage		**No rear drives**	**No rear drives**	**No rear drives**	**No rear drives**	**No rear drives**	**No rear drives**	**No rear drives**	**2 x Rear 2.5-inch No Rear Fan**	**-**
-	120 W	-	-	-	STD fan 1U STD HSK	-	-	HPR (Silver) fan 1U STD HSK	-	35°C
-	155 W	-	-	-	STD fan 1U STD HSK	-	-	HPR (Silver) fan 1U STD HSK	-	35°C
-	170 W	-	-	-	STD fan 1U STD HSK	-	-	HPR (Silver) fan 1U STD HSK	-	35°C
-	180 W	-	-	-	STD fan 2U STD Full HSK	-	-	HPR (Silver) fan 2U Full HSK	-	35°C
-	200 W	-	-	-	STD fan 2U STD Full HSK	-	-	HPR (Silver) fan 2U Full HSK	-	35°C
-	225 W	STD fan 2U STD Full HSK	STD fan 2U STD Full HSK	STD fan 2U STD Full HSK	STD fan 2U STD Full HSK	HPR (Silver) fan 2U Full HSK	STD fan 2U STD Full HSK	HPR (Silver) fan 2U Full HSK	HPR (Silver) fan 2U Full HSK	35°C
-	240 W	STD fan 2U STD Full HSK	STD fan 2U STD Full HSK	STD fan 2U STD Full HSK	STD fan 2U STD Full HSK	HPR (Silver) fan 2U Full HSK	STD fan 2U STD Full HSK	HPR (Silver) fan 2U Full HSK	HPR (Silver) fan 2U Full HSK	35°C
-	280 W	STD fan 2U STD Full HSK	STD fan 2U STD Full HSK	STD fan 2U STD Full HSK	STD fan 2U STD Full HSK	HPR (Silver) fan 2U Full HSK	STD fan 2U STD Full HSK	HPR (Silver) fan 2U Full HSK	HPR (Silver) fan 2U Full HSK	35°C ⓘ **NOTE:** Only 12x3.5" and 24x2.5" chassis

Table 141. Thermal restriction matrix (continued)

Configuration		8 x 2.5-inch NVMe	16 x 2.5-inch SAS	16 x 2.5-inch NVMe	16 x 2.5-inch SAS + 8 x 2.5-inch NVMe	24 x 2.5-inch NVMe	8 x 3.5-inch	12 x 3.5-inch		Ambient temperature
Rear storage		**No rear drives**	**No rear drives**	**No rear drives**	**No rear drives**	**No rear drives**	**No rear drives**	**No rear drives**	**2 x Rear 2.5-inch No Rear Fan**	**-**
										have 30°C limitation.

NOTE: Three fan modules are required for single processor, and six fan modules are required for dual processor system.

NOTE: If the DIMM is 128 GB and above in a12 x 3.5-inch chassis with CPU TDP/cTDP is greater than 200 W or 12 x 3.5" + x2 rear-drive chassis with CPU TDP/cTDP greater than 170 W.

The following table provides air cooling and GPU/FPGA thermal restriction matrix information.

Table 142. Air cooling and GPU/FPGA thermal restriction matrix

Configuration (front storage)	Fan type	Max CPU TDP/cTDP	GPU/FPGA (ambient temperature)											
			T4	**V100 (16 GB)**	**V100S**	**M10**	**Snow white**	**RTX 6000**	**RTX 8000**	**A100**	**M100**	**A40**	**A10**	**A30**
No backplane	HPR (Silver)	280 W	-	-	-	35°C	-	-	-	35°C	-	30°C	30°C	35°C
8 x 2.5-inch NVMe	HPR (Silver)	280 W	-	-	-	35°C	-	-	-	35°C	-	30°C	30°C	35°C
16 x 2.5-inch SAS	HPR (Silver)	280 W	30°C	35°C	30°C	35°C	35°C	35°C	35°C	35°C	30°C	30°C	30°C	35°C
16 x 2.5-inch NVMe	HPR (Gold)	280 W	30°C	35°C	30°C	35°C	35°C	35°C	35°C	35°C	30°C	30°C	30°C	35°C
16 x 2.5-inch SAS + 8 x 2.5-inch NVMe	HPR (Gold)	280 W	30°C	35°C	30°C	35°C	35°C	35°C	35°C	35°C	30°C	30°C	30°C	35°C
8 x 3.5-inch SAS	HPR (Silver)	280 W	30°C	35°C	30°C	35°C	35°C	35°C	35°C	35°C	30°C	30°C	30°C	35°C

NOTE: GPU is not supported in 12 x 3.5-inch hard drive and 24 x 2.5-inch NVMe configuration systems.

NOTE: Low Profile and Full Height T4 cards are installed in order to support maximun 6 pcs T4 in x 16 slots.

Processor and heat sink matrix

The following table provides the processor and heat sink matrix:

Table 143. Processor and heat sink matrix

Heat sink	Processor TDP
STD HSK	< 180 W
2U HPR HSK	>= 180 W
L-type HSK	Supports all TDP (system should be installed with GPU/FPGA/long PCIe cards)

NOTE: All GPU/FGPA cards require 1U L-type HSK and GPU shroud.

Label reference

The following table describes label references:

Table 144. Label reference

Label	Explanation
STD	Standard
HPR (Silver)	High performance (silver grade)
HPR (Gold)	High performance (gold grade)
HSK	Heat sink
LP	Low profile
FH	Full height

XC4000r Technical specifications

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

Chassis dimensions

The following image shows the dimensions of the XC4000r chassis:

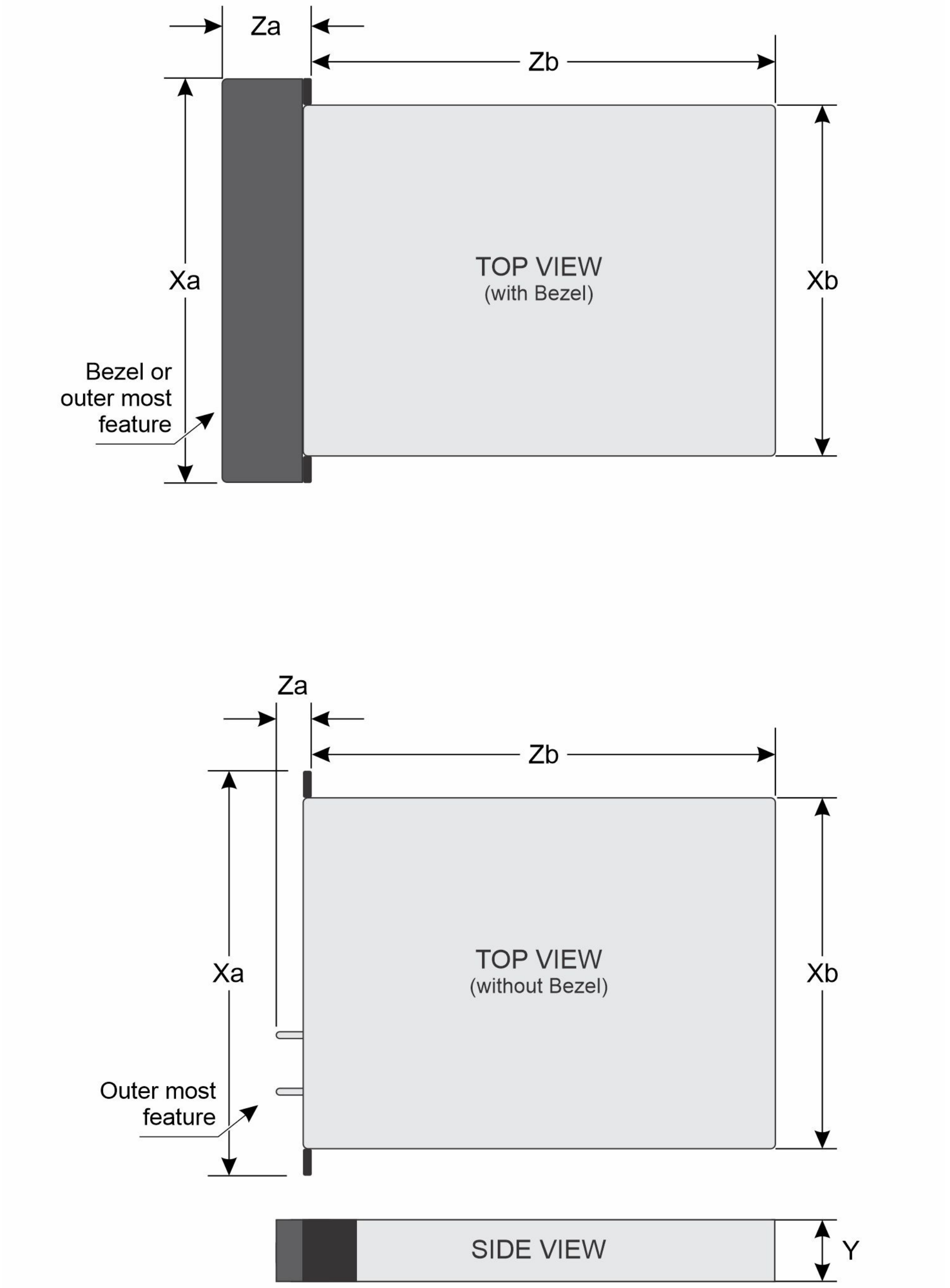


Figure 7. Chassis dimensions

Table 145. XC4000r chassis dimensions

Xa	Xb	Y	Za	Zb
482.6 mm (19 in)	434 mm (17.08 in)	87.05 mm (3.42 in)	102.5 mm (4.03 in) with the bezel 22.73 mm (0.89 in) without the bezel	352.55 mm (13.87 in) from the ear to the rear wall

System weight

The following tables provide the system weight and weight handling recommendations for the XC4000r.

Table 146. XC4000r system weight

System configuration	Maximum weight (with all drives/SSDs)
Weight of chassis without sleds	7.96 kg (17.54 lbs)
Weight of chassis with sleds and bezel and witness node	19.14 kg (42.20 lbs)

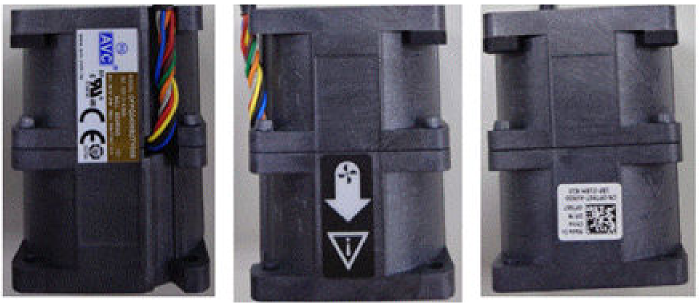
Table 147. XC4000r weight handling recommendations

Chassis weight	Description
18.14 kg to 31.75 kg (40 lbs–70 lbs)	Recommend two persons to lift.
31.75 kg to 54.43 kg (70 lbs–120 lbs)	Recommend three persons to lift.
54.88 kg (≥ 121 lbs)	Recommend to use a server lift.

Witness cooling fan specifications

The XC4000r supports one standard fan with normal air flow (NAF) or reverse air flow (RAF) for witness sled cooling.

Table 148. Cooling fan specifications

Fan type	Label color	Label image
Standard (std) fan with 60 mm (2.36 in) cable length	No label	

NOTE: The cooling fan that is installed in the chassis is used for optional witness sled cooling.

PSU specifications

The XC4000r supports up to two AC or DC power supply units (PSUs). The following table provides the PSU specifications for the system.

Table 149. PSU specifications

PSU	Class	Heat dissipation (maximum) (BTU/hr)	Frequency (Hz)	Voltage	AC		DC	Current (A)
					High line 200–240 V	Low line 100–120 V		
1800 W mixed mode	Titanium	6750 BTU/hr	50/60 Hz	200 - 240 V AC	1800 W	N/A	N/A	10 A
		6750 BTU/hr	N/A	240 V DC	N/A	N/A	1800 W	8.2 A
1400 W mixed mode	Platinum	5250 BTU/hr	50/60 Hz	100 - 240 V AC	1400 W	1050 W	N/A	12 A - 8 A
		5250 BTU/hr	N/A	240 V DC	N/A	N/A	1400 W	6.6 A
1100 W mixed mode	Titanium	4265 BTU/hr	50/60 Hz	100 - 240 V AC	N/A	N/A	N/A	12 A - 6 A
		4265 BTU/hr	N/A	240 V DC	N/A	N/A	1100 W	5.2 A

Table 149. PSU specifications (continued)

PSU	Class	Heat dissipation (maximum) (BTU/hr)	Frequency (Hz)	Voltage	AC		DC	Current (A)
					High line 200–240 V	Low line 100–120 V		
1100 W DC	N/A	4265 BTU/hr	N/A	-48 - (-60) V	N/A	N/A	1100 W	27 A

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

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

NOTE: When selecting or upgrading the system configuration, to ensure optimum power utilization, verify the system power consumption using the Dell Enterprise Infrastructure Planning Tool available at Dell Enterprise Infrastructure Planning Tool.

Power module assembly

The XC4000r is a power module assembly that consists of two power distribution boards (PDB) and are connected to each other so either or both power supplies can power the entire chassis. The PDB at the bottom has chassis manager board to manage the chassis and the optional witness sled. The witness sled fan module is mounted on the PDB to help cool the witness sled. It also has two power interposer boards (PIB) that provide power to the sleds.

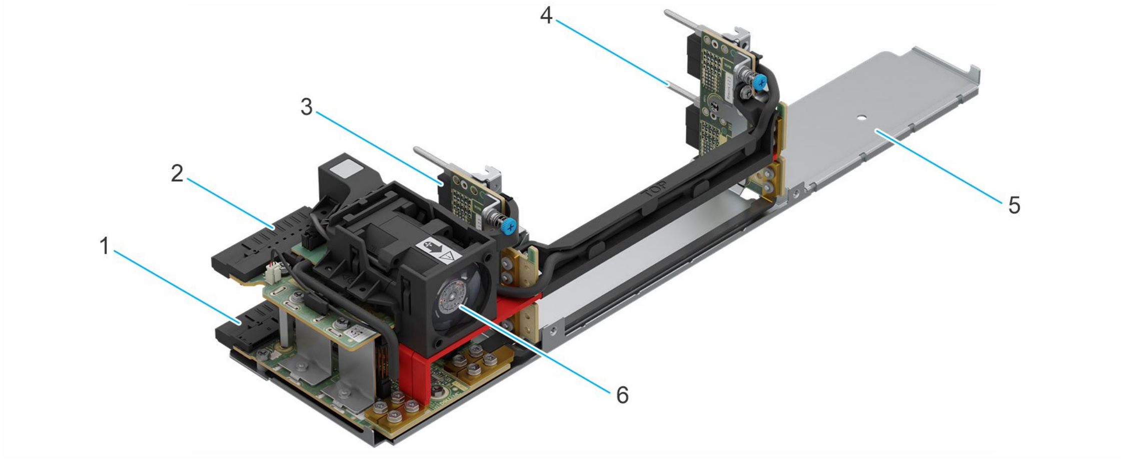


Figure 8. Power module assembly specifications

Sled ports and connectors

This section provides information about the accessible sled ports and connectors for the XC4000r.

Environmental specifications

This following table describes the operating and non-operating temperature considerations for the system.

Table 150. Operating and non-operating temperature considerations

Description	Temperature range
Operating temperature range for rear air-flow (RAF) configuration	-5°C to <55°C (23°F to <131°F) with a startup temperature of 0°C (32°F)
Operating temperature range for normal air-flow (NAF) configuration	-5°C to <45°C (23°F to <113°F) with a startup temperature of 0°C (32°F)

Table 150. Operating and non-operating temperature considerations (continued)

Description	Temperature range
Ambient temperature for rear airflow (RAF) and normal air-flow (NAF) with GPU	45°C (113°F)
Non-operating temperature range	-40°C to 85°C (-40°F to 185°F)

ⓘ **NOTE:** For additional information about environmental certifications, see the *Product Environmental Datasheet* located with the *Documentation* on Dell Support.

XC4510c Technical specifications

This section outlines the technical and environmental specifications of the system.

Sled dimensions

The following figure and table provides the dimensions of the .

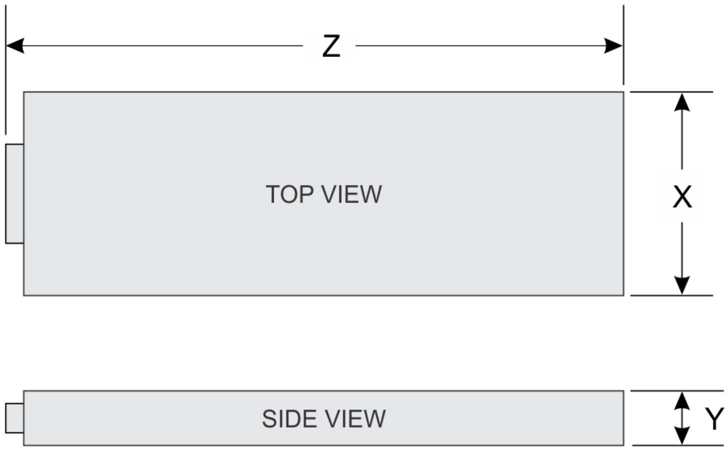


Figure 9. Top and side view of the system

System weight

The following table shows the maximum weight of the XC4510c:

Table 151. System configuration and weight capacity

System configuration	Maximum weight (with all SSDs)
Four DIMMS, four M.2 NVMe SSDs on M.2 riser, two M.2 NVMe SSDs on BOSS N1	2.46 kg (5.42 lbs)
One DIMM, one M.2 NVMe SSD on M.2 riser, one M.2 NVMe SSD on BOSS N1	2.35 kg (5.18 lbs)

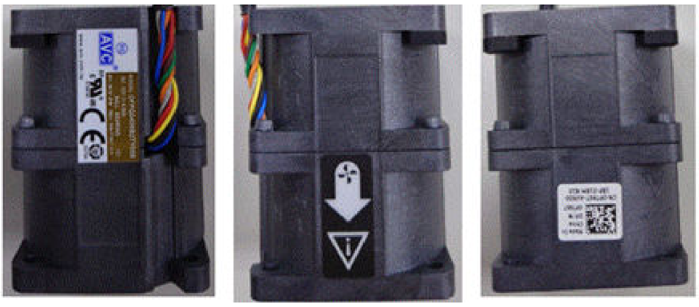
Processor specifications

The XC4510c supports one third-generation Intel Xeon D Scalable processor with up to 20 cores.

Cooling fan specifications

The supports up to three standard cabled fans with normal and reverse air flow.

Table 152. Fan specification labels

Fan type	Label color	Label image
	No label	

System battery specifications

The system supports CR 2032 3.0-V Lithium coin cell system battery.

Storage controller specifications

Drives

The XC4510c supports up to four M.2 SSDs (M.2 2280 and M.2 22110) installed on the M.2 riser module. The XC4510c supports the Tier 1 disk group configuration with one cache drive, and up to three capacity drives.

Ports and connectors specifications

This section provides the specifications for the following ports and connectors:

- USB ports
- NIC ports
- Serial connector
- Display port
- iDRAC9 port

Video specifications

The supports the integrated Matrox G200 graphics controller that is embedded in the iDRAC(BMC) chip, with 16 MB of video frame buffer.

The following table describes the supported video resolution options:

Table 153. System resolution, refresh rate, and color depth specifications

Resolution	Refresh rate (Hz)	Color depth (bits)
640 x 480	60	8, 16, 32
800 x 600	60	8, 16, 32
1024 x 768	60	8, 16, 32
1152 x 864	60	8, 16, 32

Table 153. System resolution, refresh rate, and color depth specifications (continued)

Resolution	Refresh rate (Hz)	Color depth (bits)
1280 x 800	60	8, 16, 32
1280 x 1024	60	8, 16, 32
1360 x 768	60	8, 16, 32
1400 x 1050	60	8, 16, 32
1440 x 900	60	8, 16, 32
1600 x 1200	60	8, 16, 32
1680 x 1050	60	8, 16, 32
1920 x 1080	60	8, 16, 32
1920 x 1200	60	8, 16, 32

Environmental specifications

ⓘ **NOTE:** For additional information about environmental certifications, see the *Documentation* section at Dell Support.

The following table describes the operating and non-operating temperature considerations of the system:

Table 154. Environmental specifications

Configuration	Temperature range
Operating temperature range	-5°C to 55°C (23°F to 131°F) with a startup temperature of 0°C (32°F)
Non-operating temperature range	-40°C to 85°C (-40°F to 185°F)

XC4520c Technical specifications

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

Sled dimensions

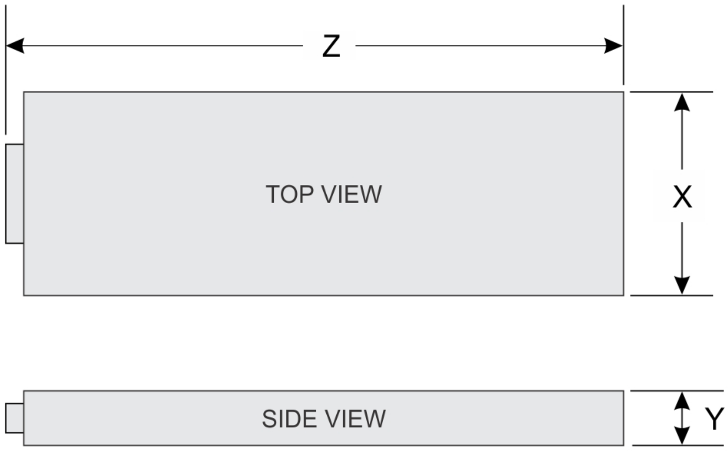


Figure 10. Sled dimensions

Table 155. The XC Core XC4520c sled dimensions

X	Y	Z (handle closed).
167.2 mm (6.58 inches)	83.25 mm (3.27 inches)	342.5 mm (13.48 inches)

System weight

Table 156. XC Core XC4520c weight

System configuration	Maximum weight (with all SSDs)
1 x DIMM, 1 x M.2 NVMe SSDs on M.2 riser 1 x M.2 NVMe SSD on BOSS-N1	3.15 kg (6.94 pound)
4 x DIMMs, 4 x M.2 NVMe SSDs on M.2 riser 2 x M.2 NVMe SSDs on BOSS-N1, 1 x Double Width GPU	4.69 kg (10.34 pound)

Processor specifications

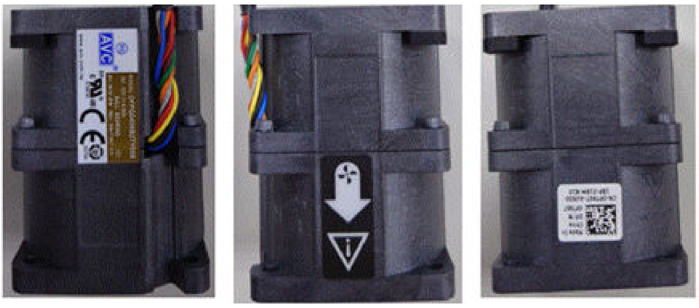
Table 157. XC Core XC4520c processor specifications

Supported processor	Number of processors supported
3rd Generation Intel Xeon D Scalable processor with up to 20 cores	One

Cooling fan specifications

The XC Core XC4520c supports up to three Standard (STD) cabled cooling fans for reverse and normal air-flow.

Table 158. Cooling fan specifications

Fan type	Label color	Label image
3 x Standard STD fans (210 mm cable length) on the upper layer	No label	

System battery specifications

The XC Core XC4520c supports CR 2032 3.0-V lithium coin cell system battery.

Memory specifications

The XC Core XC4520c supports the following memory specifications for optimized operation.

Table 159. Memory specifications

DIMM type	DIMM rank	DIMM capacity	Single processor	
			Minimum system capacity	Maximum system capacity
RDIMM	Dual rank	16 GB	16 GB	64 GB
		32 GB	32 GB	128 GB
		64 GB	64 GB	256 GB
LRDIMM	Quad rank	128 GB	128 GB	512 GB

Table 160. Memory module sockets

Memory module sockets	Speed
4, 288-pin	3200 MT/s

NOTE: Memory DIMM slots are not hot swappable.

NOTE: The DIMM memory speed is 3200 MT/s. However, the system memory operating speed is up to 2933 MT/s due to CPU restrictions.

Expansion card riser specifications

WARNING: Consumer-Grade GPU should not be installed or used in the Enterprise Server products.

The XC Core XC4520c system supports one PCI express (PCIe) expansion card riser on the upper layer of the sled.

Table 161. Expansion card slots supported on the 2U sled

PCIe slots	Expansion card riser	Processor connection	Height	Length	Slot width
Slot 1 and 2	Riser 1C	Processor 1	Full Height	Three-quarter Length	x16 PCIe (Gen 4)

Storage controller specifications

The XC Core XC4520c system supports Boot Optimized Storage Subsystem (BOSS-N1): HWRAID 1 x M.2 SSDs as internal boot.

Drives

The XC Core XC4520c system supports 4 x M.2 SSDs (M.2 2280 and M.2 22110) on the M.2 riser and 8 x M.2 NVMe SSDs on the PCIe Add-in card (AIC) installed on the riser module assembly.

GPU specifications

The XC Core XC4520c system supports up to two 150W single-width GPUs or one 250W double-width GPU.

NOTE: Systems configured with GPUs will have higher fan acoustics.

Ports and connectors specifications

Video specifications

The XC Core XC4520c system supports integrated Matrox G200 graphics controller embedded in the iDRAC (BMC) chip with 16 MB of video frame buffer.

Table 162. Supported video resolution options

Resolution	Refresh rate (Hz)	Color depth (bits)
640 x 480	60	8, 16, 32
800 x 600	60	8, 16, 32
1024 x 768	60	8, 16, 32
1152 x 864	60	8, 16, 32
1280 x 800	60	8, 16, 32
1280 x 1024	60	8, 16, 32
1360 x 768	60	8, 16, 32
1400 x 1050	60	8, 16, 32
1440 x 900	60	8, 16, 32
1600 x 1200	60	8, 16, 32
1680 x 1050	60	8, 16, 32
1920 x 1080	60	8, 16, 32
1920 x 1200	60	8, 16, 32

Environmental specifications

NOTE: For additional information about environmental certifications, see the product environmental datasheet that is located with the **Manuals & Documents** on Dell Support.

Table 163. Operating and non-operating temperature considerations

Configuration	Temperature range
Operating temperature range	-5 to 55°C with a startup temperature of 0°C
Non-operating temperature range	-40 to 85°C

XC4000z Technical specifications

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

Chassis dimensions

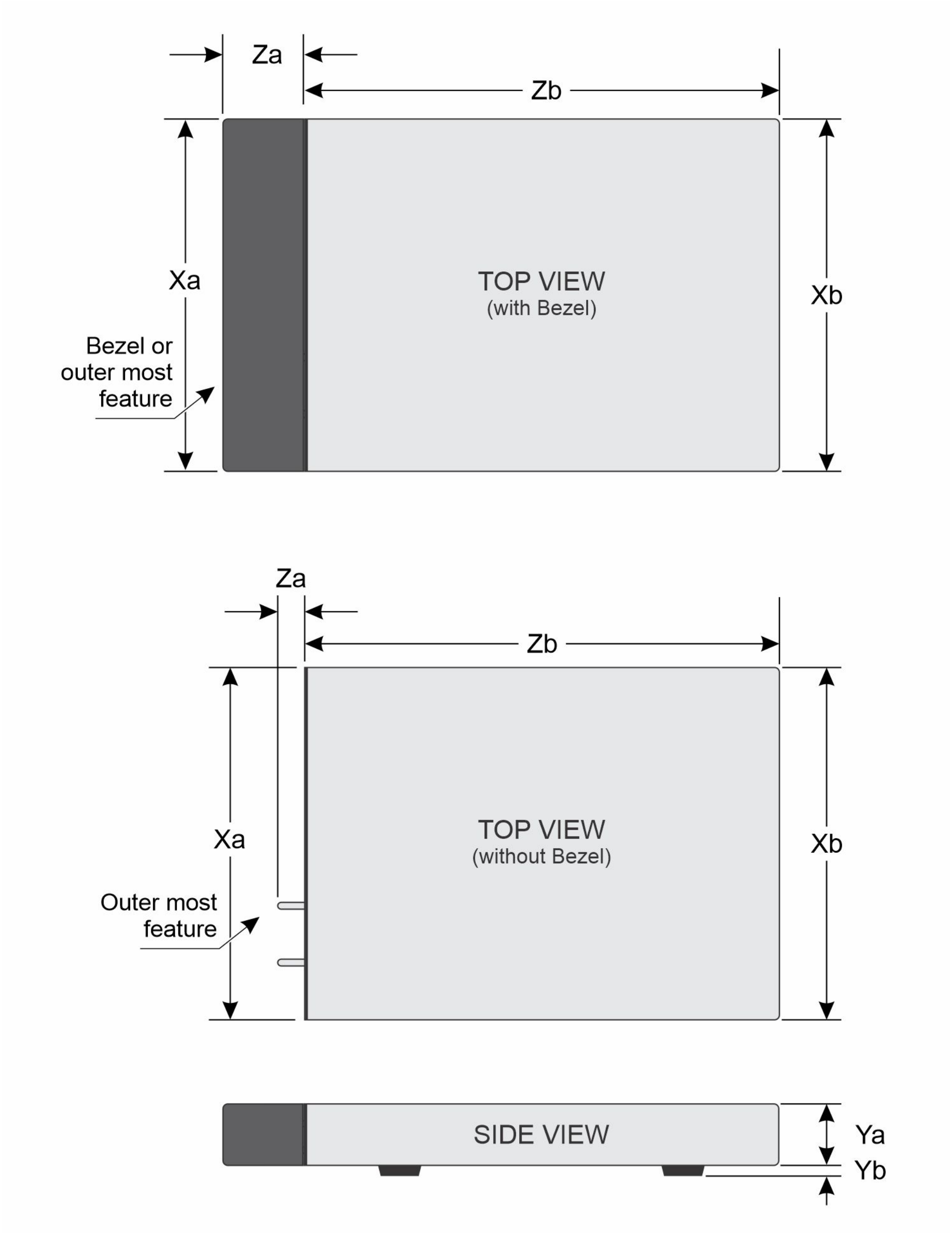


Figure 11. Chassis dimensions

Table 164. XC4000z chassis dimensions without side panels and bezel

Xa	Xb	Ya	Yb	Za	Zb
266 mm (10.47 inches)	266 mm (10.47 inches)	87.05 mm (3.42 inches)	10 mm (0.39 inches)	20.20 mm (0.79 inches) without bezel	355 mm (13.97 inches) drive_1_Ear to wall

Table 165. XC4000z chassis dimensions with side panels and bezel

Xa	Xb	Ya	Yb	Za	Zb
307 mm (12.08 inches)	307 mm (12.08 inches)	87.05 mm (3.42 inches)	10 mm (0.39 inches)	100 mm (3.93 inches)drive 1 with bezel	355 mm (13.97 inches) drive_1_Ear to wall

System weight

Table 166. XC4000z weight

System configuration	Maximum weight
Weight of chassis without sleds and without bezel and side panels	5.59 kg (12.32 pound)
Weight of chassis with sleds and without bezel and side panels	10.52 kg (23.19 pound)
Weight of chassis with sleds, bezel and side panels	12.16 kg (26.80 pound)

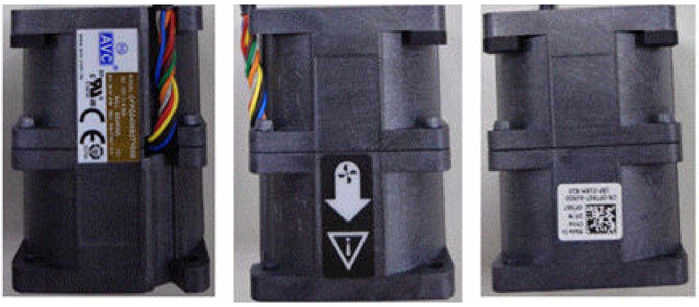
Table 167. XC4000z weight handling recommendations

Chassis weight	Description
40 pounds - 70 pounds	Recommend two person to lift
70 pounds- 120 pounds	Recommend three person to lift
≥ 121 pounds	Recommend to use a server-lift

Witness cooling fan specifications

The XC Core XC4000z supports one standard fan with reverse air flow (RAF) for witness sled cooling.

Table 168. Cooling fan specifications

Fan type	Label color	Label image
Standard Fan (60 mm cable length)	No label	

PSU specifications

The XC4000z supports up to two AC or DC power supply units (PSUs).

Table 169. PSU specifications

PSU	Class	Heat dissipation (maximum) (BTU/hr)	Frequency (Hz)	Voltage	AC		DC	Current (A)
					High line 200–240 V	**Low line 100–120 V**		
1800W Mixed Mode	Titanium	6750 BTU/hr	50/60 Hz	200 - 240 V AC	1800W	NA	NA	10A
		6750 BTU/hr	NA	240 V DC	NA	NA	1800W	8.2A
1400 W Mixed Mode	Platinum	5250 BTU/hr	50/60 Hz	100 - 240 V AC	1400 W	1050 W	NA	12 A - 8 A
		5250 BTU/hr	NA	240 V DC	NA	NA	1400 W	6.6 A
1100 W DC	NA	4265 BTU/hr	NA	-48 -(-60) V	NA	NA	1100 W	27 A

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

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

Power module assembly

The XC4000z power module assembly consists of two power distribution board (PDB's) and are connected to each other so either or both power supplies can power the whole chassis. The power distribution board (PDB) at the bottom also has chassis manager board to manage the chassis and the optional witness sled. The witness sled fan module is mounted on the PDB which helps in cooling the witness sled. It also has one power interpose board (PIB) which provide power to the sleds.

XC4000w Technical specifications

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

Sled dimensions

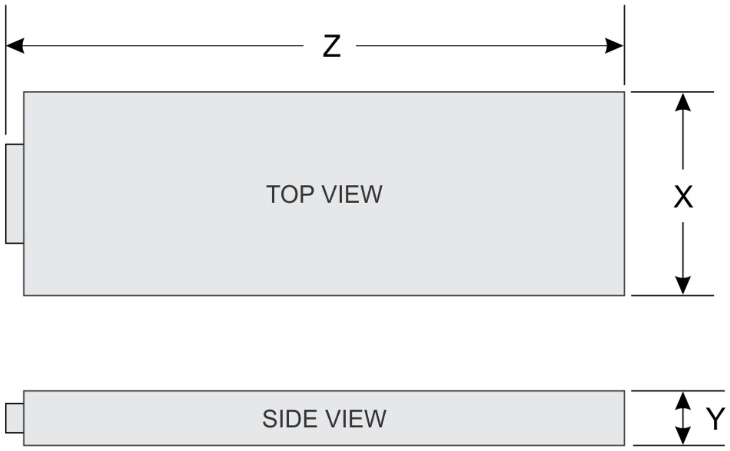


Figure 12. Sled dimensions

Table 170. XC Core XC4000w sled dimensions

X	Y	Z
83.25 mm (3.27 inches)	21.60 mm (0.85 inches)	250.79 mm (9.87 inches)

System weight

Table 171. XC Core XC4000w system weight

System configuration	Maximum weight
1 x M.2 SSD (2280)	0.44 kg (0.97 pound)

Processor specifications

Table 172. XC4000w processor specifications

Supported processor	Number of processors supported
3rd Generation Intel Xeon Scalable processor with up to 20 cores	One

Supported operating systems

The XC4000w supports the following operating systems:

- VMware ESXi
- Windows Server with Hyper-V (XC750-14 only)
- VMware ESXi
- AHV

For more information, go to OS support.

Hyper-V support and rules

This section describes the Hyper_V support and rules.

- Supported platforms
  - 15G: XC750-14
  - 14G: XC940, XCXR2, XC640, XC740, & XC6420
- Supported NIC for Hyper-V (make sure the system has one the following NICs only):
  - Intel 710
  - Intel XXV 25G
  - Melanox CX5 25G AMD 100G
- No Broadcom NICs of 10GbE or more supported with Hyper-V
- No NVMe drive support
- Hyper-V drive updates cluster
  - 14G: Image the systems first AHV, then created Hyper-V cluster. The drivers are somewhere in Phoenix folder
  - 15G: Update your system with the latest Dell OS Driver pack

Memory specifications

The XC4000w supports 16 GB DDR4 ECC RAM (soldered down).

Storage specifications

The XC4000w supports 1 x M.2 SSD of 960 GB (2280) storage pre-installed with ESXi boot image and application data.

Ports and connectors specifications

USB ports specifications

The XC4000w supports one USB 3.0-compliant port on the front of the system.

NIC port specifications

The XC4000w supports 1 GbE x 2 (intel 1210), RJ45 ports with LEDs on the front of the system.

Serial connector specifications

The XC4000w system support one Micro-USB connector for RS232 serial port, which is a Micro USB on the front of the system.

Environmental specifications

ⓘ **NOTE:** For additional information about environmental certifications, refer to the *Product Environmental Datasheet* located with the *Documentation* on Dell Support.

Table 173. Operating and non-operating temperature considerations

Description	Temperature range
Operating temperature range for rear air-flow (RAF) configuration	-5 to <55°C with a startup temperature of 0°C
Ambient temperature for rear air-fllow (RAF) and normal air-flow (NAF) with GPU	45°C
Non-operating temperature range	-40 to 85°C

Environmental Considerations

The XC4000w system is targeted for edge deployments and it meets all the additional standards for thermal, shock, and vibration parameters.

Table 174. Environmental considerations

Industry	Configuration	Description
Telco	GR-1089-CORE	Electromagnetic Compatibility and Electrical Safety – Generic Criteria for Network Telecommunications Equipment
	GR-63-CORE	NEBS Requirements: Physical Protection
	SR-3580 (NEBS Level 3)	NEBS Criteria Levels
	GR-3108-CORE (Class 1)	Network Equipment in the Outside Plant (OSP). An exception is made for cold boot at 0C instead of -5C.
Military	MILSTD 810H	Environmental engineering considerations and laboratory test
	MILSTD 461G///	Requirements for the control of electromagnetic interference characteristic of subsystems and equipment
	MILSTD 901E	High impact shock test – Shipboard

Table 174. Environmental considerations (continued)

Industry	Configuration	Description
	MILSTD 1474E	Department of Defense Design Criteria Standard Noise Limits
Marine	IEC-60945	Maritime navigation and radiocommunication equipment and systems – General requirements
	DNV-GL	Environmental Test Specification for Instrumentation and Automation Equipment
Power Industry	IEEE 1613	Environmental and testing requirements for communications networking devices in electric power substations
	IEC – 61850-3	Communication networks and systems for power utility automation
Safety	N/A	LDV, IEC/EN, CFR, CSA
EMC	N/A	EN, CISPR, ES, DTAG, CFR, ICES, VCCI
EMV	N/A	RoHS, WEEE, EN, ECE

Thermal restriction matrix

Table 175. M.2 Support Thermal Limitation for XC4000r Chassis (RAF Configurations)

M.2 Type	M.2 Module (Witness Sled)		
	Edge 2 (Max 55°C)	Edge 1 (Max 50°C)	ASHRAE A4 (Max 45°C)
Micron 480GB	No	No	No
Micron 800GB	No	No	No
Micron 960GB	Yes	Yes	Yes
Micron 1.92TB	No	No	No
Micron 3.84TB	No	No	No
Hynix 480GB	No	No	No
Hynix 800GB	No	No	No
Hynix 960GB	Yes	Yes	Yes
Hynix 1.92TB	No	No	No
Hynix 3.84BT	No	No	No

Table 176. M.2 Support Thermal Limitation for XC4000z Chassis (RAF Configurations)

M.2 Type	M.2 Module (Witness Sled)		
	Edge 2 (Max 55°C)	Edge 1 (Max 50°C)	ASHRAE A4 (Max 45°C)
Micron 480GB	No	No	No
Micron 800GB	No	No	No
Micron 960GB	Yes	Yes	Yes
Micron 1.92TB	No	No	No
Micron 3.84TB	No	No	No
Hynix 480GB	No	No	No
Hynix 800GB	No	No	No

Table 176. M.2 Support Thermal Limitation for XC4000z Chassis (RAF Configurations) (continued)

M.2 Type	M.2 Module (Witness Sled)		
	Edge 2 (Max 55°C)	Edge 1 (Max 50°C)	ASHRAE A4 (Max 45°C)
Hynix 960GB	Yes	Yes	Yes
Hynix 1.92TB	No	No	No
Hynix 3.84BT	No	No	No

Table 177. XC4000w Processor Support Thermal Limitation for XC4000r chassis (RAF Configurations)

Processor Type	HSK type	Fan type	XC4000 RAF Configurations		
			Edge 2 (Max 55°C)	Edge 1 (Max 50°C)	ASHRAE A4 (Max 45°C)
Intel Atom C3508, 4 cores, 11.5W	Aluminum extrusion	Fan	Yes	Yes	Yes

Table 178. XC4000w Processor Support Thermal Limitation for XC4000z chassis (RAF Configurations)

Processor Type	HSK type	Fan type	XC4000 RAF Configurations		
			Edge 2 (Max 55°C)	Edge 1 (Max 50°C)	ASHRAE A4 (Max 45°C)
Intel Atom C3508, 4 cores, 11.5W	Aluminum extrusion	Fan	Yes	Yes	Yes

Table 179. M.2 Support Thermal Limitation for XC4000z Chassis (NAF Configurations)

M.2 Type	M.2 Module (Witness Sled)		
	Edge 2 (Max 55°C)	Edge 1 (Max 50°C)	ASHRAE A4 (Max 45°C)
Micron 480GB	No	No	No
Micron 800GB	No	No	No
Micron 960GB	Not Supported	Not Supported	Yes
Micron 1.92TB	No	No	No
Micron 3.84TB	No	No	No
Hynix 480GB	No	No	No
Hynix 800GB	No	No	No
Hynix 960GB	Not Supported	Not Supported	Yes
Hynix 1.92TB	No	No	No
Hynix 3.84BT	No	No	No

Table 180. XC4000w Processor Support Thermal Limitation for XC4000r chassis (NAF Configurations)

Processor Type	HSK type	Fan type	NAF Configurations		
			Edge 2 (Max 55°C)	Edge 1 (Max 50°C)	ASHRAE A4 (Max 45°C)
Intel Atom C3508, 4 cores, 11.5W	Aluminum extrusion	Fan	Not Supported		Yes

Thermal Restrictions

ASHRAE A4 Support Restriction for RAF (Reverse Air Flow Direction) Configurations

- In redundant mode, two power supplies are required. A single power supply failure is not supported.

Edge1 Support Restriction RAF (Reverse Air Flow Direction) Configurations

- In redundant mode, two power supplies are required. A single power supply failure is not supported.

Edge2 Support Restriction RAF (Reverse Air Flow Direction) Configurations

- In redundant mode, two power supplies are required. A single power supply failure is not supported.

ASHRAE A4 Support Restriction NAF (Normal Air Flow Direction) Configurations

- In redundant mode, two power supplies are required. A single power supply failure is not supported.

3

Documentation matrix

The documentation matrix provides information about the documents that you use to configure and deploy the Dell Hyper-Converged Appliance solution.

WARNING: See the safety and regulatory information that shipped with your system. Warranty information may be included with this document or as a separate document.

Make sure that you read through any media that ships with your system that provides documentation and tools for configuring and managing your system, including those pertaining to the operating system, system management software, system updates, and system components that you purchased with your system.

NOTE: URLs such as `Dell.com/support` or `Dell.com/support/home` are not active because you must type the URL from your location to access your specific language.

For the full name of an abbreviation or acronym used in this document, see the Glossary at `Dell.com/support/home`.

NOTE: Always read the updates on `Dell.com/support/home` because they often supersede information in other documents.

NOTE: While upgrading your system, Dell recommends that you download and install the latest BIOS, driver, and systems management firmware on your system from `Dell.com/support/home`.

Dell documentation

About this task

Dell documentation is either included with your shipment or available at Dell Support.

Documentation is available for the following:

- Dell iDRAC
- Dell OpenManage Essentials

To access Dell documentation, see the system-specific documentation available at Dell Support (**Browse all Products** > **Infrastructure**, then go to the system.)

Table 181. Dell reference documentation

To learn about...	Refer to...
Setup instructions of your system, including the technical specifications	*Getting Started Guide*
Hardware details for your system	*Owner's Manual*
How to install your system into a rack	*Dell Rack Install Guide*
How to deploy and set up this solution	*Solutions Guide*
How to deploy an ESXi hypervisor	*ESXi Best Practices Guide*
How to find important information about your solution	*Release Notes*
Setting up and using Dell iDRAC9	*Dell iDRAC9 Quick Start Guide*
Using OpenManage Essentials to monitor, perform updates, view hardware, and view inventory on your system	*Dell OpenManage Essentials User's Guide*
XC4000w Installation	*XC4000w Installation and Service Manual*

Nutanix documentation

You can find Nutanix documentation using the Nutanix portal at Nutanix Software Documentation. To display a complete set of documentation, you must have user credentials to log in.

The required Nutanix documentation is found using various filters or search.

Table 182. Nutanix documentation

To learn about...	Acropolis base document name
Set up instructions for environments with special requirements and restrictions.	*Acropolis Advanced Setup Guide*
Comprehensive references for Controller Virtual Machine (CVM) utilities, nCLI commands, and Nutanix PowerShell cmdlet	*Acropolis Command Reference*
Instructions and reference for administering the Nutanix solution software outside the Nutanix Prism UI (such as cluster start/stop, manual upgrade, changing passwords, reconfiguring IP addresses, and troubleshooting tools).	*Acropolis Advanced Administration Guide*
Managing Nutanix Acropolis AHV hosts that run Nutanix solution software.	*Acropolis Hypervisor Administration Guide*
Managing VMware ESXi hosts that run Nutanix solution software, including VMware vCenter requirements.	*vSphere Administration Guide for Acropolis (using vSphere Client)*
Managing Hyper-V hosts that run the Nutanix solution software, including domain requirements.	*Hyper-V Administration for Acropolis*
Comprehensive references for the Nutanix REST API.	*Acropolis API Reference*
Distributed VM management services for Nutanix nodes with Acropolis hypervisor (AHV).	*Acropolis App Mobility Fabric Guide*
Nutanix support of containers through Acropolis Container Services.	*Acropolis Container Services Guide*
Set up instructions for your solution.	*Field Installation Guide*
Software instructions for hardware components that are not functioning.	*AHV Administration Guide*
Software instructions for hardware components that are not functioning.	*Hardware Replacement Documentation*
Comprehensive instructions and references for the Nutanix UI, including overview information.	*Prism Web Console Guide*
Monitoring multiple Nutanix cluster through web console.	*Prism Central Guide*

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Contacting Dell

Dell provides several online and telephone-based support and service options.

About this task

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 **Dell.com/support**.
2. Select your country from the drop-down menu on the lower right corner of the page.
3. For customized support, enter your system **Service Tag** and then click **Submit**.
   The support page that lists the various support categories is displayed.
4. For general support, select your product category, product segment and product.
   The support page that lists the various support categories is displayed.
5. For contact details of Dell Global Technical Support, click **Global Technical Support**.
   The Contact Technical Support page is displayed with details to call, chat, or email the Dell Global Technical Support team.