

# Dell EMC PowerEdge C6420

## Technical Specifications

## Notes, cautions, and warnings

 **NOTE:** A NOTE indicates important information that helps you make better use of your product.

 **CAUTION:** A CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

 **WARNING:** A WARNING indicates a potential for property damage, personal injury, or death.

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# Technical specifications

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

## Topics:

- Dimensions of the Dell EMC PowerEdge C6420 sled
- Chassis weight
- Processor specifications
- Supported operating systems
- System battery
- Expansion bus specifications
- Memory specifications
- Drives and storage specifications
- Video specifications
- Environmental specifications

## Dimensions of the Dell EMC PowerEdge C6420 sled

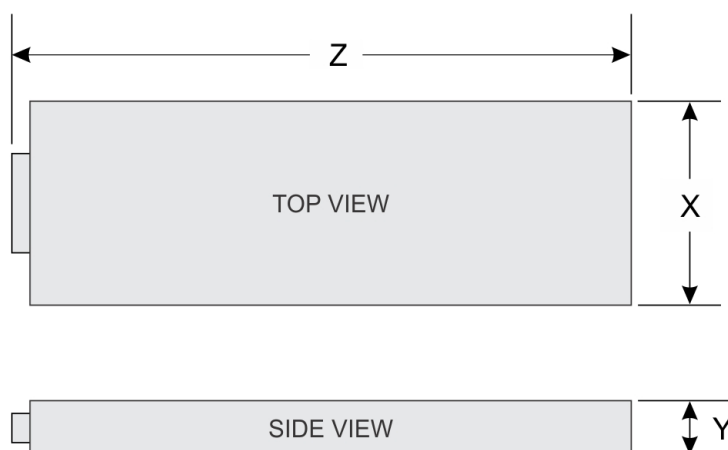


Figure 1. Dimensions of the PowerEdge C6420 sled

Table 1. Dimensions of the PowerEdge C6420 sled

X	Y	Z
174.4 mm (6.86 inches)	40.5 mm (1.59 inches)	574.5 mm (22.61 inches)

## Chassis weight

Table 2. Chassis weight of the enclosure with the sleds

System	Maximum weight (with all sleds and drives)
12 x 3.5-inch hard drive systems	43.62 Kg (96.16 lb)

**Table 2. Chassis weight of the enclosure with the sleds (continued)**

System	Maximum weight (with all sleds and drives)
No backplane systems	34.56 Kg (76.19 lb)

## Processor specifications

The Dell EMC PowerEdge C6420 sled supports up to two Intel Xeon Scalable processor in each of the four independent sleds. Each processor supports up to 28 cores.

**NOTE:** The fabric processor must be installed in the processor 2 socket in a mixed configuration of fabric and non-fabric processors.

## Supported operating systems

The Dell EMC PowerEdge C6420 supports the following operating systems:

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

**NOTE:** For more information about the specific versions and additions, see <https://www.dell.com/support/home/drivers/supportedos/poweredge-c6420>

## System battery

The PowerEdge C6420 sled uses a CR 2032 3V replaceable lithium coin cell battery.

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

## Expansion bus specifications

The Dell EMC PowerEdge C6420 sled supports four Generation 3 capable PCIe slots.

**Table 3. Expansion bus specifications**

PCIe Slots	Description	Form factor
x8 Mezz PCIe riser	Slot 1: x8 PCIe Gen3 from processor 1	Custom form factor
x8+x8 OCP Mezz riser	Slot 2: x8 PCIe Gen3 from processor 1	Standard Open Compute Project (OCP) form factor
	Slot 3: x8 PCIe Gen3 from processor 1	
x16 PCIe main riser	Slot 4: x16 PCIe Gen3 processor 1	Standard Low Profile PCIe form factor
x16 buried PCIe riser	Slot 5: x16 PCIe Gen3 from processor 2	Custom form factor <b>NOTE:</b> M.2 SATA riser is supported on the buried riser.

# Memory specifications

**Table 4. Memory specifications**

Memory module sockets	DIMM type	DIMM rank	DIMM capacity	Single processor		Dual processors	
				Minimum RAM	Maximum RAM	Minimum RAM	Maximum RAM
Sixteen 288-pins	LRDIMM	Quad rank	64 GB	64 GB	512 GB	128 GB	1024 GB
		Octal rank	128 GB	128 GB	1024 GB	256 GB	2048 GB
	RDIMM	Single rank	8 GB	8 GB	64 GB	16 GB	128 GB
		Dual rank	16 GB	16 GB	128 GB	32 GB	256 GB
			32 GB	32 GB	256 GB	64 GB	512 GB
			64 GB	64 GB	512 GB	128 GB	1024 GB

**i** **NOTE:** The older 32 GB capacity RDIMM memory with x4 data width and 8Gb DRAM density cannot be mixed with the newer 32GB capacity RDIMM memory with x8 data width and 16Gb DRAM density in the same AMD EPYC™ processor unit.

# Drives and storage specifications

The Dell EMC PowerEdge C6420 sled supports SAS and SATA Drives and Solid State Drives (SSDs).

**Table 5. Supported drive options for the PowerEdge C6420 sled**

Maximum number of drives in the enclosure	Maximum number of drives assigned per sled
12 x 3.5-inch drive systems	Three SAS or SATA Drives and SSDs per sled
24 x 2.5-inch drive systems	Six SAS or SATA Drives and SSDs per sled
24 x 2.5-inch drive systems with NVMe	The NVMe backplane supports either of these configurations: <ul style="list-style-type: none"> <li>Two NVMe drives and four SAS or SATA Drives and SSDs per sled</li> <li>Six SAS or SATA Drives and SSDs per sled</li> </ul>
M.2 SATA drive (optional)	The supported capacity of the M.2 SATA card is up to 240 GB <b>i</b> <b>NOTE:</b> The M.2 SATA card can be installed on the x8 (slot 1) mezzanine riser or the x16 riser slot (slot 5).
microSD card (optional) for boot (up to 64 GB)	One on each PCIe riser of each sled

**Table 6. Supported RAID options with M.2 SATA drives**

Options	Single M.2 SATA drive without RAID	Dual M.2 SATA drives with hardware RAID
Hardware RAID	No	Yes
RAID Mode	N/A	RAID 1
Number of drives supported	1	2
Supported processors	processor 1	processor 1 and processor 2

# Video specifications

The Dell EMC PowerEdge C6420 sled supports a Matrox G200eW3 integrated graphics card with 16 MB RAM.

**Table 7. Supported video resolution options**

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

## Environmental specifications

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

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

## Standard operating temperature specifications

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

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

**Table 8. Standard operating temperature specifications**

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

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

**Table 9. Maximum continuous operating temperature for nonfabric dual processor configuration**

TDP Watts	Process or model	Heat sink model	Max memory/processor	3.5-inch chassis			2.5-inch chassis					No-BP Chassis	
				12x Drives	8x Drives	4x Drives	24x Drives	20x Drives	16x Drives	12x Drives	8x Drives	4x Drives	N/A
205 W	8280	CPU1: FMM2M   CPU2: V2DRD	CPU1: 6   CPU2: 8	Not Supported (2°C)	Not Supported (10°C)	Not Supported (11°C)	Not Supported (19°C)	20	21	21	21	21	30
	8280L	CPU1: FMM2M   CPU2: V2DRD	CPU1: 6   CPU2: 8					20	21	21	21	21	30
	8280M	CPU1: FMM2M   CPU2: V2DRD	CPU1: 6   CPU2: 8					20	21	21	21	21	30

**Table 9. Maximum continuous operating temperature for nonfabric dual processor configuration (continued)**

TDP Watts	Process or model	Heat sink model	Max memory/processor	3.5-inch chassis			2.5-inch chassis					No-BP Chassis				
				12x Drives	8x Drives	4x Drives	24x Drives	20x Drives	16x Drives	12x Drives	8x Drives	4x Drives	N/A			
	8270	CPU1: FMM2M   CPU2: V2DRD	CPU1: 6   CPU2: 8					20	21	21	21	21	30			
	8268	CPU1: FMM2M   CPU2: V2DRD	CPU1: 6   CPU2: 8					20	21	21	21	21	30			
200 W	6254	CPU1: FMM2M   CPU2: V2DRD	CPU1: 6   CPU2: 8	Not Supported(6°C)	Not Supported(14°C)	Not Supported(15°C)	20	21	22	22	22	22	30			
165 W	8276	CPU1: JYKMM   CPU2: V2DRD	CPU1: 8   CPU2: 8				30	30	30	30	30	35	35			
	8276L	CPU1: JYKMM   CPU2: V2DRD	CPU1: 8   CPU2: 8				30	30	30	30	30	35	35			
	8276M	CPU1: JYKMM   CPU2: V2DRD	CPU1: 8   CPU2: 8				30	30	30	30	30	35	35			
	8260	CPU1: JYKMM   CPU2: V2DRD	CPU1: 8   CPU2: 8				Not Supported(11°C)	Not Supported(18°C)	Not Supported(19°C)	30	30	30	30	30	35	35
	8260L	CPU1: JYKMM   CPU2: V2DRD	CPU1: 8   CPU2: 8				30	30	30	30	30	30	30	35	35	
	8260M	CPU1: JYKMM   CPU2: V2DRD	CPU1: 8   CPU2: 8				30	30	30	30	30	30	30	35	35	
	8260C	CPU1: JYKMM   CPU2: V2DRD	CPU1: 8   CPU2: 8				30	30	30	30	30	30	30	35	35	
150 W	6252	CPU1: JYKMM   CPU2: V2DRD	CPU1: 8   CPU2: 8	Not Supported(14°C)	21	23	30	30	30	30	30	35	35			
	6248	CPU1: JYKMM   CPU2: V2DRD	CPU1: 8   CPU2: 8		21	23	30	30	30	30	30	35	35			

**Table 9. Maximum continuous operating temperature for nonfabric dual processor configuration (continued)**

TDP Watts	Process or model	Heat sink model	Max memory/processor	3.5-inch chassis			2.5-inch chassis						No-BP Chassis
				12x Drives	8x Drives	4x Drives	24x Drives	20x Drives	16x Drives	12x Drives	8x Drives	4x Drives	N/A
	6240	CPU1: JYKMM   CPU2: V2DRD	CPU1: 8   CPU2: 8		21	23	30	30	30	30	30	35	35
	6242	CPU1: JYKMM   CPU2: V2DRD	CPU1: 8   CPU2: 8		21	23	30	30	30	30	30	35	35
	6244	CPU1: FMM2M   CPU2: V2DRD	CPU1: 6   CPU2: 8		21	23	30	30	30	30	30	35	35
	6240C	CPU1: FMM2M   CPU2: V2DRD	CPU1: 6   CPU2: 8		21	23	30	30	30	30	30	35	35
125 W	6230	CPU1: JYKMM   CPU2: V2DRD	CPU1: 8   CPU2: 8	25	30	30	30	30	35	35	35	35	35
	5220	CPU1: JYKMM   CPU2: V2DRD	CPU1: 8   CPU2: 8	25	30	30	30	30	35	35	35	35	35
	5218	CPU1: JYKMM   CPU2: V2DRD	CPU1: 8   CPU2: 8	25	30	30	30	30	35	35	35	35	35
	5218B	CPU1: JYKMM   CPU2: V2DRD	CPU1: 8   CPU2: 8	25	30	30	30	30	35	35	35	35	35
	8253	CPU1: JYKMM   CPU2: V2DRD	CPU1: 8   CPU2: 8	25	30	30	30	30	35	35	35	35	35
	6238T	CPU1: JYKMM   CPU2: V2DRD	CPU1: 8   CPU2: 8	25	30	30	30	30	35	35	35	35	35
	6230N	CPU1: JYKMM   CPU2: V2DRD	CPU1: 8   CPU2: 8	25	30	30	30	30	35	35	35	35	35
115 W	5217	CPU1: FMM2M   CPU2: V2DRD	CPU1: 6   CPU2: 8	25	30	30	30	30	35	35	35	35	35

**Table 9. Maximum continuous operating temperature for nonfabric dual processor configuration (continued)**

TDP Watts	Process or model	Heat sink model	Max memory/processor	3.5-inch chassis			2.5-inch chassis						No-BP Chassis	
				12x Drives	8x Drives	4x Drives	24x Drives	20x Drives	16x Drives	12x Drives	8x Drives	4x Drives	N/A	
105 W	5218T	CPU1: FMM2M   CPU2: V2DRD	CPU1: 6   CPU2: 8	30	35	35	35	35	35	35	35	35	35	35
	5218N	CPU1: FMM2M   CPU2: V2DRD	CPU1: 6   CPU2: 8	30	35	35	35	35	35	35	35	35	35	35
	5222	CPU1: FMM2M   CPU2: V2DRD	CPU1: 6   CPU2: 8	30	35	35	35	35	35	35	35	35	35	35
	8256	CPU1: FMM2M   CPU2: V2DRD	CPU1: 6   CPU2: 8	30	35	35	35	35	35	35	35	35	35	35
100 W	4216	CPU1: JYKMM   CPU2: V2DRD	CPU1: 8   CPU2: 8	30	35	35	35	35	35	35	35	35	35	35
85 W	5215	CPU1: JYKMM   CPU2: V2DRD	CPU1: 8   CPU2: 8	35	35	35	35	35	35	35	35	35	35	35
	5215M	CPU1: JYKMM   CPU2: V2DRD	CPU1: 8   CPU2: 8	35	35	35	35	35	35	35	35	35	35	35
	5215L	CPU1: JYKMM   CPU2: V2DRD	CPU1: 8   CPU2: 8	35	35	35	35	35	35	35	35	35	35	35
	4215	CPU1: JYKMM   CPU2: V2DRD	CPU1: 8   CPU2: 8	35	35	35	35	35	35	35	35	35	35	35
	4214	CPU1: JYKMM   CPU2: V2DRD	CPU1: 8   CPU2: 8	35	35	35	35	35	35	35	35	35	35	35
	4214C	CPU1: JYKMM   CPU2: V2DRD	CPU1: 8   CPU2: 8	35	35	35	35	35	35	35	35	35	35	35
	4210	CPU1: JYKMM   CPU2: V2DRD	CPU1: 8   CPU2: 8	35	35	35	35	35	35	35	35	35	35	35

**Table 9. Maximum continuous operating temperature for nonfabric dual processor configuration (continued)**

TDP Watts	Processor model	Heat sink model	Max memory/processor	3.5-inch chassis			2.5-inch chassis						No-BP Chassis
				12x Drives	8x Drives	4x Drives	24x Drives	20x Drives	16x Drives	12x Drives	8x Drives	4x Drives	N/A
	4208	CPU1: JYKMM   CPU2: V2DRD	CPU1: 8   CPU2: 8	35	35	35	35	35	35	35	35	35	35
	3204	CPU1: JYKMM   CPU2: V2DRD	CPU1: 8   CPU2: 8	35	35	35	35	35	35	35	35	35	35
70 W	4209T	CPU1: JYKMM   CPU2: V2DRD	CPU1: 8   CPU2: 8	35	35	35	35	35	35	35	35	35	35

**Table 10. Maximum continuous operating temperature for non-fabric single processor configuration**

TDP Watts	Processor model	Heat sink model	Max memory/processor	3.5-inch chassis			2.5-inch chassis						No-BP Chassis
				12x Drives	8x Drives	4x Drives	24x Drives	20x Drives	16x Drives	12x Drives	8x Drives	4x Drives	N/A
205W	8280	CPU1: FMM2M	CPU1: 6	30	30	30	35	35	35	35	35	35	35
	8280L	CPU1: FMM2M	CPU1: 6	30	30	30	35	35	35	35	35	35	35
	8280M	CPU1: FMM2M	CPU1: 6	30	30	30	35	35	35	35	35	35	35
	8270	CPU1: FMM2M	CPU1: 6	30	30	30	35	35	35	35	35	35	35
	8268	CPU1: FMM2M	CPU1: 6	30	30	30	35	35	35	35	35	35	35
200 W	6254	CPU1: FMM2M	CPU1: 6	30	30	30	35	35	35	35	35	35	35
165 W	6212U	CPU1: JYKMM	CPU1: 8	30	35	35	35	35	35	35	35	35	35
	8276	CPU1: JYKMM	CPU1: 8	30	35	35	35	35	35	35	35	35	35
	8276L	CPU1: JYKMM	CPU1: 8	30	35	35	35	35	35	35	35	35	35
	8276M	CPU1: JYKMM	CPU1: 8	30	35	35	35	35	35	35	35	35	35
	8260	CPU1: JYKMM	CPU1: 8	30	35	35	35	35	35	35	35	35	35
	8260L	CPU1: JYKMM	CPU1: 8	30	35	35	35	35	35	35	35	35	35
	8260M	CPU1: JYKMM	CPU1: 8	30	35	35	35	35	35	35	35	35	35

**Table 10. Maximum continuous operating temperature for non-fabric single processor configuration (continued)**

TDP Watts	Processor model	Heat sink model	Max memory/processor	3.5-inch chassis			2.5-inch chassis						No-BP Chassis
				12x Drives	8x Drives	4x Drives	24x Drives	20x Drives	16x Drives	12x Drives	8x Drives	4x Drives	N/A
	8260C	CPU1: JYKMM	CPU1: 8	30	35	35	35	35	35	35	35	35	35
150 W	6210U	CPU1: JYKMM	CPU1: 8	30	35	35	35	35	35	35	35	35	35
	6252	CPU1: JYKMM	CPU1: 8	30	35	35	35	35	35	35	35	35	35
	6248	CPU1: JYKMM	CPU1: 8	30	35	35	35	35	35	35	35	35	35
	6240	CPU1: JYKMM	CPU1: 8	30	35	35	35	35	35	35	35	35	35
	6242	CPU1: JYKMM	CPU1: 8	30	35	35	35	35	35	35	35	35	35
	6244	CPU1: FMM2M	CPU1: 6	30	35	35	35	35	35	35	35	35	35
	6240C	CPU1: FMM2M	CPU1: 6	30	35	35	35	35	35	35	35	35	35
125W	6230	CPU1: JYKMM	CPU1: 8	35	35	35	35	35	35	35	35	35	35
	5220	CPU1: JYKMM	CPU1: 8	35	35	35	35	35	35	35	35	35	35
	5218	CPU1: JYKMM	CPU1: 8	35	35	35	35	35	35	35	35	35	35
	5218B	CPU1: JYKMM	CPU1: 8	35	35	35	35	35	35	35	35	35	35
	8253	CPU1: JYKMM	CPU1: 8	35	35	35	35	35	35	35	35	35	35
	6238T	CPU1: JYKMM	CPU1: 8	35	35	35	35	35	35	35	35	35	35
	6230N	CPU1: JYKMM	CPU1: 8	35	35	35	35	35	35	35	35	35	35
115 W	5217	CPU1: FMM2M	CPU1: 6	30	35	35	35	35	35	35	35	35	35
105 W	5218T	CPU1: FMM2M	CPU1: 6	30	35	35	35	35	35	35	35	35	35
	5218N	CPU1: FMM2M	CPU1: 6	30	35	35	35	35	35	35	35	35	35
	5222	CPU1: FMM2M	CPU1: 6	30	35	35	35	35	35	35	35	35	35
	8256	CPU1: FMM2M	CPU1: 6	30	35	35	35	35	35	35	35	35	35
100 W	4216	CPU1: JYKMM	CPU1: 8	30	35	35	35	35	35	35	35	35	35

**Table 10. Maximum continuous operating temperature for non-fabric single processor configuration (continued)**

TDP Watts	Processor model	Heat sink model	Max memory/processor	3.5-inch chassis			2.5-inch chassis						No-BP Chassis
				12x Drives	8x Drives	4x Drives	24x Drives	20x Drives	16x Drives	12x Drives	8x Drives	4x Drives	N/A
85 W	5215	CPU1: JYKMM	CPU1: 8	35	35	35	35	35	35	35	35	35	35
	5215M	CPU1: JYKMM	CPU1: 8	35	35	35	35	35	35	35	35	35	35
	5215L	CPU1: JYKMM	CPU1: 8	35	35	35	35	35	35	35	35	35	35
	4215	CPU1: JYKMM	CPU1: 8	35	35	35	35	35	35	35	35	35	35
	4214	CPU1: JYKMM	CPU1: 8	35	35	35	35	35	35	35	35	35	35
	4214C	CPU1: JYKMM	CPU1: 8	35	35	35	35	35	35	35	35	35	35
	4210	CPU1: JYKMM	CPU1: 8	35	35	35	35	35	35	35	35	35	35
	4208	CPU1: JYKMM	CPU1: 8	35	35	35	35	35	35	35	35	35	35
	3204	CPU1: JYKMM	CPU1: 8	35	35	35	35	35	35	35	35	35	35
70 W	4209T	CPU1: JYKMM	CPU1: 8	35	35	35	35	35	35	35	35	35	35

**Table 11. Configuration Restrictions with Mellanox Navi Dual Port Card with Active (Optical) connectivity**

TDP Watts	3.5-inch chassis			2.5-inch chassis				No-BP Chassis
	12x HDDs	8x HDDs	4x HDDs	24x HDDs	16x HDDs	8x HDDs	4x HDDs	N/A
205 W	Not supported	Not supported	Not supported	Not supported	Not supported	Not supported	Not supported	23
200 W	Not supported	Not supported	Not supported	Not supported	Not supported	Not supported	Not supported	23
173 W	Not supported	Not supported	Not supported	Not supported	Not supported	24	24	28
165 W	Not supported	Not supported	Not supported	24	25	25	26	29
160 W	Not supported	Not supported	Not supported	24	25	26	26	30
150 W	Not supported	Not supported	Not supported	26	27	28	28	31
140 W	Not supported	23	25	28	29	29	30	33
135 W	Not supported	24	25	29	30	30	31	33
130 W	Not supported	24	26	30	31	31	31	34

**Table 11. Configuration Restrictions with Mellanox Navi Dual Port Card with Active (Optical) connectivity (continued)**

TDP Watts	3.5-inch chassis			2.5-inch chassis				No-BP Chassis
	12x HDDs	8x HDDs	4x HDDs	24x HDDs	16x HDDs	8x HDDs	4x HDDs	N/A
125 W	20	25	27	30	31	32	32	35
115 W	21	27	28	32	33	34	34	>35
113 W	21	27	28	32	33	34	34	>35
105 W	22	28	30	34	35	>35	>35	>35
85 W	23	32	33	>35	>35	>35	>35	>35
70 W	25	34	>35	>35	>35	>35	>35	>35

**Table 12. Configuration Restrictions with Intel Rush Creek**

TDP Watts	3.5-inch chassis			2.5-inch chassis				No-BP Chassis
	12x HDDs	8x HDDs	4x HDDs	24x HDDs	16x HDDs	8x HDDs	4x HDDs	N/A
205 W	Not supported	Not supported	Not supported	Not supported	Not supported	20	20	23
200 W	Not supported	Not supported	Not supported	Not supported	Not supported	21	21	24
173 W	Not supported	Not supported	Not supported	20	20	23	24	28
165 W	Not supported	Not supported	Not supported	22	22	24	25	29
160 W	Not supported	Not supported	Not supported	22	22	24	26	29
150 W	Not supported	Not supported	Not supported	24	24	26	27	30
140 W	Not supported	Not supported	Not supported	26	26	27	28	31
135 W	Not supported	Not supported	20	26	26	28	29	32
130 W	Not supported	Not supported	20	27	27	29	29	33
125 W	Not supported	Not supported	21	28	28	30	30	33
115W	Not supported	21	23	29	31	31	32	34
105 W	20	23	24	30	33	33	34	>35
85 W	24	26	27	34	>35	>35	>35	>35
70 W	25	28	29	>35	>35	>35	>35	>35

**Table 13. Configuration Restrictions with Intel NVMe SSD AIC P4800X**

TDP Watts	3.5-inch chassis			2.5-inch chassis				No-BP Chassis
	12x HDDs	8x HDDs	4x HDDs	24x HDDs	16x HDDs	8x HDDs	4x HDDs	N/A
205 W	Not supported	Not supported	Not supported	Not supported	Not supported	Not supported	Not supported	Not supported
200 W	Not supported	Not supported	Not supported	Not supported	Not supported	Not supported	Not supported	Not supported
173 W	Not supported	Not supported	Not supported	Not supported	Not supported	Not supported	Not supported	20
165 W	Not supported	Not supported	Not supported	Not supported	Not supported	Not supported	Not supported	20
160 W	Not supported	Not supported	Not supported	Not supported	Not supported	Not supported	Not supported	25
150 W	Not supported	Not supported	Not supported	Not supported	20	20	20	25
140 W	Not supported	Not supported	Not supported	20	20	20	20	25
135 W	Not supported	Not supported	Not supported	20	20	20	20	25
130 W	Not supported	Not supported	Not supported	20	20	20	20	25
125 W	Not supported	Not supported	Not supported	20	25	25	25	30
115 W	Not supported	Not supported	Not supported	25	25	25	25	30
105 W	Not supported	Not supported	Not supported	25	25	25	25	30
85 W	Not supported	Not supported	Not supported	30	30	30	30	>35
70 W	Not supported	Not supported	Not supported	>35	>35	>35	>35	>35

## Expanded operating temperature specifications

**Table 14. Expanded operating temperature**

Expanded operating temperature	Specifications
Continuous operation	<p>5°C–40°C at 5% to 85% RH with maximum 29°C dew point.</p> <p><b>i</b> <b>NOTE:</b> Outside the standard operating temperature (10°C–35°C), the system can operate continuously in temperatures as low as 5°C and as high as 40°C.</p> <p>For temperatures between 35°C–40°C, derate maximum allowable temperature by 1°C per 175 m above 950 m (1°F per 319 ft).</p>
≤ 1% of annual operating hours	<p>–5°C–45°C at 5% to 90% RH with maximum 29°C dew point.</p> <p><b>i</b> <b>NOTE:</b> Outside the standard operating temperature (10°C–35°C), the system can operate down to –</p>

**Table 14. Expanded operating temperature (continued)**

Expanded operating temperature	Specifications
	5°C-45°C for a maximum of 1% of its annual operating hours.
	For temperatures between 40°C-45°C, derate maximum allowable temperature by 1°C per 125 m above 950 m (1°F per 228 ft).

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

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

## Operating temperature derating specifications

**Table 15. Operating temperature**

Operating temperature derating	Specifications
≤ 35°C (95°F)	Maximum temperature is reduced by 1°C/300 m (1°F/547 ft) above 950 meters (3,117 ft)
35°C–40°C (95°F–104°F)	Maximum temperature is reduced by 1°C/175 m (1°F/319 ft) above 950 meters (3,117 ft)
≥ 45°C (113°F)	Maximum temperature is reduced by 1°C/125 m (1°F/228 ft) above 950 meters (3,117 ft)

## Relative humidity specifications

**Table 16. Relative humidity specifications**

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

## Temperature specifications

**Table 17. Temperature specifications**

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

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

## Thermal restrictions

**Table 18. Thermal restrictions matrix for dual processors**

Maximum continuous operating inlet temperature (°C)													
				3.5" Chassis			2.5" Chassis						No-BP Chassis
TDP Watts	Proc No.	DPN of CPU Heat Sinks	Max DIM M counts	12x HDDs	8x HDDs	4x HDDs	24x HDDs	20x HDDs	16x HDDs	12x HDDs	8x HDDs	4x HDDs	N/A
165W	6238 R	CPU1:   CPU2: :	CPU1: 8   CPU2: : 8	Not Supported			30	30	30	30	30	35	35
	6240 R	CPU1:   CPU2: :	CPU1: 8   CPU2: : 8	Not Supported	Not Supported		30	30	30	30	30	35	35
150W	6230 R	CPU1:   CPU2: :	CPU1: 8   CPU2: : 8	Not Supported	21	23	30	30	30	30	30	35	35
	6226 R	CPU1:   CPU2: :	CPU1: 8   CPU2: : 8		21	23	30	30	30	30	30	35	35
	6208 U	CPU1:   CPU2: :	CPU1: 8   CPU2: : 8		21	23	30	30	30	30	30	35	35
150W	5220 R	CPU1:   CPU2: :	CPU1: 8   CPU2: : 8		21	23	30	30	30	30	30	35	35
130W	4215R	CPU1:   CPU2: :	CPU1: 8   CPU2: : 8		25	25	30	30	35	35	35	35	35
125W	5218R	CPU1:   CPU2: :	CPU1: 8   CPU2: : 8		25	30	30	30	30	35	35	35	35
100W	4214R	CPU1:   CPU2: :	CPU1: 8   CPU2: : 8	30	35	35	35	35	35	35	35	35	35
	4210R	CPU1: 8	CPU1: 8	30	35	35	35	35	35	35	35	35	

**Table 18. Thermal restrictions matrix for dual processors (continued)**

Maximum continuous operating inlet temperature (°C)													
		CPU2 : 8	CPU2 : 8										
95W	4210T	CPU1:   CPU2 : :	CPU1: 8   CPU2 : : 8	30	35	35	35	35	35	35	35	35	35
85W	3206 R	CPU1:   CPU2 : :	CPU1: 8   CPU2 : : 8	35	35	35	35	35	35	35	35	35	35

**Table 19. Thermal restrictions matrix for single processor**

Maximum continuous operating inlet temperature (°C)														
				3.5" Chassis			2.5" Chassis						No-BP Chassis	
TDP Watts	Proc No.	DPN of CPU Heat Sinks	Max DIMM counts	12x HDDs	8x HDDs	4x HDDs	24x HDDs	20x HDDs	16x HDDs	12x HDDs	8x HDDs	4x HDDs	N/A	
165W	6238R	CPU1:   CPU2:	CPU1:8   CPU2: 8	30	35	35	35	35	35	35	35	35	35	
	6240R	CPU1:   CPU2:	CPU1:8   CPU2: 8	30	35	35	35	35	35	35	35	35	35	
150W	6230R	CPU1:   CPU2:	CPU1:8   CPU2: 8	30	35	35	35	35	35	35	35	35	35	
	6226R	CPU1:   CPU2:	CPU1:8   CPU2: 8	30	35	35	35	35	35	35	35	35	35	
	6208U	CPU1:   CPU2:	CPU1:8   CPU2: 8	30	35	35	35	35	35	35	35	35	35	
	5220R	CPU1:   CPU2:	CPU1:8   CPU2: 8	30	35	35	35	35	35	35	35	35	35	
130W	4215R	CPU1:   CPU2:	CPU1:8   CPU2: 8	35	35	35	35	35	35	35	35	35	35	
125W	5218R	CPU1:   CPU2:	CPU1:8   CPU2: 8	35	35	35	35	35	35	35	35	35	35	

**Table 19. Thermal restrictions matrix for single processor (continued)**

Maximum continuous operating inlet temperature (°C)													
100W	4214R	CPU1:  CPU2:	CPU1:8   CPU2: 8	35	35	35	35	35	35	35	35	35	35
	4210R	CPU1:  CPU2:	CPU1:8   CPU2: 8	35	35	35	35	35	35	35	35	35	35
95W	4210T	CPU1:  CPU2:	CPU1:8   CPU2: 8	35	35	35	35	35	35	35	35	35	35
85W	3206R	CPU1:  CPU2:	CPU1:8   CPU2: 8	35	35	35	35	35	35	35	35	35	35

## Particulate and gaseous contamination specifications

**Table 20. 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.
<p><b>NOTE:</b> This condition applies only to data center environments. Air filtration requirements do not apply to IT equipment designed to be used outside a data center, in environments such as an office or factory floor.</p>	
<p><b>NOTE:</b> Air entering the data center must have MERV11 or MERV13 filtration.</p>	
Conductive dust	Air must be free of conductive dust, zinc whiskers, or other conductive particles.
<p><b>NOTE:</b> This condition applies to data center and non-data center environments.</p>	
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.	
<p><b>NOTE:</b> This condition applies to data center and non-data center environments.</p>	

**Table 21. Gaseous contamination specifications**

Gaseous contamination	Specifications
Copper coupon corrosion rate	<300 Å/month per Class G1 as defined by ANSI/ISA71.04-2013
Silver coupon corrosion rate	<200 Å/month per Class G1 as defined by ANSI/ISA71.04-2013
<p><b>NOTE:</b> Maximum corrosive contaminant levels measured at ≤50% relative humidity.</p>	

## Maximum vibration specifications

Table 22. Maximum vibration specifications

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

## Maximum shock specifications

Table 23. Maximum shock specifications

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

## Maximum altitude specifications

Table 24. Maximum altitude specifications

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

## Fresh Air Operation

### Fresh Air operation restrictions

- Processors with a TDP greater than 105 W are not supported
- Support for processors of 85 W and below without PERC restrictions
- 3.5-inch drive configuration is not supported
- 114-mm heat sink is required for the processor in CPU1 socket
- Kerby-flat OCP is not supported
- M.2 card on DCS Mezzanine slot is not supported.
- NVMe SSD is not supported
- AEP DIMM and LRDIMM are not supported
- PCIe cards greater than 25 W are not supported
- H730 PERC and H330 support for 105-W processors
- No PERC restrictions for 85 W and lesser TDP processors