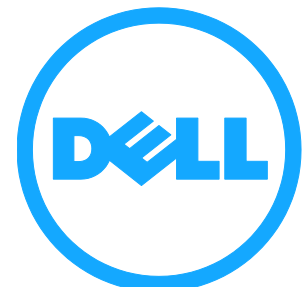


DELL PRECISION™ 7920 RACK



Technical
Guidebook



Dell Precision 7920 Rack

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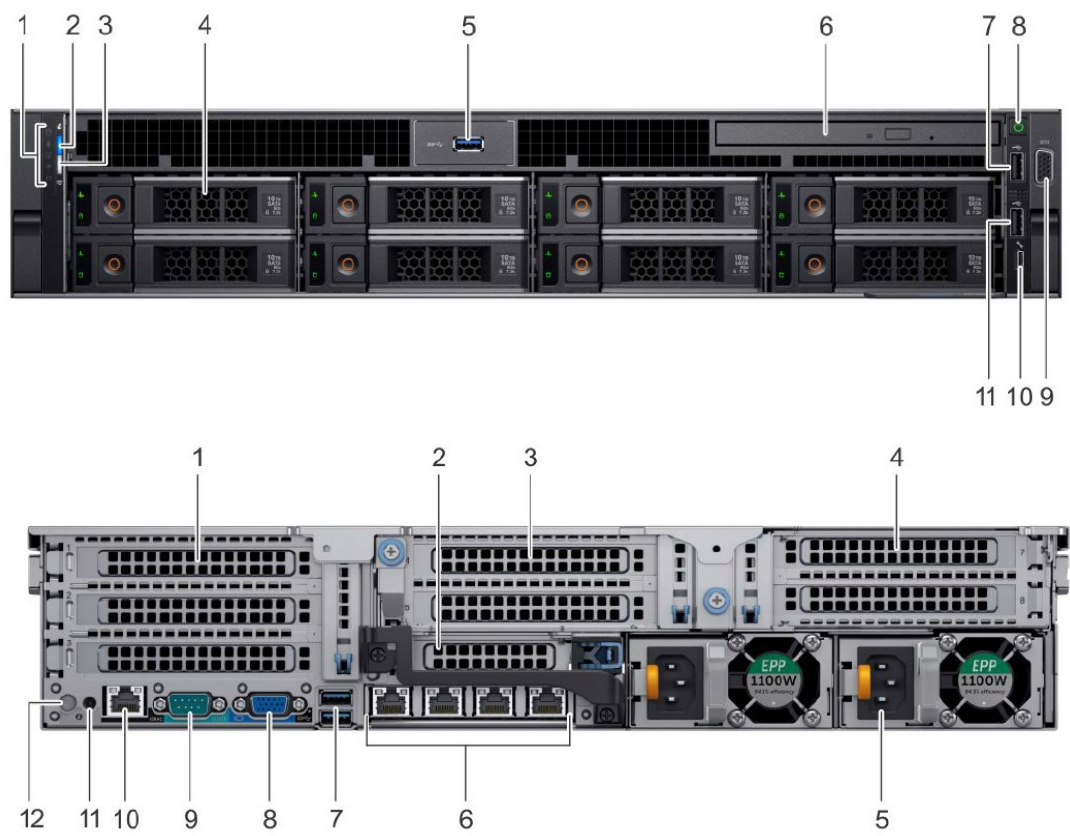
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Aug. 2023 -removed reference to USB 3.2 Gen 2 Type C Optional 2 port PCIe card—Subject to change without notice,

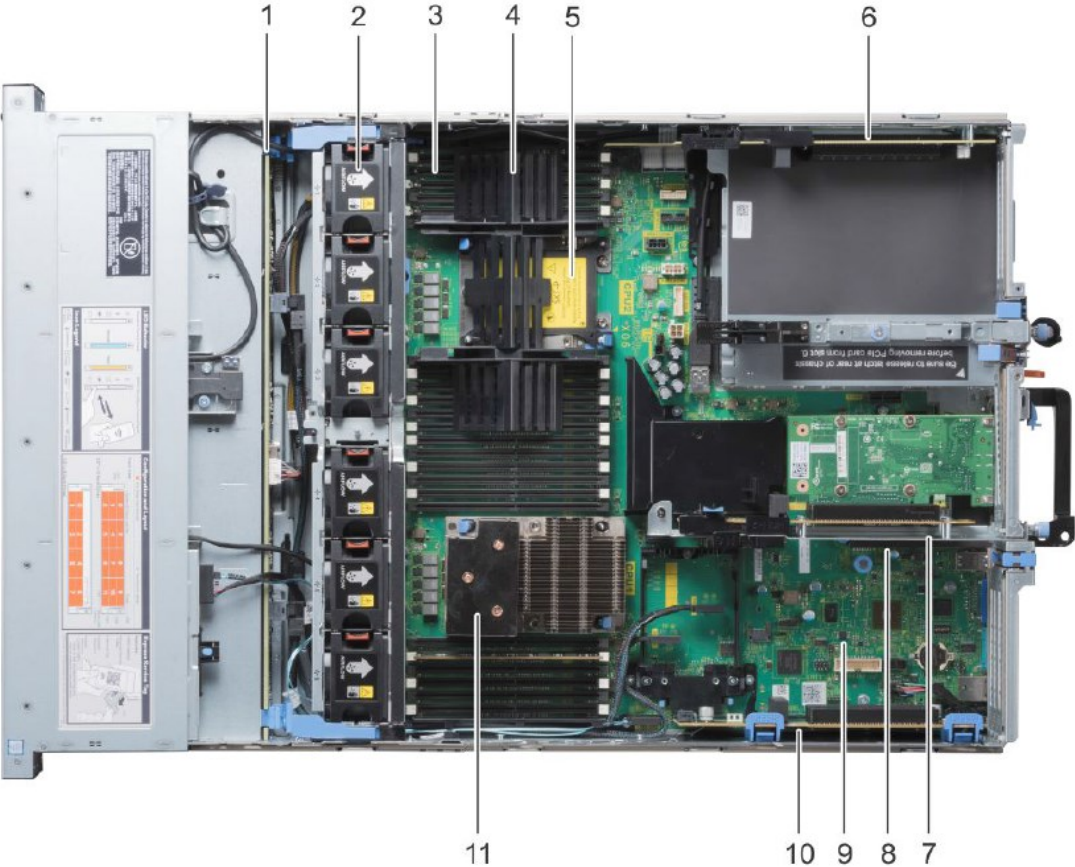
7920 RACK EXTERNAL CHASSIS VIEWS



FRONT VIEW			
1	System Status Indicator	7	USB 2.0 connector
2	System health and system ID	8	Power button/Power light
3	iDRAC Quick Sync 2 wireless indicator (Optional)	9	VGA connector
4	Hard drive (x8)	10	USB management port/ iDRAC Direct
5	USB 3.0 connector	11	USB 2.0 connector
6	Slimline Optical drive (optional)		

BACK VIEW			
1	PCIe expansion card slots	7	USB 3.0 connectors (x2)
2	PCIe expansion card slots	8	VGA connector
3	PCIe expansion card slots	9	Serial connector
4	PCIe expansion card slots	10	iDRAC9 Enterprise Network connector
5	Power supply (x2)	11	System identification connector
6	RJ45 Network connectors (x4)	12	System identification button

7920 RACK - INSIDE THE SYSTEM



Number	Name	Number	Name
1	Hard drive backplane	7	Expansion card riser 2A
2	Cooling fan (6) in the cooling fan assembly	8	VFlash connector (VFlash not offered)
3	DIMM sockets	9	System board
4	CPU DIMM blank	10	Expansion card riser 1C
5	CPU 2	11	CPU 1
6	Expansion card riser 3A		Precision-7920 Rack Owner's Manual PDF

SYSTEM CONFIGURATION OPTIONS

NOTE: Offerings may vary by country. .

OPERATING SYSTEMS

Microsoft® Windows 10® operating system	Factory Installed Microsoft® Windows® 10 Pro for Workstations (64 bit)
Microsoft® Windows 7® operating system	Microsoft® Windows 7® Professional (64 bit), Available to customers with Windows Volume License Agreements as a Windows 10 Pro for Workstations downgrade option (while offered by Microsoft). Windows 7 Pro is not supported on systems with Xeon Cascade Lake SP CPUs
Red Hat® Enterprise Linux® 7.5/8.0	Factory installed RHEL workstation 7.5 and 8.0
Ubuntu 16.04/18.04	18.04 Factory Installed Limited options supported

CHIPSET

Chipset	Intel C621 Chipset (C620 Series)
Non-volatile memory on chipset	
BIOS Configuration SPI (Serial Peripheral Interface)	256Mbit (32MB)
TPM 1.2 Security Device (Trusted Platform Module) ¹ TPM 2.0 ships and is supported with Windows 10 only Note: All systems are field upgradable to TPM 2.0 (with firmware & BIOS updates plus Windows 10 Installation http://www.dell.com/support/article/us/en/04/SLN300914	18KB
Non-TPM	Available in select countries
NIC EEPROM	LOM configuration contained within SPI_FLASH – no dedicated LOM EEPROM

7920 RACK PROCESSOR OPTIONS

INTEL XEON CASCADE LAKE 2ND GEN SCALABLE PROCESSOR FAMILY - SP

Note: Global Standard Products (GSP) are a subset of Dell's relationship products that are managed for availability and synchronized transitions on a worldwide basis. They ensure the same platform is available for purchase globally. This allows customers to reduce the number of configurations managed on a worldwide basis, thereby reducing their costs. They also enable companies to implement global IT standards by locking in specific product configurations worldwide. The following GSP processors identified below will be made available to Dell customers.

Note: Processor numbers are not a measure of performance. Processor availability subject to change and may vary by region/country.

- 2993MHz DDR4 ECC RDIMM memory will scale down to 2666MHz with Xeon Cascade Lake Gold 52XX Series and Silver 42XX Series. Maximum 2933 MHz memory configuration is 768GB with dual CPUs. **2933MHz memory scales down to 2666MHz with 2 DIMMs per channel.** Future BIOS update will enable 2 DIMMs per channel 2933MHz configs to run at 2933MHz with supported CPUs (Aug.-Sept.)
- 2666MHz DDR4 ECC RDIMM/LRDIMM memory will scale down to 2400MHz with Xeon Silver 42XX Series and down to 2133MHz with Xeon Bronze 32XX Series Processors.

Precision 7820/7920 Towers and 7920 Rack

Intel Xeon® Cascade Lake Processor Scalable Family - SP

Gold

Xeon Gold 52XX
 • 2 UPI links @ 10.4GT/s
 • DDR4-2666 RDIMM ECC
 • Base GHz- Max Turbo
 • Hyper-Threading/ Turbo Boost

5222* ² 4C 3.8-3.9GHz 105W
5220* 18C 2.2-3.9GHz 125W
5218* 16C 2.3-3.9GHz 125W
5217* (M) ¹ 8C 3.0-3.7GHz 115W
5215 (M) ¹ 10C 2.5-3.4GHz 85W

Silver

Xeon Silver
 • 2 UPI links @ 9.6 GT/s
 • DDR4-2400 RDIMM ECC
 • Base GHz- Max Turbo
 • Hyper-Threading/ Turbo Boost

4216* 16C 2.1-3.2GHz 100W
4215* 8C 2.5-3.5GHz 85W
4214* 12C 2.2-3.2GHz 85W
4210* 10C 2.2-3.2GHz 85W
4208* 8C 2.1-3.2GHz 85W

Bronze

• Xeon Bronze
 • 2 UPI Links @ 9.6 GT/s
 • DDR4-2133 RDIMM ECC
 • No Turbo/No HT

3204* 6C 1.9GHz 85W

² 5222 supports memory up to 2933MHz

* GSP CPUs – refer to base SKUs only, not M or L variants

June 2020

Platinum

Xeon 82XX Platinum
 • 3 UPI links @10.4 GT/s
 • DDR4-2993 RDIMM ECC
 • Base GHz- Max Turbo
 • Hyper-Threading/Turbo Boost

8280 (M) ¹ 28C 2.7-4.0GHz 205W
8276 (M) ¹ 28C 2.2-4.0GHz 165W
8270 26C 2.7-4.0GHz 205W
8268* 24C 2.9-3.9GHz 205W
8260* (M) ¹ 24C 2.4-3.9GHz 165W
8256 4C 3.8-3.9GHz 105W
8253 16C 2.2-3.0GHz 125W

Gold

Xeon Gold 62XX
 • 3 UPI links @10.4 GT/s UPI
 • DDR4-2933 RDIMM ECC
 • Base GHz- Max Turbo
 • Hyper-Threading/Turbo Boost

6254 18C 3.1-4.0GHz 200W
6252* 24C 2.1-3.7GHz 150W
6248* 20C 2.5-3.9GHz 150W
6244* 8C 3.6-4.4GHz 150W
6242* 16C 2.8-3.9GHz 150W
6240* (M) ¹ 18C 2.6-3.9GHz 150W
6238 (M) ¹ 22C 2.1-2.8GHz 140W
6234 8C 3.3-4.0GHz 130W
6230* 20C 2.1-3.9GHz 125W
6226 12C 2.7-3.7GHz 125W

Notes:

¹ Standard CPUs support up to 1TB RDIMM memory per CPU. Optional "M" CPU & "L" SKUs support up to 1.5TB of RDIMM memory per CPU on 7920 Tower and Rack, (N/A on 7820)

² 2933MHz & 2666MHz memory clocks down to lower speeds depending upon the CPU.

³ 2933MHz memory clocks down to 2666MHz with 2 DIMMs per channel – the Intel spec.

⁴ Future BIOS update will enable 2 DIMMs per channel 2933MHz configs to run at 2933MHz with supported CPUs (Aug.-Sept.)

7920 RACK PROCESSOR OPTIONS

INTEL XEON CASCADE LAKE 2ND GEN SCALABLE PROCESSOR FAMILY - SP REFRESH

Note: Global Standard Products (GSP) are a subset of Dell’s relationship products that are managed for availability and synchronized transitions on a worldwide basis. They ensure the same platform is available for purchase globally. This allows customers to reduce the number of configurations managed on a worldwide basis, thereby reducing their costs. They also enable companies to implement global IT standards by locking in specific product configurations worldwide. The following GSP processors identified below will be made available to Dell customers.

Note: Processor numbers are not a measure of performance. Processor availability subject to change and may vary by region/ country.

- 2993MHz DDR4 ECC RDIMM memory will scale down to 2666MHz with Xeon Cascade Lake Gold 52XX Series and Silver 42XX Series. Maximum 2933 MHz memory configuration is 768GB with dual CPUs. **2933MHz memory scales down to 2666MHz with 2 DIMMs per channel.** Future BIOS update will enable 2 DIMMs per channel 2933MHz configs to run at 2933MHz with supported CPUs (Aug.-Sept.)
- 2666MHz DDR4 ECC RDIMM/LRDIMM memory will scale down to 2400MHz with Xeon Silver 42XX Series and down to 2133MHz with Xeon Bronze 32XX Series Processors.

Precision 7820/7920 Towers and 7920 Rack
Intel Xeon® Cascade Lake Processor Scalable Family – SP Refresh¹

Gold

Xeon Gold 52XX
•2 UPI links @ 10.4GT/s
•DDR4-2666 RDIMM ECC
•Base GHz- Max Turbo
•Hyper-Threading/ Turbo Boost

5220R* 24C 2.2-4.0GHz 150W
5218R* 20C 2.1-4.0GHz 125W

Silver

Xeon Silver
•2 UPI links @ 9.6 GT/s
•DDR4-2400 RDIMM ECC
•Base GHz- Max Turbo
•Hyper-Threading/ Turbo Boost

4215R* 8C 3.2-4.0GHz 130W
4214R* 12C 2.4-3.5GHz 100W
4210R* 10C 2.4-3.2GHz 100W

Bronze

Xeon Bronze
•2 UPI Links @ 9.6 GT/s
•DDR4-2133 RDIMM ECC
•No Turbo/No HT

3206R* 8C 1.9GHz 85W

Gold

Xeon Gold 62XX
•3 UPI links @10.4 GT/s UPI
•DDR4-2933 RDIMM ECC
•Base GHz- Max Turbo
•Hyper-Threading/Turbo Boost

6258R* 28C 2.7-4.0GHz 205W
6256*1 12C 3.6-4.5GHz 205W

6250*1 8C 3.9-4.4GHz 185W
6248R* 24C 3.0-4.0GHz 205W
6246R* 16C 3.4-4.1GHz 205W

6242R* 20C 3.1-4.1GHz 205W
6240R* 24C 2.4-4.0GHz 165W
6238R 28C 2.2-4.0GHz 165W

6230R* 26C 2.1-4.0GHz 150W
6226R* 16C 2.9-3.9GHz 150W

Notes:

¹Available on 7920 and 7820 Towers only

2. 2933MHz & 2666 MHz memory clocks down to lower speeds depending upon the CPU.

3. 2933MHz memory clocks down to 2666MHz with 2 DIMMs per channel – the Intel spec.

4. Future BIOS update will enable 2 DIMMs per channel 2933MHz configs to run at 2933MHz with supported CPUs (Aug.-Sept.)

R SKUs will eventually replace corresponding Cascade Lake SKUs.

*GSP CPUs

June 2020

7920 RACK PROCESSOR OPTIONS

7920 RACK PROCESSORS—INTEL XEON SKYLAKE SCALABLE PROCESSOR FAMILY - SP

Note: Global Standard Products (GSP) are a subset of Dell's relationship products that are managed for availability and synchronized transitions on a worldwide basis. They ensure the same platform is available for purchase globally. This allows customers to reduce the number of configurations managed on a worldwide basis, thereby reducing their costs. They also enable companies to implement global IT standards by locking in specific product configurations worldwide. The following GSP processors identified below will be made available to Dell customers.

Note: Processor numbers are not a measure of performance. Processor availability subject to change and may vary by region/country.

- 2666MHz DDR4 ECC RDIMM/LRDIMM memory will scale down to 2400MHz with Xeon Gold 51XX Series (excluding 5122) and Xeon Silver 41XX Series and down to 2133MHz with Xeon Bronze 31XX Series Processors.
- 2933MHz DDR4 ECC RDIMM memory is not supported with Xeon Skylake SP processors

Precision 7820/7920 Towers and 7920 Rack

Intel Xeon® Skylake Processor Scalable Family - SP

End of Life excluding
OEM XL systems

Processor Family	Processor Model	Core Count	Cache	Frequency	Power (W)
Gold	Xeon Gold 51XX				
	5122*	25	30MB	2.5-3.8GHz	205W
	5120*	26	30MB	2.7-3.7GHz	205W
Silver	Xeon Silver				
	4116*	12C	24MB	2.1-3.0GHz	85W
	4114*	10C	22MB	2.2-3.0GHz	85W
	4112*	4C	2.6-3.0GHz	85W	
Bronze	Xeon Bronze				
	3106*	8C	1.7GHz	85W	
Gold	Xeon Gold 61XX				
	6154	18C	3.0-3.7GHz	200W	
	6152	22C	2.1-3.7GHz	140W	
	6148*	20C	2.4-3.7GHz	150W	
	6146	12C	3.2-4.2GHz	165W	
	6144	8C	3.5-4.2GHz	165W	
	6140*	(M) ¹ 18C	2.3-3.7GHz	125W	
	6138	20C	2.0-3.7GHz	125W	
	6136*	12C	3.0-3.7GHz	150W	
	6134*	(M) ¹ 8C	3.2-3.7GHz	130W	
	6130*	16C	2.1-3.7GHz	125W	
	6128*	6C	3.4-3.7GHz	115W	
6126	12C	2.6-3.7GHz	125W		

Notes:

¹ Standard CPUs support up to 768MB per CPU. Optional "M" SKU CPUs (N/A on 7820) support up to 1.5TB of memory per CPU,

² Xeon 5122 CPU supports memory at 2666MHz

³ N/A on 7820 Tower and 7920 Rack

* = GSP CPUs

MEMORY - 2666MHZ

Note: The Precision 7920 Rack workstation has a six channel memory bus architecture and two memory controllers per CPU. Dell recommends that where possible, all six memory channels be populated with DIMMS for maximum memory performance.

Note: With certain processors, 2666MHz DDR4 ECC RDIMM/LRDIMM memory scales down to 2400MHz or 2133MHz. See processor page for details.

Type:	DDR4 SDRAM RDIMM/LRDIMM ECC
Max Frequency	2666/2400/2133MHz
DIMM Slots	24 (12 per CPU)
DIMM Capacities	8GB, 16GB,32GB RDIMM, 64GB,128GB LRDIMM
Maximum System Memory	3.0TB with 2x "M" CPU SKUs installed)

FACTORY INSTALLED 2666MHZ MEMORY CONFIGURATIONS:

Note: Other configurations are possible via CFI or memory customer kits, but are not available as standard factory installed options.

7920 Rack Memory				CPU0												CPU1											
				iMC1						iMC0						iMC1						iMC0					
				Ch5		Ch4		Ch3		Ch0		Ch1		Ch2		Ch5		Ch4		Ch3		Ch0		Ch1		Ch2	
Config	Total (GB)	DPC	Frequency	0	1	0	1	0	1	1	0	1	0	1	0	0	1	0	1	0	1	1	0	1	0	1	0
S192B	192	1DPC	2666	32		32		32			32		32		32												
S256	256	2DPC	2666			32	32	32	32	32	32	32	32														
S384	384	2DPC	2666	32	32	32	32	32	32	32	32	32	32	32	32												
S384B	384	1DPC	2666	64		64		64			64		64		64												
S512	512	2DPC	2666			64	64	64	64	64	64	64	64														
S768	768	2DPC	2666	64	64	64	64	64	64	64	64	64	64	64	64												
S768B	768	1DPC	2666	128		128		128			128		128		128												
S1024	1024	2DPC	2666			128	128	128	128	128	128	128	128														
S1536	1536	2DPC	2666	128	128	128	128	128	128	128	128	128	128	128	128												
S64LR	64	1DPC	2666								64																
S128LR	128	1DPC	2666					64			64																
S384LR	384	1DPC	2666	64		64		64			64		64		64												
S512LR	512	2DPC	2666			64	64	64	64	64	64	64	64														
S768LR	768	2DPC	2666	64	64	64	64	64	64	64	64	64	64	64	64												
S128LRB	128	1DPC	2666								128																
S256LR	256	1DPC	2666					128			128																
S768LRB	768	1DPC	2666	128		128		128			128		128		128												
S1024LR	1024	2DPC	2666			128	128	128	128	128	128	128	128														
S1536LR	1536	2DPC	2666	128	128	128	128	128	128	128	128	128	128	128	128												

MEMORY - 2666MHZ

Note: The Precision 7920 Rack workstation has a six channel memory bus architecture and two memory controllers per CPU. Dell recommends that where possible, all six memory channels be populated with DIMMS for maximum memory performance.

Note: With certain processors, 2666MHz DDR4 ECC RDIMM/LRDIMM memory scales down to 2400MHz or 2133MHz. See processor page for details.

Type:	DDR4 SDRAM RDIMM/LRDIMM ECC
Max Frequency	2666/2400/2133MHz
DIMM Slots	24 (12 per CPU)
DIMM Capacities	8GB, 16GB,32GB RDIMM, 64GB,128GB LRDIMM
Maximum System Memory	3.0TB with 2x "M" CPU SKUs installed)

FACTORY INSTALLED 2666MHZ MEMORY CONFIGURATIONS:

Note: Other configurations are possible via CFI or memory customer kits, but are not available as standard factory installed options.

7920 Rack Memory				CPU0												CPU1											
				iMC1						iMC0						iMC1						iMC0					
				Ch5		Ch4		Ch3		Ch0		Ch1		Ch2		Ch5		Ch4		Ch3		Ch0		Ch1		Ch2	
Config	Total (GB)	DPC	Frequency	0	1	0	1	0	1	1	0	1	0	1	0	0	1	0	1	0	1	1	0	1	0	1	0
D16	16	1DPC	2666								8												8				
D32	32	1DPC	2666					8			8									8			8				
D64	64	1DPC	2666			8		8			8		8					8		8			8		8		
D96	96	1DPC	2666	8		8		8			8		8		8	8		8		8		8	8	8		8	
D128	128	2DPC	2666			8	8	8	8	8	8	8	8					8	8	8	8	8	8	8	8		
D192	192	2DPC	2666	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
D192B	192	1DPC	2666	16		16		16			16		16		16	16		16		16		16		16		16	
D256	256	2DPC	2666			16	16	16	16	16	16	16	16					16	16	16	16	16	16	16	16		
D384	384	2DPC	2666	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
D384B	384	1DPC	2666	32		32		32			32		32		32	32		32		32		32		32		32	
D512	512	2DPC	2666			32	32	32	32	32	32	32	32					32	32	32	32	32	32	32	32		
D768	768	2DPC	2666	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
D768B	768	1DPC	2666	64		64		64			64		64		64	64		64		64		64		64		64	
D1024	1024	2DPC	2666			64	64	64	64	64	64	64	64					64	64	64	64	64	64	64	64		
D1536	1536	2DPC	2666	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64
D1536B	1536	1DPC	2666	128		128		128			128		128		128	128		128		128		128		128		128	
D2048	2048	2DPC	2666			128	128	128	128	128	128	128	128					128	128	128	128	128	128	128	128		
D3072	3072	2DPC	2666	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128
D128LR	128	1DPC	2666								64												64				
D256LR	256	1DPC	2666								64								64				64				
D512LR	512	1DPC	2666			64		64			64		64					64		64		64		64			
D768LR	768	1DPC	2666	64		64		64			64		64		64	64		64		64		64		64		64	
D1024LR	1024	2DPC	2666			64	64	64	64	64	64	64	64					64	64	64	64	64	64	64	64		
D1536LR	1536	2DPC	2666	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64
D256LRB	256	1DPC	2666								128											128					
D512LRB	512	1DPC	2666					128			128								128			128					
D1024LRB	1024	1DPC	2666			128		128			128		128					128		128		128		128			
D1536LRB	1536	1DPC	2666	128		128		128			128		128		128	128		128		128		128		128		128	
D2048LR	1024	2DPC	2666			128	128	128	128	128	128	128	128					128	128	128	128	128	128	128	128		
D3072LR	3072	2DPC	2666	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128

MEMORY - 2933MHZ

Note: 2933MHz memory runs at 2933MHz speed in **single** DIMM per channel configs with Xeon Cascade Lake 82XX Platinum and 62XX Gold processors. With Xeon Cascade Lake Gold 52XX, Silver 42XX and Bronze 32XX processors, 2933MHz memory will clock down to 2666MHz, 2400MHz and 2133MHz speeds respectively. See processor page for details. 2933MHz memory is not supported with Xeon Skylake SP processors

Type:	DDR4 SDRAM RDIMM ECC
Max Frequency	2933MHz
DIMM Slots	24 (12 per CPU)
DIMM Capacities	8GB, 16GB, 32GB, 64GB
Maximum System Memory	768GB with 2 CPUs

FACTORY INSTALLED 2933MHZ MEMORY CONFIGURATIONS:

Note: Other configurations are possible via CFI or memory customer kits, but are not available as standard factory installed options.

7920 Rack Memory				CPU0												CPU1											
				iMC1						iMC0						iMC1						iMC0					
				Ch5		Ch4		Ch3		Ch0		Ch1		Ch2		Ch5		Ch4		Ch3		Ch0		Ch1		Ch2	
Config	Total (GB)	DPC	Frequency	0	1	0	1	0	1	1	0	1	0	1	0	1	0	1	0	1	1	0	1	0	1	0	
S8N	8	1DPC	2933							8																	
S16	16	1DPC	2933					8		8																	
S32	32	1DPC	2933			8		8		8	8																
S48	48	1DPC	2933	8		8		8		8	8		8														
S96	96	1DPC	2933	16		16		16		16	16		16														
S192	192	1DPC	2933	32		32		32		32	32		32														
S384	384	1DPC	2933	64		64		64		64	64		64														
S64	64	1DPC	2933							64																	
S128	128	1DPC	2933					64		64																	
D16	16	1DPC	2933							8											8						
D32	32	1DPC	2933					8		8								8			8						
D64	64	1DPC	2933			8		8		8	8						8		8		8		8				
D96	96	1DPC	2933	8		8		8		8	8		8	8			8		8		8		8		8		
D192	192	1DPC	2933	16		16		16		16	16		16	16			16		16		16		16		16		
D384	384	1DPC	2933	32		32		32		32	32		32	32			32		32		32		32		32		
D128	128	1DPC	2933							64											64						
D256	256	1DPC	2933					64		64									64		64						
D512	512	1DPC	2933			64		64		64	64						64		64		64		64				
D768	768	1DPC	2933	64		64		64		64	64		64	64			64		64		64		64		64		

MEMORY - INTEL OPTANE DC PERSISTENT MEMORY 2666MHZ (MEMORY MODE)

Intel Optane DC Persistent Memory is offered with select Xeon Cascade Lake processors. It runs at 2666MHz and requires standard RDIMM memory as cache— which is not included in overall memory capacity. Intel DCPMM is supported in memory mode only and is not “Persistent” in memory mode.

Type:	Intel Optane DC Persistent Memory modules
Max Frequency	2666MHz
DCPMM Capacities	128GB, 256GB, 512GB
Maximum Memory with DCPMM	1.5TB with 1 CPU, 6.0TB with 2 CPUs

FACTORY INSTALLED DCPMM MEMORY CONFIGURATIONS:

Note: Other configurations are possible via CFI or memory customer kits, but are not available as standard factory installed options.

7920 Rack Intel Optane DCPMM			CPU0												CPU1											
			iMC1						iMC0						iMC0						iMC1					
			Ch5		Ch4		Ch3		Ch0		Ch1		Ch2		Ch5		Ch4		Ch3		Ch0		Ch1		Ch2	
			0	1	0	1	0	1	1	0	1	0	1	0	0	1	0	1	0	1	1	0	1	0	1	0
DDR4 Cache (GB)	Total Memory AEP (GB)	DPC	DIMM2	DIMM8	DIMM4	DIMM10	DIMM6	DIMM12	DIMM11	DIMM5	DIMM9	DIMM3	DIMM7	DIMM1	DIMM1	DIMM7	DIMM3	DIMM9	DIMM5	DIMM11	DIMM12	DIMM6	DIMM10	DIMM4	DIMM8	DIMM2
64	256	111	128		16		16			16		16		128												
96	512	221	16	128	16	128	16			16	128	16	128	16												
192	1024	221	32	256	32	256	32			32	256	32	256	32												
192	2048	221	32	512	32	512	32			32	512	32	512	32												
96	768	222	16	128	16	128	16	128	128	16	128	16	128	16												
192	1536	222	32	256	32	256	32	256	256	32	256	32	256	32												
128	512	111	128		16		16			16		16		128	128		16		16			16		16		128
256	2048	111	512		32		32			32		32		512	512		32		32			32		32		512
192	1024	221	16	128	16	128	16			16	128	16	128	16	16	128	16	128	16			16	128	16	128	16
384	2048	221	32	256	32	256	32			32	256	32	256	32	32	256	32	256	32			32	256	32	256	32
768	4096	221	64	512	64	512	64			64	512	64	512	64	64	512	64	512	64			64	512	64	512	64
192	1536	222	16	128	16	128	16	128	128	16	128	16	128	16	16	128	16	128	16	128	128	16	128	16	128	16
384	3072	222	32	256	32	256	32	256	256	32	256	32	256	32	32	256	32	256	32	256	256	32	256	32	256	32
768	3072	222	64	256	64	256	64	256	256	64	256	64	256	64	64	256	64	256	64	256	256	64	256	64	256	64
1536	6144	222	128	512	128	512	128	512	512	128	512	128	512	128	128	512	128	512	128	512	512	128	512	128	512	128

GRAPHICS

NOTE: Up to 4 single wide or 3 double wide graphics cards can be supported with the 2nd CPU installed.

NOTE: All slots are full height (except slot 6) and full length (except slot 3). Please see the slot matrix page to see which slots are enabled with which CPU. The system ships with 1x 6+2 pin and 1x 6 pin aux power connectors per riser (3 risers).

Graphics Options	
High End 3D Cards	
Options	Graphics card PCIe AUX power connectors/dongles
Radeon Pro W5700 – August 2020	1x 8 pin 1x 6 pin
Radeon Pro WX 9100	1x 8 pin 1x 6 pin
NVIDIA Quadro GV100	1x 8 pin
NVIDIA Quadro RTX 8000	1x 8 pin 1x 6 pin
NVIDIA Quadro RTX 6000	1x 8 pin 1x 6 pin
NVIDIA Quadro P6000 - EOL	1x 8 pin
NVIDIA Quadro RTX 5000	1x 8 pin 1x 6 pin
NVIDIA Quadro P5000 - EOL	1x 8 pin
Mid-range 3D Cards	
Options	Graphics card PCIe AUX power inputs
Radeon Pro W5500 – August 2020	1x 6 pin
Radeon Pro WX 7100	1x 6 pin
Radeon Pro WX 5100	
Radeon Pro WX 4100 - EOL	
NVIDIA Quadro RTX 4000	1x 8 pin
NVIDIA Quadro P4000 - EOL	1x 6 pin
NVIDIA Quadro P2200	
NVIDIA Quadro P2000 - EOL	
Entry 3D Cards	
Options	Graphics card PCIe AUX power inputs
NVIDIA Quadro P620	
NVIDIA Quadro P400	
Professional 2D Cards	

GRAPHICS - PSU REQUIREMENTS FOR MULTI CARD CONFIGS

NOTE: Some configs require 2x 1100W PSUs in non-redundant mode for additional power (load sharing) or 2x 1600W PSUs @220V in non redundant mode. This is because the Enterprise Server IDRAC database PSU requirements were changed from vendor TDP specs to peak power specs for the new generation CPUs, graphics etc.

Note: These are estimates based on CPU + GPU combination only & can change depending on other components populated.
There is some margin for additional components, so these values should be okay except for the most extreme configs.

All items highlighted green are okay with 1x 1100W PSU

All items highlighted blue require 2x 1100W (non redundant) or 1x 1600W @220V or 2x 1600W @110V (non redundant), 2x 1600W @220V (redundant) OK

All items highlighted red require 2x 1600W @220V non redundant

CPU TDP	Cumulative CPU Pmax (W)	1x										2x										3x										4x										Cumulative GPU Peak Power (W)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
		AMD R7300	AMD R7300	AMD R7300	AMD R7300	AMD R7300	AMD R7300	AMD R7300	AMD R7300	AMD R7300	AMD R7300	AMD R7300	AMD R7300	AMD R7300	AMD R7300	AMD R7300	AMD R7300	AMD R7300	AMD R7300	AMD R7300	AMD R7300	AMD R7300	AMD R7300	AMD R7300	AMD R7300	AMD R7300	AMD R7300	AMD R7300	AMD R7300	AMD R7300	AMD R7300	AMD R7300	AMD R7300	AMD R7300	AMD R7300	AMD R7300	AMD R7300	AMD R7300	AMD R7300																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
70W	154	199	274	304	368	593	358	226	226	466	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	

BAYS, DRIVES AND OPTICAL STORAGE OPTIONS

Bays:	
Front accessible bays	8 - not hot swappable
Hard Drives Supported - 3.5" or 2.5"	8x 3.5" or 2.5" in carriers
Slimline Optical Bay	1
Optical Drives Supported	1x slimline
Controllers:	
Integrated: Intel® chipset SATA controllers (6Gb/s)	2 Intel controllers supporting 8 SATA HDD/SSD ports and 1 SATA port for optical 3 PERC Controllers
Optional: PERC SAS/SATA PCIe card Controllers	
3.5" Hard Drives:	
8TB ¹ SATA 7200 RPM Enterprise HDD	X
2TB ¹ SATA 7200 RPM HDD	X
1TB ¹ SATA 7200 RPM HDD	X
2.5" Hard Drives:	
2TB ¹ SATA 7200 RPM Enterprise HDD	X
1TB ¹ SATA 7200 RPM HDD	
500GB SATA 7200 RPM HDD	X
1.8GB SAS 12Gb/s 10K RPM Enterprise HDD	X
900GB SAS 12Gb/s 15K RPM Enterprise HDD	X
600GB SAS 12Gb/s 15K RPM Enterprise HDD	X

¹ For hard drives, GB means 1 billion bytes; actual capacity varies with preloaded material and operating environment and will be less.

Optical Drives:	
Slimline DVD+/-RW ¹ SATA 1.5Gbit/s	X
Slimline DVD-ROM ¹ SATA 1.5Gbit/s	X

¹ Discs burned with this drive may not be compatible with some existing drives and players; using DVD+R media provides maximum compatibility.

² DVD-ROM drives may have write-capable hardware that has been disabled via firmware modifications.

7920 RACK HDD/SSD FACTORY INSTALLED STORAGE MATRIX—PART 1

C-Config	Config Type	Device Type	Boot Drive	1st HDD	2nd HDD	3rd HDD	4th HDD	5th HDD	6th HDD	7th HDD	8th HDD	HDD Controller
C1	SATA JBOD	SATA HDD or SSD JBOD	1st HDD	Y								Integrated
	SATA JBOD	SATA HDD or SSD JBOD	1st HDD	Y	Y							Integrated
	SATA JBOD	SATA HDD or SSD JBOD	1st HDD	Y	Y	Y						Integrated
	SATA JBOD	SATA HDD or SSD JBOD	1st HDD	Y	Y	Y	Y					Integrated
	SATA JBOD	SATA HDD or SSD JBOD	1st HDD	Y	Y	Y	Y	Y				Integrated
	SATA JBOD	SATA HDD or SSD JBOD	1st HDD	Y	Y	Y	Y	Y	Y			Integrated
	SATA JBOD	SATA HDD or SSD JBOD	1st HDD	Y	Y	Y	Y	Y	Y	Y		Integrated
	SATA JBOD	SATA HDD or SSD JBOD	1st HDD	Y	Y	Y	Y	Y	Y	Y	Y	Integrated
C2	SATA RAID	SATA HDD or SSD RAID	RAID Volume	RAID 0	RAID 0							Integrated
	SATA RAID	SATA HDD or SSD RAID	RAID Volume	RAID 0	RAID 0	RAID 0						Integrated
	SATA RAID	SATA HDD or SSD RAID	RAID Volume	RAID 0	RAID 0	RAID 0	RAID 0					Integrated
	SATA RAID	SATA HDD or SSD RAID	RAID Volume	RAID 1	RAID 1							Integrated
	SATA RAID	SATA HDD or SSD RAID	RAID Volume	RAID 5	RAID 5	RAID 5						Integrated
	SATA RAID	SATA HDD or SSD RAID	RAID Volume	RAID 5	RAID 5	RAID 5	RAID 5					Integrated
	SATA RAID	SATA HDD or SSD RAID	RAID Volume	RAID 10	RAID 10	RAID 10	RAID 10					Integrated
C3	SATA RAID	SATA Boot HDD/SSD + SATA RAID	1st HDD	Boot	RAID 0	RAID 0						Integrated
	SATA RAID	SATA Boot HDD/SSD + SATA RAID	1st HDD	Boot	RAID 0	RAID 0	RAID 0					Integrated
	SATA RAID	SATA Boot HDD/SSD + SATA RAID	1st HDD	Boot	RAID 1	RAID 1						Integrated
	SATA RAID	SATA Boot HDD/SSD + SATA RAID	1st HDD	Boot	RAID 5	RAID 5	RAID 5					Integrated
	SATA RAID	SATA Boot HDD/SSD + SATA RAID	1st HDD	Boot				RAID 10	RAID 10	RAID 10	RAID 10	Integrated

7920 RACK HDD/SSD FACTORY INSTALLED STORAGE MATRIX—PART 2

C-Config	Config Type	Device Type	Boot Drive	1st HDD	2nd HDD	3rd HDD	4th HDD	5th HDD	6th HDD	7th HDD	8th HDD	HDD Controller
C4	SATA JBOD + Zoom Boot	Zoom Boot + SATA JBOD	Zoom	Y					-	-	-	Integrated
	SATA JBOD + Zoom Boot	Zoom Boot + SATA JBOD	Zoom	Y	Y				-	-	-	Integrated
	SATA JBOD + Zoom Boot	Zoom Boot + SATA JBOD	Zoom	Y	Y	Y			-	-	-	Integrated
	SATA JBOD + Zoom Boot	Zoom Boot + SATA JBOD	Zoom	Y	Y	Y	Y		-	-	-	Integrated
	SATA JBOD + Zoom Boot	Zoom Boot + SATA JBOD	Zoom	Y	Y	Y	Y	Y	-	-	-	Integrated
	SATA JBOD + Zoom Boot	Zoom Boot + SATA JBOD	Zoom	Y	Y	Y	Y	Y	Y	-	-	Integrated
	SATA JBOD + Zoom Boot	Zoom Boot + SATA JBOD	Zoom	Y	Y	Y	Y	Y	Y	Y	-	Integrated
	SATA JBOD + Zoom Boot	Zoom Boot + SATA JBOD	Zoom	Y	Y	Y	Y	Y	Y	Y	Y	Integrated
	SATA RAID + Zoom Boot	Zoom Boot + SATA RAID	Zoom	RAID 0	RAID 0							Integrated
	SATA RAID + Zoom Boot	Zoom Boot + SATA RAID	Zoom	RAID 0	RAID 0	RAID 0						Integrated
	SATA RAID + Zoom Boot	Zoom Boot + SATA RAID	Zoom	RAID 0	RAID 0	RAID 0	RAID 0					Integrated
	SATA RAID + Zoom Boot	Zoom Boot + SATA RAID	Zoom	RAID 1	RAID 1				-	-	-	Integrated
	SATA RAID + Zoom Boot	Zoom Boot + SATA RAID	Zoom	RAID 5	RAID 5	RAID 5						Integrated
	SATA RAID + Zoom Boot	Zoom Boot + SATA RAID	Zoom	RAID 5	RAID 5	RAID 5	RAID 5					Integrated
	SATA RAID + Zoom Boot	Zoom Boot + SATA RAID	Zoom	RAID 10	RAID 10	RAID 10	RAID 10					Integrated
C5	SATA RAID	PERC-HDD or SSD RAID	RAID Volume	RAID 0	RAID 0							PERC
	SATA RAID	PERC-HDD or SSD RAID	RAID Volume	RAID 0	RAID 0	RAID 0						PERC
	SATA RAID	PERC-HDD or SSD RAID	RAID Volume	RAID 0	RAID 0	RAID 0	RAID 0					PERC
	SATA RAID	PERC-HDD or SSD RAID	RAID Volume	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0				PERC
	SATA RAID	PERC-HDD or SSD RAID	RAID Volume	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0			PERC
	SATA RAID	PERC-HDD or SSD RAID	RAID Volume	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0		PERC
	SATA RAID	PERC-HDD or SSD RAID	RAID Volume	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0	PERC
	SATA RAID	PERC-HDD or SSD RAID	RAID Volume	RAID 1	RAID 1							PERC
	SATA RAID	PERC-HDD or SSD RAID	RAID Volume	RAID 5	RAID 5	RAID 5						PERC
	SATA RAID	PERC-HDD or SSD RAID	RAID Volume	RAID 5	RAID 5	RAID 5	RAID 5					PERC
	SATA RAID	PERC-HDD or SSD RAID	RAID Volume	RAID 5	RAID 5	RAID 5	RAID 5	RAID 5				PERC
	SATA RAID	PERC-HDD or SSD RAID	RAID Volume	RAID 5	RAID 5	RAID 5	RAID 5	RAID 5	RAID 5			PERC
	SATA RAID	PERC-HDD or SSD RAID	RAID Volume	RAID 5	RAID 5	RAID 5	RAID 5	RAID 5	RAID 5	RAID 5		PERC
	SATA RAID	PERC-HDD or SSD RAID	RAID Volume	RAID 5	RAID 5	RAID 5	RAID 5	RAID 5	RAID 5	RAID 5	RAID 5	PERC
	SATA RAID	PERC-HDD or SSD RAID	RAID Volume	RAID 10	RAID 10	RAID 10	RAID 10					PERC
	SATA RAID	PERC-HDD or SSD RAID	RAID Volume	RAID 10	RAID 10	RAID 10	RAID 10	RAID 10	RAID 10	RAID 10	RAID 10	PERC

7920 RACK HDD/SSD FACTORY INSTALLED STORAGE MATRIX—PART 3

C-Config	Config Type	Device Type	Boot Drive	1st HDD	2nd HDD	3rd HDD	4th HDD	5th HDD	6th HDD	7th HDD	8th HDD	HDD Controller
C6	SATA RAID	SATA Boot HDD/SSD + SATA RAID	1st HDD	Boot	RAID 0	RAID 0						PERC
	SATA RAID	SATA Boot HDD/SSD + SATA RAID	1st HDD	Boot	RAID 0	RAID 0	RAID 0					PERC
	SATA RAID	SATA Boot HDD/SSD + SATA RAID	1st HDD	Boot	RAID 0	RAID 0	RAID 0	RAID 0				PERC
	SATA RAID	SATA Boot HDD/SSD + SATA RAID	1st HDD	Boot	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0			PERC
	SATA RAID	SATA Boot HDD/SSD + SATA RAID	1st HDD	Boot	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0		PERC
	SATA RAID	SATA Boot HDD/SSD + SATA RAID	1st HDD	Boot	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0	PERC
	SATA RAID	SATA Boot HDD/SSD + SATA RAID	1st HDD	Boot	RAID 1	RAID 1						PERC
	SATA RAID	SATA Boot HDD/SSD + SATA RAID	1st HDD	Boot	RAID 5	RAID 5	RAID 5					PERC
	SATA RAID	SATA Boot HDD/SSD + SATA RAID	1st HDD	Boot	RAID 5	RAID 5	RAID 5	RAID 5				PERC
	SATA RAID	SATA Boot HDD/SSD + SATA RAID	1st HDD	Boot	RAID 5	RAID 5	RAID 5	RAID 5	RAID 5			PERC
	SATA RAID	SATA Boot HDD/SSD + SATA RAID	1st HDD	Boot	RAID 5	RAID 5	RAID 5	RAID 5	RAID 5	RAID 5		PERC
	SATA RAID	SATA Boot HDD/SSD + SATA RAID	1st HDD	Boot	RAID 5	RAID 5	RAID 5	RAID 5	RAID 5	RAID 5	RAID 5	PERC
	SATA RAID	SATA Boot HDD/SSD + SATA RAID	1st HDD	Boot	RAID 10	RAID 10	RAID 10	RAID 10				PERC
C7	SAS JBOD	PERC-HDD or SSD JBOD	1st HDD	Y								PERC (H330 only)
	SAS JBOD	PERC-HDD or SSD JBOD	1st HDD	Y	Y							PERC (H330 only)
	SAS JBOD	PERC-HDD or SSD JBOD	1st HDD	Y	Y	Y						PERC (H330 only)
	SAS JBOD	PERC-HDD or SSD JBOD	1st HDD	Y	Y	Y	Y					PERC (H330 only)
	SAS JBOD	PERC-HDD or SSD JBOD	1st HDD	Y	Y	Y	Y	Y				PERC (H330 only)
	SAS JBOD	PERC-HDD or SSD JBOD	1st HDD	Y	Y	Y	Y	Y	Y			PERC (H330 only)
	SAS JBOD	PERC-HDD or SSD JBOD	1st HDD	Y	Y	Y	Y	Y	Y	Y		PERC (H330 only)
	SAS JBOD	PERC-HDD or SSD JBOD	1st HDD	Y	Y	Y	Y	Y	Y	Y	Y	PERC (H330 only)

7920 RACK HDD/SSD FACTORY INSTALLED STORAGE MATRIX—PART 4

C-Config	Config Type	Device Type	Boot Drive	1st HDD	2nd HDD	3rd HDD	4th HDD	5th HDD	6th HDD	7th HDD	8th HDD	HDD Controller
C8	SAS RAID	PERC-HDD or SSD RAID	RAID Volume	RAID 0	RAID 0							PERC
	SAS RAID	PERC-HDD or SSD RAID	RAID Volume	RAID 0	RAID 0	RAID 0						PERC
	SAS RAID	PERC-HDD or SSD RAID	RAID Volume	RAID 0	RAID 0	RAID 0	RAID 0					PERC
	SAS RAID	PERC-HDD or SSD RAID	RAID Volume	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0				PERC
	SAS RAID	PERC-HDD or SSD RAID	RAID Volume	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0			PERC
	SAS RAID	PERC-HDD or SSD RAID	RAID Volume	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0		PERC
	SAS RAID	PERC-HDD or SSD RAID	RAID Volume	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0	PERC
	SAS RAID	PERC-HDD or SSD RAID	RAID Volume	RAID 1	RAID 1							PERC
	SAS RAID	PERC-HDD or SSD RAID	RAID Volume	RAID 5	RAID 5	RAID 5						PERC
	SAS RAID	PERC-HDD or SSD RAID	RAID Volume	RAID 5	RAID 5	RAID 5	RAID 5					PERC
	SAS RAID	PERC-HDD or SSD RAID	RAID Volume	RAID 5	RAID 5	RAID 5	RAID 5	RAID 5				PERC
	SAS RAID	PERC-HDD or SSD RAID	RAID Volume	RAID 5	RAID 5	RAID 5	RAID 5	RAID 5	RAID 5			PERC
	SAS RAID	PERC-HDD or SSD RAID	RAID Volume	RAID 5	RAID 5	RAID 5	RAID 5	RAID 5	RAID 5	RAID 5		PERC
	SAS RAID	PERC-HDD or SSD RAID	RAID Volume	RAID 5	RAID 5	RAID 5	RAID 5	RAID 5	RAID 5	RAID 5	RAID 5	PERC
	SAS RAID	PERC-HDD or SSD RAID	RAID Volume	RAID 10	RAID 10	RAID 10	RAID 10					PERC
	SAS RAID	PERC-HDD or SSD RAID	RAID Volume	RAID 10	RAID 10	RAID 10	RAID 10	RAID 10	RAID 10	RAID 10	RAID 10	PERC
C9	SAS RAID	PERC-SAS Boot HDD/SSD + SAS RAID	1st HDD	Boot	RAID 0	RAID 0						PERC
	SAS RAID	PERC-SAS Boot HDD/SSD + SAS RAID	1st HDD	Boot	RAID 0	RAID 0	RAID 0					PERC
	SAS RAID	PERC-SAS Boot HDD/SSD + SAS RAID	1st HDD	Boot	RAID 0	RAID 0	RAID 0	RAID 0				PERC
	SAS RAID	PERC-SAS Boot HDD/SSD + SAS RAID	1st HDD	Boot	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0			PERC
	SAS RAID	PERC-SAS Boot HDD/SSD + SAS RAID	1st HDD	Boot	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0		PERC
	SAS RAID	PERC-SAS Boot HDD/SSD + SAS RAID	1st HDD	Boot	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0	PERC
	SAS RAID	PERC-SAS Boot HDD/SSD + SAS RAID	1st HDD	Boot	RAID 1	RAID 1						PERC
	SAS RAID	PERC-SAS Boot HDD/SSD + SAS RAID	1st HDD	Boot	RAID 5	RAID 5	RAID 5					PERC
	SAS RAID	PERC-SAS Boot HDD/SSD + SAS RAID	1st HDD	Boot	RAID 5	RAID 5	RAID 5	RAID 5				PERC
	SAS RAID	PERC-SAS Boot HDD/SSD + SAS RAID	1st HDD	Boot	RAID 5	RAID 5	RAID 5	RAID 5	RAID 5			PERC
	SAS RAID	PERC-SAS Boot HDD/SSD + SAS RAID	1st HDD	Boot	RAID 5	RAID 5	RAID 5	RAID 5	RAID 5	RAID 5		PERC
	SAS RAID	PERC-SAS Boot HDD/SSD + SAS RAID	1st HDD	Boot	RAID 5	RAID 5	RAID 5	RAID 5	RAID 5	RAID 5	RAID 5	PERC
	SAS RAID	PERC-SAS Boot HDD/SSD + SAS RAID	1st HDD	Boot	RAID 10	RAID 10	RAID 10	RAID 10				PERC

7920 RACK HDD/SSD FACTORY INSTALLED STORAGE MATRIX—PART 5

C-Config	Config Type	Device Type	Boot Drive	1st HDD	2nd HDD	3rd HDD	4th HDD	5th HDD	6th HDD	7th HDD	8th HDD	HDD Controller
C10	SATA RAID + Zoom Boot	Zoom Boot + PERC-SATA RAID	Zoom	RAID 0	RAID 0							PERC
	SATA RAID + Zoom Boot	Zoom Boot + PERC-SATA RAID	Zoom	RAID 0	RAID 0	RAID 0						PERC
	SATA RAID + Zoom Boot	Zoom Boot + PERC-SATA RAID	Zoom	RAID 0	RAID 0	RAID 0	RAID 0					PERC
	SATA RAID + Zoom Boot	Zoom Boot + PERC-SATA RAID	Zoom	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0				PERC
	SATA RAID + Zoom Boot	Zoom Boot + PERC-SATA RAID	Zoom	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0			PERC
	SATA RAID + Zoom Boot	Zoom Boot + PERC-SATA RAID	Zoom	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0		PERC
	SATA RAID + Zoom Boot	Zoom Boot + PERC-SATA RAID	Zoom	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0	PERC
	SATA RAID + Zoom Boot	Zoom Boot + PERC-SATA RAID	Zoom	RAID 1	RAID 1							PERC
	SATA RAID + Zoom Boot	Zoom Boot + PERC-SATA RAID	Zoom	RAID 5	RAID 5	RAID 5						PERC
	SATA RAID + Zoom Boot	Zoom Boot + PERC-SATA RAID	Zoom	RAID 5	RAID 5	RAID 5	RAID 5					PERC
	SATA RAID + Zoom Boot	Zoom Boot + PERC-SATA RAID	Zoom	RAID 5	RAID 5	RAID 5	RAID 5	RAID 5				PERC
	SATA RAID + Zoom Boot	Zoom Boot + PERC-SATA RAID	Zoom	RAID 5	RAID 5	RAID 5	RAID 5	RAID 5	RAID 5			PERC
	SATA RAID + Zoom Boot	Zoom Boot + PERC-SATA RAID	Zoom	RAID 5	RAID 5	RAID 5	RAID 5	RAID 5	RAID 5	RAID 5		PERC
	SATA RAID + Zoom Boot	Zoom Boot + PERC-SATA RAID	Zoom	RAID 5	RAID 5	RAID 5	RAID 5	RAID 5	RAID 5	RAID 5	RAID 5	PERC
	SATA RAID + Zoom Boot	Zoom Boot + PERC-SATA RAID	Zoom	RAID 10	RAID 10	RAID 10	RAID 10					PERC
	SATA RAID + Zoom Boot	Zoom Boot + PERC-SATA RAID	Zoom	RAID 10	RAID 10	RAID 10	RAID 10	RAID 10	RAID 10	RAID 10	RAID 10	PERC
	SAS JBOD + Zoom Boot	Zoom Boot + PERC-SAS JBOD	Zoom	Y								PERC (H330 only)
	SAS JBOD + Zoom Boot	Zoom Boot + PERC-SAS JBOD	Zoom	Y	Y							PERC (H330 only)
	SAS JBOD + Zoom Boot	Zoom Boot + PERC-SAS JBOD	Zoom	Y	Y	Y						PERC (H330 only)
	SAS JBOD + Zoom Boot	Zoom Boot + PERC-SAS JBOD	Zoom	Y	Y	Y	Y					PERC (H330 only)
	SAS JBOD + Zoom Boot	Zoom Boot + PERC-SAS JBOD	Zoom	Y	Y	Y	Y	Y				PERC (H330 only)
	SAS JBOD + Zoom Boot	Zoom Boot + PERC-SAS JBOD	Zoom	Y	Y	Y	Y	Y	Y			PERC (H330 only)
	SAS JBOD + Zoom Boot	Zoom Boot + PERC-SAS JBOD	Zoom	Y	Y	Y	Y	Y	Y	Y	-	PERC (H330 only)
	SAS JBOD + Zoom Boot	Zoom Boot + PERC-SAS JBOD	Zoom	Y	Y	Y	Y	Y	Y	Y	Y	PERC (H330 only)

7920 RACK HDD/SSD FACTORY INSTALLED STORAGE MATRIX—PART 6

C-Config	Config Type	Device Type	Boot Drive	1st HDD	2nd HDD	3rd HDD	4th HDD	5th HDD	6th HDD	7th HDD	8th HDD	HDD Controller
C10	SAS RAID + Zoom Boot	Zoom Boot + PERC SAS RAID	Zoom	RAID 0	RAID 0							PERC
	SAS RAID + Zoom Boot	Zoom Boot + PERC SAS RAID	Zoom	RAID 0	RAID 0	RAID 0						PERC
	SAS RAID + Zoom Boot	Zoom Boot + PERC SAS RAID	Zoom	RAID 0	RAID 0	RAID 0	RAID 0					PERC
	SAS RAID + Zoom Boot	Zoom Boot + PERC SAS RAID	Zoom	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0				PERC
	SAS RAID + Zoom Boot	Zoom Boot + PERC SAS RAID	Zoom	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0			PERC
	SAS RAID + Zoom Boot	Zoom Boot + PERC SAS RAID	Zoom	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0		PERC
	SAS RAID + Zoom Boot	Zoom Boot + PERC SAS RAID	Zoom	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0	PERC
	SAS RAID + Zoom Boot	Zoom Boot + PERC SAS RAID	Zoom	RAID 1	RAID 1							PERC
	SAS RAID + Zoom Boot	Zoom Boot + PERC SAS RAID	Zoom	RAID 5	RAID 5	RAID 5						PERC
	SAS RAID + Zoom Boot	Zoom Boot + PERC SAS RAID	Zoom	RAID 5	RAID 5	RAID 5	RAID 5					PERC
	SAS RAID + Zoom Boot	Zoom Boot + PERC SAS RAID	Zoom	RAID 5	RAID 5	RAID 5	RAID 5	RAID 5				PERC
	SAS RAID + Zoom Boot	Zoom Boot + PERC SAS RAID	Zoom	RAID 5	RAID 5	RAID 5	RAID 5	RAID 5	RAID 5			PERC
	SAS RAID + Zoom Boot	Zoom Boot + PERC SAS RAID	Zoom	RAID 5	RAID 5	RAID 5	RAID 5	RAID 5	RAID 5	RAID 5		PERC
	SAS RAID + Zoom Boot	Zoom Boot + PERC SAS RAID	Zoom	RAID 5	RAID 5	RAID 5	RAID 5	RAID 5	RAID 5	RAID 5	RAID 5	PERC
	SAS RAID + Zoom Boot	Zoom Boot + PERC SAS RAID	Zoom	RAID 10	RAID 10	RAID 10	RAID 10					PERC
	SAS RAID + Zoom Boot	Zoom Boot + PERC SAS RAID	Zoom	RAID 10	RAID 10	RAID 10	RAID 10	RAID 10	RAID 10	RAID 10	RAID 10	PERC
C11	Zoom Boot Only	Zoom Boot with NO additional Storage	Zoom									NA

7920 RACK HDD/SSD FACTORY INSTALLED STORAGE MATRIX - ULTRA-SPEED DRIVE

Zoom 2 and Zoom 4 configs (Dell Ultra-Speed Drive Duo and Quad Cards)				CPU 1				CPU 2 - 2nd Zoom 4				Notes				
CxZ Config	Config Type	Device Type	Boot Drive HDD C4, C10 & C11 only	1st M.2 SSD	2nd M.2 SSD	3rd M.2 SSD	4th M.2 SSD	5th M.2 SSD	6th M.2 SSD	7th M.2 SSD	8th M.2 SSD	# of Zoom 2 Cards	# of Zoom 4 Cards	Total Number of M.2 Devices (No mixing Zoom 2 and Zoom 4)	Dual CPU Re- quired	VROC (RAID) Key Re- quired Y/N
C1Z	Zoom2	Zoom2 JBOD	Zoom2 1st SSD Boot	Y								1	0	1	No	N
	Zoom2	Zoom2 JBOD	Zoom2 1st SSD Boot	Y	Y							1	0	2	No	N
C2Z	Zoom2	Zoom2 RAID 0	Zoom2 RAID Volume	RAID 0	RAID 0							1	0	2	No	Y
	Zoom2	Zoom2 RAID 1	Zoom2 RAID Volume	RAID 1	RAID 1							1	0	2	No	Y
C3Z	Zoom4	Zoom4 JBOD	Zoom4 1st SSD Boot	Y								0	1	1	No	N
	Zoom4	Zoom4 JBOD	Zoom4 1st SSD Boot	Y	Y							0	1	2	No	N
	Zoom4	Zoom4 JBOD	Zoom4 1st SSD Boot	Y	Y	Y						0	1	3	No	N
	Zoom4	Zoom4 JBOD	Zoom4 1st SSD Boot	Y	Y	Y	Y					0	1	4	No	N
	Zoom4	Zoom4 JBOD	Zoom4 1st SSD Boot	Y	Y	Y	Y	Y				0	2	5	Yes	N
	Zoom4	Zoom4 JBOD	Zoom4 1st SSD Boot	Y	Y	Y	Y	Y	Y			0	2	6	Yes	N
	Zoom4	Zoom4 JBOD	Zoom4 1st SSD Boot	Y	Y	Y	Y	Y	Y	Y		0	2	7	Yes	N
	Zoom4	Zoom4 JBOD	Zoom4 1st SSD Boot	Y	Y	Y	Y	Y	Y	Y	Y	0	2	8	Yes	N

7920 RACK HDD/SSD FACTORY INSTALLED STORAGE MATRIX - ULTRA-SPEED DRIVE -2

Zoom 2 and Zoom 4 configs (Dell Ultra-Speed Drive Duo and Quad Cards)				CPU 1				CPU 2 - 2nd Zoom 4				Notes			
CxZ - Config	Config Type	Device Type	Boot Drive HDD C4, C10 & C11 only	1st M.2 SSD	2nd M.2 SSD	3rd M.2 SSD	4th M.2 SSD	5th M.2 SSD	6th M.2 SSD	7th M.2 SSD	8th M.2 SSD	# of Zoom2 Cards	# of Zoom4 Cards	Dual CPU Re- quired	VROC RAID Key Re- quired Y/N
C4Z	Zoom4	Zoom4 RAID 0	Zoom4 RAID Volume	RAID 0	RAID 0							0	1	No	Y
	Zoom4	Zoom4 RAID 0	Zoom4 RAID Volume	RAID 0	RAID 0	RAID 0						0	1	No	Y
	Zoom4	Zoom4 RAID 0	Zoom4 RAID Volume	RAID 0	RAID 0	RAID 0	RAID 0					0	1	No	Y
	Zoom4	Zoom4 RAID 0	Zoom4 RAID Volume	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0				0	2	Yes	Y
	Zoom4	Zoom4 RAID 0	Zoom4 RAID Volume	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0			0	2	Yes	Y
	Zoom4	Zoom4 RAID 0	Zoom4 RAID Volume	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0		0	2	Yes	Y
	Zoom4	Zoom4 RAID 0	Zoom4 RAID Volume	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0	RAID 0	0	2	Yes	Y
	Zoom4	Zoom4 RAID 1	Zoom4 RAID Volume	RAID 1	RAID 1							0	1	No	Y
	Zoom4	Zoom4 RAID 10	Zoom4 RAID Volume	RAID 10	RAID 10	RAID 10	RAID 10					0	1	No	Y
C5Z	Zoom4	Zoom4 SSD Boot + RAID 0	Zoom4 1st SSD Boot	Boot	RAID 0	RAID 0						0	1	No	Y
	Zoom4	Zoom4 SSD Boot + RAID 0	Zoom4 1st SSD Boot	Boot	RAID 0	RAID 0	RAID 0					0	1	No	Y
	Zoom4	Zoom4 SSD Boot + RAID 0	Zoom4 1st SSD Boot	Boot	RAID 0	RAID 0	RAID 0	RAID 0				0	1	Yes	Y

Spanned RAID (across 2 CPUs) cannot be the Boot device

SYSTEM EXPANSION SLOTS - ALL ARE PCIE GEN 3 - UP TO 3 DOUBLE WIDE CARDS

NOTE: See Detailed Engineering Specifications for supported voltage, maximum wattage and card dimensions.

PCIe x16 Slot Gen 3	Total 3 slots with both CPUs installed Slot 1 on Riser 1 - CPU 1 Slot 4 on Riser 2 and Slot 8 on Riser 3 - CPU 2
PCIe x16 Slot (wired x8) Gen 3	Total 5 slots with both CPUs installed Slots 2,3 on Riser 1, Slot 6 on Riser 2 - CPU 1 Slot 5 on Riser 2 and Slot 7 on Riser 3 - CPU 2
SATA connectors	8 SATA ports via 2x 4 port Intel chipset controllers 1 optical SATA (via Intel chipset)

Note:

1. All slots are full height (except slot 6) and full length (except slot 3).
2. The 2nd CPU must be installed to enable slots 4,5,7,8. 3. 3 risers are standard - there are no optional or alternative risers
3. To use slots 1 through 4 on the right and center risers, both processors must be installed

Risers	Slots - all Gen3 PCIe							
	Slot 1	Slot 2	Slot 3	Slot 4	Slot 5	Slot 6	Slot 7	Slot 8
Riser 1 (Right hand bay)	x16 FH/FL/DW	x8 FH/FL	x8 FH/HL					
Riser 2 (Center bay)				x16 FH/FL/DW	x8 FH/FL	x8 HL/LP		
Riser 3 (Left hand bay)							x8 FH/ FL	x16 FH/FL/DW
Associated CPU	CPU1			CPU 2		CPU 1	CPU 2	
Slot Power	225w + 75w	75w + 75w	75w	225w + 75w	75w + 75w	75w	225w + 75w	75w + 75w

**EXTERNAL PORTS/CONNECTORS**

USB 2.0	2 Front (1 Micro-USB management port for iDRAC9)
USB 3.0 Type A	1 Front
USB 3.1 Type A	2 Rear
USB 3.1 Type A	1 Internal
Serial	1 Rear
VGA Output port on iDRAC controller	1 Rear 1 Front
Network Connector (RJ-45)	4 Rear (System NDC)
Network Connector (RJ-45)	1 Rear (iDRAC)

HARD DRIVE CONTROLLERS

Dual Integrated Intel AHCI SATA 6.0Gb/s controllers 4 ports each, Total 8. 1 x 6.0Gb/s port for optical drive	Base
PERC H330 PCI-e SAS 12Gb/s (SATA 6Gb/s) controller SW based RAID 0/1/5/10.	x8 PCIe card
PERC H730P PCI-e SAS 12Gb/s (SATA 6Gb/s) controller Hardware RAID 0/1/5/10. with 2GB cache memory and backup	x8 PCIe card Offered to support Win 7 Pro (support ends Dec. 31, 2019)
PERC H740P PCI-e SAS 12Gb/s (SATA 6Gb/s) controller Hardware RAID 0/1/5/10. with 8GB cache memory and backup	x8 PCIe card Supports Win 10 Pro for WS No Win 7 Pro support

COMMUNICATIONS - NETWORK ADAPTERS/ HOST BUS ADAPTERS

Ethernet LAN 10/100/1000 for iDRAC9 Enterprise Lifecycle Controller	Integrated on system board
Intel® i350-Quad Port rNDC PCIe Ethernet 1Gb Network Adapter	Base - Network daughter card
Intel® x550-Quad port rNDC PCIe Ethernet Network Adapter 2 x 10GbE ports, 2 x 1Gb ports	Optional Network daughter card
Intel® X710* Dual port 10Gb DA/SFP+, + I350 Dual port 1Gb SFP+ Ethernet Network Daughter card	Optional Network daughter card

¹ This term does not connote an actual operating speed of 1 or 10Gb/sec. For high speed transmission, connection to a Gigabit Ethernet server and network infrastructure is required.

KEYBOARD AND MOUSE

Dell Premier Wireless Keyboard and Mouse - KM717	Optional
Dell Wireless Keyboard and Mouse - KM636	Optional
Dell KB813 Smartcard Keyboard	Optional
Dell KB216 Wired Multimedia Keyboard Black	Optional
Dell Optical Wired Mouse - MS116	Optional
Dell Laser Scroll USB 6-Buttons Silver and Black Mouse	Optional

SECURITY

Trusted Platform Module (TPM) 1.2 ¹ and 2.0	Plug in module in base
Chassis Intrusion Switch	Optional
Dell Smartcard Keyboard	Optional
Key Lock for Front bezel	Bezel is optional

¹TPM is not available in all countries. Depending on your country regulations, no-TPM system boards may be available.

SECURITY SOFTWARE

Dell Encryption Personal or Enterprise License, ProSupport for Software	Optional
Dell Endpoint Security Suite Enterprise	Optional
Dell Threat Defense	Optional

MISC. SOFTWARE

Dell Precision Optimizer	Included at no charge
Dell Precision Optimizer Premium Perpetual (AI based)	Optional

SERVICE AND SUPPORT

NOTE: For more details on Dell Service Plans please to go to: www.dell.com/service/service_plans

3 Year Warranty ¹ Next Business Day On-site ² (3-3-3)	Standard
ProSupport	Optional

¹ For a copy of our guarantees or limited warranties, please write Dell USA L.P., Attn: Warranties, One Dell Way, Round Rock, TX 78682. For more information, visit www.dell.com/warranty.

² Service may be provided by third-party. Technician will be dispatched if necessary following phone-based troubleshooting. Subject to parts availability, geographical restrictions and terms of service contract. Service timing dependent upon time of day call placed to Dell. U.S. only.

DETAILED ENGINEERING SPECIFICATIONS

SYSTEM DIMENSIONS (PHYSICAL)

NOTE: System Weight and Shipping Weight is based on a typical configuration and may vary based on actual configuration. A typical configuration includes: one graphics card one hard drive, one optical drive.

SYSTEM EXPANSION SLOTS/RISERS - ALL PCIE ARE GEN 3

	Slot	Type	Voltage supported	Height	Length	Max Wattage	Notes
Riser 1	1	PCle x16	3.3V / 12V	Full Height	Full Length	300	Double wide
Riser 1	2	PCle x16 (wired as x8)	3.3V / 12V	Full Height	Full Length	75	
Riser 1	3	PCle x16 (wired as x8)	3.3V / 12V	Full Height	Half Length	75	
Riser 2	4	PCle x16	3.3V / 12V	Full Height	Full Length	300	Double wide Requires 2nd CPU
Riser 2	5	PCle x16 (wired as x8)	3.3V / 12V	Full Height	Full Length	75	Requires 2nd CPU
Riser 2	6	PCle x16 (wired as x8)	3.3V / 12V	Low Profile	Half Length	75	
Riser 3	7	PCle x16 (wired as x8)	3.3V / 12V	Full Height	Full Length	75	Requires 2nd CPU
Riser 3	8	PCle x16	3.3V / 12V	Full Height	Full Length	300	Double wide Requires 2nd CPU

Risers	Slots - all Gen3 PCIe							
	Slot 1	Slot 2	Slot 3	Slot 4	Slot 5	Slot 6	Slot 7	Slot 8
Riser 1 (Right hand bay)	x16 FH/FL/DW	x8 FH/FL	x8 FH/HL					
Riser 2 (Center bay)				x16 FH/FL/DW	x8 FH/FL	x8 HL/LP		
Riser 3 (Left hand bay)							x8 FH/ FL	x16 FH/FL/DW
Associated CPU	CPU1			CPU 2		CPU 1	CPU 2	
Slot Power	225w + 75w	75w + 75w	75w	225w + 75w	75w + 75w	75w	225w + 75w	75w + 75w

Note: 1 x 6 pin and 1 x 8 pin (6 pin +2 pin) PCIe supplementary/aux power connectors are provided for each riser . This provides up to total 300W of power per riser (including 75W provided by the x16 electrical slots).

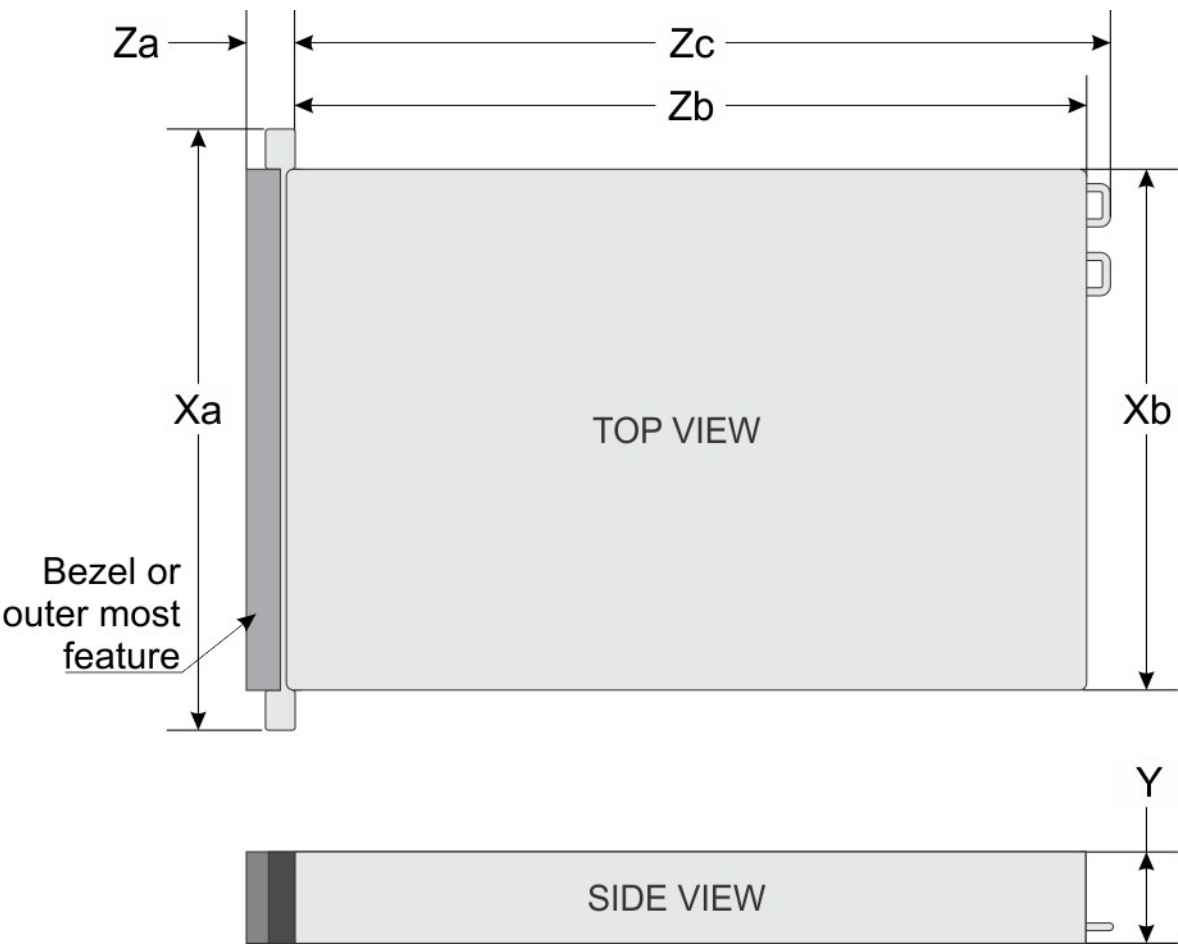
Note: 2nd CPU is required to enable PCIe slots 4,5,7,8.

Some combinations of graphics cards and CPUs require dual 1100W PSUs in non-redundant mode for increased power (load sharing) or dual 1600W PSUs @220V in non-redundant (load sharing) mode.

7920 RACK - SYSTEM DIMENSIONS

Dimensions

Precision 7920 Rack	Xa	Xb	Y	Za (with bezel)	Za (without bezel)	Zb	Zc
	482.0 mm (18.98 inches)	434.0 mm (17.09 inches)	86.8 mm (3.42 inches)	35.84 mm (1.41 inches)	22.0 mm (0.87 inches)	678.8 mm (26.72 inches)	715.5 mm (28.17 inches)



Chassis Weight:

Configuration	Maximum Weight
2.5" HDD	26.3Kg
3.5" HDD	28.6Kg

SYSTEM LEVEL ENVIRONMENTAL AND OPERATING CONDITIONS, POWER SUPPLY UNIT

Temperature	
Operating	10°C to 35°C (50°F to 95°F) with no direct sunlight on the equipment.
Storage	-40°C to 65°C (-40°F to 149°F)
Relative Humidity	10% to 80% relative humidity with 29°C (84.2°F) maximum dew point.
Maximum vibration	
Operating	0.26Grms at 5Hz to 350Hz (x, y, and z axes)
Storage	1.88Grms at 10Hz to 500Hz for 15min (all six sides tested)
Maximum Shock	
Operating	Six consecutively executed shock pulses in the positive and negative x, y, and z axes of 6G for up to 11ms
Storage	Six consecutively executed shock pulses in the positive and negative x, y, and z axes (one pulse on each side of the system) of 71 G for up to 2 ms.
Maximum Altitude	
Operating	3048m (10,000 ft)
Storage	12,000m (39,370 ft)

POWER SUPPLY UNIT

NOTE: Dual Non-redundant (increased power) mode is standard, redundant mode is optional - both are selectable in BIOS.

NOTE: Note: 1 x 6 pin and 1 x 8 pin (6 pin +2 pin) PCIe supplementary/aux power connectors are provided for all 3 risers

These provide up to total 300W of power per riser (including 75W provided by the x16 electrical slots).

	Specifications	
Power Supply	1100W	1600W @220V
Attribute		
80 Plus	Platinum	Platinum
Power Factor Correction	Active	Active
FCC Classification	Class A	Class A
Max Output Current	90.16 Amps, 153.3 Amps Peak	131.15A (180-264Vac)
Input Voltage Range	90 – 264 Volts AC, 47 – 63 Hz	90-264V AC, 47-63Hz
Iin (100-240VAC) for rating on safety label	12.0 Amps -6.5 Amps	10.0 Amps
Initial In-rush Current	25 Amps (peak)	25 Amps (peak)
Secondary In-rush Current	25 Amps (peak)	25 Amps (peak)

SUPPLEMENTARY (AUX) POWER CONNECTORS FOR GRAPHICS

Supplementary power connectors on 5000/7000 Towers/Rack

- Additional supplementary power connectors will be added [as necessary](#) in the factory.

Original Tower chassis

Original Tower Aux Power Connectors Ex factory ¹	
Platform	PCIe Aux Power Connectors
5820 Tower 950W	2x 6+2 pin
7820 Tower 950W*	1x 6+2 pin and 1x 6 pin
7920 Tower 1400W	3x 6+2 pin
7920 Rack 1100W & 1600W (220V)	3x 6+2 pin and 3x 6 pin (2-3 cards w 2 CPUs)

¹Dual AMD WX9100v2 and SSG configs ship with an additional 6 pin connector on the 7920 Tower

*Dual P4000,P5000,P6000,GV100 configs ship with 2x 6+2 pin connectors on single CPU 7820 Towers



6 Pin



6+2 Pin (8)

Upgraded Tower chassis

Upgraded Tower* Aux Power Cabling/Connectors Ex factory w RTX 5K,6K,8K cards	
Platform	PCIe Aux Power Connectors
5820 Tower 950W	2x 6+2 pin std. up to 4x 6+2 pin (2 cards)
7820 Tower 950W	2x 6+2 pin std. to 4x 6+2 (2 cards w 1 CPU)
7920 Tower 1400W	3x 6+2 std. up to 6x 6+2 pin (3 cards w 2 CPUs)
7920 Rack 1100W & 1600W (220V)	3x 6+2 pin and 3x 6 pin (2-3 cards w 2 CPUs)

* Tower chassis w upgraded cabling/connectors - e.g. Precision 7820 Tower 950W Chassis CL, Precision 5820 Tower 950W RTX/CL Chassis

Precision 5820 (950W), 7820, 7920 Towers, 7920 Rack

July 2020

High End Graphic Cards Aux Power Requirements & Platform Support

Graphics Card Width	Watts	Aux power dongle(s) required	Platforms supporting Single Cards	Platforms supporting Dual Cards	Platforms supporting Triple cards
Nvidia P4000	<150W SW	1x 6 pin	All	All	4x New 7920 Tower (2CPUs) 7920 Rack (2 CPUs)
Quadro RTX 4000*	160W	1x 8 pin	All	All New 7820 (1 CPU)	4x New 7920 Tower (2CPUs) 3x 7920 Rack (2 CPUs)
Nvidia P5000	<225W	1x 8 pin	All	All 7820 (1 CPU)	7920 Tower/Rack (2 CPUs)
Nvidia P6000	250W	1x 8 pin	All	5820,7820 (1 CPU),7920, 7920 Rack (2 CPUs)	7920 Tower/Rack (2 CPUs)
Nvidia GV100	250W	1x 8 pin	All	5820,7820 (1 CPU),7920, 7920 Rack (2 CPUs)	7920 Tower/Rack (2 CPUs)
Quadro RTX 5000/6000/8000*	5K 265W 6K,8K 295W	1x 8 pin + 1x 6 pin	5000/7000 Towers/Rack	7920 Tower 7920 Rack (2 CPUs) New 5820/7820 (1 CPU)	New 7920 Tower (2CPUs) 7920 Rack (2 CPUs)
GeForce RTX 2080 Super*	250W	1x 8 pin + 1x 6 pin	5000/7000 Towers	New 5820/7820 (1 CPU) 7920 Tower	N/A
AMD WX7100/W5500	<150W SW	1x 6 pin	All	5820,7280,7920 Towers 7920 Rack (2 CPUs)	7920 Tower/Rack (2 CPUs)
AMD WX9100v2*	300W	1x 8 pin + 1x 6 pin	5820,7820 7920 Towers/Rack	7920 Tower 7920 Rack (2 CPUs)	N/A
AMD Radeon Pro W5700	205W	1x 8 pin + 1x 6 pin	5820,7820 7920 Towers	5820,7280 (single CPU),7920 Towers 7920 Rack (2 CPUs)	7920 Tower/Rack (2 CPUs)

New designates tower systems with upgraded graphics power cabling with support for additional dongles. **No** changes to the PSUs

* Denotes single card support on legacy (SkyLake) & **New** (CL/RTX) chassis, dual card support on legacy & **New** 7920 Tower chassis

Note - **All** of these cards plus the quad P4000 SKU are tied in the factory to **New** (upgraded) CL/RTX Tower chassis .

COMMUNICATIONS— IDRAC INTEGRATED LAN, NETWORK DAUGHTER CARDS

**INTEGRATED
ETHERNET LAN 10/100/1000 FOR IDRAC**

External Connector Type	RJ45
Data Rates supported	10/100/1000 Mbps
Controller Details	
IEEE standards compliance (example 802.1P)	802.3, 802.3u, 802.3ab
Network Transfer Mode (example Full Duplex, Half Duplex)	
Network Transfer Rate (example 10BASE-T (half-duplex) 10 Mbps 10BASE-T (full-duplex) 20 Mbps 100BASE-TX (half-duplex) 100 Mbps 100BASE-TX (full-duplex) 200 Mbps 1000BASE-T (full-duplex) 2000 Mbps	10 Mb (full/half-duplex) 100 Mb (full/half-duplex) 1000 ¹ Mb (full-duplex)

COMMUNICATIONS – NETWORK INTERFACE CARD (NETWORK DAUGHTER CARD)

Intel® i350-QP rNDC PCIe Ethernet Gbit Network Adapter

Entry NIC	
Connector Type	4X RJ45
Data Rates supported	10/100/1000 Mbps Half/Full duplex
Controller Details	
Controller bus architecture (example PCIe 1.0a x1)	PCIe Gen 2 X8
Power consumption (full operation per data rate connection speed)	5.41W maximum
Power consumption (standby operation)	690mw
IEEE standards compliance (example 802.1P)	802.3, 802.3u, 802.3ab
Manageability (examples WOL, PXE)	PXE, WOL
Network Transfer Mode	
Network Transfer Rate (example 10BASE-T (half-duplex) 10 Mbps 10BASE-T (full-duplex) 20 Mbps 100BASE-TX (half-duplex) 100 Mbps 100BASE-TX (full-duplex) 200 Mbps 1000BASE-T (full-duplex) 2000 Mbps	

COMMUNICATIONS—NETWORK DAUGHTER CARDS

Intel® x550-QP rNDC PCIe Ethernet 10GbE/1Gb Network Adapter

Connector Type	4X RJ45 2x 10GbE, + 2x 1Gb
Data Rates supported	10/100/1000/10000 Mbps Half/Full duplex
Controller Details	
Controller bus architecture (example PCIe 1.0a x1)	PCIe Gen 2 X8
Power consumption (full operation per data rate connection speed)	25.0W maximum
Power consumption (standby operation)	9.6w maximum
IEEE standards compliance (example 802.1P)	802.3, 802.3u, 802.3ab
Manageability (examples WOL, PXE)	PXE, WOL
Network Transfer Mode	
Network Transfer Rate (example 10BASE-T (half-duplex) 10 Mbps 10BASE-T (full-duplex) 20 Mbps 100BASE-TX (half-duplex) 100 Mbps 100BASE-TX (full-duplex) 200 Mbps 1000BASE-T (full-duplex) 2000 Mbps 10000BASE-T (full-duplex) 20000 Mbps	

¹ This term does not connote an actual operating speed of 1 Gb/sec. For high speed transmission, connection to a Gigabit Ethernet server and network infrastructure is required.

Intel® x710/i350 -QP rNDC PCIe Ethernet 10GbE/1Gb SFP+ Network Adapter

Connector Type	4x SFP+ ports 2x 10GbE, + 2x 1Gb
Data Rates supported	10/100/1000/10000 Mbps Half/Full duplex
Controller Details	
Controller bus architecture (example PCIe 1.0a x1)	PCIe Gen 2 X8
Power consumption (full operation per data rate connection speed)	25.0W maximum
Power consumption (standby operation)	9.6w maximum
IEEE standards compliance (example 802.1P)	802.3, 802.3u, 802.3ab
Manageability (examples WOL, PXE)	PXE, WOL
Network Transfer Mode	
Network Transfer Rate (example 10BASE-T (half-duplex) 10 Mbps 10BASE-T (full-duplex) 20 Mbps 100BASE-TX (half-duplex) 100 Mbps 100BASE-TX (full-duplex) 200 Mbps 1000BASE-T (full-duplex) 2000 Mbps 10000BASE-T (full-duplex) 20000 Mbps	

COMMUNICATIONS—SERIAL PORT AND USB 3.1 GEN 2 ADD-IN CARDS

Dell PCIe Serial FH/LP Card (DPWC100)	
Connector Type	RS-232
Data Rates supported	250Kbps
Controller Details	
Controller bus architecture (example PCIe 1.0a x1)	PCIe Gen 1.1 X1
Data transfer mode (example Bus-Master DMA)	Serial Bus
Power consumption (full operation per data rate connection speed)	1.05W + 12W (1A Configurable at 5V or 12V)
Power consumption (standby operation)	Less than 1.05W
Standards compliance (example 802.1P)	RS-232, Power COM port(5V/12V)
Hardware Certifications (example FCC, B, GS mark...)	FCC B, UL, CE, VCCI, BSMI, CTICK, KCC
Boot ROM Support	No
Operating System Driver Support	Windows 10 Pro for WS, Windows 7 Pro Red Hat Linux 7.3, Ubuntu 16.04

COMMUNICATIONS—PCOIP REMOTE ACCESS HOST CARDS

Dell PCIe Quad Display PCoIP Remote Access Host Card (Full height)	
Connector Type	RJ45 x 1, mDP x 4
Displays supported	2 @ 2560 x 1600 or 4 @ 1920 x 1200
Imaging Performance	130 Mpps 60fps
Dongles supplied	mDP to DP x 4
Optional dongle for DMS59 to DVI graphics cards	DVI <u>to</u> mDP
Controller Details	
Controller bus architecture (example PCIe 1.0a x1)	PCIe Gen 1.1 X1
Data transfer mode (example Bus-Master DMA)	N/A
Integrated memory	Flash Memory:256 Mbit (parallel fastboot flash) System RAM:512MB DDR3 ECC
Power consumption (full operation per data rate connection speed)	13.15 W
Power consumption (standby operation)	N/A
Standards compliance (example 802.1P)	802.1x, DisplayPort
Hardware Certifications (example FCC, B, GS mark...)	FCC B, UL, CE, VCCI, BSMI, CTICK, KCC
Boot ROM Support	No
Operating System Driver Support in-box or web download—not factory installed	Windows 10 Pro, Windows 7 Pro Red Hat Linux, Ubuntu

Dell PCIe Dual display PCoIP Remote Access Host Card, (FH & LP cards)	
Connector Type	RJ45 x 1, mDP x 2
Displays supported	1 @ 2560 x 1600 or 2 @ 1920 x 1200
Imaging Performance	130 Mpps 60fps
Dongles supplied	mDP to DP x 2
Optional dongle for DMS59 to DVI graphics cards	DVI <u>to</u> mDP
Controller Details	
Controller bus architecture (example PCIe 1.0a x1)	PCIe Gen 1.1 X1
Data transfer mode (example Bus-Master DMA)	N/A
Integrated memory	Flash Memory:256 Mbit (parallel fastboot flash) System RAM:512MB DDR3 ECC
Power consumption (full operation per data rate connection speed)	13.15 W
Power consumption (standby operation)	N/A
Standards compliance (example 802.1P)	802.1x, DisplayPort
Hardware Certifications (example FCC, B, GS mark...)	FCC B, UL, CE, VCCI, BSMI, CTICK, KCC
Boot ROM Support	No
Operating System Driver Support in-box or web download—not factory installed	Windows 10 Pro, Windows 7 Pro Red Hat Linux, Ubuntu

GRAPHICS

NVIDIA QUADRO P400	
PCIe slot width	1 slot full height and available in half height for SFF chassis
Memory (GDDR5)	2 GB
Open GL	4.5
Open CL	yes
DirectX	11.2
Vulkan	1.0
PCIe support	x16 Gen3
Max Resolution (# of DisplayPorts used)	5120x2880 24bpp @ 60hz
Maximum Monitors using DP Multi-Stream (monitor to monitor connections)	3
Maximum monitors (direct connection)	3
Max # of 4Kx2K displays @ 60hz	3
Max # of 5120x2880 pixel displays @ 60hz	1
Max # of 7280x4320 pixel displays @ 60hz	0
Video connectors	three mini-DisplayPorts 1.4
Included video adapters (with systems or customer kits)	None
Aux power connectors needed	None
Maximum power	30 W

GRAPHICS

NVIDIA QUADRO P620	
PCIe slot width	1 slot full height and available in half height for SFF chassis
Memory (GDDR5)	2 GB
Open GL	4.6
Open CL	1.2
DirectX	12.1
Vulkan	1.1
PCIe support	x16 Gen3
Max Resolution (# of DisplayPorts used)	7680 x 4320 x 24 bpp @ 30 Hz per DP port
Maximum Monitors using DP Multi-Stream (monitor to monitor connections)	4 (Connecting displays using MST shares link bandwidth and reduces maximum supported resolution for each attached display)
Maximum monitors (direct connection)	4
Max # of 4Kx2K displays @ 60hz	4
Max # of 5120x2880 pixel displays @ 60hz	4
Max # of 7280x4320 pixel displays @ 60hz	2 (8K usage not recommended)
Video connectors	four mini-DisplayPorts 1.4
Included video adapters (with systems or customer kits)	None
Aux power connectors needed	None
Maximum power	40 W

GRAPHICS

RADEON PRO WX 3200	
PCIe slot width	1 slot full height and available in half height for SFF chassis
Memory (GDDR5)	4 GB
Open GL	4.6
Open CL	2.0
DirectX	12.0
Vulcan	1.1
PCIe support	x16 Gen3
Max Resolution (# of DisplayPorts used)	1x 7680x4320, 69Hz 2x 5120x3200, 60Hz 4x 3840x2160, 60Hz 4x 1920x1080, 60Hz
Maximum Monitors using DP Multi-Stream (monitor to monitor connections)	4
Maximum monitors (direct connection)	3
Max # of 4Kx2K displays @ 60hz	3 (1 display @120Hz)
Max # of 5120x2880 pixel displays @ 60hz	1 (dual DP cables)
Max # of 7280x4320 pixel displays @ 60hz	0
Video connectors	2 miniDP 1.4 + one DisplayPort 1.4
Included video adapters (with systems or customer kits)	None
Aux power connectors needed	None
Maximum power	50 W

GRAPHICS

NVIDIA QUADRO P2000 EOL

PCIe slot width	1
Memory (GDDR5)	5 GB
Open GL	4.5
Open CL	
DirectX	12.0
Vulkan	1.0
PCIe support	x16 Gen3
Max Resolution (# of DisplayPorts used)	5120x2880 24bpp @60hz (one DisplayPort)
Maximum Monitors using DP Multi-Stream (monitor to monitor connections)	4
Maximum monitors (direct connection)	4
Max # of 4Kx2K displays @ 60hz	4 (4 @ 120Hz)
Max # of 5120x2880 pixel displays @ 60hz	4
Max # of 7280x4320 pixel displays @ 60hz	0
Video connectors	four DisplayPorts 1.4
Included video adapters (with systems or customer kits)	None
Aux power connectors needed	None
Maximum power	75 W

GRAPHICS

NVIDIA QUADRO P2200	
PCIe slot width	1
Memory (GDDR5)	5 GB
Open GL	4.6
Open CL	
DirectX	12.0
Vulkan	1.1
PCIe support	x16 Gen3
Max Resolution (# of DisplayPorts used)	5120x2880 24bpp @60hz (4 DisplayPort)
Maximum Monitors using DP Multi-Stream (monitor to monitor connections)	4
Maximum monitors (direct connection)	4
Max # of 4Kx2K displays @ 60hz	4 (4 @ 120Hz)
Max # of 5120x2880 pixel displays @ 60hz	4
Max # of 7280x4320 pixel displays @ 60hz	0
Video connectors	four DisplayPorts 1.4
Included video adapters (with systems or customer kits)	None
Aux power connectors needed	None
Maximum power	75 W

GRAPHICS

NVIDIA QUADRO P4000 EOL

PCIe slot width	1
Memory (GDDR5)	8 GB
Open GL	4.5
Open CL	
DirectX	12.0
Vulkan	1.0
PCIe support	x16 Gen3
Max Resolution (# of DisplayPorts used)	5120x2880 24bpp @60hz (one DisplayPort)
Maximum Monitors using DP Multi-Stream (monitor to monitor connections)	4
Maximum monitors (direct connection)	4
Max # of 4Kx2K displays @ 60hz	4 (4 @ 120Hz)
Max # of 5120x2880 pixel displays @ 60hz	4
Max # of 7280x4320 pixel displays @ 60hz	0
Video connectors	four DisplayPorts 1.4 One stereo (optional)
Included video adapters (with systems or customer kits)	None
Aux power connectors needed	None
Maximum power	105 W

GRAPHICS

NVIDIA QUADRO RTX 4000	
PCIe slot width	Single
Memory (GDDR6)	8 GB
Open GL	4.6
Open CL	1.2
DirectX	12.1
Vulkan	1.1
PCIe support	x16 Gen3
VR Ready	Yes
Max Resolution (# of DisplayPorts used)	5120 x 2880 24bpp @60hz (one DisplayPort 1.4);
Max Resolution (# of DisplayPorts used)	7680 × 4320 36bpp @60Hz (two DisplayPorts 1.4 OR one DisplayPort 1.4 if 8K DSC panel)
Maximum Monitors using DP Multi-Stream (monitor to monitor connections)	4 (Connecting displays using MST shares link bandwidth and reduces maximum supported resolution for each attached display)
Maximum monitors (direct connection)	4
Max # of 4Kx2K displays @ 60hz	4 (4 @ 60Hz)
Max # of 5120x2880 pixel displays @ 60hz	4 (4 @ 60Hz)
Max # of 7280x4320 pixel displays @ 60hz	2 (2 @ 60Hz) OR 4 (4 @ 60Hz if 8K DSC panel)
Video connectors	Three DisplayPorts 1.4
Video connectors	One USB-C (DP1.4 bandwidth)
Included video adapters (with systems or customer kits)	None
Aux power connectors needed	8-pin
Maximum power	160W (with USB-C)

GRAPHICS

RADEON PRO WX 4100	
PCIe slot width	1 slot full height and available in half height for SFF chassis
Memory (GDDR5)	4 GB
Open GL	4.5
Open CL	2.0
DirectX	12.0
Vulcan	1.0
PCIe support	x16 Gen3
Max Resolution (# of DisplayPorts used)	5120x2880 30bpp @ 60hz
Maximum Monitors using DP Multi-Stream (monitor to monitor connections)	4
Maximum monitors (direct connection)	4
Max # of 4Kx2K displays @ 60hz	4 (1 display @120Hz)
Max # of 5120x2880 pixel displays @ 60hz	2 (dual DP cables)
Max # of 7280x4320 pixel displays @ 60hz	1 (dual DP cables)
Video connectors	four DisplayPorts 1.4
Included video adapters (with systems or customer kits)	None
Aux power connectors needed	None
Maximum power	50 W

GRAPHICS

RADEON PRO WX 5100	
PCIe slot width	1
Memory (GDDR5)	8 GB
Open GL	4.5
Open CL	2.0
DirectX	12.0
Vulcan	1.0
PCIe support	x16 Gen3
Max Resolution (# of DisplayPorts used)	7680x4320 30bpp @60hz (two DisplayPorts)
Maximum Monitors using DP Multi-Stream (monitor to monitor connections)	4
Maximum monitors (direct connection)	4
Max # of 4Kx2K displays @ 60hz	4 (1 display @120hz)
Max # of 5120x2880 pixel displays @ 60hz	2 (dual DP cables)
Max # of 7280x4320 pixel displays @ 60hz	1 (dual DP cables)
Video connectors	four DisplayPorts 1.4
Included video adapters (with systems or customer kits)	None
Aux power connectors needed	None
Maximum power	75 W

GRAPHICS

RADEON PRO W5500	
PCIe slot width	1
Memory (GDDR5)	8 GB GDDR6
Open GL	4.6
Open CL	2.0
DirectX	12.0
Vulkan	1.1
PCIe support	x16 Gen4
Max Resolution (# of DisplayPorts used)	7680x4320 @ 60Hz (two DisplayPorts)
Maximum Monitors using DP Multi-Stream (monitor to monitor connections)	4
Maximum monitors (direct connection)	4
Max # of 4Kx2K displays @ 60hz	4
Max # of 5120x2880 pixel displays @ 60hz	2
Max # of 7280x4320 pixel displays @ 60hz	2
Video connectors	4x DisplayPort 1.4
Included video adapters (with systems or customer kits)	None
PCIe Aux power connectors needed	6 pin
Maximum power	125 W

GRAPHICS

RADEON PRO WX 7100	
PCIe slot width	1
Memory (GDDR5)	8 GB
Open GL	4.5
Open CL	2.0
DirectX	12.0
Vulkan	1.0
PCIe support	x16 Gen3
Max Resolution (# of DisplayPorts used)	7680x4320 30bpp @60hz (two DisplayPorts)
Maximum Monitors using DP Multi-Stream (monitor to monitor connections)	4
Maximum monitors (direct connection)	4
Max # of 4Kx2K displays @ 60hz	4 (1 display @120hz)
Max # of 5120x2880 pixel displays @ 60hz	2 (dual DP cables)
Max # of 7280x4320 pixel displays @ 60hz	1 (dual DP cables)
Video connectors	four DisplayPorts 1.4
Included video adapters (with systems or customer kits)	None
PCIe Aux power connectors needed	6-pin
Maximum power	130 W

GRAPHICS

NVIDIA QUADRO P5000 EOL	
PCIe slot width	2
Memory (GDDR5)	16GB GDDR5X
Open GL	4.5
Open CL	2.0
DirectX	12.0
Vulkan	1.0
PCIe support	x16 Gen3
Max Resolution (# of DisplayPorts used)	7680x4320 24bpp @120hz (four DisplayPorts) 7680x4320 24bpp @60Hz (two DisplayPorts)
Maximum Monitors using DP Multi-Stream (monitor to monitor connections)	4
Maximum monitors (direct connection)	4
Max # of 4Kx2K displays @ 60hz	4
Max # of 5120x2880 pixel displays @ 60hz	4
Max # of 7280x4320 pixel displays @ 60hz	1 (dual DP cables)
Video connectors	One Dual Link DVI-I Four DisplayPorts One Stereo (optional) SYNC connector
Included video adapters (with systems or customer kits)	None
PCIe Aux power connectors needed	8-pin
Maximum power	180 W

GRAPHICS

NVIDIA QUADRO RTX 5000	
PCIe slot width	Dual
Memory (GDDR6)	16GB
Open GL	4.6
Open CL	1.2
DirectX	12.1
Vulkan	1.1
VR Ready	Yes
PCIe support	x16 Gen3
Max Resolution (# of DisplayPorts used)	5120 x 2880 24bpp @60hz (one DisplayPort 1.4);
Max Resolution (# of DisplayPorts used)	7680 × 4320 36bpp @60Hz (two DisplayPorts 1.4 OR one DisplayPort 1.4 if 8K DSC panel)
Maximum Monitors using DP Multi-Stream (monitor to monitor connections)	4 (Connecting displays using MST shares link bandwidth and reduces maximum supported resolution for each attached display)
Maximum monitors (direct connection)	4
Max # of 4Kx2K displays @ 60hz	4 (4 @ 60Hz)
Max # of 5120x2880 pixel displays @ 60hz	4 (4 @ 60Hz)
Max # of 7280x4320 pixel displays @ 60hz	2 (2 @ 60Hz) OR 4 (4 @ 60Hz if panel is 8K DSC)
Video connectors	Four DisplayPorts 1.4
Video connectors	One USB-C (DP1.4 bandwidth)
Included video adapters (with systems or customer kits)	None
PCIe Aux power connectors needed	8+6-pin
Maximum power	265 W (with USB-C)

GRAPHICS

RADEON PRO W5700	
PCIe slot width	2
Memory (GDDR5)	8 GB GDDR6
Open GL	4.6
Open CL	2.0
DirectX	12.0
Vulcan	1.1
PCIe support	x16 Gen4
Max Resolution (# of DisplayPorts used)	7680x4320 @60hz (two DisplayPorts)
Maximum Monitors using DP Multi-Stream (monitor to monitor connections)	6
Maximum monitors (direct connection)	6
Max # of 4Kx2K displays @ 60hz	6
Max # of 5120x2880 pixel displays @ 60hz	3
Max # of 7280x4320 pixel displays @ 60hz	3
Video connectors	5x mDP 1.4, 1x USB-C
Included video adapters (with systems or customer kits)	None
PCIe Aux power connectors needed	8-pin + 6-pin
Maximum power	205 W

GRAPHICS

RADEON PRO WX 9100	
PCIe slot width	2
Memory (GDDR5)	16 GB HMB2
Open GL	4.5
Open CL	2.0
DirectX	12.0
Vulcan	1.0
PCIe support	x16 Gen3
Max Resolution (# of DisplayPorts used)	7680x4320 @ 60Hz (two DisplayPorts)
Maximum Monitors using DP Multi-Stream (monitor to monitor connections)	6
Maximum monitors (direct connection)	6
Max # of 4Kx2K displays @ 60hz	6 (2 displays @120Hz)
Max # of 5120x2880 pixel displays @ 60hz	3 (dual DP cables)
Max # of 7280x4320 pixel displays @ 60hz	1 (dual DP cables)
Video connectors	6 mini-DisplayPort 1.4
Included video adapters (with systems or customer kits)	None
PCIe Aux power connectors needed	8 pin + 6 pin
Maximum power	250 W

GRAPHICS

NVIDIA QUADRO P6000 EOL	
PCIe slot width	2
Memory (GDDR5)	24GB GDDR5X
Open GL	4.5
Open CL	
DirectX	12.0
Vulkan	1.0
PCIe support	x16 Gen3
Max Resolution (# of DisplayPorts used)	7680x4320 24bpp @120hz (four DisplayPorts) 7680x4320 24bpp @60Hz (two DisplayPorts)
Maximum Monitors using DP Multi-Stream (monitor to monitor connections)	4
Maximum monitors (direct connection)	4
Max # of 4Kx2K displays @ 60hz	4
Max # of 5120x2880 pixel displays @ 60hz	4
Max # of 7280x4320 pixel displays @ 60hz	1 (dual DP cables)
Video connectors	One Dual Link DVI-I Four DisplayPorts One Stereo (optional) SYNC connector
Included video adapters (with systems or customer kits)	None
PCIe Aux power connectors needed	8-pin (ships with an adapter for 8pin to dual PCIe 6-pin for system power)
Maximum power	250W

GRAPHICS

NVIDIA QUADRO RTX 6000	
PCIe slot width	Dual
Memory (GDDR6)	24GB
Open GL	4.6
Open CL	1.2
DirectX	12.1
Vulkan	1.1
PCIe support	x16 Gen3
Max Resolution (# of DisplayPorts used)	5120 x 2880 24bpp @60hz (one DisplayPort 1.4);
Max Resolution (# of DisplayPorts used)	7680 × 4320 36bpp @60Hz (two DisplayPorts 1.4 OR one DisplayPort 1.4 if 8K DSC panel)
Maximum Monitors using DP Multi-Stream (monitor to monitor connections)	4 (Connecting displays using MST shares link bandwidth and reduces maximum supported resolution for each attached display)
Maximum monitors (direct connection)	4
Max # of 4Kx2K displays @ 60hz	4 (4 @ 60Hz)
Max # of 5120x2880 pixel displays @ 60hz	4 (4 @ 60Hz)
Max # of 7280x4320 pixel displays @ 60hz	2 (2 @ 60Hz) OR 4 (4 @ 60Hz if panel is 8K DSC)
Video connectors	Four DisplayPorts 1.4
Video connectors	One USB-C (DP1.4 bandwidth)
Included video adapters (with systems or customer kits)	None
PCIe Aux power connectors needed	8+6-pin
Maximum power	295W (with USB-C)

GRAPHICS

NVIDIA QUADRO RTX 8000	
PCIe slot width	Dual
Memory (GDDR6)	24GB
Open GL	4.6
Open CL	1.2
DirectX	12.1
Vulkan	1.1
PCIe support	x16 Gen3
Max Resolution (# of DisplayPorts used)	5120 x 2880 24bpp @60hz (one DisplayPort 1.4);
Max Resolution (# of DisplayPorts used)	7680 × 4320 36bpp @60Hz (two DisplayPorts 1.4 OR one DisplayPort 1.4 if 8K DSC panel)
Maximum Monitors using DP Multi-Stream (monitor to monitor connections)	4 (Connecting displays using MST shares link bandwidth and reduces maximum supported resolution for each attached display)
Maximum monitors (direct connection)	4
Max # of 4Kx2K displays @ 60hz	4 (4 @ 60Hz)
Max # of 5120x2880 pixel displays @ 60hz	4 (4 @ 60Hz)
Max # of 7280x4320 pixel displays @ 60hz	2 (2 @ 60Hz) OR 4 (4 @ 60Hz if panel is 8K DSC)
Video connectors	Four DisplayPorts 1.4
Video connectors	One USB-C (DP1.4 bandwidth)
Included video adapters (with systems or customer kits)	None
PCIe Aux power connectors needed	8+6-pin
Maximum power	295W (with USB-C)

GRAPHICS

NVIDIA QUADRO GV100	
PCIe slot width	2
Memory (GDDR5)	32 GB HBM2
Open GL	4.6
Open CL	1.2
DirectX	12.1
Vulkan	1.1
PCIe support	x16 Gen3
Max Resolution (# of DisplayPorts used)	7680 x 4320 x 24 bpp @ 30 Hz per DP port
Maximum Monitors using DP Multi-Stream (monitor to monitor connections)	4 (Connecting displays using MST shares link bandwidth and reduces maximum supported resolution for each attached display)
Maximum monitors (direct connection)	4
Max # of 4Kx2K displays @ 60hz	4
Max # of 5120x2880 pixel displays @ 60hz	4
Max # of 7280x4320 pixel displays @ 60hz	2 (dual DP cables per display)
Video connectors	Four DisplayPorts
Video connectors	One Stereo (optional)
Video connectors	SYNC connector
Included video adapters (with systems or customer kits)	None
PCIe Aux power connectors needed	8-pin (ships with an adapter for 8pin to dual PCIe 6-pin for system power)
Maximum power	250W

HARD DRIVES¹ (CONT.)

3.5" 1TB SATA 7200 RPM HDD	
Capacity (bytes)	1.0TB
Dimensions inches (W x D x H)	Approximately (4.00 x 5.787 x 1.028 inches)
Interface type and Maximum speed	SATA Up to 6Gb/s
Internal buffer size	32 MB NCQ
Rotational Speed	7200 RPM
Logical Blocks	1,953,525,168
Power Source	
Power Consumption (reference only)	Idle 5.0W, Active 10.0W
Spin Up Current (reference only)	5V (1A) ,12V (2A)

3.5" 2TB SATA 7200 RPM HDD	
Capacity (bytes)	2.0TB
Dimensions inches (W x D x H)	Approximately (4.00 x 5.787 x 1.028 inches)
Interface type and Maximum speed	SATA Up to 6Gb/s
Internal buffer size	32 MB NCQ
Rotational Speed	7200 RPM
Logical Blocks	3,907,029,168
Power Source	
Power Consumption (reference only)	Idle 5.0W, Active 10.0W
Spin Up Current (reference only)	5V (1A) ,12V (2A)

¹ For hard drives, GB means 1 billion bytes ; actual capacity varies with preloaded material and operating environment and will be less.

HARD DRIVES¹ (CONT.)

3.5” 8TB SATA 7200 RPM ENTERPRISE HDD

Capacity (bytes)	8TB
Dimensions inches (W x D x H)	101.6 mm x 147 mm x 26.1 mm
Interface type and Maximum speed	6Gbps SATA
Internal buffer size	128MB
Rotational Speed	7200 RPM
Logical Blocks	976,773,168
Power Source	
Power Consumption (reference only)	7.4W Operating 5.1W Idle
Spin Up Current (typical) 12V (peak)	2.6A

¹ For hard drives, GB means 1 billion bytes ; actual capacity varies with preloaded material and operating environment and will be less.

HARD DRIVES¹ (CONT.)

2.5" 500GB SATA 7200 RPM HDD	
Capacity (bytes)	500GB
Dimensions inches (W x D x H)	Approximately (2.75 x 3.94 x 0.374 inches)
Interface type and Maximum speed	6Gbps SATA
Internal buffer size	16 MB
Rotational Speed	7200 RPM
Logical Blocks	976,773,168
Power Source	
Power Consumption (reference only)	Idle 0.70W, Active 3.25W
Spin Up Current (reference only)	5V (1000 mA)

2.5" 2TB SATA 7200 RPM ENTERPRISE HDD	
Capacity (bytes)	2TB
Dimensions inches (W x D x H)	70.1mm x 100.45mm x 15mm
Interface type and Maximum speed	SATA 6Gb/s
Internal buffer size	128MB
Rotational Speed	7200 RPM
Logical Blocks	3,907,029,168
Power Source	
Power Consumption (reference only)	5.22W (typical-operating) 3.87W (Idle)
Spin Up Current (reference only)	

¹ For hard drives, GB means 1 billion bytes ; actual capacity varies with preloaded material and operating environment and will be less.

HARD DRIVES¹ (CONT.)

2.5" 600GB SAS 15K RPM HDD	
Capacity (bytes)	600GB
Dimensions inches (W x D x H)	69.85mm x 100.45mm x 15mm
Interface type and Maximum speed	SAS Up to 6Gb/s
Internal buffer size	64MB
Rotational Speed	15,000 RPM
Power Source	
Power Consumption (reference only –typical)	9.0W
Spin Up Current (reference only)	Not Specified

2.5" 900GB SAS 15K RPM HDD	
Capacity (bytes)	900GB
Dimensions inches (W x D x H)	Approximately (2.75 x 3.94 x 0.374 inches)
Interface type and Maximum speed	SAS Up to 6Gb/s
Internal buffer size	16MB Minimum
Rotational Speed	10,000 RPM
Power Source	
Power Consumption (reference only)	Active 9.0W
Spin Up Current (reference only)	Not Specified

¹ For hard drives, GB means 1 billion bytes ; actual capacity varies with preloaded material and operating environment and will be less.

HARD DRIVES¹ (CONT.)

2.5" 1.8TB SAS 10,000 RPM HDD	
Capacity (bytes)	1.8TB
Dimensions inches (W x D x H)	Approximately (2.75 x 3.94 x 0.374 inches)
Interface type and Maximum speed	SAS Up to 6Gb/s
Internal buffer size	16MB Minimum
Rotational Speed	10,000 RPM
Power Source	
Power Consumption (reference only)	Active 9.0W
Spin Up Current (reference only)	Not Specified

¹ For hard drives, GB means 1 billion bytes ; actual capacity varies with preloaded material and operating environment and will be less.

SOLID STATE DRIVES

2.5" SAS SSDs	
2.5" 800GB ¹ SAS 12Gbps Enterprise Solid State Drive	X
2.5" SATA SSDs:	
2.5" 960GB SATA Enterprise Solid State Drive	X
2.5" 480GB SATA Enterprise Solid State Drive	X
2.5" 1TB SATA Class 20 Solid State Drive	X
2.5" 500GB SATA Class 20 Solid State Drive	X
2.5" 256GB SATA Class 20 Solid State Drive	X
M.2 PCIe NVMe PCIe SSDs	
M.2 1TB PCIe NVMe Class 50 Solid State Drive	X
M.2 512GB PCIe NVMe Class 50 Solid State Drive	X
M.2 2TB PCIe NVMe Class 40 Solid State Drive	X
M.2 1TB PCIe NVMe Class 40 Solid State Drive	X
M.2 512GB PCIe NVMe Class 40 Solid State Drive	X
M.2 256G PCIe NVMe Class 40 Solid State Drive	X

Dell SSD classifications

	Class	Sequential* Read/Write IOMeter (MBPS)	Random** Read/Write IOMeter (KIOPS)	Interface
SATA	20 "mainstream"	487 / 425	91 / 58	SATA Interface full feature set Consumer, Commercial
	40 "performance"	1091 / 587	220 / 132	PCIe interface NVMe host protocol Consumer, Commercial Performance
	50 "performance"	1523 / 1116	300 / 247	Best in class PCIe NVMe Precision Only

Based on Dell internal testing, July 2017, using IOMeter.
Actual performance will vary with configuration, usage and manufacturing variability."

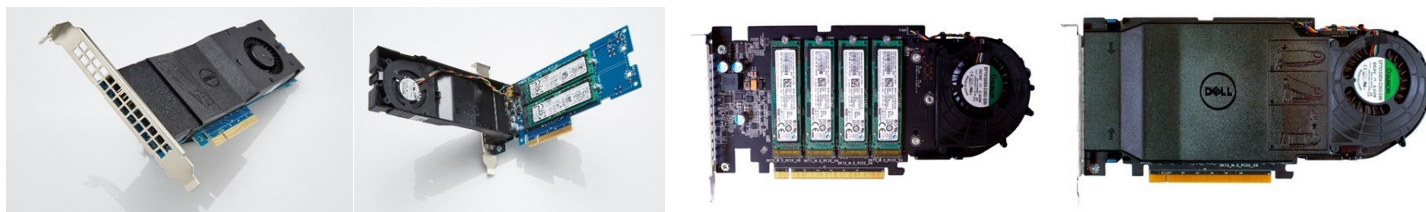
Note: Capacity 512GB, typical values, results may vary

*Sequential = boot, hibernate, daily power up and power down functions

**Random = random tasks such as file search



DELL PRECISION ULTRA -SPEED DUO AND QUAD DRIVES



Dell Precision Ultra-Speed Drive Specifications

	Duo	Quad
Configuration:		
On-board M.2 Slots	2	4
NAND Type	Class 40 Minimum	
M.2 Capacity Options	256GB, 512GB, 1TB, 2TB	
Maximum Capacity	2x 2TB	4x 2TB
System Requirements:		
System Board Connection	PCIe Gen3 X8	PCIe Gen3 X16
Form Factor	HHHL	FHFL
OS	Win 7, Win 10; RHEL, Ubuntu 18.04	
Supported Platforms	5820, 7820, 7920 Towers	7920 Rack
Performance*		
Sequential Reads	At least 1500	
Sequential Writes	At least 350K	
SPECwpc Storage General Ops.	Up to 123	
Endurance		
Terabytes Written (TBW)	Up to 72	
MTBF	800,000 Hours	
Physical		
Weight (Single M.2 Populated)	.242 lbs. (110g)	.484 lbs. (220g)
Dimensions (HWD)	167.65mm x 69.56mm x 17.77mm	240mm x 111.15mm x 19.23mm
Operating Temperature Range	50-95F (10-35C)	
Airflow	3.5 CFM	12 CFM
Certifications		
UL, CE, RoHS		

Storage Reliability & Endurance Summary – CY2018

Category	Capacity	SATA HDD	SATA Mainstream Class 20	SATA Performance Class 30	PCIe NVMe Mainstream Class 35/40	PCIe NVMe Performance Class 50
SSD Endurance (TBW)	128GB		72			
	256GB		75	150	75	150
	512GB		150	300	150	300
	1TB		300		300	600
	2TB				300	
Reliability (MTBF hours)	All SSD		1,400,000			
	ALL HDD	550,000				

Endurance is a measure of SSD life, how much data can be written for how long – measured in Terabytes Written, TBW, our SSD's are specified for TBW over a 5 year lifecycle

Reliability is measured in Mean Time Between Failures, MTBF units = hours

Values shown are minimum required – Dell Internal Engineering Specification.

OPTICAL DRIVES

	8x Slimline DVD-ROM	8x Slimline DVD +/- R/W ¹
External Dimensions inches/centimeters (Without Bezel – W x H x D)	128.0 mm (5.04)/ 9.5mm (0.5 in)/ 126.1mm (4.97in)	128.0 mm (5.04)/ 9.5mm (0.5 in)/ 126.1mm (4.97in)
Weight (max) pounds/kilograms	170g	170g
Interface type and speed	SATA 1.5Gbit/s	SATA 1.5Gbit/s
Disc Capacity	Standard	Standard
Internal buffer size	supplier dependent	supplier dependent
Access Times (typical)	supplier dependent	supplier dependent
Writes	NA	8x DVD/ 24x CD
Reads	8x DVD/ 24x CD	8x DVD/ 24x CD
Power Source		
DC Power Requirements	5V	5V
DC Current	1000mA	1000mA

¹ Discs burned with this drive may not be compatible with some existing drives and players; using DVD+R media provides maximum compatibility.

BIOS DEFAULTS

System BIOS Attribute			Default Value
System Information			
	System Model Name		Precision Rack 792-0
	System BIOS Version		CURRENT VERSION (ie: 1.0.4)
	System Management Engine Version		Current Version (IE: 3.06.270)
	System Service Tag		Tag Value
	System Manufacturer		Dell Inc.
	System Manufacturer Contact Information		WWW.DELL.COM
	System CPLD Version		CURRENT VERSION (ie: 1.0.1)
	UEFI Compliance Version		Current version (IE: 2.3.1)
Memory Settings			
	System Memory Size		RAM installed (IE: 8GB)
	System Memory Type		ECC DDR4
	System Memory Speed		Dependant on Memory & CPU populated
	System Memory Voltage		1.20V read from SPD
	Video Memory		16MB
	System Memory Testing		Disabled
	Memory Operating Mode		Optimizer Mode
	Node Interleaving		Disabled
	Opportunistic Self-Refresh		Disabled

BIOS DEFAULTS (CONT.)

System BIOS Attribute		Default Value
Processor Settings		
	Logical Processor	Enabled
	CPU Interconnect Speed	Maximum Data rate
	Virtualization Technology	Enabled
	Adjacent Cache Line Prefetch	Enabled
	Hardware Prefetcher	Enabled
	DCU Streamer Prefetcher	Enabled
	DCU IP Prefetcher	Enabled
	Sub NUMA Cluster	Disabled
	Logical Processor Idling	Disabled
	X2Apic Mode	Disabled
	Dell Controlled Turbo	Disabled
	Number of Cores per Processor	ALL
	Processor 64-bit Support	Yes
	Processor Core Speed	Based on currently installed CPU
	Processor Bus Speed	Based on currently installed CPU
	Processor 1	
	Family-Model-Stepping	Based on currently installed CPU
	Brand	Based on currently installed CPU
	Level 2 Cache	Based on currently installed CPU
	Level 3 Cache	Based on currently installed CPU
	Number of Cores	Based on currently installed CPU
	Processor 2	
	Family-Model-Stepping	Based on currently installed CPU
	Brand	Based on currently installed CPU
	Level 2 Cache	Based on currently installed CPU
	Level 3 Cache	Based on currently installed CPU
	Number of Cores	Based on currently installed CPU

BIOS DEFAULTS (CONT.)

System BIOS Attribute			Default Value	
SATA Settings				
	Embedded SATA		RAID	
	Security Freeze Lock		Disabled	
	Write Cache		Disabled	
	Port A		Auto	
	Port B		Auto	
	Port C		Auto	
	Port D		Auto	
	Port E		Auto	
	Port F		Auto	
	Port G		Auto	
	Port H		Auto	
	Port I		Auto	
	Port J		Auto	
NVMe Settings				
	NVMe Mode		Non-RAID	
Boot Settings				
	Boot Mode		UEFI	
	Boot Sequence Retry		Enabled	
	Hard Disk Failover		Disabled	
	Boot Option Settings		all enabled	
Network Settings				
	PXE Device 1		Enabled	
	PXE Device 2		Disabled	
	PXE Device 3		Disabled	
	PXE Device 4		Disabled	
	PXE Device 1 - sub link			
		Interface	Integrated NIC 1 Port 1 Partition1	
		Protocol	IPV4	
		VLAN	Disabled	
		VLAN ID	1	
		VLAN Priority	0	
	PXE Device 2 - sub link		greyed out - no selection	
	PXE Device 3 - sub link		greyed out - no selection	
	PXE Device 4 - sub link		greyed out - no selection	
	HTTP Device1		Disabled	
	HTTP Device2		Disabled	
	HTTP Device3		Disabled	
	HTTP Device4		Disabled	
	iSCSI Initiator Name		blank	
	iSCSI Device1		Disabled	

BIOS DEFAULTS (CONT.)

System BIOS Attribute		Default Value	
Integrated Devices			
	User Accessible USB Ports		All Ports on
	Internal USB Port		on
	iDRAC Direct USB Port		On
	Integrated Network Card1		Enabled
	I/O AT DMA Engine		Disabled
	Embedded Video Control- ler		Enabled
	Current State of Embed- ded Video Controller		Enabled
	SR-IOV Global Enable		Disabled
	OS Watchdog Timer		Disabled
	Memory Mapped I/O above 4GB		Enabled
	Memory Mapped I/O Base		512GB
	Slot Disablement - sub link		
		Slot 1	Enabled
		Slot 2	Enabled
		Slot 3	Enabled
		Slot 4	Enabled
		Slot 5	Enabled
		Slot 6	Enabled
		Slot 7	Enabled
	Slot 8	Enabled	
Serial Communication			
	Serial Communication		Auto
	Serial Port Address		S/D1 = Com2, S/D2 = Com1
	External Serial Connector		Serial device 1
	Failsafe Baud Rate		115200
	Remote Terminal Type		VT100/Vt220
	Redirection After Boot		Enabled

BIOS DEFAULTS (CONT.)

System BIOS Attribute		Default Value
System Profile Settings		
	System Profile	Workstation Performance
	CPU Power Management	Maximum Performance
	Memory Frequency	Maximum Performance
	Turbo Boost	Enabled
	C1E	Disabled
	C States	Enabled
	Write Data CRC	Disabled
	Memory Patrol Scrub	Standard
	Memory Refresh Rate	1x
	Uncore Frequency	Maximum
	Energy Efficient Policy	Performance
	Number of Turbo Boost Enabled cores for Processor 1	ALL
	Number of Turbo Boost Enabled cores for Processor 2	ALL
	Monitor/Mwait	Enabled
	CPU Interconnect Bus Link Power Management	Disabled
	PCI ASPML1 Link Power Management	Disabled
System Security		
	Intel® AES-NI	Enabled
	System Password	
	Setup Password	
	Password Status	Unlocked
	TPM Security	Off
	TPM Information	
	Intel® TXT	Off
	Power Button	Enabled
	AC Power Recovery	Last
	AC Power Recovery Delay	Immediate
	User Defined Delay(60s to 240s)	60
	UEFI Variable Access	Standard
	In-Band Manageability Interface	Enabled
	Secure Boot	Disabled
	Secure Boot Policy	Standard
	Secure Boot Mode	Deployed Mode

BIOS DEFAULTS (CONT.)

System BIOS Attribute			Default Value
Redundant OS Control			
	Redundant OS Location		None
Miscellaneous Settings			
	System Time		
	System Date		
	Asset Tag		
	Keyboard NumLock		On
	F1/F2 Prompt on Error		Enabled
	Load Legacy Video Option ROM		Disabled
	Dell Wyse P25/P45 BIOS access		Enabled
	Power Cycle Request		None

CHASSIS ENCLOSURE & VENTILATION REQUIREMENTS

RACK ENCLOSURE VENTILATION

If your rack enclosure has doors, they need to be of a type that allows at least 30% airflow through the enclosure (front and back).

The intake and exhaust door areas should be at a minimum, the same size as the system intake and exhaust areas for all systems installed in the rack.

Do not install your computer in a rack enclosure that does not allow airflow. This restricts the airflow and impacts your computer's performance, possibly causing it to overheat.

OPEN AIR MINIMUM CLEARANCE

If your computer is installed on a desk, or bench, leave at least 4" clearance from the back and front of the computer to the wall, or other obstacles to permit the airflow required for proper ventilation.

REGULATORY COMPLIANCE AND ENVIRONMENTAL

Product related conformity assessment and regulatory authorizations including Product Safety, Electromagnetic Compatibility (EMC), Ergonomics, and Communication Devices relevant to this product may be viewed at www.dell.com/regulatory_compliance. The Regulatory Datasheet for this product is located at http://www.dell.com/regulatory_compliance.

Details of Dell's environmental stewardship program to conserve product energy consumption, reduce or eliminate materials for disposal, prolong product life span and provide effective and convenient equipment recovery solutions may be viewed at www.dell.com/environment. Product related conformity assessment, regulatory authorizations, and information encompassing Environmental, Energy Consumption, Noise Emissions, Product Materials Information, Packaging, Batteries, and Recycling relevant to this product may be viewed by clicking the Design for Environment link on the webpage.