

ThinkStation P520 Platform Specifications

Product Specifications Reference (PSREF)

Form factor	33L Tower					
Dimensions	165mm/6.5" W x 460mm/18.1" D x 440mm/17.3" H (with feet)					
Weight	Maximum configuration: 52.91 lb (24kg)					
Processor Family	Up to one 140W Intel Xeon W family processor: <ul style="list-style-type: none"> Up to 18 cores at 2.3 GHz Up to 4.0 GHz with 4 cores Up to 24.75 MB cache Up to DDR4-2666 memory speed 					
Processor Sockets	1x FCLGA2066					
Chipset	Intel C422 Chipset					
Memory Sockets	8 DIMM sockets with 4 channels					
Memory Types	DDR4-2666 RDIMM					
Memory Capacity	256GB with 8 x 32GB RDIMMs					
Memory Protection	ECC					
Expansion slots	Slot 1 (CPU)	PCIe 3.0 x8, full height, full length, 25W, open ended				
	Slot 2 (CPU)	PCIe 3.0 x16, full height, full length, 75W, double-width				
	Slot 3 (PCH)	PCIe 3.0 x4, full height, half length, 25W, open ended				
	Slot 4 (CPU)	PCIe 3.0 x16, full height, full length, 75W, double-width				
	Slot 5	PCI, full height, full length, 25W				
	Slot 6 (PCH)	PCIe 3.0 x4, full height, half length, 25W, open ended				
Discrete Graphics Offering	Graphics	Memory	Power	Connector	SLI / NVlink	Max Qty
	NVS 810	4GB DDR3	68W	8xmini DP		2
	Quadro P400	2GB GDDR5	30W	3xminiDP		2
	Quadro P600	2GB GDDR5	45W	4xminiDP		2
	Quadro P620	2GB GDDR5	40W	4xminiDP		2
	Quadro P1000	4GB GDDR5	50W	4xminiDP		2
	Quadro P2000	5GB GDDR5	75W	4xDP		2
	Quadro P4000	8GB GDDR5	120W	4xDP		2
	Quadro P5000	16GB GDDR5X	180W	DVI-D DL+4xDP	SLI	2
	Quadro P6000	24GB GDDR5X	250W	DVI-D DL+4xDP		1
	Quadro RTX 4000	8GB GDDR6	160W	3xDP, 1xVirtualLink		2
	Quadro RTX 5000	16GB GDDR6	265W	4xDP, 1xVirtualLink		1
	Quadro RTX 6000	24GB GDDR6	295W	4xDP, 1xVirtualLink		1
	Quadro RTX 8000	48GB GDDR6	295W	4xDP, 1xVirtualLink		1
Quadro GP100	16GB HBM2	235W	1xDVI-D DL, 4xDP	NVLink	2	
Quadro GV100	32GB HBM2	250W	4xDP		1	
Storage Controller	Storage Controller	Type	Interface	RAID	Cache	
	Onboard Intel RSTe	Std	SATA 6Gb/s	0/1/10/5		
	9440-8i PCIe	Opt	SAS 12Gb/s, SATA 6Gb/s	0/1/10/5		
	9460-16i PCIe	Opt	SAS 12Gb/s, SATA 6Gb/s	0/1/10/5/6	4GB DDR4, SuperCap	
	NVMe Basic	Opt	PCIe NVMe	0/1/10		
	NVMe Premium	Opt	PCIe NVMe	0/1/10/5		
NVMe for Intel SSD	Opt	PCIe NVMe	0/1/10/5			
Storage Support	Disk Type	Interface	RPM	Offering	Max Qty	
	3.5" SATA HDD	SATA 6Gb/s	7.2K	1TB/2TB/4TB/6TB	6	
	2.5" SATA HDD	SATA 6Gb/s	7.2K	500GB/500GB FIPS	6	
	2.5" SATA SSD	SATA 6Gb/s		256GB/512GB/1TB/2TB	6	
	M.2 PCIe SSD	PCIe NVMe		256GB/512GB/1TB/2TB	9	
	PCIe AIC SSD	PCIe NVMe		480GB	2 (1 when quad M.2 adapter used)	
Storage Bays	Bay Type	Maximum Drives Qty				
	M.2 slot	9x M.2 SSD (2 onboard, 7 via PCIe to M.2 adapter)				
	Flex Bay	2 flex bays. Supports the following: <ul style="list-style-type: none"> 2x half-height optical drives 2x 5.25" 9.0mm optical drives 1x 5.25" 9.0mm optical drive + 2x 3.5"/2.5" SATA SSD/HDD 1x 3.5"/2.5" SATA SSD/HDD with Front Access Storage Enclosure 1x flex module for the following options: Tray 1: 9.0mm optical Tray 2: 15-in-1 USB 3.0 reader, 2x Thunderbolt, or 4-digit diagnostic display Port 1 and 2: Front USB 3.0 Type-C or eSATA 2x M.2 SSD with 2x Front Removable Drive Enclosures				
Disk bay	Up to 4x 3.5" or 2.5" disks with 4 disk bays (2 bays standard, 2 bays optional)					

Max Storage	Supports up to 9x M.2 SSD + 6x 3.5" HDD/6x 2.5" SATA disks/4x 2.5" SAS HDD + 1x PCIe AIC SSD. All HDD: 36TB using 6x 3.5" HDD All SSD: 30.48TB using 6x 2.5" SATA SSD, 9x M.2 SSD, and 1x PCIe AIC SSD	
Power supply	Supports one of the following: <ul style="list-style-type: none"> One fixed 690W, autosensing, 92%, 80 PLUS Platinum qualified One fixed 900W, autosensing, 92%, 80 PLUS Platinum qualified 	
Media reader	SD USB 2.0 card reader on most models. Optional UHS-II 15-in-1 USB 3.0 reader on flex module	
Network interfaces	Integrated one gigabit ethernet (Intel i219LM), supports Wake-on-LAN. Optional PCIe ethernet or wireless adapters are available	
WLAN + Bluetooth	Optional Intel Wireless-AC 8265, 2x2, 2.4GHz/5GHz, 802.11ac, Bluetooth 4.2, up to 867Mbps	
Security features	Power-on and admin password. Trusted Platform Module, TCG 2.0 compliant, switch to 1.2 via UEFI setting. Optional access panel lock, Kensington lock, and pad lock	
Intel vPro	Intel vPro technology supported. vPro requires Wireless-AC 8265 if Wi-Fi is needed	
Intel AMT	Intel Active Management Technology 11	
Diagnostic	Front panel warning LED. ThinkStation Diagnostics for Windows. Photo-audio transfer with Lenovo PC Diag-nostics for Android and iOS. Optional front 4-digit diagnostic display on flex module	
Base warranty	1 or 3-year limited onsite service with 9x5/NBD	
HD Audio	Realtek ALC662 codec	
Front ports	4x USB 3.0 (includes one 11W charging), 1x combo audio/microphone jack (3.5mm)	
Rear ports	2x USB 2.0, 4x USB 3.0, 1x RJ-45, 3x analog audio ports (line-in, line-out, mic-in), 2x PS/2	
Optional ports	Supports the following optional ports: Front: <ul style="list-style-type: none"> 2x Thunderbolt ports (USB Type-C) on flex module, one of two ports supports video-out 1x eSATA on flex module 1x USB Type-C on flex module, USB 3.1 gen 1 Rear: <ul style="list-style-type: none"> 1x COM port 2x USB Type-C ports via PCIe adapter, USB 3.1 gen 2. One 15W, one 5W Internal: <ul style="list-style-type: none"> 1x internal USB 3.0 port 	
	Temperature - operating	50 °F to 95 °F (10 °C to 35 °C)
	Temperature - storage (no package)	14 °F to 140 °F (-10 °C to 60 °C)
Environmental specification	Temperature - storage (with package)	-40 °F to 140 °F (-40 °C to 60 °C)
	Altitude - operating	(Unpressurized): -50ft-10000ft (-15.2m-3048m)
	Humidity - operating	10%~80%, non-condensing
	Humidity - storage (with package)	10%~90%, non-condensing
Environmental Certifications	RoHS-compliant. GREENGUARD. EPEAT Gold rating. ENERGY STAR 6.1 qualified on model 30BE0008US and 30BE0009US	
ISV certifications	Please visit www.thinkworkstations.com/isv-certifications/	

Note:
 1. Depending on many factors, actual data transfer speed mentioned on this page may be lower than theoretical speed.
 2. To support the maximum expandability, 900W power supply may be needed.
 3. Any questions or advice on ThinkStation PSREF, please contact [ThinkStation PSREF developer](mailto:ThinkStation_PSREF_developer)