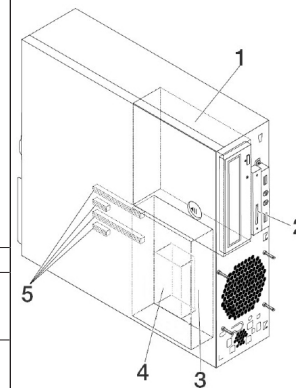


ThinkStation P320 SFF Platform Specifications

Product Specifications Reference (PSREF)

Components	Specification																																			
Chipset	Intel C236 Chipset																																			
Intel AMT	Intel Active Management Technology 11 on Xeon models, Intel Standard Manageability on other models																																			
Processor	One Intel "Kabylake" or "Skylake" processor as listed: "Kaby Lake"																																			
	<table><tr><td>Xeon E3-1280 v6</td><td>4C/3.9GHz/8MB/72W/DDR4-2400</td></tr><tr><td>Xeon E3-1275 v6</td><td>4C/3.8GHz/8MB/73W/DDR4-2400</td></tr><tr><td>Xeon E3-1270 v6</td><td>4C/3.8GHz/8MB/72W/DDR4-2400</td></tr><tr><td>Xeon E3-1245 v6</td><td>4C/3.7GHz/8MB/73W/DDR4-2400</td></tr><tr><td>Xeon E3-1240 v6</td><td>4C/3.7GHz/8MB/72W/DDR4-2400</td></tr><tr><td>Xeon E3-1230 v6</td><td>4C/3.5GHz/8MB/72W/DDR4-2400</td></tr><tr><td>Xeon E3-1225 v6</td><td>4C/3.3GHz/8MB/73W/DDR4-2400</td></tr><tr><td>Xeon E3-1220 v6</td><td>4C/3GHz/8MB/72W/DDR4-2400</td></tr><tr><td>Core i7-7700</td><td>4C/3.6GHz/8MB/65W/DDR4-2400</td></tr><tr><td>Core i5-7600</td><td>4C/3.5GHz/6MB/65W/DDR4-2400</td></tr><tr><td>Core i5-7500</td><td>4C/3.4GHz/6MB/65W/DDR4-2400</td></tr><tr><td>Core i5-7400</td><td>4C/3GHz/6MB/65W/DDR4-2400</td></tr><tr><td>Core i3-7300</td><td>2C/4GHz/4MB/51W/DDR4-2400</td></tr><tr><td>Core i3-7100</td><td>2C/3.9GHz/3MB/51W/DDR4-2400</td></tr></table>	Xeon E3-1280 v6	4C/3.9GHz/8MB/72W/DDR4-2400	Xeon E3-1275 v6	4C/3.8GHz/8MB/73W/DDR4-2400	Xeon E3-1270 v6	4C/3.8GHz/8MB/72W/DDR4-2400	Xeon E3-1245 v6	4C/3.7GHz/8MB/73W/DDR4-2400	Xeon E3-1240 v6	4C/3.7GHz/8MB/72W/DDR4-2400	Xeon E3-1230 v6	4C/3.5GHz/8MB/72W/DDR4-2400	Xeon E3-1225 v6	4C/3.3GHz/8MB/73W/DDR4-2400	Xeon E3-1220 v6	4C/3GHz/8MB/72W/DDR4-2400	Core i7-7700	4C/3.6GHz/8MB/65W/DDR4-2400	Core i5-7600	4C/3.5GHz/6MB/65W/DDR4-2400	Core i5-7500	4C/3.4GHz/6MB/65W/DDR4-2400	Core i5-7400	4C/3GHz/6MB/65W/DDR4-2400	Core i3-7300	2C/4GHz/4MB/51W/DDR4-2400	Core i3-7100	2C/3.9GHz/3MB/51W/DDR4-2400							
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Memory DIMM slots	4 DIMM slots, 2-channel (integrated memory controller in processor)																																			
Memory type/capacity	Up to 64GB ECC/non-ECC (4 x 16GB), DDR4-2400. UDIMM. "Skylake" processor supports up to DDR4-2133. Core i7 and i5 processors cannot support ECC.																																			
Intel HD Graphics in processor	Integrated Intel HD P530 in Xeon E3-12x5 v5 processors, or Intel HD P630 in Xeon E3-12x5 v6 processors, or Intel HD 530 in Core i7, i5, or i3 6000 processors, or Intel HD 630 in Core i7, i5, or i3 7000 processors. Works along with discrete graphics to support multi-display, enables three display connectors (2 DP, 1 VGA) on rear.																																			
Discrete graphics	Two PCI Express 3.0 x16 slots for graphics adapters. Up to two NVIDIA Quadro P1000. Supports the following NVIDIA graphic adapters:																																			
	<table><tr><th>Adapter</th><th>Cores</th><th>Memory</th><th>Power</th><th>Connector</th></tr><tr><td>NVS 310</td><td>48</td><td>1GB</td><td>19.5W</td><td>2xDP</td></tr><tr><td>NVS 315</td><td>48</td><td>1GB</td><td>19.5W</td><td>2xDVI-I SL/2xDP</td></tr><tr><td>NVS 510</td><td>192</td><td>2GB</td><td>33.4W</td><td>4xmini DP</td></tr><tr><td>Quadro P400</td><td>256</td><td>2GB</td><td>30W</td><td>3xminiDP</td></tr><tr><td>Quadro P600</td><td>384</td><td>2GB</td><td>40W</td><td>4xminiDP</td></tr><tr><td>Quadro P1000</td><td>640</td><td>4GB</td><td>47W</td><td>4xminiDP</td></tr></table>	Adapter	Cores	Memory	Power	Connector	NVS 310	48	1GB	19.5W	2xDP	NVS 315	48	1GB	19.5W	2xDVI-I SL/2xDP	NVS 510	192	2GB	33.4W	4xmini DP	Quadro P400	256	2GB	30W	3xminiDP	Quadro P600	384	2GB	40W	4xminiDP	Quadro P1000	640	4GB	47W	4xminiDP
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	Quadro P600	384	2GB	40W	4xminiDP																															
Quadro P1000	640	4GB	47W	4xminiDP																																
Onboard drive controller	Five onboard SATA 6.0Gb/s connectors for optical and disk drives plus one SATA connector for optional eSATA. RAID 0, 1, 5* support * RAID 5 needs three 2.5" SSD drives.																																			
Drive Bays	One external 5.25" bay, one internal 3.5" bay (see right). Up to one 9mm optical + 2 x 3.5" disk drive bays + 1 x 2.5" disk drive bay + two M.2 NVMe SSD																																			
Supporting disk drives	<table><tr><td>3.5" SATA HDD (7.2K 6Gbs)</td><td>1TB/2TB/4TB/1TB hybrid/2TB hybrid</td></tr><tr><td>2.5" SATA SSD (6Gbs)</td><td>256GB Opal/512GB/512GB Opal/1TB Opal/2TB opal</td></tr><tr><td>M.2 NVMe SSD, via PCIe adapter</td><td>256GB Opal/512GB Opal/1TB Opal, via PCIe 3.0 x4 adapter, up to 2; or 16GB Intel Optane Memory, PCIe 3.0 x2</td></tr></table>	3.5" SATA HDD (7.2K 6Gbs)	1TB/2TB/4TB/1TB hybrid/2TB hybrid	2.5" SATA SSD (6Gbs)	256GB Opal/512GB/512GB Opal/1TB Opal/2TB opal	M.2 NVMe SSD, via PCIe adapter	256GB Opal/512GB Opal/1TB Opal, via PCIe 3.0 x4 adapter, up to 2; or 16GB Intel Optane Memory, PCIe 3.0 x2																													
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Max internal storage	10TB (2 x 4TB 3.5" HDDs + 1 x 2TB 2.5" SSD) plus two 1TB M.2 NVMe SSD																																			
Media reader	9-in-1 card reader. Optional 29-in-1 card reader on selected models																																			
Power supply	210 watts with variable speed fan, autosensing, Climate Savers Computing Bronze, 80 PLUS Bronze qualified																																			
Onboard Ethernet	One onboard gigabit ethernet, Intel I219LM, supports Wake-on-LAN																																			
HD Audio	Realtek ALC662 codec																																			
TPM	Standard, TCG 2.0-compliant																																			

Components	Specification
Front ports	Two USB 3.0, microphone (3.5mm), headphone (3.5mm)
Rear ports	1 VGA and 2 DisplayPort (for Intel HD Graphics models only), two USB 2.0, four USB 3.0, one serial (9-pin), one ethernet (RJ-45), three analog audio ports (line-in, line-out, mic-in)
Mechanical	- Raven black color; metal case 4.02"W x 15.53"D x 13.31"H 102mm W x 394.5mm D x 338mm H 17.2 lb (7.9kg) max configuration 12.9-liter
Environmental certifications	GREENGUARD certified/RoHS-compliant/EPEAT Gold rating/ENERGY STAR 6.1 qualified
Limited warranty	1 or 3-year limited onsite service with 9x5/NBD. Some parts are Customer Replaceable Units.
ISV certifications	Please visit www.thinkworkstations.com/isv-certifications/



Drive Bays and PCIe Slots

Bay 1	5.25", supports one of the following: HH optical/flex module***/9mm optical+3.5" HDD bay/ 3.5" HDD bay/Front Access Storage Enclosure *** Flex module supports one or more of the following: 9mm optical/ 29-in-1 reader/front IEEE 1394/front eSATA. Up to one flex module is supported per system.
Bay 2	Optional 9-in-1 single slot reader
Bay 3	Standard 3.5" HDD bay
Bay 4	Optional 2.5" HDD bay (under Bay 3)
5 -Slots	Four PCIe slots (top-down): Slot 1: Low Profile, PCIe 3.0 x16 (near CPU) Slot 2: Low Profile, PCIe 3.0 x1 Slot 3: Low Profile, PCIe 3.0 x16 (x4 elec) Slot 4: Low Profile, PCIe 3.0 x1