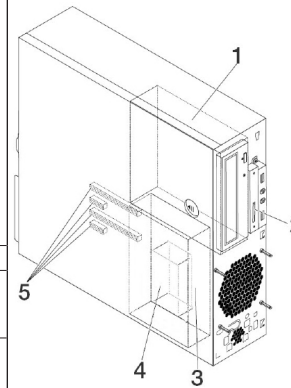


ThinkStation P320 SFF Platform Specifications

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 border="1"> <tbody> <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> </tbody> </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 | | | | | | | |
| | 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 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | "Skylake" | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | <table border="1"> <tbody> <tr><td>Xeon E3-1245 v5</td><td>4C/3.5GHz/8MB/80W/DDR4-2133</td></tr> <tr><td>Xeon E3-1240 v5</td><td>4C/3.5GHz/8MB/80W/DDR4-2133</td></tr> <tr><td>Xeon E3-1230 v5</td><td>4C/3.4GHz/8MB/80W/DDR4-2133</td></tr> <tr><td>Xeon E3-1225 v5</td><td>4C/3.3GHz/8MB/80W/DDR4-2133</td></tr> <tr><td>Xeon E3-1220 v5</td><td>4C/3GHz/8MB/80W/DDR4-2133</td></tr> <tr><td>Core i7-6700</td><td>4C/3.4GHz/8MB/65W/DDR4-2133</td></tr> <tr><td>Core i5-6500</td><td>4C/3.2GHz/6MB/65W/DDR4-2133</td></tr> <tr><td>Core i5-6400</td><td>4C/2.7GHz/6MB/65W/DDR4-2133</td></tr> <tr><td>Core i3-6100</td><td>2C/3.7GHz/3MB/51W/DDR4-2133</td></tr> </tbody> </table> | Xeon E3-1245 v5 | 4C/3.5GHz/8MB/80W/DDR4-2133 | Xeon E3-1240 v5 | 4C/3.5GHz/8MB/80W/DDR4-2133 | Xeon E3-1230 v5 | 4C/3.4GHz/8MB/80W/DDR4-2133 | Xeon E3-1225 v5 | 4C/3.3GHz/8MB/80W/DDR4-2133 | Xeon E3-1220 v5 | 4C/3GHz/8MB/80W/DDR4-2133 | Core i7-6700 | 4C/3.4GHz/8MB/65W/DDR4-2133 | Core i5-6500 | 4C/3.2GHz/6MB/65W/DDR4-2133 | Core i5-6400 | 4C/2.7GHz/6MB/65W/DDR4-2133 | Core i3-6100 | 2C/3.7GHz/3MB/51W/DDR4-2133 | | | | | | | | | | | | | | | | |
| | | Xeon E3-1245 v5 | 4C/3.5GHz/8MB/80W/DDR4-2133 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Xeon E3-1240 v5 | 4C/3.5GHz/8MB/80W/DDR4-2133 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Xeon E3-1230 v5 | | 4C/3.4GHz/8MB/80W/DDR4-2133 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Xeon E3-1225 v5 | | 4C/3.3GHz/8MB/80W/DDR4-2133 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Xeon E3-1220 v5 | | 4C/3GHz/8MB/80W/DDR4-2133 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Core i7-6700 | | 4C/3.4GHz/8MB/65W/DDR4-2133 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Core i5-6500 | | 4C/3.2GHz/6MB/65W/DDR4-2133 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Core i5-6400 | | 4C/2.7GHz/6MB/65W/DDR4-2133 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Core i3-6100 | 2C/3.7GHz/3MB/51W/DDR4-2133 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 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 530 in Core i7, i5, or i3 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 border="1"> <thead> <tr> <th>Adapter</th> <th>Cores</th> <th>Memory</th> <th>Power</th> <th>Connector</th> </tr> </thead> <tbody> <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> </tbody> </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 |
| | 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 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 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 | 3.5" SATA HDD (7.2K 6Gbs) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 2.5" SATA SSD (6Gbs) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | M.2 NVMe SSD | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 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 | <ul style="list-style-type: none"> 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 |