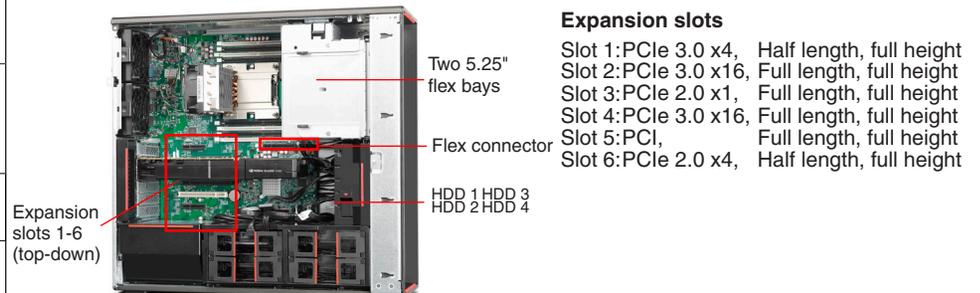


ThinkStation P510 Platform Specifications

Product Specifications Reference (PSREF)

| Components | Specification | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------------------------------|--|---|--------|--------|---------------|------------------------|--------------|---------|----|-----|-------|--|------|---------|----|-----|-------|--|-----------------|---------|-----|-----|-----|--|-----------|---------|------|-----|-----|--|-----------|-------------|-----|-----|-----|--|-------------|-------------|-----|-----|-----|--|-------------|--------------|-----|-----|-----|--|-----------|--------------|-----|-----|-----|--|---------------|--------------|------|-----|------|--|---------------|--------------|------|-----|------|-----|------------------------|--------------|-----|-----|-----|--|------|--------------|------|-----|------|--|------|--------------|------|-----|------|-----|---------------|--------------|------|------|------|--|---------------|-----------|------|------|------|--|--|
| Chipset | Intel C612 Platform Controller Hub (PCH) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| System mgmt | Intel Active Management Technology 9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Processor | Up to one 145W Intel Xeon E5-2600 v4 or E5-1600 v4 family processors. 22 cores up to 2.2GHz, 16 cores up to 2.6GHz, 14 cores up to 2.6GHz, 12 cores up to 2.2GHz, 10 cores up to 2.4GHz, 8 cores up to 3.4GHz, 6 cores up to 3.6GHz, 4 cores up to 3.7GHz Or up to one Intel Xeon E5-2600 v3 or E5-1600 v3 processors (not available in EMEA). | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Coprocessor | None | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Memory DIMM slots | 8 DIMM sockets, 4-channel capable. RDIMM, ECC, DDR4, 2400MHz | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Memory capacity | 256GB | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Graphics, GPU computing | Two PCIe 3.0 x16 slots for graphics and GPU computing adapters. Up to two NVIDIA Quadro M5000 SLI | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Supporting Graphics and GPU computing | <table border="1"> <thead> <tr> <th>Adapter</th> <th>Cores</th> <th>Memory</th> <th>Power</th> <th>SLI</th> <th>Connector***</th> </tr> </thead> <tbody> <tr> <td>NVS 310</td> <td>48</td> <td>1GB</td> <td>19.5W</td> <td></td> <td>2xDP</td> </tr> <tr> <td>NVS 315</td> <td>48</td> <td>1GB</td> <td>19.5W</td> <td></td> <td>2xDVI-I SL/2xDP</td> </tr> <tr> <td>NVS 510</td> <td>192</td> <td>2GB</td> <td>35W</td> <td></td> <td>4xmini DP</td> </tr> <tr> <td>NVS 810</td> <td>1024</td> <td>4GB</td> <td>68W</td> <td></td> <td>8xmini DP</td> </tr> <tr> <td>Quadro K420</td> <td>192</td> <td>2GB</td> <td>41W</td> <td></td> <td>DVI-I DL+DP</td> </tr> <tr> <td>Quadro K620</td> <td>384</td> <td>2GB</td> <td>45W</td> <td></td> <td>DVI-I DL+DP</td> </tr> <tr> <td>Quadro K1200</td> <td>512</td> <td>4GB</td> <td>45W</td> <td></td> <td>4xmini DP</td> </tr> <tr> <td>Quadro K2200</td> <td>640</td> <td>4GB</td> <td>68W</td> <td></td> <td>DVI-I DL+2xDP</td> </tr> <tr> <td>Quadro K4200</td> <td>1344</td> <td>4GB</td> <td>108W</td> <td></td> <td>DVI-I DL+2xDP</td> </tr> <tr> <td>Quadro K5200</td> <td>2304</td> <td>8GB</td> <td>150W</td> <td>SLI</td> <td>DVI-I DL+DVI-D DL+2xDP</td> </tr> <tr> <td>Quadro M2000</td> <td>768</td> <td>4GB</td> <td>75W</td> <td></td> <td>4xDP</td> </tr> <tr> <td>Quadro M4000</td> <td>1664</td> <td>8GB</td> <td>120W</td> <td></td> <td>4xDP</td> </tr> <tr> <td>Quadro M5000</td> <td>2048</td> <td>8GB</td> <td>150W</td> <td>SLI</td> <td>DVI-I DL+4xDP</td> </tr> <tr> <td>Quadro M6000</td> <td>3072</td> <td>24GB</td> <td>250W</td> <td></td> <td>DVI-I DL+4xDP</td> </tr> <tr> <td>Tesla K40</td> <td>2880</td> <td>12GB</td> <td>235W</td> <td></td> <td></td> </tr> </tbody> </table> | Adapter | Cores | Memory | Power | SLI | Connector*** | NVS 310 | 48 | 1GB | 19.5W | | 2xDP | NVS 315 | 48 | 1GB | 19.5W | | 2xDVI-I SL/2xDP | NVS 510 | 192 | 2GB | 35W | | 4xmini DP | NVS 810 | 1024 | 4GB | 68W | | 8xmini DP | Quadro K420 | 192 | 2GB | 41W | | DVI-I DL+DP | Quadro K620 | 384 | 2GB | 45W | | DVI-I DL+DP | Quadro K1200 | 512 | 4GB | 45W | | 4xmini DP | Quadro K2200 | 640 | 4GB | 68W | | DVI-I DL+2xDP | Quadro K4200 | 1344 | 4GB | 108W | | DVI-I DL+2xDP | Quadro K5200 | 2304 | 8GB | 150W | SLI | DVI-I DL+DVI-D DL+2xDP | Quadro M2000 | 768 | 4GB | 75W | | 4xDP | Quadro M4000 | 1664 | 8GB | 120W | | 4xDP | Quadro M5000 | 2048 | 8GB | 150W | SLI | DVI-I DL+4xDP | Quadro M6000 | 3072 | 24GB | 250W | | DVI-I DL+4xDP | Tesla K40 | 2880 | 12GB | 235W | | |
| | Adapter | Cores | Memory | Power | SLI | Connector*** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | NVS 310 | 48 | 1GB | 19.5W | | 2xDP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | NVS 315 | 48 | 1GB | 19.5W | | 2xDVI-I SL/2xDP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | NVS 510 | 192 | 2GB | 35W | | 4xmini DP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | NVS 810 | 1024 | 4GB | 68W | | 8xmini DP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Quadro K420 | 192 | 2GB | 41W | | DVI-I DL+DP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Quadro K620 | 384 | 2GB | 45W | | DVI-I DL+DP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Quadro K1200 | 512 | 4GB | 45W | | 4xmini DP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Quadro K2200 | 640 | 4GB | 68W | | DVI-I DL+2xDP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Quadro K4200 | 1344 | 4GB | 108W | | DVI-I DL+2xDP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Quadro K5200 | 2304 | 8GB | 150W | SLI | DVI-I DL+DVI-D DL+2xDP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Quadro M2000 | 768 | 4GB | 75W | | 4xDP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Quadro M4000 | 1664 | 8GB | 120W | | 4xDP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Quadro M5000 | 2048 | 8GB | 150W | SLI | DVI-I DL+4xDP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Quadro M6000 | 3072 | 24GB | 250W | | DVI-I DL+4xDP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tesla K40 | 2880 | 12GB | 235W | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RAID controller | Supports one of the following: RAID 0, 1, 5, 10 with onboard SATA controller in chipset, SATA 6Gb/s. RAID 0, 1, 5, 10 with optional LSI RAID flex adapter, 12Gb/s SAS and SATA. RAID 0, 1, 5, 6, 10 with optional LSI 9364-8i PCIe adapter, 1GB memory, 12Gb/s SAS and SATA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Drive Bays | Two external 5.25" flex bays for flex module, optical drives, or optional disk drives. Four 3.5" internal bays. Each 3.5" bay can support dual drives on selected models (see right). | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Supporting storage | 3.5" HDD, 7.2K SATA6Gbs | 500GB/1TB/2TB/3TB/4TB, 1TB/2TB hybrid | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 2.5" HDD, 15K SAS12Gbs | 300GB/600GB | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 2.5" SSD, SAS12Gbs | 200GB/400GB/800GB | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 2.5" SSD, SATA6Gbs | 180GB/240GB/256GB/480GB with OPAL, 256GB/512GB/1TB without OPAL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | PCIe SSD, U.2 | 400GB | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | PCIe SSD, M.2 | 256 GB/512GB | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PCIe SSD, PCIe adapter | 400GB | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Flex connector | One flex connector, supports one of the following: • Up to one LSI RAID flex adapter for SATA/SAS RAID • Up to one Multi-I/O flex adapters for one 2.5" PCIe SSD • Up to one M.2 flex adapters for one M.2 PCIe SSD | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Network interfaces | Integrated one Gigabit Ethernet (Intel i218LM), supports Wake-on-LAN. Optional discrete Ethernet is available | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| HD Audio | Realtek ALC662 codec | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TPM | TCG 1.2-compliant | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Power supply | One fixed 490 watts, autosensing, 90%, 80 PLUS Gold qualified. Or one fixed 650 watts, autosensing, 92%, 80 PLUS Platinum qualified | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Components | Specification | |
|-----------------------------------|--|--------------------------------------|
| Front ports | Four USB 3.0 (one Diagnostic, one Always On), one combo audio/microphone jack (3.5mm) | |
| Rear ports | Four 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), two PS/2 | |
| Add-on ports | Supports the following optional ports: Two IEEE 1394 (one on rear and one on front flex module) via PCIe adapter, up to one adapter per system. Two rear USB 3.0 per PCIe adapter, up to three adapters per system. One rear Thunderbolt via PCIe adapter. One front eSATA (on flex module), or one rear eSATA via cable (also needs one PCIe slot), up to one eSATA port per system. One internal USB 3.0 port via cable, cannot be intermixed with 29-in-1 reader | |
| Media reader | 9-in-1 USB 2.0 or 29-in-1 USB 3.0 card reader | |
| Mechanical | <ul style="list-style-type: none"> 36-liter: 175mm/6.89" W x 470mm/18.5" D x 440mm/17.32" H (with feet) Tool-less parts: all except CPU fansink 48.94 lb (22.2kg) max configuration | |
| Environmental specification | Temperature - operating | 50 °F to 95 °F (10 °C to 35 °C) |
| | Temperature - non operating (no package) | 14 °F to 140 °F (-10 °C to 60 °C) |
| | Temperature - non operating (with package) | -40 °F to 140 °F (-40 °C to 60 °C) |
| | Altitude - operating | (Unpressurized): 0-10000ft (0-3048m) |
| | Humidity - operating | 10%-80%, non-condensing |
| Humidity - storage (with package) | 10%-90%, non-condensing | |
| | RoHS-compliant, GREENGUARD on all models. EPEAT Gold rating, ENERGY STAR 6.1 qualified on selected models. | |
| Base warranty | 3-year limited onsite service with 9x5/NBD | |



Expansion slots

- Slot 1: PCIe 3.0 x4, Half length, full height
- Slot 2: PCIe 3.0 x16, Full length, full height
- Slot 3: PCIe 2.0 x1, Full length, full height
- Slot 4: PCIe 3.0 x16, Full length, full height
- Slot 5: PCI, Full length, full height
- Slot 6: PCIe 2.0 x4, Half length, full height

Drive Bays

- HDD 1-4: Standard 3.5" HDD bay, up to four 3.5" or 2.5" disk drives.
On selected models, each 3.5" bay can support 2.5" (9mm or less) drive plus 3.5" drive, or two 2.5" (15mm or less) drives.
- Flex bay: Two 5.25" flex bays, for HH optical drives.
Or up to one optional flex module (Flex module supports one or more of the following options: 9.5mm optical/29-in-1 USB 3.0 reader/front IEEE 1394/front eSATA).
Or up to two HDD bays for two drives, 3.5" or 2.5" each, SATA only.

For the list of ISV certifications, please visit www.thinkworkstations.com/isv-certifications
For a list of all supported options, please visit https://download.lenovo.com/pccbbs/options_iso/ocm_july_2016.xlsx sheet

| Model | 30B5001A++ |
|-------------------------|--|
| Product | ThinkStation P510 |
| Region | EMEA |
| Machine Type | 30B5 |
| TopSeller | TopSeller |
| Processor | Xeon E5-1630 v4 4C/3.7GHz/ 10MB/140W/DDR4-2400 |
| Graphics | Open |
| Memory | 2x8GB RDIMM DDR4-2400 ECC |
| RAID Controller | Onboard |
| Max Drives in 3.5" Bays | 4 |
| Storage | 1x256GB SSD 2.5" SATA6Gbs Opal |
| Optical | HH DVD±RW |
| Media Reader | 9-in-1 |
| Power Supply | 650W 92% |
| Add-on Ports | None |
| Keyboard / Mouse | USB / USB Optical |
| Operating System | Windows 10 DG Windows 7 Pro 64 |
| Warranty | 3-year |
| Global | No |
| Ann Date (mm/yy) | 06/16 |