Summary of Changes

This section describes the changes made in this version of ThinkStation PSREF and in previous version. This edition might also include minor corrections and editorial changes which are not identified.

December 31, 2019 - Version 553
► Add Xeon W-2200 series Processor and DDR4-2933 memory on ThinkStation P520c and P520

December 11, 2019 - Version 552
► Add Xeon Gold 6226 and 6244 on ThinkStation P920 and P720

August 7, 2019 - Version 546
► Update processor information on ThinkStation P330 Tiny

July 17, 2019 - Version 545
► Update EPEAT rating to Silver on most ThinkStation

June 26, 2019 - Version 544
► Add ThinkStation P330 Tower Gen 2/P330 SFF Gen 2 CPU Async update

May 15, 2019 - Version 542
► New ThinkStation P330 Tower Gen 2/P330 SFF Gen 2 announced on April 2019
► Update ThinkStation P920/P720/P520 specifications, add Quadro RTX 8000, DDR4-2933, Xeon Scalable Gen 2

March 13, 2019 - Version 539
► Add Intel vPro information on ThinkStation P330 Tower/P330 SFF/P520c/P520/P720/P920

February 20, 2019 - Version 538
► New ThinkStation P330 Tower models announced on February 2019
► Update ThinkStation P920/P720/P520 specifications, add Quadro RTX4000/5000/6000

August 22, 2018 - Version 529
► New ThinkStation P330 Tower/SFF/Tiny models announced on August 2018
► Update ThinkStation P920/P720 specifications, update flex bay and graphics adapter section

August 1, 2018 - Version 528
► New product ThinkStation P330 Tower/SFF/Tiny announced on July 2018
► Update ThinkStation P920/P720/P520/P520c, add Refresh 2.0 information
► Remove all MTM PNs from PDF version

June 20, 2018 - Version 526
► New ThinkStation P320 Tower models announced on June 2018
► Update ThinkStation P720 and P920 models, remove EOL models for US
► Update Windows 10 Pro 64 for Workstations for some ThinkStation P720/P920 models

May 30, 2018 - Version 525
► Added ThinkStation P720/P920 EMEA May 2018 models

April 18, 2018 - Version 523
► New ThinkStation P320 Tower/ P320 SFF/P520c/P520/P720/P920 models announced on April 2018

March 28, 2018 - Version 522
► New ThinkStation P320 Tower/ P320 SFF/P520c/P520/P920 announced on March 2018

March 7, 2018 - Version 521
► New ThinkStation P320 Tower/ P320 SFF/P720/P920 announced on February 2018
January 30, 2018 - Version 519
► New ThinkStation P520c and P520 announced on January 2018
► New ThinkStation P320 Tower/P320 SFF announced on January 2018

December 20, 2017 - Version 517
► New ThinkStation P920 models announced on December 2017
► Add Optional Ports on ThinkStation P320 Tiny

September 29, 2017 - Version 513
► New ThinkStation P920 and P720 announced on September 2017
► New ThinkStation P320 Tower/P320 SFF/P410/P510/P710/P910 announced on September 2017

September 12, 2017 - Version 512
► New ThinkStation P320 Tower and P320 SFF models announced on August 2017

August 23, 2017 - Version 511
► New ThinkStation P320 Tiny models announced on August 2017

August 2, 2017 - Version 510
► New ThinkStation P320 Tiny/P320 Tower/ P320 SFF/P410/P510 models announced on July 2017

June 21, 2017 - Version 508
► New ThinkStation P320 Tiny announced on June 2017

May 26, 2017 - Version 507
► Add ThinkStation P410/P510/P710/P910 Refresh 3.0 Wave 1 models and update platform specifications

April 19, 2017 - Version 505
► New ThinkStation P320 Tower announced on April 2017
► New ThinkStation P320 SFF announced on April 2017

March 29, 2017 - Version 504
► Added ThinkStation P310 Tower and SFF models announced on March 2017
► Added ThinkStation P410 models announced on March 2017

January 25, 2017 - Version 501
► Update quantity of PCIe SSD adapter in ThinkStation P510/P910

January 4, 2017 - Version 500
► Added ThinkStation P310 models announced on December 2016

December 14, 2016 - Version 499
► Added ThinkStation P410/P510/P710/P910 EMEA models
► Added 1TB M.2 PCIe SSD, Quadro P5000, Quadro P6000 support on ThinkStation P510/P710/P910
► Added Quadro P5000 support on ThinkStation P410
► Added 6TB 7.2K SATA6Gbs HDD support on ThinkStation P410/P510/P710/P910
► Added ThinkStation P410/P510/P710/P910 models announced on December 2016

November 23, 2016 - Version 498
► Removed ThinkStation P500/P900 due to EOL
► Added ThinkStation P310 Tower and SFF models announced on November 2016

October 12, 2016 - Version 496
► Removed flash option on ThinkStation P510/P710/P910
► Added ThinkStation P310/P410/P510/P710/P910 models announced on September 2016

August 3, 2016 - Version 493
► Removed ThinkStation P500/P700/P900 Windows 7 DG from Win8.1 U.S. models
► Added keyboard and mouse features on all ThinkStation
July 13, 2016 - Version 492
► Added ThinkStation P500, P700, and P900 Windows 10 downgrade to Windows 7 models
► Updated Maximum configuration weight of ThinkStation P410
► Added ThinkStation P710 and P910 models announced on July 2016
► Added "Maximum drives in 3.5" bay" feature on ThinkStation P500/P510/P700/P710/P900/P910

June 22, 2016 - Version 491
► Added new product ThinkStation P410/P510
► Added NVIDIA Quadro M2000 on ThinkStation P310 Tower
► Added keyboard and mouse information on ThinkStation P710/P910
► Added internal USB information on ThinkStation P710/P910

June 2, 2016 - Version 490
► Added ThinkStation P710/P910 US models
► Updated ThinkStation P710/P910 processor information

May 19, 2016 - Version 489
► Added NVIDIA Quadro M2000 on compatible product
► Updated maximum weight on ThinkStation P710
► Removed 30AT000BUS

April 27, 2016 - Version 488
► Added ThinkStation P710 and P910 models for EMEA, announced on April 2016
► Updated Energy star information on ThinkStation P500/P700/P710/P900/P910

April 6, 2016 - Version 487
► New ThinkStation P710 and P910, announced April 5, 2016 (specification only)

March 23, 2016 - Version 486
► Added processors specifications for P310/P500/P700/P900

February 24, 2016 - Version 485
► Added ThinkStation P310 and P700 models for US, announced on February 2016
► Added ThinkStation P700 and P900 models for EMEA, announced on February 2016

December 9, 2015 - Version 482
► New ThinkStation P310 Tower and SFF, announced November 24, 2015

November 18, 2015 - Version 481
► Combines ThinkStation PSREF United States version and Western Europe version.
► Extends the supported GEO into Europe, Middle East and Africa.
► Covers all TopSeller and Relationship models for US and all focus models for EMEA
## ThinkStation P330 SFF Gen 2 (30D1 and 30D2) Platform Specifications

### Components Specification

#### Form factor
- 8.4L mini-tower

#### Dimensions
- Height: 343.5 mm (13.5 in)
- Width: 92.5 mm (3.6 in)
- Depth: 305.6 mm (12 in)

#### Weight
- Maximum configuration: 13.23 lb (6.0kg)

#### Processor
- Supports one of the following processors:
  - Xeon E-2276G
  - Xeon E-2264G
  - Xeon E-2234
  - Xeon E-2224G
  - Xeon E-2174G

#### Memory Sockets
- 4 DIMM sockets with 2 channels

#### Chipset
- Intel C246 Chipset

#### Memory Types
- 8GB/16GB DDR4-2666 UDIMM ECC or 4GB/8GB/16GB/32GB DDR4-2666 UDIMM non-ECC

#### Memory Protection
- UDIMM ECC memory

#### Expansion slots
- Three PCIe 3.0 slots as following:
  - Slot 1 PCIe 3.0 x16, low profile, links to CPU
  - Slot 2 PCIe 3.0 x1, low profile, links to PCH
  - Slot 3 PCIe 3.0 x16 (negotiable link width x4), low profile, links to PCH

#### Discrete graphics card
- Integrated Intel UHD Graphics P630 in -G suffix Xeon processors, or Intel UHD Graphics 630 in Core i5 or i3 processors.
- Works along with discrete graphics to support multi-display, enables three rear display connectors (2 DP standard, 1 DP or HDMI optional)

#### Storage Controller
- Supports up to two PCIe 3.0 x16 slots for discrete graphics adapter (Slot 1 and 3). Supports the following graphics adapters:
  - Quadro P4000
  - Quadro P620
  - Quadro P1000

#### Storage Support
- Disk Type
  - 3.5" SATA HDD
  - 2.5" SATA SSD
- Interface
  - SATA 6Gb/s
  - SATA 6Gb/s
- Memory
  - 7.2K
  - 7.2K
- Power
  - 30W
  - 40W
- Connectors
  - 3x miniDP
  - 4x miniDP
- Max qty
  - 2
  - 2

#### Storage bay
- Up to 3 bays with two disk bays and one slim optical bay:
  - Bay 1: 3x M.2 SSD (1 onboard, 2 via PCIe to M.2 adapter)
  - Bay 2: 2.5" SATA bay (Optional)
  - Bay 3: 8mm Slim Odd bay

#### Storage (with package)
- 20%~90%, non-condensing

#### Storage (no package)
- 15.2 m (-50 ft) to 10,668 m (35,000 ft)

#### Temperature
- Operating: 50°F to 104°F (10°C to 40°C)
- Non-operating (with package): -4°F to 140°F (-20°C to 60°C)

#### Humidity
- Operating: 30%~90%, non-condensing
- Storage (with package): 20%~90%, non-condensing

#### Environmental certification
- RoHS-compliant
- GREENGUARD. EPEAT Silver rating and ENERGY STAR 7 qualified

#### Power supply
- Supports one 210W or 260W power supply.

#### ISA certifications
- Please visit www.thinkworkstations.com/isv-certifications/
### Components Specification

**Form factor**
- 1L, Optional VESA mount bracket kit, supports VESA 75mm and 100mm.
- Optional floor stand for vertical orientation.
- Optional tool-less chassis open.
- Optional dust filter.

**Dimensions**
- Height: 179 mm (7.0 in).
- Width: 36.5 mm (1.437 in).
- Depth: 182.9 mm (7.2 in).

**Weight**
- Maximum configuration: 3.08 lb (1.4kg).

**Recommended monitors**
- Lenovo recommends ThinkVision P series monitors for best display performance and productivity.

### Processor

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<thead>
<tr>
<th>Processor Number</th>
<th>Cores</th>
<th>Threads</th>
<th>Base Frequency</th>
<th>Cache</th>
<th>TDP</th>
<th>Memory Types</th>
<th>Processor Graphics</th>
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</tbody>
</table>

### Chipset
- Intel Q370 Chipset

### Memory
- 2 DIMM sockets, DDR4-2666, SoDIMM, Non-ECC
- 64GB (2x 32GB)

### Expansion slots
- One PCIe slot via specific riser card:
  - PCIe 3.0 x16 (negotiable link width x8) and low profile for discrete graphics card;
  - PCIe 3.0 x4 and low profile for i350-T4 adapter and quad COM ports adapter

### Graphics
- 65W or 62W processor models supports processor graphics only.
- 35W processor models come with processor graphics plus a discrete graphics adapter

### Graphics - Processor graphics
- Integrated Intel UHD Graphics 630. Works along with discrete graphics to support multi-display

### Graphics - Discrete graphics card
- One of the following discrete graphics cards on 35W processor models:
  - Quadro P620 512 2GB GDDR5 40W 4x miniDP
  - Quadro P1000 640 4GB GDDR5 47W 4x miniDP

### Storage controllers
- Integrated Intel SATA AHCI controller in chipset, 6Gbps SATA, one onboard SATA port for 2.5” HDD

### Internal storage bay
- Up to one 2.5” HDD on models without discrete graphics card

### M.2 Slot
- Two onboard M.2 slots for M.2 SSD, one for M.2 2280 SSD, one for M.2 2280 or 2242 SSD

### M.2 SSD
- M.2 2280 SSD supports up to 1TB each, PCIe 3.0 x4, NVMe, optional Opal.
- M.2 2242 SSD supports up to 128GB, PCIe 3.0 x2. NVMe

### Optane memory
- Up to one 16GB Optane memory per system. Optane memory must work with a 2.5” HDD

### M.2 slot for Wi-Fi and Bluetooth
- One dedicated M.2 2230 slot for optional Wi-Fi card, supports one of the following:
  - Intel Wireless-AC 9560, 2x2, 2.4GHz/5GHz (160MHz channels), 802.11ac, Bluetooth 5, up to 1.73Gbps.
  - Intel Wireless-AC 8265, 2x2, 2.4GHz/5GHz, Bluetooth 4.2, up to 867Mbps.

Note: Wi-Fi card, or specific functions of Wi-Fi card may not be supported in some countries

### Wi-Fi antenna
- Optional Tiny 2.4GHz/5GHz SMA antenna kit

### Optical
- Optional 9.0mm optical drive via optical drive kit, DVD-ROM or DVDs.RW. VESA mount is required

### Media reader
- None. Using USB adapter

### Network interfaces
- One onboard GbE port via integrated gigabit ethernet Intel i219LM, supports Wake-on-LAN. Optional Intel i350-T4 for 4x GbE ports, using PCIe slot

### Security features
- Power-on and admin password. Trusted Platform Module, TCG 2.0 compliant. Chassis intrusion switch. Optional Kensington lock

### Intel vPro Technology
- Supports vPro on models with the following processors: Core i7-8700T, Core i5-8600T, Core i5-8600, Core i5-8500T, Core i5-8500. vPro also requires Wireless-AC 9560 if Wi-Fi is needed

### Systems management
- Intel Active Management Technology 12 on vPro models, Intel Standard Manageability on other models

### Base warranty
- US models comes with 3-year limited onsite service with 9x5/NBD, 1 or 3-year limited onsite service with 9x5NBD in EMEA or other GEOs

### HD Audio
- Intel HD Audio interface with Realtek ALC233 Codec

### Front standard ports
- 1x USB 3.1 Gen 1 Type A (charging), 1x USB 3.1 Gen 1 Type-C, 1x Mic-in, 1x Combo jack

### Rear standard ports
- 2x USB 3.1 Gen 2 Type A, 2x USB 3.1 Gen 1 Type-A, 1x RJ-45, 1x DP, 1x HDMI

### Optional rear ports via punch out cable
- Up to two optional rear ports via punch out cable.
  - Port 1 supports one of the following:
    - 1x USB 3.1 Gen 1 Type-C, also supports DP function.
    - 1x COM.
    - 1x VGA.
    - 1x DP.
    - 1x HDMI.
  - Port 2 supports one COM

Lenovo, January 2020
<table>
<thead>
<tr>
<th>Components</th>
<th>Specification</th>
</tr>
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<tbody>
<tr>
<td>Optional rear ports</td>
<td>Supports one of the following:</td>
</tr>
<tr>
<td>via PCIe adapter</td>
<td>4x miniDP with Quadro P620 or P1000, 35W processor models only</td>
</tr>
<tr>
<td></td>
<td>2x USB 3.1 Gen 1.</td>
</tr>
<tr>
<td></td>
<td>4x RJ-45 GbE with Intel I350-T4.</td>
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<tr>
<td></td>
<td>4x COM</td>
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<tr>
<td></td>
<td>Note: Punch out cable and PCIe adapter are mutually exclusive</td>
</tr>
<tr>
<td>Temperature</td>
<td>Operating: 50 °F to 95 °F (10 °C to 35 °C)</td>
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<td></td>
<td>Non operating (with package): -40 °F to 140 °F (-40 °C to 60 °C)</td>
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<tr>
<td>Altitude</td>
<td>Operating: -15.2 m (-50 ft) to 3048 m (10 000 ft). Storage: -15.2 m (-50 ft) to 10, 668 m (35 000 ft)</td>
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<tr>
<td>Humidity</td>
<td>Operating: 20%–80%, non-condensing</td>
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<tr>
<td></td>
<td>Storage (with package): 20%–90%, non-condensing</td>
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<tr>
<td>MIL-SPEC</td>
<td>Certified</td>
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<tr>
<td>Environmental certification</td>
<td>RoHS-compliant, GREENGUARD, EPEAT Silver rating and ENERGY STAR 7 qualified</td>
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<tr>
<td>Power supply</td>
<td>Supports one 135W power adapter, 100V - 240V, 88% PSU</td>
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<tr>
<td>SV certifications</td>
<td>Please visit <a href="http://www.thinkworkstations.com/isv-certifications/">www.thinkworkstations.com/isv-certifications/</a></td>
</tr>
</tbody>
</table>
## ThinkStation P330 Tower Gen 2 (30CY and 30D0) Platform Specifications - I of II

### Memory Protection
- ECC on models with UDIMM ECC memory.
- Memory Capacity: 64GB with 4 x 16GB for UDIMM ECC or 128GB with 4 x 32GB UDIMM non-ECC.

### Processor Graphics
- Supports up to two PCIe 3.0 x16 slots for discrete graphics card.
- Works along with discrete graphics to support multi-display.
- Optional front ports on (flex module).
- Supports Intel vPro on Xeon models.
- Intel Active Management Technology 12 on Xeon models.

### Storage Controller
- Onboard Intel RST SATA RAID.
- Storage Controller Type: Standard, SAS 6Gb/s.
- Disk Type: HDD or SSD.
- RAID Levels: 0/1/5.

### Chipset
- Intel C246 Chipset.

### Memory Sockets
- 4 DIMM sockets with 2 channels.

### Memory Types
- 8GB/16GB DDR4-2666 UDIMM ECC or 4GB/8GB/16GB/32GB DDR4-2666 UDIMM non-ECC.

### Memory Capacity
- 64GB with 4 x 16GB for UDIMM ECC or 128GB with 4 x 32GB UDIMM non-ECC.

### Memory Protection
- ECC on models with UDIMM ECC memory.

### Expansion slots
- Three PCIe 3.0 slots as follows:
  - Slot 1: PCIe 3.0 x16, full height, half length, links to CPU.
  - Slot 2: PCIe 3.0 x1, full height, full length, links to PCH.
  - Slot 3: PCIe 3.0 x16 (nearly link width x4), full height, half length, links to PCH.

### Processor
- Integrated Intel UHD Graphics 630 in -G suffix Xeon processors, or Intel UHD Graphics 630 in Core i7, i5, or Pentium processors.
- Works along with discrete graphics to support multi-display, enables three rear display connectors (2 DP standard, 1 DP or HDMI optional).

### Storage Bays
- Bay 1: Primary disk bay, 3.5" or 2.5".
- Bay 2: 2.5" SATA bay, cannot be available when 2nd Quadro P2000 is used.
- Bay 3: Secondary disk bay, 3.5" or 2.5".
- Bay 4: 5.25" Flex bay, supports one of the following:
- Bay 5: 9mm Slim ODD bay.
- Media reader
- Network interfaces
- WLAN + Bluetooth
- Intel vPro also requires Wireless-AC 9560 if Wi-Fi is needed.

### Network interfaces
- One onboard GbE port via integrated gigabit ethernet Intel i219LM, supports Wake-on-LAN.
- Optional PCIe ethernet adapters are available.

### Security features
- Power-on and admin password.
- Trusted Platform Module, TCG 2.0 compliant.

### Notes
- For more information, please refer to the Lenovo ThinkStation P330 Tower Gen 2 (30CY and 30D0) Platform Specifications - II of II.

---

### Lenovo, November 2019
### Components Specifications

<table>
<thead>
<tr>
<th>Component</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Altitude</td>
<td>Operating: -15.2 m (-50 ft) to 3048 m (10 000 ft).</td>
</tr>
<tr>
<td></td>
<td>Storage: -15.2 m (-50 ft) to 10, 668 m (35 000 ft)</td>
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<tr>
<td>Humidity</td>
<td>Operating: 30%–90%, non-condensing</td>
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<tr>
<td></td>
<td>Storage (with package): 20%–90%, non-condensing</td>
</tr>
<tr>
<td>Environmental certification</td>
<td>RoHS-compliant, GREENGUARD, EPEAT Silver rating and ENERGY STAR 7 qualified</td>
</tr>
<tr>
<td>Power supply</td>
<td>Supports one 250W or 400W power supply, 100V - 240V, 92% PSU.</td>
</tr>
<tr>
<td></td>
<td>Climate Savers Computing Platinum and 80 PLUS Platinum qualified.</td>
</tr>
<tr>
<td></td>
<td>400W PSU supports one 6+2-pin aux power connector.</td>
</tr>
</tbody>
</table>

**Note:**
1. Depending on many factors, actual data transfer speed mentioned on this page may be lower than theoretical speed.
2. Any questions or advice on ThinkStation PSREF, please contact ThinkStation PSREF developer.

---

**ISV certifications**
- Please visit [www.thinkworkstations.com/isv-certifications/](http://www.thinkworkstations.com/isv-certifications/)
# ThinkStation P520 Platform Specifications - I of II

**Product Specifications Reference (PSREF)**

## Form factor
33L Tower

## Dimensions
165mmx65.5" W x 460mm/18.1" D x 440mm/17.3" H (with feet)

## Weight
Maximum configuration: 52.91 lb (24kg)

## Processor Support
**Form factor**: 33L Tower

<table>
<thead>
<tr>
<th>Processor</th>
<th># of Cores</th>
<th># of Threads</th>
<th>Base Frequency</th>
<th>Cache</th>
<th>TDP</th>
<th>Memory Types</th>
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</thead>
<tbody>
<tr>
<td>Xeon W-2295</td>
<td>18</td>
<td>36</td>
<td>3.6GHz</td>
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<td>165W</td>
<td>DDR4-2933</td>
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<tr>
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<td>8</td>
<td>2.9GHz</td>
<td>8.25MB</td>
<td>120W</td>
<td>DDR4-2666</td>
</tr>
</tbody>
</table>

## Expansion slots
**Slot 1 (CPU)**: PCIe x8, full height, full length, 25W, open ended
**Slot 2 (CPU)**: PCIe x16, full height, full length, 75W, double-width
**Slot 3 (PCH)**: PCIe x4, full height, half length, 25W, open ended
**Slot 4 (CPU)**: PCIe x16, full height, full length, 75W, double-width
**Slot 5**: PCI, full height, full length, 25W
**Slot 6 (PCH)**: PCIe x4, full height, half length, 25W, open ended

## Storage Controller
**Onboard Intel RSTe Std**: SATA 6Gb/s, RAID 0/1/5/6, 9440-8i PCIe
**Opt**: SAS 12Gb/s, SATA 6Gb/s, 1/3/5/10, 4GB DDR4, SuperCap

### Discrete Graphics Offering
**NVS 810**: 4GB GDDR3, 68W, 8xminiDP
**Quadro P400**: 2GB GDDR5, 30W, 3xminiDP
**Quadro P600**: 2GB GDDR5, 45W, 4xminiDP
**Quadro P620**: 2GB GDDR5, 40W, 4xminiDP
**Quadro P1000**: 4GB GDDR5, 50W, 4xminiDP
**Quadro P2000**: 5GB GDDR5, 75W, 4DP
**Quadro P4000**: 8GB GDDR5, 120W, 4DP
**Quadro P5000**: 16GB GDDR5/8GB GDDR6, 2x180W, 4xDP, 2xSLI
**Quadro P6000**: 24GB GDDR6, 250W, 4xDP, 1xSLI
**Quadro RTX 4000**: 8GB GDDR6, 160W, 3xDP, 1xVirtualLink
**Quadro RTX 5000**: 16GB GDDR6, 250W, 4xDP, 1xVirtualLink
**Quadro RTX 6000**: 24GB GDDR6, 250W, 4xDP, 1xVirtualLink
**Quadro RTX 8000**: 48GB GDDR6, 295W, 4xDP, 1xVirtualLink
**Quadro GP100**: 16GB HBM2, 235W, 1x180W, 4xDP, 2xSLI
**Quadro GV100**: 32GB HBM2, 250W, 4xDP

## Memory Protection ECC
**Memory Capacity**: 512GB with 8 x 64GB DDR4-2933 RDIMMs

<table>
<thead>
<tr>
<th>Memory Types</th>
<th>DDR4-2933 RDIMM</th>
<th>Memory Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECC</td>
<td>DDR4-2400 RDIMM</td>
<td>512GB with 8 x 64GB</td>
</tr>
</tbody>
</table>

## Power supply
**Max Storage**: Supports up to 9x M.2 SSD + 3x 3.5" HDD/2x 2.5" SATA disks/4x 2.5" SATA SSD + 1x PCIe AIC SSD. All HDD/3TB using 6x 3.5" HDD/SSD: 30.4TB using 6x 2.5" SATA SSD, 9x M.2 SSD, and 1x PCIe AIC SSD

## Network interfaces
**Integrated one gigabit ethernet (Intel i219LM)**, supports Wake-on-LAN. Optional PCIe ethernet or wireless adapters are available

## Security features
**TPM 2.0**

## Front panel warning LED. ThinkStation Diagnostics for Windows. Photo-audio transfer to 1.2 via UEFI setting. Optional access panel lock, Kensington lock, and pad lock

## Base warranty
1 or 3-year limited onsite service with 9x5/NBD
### Environmental Specification

<table>
<thead>
<tr>
<th>Specification</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature - operating</td>
<td>50 °F to 95 °F (10 °C to 35 °C)</td>
</tr>
<tr>
<td>Temperature - storage (no package)</td>
<td>14 °F to 140 °F (-10 °C to 60 °C)</td>
</tr>
<tr>
<td>Temperature - storage (with package)</td>
<td>-40 °F to 140 °F (-40 °C to 60 °C)</td>
</tr>
<tr>
<td>Altitude - operating</td>
<td>(Unpressurized): -50ft-10000ft (-15.2m-3048m)</td>
</tr>
<tr>
<td>Humidity - operating</td>
<td>10%–80%, non-condensing</td>
</tr>
<tr>
<td>Humidity - storage (with package)</td>
<td>10%–80%, non-condensing</td>
</tr>
</tbody>
</table>

### Environmental Certifications

- RoHS-compliant
- GREENGUARD
- EPEAT Silver rating
- ENERGY STAR 6.1 qualified on model 30BE0008US and 30BE0009US

### ISV certifications

Please visit [www.thinkworkstations.com/isv-certifications/](http://www.thinkworkstations.com/isv-certifications/)

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**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.

Lenovo, December 2019
## Storage Support

<table>
<thead>
<tr>
<th>Disk Type</th>
<th>Interface</th>
<th>RPM</th>
<th>Offering</th>
<th>Max Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.5&quot; SATA HDD</td>
<td>SATA 6Gb/s</td>
<td>7,2K</td>
<td>1TB/2TB/4TB/6TB</td>
<td>4</td>
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<tr>
<td>2.5&quot; SATA HDD</td>
<td>SATA 6Gb/s</td>
<td>7,2K</td>
<td>250GB/500GB/500GB FIPS</td>
<td>4</td>
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<tr>
<td>2.5&quot; SATA SSD</td>
<td>SATA 6Gb/s</td>
<td>256GB/512GB/1TB/2TB</td>
<td>4</td>
<td></td>
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<tr>
<td>M.2 PCIe SSD</td>
<td>PCIe NVMe</td>
<td></td>
<td>256GB/512GB/1TB/2TB</td>
<td>5</td>
</tr>
</tbody>
</table>

## Max Storage
- Supports up to 5x M.2 SSD + 4x 3.5" HDD/4x 2.5" SSD/4x 2.5" HDD
- All HDD: 24TB using 4x 3.5" HDD
- All SSD: 18TB using 4x 2.5" SATA SSD and 5x M.2 SSD

## Power supply
- One fixed 500W, auto-sensing, 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 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 bad lock

## Processor Support

<table>
<thead>
<tr>
<th>Processor</th>
<th># of Cores</th>
<th># of Threads</th>
<th>Base Frequency</th>
<th>Cache</th>
<th>TDP</th>
<th>Memory Types</th>
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<tbody>
<tr>
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## Processor sockets

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<thead>
<tr>
<th>Processor Sockets</th>
<th>Chipset</th>
<th>Memory Types</th>
<th>Memory Capacity</th>
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<tbody>
<tr>
<td>1x FCLGA2066</td>
<td>Intel C422 Chipset</td>
<td>DDR4-2666 RDIMM or DDR4-2933 RDIMM</td>
<td>256GB with 4x 64GB RDIMMs</td>
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## Expansion slots

<table>
<thead>
<tr>
<th>Expansion slots</th>
<th>Graphics</th>
<th>Memory</th>
<th>Power</th>
<th>Connector</th>
<th>SLI / NV-link</th>
<th>Max Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slot 1 (CPU)</td>
<td>PCIe 3.0 x16, full height, full length, 75W.</td>
<td>4GB DDR3</td>
<td>68W</td>
<td>8xminiDP</td>
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<tr>
<td>Slot 2 (CPU)</td>
<td>PCIe 3.0 x8, full height, full length, 25W, open ended</td>
<td>2GB DDR5</td>
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<td>Slot 3 (CPU)</td>
<td>PCIe 3.0 x16, full height, full length, 75W</td>
<td>Quadro P4000</td>
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<td>Slot 4 (PCH)</td>
<td>PCIe 3.0 x4, full height, half length, 25W, open ended</td>
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<td>Slot 6 (PCH)</td>
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<td>Quadro P5000</td>
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<td>Slot 8 (PCH)</td>
<td>PCIe 3.0 x4, full height, half length, 25W, open ended</td>
<td>Quadro RTX 4000</td>
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<td>1xVirtualLink</td>
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## Rear ports

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<th>Graphics</th>
<th>Memory</th>
<th>Power</th>
<th>Connector</th>
<th>SLI / NV-link</th>
<th>Max Qty</th>
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<tbody>
<tr>
<td>2x USB 2.0, 4x USB 3.0, 1x RJ-45, 3x analog audio ports (line-in, line-out, microphone, 2x PS/2)</td>
<td>NVS 810</td>
<td>4GB DDR3</td>
<td>68W</td>
<td>8xminiDP</td>
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<td>2x USB 3.0, microphone (3.5mm), headphone (3.5mm)</td>
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<td>2GB DDR5</td>
<td>30W</td>
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## Storage controller

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<th>Type</th>
<th>Interface</th>
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<th>Cache</th>
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<tr>
<td>Onboard Intel RSTe</td>
<td>Std</td>
<td>SAS 6Gb/s</td>
<td>0/1/10/5</td>
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<tr>
<td>9440-R8 PCIe</td>
<td>Opt</td>
<td>SAS 12Gb/s, SATA 6Gb/s</td>
<td>0/1/10/5</td>
<td>-</td>
</tr>
<tr>
<td>NVMe Basic</td>
<td>Opt</td>
<td>PCIe NVMe</td>
<td>0/1/10</td>
<td>-</td>
</tr>
<tr>
<td>NVMe for Intel SSD</td>
<td>Opt</td>
<td>PCIe NVMe</td>
<td>0/1/10/5</td>
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## Disk drive types

<table>
<thead>
<tr>
<th>Disk drive types</th>
<th>Interface</th>
<th>RPM</th>
<th>Offering</th>
<th>Max Qty</th>
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<tr>
<td>9.0mm optical drives</td>
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<tr>
<td>2x 5.25&quot; 9.0mm optical drives</td>
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<td>1x flex module for the following options:</td>
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<td>Tray 2: 5.25&quot; 9.0mm optical drive</td>
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<td>Tray 4: 2.5&quot; 9.0mm optical drive</td>
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## Environmental specifications
- 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)
- Temperature - storage (with package): -40 °F to 140 °F (-40 °C to 60 °C)
- Altitude - operating: Unpressurized: 3,000 ft to 10,000 ft (~914 to 3048m)
- Humidity - operating: 10%–80%, non-condensing
- Humidity - storage (with package): 10%–90%, non-condensing

## Environmental certifications
- RoHS-compliant. GREENGUARD EPEAT Silver rating. ENERGY STAR 6.1 qualified on model 30BX0008US and 30BX0009US

## 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. Any questions or advice on ThinkStation PSREF, please contact ThinkStation PSREF developer.

Lenovo, December 2019
Expansion slots

Slot 1 (CPU1) PCIe 3.0 x16, full height, full length, 75W
Slot 2 (CPU1) PCIe 3.0 x16, full height, full length, 75W, double-width
Slot 3 (CPU1) PCIe 3.0 x8, full height, full length, 25W, open-ended
Slot 4 (CPU1) PCIe 3.0 x8, full height, full length, 75W, double-width
Slot 5 PCIe, full height, full length, 25W
Slot 6 (PCIe) PCIe 3.0 x4, full height, half length, 25W, open-ended

900W PSU supports two 6+2-pin aux power connectors.
680W PSU supports one 6+2-pin aux power connector.

Note: All expansion cards are optional.
## ThinkStation P720 Platform Specifications

### Processor Support
- Up to two 150 W Gen 1 or Gen 2 Intel Xeon Scalable family processors, Bronze, Silver, Gold, or Platinum

### Processor Offerings

<table>
<thead>
<tr>
<th>Processor</th>
<th># of Cores</th>
<th># of Threads</th>
<th>Base Frequency</th>
<th>Cache</th>
<th>TDP</th>
<th>Memory Types</th>
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</table>

### Memory Protection ECC

- ECC: Optional
- 2 DIMM sockets with 12 channels, 6 DIMM sockets with 6 channels per processor

### Memory Capacity
- 768GB (DDR4-2933 RDIMM) or 384GB (DDR4-2666 RDIMM)

### Memory Sockets
- 12 DIMMs

### Chipset
- Intel C621 Chipset

### Storage Support

- Maximum drives per bay: 2 x 2.5" SSD, 2 x 3.5" HDD/SSD
- Maximum drives supported: 9 x 2.5" SSD, 9 x 3.5" HDD/SSD

### Storage Bays

- 2x M.2 slot (2 onboard, 7 via PCIe to M.2 adapter)
- 2x 2.5" SATA HDD
- 2x 3.5" SATA HDD
- 2x NVMe SSD

### Components

<table>
<thead>
<tr>
<th>Graphics Type</th>
<th>Memory Type</th>
<th>Power</th>
<th>Connector</th>
<th>SLI / NVlink</th>
<th>Max Qty</th>
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<td>x16 / x8 DP</td>
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### Expansion slots

- Slot 1 (CPU2): PCIe 3.0 x16, full height, full length, 75W
- Slot 2 (CPU1): PCIe 3.0 x16, full height, full length, 75W, double-width
- Slot 3 (CPU1): PCIe 3.0 x8, full height, full length, 25W, open ended
- Slot 4 (CPU1): 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, full length, 25W, open ended

### Form factor
- 36L Tower

### Dimensions
- 175mm/6.89" W x 485mm/19.1" D x 446mm/17.6" H (with feet)

### Weight
- Maximum configuration: 25.2 lb (11.4kg)

### Processor Sockets
- 2x FCLGA3647

### Product Specifications Reference (PSREF)

Lenovo, September 2019
**Power supply**
- Supports one of the following:
  - 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 3.1 Gen 1 reader on flex module

**Network interfaces**
- Integrated two-port gigabit ethernet (Intel i219LM and i210AT), supports Wake-on-LAN on both two ports. Optional PCIe ethernet 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. Chassis intrusion switch. Optional access panel lock, Kensington lock, and pad lock
- 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 Diagnostics 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 3.1 Gen 1 (includes one 11W charging), 1x combo audio/microphone jack (3.5mm)

**Rear ports**
- 2x USB 2.0, 4x USB 3.1 Gen 1, 2x RJ-45, 3x analog audio ports (line-in, line-out, mic-in), 2x PS/2

**Optional ports**
- Supports the following optional ports:
  - Front:
    - 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:
    - 1x COM port
    - 2x USB Type-C ports via PCIe adapter, USB 3.1 gen 2. One 15W, one 5W Internal:
    - 1x internal USB 3.1 Gen 1 port

**Environmental specification**
- 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)
- Temperature - storage (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

**Environmental Certifications**
- RoHS-compliant. GREENGUARD. EPEAT Silver rating. ENERGY STAR 6.1 qualified on model 30BA0007US and 30BA0008US

**ISV certifications**
- Please visit [www.thinkworkstations.com/isv-certifications/](http://www.thinkworkstations.com/isv-certifications/)

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**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.
ThinkStation P920 Platform Specifications

Product Specifications Reference (PSREF)

**Expansion slots**

<table>
<thead>
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<th>Slot</th>
<th>Type</th>
<th>Description</th>
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<tr>
<td>Slot 1 (CPU1)</td>
<td>PCIe 3.0 x16</td>
<td>full height, full length, 75W, double-width</td>
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<tr>
<td>Slot 2 (CPU1)</td>
<td>PCIe 3.0 x4</td>
<td>full height, full length, 25W, open ended</td>
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<tr>
<td>Slot 3 (CPU1)</td>
<td>PCIe 3.0 x16</td>
<td>full height, full length, 75W, double-width</td>
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<td>Slot 4 (CPU1)</td>
<td>PCIe 3.0 x4</td>
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<td>Slot 5 (PCH)</td>
<td>PCIe 3.0 x4</td>
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<tr>
<td>Slot 6 (CPU2)</td>
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<td>Slot 7 (CPU2)</td>
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<td>Slot 8 (CPU2)</td>
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**Processor Support**

Up to two 205 W Gen 1 or Gen 2 Intel Xeon Scalable family processors, Bronze, Silver, Gold, or Platinum

**Memory Types**

Memory Sockets: 16 DIMM sockets with 12 channels. 8 DIMM sockets with 6 channels per processor

**Processor Offering**

<table>
<thead>
<tr>
<th>Processor</th>
<th># of Cores</th>
<th># of Threads</th>
<th>Base Frequency</th>
<th>Cache</th>
<th>TDP</th>
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**Chipset**

Intel C621 Chipset

**Memory Sockets**

16 DIMM sockets with 12 channels, 8 DIMM sockets with 6 channels per processor

**Memory Types**

DDR4-2666 RDIMM, DDR4-2666 LRDIMM, or DDR4-2933 RDIMM

**Memory Protection**

1TB DDR4-2666 LRDIMM or DDR4-2933 RDIMM or 512GB DDR4-2666 LRDIMM

**Form factor**

55L Tower

**Dimensions**

200mm/7.87" W x 620mm/24.4" D x 446mm/17.56" H (with feet)

**Weight**

Maximum configuration: 71.3 lb (32.3kg)

**Processor Sockets**

2x FCLGA3647

Lenovo, September 2019
## ThinkStation P920 Platform Specifications

**Max Storage**
- Supports up to 9x M.2 SSD + 6x 3.5" HDD/10x 2.5" SSD/10x 2.5" HDD + 2x PCIe AIC SSD.
- All HDD: 36TB using 6x 3.5" HDD
- All SSD: 38.96TB using 10x 2.5" SATA SSD, 9x M.2 SSD, and 2x PCIe AIC SSD

**Power supply**
- One fixed 1400 watts, autosensing, 92% PSU, 80 PLUS Platinum qualified.
- Countries with input voltage under 115V, output power limited to 1125 watts

**Media reader**
- SD USB 2.0 card reader on most models. Optional UHS-II 15-in-1 USB 3.1 Gen 1 reader on flex module

**Network interfaces**
- Integrated two-port gigabit ethernet (Intel i219LM and i210AT), supports Wake-on-LAN on both two ports. Optional PCIe ethernet 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, Chassis intrusion switch. 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 4-digit diagnostic display. ThinkStation Diagnostics for Windows. Photo-audio transfer with Lenovo PC Diagnostics for Android and iOS

**Base warranty**
- 1 or 3-year limited onsite service with 9x5/NBD

**HD Audio**
- Realtek ALC662 codec

**Front ports**
- 4x USB 3.1 Gen 1 (includes one 11W charging), 1x combo audio/microphone jack (3.5mm)

**Rear ports**
- 2x USB 2.0, 4x USB 3.1 Gen 1, 2x RJ-45, 3x analog audio ports (line-in, line-out, mic-in), 2x PS/2

**Optional ports**
- Supports the following optional ports:
  - Front: 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: 1x COM port
  - 2x USB Type-C ports via PCIe adapter, USB 3.1 gen 2. One 15W, one 5W
- Internal: 1x internal USB 3.1 Gen 1 port

**Environmental specification**
- 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)
- Temperature - storage (with package): -40 °F to 140 °F (-40 °C to 60 °C)
- Humidity - operating: 10%~80%, non-condensing
- Humidity - storage (with package): 10%~90%, non-condensing

**Environmental certifications**
- RoHS-compliant. GREENGUARD. EPEAT Silver rating. ENERGY STAR 6.1 qualified on model 30BC0008US and 30BC0009US

**ISV certifications**
- Please visit [www.thinkworkstations.com/isv-certifications/](http://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. Any questions or advice on ThinkStation PSREF, please contact ThinkStation PSREF developer (houyf@lenovo.com)
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Battery life: Battery life (and recharge times) will vary based on many factors including screen brightness, applications, features, power management, battery conditioning, and other customer preferences.