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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.

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/P520c 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 PN s 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 P320 SFF Platform Specifications

**Components Specification**

<table>
<thead>
<tr>
<th>Component</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chipset</td>
<td>Intel C236 Chipset</td>
</tr>
<tr>
<td>Intel AMT</td>
<td>Intel Active Management Technology 11 on Xeon models, Intel Standard Manageability on other models</td>
</tr>
</tbody>
</table>
| Processor       | One Intel "Kabylake" or "Skylake" processor as listed: * "Kaby Lake"  
E3-1280 v6: Kc3:6GH2/8MB/80W/D4R4-2400  
E3-1275 v6: Kc3:6GH2/8MB/80W/D4R4-2400  
E3-1270 v6: Kc3:6GH2/8MB/80W/D4R4-2400  
E3-1285 v6: Kc3:6GH2/8MB/80W/D4R4-2400  
E3-1240 v6: Kc3:6GH2/8MB/80W/D4R4-2400  
E3-1225 v6: Kc3:6GH2/8MB/80W/D4R4-2400  
Core i7-7700: Kc3:6GH2/8MB/65W/D4R4-2400  
Core i5-7500: Kc3:6GH2/8MB/65W/D4R4-2400  
Core i5-7400: Kc3:6GH2/8MB/65W/D4R4-2400  
Core i3-7300: Kc3:6GH2/4MB/51W/D4R4-2400  
Core i3-7100: Kc3:6GH2/4MB/51W/D4R4-2400  *
| 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: |
| Adapter         | Cores | Memory | Power | Connector |
| NVS 310         | 48    | 1GB    | 19.5W | 2xDP |
| NVS 315         | 48    | 1GB    | 19.5W | 2xDP |
| NVS 510         | 192   | 2GB    | 33.4W | 4mmxDP |
| Quadro P400     | 256   | 2GB    | 30W   | 3mmxDP |
| Quadro P600     | 384   | 2GB    | 40W   | 4mmxDP |
| Quadro P1000    | 640   | 4GB    | 47W   | 4mmxDP |
| 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, 6 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 6Gbps) 1TB/2TB/4TB/1TB hybrid disk2 2TB hybrid | 3.5" SATA SSD (60lbs) 556GB Opal125GB Opal1T Opal2Tb Opal1TB Opal2Tb Opal M.2 NVMe SSD, via PCIe adapter 556GB Opal125GB Opal1T Opal via PCIe 3.0 x4 adapter, up to 2, or 16GB Intel Oplaine Memory, PCIe 3.0 x2 |
| 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 |
| ISV certifications | Please visit www.thinkworkstations.com/isv-certifications/ |

### Drive Bays and PCIe Slots

<table>
<thead>
<tr>
<th>Bay</th>
<th>Description</th>
</tr>
</thead>
</table>
| 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) |

### Power Supply

- 210 watts with variable speed fan, autosensing, Climate Savers Computing Bronze, 80 PLUS Bronze qualified

### Thermals

- 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.

### 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

- **"* 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.**

### ISV certifications

Please visit www.thinkworkstations.com/isv-certifications/

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### ThinkStation P320 Tiny Platform Specifications

#### Components | Specification
--- | ---
Chipset | Intel Q270 Chipset
Intel AMT | Intel Active Management Technology 11

#### Processor
- One Intel "Kaby Lake" or "Skylake" processor as listed: "Kaby Lake"
- Core i3-7100T with Intel "Kaby Lake" processors
- 2C/4.0GHz/4MB/51W/DDR4-2133/Intel HD 630
- 2GB

#### Memory DIMM slots
- 2 DIMM slots, 2-channel (integrated memory controller in processor)

#### Memory type/capacity
- Up to 32GB (2 x 16GB), non-ECC, DDR4-2400. SO-DIMM. "Skylake" processor supports up to DDR4-2133

#### Graphics
- Integrated Intel HD 630 in "Kaby Lake" processors; or Intel HD 530 in "Skylake" processors. Works along with optional discrete graphics to support multi-display.
- Enables two display connectors (2 DP) on rear.
- Supports one optional Nvidia Quadro P600 on 35W processor models

#### Max simultaneous displays
- Up to six displays (2 x DP plus 4 x mDP) with integrated Intel HD (2 x DP) and Nvidia Quadro P600 (4 x mDP)

#### Storage
- Up to one 2.5" disk drive (HDD or SSD) plus one M.2 NVMe SSD, or up to two M.2 SSD on Intel HD only models.
- Or up to one M.2 SSD on Quadro P600 models. 2nd M.2 SSD on Quadro P600 models is special bid only. 2.5" drive cannot work with Quadro P600. All US models come with Quadro P600 and only support M.2 SSD

#### Optical drive
- Optional one 9.0mm optical drive via optical drive kit, DVD-ROM or DVD±RW. VESA mount is needed, consumes one USB 3.0 port

#### Power supply
- 135W AC/DC adapter,
- 4C/3.5GHz/6MB/65W/DDR4-2400/Intel HD 630
- Optional system floor stand for vertical orientation

#### VESA mount
- Optional Tiny VESA mount kit, supports VESA 75mm and 100mm

#### Media reader
- None

#### Onboard Ethernet
- One onboard gigabit ethernet. Intel i219LM. supports Wake-on-LAN

#### WLAN/Bluetooth
- Supports the following 11ac wireless, M.2 card:
  - Qualcomm Atheros QCA9377A, dual band, Wi-Fi + Bluetooth 4.2, 1x1 (BT4.0 for Egypt models)
  - Qualcomm Atheros QCA6174A, dual band, Wi-Fi + Bluetooth 4.2, 2x2 (BT4.0 for Egypt and US models)
  - Intel Dual Band Wireless-AC 3165, Wi-Fi + Bluetooth 4.0, 1x1
  - Intel Dual Band Wireless-AC 8265, Wi-Fi + Bluetooth 4.2, 2x2
  - Intel Dual Band Wireless-AC 8265, Wi-Fi + Bluetooth 4.2, 2x2, vPro

#### HD Audio
- Realtek ALC294 code

#### TPM
- Standard, TCG 2.0-compliant

#### Front ports
- Two USB 3.0 (one Always On), one microphone (3.5mm), one combo audio/microphone jack (3.5mm)

#### Rear ports
- 2 DisplayPort (for Intel HD Graphics), four USB 3.0, one ethernet (RJ-45).

#### Limited warranty
- 1 or 3-year limited onsite service with 9x5/NBD. Some parts are Customer Replaceable Units.

#### Lenovo June 2016
## ThinkStation P320 Tower Platform Specifications

**Processor**

- **Core i3-7300**: 2C/4GHz/4MB/51W/DDR4-2400
- **Core i5-7400**: 4C/3.6GHz/8MB/65W/DDR4-2400
- **Core i5-7500**: 4C/3.6GHz/8MB/65W/DDR4-2400
- **Core i5-7600**: 4C/3.8GHz/8MB/65W/DDR4-2400
- **Core i7-7700**: 4C/3.8GHz/8MB/65W/DDR4-2400
- **Core i7-7700K**: 4C/4.2GHz/8MB/72W/DDR4-2133
- **Xeon E3-1220 v6**: 4C/3.3GHz/8MB/73W/DDR4-2400
- **Xeon E3-1225 v6**: 4C/3.4GHz/8MB/73W/DDR4-2400
- **Xeon E3-1230 v6**: 4C/3.5GHz/8MB/73W/DDR4-2400
- **Xeon E3-1240 v6**: 4C/3.5GHz/8MB/73W/DDR4-2400
- **Xeon E3-1245 v6**: 4C/3.6GHz/8MB/73W/DDR4-2400
- **Xeon E3-1270 v6**: 4C/3.8GHz/8MB/73W/DDR4-2400
- **Xeon E3-1275 v6**: 4C/3.8GHz/8MB/73W/DDR4-2400
- **Xeon E3-1280 v6**: 4C/3.9GHz/8MB/73W/DDR4-2400
- **Intel C236 Chipset**: Supports the following NVIDIA graphics adapters:
  - Quadro P2000
  - Quadro P1000
  - Quadro P600
  - Quadro P400
  - NVS 810
  - NVS 315

**Discrete graphics**

<table>
<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>40</td>
<td>1GB</td>
<td>16.5W</td>
<td>2xDP</td>
</tr>
<tr>
<td>NVS 315</td>
<td>48</td>
<td>1GB</td>
<td>19.5W</td>
<td>2xDP/1xSL/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>NVS 810</td>
<td>1024</td>
<td>4GB</td>
<td>68W</td>
<td>8xmini DP</td>
</tr>
<tr>
<td>Quadro P400</td>
<td>256</td>
<td>2GB</td>
<td>30W</td>
<td>3xmini DP</td>
</tr>
<tr>
<td>Quadro P600</td>
<td>384</td>
<td>2GB</td>
<td>40W</td>
<td>4xmini DP</td>
</tr>
<tr>
<td>Quadro P1000</td>
<td>640</td>
<td>4GB</td>
<td>47W</td>
<td>4xmini DP</td>
</tr>
<tr>
<td>Quadro P2000</td>
<td>1024</td>
<td>8GB</td>
<td>75W</td>
<td>4xDP</td>
</tr>
<tr>
<td>Quadro P4000</td>
<td>1792</td>
<td>16GB</td>
<td>105W</td>
<td>8xDP</td>
</tr>
</tbody>
</table>

**Onboard drive controller**

- Two external 5.25" bays, two internal 3.5" bays (see right).

**Drive Bays**

- Two 3.5" SATA HDD (7.2K Gbps)
- Two 2.5" SATA SSD (6Gbps)
- Two 2.5" M.2 NVMe SSD via PCIe adapter

**Supporting drives**

- 3.5" SATA SSD (6Gbps)
- M.2 NVMe SSD via PCIe adapter

**Max internal storage**

- 16TB (4 x 4TB 3.5" HDDs) plus 2TB (2 x 1TB) M.2 NVMe SSD

**Media reader**

- 9-in-1 card reader, Optional 29-in-1 card reader on selected models

---

**Components**

- **Chipset**: Intel C236 Chipset
- **Intel AMT**: Intel Active Management Technology 11 on Xeon models, Intel Standard Manageability on other models
- **Optical**: Intel 640, TCG 2.0-compliant
- **Power**: 30W/4C/3GHz/8MB/80W/DDR4-2133
- **Memory**: 256GB Opal, 512GB Opal, 1TB Opal, 2TB opal
- **Cores**: 8xmini DP, 3xminiDP
- **Mechanical**: 256GB, 512GB, 1TB Opal, 2TB Opal
- **Environmental certifications**: GREENGUARD certified, RoHS-compliant, EPEAT Gold rating

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**Power supply**

- One 250 watts with variable speed fan, autosensing
- Climate Savers Computing Bronze, 80 PLUS Bronze qualified
- Or one 400 watts with variable speed fan, autosensing
- Climate Savers Computing Platinum, 80 PLUS Platinum qualified

**Onboard Ethernet**

- One onboard gigabit ethernet, Intel I219LM, supports Wake-on-LAN

---

**TPM**

- Standard, TCG 2.0-compliant

**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 audio ports (line-in, line-out, mic-in)

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**Environmental certifications**

- ENERGY STAR 6.1 qualified
- Limited warranty 1 or 3-year limited onsite service with 9x5/NBD. Some parts are Customer Replaceable Units

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**ISV certifications**

- Please visit www.thinkworkstations.com/isv-certifications/

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**Drive Bays and PCIe Slots**

- Bay 1 and Bay 2: 4 - Slots
- Bay 3: Optional 9-in-1 single slot reader
- Bay 4: 6 - Slots
- Bay 5: 4 PCIe slots (top-down):
  - Slot 1: Half length, full height, PCIe 3.0 x16 (near CPU)
  - Slot 2: Half length, full height, PCIe 3.0 x1
  - Slot 3: Half length, full height, PCIe 3.0 x16 (x4 elec)
  - Slot 4: Half length, full height, PCIe 3.0 x1

- Note:
  - 1. Both discrete graphics adapter and M.2 NVMe SSD should be installed on slot 1 or slot 2, the maximum quantity of discrete graphics adapter and M.2 NVMe SSD is 2.
  - 2. When two discrete graphics adapters are used, no other PCIe card can be used.
### ThinkStation P330 SFF Platform Specifications

#### Components

<table>
<thead>
<tr>
<th>Components</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Machine Type</td>
<td>MT 30C7 for Transactional model and MT 30C8 for Relationship model. For configuration of all 30C7 EMEA and US models, please visit: <a href="http://psref.lenovo.com/Product/ThinkStation/ThinkStation_P330_SFF">http://psref.lenovo.com/Product/ThinkStation/ThinkStation_P330_SFF</a></td>
</tr>
<tr>
<td>Form factor</td>
<td>8.4L mini-tower</td>
</tr>
<tr>
<td>Dimensions</td>
<td>Height: 343.5 mm (13.5 in). Width: 92.5 mm (3.6 in). Depth: 305.6 mm (12 in)</td>
</tr>
<tr>
<td>Weight</td>
<td>Maximum configuration: 13.23 lb (6.0kg)</td>
</tr>
<tr>
<td>Processor</td>
<td>Up to one Intel Xeon E-2100 family processor, up to 80W, up to 6 cores at 3.7GHz, up to 3.8GHz with 4 cores, up to 12MB cache, DDR4-2666 memory speed. Or up to one 8th Intel Core family processor, i7, i5, or i3, up to 65W, up to 6 cores at 3.2GHz, up to 3.7GHz with 4 cores, up to 12MB cache, up to DDR4-2666 memory speed. Or up to one Intel Pentium G5400 via Special Bids, 58W, 2 cores at 3.7GHz, 4GB cache, DDR4-2400 memory speed.</td>
</tr>
<tr>
<td>Chipset</td>
<td>Intel C246 Chipset</td>
</tr>
<tr>
<td>Memory</td>
<td>4 DIMM sockets. DDR4-2666. UDIMM. ECC and non-ECC are supported, but memory types cannot be intermixed.</td>
</tr>
<tr>
<td>Memory capacity</td>
<td>Up to 64GB with 4x 16GB, both ECC and non-ECC.</td>
</tr>
<tr>
<td>Memory protection</td>
<td>ECC with ECC UDIMM. Core i7 and i5 processors cannot support ECC UDIMM</td>
</tr>
<tr>
<td>Expansion slots</td>
<td>Three PCIe 3.0 slots as following:</td>
</tr>
<tr>
<td></td>
<td>Slot 1 PCIe 3.0 x16, low profile, links to CPU</td>
</tr>
<tr>
<td></td>
<td>Slot 2 PCIe 3.0 x1, low profile, links to PCH</td>
</tr>
<tr>
<td></td>
<td>Slot 3 PCIe 3.0 x16 (negotiable link width x4), low profile, links to PCH</td>
</tr>
<tr>
<td>Graphics - Processor graphics</td>
<td>Integrated Intel UHD Graphics P630 in -G suffix Xeon processors, or Intel UHD Graphics 630 in Core i7, i5, or i3 processors, or Intel UHD Graphics 610 in Pentium Gold G5400. Works along with discrete graphics to support multi-display, enables three display connectors (2x DP, 1x HDMI. HDMI is optional) on rear</td>
</tr>
<tr>
<td>Graphics - Discrete graphics card</td>
<td>Up to two PCIe 3.0 x16 slots for discrete graphics adapter (Slot 1 and 3). Supports the following graphics adapters:</td>
</tr>
<tr>
<td></td>
<td>Adapter</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Quadro P400</td>
</tr>
<tr>
<td></td>
<td>Quadro P620</td>
</tr>
<tr>
<td></td>
<td>Quadro P1000</td>
</tr>
<tr>
<td>Storage controllers</td>
<td>Integrated Intel SATA AHCI/RAID controller in chipset, 6GBps SATA, RAID 0/1. Four onboard SATA ports for max 4 SATA HDD/SSD/ODD</td>
</tr>
<tr>
<td>Internal storage bay</td>
<td>Up to 3 bays with two disk bays and one slim optical bay:</td>
</tr>
<tr>
<td></td>
<td>Bay 1</td>
</tr>
<tr>
<td></td>
<td>Bay 2</td>
</tr>
<tr>
<td></td>
<td>Bay 3</td>
</tr>
<tr>
<td>Disks</td>
<td>3.5&quot; HDD supports up to 4TB each, 6GBps SATA, 7.2K. 2.5&quot; SSD supports up to 1TB each, 6GBps SATA</td>
</tr>
<tr>
<td>M.2 slot for SSD</td>
<td>Up to 3x M.2 SSD with one dedicated onboard M.2 slot plus two PCIe to M.2 adapters. PCIe to M.2 adapter uses slot 1 or 3. Supports RAID 0/1 with PCH, When used as RAID, M.2 SSD should be installed in onboard M.2 slot and slot 3. Up to one Optane memory per system; Optane memory must work with a HDD or SSD; Optane memory cannot be installed on Pentium G5400 models</td>
</tr>
<tr>
<td>M.2 SSD</td>
<td>M.2 SSD supports up to 1TB each, PCIe 3.0 x4, NVMe, Opal.</td>
</tr>
<tr>
<td>M.2 slot for Wi-Fi and Bluetooth</td>
<td>One dedicated onboard M.2 slot for optional Intel Wireless-AC 9560, 2x2, 2.4GHz/5GHz (160MHz channels), 802.11ac, Bluetooth 5, up to 1.73Gbps</td>
</tr>
<tr>
<td>Media reader</td>
<td>Optional SD card reader on most models</td>
</tr>
<tr>
<td>Network interfaces</td>
<td>One onboard GbE port via integrated gigabit ethernet Intel i219LM, supports Wake-on-LAN. Optional PCIe ethernet adapters are available</td>
</tr>
<tr>
<td>Security features</td>
<td>Power-on and admin password, Trusted Platform Module, TCG 2.0 compliant. Optional chassis intrusion switch, cable lock, Kensington lock, and padlock</td>
</tr>
<tr>
<td>Intel vPro</td>
<td>Supports Intel vPro on Xeon models. Intel vPro also requires Wireless-AC 9560 if Wi-Fi is needed</td>
</tr>
<tr>
<td>Intel AMT</td>
<td>Intel Active Management Technology 12 on Xeon models. Intel Standard Manageability on other models</td>
</tr>
<tr>
<td>Base warranty</td>
<td>US models comes with 3-year limited onsite service with 9x5/NBD, 1 or 3-year limited onsite service with 9x5/NBD in EMEA or other GEOs</td>
</tr>
<tr>
<td>HD Audio</td>
<td>Intel HD Audio interface with Realtek ALC233 Codec</td>
</tr>
<tr>
<td>Front ports</td>
<td>2x USB 3.1 Gen 1 Type A, 2x USB 3.1 Gen 2 Type A, 1x USB 3.1 Gen 1 Type-C, 1x Mic-in, 1x Combo jack</td>
</tr>
<tr>
<td>Rear ports</td>
<td>2x USB 3.1 Gen 1 Type A, 2x USB 2.0 Type-A, 1x RJ-45, 1x COM, 2x DP. Notes: DP needs Core, Pentium, or -G suffix Xeon processor</td>
</tr>
<tr>
<td>Optional rear ports</td>
<td>2x USB 3.1 Type-C, 1x COM, PS/2, 1x Parallel, 1x Thunderbolt, 1x IEEE1394, 1x HDMI, 1x Audio line-out. Notes: HDMI needs Core, Pentium, or -G suffix Xeon processor</td>
</tr>
<tr>
<td>Temperature</td>
<td>Operating: 41 °F to 104 °F (10 °C to 35 °C) Non operating (no package): 14 °F to 140 °F (-10 °C to 60 °C) Non operating (with package): -40 °F to 140 °F (-40 °C to 60 °C)</td>
</tr>
<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, 688 m (35 000 ft)</td>
</tr>
<tr>
<td>Humidity</td>
<td>Operating: 30%~90%, non-condensing Storage (package): 20%~90%, non-condensing</td>
</tr>
<tr>
<td>Environmental certification</td>
<td>RoHS-compliant. GREENGUARD. EPEAT Gold rating and ENERGY STAR 7 qualified</td>
</tr>
<tr>
<td>Power supply</td>
<td>Supports one 210W or 260W power supply. 210W is 100V - 240V, 85% PSU, Climate Savers Computing Bronze and 80 PLUS Bronze qualified. 260W is 100V - 240V, 92% PSU, Climate Savers Computing Platinum and 80 PLUS Platinum qualified</td>
</tr>
<tr>
<td>ISV certifications</td>
<td>Please visit <a href="http://www.thinkworkstations.com/isv-certifications/">www.thinkworkstations.com/isv-certifications/</a></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.
### ThinkStation P330 Tiny Platform Specifications

#### Components | Specification
---|---
**Machine Type** | MT 30CF for Transactional model and MT 30CE for Relationship model. For configuration of all 30CF EMEA and US models, please visit: [http://psref.lenovo.com/Product/ThinkStation/ThinkStation_P330_Tiny](http://psref.lenovo.com/Product/ThinkStation/ThinkStation_P330_Tiny)
**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)
**Supported TIO monitors** | Tiny-in-One 23 (MT: 10DQ).
Tiny-in-One22 Gen3 (MT: 10R1).
Tiny-in-One22 Gen3 Touch (MT: 10R0).
Tiny-in-One24 Gen3 (MT: 10OY).
Tiny-in-One24 Gen3 Touch (MT: 10OX).
**Processor** | Up to one Intel Core family processor, i7, i5, or i3.
Core i7 supports 65W or 35W, 6 cores, up to 3.2GHz, 12MB cache, DDR4-2666 memory speed.
Core i5 supports 65W or 35W, 6 cores, up to 3.1GHz, 9MB cache, DDR4-2666 memory speed.
Core i3 supports 65W, 62W, or 35W, 4 cores, up to 3.7GHz, 6MB or 8MB cache, DDR4-2400 memory speed.
**Chipset** | Intel Q370 Chipset
**Memory** | 2 DIMM sockets. DDR4-2666, SoDIMM. Non-ECC
**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 (350-T4 adapter and quad COM ports adapter
**Graphics** | 65W or 82W 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:

<table>
<thead>
<tr>
<th>Adapter</th>
<th>Cores</th>
<th>Memory</th>
<th>Power</th>
<th>Connectors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quadro P620</td>
<td>512</td>
<td>2GB GDDRRS</td>
<td>40W</td>
<td>4x miniDP</td>
</tr>
<tr>
<td>Quadro P1000</td>
<td>640</td>
<td>4GB GDDRRS</td>
<td>47W</td>
<td>4x miniDP</td>
</tr>
</tbody>
</table>
**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
**Disks** | 2.5” HDD supports up to 1TB, 6Gbps SATA, 7,2K or 5,4K
**M.2 slot for SSD** | Two onboard M.2 slots for M.2 SSD, one for M.2 2280 SSD, one for M.2 2220 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, 802.11ac, 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 one 9.0mm optical drive via optical drive kit, DVD-ROM or DVD±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

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**Components** | **Specification**
---|---
Intel vPro Technology | Supports vPro on models with the following processors: Core i7-8700T, Core i7-8700, 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 9x5/NBD 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 | 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.
3x COM.
1x VGA.
1x DP
1x HDMI.
Port 2 supports one COM
Optional rear ports - via punch out cable | Supports one of the following:
4x miniDP with Quadro P620 or P1000, 35W processor models only
2x USB 3.1 Gen 1
4x RJ-45 GbE with Intel I350-T4.
4x COM
Note: Punch out cable and PCIe adapter are mutually exclusive
Temperature | Operating: 60 °F to 95 °F (10 °C to 35 °C)
Non operating (with package): -40 °F to 140 °F (-40 °C to 60 °C)
Altitude | 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)
Humidity | Operating: 20%~80%, non-condensing
Storage (with package): 20%~90%, non-condensing
MIL-SPEC | Certified
Environmental certification | RoHS-compliant. GREENGUARD. EPEAT Gold rating and ENERGY STAR 7 qualified
Power supply | Supports one 135W power adapter, 100V - 240V, 88% PSU
SV certifications | Please visit [www.thinkworkstations.com/sv-certifications/](http://www.thinkworkstations.com/sv-certifications/)

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Lenovo, July 2018
## ThinkStation P330 Tower Platform Specifications

### Machine Type
- MT 30C5 for Transactional model and MT 30C6 for Relationship model.
- For configuration of all 30C5 EMEA and US models, please visit: http://psref.lenovo.com/Product/ThinkStation/ThinkStation_P330_Tower

### Form factor
- 18L Tower

### Dimensions
- Height: 376 mm (14.8 in), Width: 165 mm (6.5 in), Depth: 328 mm (12.9 in)

### Weight
- Maximum configuration: 23.4 lb (10.6kg)

### Processor
- Up to one Intel Xeon E Family processor, up to 95W, up to 6 cores at 3.8GHz, up to 12MB cache, up to DDR4-2666 memory speed.
- Or up to one 8th Intel Core family processor, i7, i5, or i3, up to 95W, up to 6 cores at 3.7GHz, up to 12MB cache, up to DDR4-2666 memory speed.
- Or up to one Intel Pentium Gold G4500 via Special Bids, 54W, 2 cores at 3.7GHz, 4MB cache, DDR4-2400 memory speed

### Chipset
- Intel C246 Chipset

### Memory
- 4 DIMM sockets. DDR4-2666. UDIMM. ECC and non-ECC are supported, but memory types cannot be intermixed
- 4MB cache, DDR4-2400 memory speed

### Storage controllers
- Integrated Intel SATA AHCII/RAID controller in chipset, 6Gbps SATA, RAID 0/1/10/5.
- Four onboard SATA ports for max 4 SATA HADD/SSD/ODD
- Up to five bays with four disk bays plus one slim optical bay, supports up to 3x 3.5" HDD plus 1x 2.5" SSD, or 4x 2.5" SSD

### Internal storage bay
- 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:
  - Flex module for optional front eSATA/Thunderbolt/IEEE 1394
  - 3rd disk bay, 3.5" or 2.5", removable, via Front Access Storage Enclosure, using SATA 4 connector as eSATA module
  - 3rd disk bay, 3.5" or 2.5", via 5.25" to 3.5" HDD Kit
  - M.2 drive, via Front removable M.2 enclosure, also occupies slot 1 or 3
- Bay 5: 9mm Slim ODD bay

### Disks
- 3.5" HDD supports up to 4TB each, 6Gbps SATA. 2.5" SSD supports up to 1TB each, 6Gbps SATA

### 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.
- Optional chassis intrusion switch, cable lock, Kensington lock, and pad lock

### Graphics - Processor graphics
- 1. Quadro P4000, 2x Quadro P2000, Geforce GTX 1060/1070/1080 needs 400W PSU.
- 2. Geforce GTX 1060/1070/1080 are dual-slot width.
- 3. Geforce GTX 1060/1070/1080 and Radeon Pro WX 4100 are SBO.

### Graphics card
- 1. Any questions or advice on ThinkStation PSREF, please contact ThinkStation PSREF developer
- 2. Note: M.2 SSD supports up to 1TB, PCIe 3.0 x4, NVMe, Opal. A single 2.5" SSD can be used as a second graphics card via the rear M.2 slot.

### Graphics - Discrete graphics card
- Note: HDMI needs Core, Pentium, or -G suffix Xeon processor
- Note: DP needs Core, Pentium, or -G suffix Xeon processor

### Rear ports
- 2x USB 3.1 Gen 1 Type A. 2x USB 3.1 Gen 2 Type A. 1x USB 3.1 Gen 1
- 1x Mic-in. 1x Combo jack
- 2x USB 3.1 Gen 1 Type A. 2x USB 2.0 Type-A. 1x RJ-45. 1x COM. 2x DP
- 1x Audio line-out

### Front ports
- 2x USB 3.1 Gen 1 Type A. 2x USB 3.1 Gen 2 Type A. 1x USB 3.1 Gen 1 Type-C.
- 1x eSATA. 1x IEEE1394

### Optional rear ports
- 2x USB Type-C. 1x COM. 2x Thunderbolt. 1x IEEE1394. 1x HDMI

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

### Power supply
- Intel vPro supports Intel vPro on Xeon models.
- Intel AMT Intel Active Management Technology 12 on Xeon models, Intel Standard Manageability on other models

### 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.
- Optional chassis intrusion switch, cable lock, Kensington lock, and pad lock

### Environmental
- Temperature:
  - Operating: 41 °F to 104 °F (10 °C to 40 °C)
  - Non operating (no package): 14 °F to 140 °F (-10 °C to 60 °C)
- Altitude:
  - 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)
- Humidity:
  - Operating: 30%–90%, non-condensing
  - Storage: 20%–90%, non-condensing

### Power supply
- Supports one 250W or 400W power supply. 100V - 240V, 92% PSU. Climate Savers Computing Platinum and 60 PLUS Platinum qualified. 400W PSU supports one 6+2-pin aux power connector.

### ISV certifications
- Please visit www.thinkworkstations.com/ivc-certifications/

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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
## 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)
- Power supply: Supports the following:
  - One fixed 900W, autoselection, 92%, 80 PLUS Platinum qualified
  - One fixed 900W, autoselection, 92%, 80 PLUS Platinum qualified

**Processor Family**
- Up to one 140W Intel Xeon W family processor:
  - 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 Types**
- DDR4-2666 RDIMM

**Memory Protection**
- ECC

**Weight**
- Maximum configuration: 52.91 lb (24kg)

**Dimensions**
- 165mm/6.5" W x 460mm/18.1" D x 440mm/17.3" H (with feet)

**Storage Bays**

<table>
<thead>
<tr>
<th>Bays Type</th>
<th>Maximum Drives Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>M.2 slot</td>
<td>2x M.2 SSD (2 onboard, 7 via PCIe to M.2 adapter)</td>
</tr>
<tr>
<td>PCIe AIC SSD</td>
<td>PCIe NVMe</td>
</tr>
<tr>
<td>PCIe NVMe</td>
<td>480GB</td>
</tr>
</tbody>
</table>

**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 6Gbps</td>
<td>7.2K</td>
<td>1TB/2TB/4TB/6TB</td>
<td>6</td>
</tr>
<tr>
<td>2.5&quot; SATA HDD</td>
<td>SATA 6Gbps</td>
<td>7.2K</td>
<td>500GB/500GB FIPS</td>
<td>6</td>
</tr>
<tr>
<td>2.5&quot; SATA SSD</td>
<td>SATA 6Gbps</td>
<td>7.2K</td>
<td>256GB/512GB/1TB/2TB</td>
<td>6</td>
</tr>
<tr>
<td>M.2 PCIe SSD</td>
<td>PCIe NVMe</td>
<td>480GB</td>
<td>2 (1 when quad M.2 adapter used)</td>
<td></td>
</tr>
</tbody>
</table>

**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.
- Supports the following ports:
  - 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

**Power supply**
- Supports the following optional ports:
  - 1.2 via UEFI setting, 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/ND

**HD Audio**
- Realtek ALC662 codec

**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)
- Humidity - operating: 10%–80%, non-condensing
- Humidity - storage (with package): 10%–90%, non-condensing

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

**SV certifications**
- Please visit [www.thinkworkstations.com/sv-certifications/](http://www.thinkworkstations.com/sv-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

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**Lenovo, February 2019**
### ThinkStation P520c Platform Specifications

#### Form factor
25L Tower

#### Dimensions
175mm/6.89” W x 426mm/16.77” D x 376mm/14.8” H (with feet)

#### Weight
Maximum configuration: 31.97 lb (14.5kg)

#### Processor Family
Up to one 140W Intel Xeon W family processor:
- 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
4 DIMM sockets with 4 channels

#### Memory Specifications
- **Memory Capacity**: 128GB with 4 x 32GB RDIMMs
- **Memory Types**: DDR4-2666 RDIMM
- **Memory Protection**: ECC

#### Expansion slots
| Slot 1 (CPU) | PCIe 3.0 x16, full height, full length, 75W. |
| Slot 2 (CPU) | PCIe 3.0 x8, full height, full length, 25W, open ended |
| Slot 3 (CPU) | PCIe 3.0 x16, full height, full length, 75W |
| Slot 4 (PCH) | PCIe 3.0 x4, half height, full length, 25W, open ended |

#### Storage Support
- **Storage Controller**: Onboard Intel RSTe Std
- **Storage Controller Type**: NVMe Basic
- **RAID**: PCA207/213-00060
- **Cache**: NVMe SSD

#### Graphics
<table>
<thead>
<tr>
<th>Graphics Type</th>
<th>Memory</th>
<th>Power</th>
<th>Connector</th>
<th>SLI / NVLink</th>
<th>Max Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>NVS 810</td>
<td>4GB DDR3</td>
<td>68W</td>
<td>8xmini DP</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Quadro P400</td>
<td>2GB GDDR5</td>
<td>30W</td>
<td>3xminiDP</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Quadro P500</td>
<td>2GB GDDR5</td>
<td>45W</td>
<td>4xminiDP</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Quadro P620</td>
<td>2GB GDDR5</td>
<td>40W</td>
<td>4xminiDP</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Quadro P1000</td>
<td>4GB GDDR5</td>
<td>50W</td>
<td>4xminiDP</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Quadro P2000</td>
<td>5GB GDDR5</td>
<td>75W</td>
<td>4xDP</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Quadro P4000</td>
<td>8GB GDDR5</td>
<td>120W</td>
<td>4xDP</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Quadro P5000</td>
<td>16GB GDDR5X</td>
<td>180W</td>
<td>4xDP</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Quadro RTX 4000</td>
<td>8GB GDDR6</td>
<td>160W</td>
<td>3xDP, 1xVirtualLink</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

#### Discrete Graphics Offering

#### Storage
- **Storage Controller**: Onboard Intel RSTe Std
- **Type**: NVMe Basic
- **Interface**: NVMe
- **RAID**: NVMe SSD
- **Cache**: NVMe SSD

#### 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” SATA HDD</td>
<td>Sata 6Gb/s</td>
<td>7.2K</td>
<td>1TB / 2TB / 4TB / 6TB</td>
<td>4</td>
</tr>
<tr>
<td>2.5” SATA SSD</td>
<td>Sata 6Gb/s</td>
<td>7.2K</td>
<td>256GB / 512GB / 1TB / 2TB</td>
<td>4</td>
</tr>
</tbody>
</table>

#### 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)
- **Humidity - operating**: 10%–80%, non-condensing
- **Humidity - storage (with package)**: 10%–90%, non-condensing

#### Certifications
- **RoHS-compliant**: Yes
- **GREENGUARD**: Yes
- **EPEAT Gold**: Yes
- **ENERGY STAR 6.1**: Qualified on model 30BX0008US and 30BX0009US

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

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Lenovo, February 2019
**ThinkStation P720 Platform Specifications**

**Product Specifications Reference (PSREF)**

### Form factor
36L Tower

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

### Weight
Maximum configuration: 52.25 lb (23.7kg)

### Processor Family
Up to two 150 W Intel Xeon Scalable family processors, Bronze, Silver, Gold, or Platinum:
- Up to 24 cores at 2.1 GHz
- Up to 3.6 GHz with 4 cores
- Up to 33 MB cache
- Up to DDR4-2666 memory speed

### Processor Sockets
2x FCLGA3647

### Chipset
Intel C621 Chipset

### Memory Sockets
12 DIMM sockets with 12 channels, 6 DIMM sockets with 6 channels per processor

### Memory Types
- DDR4-2666 RDIMM
- Up to DDR4-2666 memory speed
- Up to 33 MB cache
- Up to 3.6 GHz with 4 cores
- Up to 24 cores at 2.1 GHz

### Memory Protection ECC

### Memory Capacity
- 384GB with 12 x 32GB RDIMMs and two processors

### Chipset
Intel C621 Chipset

### 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 x4, full height, full length, 25W, 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

<table>
<thead>
<tr>
<th>Graphics</th>
<th>Memory</th>
<th>Power</th>
<th>Connector</th>
<th>SLI / NVlink</th>
<th>Max Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>NVS 810</td>
<td>4GB DDR3</td>
<td>68W</td>
<td>8xmini DP</td>
<td>SLI / NVLink</td>
<td>Max Qty</td>
</tr>
<tr>
<td>Quadro P400</td>
<td>2GB GDDR5</td>
<td>30W</td>
<td>4xminiDP</td>
<td>SLI / NVLink</td>
<td>Max Qty</td>
</tr>
<tr>
<td>Quadro P600</td>
<td>2GB GDDR5</td>
<td>45W</td>
<td>4xminiDP</td>
<td>SLI / NVLink</td>
<td>Max Qty</td>
</tr>
<tr>
<td>Quadro P600</td>
<td>2GB GDDR5</td>
<td>45W</td>
<td>4xminiDP</td>
<td>SLI / NVLink</td>
<td>Max Qty</td>
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<tr>
<td>Quadro P1000</td>
<td>4GB GDDR5</td>
<td>50W</td>
<td>4xminiDP</td>
<td>SLI / NVLink</td>
<td>Max Qty</td>
</tr>
<tr>
<td>Quadro P2000</td>
<td>5GB GDDR5</td>
<td>75W</td>
<td>4xDP</td>
<td>SLI / NVLink</td>
<td>Max Qty</td>
</tr>
<tr>
<td>Quadro P4000</td>
<td>8GB GDDR5</td>
<td>120W</td>
<td>4xDP</td>
<td>SLI / NVLink</td>
<td>Max Qty</td>
</tr>
<tr>
<td>Quadro P6000</td>
<td>16GB GDDRX</td>
<td>180W</td>
<td>DVI-D +4xDP</td>
<td>SLI / NVLink</td>
<td>Max Qty</td>
</tr>
<tr>
<td>Quadro P6000</td>
<td>24GB GDDRX</td>
<td>250W</td>
<td>DVI-D +4xDP</td>
<td>SLI / NVLink</td>
<td>Max Qty</td>
</tr>
<tr>
<td>Quadro RTX 4000</td>
<td>8GB GDDR</td>
<td>160W</td>
<td>3xDP 1xVirtualLink</td>
<td>SLI / NVLink</td>
<td>Max Qty</td>
</tr>
<tr>
<td>Quadro RTX 5000</td>
<td>16GB GDDR6</td>
<td>256W</td>
<td>4xDP 1xVirtualLink</td>
<td>SLI / NVLink</td>
<td>Max Qty</td>
</tr>
<tr>
<td>Quadro RTX 6000</td>
<td>24GB GDDR6</td>
<td>299W</td>
<td>4xDP 1xVirtualLink</td>
<td>SLI / NVLink</td>
<td>Max Qty</td>
</tr>
<tr>
<td>Quadro GP100</td>
<td>16GB HBM2</td>
<td>235W</td>
<td>1xDVI-D DL +4xDP</td>
<td>SLI / NVLink</td>
<td>Max Qty</td>
</tr>
<tr>
<td>Quadro GV100</td>
<td>32GB HBM2</td>
<td>256W</td>
<td>4xDP</td>
<td>SLI / NVLink</td>
<td>Max Qty</td>
</tr>
</tbody>
</table>

### Storage Controller

<table>
<thead>
<tr>
<th>Storage Controller</th>
<th>Type</th>
<th>Interface</th>
<th>RAID</th>
<th>Cache</th>
</tr>
</thead>
<tbody>
<tr>
<td>Onboard Intel RSTe Std</td>
<td>SATA 6Gb/s</td>
<td>0/1/0/5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NVMe -60 PCIe</td>
<td>Opt</td>
<td>SAS 12Gb/s, Sata 6Gb/s</td>
<td>0/1/0/5</td>
<td></td>
</tr>
<tr>
<td>NVMe Basic</td>
<td>Opt</td>
<td>PCIe NVMe</td>
<td>0/1/0</td>
<td></td>
</tr>
<tr>
<td>NVMe Premium</td>
<td>Opt</td>
<td>PCIe NVMe</td>
<td>0/1/0/5</td>
<td></td>
</tr>
<tr>
<td>NVMe for Intel SSD</td>
<td>Opt</td>
<td>PCIe NVMe</td>
<td>0/1/0/5</td>
<td></td>
</tr>
</tbody>
</table>

### Disk type

<table>
<thead>
<tr>
<th>Disk type</th>
<th>Interface</th>
<th>RPM</th>
<th>Offering</th>
<th>Max Qty (Blind connection + 9460 used)</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>6 (Also supports additional 4x 2.5&quot; SATA SSD/HDD)</td>
</tr>
<tr>
<td>2.5&quot; SATA HDD</td>
<td>6Gb/s</td>
<td>7.2K</td>
<td>500GB/500GB FIPS</td>
<td>10</td>
</tr>
<tr>
<td>2.5&quot; SSD HDD</td>
<td>SAS 12Gb/s</td>
<td>10K</td>
<td>300GB/600GB</td>
<td>8</td>
</tr>
<tr>
<td>2.5&quot; SSD SAS</td>
<td>SAS 12Gb/s</td>
<td>10K</td>
<td>256GB/512GB/1TB/2TB</td>
<td>10</td>
</tr>
<tr>
<td>2.5&quot; PCIe SSD</td>
<td>PCIe NVMe</td>
<td>1TB</td>
<td>1TB</td>
<td>2</td>
</tr>
<tr>
<td>M.2 PCIe SSD</td>
<td>PCIe NVMe</td>
<td>256GB/512GB/1TB/2TB</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>PCIe AIC SSD</td>
<td>PCIe NVMe</td>
<td>480GB</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

### Bay Type

<table>
<thead>
<tr>
<th>Bay Type</th>
<th>Maximum Drives Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>M.2 slot</td>
<td>2x M.2 SSD (2 onboard, 7 via PCIe to M.2 adapter)</td>
</tr>
<tr>
<td>Flex Bay</td>
<td>- 2 flex bays. Supports the following: 2x half-height optical drives 2x 5.25&quot; 9.0mm optical drives 1x 5.25&quot; 9.0mm optical drive + 1x 3.5&quot;/2.5&quot; SATA SSD/HDD 1x 3.5&quot;/2.5&quot; 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 or 2x Thunderbolt Port 1 and 2: Front USB 3.0 Type-C or eSATA 2x M.2 SSD with 2x Front Removable Drive Enclosures</td>
</tr>
</tbody>
</table>

### Memory Protection
- Supports up to 9x M.2 SSD + 6x 3.5" HDD/10x 2.5" SSD/10x 2.5" HDD + 2x PCIe AIC SSD.

### Max Storage
- All HDD: 36TB using 6x 3.5" HDD
- All SSD: 38.6TB using 10x 2.5" SATA SSD, 9x M.2 SSD, and 2x PCIe AIC SSD

### Power supply
- Supports one of the following: One fixed 900W, autoselecting, 92%, 80 PLUS Platinum qualified
- One fixed 900W, autoselecting, 92%, 80 PLUS Platinum qualified

### Media reader
- 5D USB 2.0 card reader on most models. Optional UHS-II 15-in-1 USB 3.0 reader on flex module

### Network interfaces
- Integrated two-port gigabit ethernet (Intel i219LM and i210AT), supports Wake-on-LAN on both ports. Optional PCIe ethernet are available

### Wireless
- 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 padlock

### Environmental
- Temperature - operating 50 o F to 95 o F (10 o C to 35 o C)
- Humidity - operating 10%~80%, non-condensing
- Altitude - operating (Unpressurized): 0-10000ft (0-3048m)
- Temperature - storage (no package) 14 o F to 140 o F (-10 o C to 60 o C)
- Temperature - storage (with package) -40 o F to 140 o F (-40 o C to 60 o C)

**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-nsotics 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 AL662 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, 2x RJ-45, 3x analog audio ports (line-in, line-out, mic-in), 2x PS/2

**Optional ports**
- Supports the following optional ports:
  - 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

**Environmental specifications**
- Temperature - operating 50 o F to 95 o F (10 o C to 35 o C)
- Temperature - storage (no package) 14 o F to 140 o F (-10 o C to 60 o C)
- Temperature - storage (with package) -40 o F to 140 o F (-40 o C to 60 o 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. EPEAT Gold rating. ENERGY STAR 6.1 qualified on model 30BA0007US and 30BA0008US.**

**FSC certifications**
- Please visit [www.thinkworkstations.com/ce/ivs-certifications/](http://www.thinkworkstations.com/ce/ivs-certifications/)

**Lenovo, March 2019**
ThinkStation P920 Platform Specifications

**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 Family**
- Up to two 205 W Intel Xeon Scalable family processors, Bronze, Silver, Gold, or Platinum:
  - Up to 28 cores at 2.5 GHz
  - Up to 3.6 GHz with 4 cores
  - Up to 38.5 MB cache
  - Up to DDR4-2666 memory speed

**Processor Sockets** 2x FCLGA3647

**Chipset** Intel C621 Chipset

**Memory Types** DDR4-2666 RDIMM or DDR4-2666 LRDIMM

**Memory Capacity**
- 1TB with 16 x 4GB LRDIMMs and two processors
- 1.75 GB with 16 x 32GB RDIMMs and two processors

**Memory Protection** ECC

**Expansion slots**
- Slot 1 (CPU1) PCIe 3.0 x16, full height, full length, 75W, double-width
- Slot 2 (CPU1) PCIe 3.0 x4, full height, full length, 25W, open ended
- Slot 3 (CPU1) PCIe 3.0 x16, full height, full length, 75W, double-width
- Slot 4 (CPU1) PCIe 3.0 x4, full height, full length, 25W, open ended
- Slot 5 (PCH) PCIe 3.0 x4, full height, full length, 25W, open ended
- Slot 6 (CPU2) PCIe 3.0 x4, full height, half length, 75W
- Slot 7 (CPU2) PCIe 3.0 x4, full height, full length, 75W, double-width
- Slot 8 (CPU2) PCIe 3.0 x16, full height, full length, 75W

**Storage Bays**
- Max Storage: Supports up to 9x M.2 SSD + 6x 3.5" SATA HDD/10x 2.5" SATA SSD
- Max Power: 1400 watts, autosensing, 92% PSU, 80 PLUS Platinum qualified
- 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

**Network Interfaces**
- One fixed 1400 watts, autosensing, 92% PSU, 80 PLUS Platinum qualified
- Optional Intel Wireless-AC 8265, 2x2, 2.4GHz/5GHz, 802.11ac, Bluetooth 4.2, up to 867Mbps

**Environmental**
- Temperature: -40 o F to 140 o F (-40 o C to 60 o C)
- Temperature: 50 o F to 95 o F (10 o C to 35 o C)
- Humidity: 10%~90%, non-condensing
- Humidity: 10%~80%, non-condensing
- Altitude: 0-10000ft (0-3048m)
- Altitude: 0-10000ft (0-3048m)
- Temperature: -40 o F to 140 o F (-40 o C to 60 o C)
- Temperature: -40 o F to 140 o F (-40 o C to 60 o C)

**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

**Specifications**
- 38.96TB using 10x 2.5" SATA SSD
- 9x M.2 SSD, and 2x PCIe AIC SSD
- 32GB DDR4, 68W, 8xmini DP 2
- 10x 2.5" SATA SSD/10x 2.5" SATA SSD + 2x PCIe AIC SSD
- 9x M.2 SSD/10x 2.5" SATA SSD + 2x PCIe AIC SSD

**Certifications**
- RoHS-compliant. GREENGUARD. EPEAT Gold rating. ENERGY STAR 6.1 qualified on model 30BC0008US and 30BC0009US
- ISV certifications: Please visit www.thinkworkstations.com/isv-certifications/

**Other**
- 71.3 lb (32.3kg)
- 200mm/7.87" W x 620mm/24.4" D x 446mm/17.56" H (with feet)
- Desktop with 16 x 32GB RDIMMs and two processors
- 3x 3.5" or 2.5" disks. Supports the following:
  - 3x half-height optical drives
  - 2x 5.25" 9.0mm optical drives
  - 1x 5.25" 9.0mm optical drive + 1x 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: 5.25" 9.0mm optical (via PCIe adapter, USB 3.1 gen 1)
    - 2x USB Type-C ports via PCIe adapter, USB 3.1 gen 1
    - 2x USB Type-C ports via PCIe adapter, USB 3.1 gen 2
    - 1x internal USB 3.0 port

**Lenovo, February 2019**
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**Depot or Courier Service:** Parts and labor repair coverage where shipping (including packaging) or delivery to the repair center is paid for by Lenovo.

**Expedited Depot:** Parts and labor coverage with expedited turnaround. Shipping (including packaging) or delivery to the repair center is paid for by Lenovo.

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If Lenovo determines your product problem is covered by the product warranty and cannot be resolved over the telephone, a technician will be dispatched to arrive onsite, typically the next day.


Visit [www.lenovo.com/warranty](http://www.lenovo.com/warranty) for Lenovo Warranty Services terms and conditions for complete details and restrictions.

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