### OVERVIEW

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>2x Flex bay</td>
</tr>
<tr>
<td>2.</td>
<td>Power button</td>
</tr>
<tr>
<td>3.</td>
<td>Headphone / microphone combo jack (3.5mm)</td>
</tr>
<tr>
<td>4.</td>
<td>4x USB 3.1 Gen 1</td>
</tr>
<tr>
<td>5.</td>
<td>Card reader</td>
</tr>
<tr>
<td>6.</td>
<td>2x PS/2 ports (keyboard / mouse)</td>
</tr>
<tr>
<td>7.</td>
<td>Serial *</td>
</tr>
<tr>
<td>8.</td>
<td>Ethernet (RJ-45)</td>
</tr>
<tr>
<td>9.</td>
<td>4x USB 3.1 Gen 1</td>
</tr>
<tr>
<td>10.</td>
<td>2x USB 2.0</td>
</tr>
<tr>
<td>11.</td>
<td>Microphone (3.5mm)</td>
</tr>
<tr>
<td>12.</td>
<td>Line-out (3.5mm)</td>
</tr>
<tr>
<td>13.</td>
<td>Line-in (3.5mm)</td>
</tr>
</tbody>
</table>

**Notes:**
- Ports with * are only available on selected models
PERFORMANCE

Processor

Processor Family
Up to one Intel® Xeon® W-2100 / W-2200 Processor

<table>
<thead>
<tr>
<th>Processor Name</th>
<th>Cores</th>
<th>Threads</th>
<th>Base Frequency</th>
<th>Max Frequency</th>
<th>Cache</th>
<th>Memory Support</th>
<th>Processor Graphics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Xeon W-2102</td>
<td>4</td>
<td>4</td>
<td>2.9GHz</td>
<td>-</td>
<td>8.25MB</td>
<td>DDR4-2400</td>
<td>-</td>
</tr>
<tr>
<td>Xeon W-2104</td>
<td>4</td>
<td>4</td>
<td>3.2GHz</td>
<td>-</td>
<td>8.25MB</td>
<td>DDR4-2400</td>
<td>-</td>
</tr>
<tr>
<td>Xeon W-2123</td>
<td>4</td>
<td>8</td>
<td>3.6GHz</td>
<td>3.9GHz</td>
<td>8.25MB</td>
<td>DDR4-2666</td>
<td>-</td>
</tr>
<tr>
<td>Xeon W-2125</td>
<td>4</td>
<td>8</td>
<td>4.0GHz</td>
<td>4.5GHz</td>
<td>8.25MB</td>
<td>DDR4-2666</td>
<td>-</td>
</tr>
<tr>
<td>Xeon W-2133</td>
<td>6</td>
<td>12</td>
<td>3.6GHz</td>
<td>3.9GHz</td>
<td>8.25MB</td>
<td>DDR4-2666</td>
<td>-</td>
</tr>
<tr>
<td>Xeon W-2135</td>
<td>6</td>
<td>12</td>
<td>3.7GHz</td>
<td>4.5GHz</td>
<td>8.25MB</td>
<td>DDR4-2666</td>
<td>-</td>
</tr>
<tr>
<td>Xeon W-2145</td>
<td>8</td>
<td>16</td>
<td>3.7GHz</td>
<td>4.5GHz</td>
<td>11MB</td>
<td>DDR4-2666</td>
<td>-</td>
</tr>
<tr>
<td>Xeon W-2155</td>
<td>10</td>
<td>20</td>
<td>3.3GHz</td>
<td>4.5GHz</td>
<td>13.75MB</td>
<td>DDR4-2666</td>
<td>-</td>
</tr>
<tr>
<td>Xeon W-2175</td>
<td>14</td>
<td>28</td>
<td>2.5GHz</td>
<td>4.3GHz</td>
<td>19MB</td>
<td>DDR4-2666</td>
<td>-</td>
</tr>
<tr>
<td>Xeon W-2195</td>
<td>18</td>
<td>36</td>
<td>2.3GHz</td>
<td>4.3GHz</td>
<td>24.75MB</td>
<td>DDR4-2666</td>
<td>-</td>
</tr>
<tr>
<td>Xeon W-2223</td>
<td>4</td>
<td>8</td>
<td>3.6GHz</td>
<td>3.9GHz</td>
<td>8.25MB</td>
<td>DDR4-2666</td>
<td>-</td>
</tr>
<tr>
<td>Xeon W-2225</td>
<td>4</td>
<td>8</td>
<td>4.1GHz</td>
<td>4.6GHz</td>
<td>8.25MB</td>
<td>DDR4 2933</td>
<td>-</td>
</tr>
<tr>
<td>Xeon W-2235</td>
<td>6</td>
<td>12</td>
<td>3.8GHz</td>
<td>4.6GHz</td>
<td>8.25MB</td>
<td>DDR4 2933</td>
<td>-</td>
</tr>
<tr>
<td>Xeon W-2245</td>
<td>8</td>
<td>16</td>
<td>3.9GHz</td>
<td>4.5GHz</td>
<td>16.5MB</td>
<td>DDR4 2933</td>
<td>-</td>
</tr>
<tr>
<td>Xeon W-2255</td>
<td>10</td>
<td>20</td>
<td>3.7GHz</td>
<td>4.5GHz</td>
<td>19.25MB</td>
<td>DDR4 2933</td>
<td>-</td>
</tr>
<tr>
<td>Xeon W-2265</td>
<td>12</td>
<td>24</td>
<td>3.5GHz</td>
<td>4.6GHz</td>
<td>19.25MB</td>
<td>DDR4 2933</td>
<td>-</td>
</tr>
<tr>
<td>Xeon W-2275</td>
<td>14</td>
<td>28</td>
<td>3.3GHz</td>
<td>4.6GHz</td>
<td>19.25MB</td>
<td>DDR4 2933</td>
<td>-</td>
</tr>
<tr>
<td>Xeon W-2295</td>
<td>18</td>
<td>36</td>
<td>3.0GHz</td>
<td>4.6GHz</td>
<td>24.75MB</td>
<td>DDR4 2933</td>
<td>-</td>
</tr>
</tbody>
</table>

Processor Sockets
1x FCLGA2066

Operating System

Operating System**
- Windows® 10 Pro 64 for Workstations
- Ubuntu Linux LTS
- No operating system

Graphics

Discrete Graphics Support
Supports up to one NVIDIA® Quadro® RTX 8000 or two NVIDIA Quadro RTX 6000 with NVLink

Discrete Graphics Offering**

<table>
<thead>
<tr>
<th>Graphics</th>
<th>Memory</th>
<th>Power</th>
<th>Connector</th>
<th>SLI / NVlink</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quadro P400</td>
<td>2GB GDDR5</td>
<td>30W</td>
<td>3x miniDP 1.4</td>
<td>None</td>
</tr>
<tr>
<td>Quadro P600</td>
<td>2GB GDDR5</td>
<td>45W</td>
<td>4x miniDP</td>
<td>None</td>
</tr>
<tr>
<td>Quadro P620</td>
<td>2GB GDDR5</td>
<td>40W</td>
<td>4x miniDP 1.4</td>
<td>None</td>
</tr>
<tr>
<td>Quadro P1000</td>
<td>4GB GDDR5</td>
<td>50W</td>
<td>4x miniDP 1.4</td>
<td>None</td>
</tr>
<tr>
<td>Quadro P2000</td>
<td>5GB GDDR5</td>
<td>75W</td>
<td>4x DP</td>
<td>None</td>
</tr>
<tr>
<td>Quadro P2200</td>
<td>5GB GDDR5</td>
<td>75W</td>
<td>4x DP 1.4</td>
<td>None</td>
</tr>
<tr>
<td>Quadro P4000</td>
<td>8GB GDDR5</td>
<td>120W</td>
<td>4x DP 1.4</td>
<td>None</td>
</tr>
</tbody>
</table>
### Monitor Support

**Monitor Support**

Supports multiple displays via discrete graphics, the number of maximum monitors supported depends on the graphic card in use.

### Chipset

**Chipset**

Intel C422 chipset

### Memory

**Max Memory**

- Up to 512GB (8x 64GB RDIMMs) DDR4-2933
- Up to 256GB (8x 32GB RDIMMs) DDR4-2666

**Memory Type**

- DDR4-2666 RDIMM ECC
- DDR4-2933 RDIMM ECC

**Memory Slots**

8 DDR4 DIMM slots, 4 channels capable

**Memory Protection**

- ECC

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

### Storage

**Storage Support**

Up to 6x 3.5" SATA HDD / 2.5" SATA HDD / 2.5" SATA SSD + 9x M.2 PCIe SSD + 1x PCIe AIC SSD

- 3.5" HDD up to 6TB each
- 2.5" SATA HDD up to 500GB each
- 2.5" SATA SSD up to 2TB each
- 2.5" SAS HDD up to 600GB each
- M.2 PCIe SSD up to 2TB each
- PCIe AIC SSD up to 480GB each

**Storage Type**

<table>
<thead>
<tr>
<th>Disk Type</th>
<th>Interface</th>
<th>RPM</th>
<th>Offering</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.5&quot; SAS HDD</td>
<td>SAS 12Gb/s</td>
<td>10K</td>
<td>300GB / 600GB</td>
</tr>
<tr>
<td>2.5&quot; SATA HDD</td>
<td>SATA 6Gb/s</td>
<td>7.2K</td>
<td>500GB / 500GB FIPS</td>
</tr>
</tbody>
</table>
### Storage Controllers

<table>
<thead>
<tr>
<th>Storage Controller</th>
<th>Type</th>
<th>Interface</th>
<th>RAID</th>
<th>Cache</th>
</tr>
</thead>
<tbody>
<tr>
<td>9440-8i PCIe</td>
<td>Optional</td>
<td>SAS 12.0Gb/s, SATA 6.0Gb/s</td>
<td>0/1/10/10</td>
<td>None</td>
</tr>
<tr>
<td>9460-16i PCIe</td>
<td>Optional</td>
<td>SAS 12.0Gb/s, SATA 6.0Gb/s</td>
<td>0/1/10/5/6</td>
<td>4GB DDR4, SuperCap</td>
</tr>
<tr>
<td>NVMe Basic</td>
<td>Optional</td>
<td>PCIe NVMe</td>
<td>0/1/10</td>
<td>None</td>
</tr>
<tr>
<td>NVMe Premium</td>
<td>Optional</td>
<td>PCIe NVMe</td>
<td>0/1/10/5</td>
<td>None</td>
</tr>
<tr>
<td>NVMe for Intel SSD</td>
<td>Optional</td>
<td>PCIe NVMe</td>
<td>0/1/10/5</td>
<td>None</td>
</tr>
<tr>
<td>Onboard Intel RSTe SATA RAID</td>
<td>Standard</td>
<td>SATA 6.0Gb/s</td>
<td>0/1/10/5</td>
<td>None</td>
</tr>
</tbody>
</table>

### Removable Storage

#### Optical Support

Up to two HH or 9.0mm optical drive, DVD-ROM, DVD±RW, and Blu-ray

#### Card Reader

- SD card reader
- 15-in-1 card reader
- No card reader

### Multi-Media

#### Audio Chip

High Definition (HD) Audio, Realtek® ALC662 codec

### Power Supply

#### Power Supply**

<table>
<thead>
<tr>
<th>Power</th>
<th>Type</th>
<th>Efficiency</th>
<th>Key Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>690W</td>
<td>Fixed</td>
<td>92%</td>
<td>Autosensing, 80 PLUS Platinum qualified</td>
</tr>
<tr>
<td>900W</td>
<td>Fixed</td>
<td>92%</td>
<td>Autosensing, 80 PLUS Platinum qualified</td>
</tr>
<tr>
<td>1000W</td>
<td>Fixed</td>
<td>92%</td>
<td>Autosensing, 80 PLUS Platinum qualified</td>
</tr>
</tbody>
</table>

### DESIGN

#### Mechanical

#### Form Factor

Tower (33L)

#### Dimensions (WxDxH)

<table>
<thead>
<tr>
<th>Models</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>165 x 460 x 440 mm (6.5 x 18.1 x 17.3 inches, with feet)</td>
</tr>
</tbody>
</table>

#### Weight

<table>
<thead>
<tr>
<th>Models</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>24 kg (52.91 lbs, maximum configuration)</td>
</tr>
</tbody>
</table>

#### Bays

- 2x 3.5" disk bay (standard)
- 4x 3.5" disk bay (optional):
  - 2 bays come with 3rd disk or Storage Bay Upgrade Kit
2 bays via flex bay

**Flex Bays**
2x flex bays, supports the following:
• 2x half-height optical drives
• 2x 5.25" 9.0mm optical drives
• 1x 5.25" 9.0mm optical drive + 2x 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: 15-in-1 USB 3.1 Gen 1 reader, 2x Thunderbolt™, or 4-digit diagnostic display
Port 1 and 2: Front USB 3.1 Gen 1 Type-C or eSATA

**M.2 Slots**
Up to 9x M.2 SSD:
• 2 via onboard slots
• 4 via Quad M.2 to PCIe adapter
• 3 via Single M.2 to PCIe adapter

**Expansion Slots**
• One PCI
• Two PCIe 3.0 x4
• One PCIe 3.0 x8
• Two PCIe 3.0 x16

**Expansion Slots Offering**
Slot 1: PCIe 3.0 x8, full height, full length, 25W, open ended, by CPU
Slot 2: PCIe 3.0 x16, full height, full length, 75W, double-width, by CPU
Slot 3: PCIe 3.0 x4, full height, half length, 25W, open ended, by PCH
Slot 4: PCIe 3.0 x16, full height, full length, 75W, double-width, by CPU
Slot 5: PCI, full height, full length, 25W
Slot 6: PCIe 3.0 x4, full height, half length, 25W, open ended, by PCH

**CONNECTIVITY**

**Network**

**Onboard Ethernet**
Gigabit Ethernet, Intel Ethernet Connection I219-LM, 1x RJ45, supports Wake-on-LAN

**Optional Ethernet**
Additional Ethernet options via PCIe adapter

**WLAN + Bluetooth®**
• Intel Dual-Band Wireless-AC 8265, 802.11ac Dual-Band 2x2 Wi-Fi® + Bluetooth 4.2
• No WLAN and Bluetooth

**Ports**

**Front Ports**
• 1x USB 3.1 Gen 1 (Always On and fast charge)
• 3x USB 3.1 Gen 1
• 1x headphone / microphone combo jack (3.5mm)

**Optional Front Ports**
• 1x eSATA (with flex module)
• 2x Thunderbolt (with flex module, USB-C form, one supports video-out)
• 1x USB-C 3.1 Gen 1 (with flex module)

**Rear Ports**
• 2x USB 2.0
• 4x USB 3.1 Gen 1
• 2x PS/2 ports (keyboard / mouse)
• 1x Ethernet (RJ-45)
• 1x line-in (3.5mm)
• 1x line-out (3.5mm)
• 1x microphone (3.5mm)
Optional Rear Ports***

- 2x USB-C 3.1 Gen 2 (via 2-port USB-C expansion card)
- 1x Thunderbolt
- 1x serial

Notes:
1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
   - USB 2.0: 480 Mbit/s;
   - USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   - USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
   - USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
   - Thunderbolt 3: 40 Gbit/s;
   - FireWire 400: 400 Mbit/s;
   - FireWire 800: 800 Mbit/s
2. For video ports on discrete graphics, please see graphics section

SECURITY & PRIVACY

Security

Security Chip
Discrete TPM 2.0, TCG certified

Physical Locks
- (Optional) Access Panel Lock Kit with Common Key
- (Optional) Access Panel Lock Kit with Unique Key
- Kensington® Security Slot

BIOS Security
- Administrator password
- Power-on password

MANAGEABILITY

System Management

System Management
Intel vPro with Intel AMT 11.0

Diagnostic

Diagnostic
- Photo-audio transfer with Lenovo PC Diagnostics for Android™ and iOS
- ThinkStation® Diagnostics for Windows
- Front 4-digit diagnostic
- Lenovo UEFI Bootable Diagnostics
- None

SERVICE

Warranty

Base Warranty**
- 1-year limited onsite service
- 3-year limited onsite service with 9x5 NBD (for most models)

ENVIRONMENTAL

Operating Environment

Temperature
- Operating: 10°C (50°F) to 35°C (95°F)
• Storage: -40°C (-40°F) to 60°C (140°F)

Altitude
• Operating: -15.2 m (-50 ft) to 3048 m (10,000 ft)
• Storage: -15.2 m (-50 ft) to 12192 m (40,000 ft)

Humidity
• Operating: 20% to 80%
• Storage: 10% to 90%

CERTIFICATIONS

Green Certifications

Green Certifications
• EPEAT™ Silver
• ENERGY STAR® 8.0 (on model 30BE00B7US)
• GREENGUARD®
• RoHS compliant

ISV Certifications

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

• Feature with ** means that only one offering listed under the feature is configured on selected models.

• Feature with *** means that one or more offerings listed under the feature could be configured on selected models.

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