### 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® 11 Pro 64 for Workstations
- Windows 11 DG Windows 10 Pro 64 for Workstations
- Windows 10 Pro 64 for Workstations
- Ubuntu Linux LTS
- Red Hat Enterprise Linux 8.5 (certified only, for detailed and latest information, please visit Red Hat Certified Hardware)
- No operating system

Graphics
Discrete Graphics Support
Supports up to one NVIDIA® Quadro® RTX 8000, or two NVIDIA RTX A6000 with NVLink

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

**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
### 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 SSD</td>
<td>SATA 6Gb/s</td>
<td>-</td>
<td>256GB / 512GB / 1TB / 2TB</td>
</tr>
<tr>
<td>2.5&quot; SATA SSD</td>
<td>SATA 6Gb/s</td>
<td>7.2K</td>
<td>500GB / 500GB FIPS</td>
</tr>
<tr>
<td>3.5&quot; SATA HDD</td>
<td>SATA 6Gb/s</td>
<td>7.2K</td>
<td>1TB / 2TB / 4TB / 6TB</td>
</tr>
<tr>
<td>M.2 PCIe SSD</td>
<td>PCIe NVMe</td>
<td>-</td>
<td>256GB / 512GB / 1TB / 2TB</td>
</tr>
<tr>
<td>PCIe AIC SSD</td>
<td>PCIe NVMe</td>
<td>-</td>
<td>480GB</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>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>
<tr>
<td>9440-8i PCIe</td>
<td>Optional</td>
<td>SAS 12.0Gb/s, SATA 6.0Gb/s</td>
<td>0/1/10/5</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>
</tbody>
</table>

Notes:
1. The storage capacity supported is based on the test results with current Lenovo storage offerings. The system may support larger storage as the technology develops.

### 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

#### Speakers
Single speaker

### Power Supply

#### Power Supply**

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

### DESIGN
**Mechanical**

**Form Factor**
Tower (33L)

**Dimensions (WxDxH)**
165 x 460 x 440 mm (6.5 x 18.1 x 17.3 inches, with feet)

**Weight**
24 kg (52.91 lbs, maximum configuration)

**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 PCIe 3.0 x8
- Two PCIe 3.0 x4
- Two PCIe 3.0 x16
- One PCI

**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 RJ-45, supports Wake-on-LAN

**Optional Ethernet**
Two additional Ethernet adapters support, up to four additional 10 GbE ports
- Gigabit Ethernet, Intel I210-T1, 1x RJ-45, PCIe x1
- Gigabit Ethernet, Intel I350-T2, 2x RJ-45, PCIe x4
- Gigabit Ethernet, Intel I350-T4, 4x RJ-45, PCIe x4
- Gigabit Ethernet, Intel X540-T2, 2x RJ-45, PCIe x8
- Gigabit Ethernet, Intel X550-T2, 2x RJ-45, PCIe x4
- Gigabit Ethernet, Bitland BN8E88, 1x RJ-45, PCIe x1
- Gigabit Ethernet, Broadcom BCM5719, 4x RJ-45, PCIe x4
- Gigabit Ethernet, Broadcom BCM5720, 2x RJ-45, PCIe x1
- 5 Gigabit Ethernet, Marvell AQtion AQN-108, 1x RJ-45, PCIe x1
- 10 Gigabit Ethernet, Intel X710-DA2, 2x SFP+, PCIe x8
• 10 Gigabit Ethernet, Marvell AQtion AQN-107, 1x RJ-45, PCIe x4

WLAN + Bluetooth®

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

Notes:
1. Bluetooth 5.2 is hardware ready but may run at a lower version due to OS limitation

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***
• 2x Thunderbolt 3 (with flex module, USB-C® form, one supports video-out)
• 1x eSATA (with flex module)
• 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 3
• 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 3/4: 40 Gbit/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™, 3 x 7 mm

BIOS Security
• Administrator password
• Power-on password

MANAGEABILITY

System Management

System Management

Notes:
[1] 1x USB 3.1 Gen 1 (Always On and fast charge)
[2] 2x Thunderbolt 3 (with flex module, USB-C® form, one supports video-out)
[3] 1x eSATA (with flex module)
[4] 1x USB-C 3.1 Gen 1 (with flex module)

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 3/4: 40 Gbit/s;
2. For video ports on discrete graphics, please see graphics section
Intel vPro with Intel AMT 11.0

Notes:
1. Intel vPro offers a superset of DASH’s defined capabilities.
2. Intel vPro offers a superset of DASH’s defined capabilities.

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]
- 1-year limited onsite service
- 3-year limited onsite service

Notes:

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: 0 m (0 ft) to 3048 m (10,000 ft)
- Storage: 0 m (0 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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