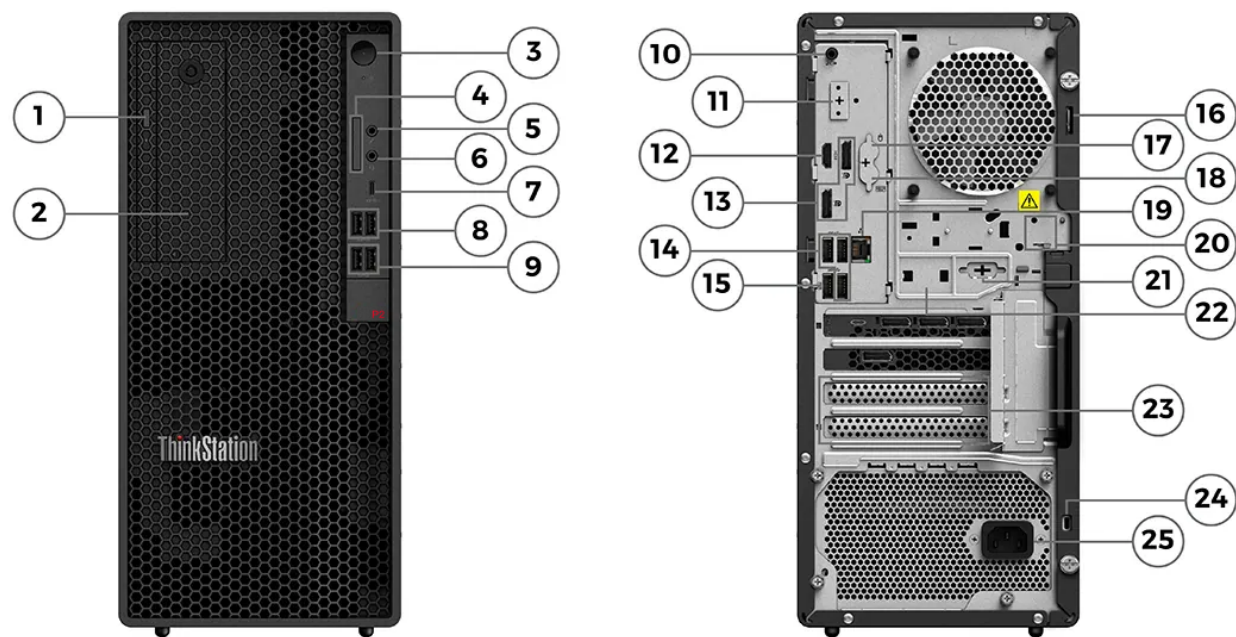


OVERVIEW



|  |  |
|--|--|
| 1. Optical drive *                           | 14. 3x USB-A (USB 5Gbps)                   |
| 2. Front access storage bay or 2nd HDD bay * | 15. USB-A (USB 5Gbps), with Smart Power On |
| 3. Power button                              | 16. Padlock loop                           |
| 4. SD card reader *                          | 17. PS/2 port (mouse) *                    |
| 5. Microphone (3.5mm)                        | 18. PS/2 port (keyboard) *                 |
| 6. Headphone / microphone combo jack (3.5mm) | 19. Ethernet (GbE RJ-45)                   |
| 7. USB-C (USB 10Gbps), data transfer only    | 20. E-lock slot *                          |
| 8. 2x USB-A (USB 5Gbps)                      | 21. Serial (9-pin) *                       |
| 9. 2x USB-A (USB 10Gbps)                     | 22. Smart cable clip slots                 |
| 10. Audio line-out (3.5mm)                   | 23. Optional ports on expansion cards *    |
| 11. Flex IO *                                | 24. Kensington Security Slot               |
| 12. HDMI                                     | 25. Power-in                               |
| 13. 2x DisplayPort                           |  |

Notes:

- Items with \* are only available on selected models

PERFORMANCE

Processor

Processor Family

Up to one 125W Intel® Core™ i5 / i7 / i9 (12th Gen), Intel® Core™ i3 / i5 / i7 / i9 (13th Gen), or Intel® Core™ i5 / i7 / i9 (14th Gen) processor; supports up to 24 cores; up to 6GHz.

Processor\*\*[1]

| Processor Name  | Cores                     | Threads | Base Frequency                | Max Frequency  | Cache | Memory Support | Processor Graphics      |
|-----------------|---------------------------|---------|-------------------------------|--|-------|----------------|-------------------------|
| Core™ i5-12500  | 6 (6 P-core + 0 E-core)   | 12      | P-core 3.0GHz                 | P-core 4.6GHz  | 18MB  | DDR5-4800      | Intel® UHD Graphics 770 |
| Core™ i7-12700  | 12 (8 P-core + 4 E-core)  | 20      | P-core 2.1GHz / E-core 1.6GHz | Max Turbo up to 4.9GHz / P-core 4.8GHz / E-core 3.6GHz | 25MB  | DDR5-4800      | Intel® UHD Graphics 770 |
| Core™ i9-12900K | 16 (8 P-core + 8 E-core)  | 24      | P-core 3.2GHz / E-core 2.4GHz | Max Turbo up to 5.2GHz / P-core 5.1GHz / E-core 3.9GHz | 30MB  | DDR5-4800      | Intel® UHD Graphics 770 |
| Core™ i3-13100  | 4 (4 P-core + 0 E-core)   | 8       | P-core 3.4GHz                 | P-core 4.5GHz  | 12MB  | DDR5-4800      | Intel® UHD Graphics 730 |
| Core™ i5-13500  | 14 (6 P-core + 8 E-core)  | 20      | P-core 2.5GHz / E-core 1.8GHz | P-core 4.8GHz / E-core 3.5GHz                          | 24MB  | DDR5-4800      | Intel® UHD Graphics 770 |
| Core™ i7-13700  | 16 (8 P-core + 8 E-core)  | 24      | P-core 2.1GHz / E-core 1.5GHz | Max Turbo up to 5.2GHz / P-core 5.1GHz / E-core 4.1GHz | 30MB  | DDR5-5600      | Intel® UHD Graphics 770 |
| Core™ i9-13900K | 24 (8 P-core + 16 E-core) | 32      | P-core 3.0GHz / E-core 2.2GHz | Max Turbo up to 5.8GHz / P-core 5.4GHz / E-core 4.3GHz | 36MB  | DDR5-5600      | Intel® UHD Graphics 770 |
| Core™ i5-14500  | 14 (6 P-core + 8 E-core)  | 20      | P-core 2.6GHz / E-core 1.9GHz | P-core 5.0GHz / E-core 3.7GHz                          | 24MB  | DDR5-4800      | Intel® UHD Graphics 770 |
| Core™ i7-14700  | 20 (8 P-core + 12 E-core) | 28      | P-core 2.1GHz / E-core 1.5GHz | Max Turbo up to 5.4GHz / P-core 5.3GHz / E-core 4.2GHz | 33MB  | DDR5-5600      | Intel® UHD Graphics 770 |
| Core™ i7-14700K | 20 (8 P-core + 12 E-core) | 28      | P-core 3.4GHz / E-core 2.5GHz | Max Turbo up to 5.6GHz / P-core 5.5GHz / E-core 4.3GHz | 33MB  | DDR5-5600      | Intel® UHD Graphics 770 |
| Core™ i9-14900K | 24 (8 P-core + 16 E-core) | 32      | P-core 3.2GHz / E-core 2.4GHz | Max Turbo up to 6.0GHz / P-core 5.6GHz / E-core 4.4GHz | 36MB  | DDR5-5600      | Intel® UHD Graphics 770 |

Processor Sockets

1x FCLGA1700

Notes:

[1] Intel® Max Turbo frequency will vary depending on application workload and the hardware and software configurations, see <http://www.intel.com/technology/turboboost/> for more information.

Operating System

Operating System

- Windows® 11 Pro
- Windows® 11 Home
- Windows® 11 Home Single Language
- Red Hat Enterprise Linux 9.3 (certified only, for detailed and latest information, please visit [Red Hat Certified Hardware](#))[1]
- Ubuntu Linux LTS
- No preload operating system

Notes:

[1] Red Hat Enterprise Linux 9.3 certification will be available after May 2024.

Graphics

- Integrated Graphics\*\***
- Intel® UHD Graphics 730
  - Intel® UHD Graphics 770

**Discrete Graphics Support[1]**

Supports up to two NVIDIA® RTX A2000 12GB

**Discrete Graphics Offering**

| Graphics               | Memory     | Power | Connector      | Form Factor | SLI / NVLink |
|------------------------|------------|-------|----------------|-------------|--------------|
| NVIDIA® T400 4GB       | 4GB GDDR6  | 40W   | 3x miniDP 1.4  | Single slot | None         |
| NVIDIA® T1000          | 4GB GDDR6  | 50W   | 4x miniDP 1.4  | Single slot | None         |
| NVIDIA® T1000 8GB      | 8GB GDDR6  | 50W   | 4x miniDP 1.4  | Single slot | None         |
| NVIDIA® RTX A2000 12GB | 12GB GDDR6 | 70W   | 4x miniDP 1.4a | Dual slot   | None         |

Notes:

[1] Discrete graphics support may vary by configurations such as processor selection or power supply wattage.

Monitor Support

**Monitor Support**

Onboard graphics supports up to 4 independent displays via onboard two DP, one HDMI® and one optional USB-C®; the number of maximum monitors also depends on the discrete graphic card in use

Chipset

**Chipset**

Intel® W680 chipset

Memory

**Max Memory[1]**

Up to 128GB (4x 32GB DDR5 UDIMM)

- Memory Type\*\*[2]**
- DDR5-4400 UDIMM ECC
  - DDR5-4400 UDIMM non-ECC

**Memory Slots**

Four DDR5 UDIMM slots, dual-channel capable

**Memory Protection**

ECC on models with ECC DIMMs and ECC capable processor

Notes:

[1] The max memory is based on the test results with current Lenovo® memory offerings.

[2] Maximum operating speed is DDR5-4400, memory operating speed varies depending on memory configuration:  
1x 8GB / 2x 8GB / 1x 16GB / 2x 16GB / 2x 32GB configurations run at DDR5-4400;  
4x 8GB / 4x 16GB configurations run at DDR5-4000;  
4x 32GB configuration runs at DDR5-3600.

Storage

**Storage Support[1][2]**

Up to 2x 3.5" SATA HDD; also supports up to 3x M.2 SSD (two by onboard, one by M.2 to PCIe® adapter)

- 3.5" HDD up to 4TB each
- Onboard M.2 SSD up to 4TB each
- M.2 SSD by M.2 to PCIe® adapter up to 2TB

**Storage Type**

| Disk Type | Interface | RPM | Offering | Security |
|-----------|-----------|-----|----------|----------|
|-----------|-----------|-----|----------|----------|

|  |  |      |                           |          |
|--|--|------|---------------------------|----------|
| 3.5" SATA HDD                                | SATA 6Gb/s                               | 7.2K | 1TB / 2TB / 4TB           | -        |
| M.2 2280 SSD for Onboard M.2 slots           | PCIe® NVMe®, PCIe® 4.0 x4                | -    | 256GB / 512GB / 1TB       | Opal 2.0 |
| M.2 2280 SSD for Onboard M.2 slots           | PCIe® NVMe®, PCIe® 4.0 x4 Performance    | -    | 512GB / 1TB / 2TB / 4TB   | Opal 2.0 |
| M.2 2280 SSD for single M.2 to PCIe® adapter | PCIe® NVMe®, PCIe® 4.0 x4 <sup>[3]</sup> | -    | 256GB / 512GB / 1TB / 2TB | Opal 2.0 |

Storage Controllers\*\*\*

| Storage Controller          | Type     | Interface    | RAID | Cache |
|-----------------------------|----------|--------------|------|-------|
| Integrated SATA controller  | Standard | SATA 6.0Gb/s | 0/1  | None  |
| Integrated NVMe® controller | Standard | PCIe® NVMe®  | 0/1  | None  |

Notes:

- [1] The storage capacity supported is based on the test results with current Lenovo® storage offerings.
- [2] For detailed storage bays infomation and how to upgrade optional drives for ThinkStation® products, please visit [ThinkStation® Storage Upgrade Guide](#)
- [3] M.2 2280 SSD is PCIe® 4.0 x4, and the M.2 slot on single M.2 to PCIe® adapter are PCIe® 3.0 x4. See M.2 Slots section for more information.

Removable Storage

Optical Support

Optional one 9.0mm optical drive, DVD-ROM, DVD±RW, and Blu-ray

Card Reader

- SD card reader
- No card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC897Q-CG codec

Speakers

Single speaker, 2W x1

Power Supply

Power Supply\*\*

| Power | Type  | Efficiency | Key Features                            |
|-------|-------|------------|---|
| 500W  | Fixed | 92%        | Autosensing, 80 PLUS Platinum qualified |
| 750W  | Fixed | 92%        | Autosensing, 80 PLUS Platinum qualified |

DESIGN

Mechanical

Form Factor

Tower (17L)

Dimensions (WxDxH)<sup>[1]</sup>

170 x 315.35 x 376 mm (6.7 x 12.4 x 14.8 inches, with feet)

Weight<sup>[2]</sup>

9.67 kg (21.32 lbs, maximum configuration)

Bays

- Three internal disk bays, up to two 3.5" bays plus one 2.5" bay:
- Bay 1 supports one 3.5" HDD, standard; or one 2.5" HDD / SSD, optional
  - Bay 2 supports one 3.5" HDD or 2.5" HDD / SSD, optional
  - Bay 3 supports one 2.5" HDD / SSD, optional

- Front Access HDD Bay supports one 3.5" HDD or 2.5" HDD / SSD, optional, occupies Bay 2 location<sup>[3]</sup>

### M.2 Slots

- Up to 3x M.2 SSD:
  - 2 via onboard slots, PCIe® 4.0 x4
  - 1 via Single M.2 to PCIe® adapter, PCIe® 3.0 x4
- One M.2 slot (for WLAN)

### Expansion Slots

Supports four PCIe® slots with two PCIe® 4.0 x16 and two PCIe® 3.0 x1.

- Slot 1: PCIe® 4.0 x16, full height, full length, 75W, double-width
- Slot 2: PCIe® 3.0 x1, full height, half length, 25W
- Slot 3: PCIe® 4.0 x16 (x4 lanes), full height, half length, 25W
- Slot 4: PCIe® 3.0 x1, full height, half length, 25W

### Notes:

<sup>[1]</sup> The system dimensions may vary depending on configurations.

<sup>[2]</sup> The system weight is approximate and based on results in Lenovo® lab, which varies depending on the source of component, variance of the distribution of each component, and manufacturing process. It may not be the exact weight for each specific model.

<sup>[3]</sup> 3.5" bay and Front Access HDD Bay need optional 3.5" to 2.5" HDD bracket kit. 2.5" drive is for customer-own configuration. None of configurable 2.5" drive options are provided.

## CONNECTIVITY

### Network

#### Onboard Ethernet

Gigabit Ethernet, Intel® Ethernet Connection I219-LM, 1x RJ-45, supports Wake-on-LAN

#### Optional Ethernet

Up to two additional PCIe® x1 Ethernet adapters; or one PCIe® x4 plus one PCIe® x1 Ethernet adapter, up to five additional 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, Realtek® RTL8168H, 1x RJ-45, PCIe® x1

#### WLAN + Bluetooth®

- Intel® Wi-Fi® 6E AX211, 802.11ax 2x2 Wi-Fi® + Bluetooth® 5.3, Intel® vPro® technology support
- No WLAN and Bluetooth®

### Ports<sup>[1]</sup>

#### Front Ports

- 1x USB-C® (USB 10Gbps / USB 3.2 Gen 2), data transfer only
- 2x USB-A (USB 5Gbps / USB 3.2 Gen 1)
- 2x USB-A (USB 10Gbps / USB 3.2 Gen 2)
- 1x headphone / microphone combo jack (3.5mm)
- 1x microphone (3.5mm)

#### Rear Ports<sup>[2]</sup>

- 1x HDMI® 2.1 TMDS
- 2x DisplayPort™ 1.4
- 1x Ethernet (RJ-45)
- 1x line-out (3.5mm)
- 4x USB-A (USB 5Gbps / USB 3.2 Gen 1), one supports Smart Power On

#### Optional Rear Ports

- 1x HDMI® 2.1 TMDS (Flex IO)
- 1x DP 1.2 (Flex IO)
- 1x VGA (Flex IO)
- 1x parallel (via cable and PCIe® bracket)
- 1x USB-C® (USB 20Gbps / USB 3.2 Gen 2x2), support data transfer, via USB-C® PCIe® x4 card
- 1x USB-C® (USB 5Gbps / USB 3.2 Gen 1), with DisplayPort™ 2.1 (Flex IO)
- 2x USB-A (USB 5Gbps / USB 3.2 Gen 1), via additional PCIe® adapter
- 2x USB-A (Hi-Speed USB / USB 2.0), via cable and PCIe® bracket

- 1x serial (via cable)
- 4x serial (via 4-port serial expansion card, PCIe® x1)
- 2x PS/2 (via cable)

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**Notes:**

[1] The transfer speed of the 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 the theoretical speed.

[2] For video ports on discrete graphics, please see graphics section.

## SECURITY & PRIVACY

### Security

#### Security Chip

Discrete TPM 2.0, TCG certified, FIPS 140-2 certified

#### Physical Locks

- (Optional) E-lock
- Kensington® Security Slot™, 3 x 7 mm
- Padlock Loop

#### Chassis Intrusion Switch

- Chassis intrusion switch
- No chassis intrusion switch

#### BIOS Security

- Administrator password
- Power-on password
- Self-healing BIOS

## MANAGEABILITY

### System Management

#### System Management<sup>[1]</sup>

- Intel® vPro® Enterprise with Intel® AMT 16
- Non-vPro®

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**Notes:**

[1] Intel® vPro® offers a superset of DASH's defined capabilities.

## SERVICE

### Warranty<sup>[1]</sup>

#### Base Warranty\*\*

- 1-year limited onsite service
- 2-year limited onsite service
- 3-year limited onsite service
- No base warranty

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**Notes:**

[1] The warranty upgrades may be bundled with some models, please check the "Included upgrade" column in the specific model's configurations. For more service extensions, please go to <https://smartfind.lenovo.com/>. To learn more details of warranty policy, please access <https://pcsupport.lenovo.com/warranty>.

## 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)

**Relative Humidity**

- Operating: 20% to 80%
- Storage: 10% to 90%

## CERTIFICATIONS

### Green Certifications<sup>[1]</sup>

**Green Certifications**

- (Optional) ENERGY STAR® 8.0
- (Optional) EPEAT™ Gold Registered
- ErP Lot 3
- RoHS compliant
- TCO Certified 9.0

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**Notes:**

[1] The items listed under the "Green Certifications" section may not only refer to certification but also registration or self-declaration.

### ISV Certifications

**ISV Certifications**

Please visit [ISV certifications for Lenovo® Workstations](#)

- 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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