



# Product Specifications Reference

ThinkStation Workstations



Version 646

April 23, 2025



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# Summary of Changes

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This section describes the technical changes made in this edition.

This edition might also include minor corrections and editorial changes which are not identified.

## February 28, 2024 - Version 626

### Additions in this update

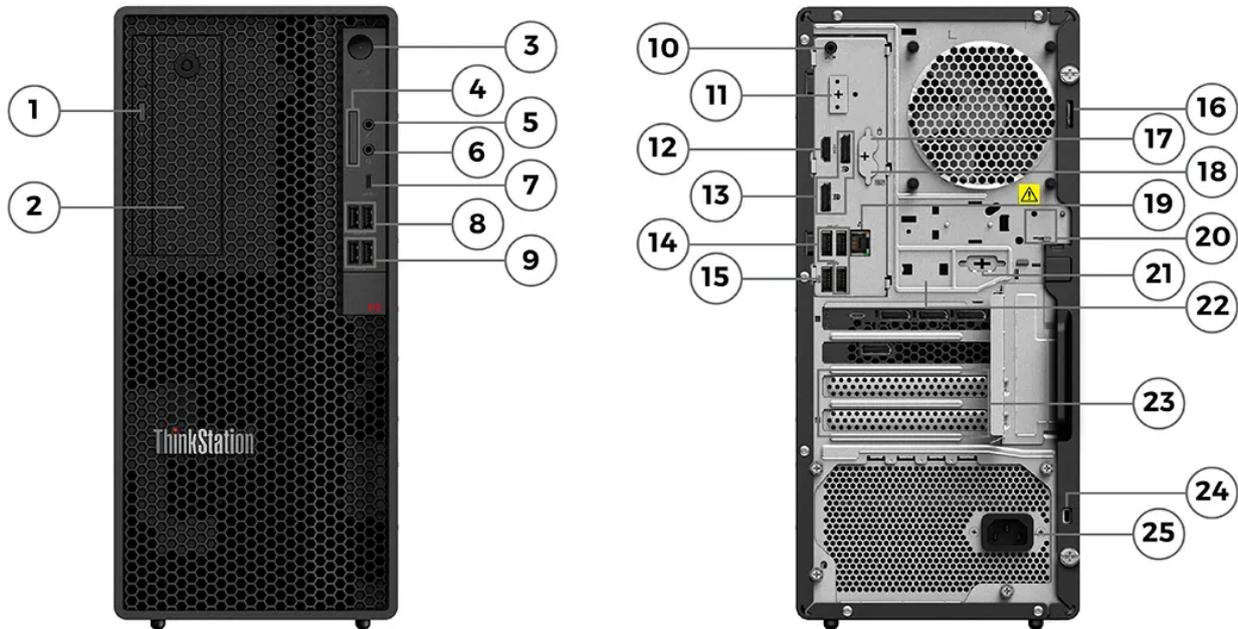
- ▶ **New product(s)**  
ThinkStation P2 Tower

- ▶ **Spec updated**  
ThinkStation P3 Tower

### Withdrawals in this update

- ▶ **Withdrawn product(s)**  
None

## 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 jack (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	Intel® vPro® Eligibility
Core i5-12500	6 (6 P-core + 0 E-core)	12	P-core 3.0GHz	P-core 4.6GHz	7.5MB L2 Cache / 18MB Intel® Smart Cache	DDR5-4800	Intel® UHD Graphics 770	Intel® vPro® Enterprise
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	12MB L2 Cache / 25MB Intel® Smart Cache	DDR5-4800	Intel® UHD Graphics 770	Intel® vPro® Enterprise
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	14MB L2 Cache / 30MB Intel® Smart Cache	DDR5-4800	Intel® UHD Graphics 770	Intel® vPro® Enterprise
Core i3-13100	4 (4 P-core + 0 E-core)	8	P-core 3.4GHz	P-core 4.5GHz	5MB L2 Cache / 12MB Intel® Smart Cache	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	11.5MB L2 Cache / 24MB Intel® Smart Cache	DDR5-4800	Intel® UHD Graphics 770	Intel® vPro® Enterprise
Core i5-13600K	14 (6 P-core + 8 E-core)	20	P-core 3.5GHz / E-core 2.6GHz	P-core 5.1GHz / E-core 3.9GHz	20MB L2 Cache / 24MB Intel® Smart Cache	DDR5-5600	Intel® UHD Graphics 770	Intel® vPro® Enterprise
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	24MB L2 Cache / 30MB Intel® Smart Cache	DDR5-5600	Intel® UHD Graphics 770	-
Core i7-13700K	16 (8 P-core + 8 E-core)	24	P-core 3.4GHz / E-core 2.5GHz	Max Turbo up to 5.4GHz / P-core 5.3GHz / E-core 4.2GHz	24MB L2 Cache / 30MB Intel® Smart Cache	DDR5-5600	Intel® UHD Graphics 770	-
Core i9-13900	24 (8 P-core + 16 E-core)	32	P-core 2.0GHz / E-core 1.5GHz	Max Turbo up to 5.6GHz / P-core 5.2GHz / E-core 4.2GHz	32MB L2 Cache / 36MB Intel® Smart Cache	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	32MB L2 Cache / 36MB Intel® Smart Cache	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	11.5MB L2 Cache / 24MB Intel® Smart Cache	DDR5-4800	Intel® UHD Graphics 770	Intel® vPro® Enterprise
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	28MB L2 Cache / 33MB Intel® Smart Cache	DDR5-5600	Intel® UHD Graphics 770	Intel® vPro® Enterprise

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	28MB L2 Cache / 33MB Intel® Smart Cache	DDR5-5600	Intel® UHD Graphics 770	Intel® vPro® Enterprise
Core i9-14900	24 (8 P-core + 16 E-core)	32	P-core 2.0GHz / E-core 1.5GHz	Max Turbo up to 5.8GHz / P-core 5.4GHz / E-core 4.3GHz	32MB L2 Cache / 36MB Intel® Smart Cache	DDR5-5600	Intel® UHD Graphics 770	Intel® vPro® Enterprise
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	32MB L2 Cache / 36MB Intel® Smart Cache	DDR5-5600	Intel® UHD Graphics 770	Intel® vPro® Enterprise

### 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.

## AI (Artificial Intelligence)

### AI PC Category<sup>[1]</sup>

AI-Ready Workstations

Notes:

[1] With scalable configurations of higher-performance CPUs and professional NVIDIA® RTX GPUs, in addition to advantage of the same modern AI PC technology, AI-Ready workstation power the demanding AI consumption & development workflows.

## Operating System

### Operating System

- Windows® 11 Pro
- Windows® 11 Home
- Windows® 11 Home Single Language
- Ubuntu Linux LTS
- Red Hat Enterprise Linux 9.4 (certified only, for detailed and latest information, please visit [Red Hat Certified Hardware](#))
- No preload operating system

## Graphics

### Integrated Graphics\*\*

- Intel® UHD Graphics 730
- Intel® UHD Graphics 770

### Discrete Graphics Support

Supports up to two NVIDIA® RTX A2000 12GB

### Discrete Graphics Offering

Graphics	Memory	Power	Connector	Form Factor	SLI / NVLink
NVIDIA® RTX A4000	16GB GDDR6 with ECC	140W	4x DP 1.4a	Single slot	None
NVIDIA® RTX A400	4GB GDDR6	50W	4x miniDP 1.4a	Single slot	None
NVIDIA® RTX A2000 12GB	12GB GDDR6	70W	4x miniDP 1.4a	Dual slot	None
NVIDIA® RTX A1000	8GB GDDR6	50W	4x miniDP 1.4a	Single slot	None
NVIDIA® RTX 2000 Ada Generation	16GB GDDR6 with ECC	70W	4x miniDP 1.4a	Dual slot	None
NVIDIA® T1000 8GB	8GB GDDR6	50W	4x miniDP 1.4	Single slot	None
NVIDIA® T1000	4GB GDDR6	50W	4x miniDP 1.4	Single slot	None
NVIDIA® T400 4GB	4GB GDDR6	40W	3x miniDP 1.4	Single slot	None

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

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

### Memory Type<sup>\*\*[2]</sup>

- DDR5-4400 UDIMM ECC, maximum transfer speeds of up to 4400 MT/s
- DDR5-4400 UDIMM non-ECC, maximum transfer speeds of up to 4400 MT/s

### 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] 4400MT/s is the maximum operating speed, memory operating speed varies depending on memory configuration:

1x 8GB / 2x 8GB / 1x 16GB / 2x 16GB / 2x 32GB configurations run at 4400 MT/s;

4x 8GB / 4x 16GB configurations run at 4000 MT/s;

4x 32GB configuration runs at 3600 MT/s.

## Storage

### Max Storage Support<sup>[1]</sup>

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 single M.2 to PCIe® adapter	PCIe® NVMe®, PCIe® 4.0 x4 <sup>[2]</sup>	-	256GB / 512GB / 1TB / 2TB	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

### Storage Controllers<sup>\*\*\*</sup>

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] 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<sup>[1]</sup>

#### Form Factor

Tower (17L)

#### Dimensions (WxDxH)<sup>[2]</sup>

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

#### Weight<sup>[3]</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>[4]</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, length <= 268mm 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

#### EOU

Tool-less design for side cover, memory, 3.5" HDD, optical, PCIe® card assembly / removal

#### Notes:

[1] The actual data transfer rate of the following PCIe® interface also depends on the capabilities of the connected PCIe® device. The listed values represent theoretical maximums.

PCIe® 3.0 (x1 / x2 / x4 / x8 / x16): 1 GB/s ( 8 Gbps) / 2 GB/s (16 Gbps) / 4 GB/s (32 Gbps) / 8 GB/s (64 Gbps) / 16 GB/s (128 Gbps);

PCIe® 4.0 (x1 / x2 / x4 / x8 / x16): 2 GB/s (16 Gbps) / 4 GB/s (32 Gbps) / 8 GB/s (64 Gbps) / 16 GB/s (128 Gbps) / 32 GB/s (256 Gbps);

PCIe® 5.0 (x1 / x2 / x4 / x8 / x16): 4 GB/s (32 Gbps) / 8 GB/s (64 Gbps) / 16 GB/s (128 Gbps) / 32 GB/s (256 Gbps) / 64

GB/s (512 Gbps).

[2] The system dimensions may vary depending on configurations.

[3] 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.

[4] 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

#### WLAN + Bluetooth<sup>[1]</sup>

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

#### 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

Notes:

[1] Wi-Fi® operation (including Wi-Fi® 6, Wi-Fi® 6E, Wi-Fi® 7, etc.) is subject to the regulatory requirements of each country. Bluetooth® may operate at a lower version than hardware design depending on the factors such as operating system, driver, etc.

### 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

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

#### Optional Rear Ports

- 1x USB-C® (USB 5Gbps / USB 3.2 Gen 1), with DisplayPort™ 2.1 (Flex IO)
- 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 PCIe® x4 card
- 2x USB-A (Hi-Speed USB / USB 2.0), via cable and PCIe® bracket
- 2x USB-A (USB 5Gbps / USB 3.2 Gen 1), via additional PCIe® x1 adapter
- 1x serial (via cable)
- 4x serial (via 4-port serial expansion card, PCIe® x1)
- 2x PS/2 (via cable)

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.

## 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
- More BIOS security features, please visit [BIOS Simulator](#)<sup>[1]</sup>

Notes:

[1] The BIOS simulator is just for reference. Default settings and some options may vary depending on the hardware, operating system and BIOS version.

## MANAGEABILITY

### System Management

#### System Management<sup>[1][2]</sup>

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

Notes:

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

[2] Intel® vPro® platform require an eligible Intel® processor, a supported operating system, Intel® LAN and/or WLAN silicon, firmware enhancements, and other hardware and software necessary to deliver the manageability use cases, security features, system performance, and stability that define the platform. See [Intel® vPro® Platform](#) for details.

## 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

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://support.lenovo.com/warrantylookup/warrantyolicy>.

## OPERATING REQUIREMENTS

### 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%

## ENVIRONMENTAL

### Sustainability

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

- 85% PCC ABS bezel
- 95% PCC ABS wired USB keyboard/mouse top/bottom cover
- 90% PIC recycled plastic EPE cushion
- 30% OBP used in bag
- FSC certified paper in packaging

#### Notes:

[1] PCC: Post Consumer Content, recycled materials from customers.  
PIC: Post Industry Content, recycled materials from internal factories.  
EPE: Expanded Polyethylene.  
OBP: Ocean Bound Plastic, reducing plastic spill into the sea.  
FSC: Forest Stewardship Council.

## 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

#### Notes:

[1] The items listed under the "Green Certifications" section may not only refer to certification but also registration or self-declaration. For ESG & regulatory compliance documents, please visit <https://compliance.lenovo.com>.

### ISV Certifications

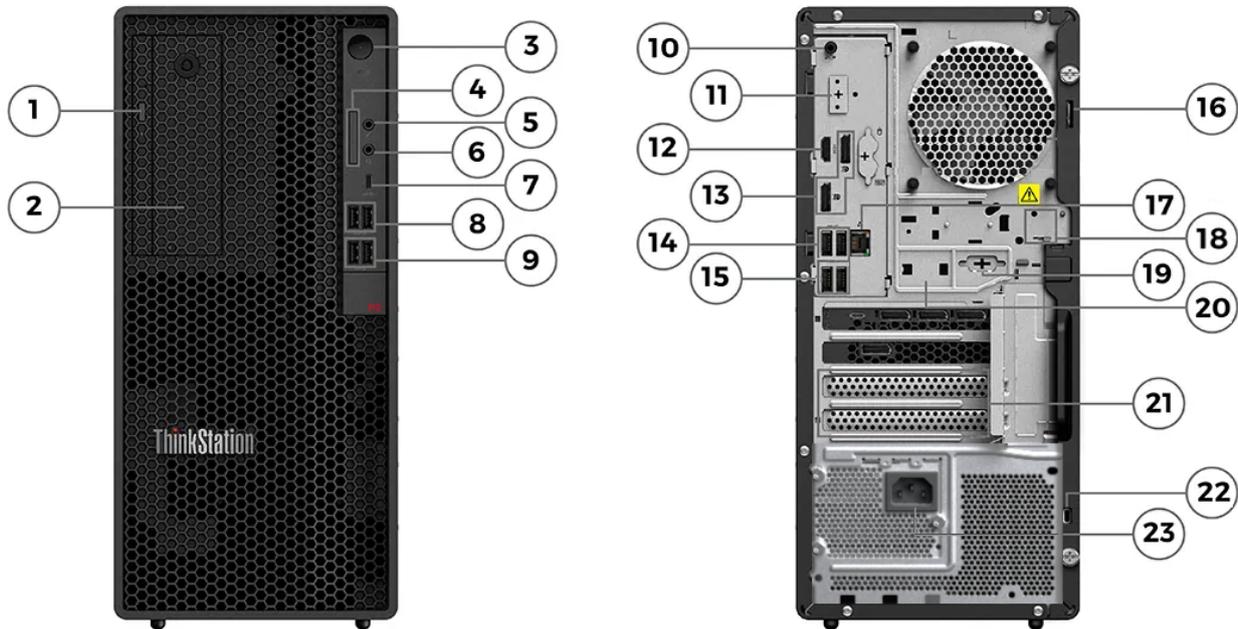
#### ISV Certifications

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

- Feature with \*\* means that only one option listed under the feature can be configured on selected models. Please refer to the model configuration for specific information.
- Feature with \*\*\* means that one or more options listed under the feature can be configured on selected models. Please refer to the model configuration for specific information.
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- The specifications on this page may not be available in all regions, and may be changed or updated without notice.



## OVERVIEW



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

Notes:

- Items with \* are only available on selected models

## PERFORMANCE

### Processor

#### Processor Family

Up to one 125W Intel® Core™ Ultra (Series 2) processor; supports up to 24 cores; up to 5.7GHz

#### Processor\*\*<sup>[1]</sup>

Processor Name	Cores	Threads	Base Frequency	Max Frequency	Cache	Memory Support	Processor Graphics	Intel® vPro® Eligibility
Core Ultra 5 225	10 (6 P-core + 4 E-core)	10	P-core 3.3GHz / E-core 2.7GHz	Max Turbo up to 4.9GHz / P-core 4.9GHz / E-core 4.4GHz	22MB L2 Cache / 20MB Intel® Smart Cache	DDR5-6400	Intel® Graphics	-
Core Ultra 5 235	14 (6 P-core + 8 E-core)	14	P-core 3.4GHz / E-core 2.9GHz	Max Turbo up to 5.0GHz / P-core 5.0GHz / E-core 4.4GHz	26MB L2 Cache / 24MB Intel® Smart Cache	DDR5-6400	Intel® Graphics	Intel® vPro® Enterprise
Core Ultra 5 245	14 (6 P-core + 8 E-core)	14	P-core 3.5GHz / E-core 3.0GHz	Max Turbo up to 5.1GHz / P-core 5.1GHz / E-core 4.5GHz	26MB L2 Cache / 24MB Intel® Smart Cache	DDR5-6400	Intel® Graphics	Intel® vPro® Enterprise
Core Ultra 5 245K	14 (6 P-core + 8 E-core)	14	P-core 4.2GHz / E-core 3.6GHz	Max Turbo up to 5.2GHz / P-core 5.2GHz / E-core 4.6GHz	26MB L2 Cache / 24MB Intel® Smart Cache	DDR5-6400	Intel® Graphics	Intel® vPro® Enterprise
Core Ultra 7 265	20 (8 P-core + 12 E-core)	20	P-core 2.4GHz / E-core 1.8GHz	Max Turbo up to 5.3GHz / P-core 5.2GHz / E-core 4.6GHz	36MB L2 Cache / 30MB Intel® Smart Cache	DDR5-6400	Intel® Graphics	Intel® vPro® Enterprise
Core Ultra 7 265K	20 (8 P-core + 12 E-core)	20	P-core 3.9GHz / E-core 3.3GHz	Max Turbo up to 5.5GHz / P-core 5.4GHz / E-core 4.6GHz	36MB L2 Cache / 30MB Intel® Smart Cache	DDR5-6400	Intel® Graphics	Intel® vPro® Enterprise
Core Ultra 9 285	24 (8 P-core + 16 E-core)	24	P-core 2.5GHz / E-core 1.9GHz	Max Turbo up to 5.6GHz / P-core 5.4GHz / E-core 4.6GHz	40MB L2 Cache / 36MB Intel® Smart Cache	DDR5-6400	Intel® Graphics	Intel® vPro® Enterprise
Core Ultra 9 285K	24 (8 P-core + 16 E-core)	24	P-core 3.7GHz / E-core 3.2GHz	Max Turbo up to 5.7GHz / P-core 5.5GHz / E-core 4.6GHz	40MB L2 Cache / 36MB Intel® Smart Cache	DDR5-6400	Intel® Graphics	Intel® vPro® Enterprise

#### Processor Sockets

1x FCLGA1851

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.

### AI (Artificial Intelligence)

#### AI PC Category<sup>[1]</sup>

AI-Ready Workstations

Notes:

[1] With scalable configurations of higher-performance CPUs and professional NVIDIA® RTX GPUs, in addition to advantage of the same modern AI PC technology, AI-Ready workstation power the demanding AI consumption & development workflows.

## Operating System

### Operating System\*\*

- Windows® 11 Pro
- Windows® 11 Home
- Windows® 11 Home Single Language
- Ubuntu Linux LTS
- Red Hat Enterprise Linux 10 (certified only, for detailed and latest information, please visit [Red Hat Certified Hardware](#))
- No preload operating system

## Graphics

### Integrated Graphics

Intel® Graphics

### Discrete Graphics Support<sup>[1]</sup>

- Supports up to two NVIDIA® RTX 2000 Ada Generation
- Supports up to two NVIDIA® RTX PRO 2000 Blackwell

### Discrete Graphics Offering\*\*\*

Graphics	Memory	Power	Connector	Form Factor	SLI / NVLink
NVIDIA® RTX PRO 2000 Blackwell	16GB GDDR7 with ECC	70W	4x miniDP 2.1	Dual slot	-
NVIDIA® RTX A400	4GB GDDR6	50W	4x miniDP 1.4a	Single slot	None
NVIDIA® RTX A1000	8GB GDDR6	50W	4x miniDP 1.4a	Single slot	None
NVIDIA® RTX 4000 Ada Generation	20GB GDDR6 with ECC	130W	4x DP 1.4a	Single slot	-
NVIDIA® RTX 2000 Ada Generation	16GB GDDR6 with ECC	70W	4x miniDP 1.4a	Dual slot	None

Notes:

[1] Blackwell GPUs are already supported, and the exact orderability timeframe is under confirmation and may be slightly later.

## Monitor Support

### Monitor Support

Supports up to 12 independent displays:

- 3 by onboard ports: 2x DP, 1x HDMI®, standard
- 1 by Flex IO port: one of DP / HDMI® / USB-C® / VGA, optional
- 8 by two discrete graphics, optional

## Chipset

### Chipset

Intel® W880 chipset

## Memory

### Max Memory<sup>[1]</sup>

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

### Memory Type<sup>[2]</sup>

DDR5-5600 UDIMM, ECC or non-ECC, maximum transfer speeds of up to 5600 MT/s

### Memory Slots

Four DDR5 UDIMM slots, dual-channel capable

### Memory Protection

ECC on models with ECC DIMMs

Notes:

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

[2] System comes with DDR5-5600 UDIMM memory and will run at lower speed due to platform limitations:

1x 8GB / 2x 8GB / 1x 16GB / 2x 16GB / 1x 32GB / 2x 32GB configurations run at 5600 MT/s;

4x 8GB / 4x 16GB configurations run at 4800 MT/s;

4x 32GB configuration run at 4400 MT/s.

## Storage

### Max Storage Support<sup>[1]</sup>

Up to 2x 3.5" SATA HDD; also supports up to 4x M.2 SSD (3 by onboard, 1 by M.2 to PCIe<sup>®</sup> adapter)

- 3.5" HDD up to 4TB each
- Onboard M.2 SSD up to 4TB each
- M.2 SSD by M.2 to PCIe<sup>®</sup> adapter up to 4TB<sup>[2]</sup>

### Storage Type<sup>\*\*\*</sup>

Disk Type	Interface	RPM	Offering	Security
3.5" SATA HDD for disk bays and front access bay <sup>[3]</sup>	SATA 6Gb/s	7.2K	2TB / 4TB / 6TB	-
M.2 SSD for 1x M.2 PCIe <sup>®</sup> 3.0 slot (by Single M.2 to PCIe <sup>®</sup> Adapter) <sup>[4]</sup>	NVMe <sup>®</sup> , PCIe <sup>®</sup> 4.0 x4	-	Gen 4 Performance SSD: 512GB / 1TB / 2TB / 4TB Gen 4 SSD: 256GB	Opal 2.0
M.2 SSD for 1x onboard M.2 PCIe <sup>®</sup> 5.0 slot <sup>[5]</sup>	NVMe <sup>®</sup> , PCIe <sup>®</sup> 4.0 x4	-	Gen 4 Performance SSD: 512GB / 1TB / 2TB / 4TB Gen 4 SSD: 256GB	Opal 2.0
M.2 SSD for 2x onboard M.2 PCIe <sup>®</sup> 4.0 slots	NVMe <sup>®</sup> , PCIe <sup>®</sup> 4.0 x4	-	Gen 4 Performance SSD: 512GB / 1TB / 2TB / 4TB Gen 4 SSD: 256GB	Opal 2.0

### Storage Controllers

Storage Controller	Type	Interface	RAID	Cache
Integrated SATA controller	Standard	SATA 6.0Gb/s	0/1	None
Integrated NVMe <sup>®</sup> controller	Standard	PCIe <sup>®</sup> NVMe <sup>®</sup>	0/1/5	None

Notes:

[1] The storage capacity supported is based on the test results with current Lenovo<sup>®</sup> storage offerings.

[2] In addition to 2x 3.5" bays, an optional 2.5" bay is supported. 2.5" drive is for customer-own configuration. None of configurable 2.5" drive options are provided.

[3] 6TB 3.5" HDD is for special bids only.

[4] M.2 slot supports PCIe<sup>®</sup> 3.0, Gen 4 SSDs will run on PCIe<sup>®</sup> 3.0.

[5] M.2 slot supports PCIe<sup>®</sup> 5.0, currently optional M.2 SSD support PCIe<sup>®</sup> 4.0.

## 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<sup>®</sup> ALC623-CG codec

### Speakers

Single speaker, 2W x1

## Power Supply

### Power Supply<sup>\*\*</sup>

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

## DESIGN

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

### Form Factor

Tower (17L)

### Dimensions (WxDxH)<sup>[2]</sup>

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

### Weight<sup>[3]</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>[4]</sup>

### M.2 Slots

- One M.2 slot (for WLAN)
- Up to 4x M.2 slots for M.2 SSD:
  - 2 onboard M.2 PCIe® 4.0 slots
  - 1 onboard M.2 PCIe® 5.0 slot
  - 1 via Single M.2 to PCIe® adapter, running on PCIe® 3.0 protocol<sup>[5]</sup>

### Expansion Slots

Supports four PCIe® slots with one PCIe® 5.0 x16, one PCIe® 4.0 x16, and two PCIe® 3.0 x1.

- Slot 1: PCIe® 5.0 x16, full height, length <= 268mm, 75W, double-width
- Slot 2: PCIe® 3.0 x1, full height, half length, 25W, open-ended
- Slot 3: PCIe® 4.0 x16 (x4 lanes), full height, half length, 25W
- Slot 4: PCIe® 3.0 x1, full height, half length, 25W, open-ended

### EOU

Tool-less design for side cover, memory, 3.5" HDD, optical, PCIe® card assembly / removal

### Notes:

[1] The actual data transfer rate of the following PCIe® interface also depends on the capabilities of the connected PCIe® device. The listed values represent theoretical maximums.

PCIe® 3.0 (x1 / x2 / x4 / x8 / x16): 1 GB/s ( 8 Gbps) / 2 GB/s (16 Gbps) / 4 GB/s (32 Gbps) / 8 GB/s (64 Gbps) / 16 GB/s (128 Gbps);

PCIe® 4.0 (x1 / x2 / x4 / x8 / x16): 2 GB/s (16 Gbps) / 4 GB/s (32 Gbps) / 8 GB/s (64 Gbps) / 16 GB/s (128 Gbps) / 32 GB/s (256 Gbps);

PCIe® 5.0 (x1 / x2 / x4 / x8 / x16): 4 GB/s (32 Gbps) / 8 GB/s (64 Gbps) / 16 GB/s (128 Gbps) / 32 GB/s (256 Gbps) / 64 GB/s (512 Gbps).

[2] The system dimensions may vary depending on configurations.

[3] 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.

[4] 3.5" bay and Front Access HDD Bay need optional 3.5" to 2.5" HDD bracket kit to support 2.5" drive. 2.5" drive is for customer-own configuration. None of configurable 2.5" drive options are provided.

[5] M.2 slot is PCIe® 5.0 compatible, and currently M.2 PCIe® 4.0 SSD is offered.

## CONNECTIVITY

### Network

#### WLAN + Bluetooth<sup>[1]</sup>

- Intel® Wi-Fi® 7 BE200, 802.11be 2x2 Wi-Fi® + Bluetooth® 5.4, Intel® vPro® technology support
- No WLAN and Bluetooth®

#### 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-T4, 4x RJ-45, PCIe® x4
- 2.5 Gigabit Ethernet, Realtek® RTL8125BGS, 1x RJ-45, PCIe® x1

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**Notes:**

[1] Wi-Fi® operation (including Wi-Fi® 6, Wi-Fi® 6E, Wi-Fi® 7, etc.) is subject to the regulatory requirements of each country. Bluetooth® may operate at a lower version than hardware design depending on the factors such as operating system, driver, etc.

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

### Front Ports

- 1x USB-C® (USB 20Gbps / USB 3.2 Gen 2x2), 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)

### Optional Front Ports

1x SD card reader

### Rear Ports

- 2x USB-A (Hi-Speed USB / USB 2.0)
- 2x USB-A (USB 5Gbps / USB 3.2 Gen 1), one supports Smart Power On
- 1x HDMI® 2.1 TMDS
- 2x DisplayPort™ 1.4
- 1x Ethernet (GbE RJ-45)
- 1x line-out (3.5mm)

### Optional Rear Ports

- 1x USB-C® (USB 5Gbps / USB 3.2 Gen 1), with DisplayPort™ function (Flex IO)
- 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 PCIe® x4 card
- 2x USB-A (Hi-Speed USB / USB 2.0), via cable and PCIe® bracket
- 2x USB-A (USB 5Gbps / USB 3.2 Gen 1), via additional PCIe® x1 adapter
- 1x serial (via cable)
- 4x serial (via 4-port serial expansion card, PCIe® x1)

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**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;

USB4® 20Gbps / USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;

USB4® 40Gbps (USB 40Gbps): 40 Gbit/s;

Thunderbolt™ 3/4: 40 Gbit/s.

Thunderbolt™ 5: 80 Gbit/s (bidirectional), up to 120 Gbit/s in bandwidth boost mode for video-intensive applications.

## 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
- More BIOS security features, please visit [BIOS Simulator](#)

## MANAGEABILITY

### System Management

#### System Management<sup>[1][2]</sup>

- (Optional) Intel® vPro® Enterprise with Intel® AMT 16
- Non-vPro®

Notes:

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

[2] Intel® vPro® platform require an eligible Intel® processor, a supported operating system, Intel® LAN and/or WLAN silicon, firmware enhancements, and other hardware and software necessary to deliver the manageability use cases, security features, system performance, and stability that define the platform. See [Intel® vPro® Platform](#) for details.

## 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

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://support.lenovo.com/warrantylookup/warrantypolicy>.

## OPERATING REQUIREMENTS

### 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%

## ENVIRONMENTAL

### Sustainability

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

- 85% PCC ABS bezel
- 95% PCC ABS wired USB keyboard/mouse top/bottom cover
- 90% PIC recycled plastic EPE cushion

- 30% OBP used in bag
- FSC certified paper in packaging

Notes:

[1] PCC: Post Consumer Content, recycled materials from customers.  
PIC: Post Industry Content, recycled materials from internal factories.  
EPE: Expanded Polyethylene.  
OBP: Ocean Bound Plastic, reducing plastic spill into the sea.  
FSC: Forest Stewardship Council.

## CERTIFICATIONS

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

#### Green Certifications

- (Optional) ENERGY STAR® 9.0
- (Optional) EPEAT™ Gold Registered
- RoHS compliant
- TCO Certified, generation 10

Notes:

[1] The items listed under the "Green Certifications" section may not only refer to certification but also registration or self-declaration. For ESG & regulatory compliance documents, please visit <https://compliance.lenovo.com>.

### ISV Certifications

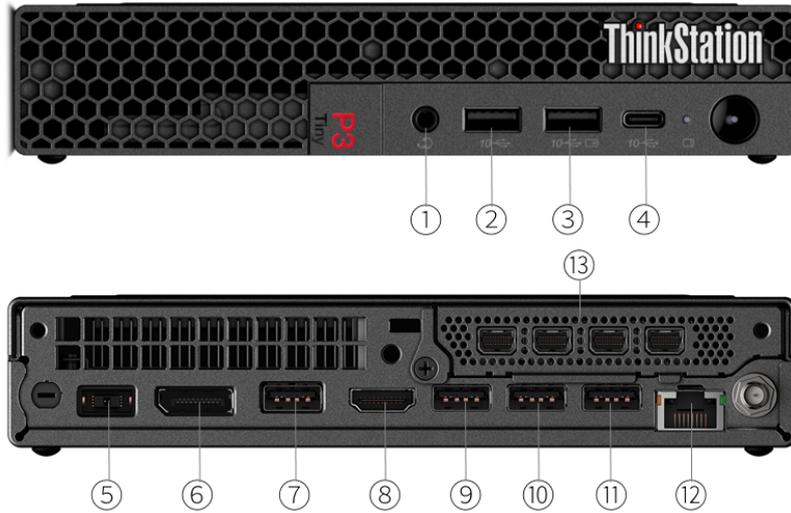
#### ISV Certifications

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

- Feature with \*\* means that only one option listed under the feature can be configured on selected models. Please refer to the model configuration for specific information.
- Feature with \*\*\* means that one or more options listed under the feature can be configured on selected models. Please refer to the model configuration for specific information.
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## OVERVIEW



1. Headphone / microphone combo jack (3.5mm)	8. HDMI 2.1 TMDs
2. USB-A (USB 10Gbps)	9. USB-A (USB 5Gbps), with Smart Power On
3. USB-A (USB 10Gbps), Always On	10. USB-A (USB 10Gbps)
4. USB-C (USB 10Gbps), data transfer only	11. USB-A (USB 10Gbps)
5. Power connector	12. Ethernet (RJ-45)
6. DisplayPort 1.4	13. 2 Punch out ports or expansion card *
7. USB-A (USB 5Gbps)	

Notes:

- Items with \* are only available on selected models

## PERFORMANCE

### Processor

#### Processor Family

Up to one Intel® Core™ i3 / i5 / i7 / i9 (13th Gen or 14th Gen) processor; supports up to 24 cores; up to 5.8GHz

#### Processor\*\*[1]

Processor Name	Cores	Threads	Base Frequency	Max Frequency	Cache	Memory Support	Processor Graphics	Intel® vPro® Eligibility
Core i3-13100	4 (4 P-core + 0 E-core)	8	P-core 3.4GHz	P-core 4.5GHz	5MB L2 Cache / 12MB Intel® Smart Cache	DDR5-4800	Intel® UHD Graphics 730	-
Core i3-13100T	4 (4 P-core + 0 E-core)	8	P-core 2.5GHz	P-core 4.2GHz	5MB L2 Cache / 12MB Intel® Smart Cache	DDR5-4800	Intel® UHD Graphics 730	-
Core i5-13400	10 (6 P-core + 4 E-core)	16	P-core 2.5GHz / E-core 1.8GHz	P-core 4.6GHz / E-core 3.3GHz	9.5MB L2 Cache / 20MB Intel® Smart Cache	DDR5-4800	Intel® UHD Graphics 730	-
Core i5-13400T	10 (6 P-core + 4 E-core)	16	P-core 1.3GHz / E-core 1.0GHz	P-core 4.4GHz / E-core 3.0GHz	9.5MB L2 Cache / 20MB Intel® Smart Cache	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	11.5MB L2 Cache / 24MB Intel® Smart Cache	DDR5-4800	Intel® UHD Graphics 770	Intel® vPro® Enterprise
Core i5-13500T	14 (6 P-core + 8 E-core)	20	P-core 1.6GHz / E-core 1.2GHz	P-core 4.6GHz / E-core 3.2GHz	11.5MB L2 Cache / 24MB Intel® Smart Cache	DDR5-4800	Intel® UHD Graphics 770	Intel® vPro® Enterprise
Core i5-13600	14 (6 P-core + 8 E-core)	20	P-core 2.7GHz / E-core 2.0GHz	P-core 5.0GHz / E-core 3.7GHz	11.5MB L2 Cache / 24MB Intel® Smart Cache	DDR5-4800	Intel® UHD Graphics 770	Intel® vPro® Enterprise
Core i5-13600T	14 (6 P-core + 8 E-core)	20	P-core 1.8GHz / E-core 1.3GHz	P-core 4.8GHz / E-core 3.4GHz	11.5MB L2 Cache / 24MB Intel® Smart Cache	DDR5-4800	Intel® UHD Graphics 770	Intel® vPro® Enterprise
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	24MB L2 Cache / 30MB Intel® Smart Cache	DDR5-5600	Intel® UHD Graphics 770	-
Core i7-13700T	16 (8 P-core + 8 E-core)	24	P-core 1.4GHz / E-core 1.0GHz	Max Turbo up to 4.9GHz / P-core 4.8GHz / E-core 3.6GHz	24MB L2 Cache / 30MB Intel® Smart Cache	DDR5-5600	Intel® UHD Graphics 770	Intel® vPro® Enterprise
Core i9-13900	24 (8 P-core + 16 E-core)	32	P-core 2.0GHz / E-core 1.5GHz	Max Turbo up to 5.6GHz / P-core 5.2GHz / E-core 4.2GHz	32MB L2 Cache / 36MB Intel® Smart Cache	DDR5-5600	Intel® UHD Graphics 770	-
Core i9-13900T	24 (8 P-core + 16 E-core)	32	P-core 1.1GHz / E-core 0.8GHz	Max Turbo up to 5.3GHz / P-core 5.1GHz / E-core 3.9GHz	32MB L2 Cache / 36MB Intel® Smart Cache	DDR5-5600	Intel® UHD Graphics 770	Intel® vPro® Enterprise
Core i3-	4 (4 P-	8	P-core 3.5GHz	P-core 4.7GHz	5MB L2	DDR5-	Intel® UHD	-

14100	core + 0 E-core)				Cache / 12MB Intel® Smart Cache	4800	Graphics 730	
Core i3- 14100T	4 (4 P- core + 0 E-core)	8	P-core 2.7GHz	P-core 4.4GHz	5MB L2 Cache / 12MB Intel® Smart Cache	DDR5- 4800	Intel® UHD Graphics 730	-
Core i5- 14400	10 (6 P- core + 4 E-core)	16	P-core 2.5GHz / E-core 1.8GHz	P-core 4.7GHz / E- core 3.5GHz	9.5MB L2 Cache / 20MB Intel® Smart Cache	DDR5- 4800	Intel® UHD Graphics 730	-
Core i5- 14400T	10 (6 P- core + 4 E-core)	16	P-core 1.5GHz / E-core 1.1GHz	P-core 4.5GHz / E- core 3.2GHz	9.5MB L2 Cache / 20MB Intel® Smart Cache	DDR5- 4800	Intel® UHD Graphics 730	-
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	11.5MB L2 Cache / 24MB Intel® Smart Cache	DDR5- 4800	Intel® UHD Graphics 770	Intel® vPro® Enterprise
Core i5- 14500T	14 (6 P- core + 8 E-core)	20	P-core 1.7GHz / E-core 1.2GHz	P-core 4.8GHz / E- core 3.4GHz	11.5MB L2 Cache / 24MB Intel® Smart Cache	DDR5- 4800	Intel® UHD Graphics 770	Intel® vPro® Enterprise
Core i5- 14600	14 (6 P- core + 8 E-core)	20	P-core 2.7GHz / E-core 2.0GHz	P-core 5.2GHz / E- core 3.9GHz	20MB L2 Cache / 24MB Intel® Smart Cache	DDR5- 5600	Intel® UHD Graphics 770	Intel® vPro® Enterprise
Core i5- 14600T	14 (6 P- core + 8 E-core)	20	P-core 1.8GHz / E-core 1.3GHz	P-core 5.1GHz / E- core 3.6GHz	20MB L2 Cache / 24MB Intel® Smart Cache	DDR5- 5600	Intel® UHD Graphics 770	Intel® vPro® Enterprise
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	28MB L2 Cache / 33MB Intel® Smart Cache	DDR5- 5600	Intel® UHD Graphics 770	Intel® vPro® Enterprise
Core i7- 14700T	20 (8 P- core + 12 E-core)	28	P-core 1.3GHz / E-core 0.9GHz	Max Turbo up to 5.2GHz / P-core 5.0GHz / E-core 3.7GHz	28MB L2 Cache / 33MB Intel® Smart Cache	DDR5- 5600	Intel® UHD Graphics 770	Intel® vPro® Enterprise
Core i9- 14900	24 (8 P- core + 16 E-core)	32	P-core 2.0GHz / E-core 1.5GHz	Max Turbo up to 5.8GHz / P-core 5.4GHz / E-core 4.3GHz	32MB L2 Cache / 36MB Intel® Smart Cache	DDR5- 5600	Intel® UHD Graphics 770	Intel® vPro® Enterprise
Core i9- 14900T	24 (8 P- core + 16 E-core)	32	P-core 1.1GHz / E-core 0.8GHz	Max Turbo up to 5.5GHz / P-core 5.1GHz / E-core 4.0GHz	32MB L2 Cache / 36MB Intel® Smart Cache	DDR5- 5600	Intel® UHD Graphics 770	Intel® vPro® Enterprise

### 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.

## AI (Artificial Intelligence)

### AI PC Category<sup>[1]</sup>

AI-Ready Workstations

## Notes:

[1] With scalable configurations of higher-performance CPUs and professional NVIDIA® RTX GPUs, in addition to advantage of the same modern AI PC technology, AI-Ready workstation power the demanding AI consumption & development workflows.

## Operating System

### Operating System\*\*

- Windows® 11 Pro
- Windows® 11 Home
- Windows® 11 DG Windows® 10 Pro 64
- Ubuntu Linux LTS
- Red Hat Enterprise Linux 9.4 (certified only, for detailed and latest information, please visit [Red Hat Certified Hardware](#))
- No preload operating system

## Graphics

### Integrated Graphics\*\*

- Intel® UHD Graphics 730
- Intel® UHD Graphics 770

### Discrete Graphics Support

Supports up to one NVIDIA® T1000 8GB

### Discrete Graphics Offering

Graphics	Memory	Power	Connector	SLI / NVLink
NVIDIA® RTX A400	4GB GDDR6	50W	4x miniDP 1.4a	None
NVIDIA® RTX A1000	8GB GDDR6	50W	4x miniDP 1.4a	None
NVIDIA® T1000 8GB	8GB GDDR6	50W	4x miniDP 1.4	None
NVIDIA® T1000	4GB GDDR6	50W	4x miniDP 1.4	None
NVIDIA® T400 4GB	4GB GDDR6	40W	3x miniDP 1.4	None

## Monitor Support

### Monitor Support

Onboard graphics supports up to 4 independent displays via (onboard DP, onboard HDMI®, punch out port 1 [VGA / HDMI® / DP / USB-C®], and punch out port 2 [VGA / HDMI® / DP]); the number of maximum monitors also depends on the discrete graphic card in use

## Chipset

### Chipset

Intel® Q670 chipset

## Memory

### Max Memory<sup>[1]</sup>

Up to 96GB (2x 48GB DDR5 SODIMM)

### Memory Type\*\*

- DDR5-4800 SODIMM non-ECC, maximum transfer speeds of up to 4800 MT/s
- DDR5-5600 SODIMM non-ECC, maximum transfer speeds of up to 5200 MT/s<sup>[2]</sup>

### Memory Slots

Two DDR5 SODIMM slots, dual-channel capable

## Notes:

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

[2] System comes with DDR5-5600 memory and some configurations will run at 5200 MT/s due to the memory support capability of processor.

## Storage

**Max Storage Support<sup>[1]</sup>**

Up to two drives, 2x M.2 SSD, up to 2TB each

**Storage Type**

Disk Type	Interface	Offering	Security
M.2 2280 SSD	PCIe® NVMe®, PCIe® 4.0 x4	256GB	Opal 2.0
M.2 2280 SSD	PCIe® NVMe®, PCIe® 4.0 x4 Performance	512GB / 1TB / 2TB	Opal 2.0

**Storage Controllers**

Storage Controller	Type	Interface	RAID	Cache
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.

**Removable Storage**

**Optical Support**

No optical support

**Multi-Media**

**Audio Chip**

High Definition (HD) Audio, Realtek® ALC256VB codec

**Speakers\*\***

- Single speaker
- Single speaker, premium

**Power Supply**

**Power Supply\*\*<sup>[1]</sup>**

Power	Type	Efficiency	Key Features
170W	Adapter	90%	100V - 240V
230W	Adapter	90%	100V - 240V
300W	Adapter	90%	100V - 240V

Notes:  
[1] When using Tiny together with a TIO monitor, the power adapter must meet the minimum requirements. For detailed information, please refer to [ThinkStation® P3 Tiny Minimum PSU Requirement Matrix](#)

**DESIGN**

**Mechanical<sup>[1]</sup>**

**Form Factor**

Tiny (1L)

**Dimensions (WxDxH)<sup>[2]</sup>**

Models	Dimensions
Tiny only	179 x 182.9 x 37mm with rubber feet (7.0 x 7.2 x 1.5 inches with rubber feet)
Tiny & ODD	204.2 x 186.6 x 64 mm with rubber feet (8.04 x 7.35 x 2.52 inches with rubber feet)

**Weight<sup>[3]</sup>**

Models	Weight
Tiny only	1.4 kg (3 lbs, maximum configuration)

**Bays**

No bays

## M.2 Slots

- Two M.2 PCIe® Gen 4x4 slots (for SSD)
- One M.2 slot (for WLAN)

## Expansion Slots

One PCIe® 4.0 x8, low-profile<sup>[4]</sup>

## EOU

Tool-less design for side cover and memory

### Notes:

[1] The actual data transfer rate of the following PCIe® interface also depends on the capabilities of the connected PCIe® device. The listed values represent theoretical maximums.

PCIe® 3.0 (x1 / x2 / x4 / x8 / x16): 1 GB/s ( 8 Gbps) / 2 GB/s (16 Gbps) / 4 GB/s (32 Gbps) / 8 GB/s (64 Gbps) / 16 GB/s (128 Gbps);

PCIe® 4.0 (x1 / x2 / x4 / x8 / x16): 2 GB/s (16 Gbps) / 4 GB/s (32 Gbps) / 8 GB/s (64 Gbps) / 16 GB/s (128 Gbps) / 32 GB/s (256 Gbps);

PCIe® 5.0 (x1 / x2 / x4 / x8 / x16): 4 GB/s (32 Gbps) / 8 GB/s (64 Gbps) / 16 GB/s (128 Gbps) / 32 GB/s (256 Gbps) / 64 GB/s (512 Gbps).

[2] The system dimensions may vary depending on configurations.

[3] 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.

[4] Supports discrete graphic card by x16 riser card (x8 signal), and supports Ethernet card / Thunderbolt 4 / serial card by x4 riser card. Riser card comes with the expansion cards.

# CONNECTIVITY

## Network

### WLAN + Bluetooth®\*\*<sup>[1]</sup>

- Realtek® Wi-Fi® 6 RTL8852BE, 802.11ax Dual Band 2x2 Wi-Fi® + Bluetooth® 5.1
- Intel® Wi-Fi® 6 AX201, 802.11ax 2x2 Wi-Fi® + Bluetooth® 5.2
- Intel® Wi-Fi® 6E AX211, 802.11ax 2x2 Wi-Fi® + Bluetooth® 5.3, Intel® vPro® technology support
- No WLAN and Bluetooth®

### Onboard Ethernet

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

### Optional Ethernet

One additional ethernet adapter support, up to one additional 2.5GbE port

- Gigabit Ethernet, Intel® I350-T2, 2x RJ-45, PCIe® x4
- Gigabit Ethernet, Intel® I350-T4, 4x RJ-45, PCIe® x4
- Gigabit Ethernet, Broadcom BCM5720, 2x RJ-45, PCIe® x1
- Gigabit Ethernet, Broadcom BCM5719, 4x RJ-45, PCIe® x4
- 2.5 Gigabit Ethernet, Realtek® RTL8125BGS, 1x RJ-45, BTB

### Notes:

[1] Wi-Fi® operation (including Wi-Fi® 6, Wi-Fi® 6E, Wi-Fi® 7, etc.) is subject to the regulatory requirements of each country. Bluetooth® may operate at a lower version than hardware design depending on the factors such as operating system, driver, etc.

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

### Front Ports

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

### Rear Ports

- 2x USB-A (USB 10Gbps / USB 3.2 Gen 2)
- 2x USB-A (USB 5Gbps / USB 3.2 Gen 1), one supports Smart Power On
- 1x HDMI® 2.1 TMDS
- 1x DisplayPort™ 1.4

- 1x Ethernet (GbE RJ-45)

#### Optional Rear Ports

- Punch out port 1 (one of VGA / DisplayPort™ / HDMI® / serial / USB-C® 5Gbps with DisplayPort™ and PD 3.0 functions)
- Punch out port 2 (one of VGA / DisplayPort™ / HDMI® / serial / RJ-45)
- 1x Thunderbolt™ 4 (via additional PCIe® adapter)
- 2x USB-A (USB 5Gbps / USB 3.2 Gen 1), occupies port 1 and 2
- 4x USB-A (USB 5Gbps / USB 3.2 Gen 1), share 5Gbps bandwidth, occupy port 1 and 2
- 2x GbE RJ-45, via additional PCIe® adapter
- 4x GbE RJ-45, via additional PCIe® adapter
- 4x serial (via 4-port serial expansion card, PCIe® x1)

#### 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.

## SECURITY & PRIVACY

### Security

#### Security Chip

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

#### Physical Locks

- (Optional) Cable lock
- Kensington® Security Slot™, 3 x 7 mm

#### Chassis Intrusion Switch

Chassis intrusion switch

#### BIOS Security

- Administrator password
- Hard disk password
- Power-on password
- Boot sequence control
- Boot without keyboard and mouse
- Certificate based BIOS management
- Cover presence switch
- Individual USB port disablement
- Self-healing BIOS
- Smart USB protection (allows keyboard / mouse only, blocks all storage devices)

## MANAGEABILITY

### System Management

#### System Management<sup>[1][2]</sup>

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

#### Notes:

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

[2] Intel® vPro® platform require an eligible Intel® processor, a supported operating system, Intel® LAN and/or WLAN silicon, firmware enhancements, and other hardware and software necessary to deliver the manageability use cases, security features, system performance, and stability that define the platform. See [Intel® vPro® Platform](#) for details.

## SERVICE

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

#### Base Warranty\*\*

- 1-year limited onsite service
- 2-year limited onsite service

- 3-year limited onsite service

#### 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://support.lenovo.com/warrantylookup/warrantypolicy>.

## OPERATING REQUIREMENTS

### Operating Environment

#### Temperature

- Operating: 5°C (41°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%

## ENVIRONMENTAL

### Sustainability

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

- 65% PCC ABS bezel
- 95% PCC ABS wired USB keyboard/mouse top/bottom cover
- 95% PCC thermal shell with OBP
- 90% PIC recycled plastic EPE cushion
- 30% OBP used in bag
- FSC certified paper in packaging

#### Notes:

[1] PCC: Post Consumer Content, recycled materials from customers.  
PIC: Post Industry Content, recycled materials from internal factories.  
EPE: Expanded Polyethylene.  
OBP: Ocean Bound Plastic, reducing plastic spill into the sea.  
FSC: Forest Stewardship Council.

## CERTIFICATIONS

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

#### Green Certifications

- (Optional) ENERGY STAR® 8.0
- (Optional) EPEAT™ Gold Registered<sup>[2]</sup>
- ErP Lot 3
- RoHS compliant
- TCO Certified 9.0

#### Notes:

[1] The items listed under the "Green Certifications" section may not only refer to certification but also registration or self-declaration. For ESG & regulatory compliance documents, please visit <https://compliance.lenovo.com>.

[2] EPEAT™ is registered where applicable, please visit [epeat.net](https://epeat.net) for registration status by country.

### Other Certifications

#### Mil-Spec Test

MIL-STD-810H military test passed

## ISV Certifications

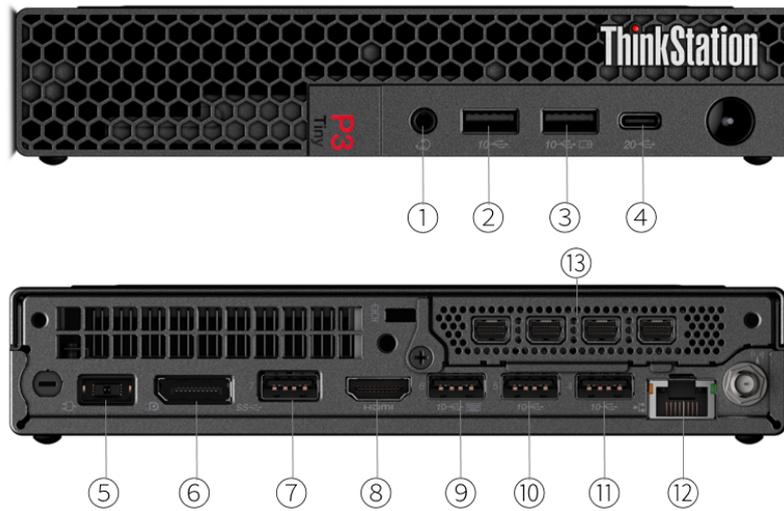
### ISV Certifications

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

- Feature with \*\* means that only one option listed under the feature can be configured on selected models. Please refer to the model configuration for specific information.
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- The specifications on this page may not be available in all regions, and may be changed or updated without notice.



## OVERVIEW



1. Headphone / microphone combo jack (3.5mm)	8. HDMI 2.1 TMDs
2. USB-A (USB 10Gbps)	9. USB-A (USB 10Gbps), with Smart Power On
3. USB-A (USB 10Gbps), Always On	10. USB-A (USB 10Gbps)
4. USB-C (USB 20Gbps), data transfer only	11. USB-A (USB 10Gbps)
5. Power connector	12. Ethernet (RJ-45)
6. DisplayPort 1.4	13. 2 Punch out ports or expansion card *
7. USB-A (USB 5Gbps)	

Notes:

- Items with \* are only available on selected models

## PERFORMANCE

### Processor

#### Processor Family

Up to one 65W Intel® Core™ Ultra (Series 2) processor; supports up to 20 cores; up to 5.6GHz

#### Processor\*\*<sup>[1]</sup>

Processor Name	Cores	Threads	Base Frequency	Max Frequency	Cache	Memory Support	Processor Graphics	Intel® vPro® Eligibility
Core Ultra 5 225	10 (6 P-core + 4 E-core)	10	P-core 3.3GHz / E-core 2.7GHz	Max Turbo up to 4.9GHz / P-core 4.9GHz / E-core 4.4GHz	22MB L2 Cache / 20MB Intel® Smart Cache	DDR5-6400	Intel® Graphics	-
Core Ultra 5 225T	10 (6 P-core + 4 E-core)	10	P-core 2.5GHz / E-core 1.9GHz	Max Turbo up to 4.9GHz / P-core 4.9GHz / E-core 4.4GHz	22MB L2 Cache / 20MB Intel® Smart Cache	DDR5-6400	Intel® Graphics	-
Core Ultra 5 235	14 (6 P-core + 8 E-core)	14	P-core 3.4GHz / E-core 2.9GHz	Max Turbo up to 5.0GHz / P-core 5.0GHz / E-core 4.4GHz	26MB L2 Cache / 24MB Intel® Smart Cache	DDR5-6400	Intel® Graphics	Intel® vPro® Enterprise
Core Ultra 5 235T	14 (6 P-core + 8 E-core)	14	P-core 2.2GHz / E-core 1.6GHz	P-core 5.0GHz / E-core 4.4GHz	26MB L2 Cache / 24MB Intel® Smart Cache	DDR5-6400	Intel® Graphics	Intel® vPro® Enterprise
Core Ultra 5 245	14 (6 P-core + 8 E-core)	14	P-core 3.5GHz / E-core 3.0GHz	Max Turbo up to 5.1GHz / P-core 5.1GHz / E-core 4.5GHz	26MB L2 Cache / 24MB Intel® Smart Cache	DDR5-6400	Intel® Graphics	Intel® vPro® Enterprise
Core Ultra 5 245T	14 (6 P-core + 8 E-core)	14	P-core 2.2GHz / E-core 1.7GHz	P-core 5.1GHz / E-core 4.5GHz	26MB L2 Cache / 24MB Intel® Smart Cache	DDR5-6400	Intel® Graphics	Intel® vPro® Enterprise
Core Ultra 7 265	20 (8 P-core + 12 E-core)	20	P-core 2.4GHz / E-core 1.8GHz	Max Turbo up to 5.3GHz / P-core 5.2GHz / E-core 4.6GHz	36MB L2 Cache / 30MB Intel® Smart Cache	DDR5-6400	Intel® Graphics	Intel® vPro® Enterprise
Core Ultra 7 265T	20 (8 P-core + 12 E-core)	20	P-core 1.5GHz / E-core 1.2GHz	Max Turbo up to 5.3GHz / P-core 5.2GHz / E-core 4.6GHz	36MB L2 Cache / 30MB Intel® Smart Cache	DDR5-6400	Intel® Graphics	Intel® vPro® Enterprise
Core Ultra 9 285	24 (8 P-core + 16 E-core)	24	P-core 2.5GHz / E-core 1.9GHz	Max Turbo up to 5.6GHz / P-core 5.4GHz / E-core 4.6GHz	40MB L2 Cache / 36MB Intel® Smart Cache	DDR5-6400	Intel® Graphics	Intel® vPro® Enterprise
Core Ultra 9 285T	24 (8 P-core + 16 E-core)	24	P-core 1.4GHz / E-core 1.2GHz	Max Turbo up to 5.4GHz / P-core 5.3GHz / E-core 4.6GHz	40MB L2 Cache / 36MB Intel® Smart Cache	DDR5-6400	Intel® Graphics	Intel® vPro® Enterprise

#### Processor Sockets

1x FCLGA1851

#### 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.

### AI (Artificial Intelligence)

**AI PC Category<sup>[1]</sup>**

AI-Ready Workstations

Notes:

[1] With scalable configurations of higher-performance CPUs and professional NVIDIA® RTX GPUs, in addition to advantage of the same modern AI PC technology, AI-Ready workstation power the demanding AI consumption & development workflows.

**Operating System****Operating System**

- Windows® 11 Pro
- Windows® 11 Home
- Windows® 11 Home Single Language
- Ubuntu Linux LTS
- Red Hat Enterprise Linux 9.6 (certified only, for detailed and latest information, please visit [Red Hat Certified Hardware](#))
- No preload operating system

**Graphics****Integrated Graphics**

Intel® Graphics

**Discrete Graphics Support**

Supports up to one NVIDIA® RTX A1000 or RTX A400

**Discrete Graphics Offering\*\***

Graphics	Memory	Power	Connector	Form Factor	SLI / NVLink
NVIDIA® RTX A400	4GB GDDR6	50W	4x miniDP 1.4a	Single slot	None
NVIDIA® RTX A1000	8GB GDDR6	50W	4x miniDP 1.4a	Single slot	None

**Monitor Support****Monitor Support**

Onboard graphics supports up to 4 independent displays via (onboard DP, onboard HDMI®, punch out port 1 [VGA / HDMI® / DP / USB-C®], and punch out port 2 [VGA / HDMI® / DP / Thunderbolt™ 4]); the number of maximum monitors also depends on the discrete graphic card in use

**Chipset****Chipset**

Intel® Q870 chipset

**Memory****Max Memory<sup>[1]</sup>**

Up to 128GB (2x 64GB DDR5 CSODIMM)

**Memory Type\*\***

- DDR5-5600 SODIMM, non-ECC, maximum transfer speeds of up to 5600 MT/s
- DDR5-6400 CSODIMM, non-ECC, maximum transfer speeds of up to 6400 MT/s

**Memory Slots**

Two DDR5 SODIMM slots, dual-channel capable

Notes:

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

**Storage****Max Storage Support<sup>[1]</sup>**

Up to 3x M.2 SSD, PCIe® 5.0 Performance, PCIe® 4.0 Performance, or PCIe® 4.0

- PCIe® 5.0 Performance SSD up to 2TB each
- PCIe® 4.0 Performance SSD up to 1TB each
- PCIe® 4.0 SSD up to 1TB each

**Storage Type**

Disk Type	Interface	Offering	Security
M.2 SSD for 3x onboard M.2 PCIe® slots	NVMe®, PCIe® 5.0 x4 or 4.0 x4 [2]	Gen 5 Performance SSD: 512GB / 1TB / 2TB Gen 4 Performance SSD: 512GB / 1TB Gen 4 SSD: 256GB / 512GB / 1TB	Opal 2.0

**Storage Controllers**

Storage Controller	Type	Interface	RAID	Cache
Integrated NVMe® controller	Standard	PCIe® NVMe®	0/1/5	None

- Notes:
- [1] The storage capacity supported is based on the test results with current Lenovo® storage offerings.
  - [2] Gen 5 SSD on M.2 PCIe® 4.0 slot will run on PCIe® 4.0 protocols.

**Multi-Media**

**Audio Chip**

High Definition (HD) Audio, Realtek® ALC233VB codec

**Speakers\*\***

- Single speaker, 2W x1
- Single speaker, premium, 2W x1

**Power Supply**

**Power Supply\*\*[1]**

Power	Type	Efficiency	Key Features
170W	Adapter	90%	100V - 240V
230W	Adapter	90%	100V - 240V
300W	Adapter	90%	100V - 240V
330W	Adapter	90%	100V - 240V

- Notes:
- [1] When using Tiny together with a TIO monitor, the power adapter must meet the minimum requirements. For detailed information, please refer to [ThinkStation® P3 Tiny Gen 2 Minimum PSU Requirement Matrix](#)

**DESIGN**

**Mechanical<sup>[1]</sup>**

**Form Factor**

Tiny (1L)

**Dimensions (WxDxH)<sup>[2]</sup>**

Models	Dimensions
Tiny only	179 x 182.9 x 37mm with rubber feet (7.0 x 7.2 x 1.5 inches with rubber feet)

**Weight<sup>[3]</sup>**

Models	Weight
Tiny only	1.4 kg (3 lbs, maximum configuration)

**Bays**

No bays

**M.2 Slots**

- One M.2 slot (for WLAN)
- Up to 3x M.2 slots for M.2 SSD:
  - 2 onboard M.2 PCIe® 4.0 slots

- 1 onboard M.2 PCIe® 5.0 slot

### Expansion Slots

One PCIe® slot via specific riser card:

PCIe® 4.0 x16 (negotiable link width x8) and low profile for discrete graphics card,  
PCIe® 4.0 x4 and low profile for serial or ethernet adapters

### EOU

Tool-less design for side cover and memory

### Notes:

[1] The actual data transfer rate of the following PCIe® interface also depends on the capabilities of the connected PCIe® device. The listed values represent theoretical maximums.

PCIe® 3.0 (x1 / x2 / x4 / x8 / x16): 1 GB/s ( 8 Gbps) / 2 GB/s (16 Gbps) / 4 GB/s (32 Gbps) / 8 GB/s (64 Gbps) / 16 GB/s (128 Gbps);

PCIe® 4.0 (x1 / x2 / x4 / x8 / x16): 2 GB/s (16 Gbps) / 4 GB/s (32 Gbps) / 8 GB/s (64 Gbps) / 16 GB/s (128 Gbps) / 32 GB/s (256 Gbps);

PCIe® 5.0 (x1 / x2 / x4 / x8 / x16): 4 GB/s (32 Gbps) / 8 GB/s (64 Gbps) / 16 GB/s (128 Gbps) / 32 GB/s (256 Gbps) / 64 GB/s (512 Gbps).

[2] The system dimensions may vary depending on configurations.

[3] 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.

## CONNECTIVITY

### Network

#### WLAN + Bluetooth<sup>[1]</sup>

- Intel® Wi-Fi® 7 BE200, 802.11be 2x2 Wi-Fi® + Bluetooth® 5.4, Intel® vPro® technology support
- No WLAN and Bluetooth®

#### Onboard Ethernet

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

#### Optional Ethernet

Two additional ethernet support via BTB, or one additional ethernet support via PCIe® slot; up to two additional 2.5GbE port

- Gigabit Ethernet, Intel® I350-T2, 2x RJ-45, PCIe® x4
- Gigabit Ethernet, Intel® I350-T4, 4x RJ-45, PCIe® x4
- Gigabit Ethernet, Broadcom BCM5720, 2x RJ-45, PCIe® x1
- Gigabit Ethernet, Broadcom BCM5719, 4x RJ-45, PCIe® x4
- 2.5 Gigabit Ethernet, Realtek® RTL8125BGS, 1x RJ-45, BTB

### Notes:

[1] Wi-Fi® operation (including Wi-Fi® 6, Wi-Fi® 6E, Wi-Fi® 7, etc.) is subject to the regulatory requirements of each country. Bluetooth® may operate at a lower version than hardware design depending on the factors such as operating system, driver, etc.

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

#### Front Ports

- 1x USB-C® (USB 20Gbps / USB 3.2 Gen 2x2), data transfer only
- 1x USB-A (USB 10Gbps / USB 3.2 Gen 2), Always On
- 1x USB-A (USB 10Gbps / USB 3.2 Gen 2)
- 1x headphone / microphone combo jack (3.5mm)

#### Rear Ports

- 1x USB-A (USB 5Gbps / USB 3.2 Gen 1)
- 3x USB-A (USB 10Gbps / USB 3.2 Gen 2), one supports Smart Power On
- 1x HDMI® 2.1 TMDS
- 1x DisplayPort™ 1.4
- 1x Ethernet (GbE RJ-45)

#### Optional Rear Ports

- Punch out port 1 (one of VGA / DisplayPort™ / HDMI® 4K / HDMI® 8K / serial / USB-C® 5Gbps with DisplayPort™ and PD

3.0 functions / RJ-45)

- Punch out port 2 (one of VGA / DisplayPort™ / Thunderbolt™ 4 / HDMI® 4K / HDMI® 8K / serial / RJ-45)
- 2x USB-A (USB 10Gbps / USB 3.2 Gen 2), occupies port 1 and 2
- 4x USB-A (USB 10Gbps / USB 3.2 Gen 2), share 10Gbps bandwidth, occupy port 1 and 2
- 2x GbE RJ-45, via additional PCIe® adapter
- 4x GbE RJ-45, via additional PCIe® adapter
- 4x serial (via 4-port serial expansion card, PCIe® x1)

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;

USB4® 20Gbps / USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;

USB4® 40Gbps (USB 40Gbps): 40 Gbit/s;

Thunderbolt™ 3/4: 40 Gbit/s.

Thunderbolt™ 5: 80 Gbit/s (bidirectional), up to 120 Gbit/s in bandwidth boost mode for video-intensive applications.

## SECURITY & PRIVACY

### Security

#### Security Chip

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

#### Physical Locks

Kensington® Security Slot™, 3 x 7 mm

#### Chassis Intrusion Switch

Chassis intrusion switch

#### BIOS Security

- Administrator password
- Hard disk password
- Power-on password
- Boot sequence control
- Boot without keyboard and mouse
- Certificate based BIOS management
- Cover presence switch
- Individual USB port disablement
- Self-healing BIOS
- Smart USB protection (allows keyboard / mouse only, blocks all storage devices)
- More BIOS security features, please visit [BIOS Simulator](#)

## MANAGEABILITY

### System Management

#### System Management<sup>[1][2]</sup>

- (Optional) Intel® vPro® Enterprise with Intel® AMT 16
- Non-vPro®

Notes:

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

[2] Intel® vPro® platform require an eligible Intel® processor, a supported operating system, Intel® LAN and/or WLAN silicon, firmware enhancements, and other hardware and software necessary to deliver the manageability use cases, security features, system performance, and stability that define the platform. See [Intel® vPro® Platform](#) for details.

## SERVICE

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

**Base Warranty\*\***

- 1-year limited onsite service
- 2-year limited onsite service
- 3-year limited onsite service

## 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://support.lenovo.com/warrantylookup/warrantypolicy>.

## OPERATING REQUIREMENTS

### Operating Environment

**Temperature**

- Operating: 5°C (41°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%

## ENVIRONMENTAL

### Sustainability

**Material<sup>[1]</sup>**

- 85% PCC ABS bezel
- 95% PCC ABS wired USB keyboard/mouse top/bottom cover
- 90% PIC recycled plastic EPE cushion
- FSC certified paper in packaging

## Notes:

[1] PCC: Post Consumer Content, recycled materials from customers.  
PIC: Post Industry Content, recycled materials from internal factories.  
EPE: Expanded Polyethylene.  
OBP: Ocean Bound Plastic, reducing plastic spill into the sea.  
FSC: Forest Stewardship Council.

## CERTIFICATIONS

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

**Green Certifications**

- (Optional) ENERGY STAR® 9.0
- (Optional) EPEAT™ Gold Registered
- RoHS compliant
- TCO Certified, generation 10

## Notes:

[1] The items listed under the "Green Certifications" section may not only refer to certification but also registration or self-declaration. For ESG & regulatory compliance documents, please visit <https://compliance.lenovo.com>.

### Other Certifications

**Mil-Spec Test**

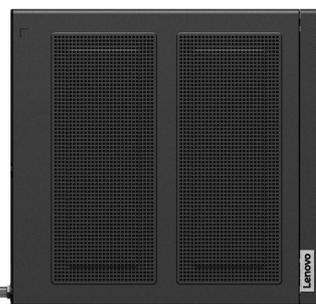
MIL-STD-810H military test passed

## ISV Certifications

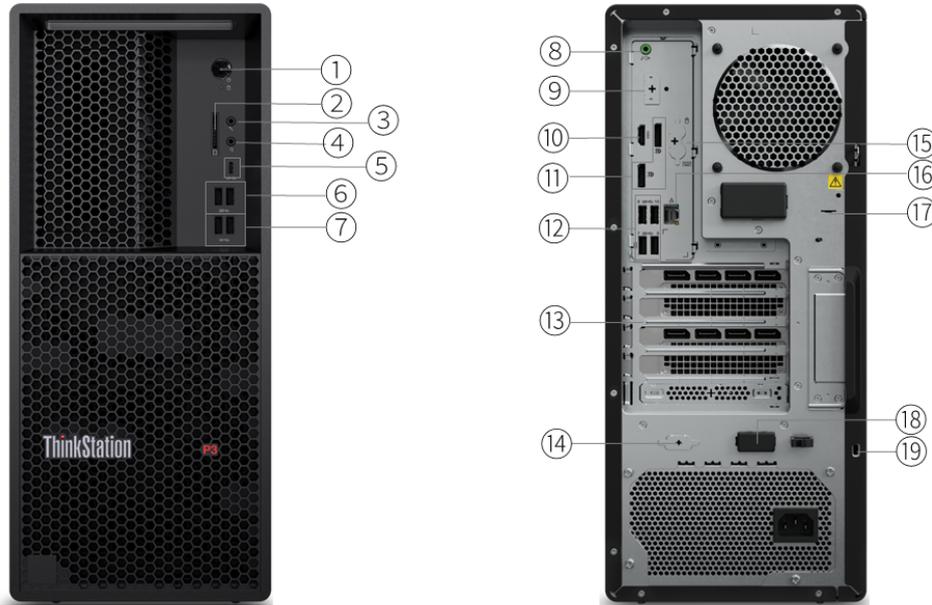
### ISV Certifications

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

- Feature with \*\* means that only one option listed under the feature can be configured on selected models. Please refer to the model configuration for specific information.
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**OVERVIEW**



1. Power button	11. 2x DisplayPort
2. SD card reader *	12. 4x USB-A (USB 5Gbps)
3. Microphone jack (3.5mm)	13. Optional ports on expansion cards *
4. Headphone / microphone combo jack (3.5mm)	14. Serial (9-pin) *
5. USB-C (USB 10Gbps), data transfer only	15. 2x PS/2 ports (keyboard / mouse) *
6. 2x USB-A (USB 5Gbps)	16. Ethernet (GbE RJ-45)
7. 2x USB-A (USB 10Gbps)	17. E-lock slot
8. Audio line-out (3.5mm)	18. Cable lock slot
9. Flex IO *	19. Kensington Security Slot
10. HDMI	

Notes:

- Items with \* are only available on selected models
- Flex IO supports one optional port from HDMI, VGA, USB-C (with DP function), and DP.

## PERFORMANCE

### Processor

#### Processor Family

Up to one 125W Intel® Core™ i3 / i5 / i7 / i9 (13th Gen or 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	Intel® vPro® Eligibility
Core i3-13100	4 (4 P-core + 0 E-core)	8	P-core 3.4GHz	P-core 4.5GHz	5MB L2 Cache / 12MB Intel® Smart Cache	DDR5-4800	Intel® UHD Graphics 730	-
Core i5-13400	10 (6 P-core + 4 E-core)	16	P-core 2.5GHz / E-core 1.8GHz	P-core 4.6GHz / E-core 3.3GHz	9.5MB L2 Cache / 20MB Intel® Smart Cache	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	11.5MB L2 Cache / 24MB Intel® Smart Cache	DDR5-4800	Intel® UHD Graphics 770	Intel® vPro® Enterprise
Core i5-13600	14 (6 P-core + 8 E-core)	20	P-core 2.7GHz / E-core 2.0GHz	P-core 5.0GHz / E-core 3.7GHz	11.5MB L2 Cache / 24MB Intel® Smart Cache	DDR5-4800	Intel® UHD Graphics 770	Intel® vPro® Enterprise
Core i5-13600K	14 (6 P-core + 8 E-core)	20	P-core 3.5GHz / E-core 2.6GHz	P-core 5.1GHz / E-core 3.9GHz	20MB L2 Cache / 24MB Intel® Smart Cache	DDR5-5600	Intel® UHD Graphics 770	Intel® vPro® Enterprise
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	24MB L2 Cache / 30MB Intel® Smart Cache	DDR5-5600	Intel® UHD Graphics 770	-
Core i7-13700K	16 (8 P-core + 8 E-core)	24	P-core 3.4GHz / E-core 2.5GHz	Max Turbo up to 5.4GHz / P-core 5.3GHz / E-core 4.2GHz	24MB L2 Cache / 30MB Intel® Smart Cache	DDR5-5600	Intel® UHD Graphics 770	-
Core i9-13900	24 (8 P-core + 16 E-core)	32	P-core 2.0GHz / E-core 1.5GHz	Max Turbo up to 5.6GHz / P-core 5.2GHz / E-core 4.2GHz	32MB L2 Cache / 36MB Intel® Smart Cache	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	32MB L2 Cache / 36MB Intel® Smart Cache	DDR5-5600	Intel® UHD Graphics 770	-
Core i3-14100	4 (4 P-core + 0 E-core)	8	P-core 3.5GHz	P-core 4.7GHz	5MB L2 Cache / 12MB Intel® Smart Cache	DDR5-4800	Intel® UHD Graphics 730	-
Core i5-14400	10 (6 P-core + 4 E-core)	16	P-core 2.5GHz / E-core 1.8GHz	P-core 4.7GHz / E-core 3.5GHz	9.5MB L2 Cache / 20MB Intel® Smart Cache	DDR5-4800	Intel® UHD Graphics 730	-
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	11.5MB L2 Cache / 24MB Intel® Smart Cache	DDR5-4800	Intel® UHD Graphics 770	Intel® vPro® Enterprise
Core i5-	14 (6 P-	20	P-core 2.7GHz	P-core 5.2GHz / E-	20MB L2	DDR5-	Intel® UHD	Intel® vPro®

14600	core + 8 E-core)		/ E-core 2.0GHz	core 3.9GHz	Cache / 24MB Intel® Smart Cache	5600	Graphics 770	Enterprise
Core i5-14600K	14 (6 P-core + 8 E-core)	20	P-core 3.5GHz / E-core 2.6GHz	P-core 5.3GHz / E-core 4.0GHz	20MB L2 Cache / 24MB Intel® Smart Cache	DDR5-5600	Intel® UHD Graphics 770	Intel® vPro® Enterprise
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	28MB L2 Cache / 33MB Intel® Smart Cache	DDR5-5600	Intel® UHD Graphics 770	Intel® vPro® Enterprise
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	28MB L2 Cache / 33MB Intel® Smart Cache	DDR5-5600	Intel® UHD Graphics 770	Intel® vPro® Enterprise
Core i9-14900	24 (8 P-core + 16 E-core)	32	P-core 2.0GHz / E-core 1.5GHz	Max Turbo up to 5.8GHz / P-core 5.4GHz / E-core 4.3GHz	32MB L2 Cache / 36MB Intel® Smart Cache	DDR5-5600	Intel® UHD Graphics 770	Intel® vPro® Enterprise
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	32MB L2 Cache / 36MB Intel® Smart Cache	DDR5-5600	Intel® UHD Graphics 770	Intel® vPro® Enterprise

### 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.

## AI (Artificial Intelligence)

### AI PC Category<sup>[1]</sup>

AI-Ready Workstations

### Notes:

[1] With scalable configurations of higher-performance CPUs and professional NVIDIA® RTX GPUs, in addition to advantage of the same modern AI PC technology, AI-Ready workstation power the demanding AI consumption & development workflows.

## Operating System

### Operating System\*\*

- Windows® 11 Pro
- Windows® 11 Home
- Windows® 11 DG Windows® 10 Pro 64
- Ubuntu Linux LTS
- Red Hat Enterprise Linux 9.2 (certified only, for detailed and latest information, please visit [Red Hat Certified Hardware](#))
- No preload operating system

## Graphics

### Integrated Graphics\*\*

- Intel® UHD Graphics 730
- Intel® UHD Graphics 770

### Discrete Graphics Support

Supports up to one NVIDIA® RTX 5000 Ada Generation or two NVIDIA® RTX A2000

### Discrete Graphics Offering

Graphics	Memory	Power	Connector	Form Factor	SLI / NVLink
NVIDIA® RTX A5500	24GB GDDR6 with ECC	230W	4x DP 1.4a	Dual slot	None
NVIDIA® RTX A5000	24GB GDDR6 with ECC	230W	4x DP 1.4a	Dual slot	None
NVIDIA® RTX A4500	20GB GDDR6 with ECC	200W	4x DP 1.4	Dual slot	None
NVIDIA® RTX A4000	16GB GDDR6 with ECC	140W	4x DP 1.4a	Single slot	None
NVIDIA® RTX A400	4GB GDDR6	50W	4x miniDP 1.4a	Single slot	None
NVIDIA® RTX A2000 12GB	12GB GDDR6	70W	4x miniDP 1.4a	Dual slot	None
NVIDIA® RTX A1000	8GB GDDR6	50W	4x miniDP 1.4a	Single slot	None
NVIDIA® RTX 5000 Ada Generation	32GB GDDR6 with ECC	250W	4x DP 1.4a	Dual slot	-
NVIDIA® RTX 4500 Ada Generation	24GB GDDR6 with ECC	210W	4x DP 1.4a	Dual slot	-
NVIDIA® RTX 4000 Ada Generation	20GB GDDR6 with ECC	130W	4x DP 1.4a	Single slot	-
NVIDIA® RTX 2000 Ada Generation	16GB GDDR6 with ECC	70W	4x miniDP 1.4a	Dual slot	None
NVIDIA® T1000 8GB	8GB GDDR6	50W	4x miniDP 1.4	Single slot	None
NVIDIA® T400 4GB	4GB GDDR6	40W	3x miniDP 1.4	Single slot	None

## Monitor Support

### Monitor Support

Supports multiple displays via onboard video ports and discrete graphics, the number of maximum monitors supported depends on the graphic card in use

## Chipset

### Chipset

Intel® W680 chipset

## Memory

### Max Memory<sup>[1]</sup>

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

### Memory Type<sup>\*\*[2]</sup>

- DDR5-4400 UDIMM ECC, maximum transfer speeds of up to 4400 MT/s
- DDR5-4400 UDIMM non-ECC, maximum transfer speeds of up to 4400 MT/s

### Memory Slots

4 DDR5 DIMM slots, 2 channels 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] 4400 MT/s is maximum operating speed, memory operating speed varies depending on memory configuration:  
 1x 8GB / 2x 8GB / 1x 16GB / 2x 16GB / 2x 32GB configurations run at 4400 MT/s;  
 4x 8GB / 4x 16GB configurations run at 4000 MT/s;  
 4x 32GB configuration runs at 3600 MT/s.

## Storage

### Max Storage Support<sup>[1]</sup>

Up to five drives (4x HDD + 1x M.2 SSD) or six drives (3x HDD + 3x M.2 SSD)

- 3.5" HDD up to 6TB each
- 2.5" HDD up to 1TB each
- M.2 SSD up to 4TB or 2TB each (see Storage Type)

### Storage Type<sup>[2]</sup>

Disk Type	Interface	RPM	Offering	Security
2.5" SATA HDD	SATA 6Gb/s	7.2K	1TB / 1TB FIPS	-

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

**Storage Controllers**

Storage Controller	Type	Interface	RAID	Cache
Integrated NVMe® controller	Standard	PCIe® NVMe®	0/1	None
Integrated SATA controller	Standard	SATA 6.0Gb/s	0/1/10/5	None

- Notes:
- [1] The storage capacity supported is based on the test results with current Lenovo® storage offerings.
  - [2] M.2 slot on single M.2 to PCIe® adapter works at PCIe® 3.0.

**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
1100W	Fixed	92%	Autosensing, 80 PLUS Platinum qualified

**DESIGN**

**Mechanical<sup>[1]</sup>**

**Form Factor**

Tower (27L)

**Dimensions (WxDxH)<sup>[2]</sup>**

180 x 370 x 415 mm (7.09 x 14.57 x 16.34 inches)

**Weight<sup>[3]</sup>**

13.61 kg (30.00 lbs, maximum configuration)

**Bays<sup>[4]</sup>**

Up to four disk bays:

- Bay 1 supports one 3.5" / 2.5" drive, standard
- Bay 2 supports one 3.5" / 2.5" drive, optional
- Bay 3 supports one 3.5" / 2.5" drive, optional
- Bay 4 supports one 3.5" / 2.5" drive, optional
- Front Access HDD Bay supports one 3.5" / 2.5" drive, optional, occupies Bay 3 location

## M.2 Slots

- Up to 3x M.2 SSD:
  - 2 via onboard slot, can't be available when 4th HDD is selected
  - 1 via Single M.2 to PCIe® adapter
- 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

## EOU

Tool-less design for side cover, memory, 3.5" HDD, optical, PCIe® card assembly / removal

### Notes:

[1] The actual data transfer rate of the following PCIe® interface also depends on the capabilities of the connected PCIe® device. The listed values represent theoretical maximums.

PCIe® 3.0 (x1 / x2 / x4 / x8 / x16): 1 GB/s ( 8 Gbps) / 2 GB/s (16 Gbps) / 4 GB/s (32 Gbps) / 8 GB/s (64 Gbps) / 16 GB/s (128 Gbps);

PCIe® 4.0 (x1 / x2 / x4 / x8 / x16): 2 GB/s (16 Gbps) / 4 GB/s (32 Gbps) / 8 GB/s (64 Gbps) / 16 GB/s (128 Gbps) / 32 GB/s (256 Gbps);

PCIe® 5.0 (x1 / x2 / x4 / x8 / x16): 4 GB/s (32 Gbps) / 8 GB/s (64 Gbps) / 16 GB/s (128 Gbps) / 32 GB/s (256 Gbps) / 64 GB/s (512 Gbps).

[2] The system dimensions may vary depending on configurations.

[3] 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.

[4] Front access HDD bay can be selected when disk bays is equal or less that 2.

2.5" drive requires additional 3.5" to 2.5" conversion kit

# CONNECTIVITY

## Network

### WLAN + Bluetooth<sup>[1]</sup>

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

### 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 or x8 Ethernet adapter support; up to two additional 25GbE ports

- Gigabit Ethernet, Intel® I210-T1, 1x RJ-45, PCIe® x1
- Gigabit Ethernet, Intel® I350-T2, 2x RJ-45, PCIe® x4
- Gigabit Ethernet, Broadcom BCM5719, 4x RJ-45, PCIe® x4
- Gigabit Ethernet, Broadcom BCM5720, 2x RJ-45, PCIe® x1
- Gigabit Ethernet, Realtek® RTL8168H, 1x RJ-45, PCIe® x1
- 2.5 Gigabit Ethernet, Realtek® RTL8125BGS, 1x RJ-45, PCIe® x1
- 10 Gigabit Ethernet, Marvell AQtion AQN-107, 1x RJ-45, PCIe® x4
- 10 Gigabit Ethernet, Intel® X710-T2L, 2x RJ-45, PCIe® x8
- 25 Gigabit Ethernet, NVIDIA® Mellanox ConnectX-6, 2x SFP28, PCIe® x8

### Notes:

[1] Wi-Fi® operation (including Wi-Fi® 6, Wi-Fi® 6E, Wi-Fi® 7, etc.) is subject to the regulatory requirements of each country. Bluetooth® may operate at a lower version than hardware design depending on the factors such as operating system, driver, etc.

## 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)

**Optional Front Ports**

1x SD card reader

**Rear Ports**

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

**Optional Rear Ports<sup>[2]</sup>**

- 1x USB-C® (USB 5Gbps / USB 3.2 Gen 1), with DisplayPort™ function (Flex IO)
- 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 Thunderbolt™ 4 (via additional PCIe® adapter)
- 1x USB-C® (USB 20Gbps / USB 3.2 Gen 2x2), support data transfer, via PCIe® x4 card
- 2x USB-A (Hi-Speed USB / USB 2.0), via cable and PCIe® bracket
- 2x USB-A (USB 5Gbps / USB 3.2 Gen 1), via additional PCIe® x1 adapter
- 1x serial (via cable)
- 4x serial (via 4-port serial expansion card, PCIe® x1)
- 2x PS/2 (via cable)

**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] 2x USB 2.0 and 1x parallel can not be chosen simultaneously.

## SECURITY & PRIVACY

### Security

**Security Chip**

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

**Physical Locks**

- (Optional) Cable lock
- (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
- UEFI Secure Boot

## MANAGEABILITY

### System Management

**System Management<sup>[1][2]</sup>**

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

## Notes:

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

[2] Intel® vPro® platform require an eligible Intel® processor, a supported operating system, Intel® LAN and/or WLAN silicon, firmware enhancements, and other hardware and software necessary to deliver the manageability use cases, security features, system performance, and stability that define the platform. See [Intel® vPro® Platform](#) for details.

## 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

## 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://support.lenovo.com/warrantylookup/warrantypolicy>.

## OPERATING REQUIREMENTS

### 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%

## ENVIRONMENTAL

### Sustainability

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

- 95% PCC ABS bezel
- 95% PCC ABS wired USB keyboard/mouse top/bottom cover
- 16% recycled SGCC metal chassis
- 90% PIC recycled plastic EPE cushion
- 30% OBP used in bag
- FSC certified paper in packaging

## Notes:

[1] PCC: Post Consumer Content, recycled materials from customers.

PIC: Post Industry Content, recycled materials from internal factories.

EPE: Expanded Polyethylene.

OBP: Ocean Bound Plastic, reducing plastic spill into the sea.

FSC: Forest Stewardship Council.

## CERTIFICATIONS

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

#### Green Certifications

- (Optional) ENERGY STAR® 8.0

- (Optional) EPEAT™ Gold Registered<sup>[2]</sup>
- 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. For ESG & regulatory compliance documents, please visit <https://compliance.lenovo.com>.

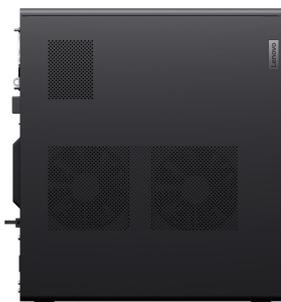
[2] EPEAT™ is registered where applicable, please visit [epeat.net](http://epeat.net) for registration status by country.

## ISV Certifications

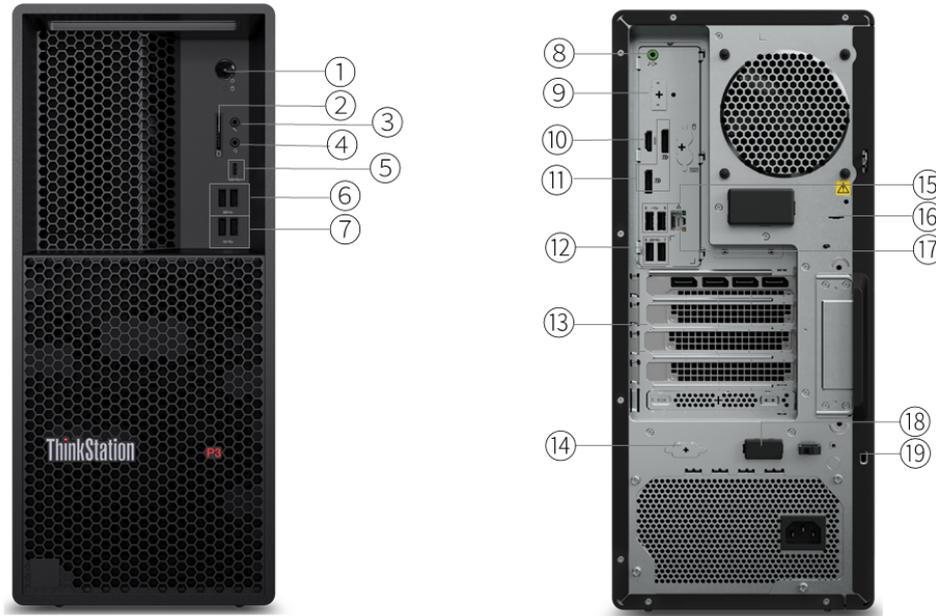
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## OVERVIEW



1. Power button	11. 2x DisplayPort
2. SD card reader *	12. 2x USB-A (USB 5Gbps)
3. Microphone jack (3.5mm)	13. Optional ports on expansion cards *
4. Headphone / microphone combo jack (3.5mm)	14. Serial (9-pin) *
5. USB-C (USB 20Gbps), data transfer only	15. 2x USB-A (Hi-Speed USB) *
6. 2x USB-A (USB 5Gbps)	16. E-lock slot
7. 2x USB-A (USB 10Gbps)	17. Ethernet (GbE RJ-45)
8. Audio line-out (3.5mm)	18. Cable lock slot
9. Flex IO *	19. Kensington Security Slot
10. HDMI	

Notes:

- Items with \* are only available on selected models
- Flex IO supports one optional port from HDMI, VGA, USB-C (with DP function), and DP.

## PERFORMANCE

### Processor

#### Processor Family

Up to one 125W Intel® Core™ Ultra (Series 2) processor; supports up to 24 cores; up to 5.7GHz

#### Processor\*\*<sup>[1]</sup>

Processor Name	Cores	Threads	Base Frequency	Max Frequency	Cache	Memory Support	Processor Graphics	Intel® vPro® Eligibility
Core Ultra 5 225	10 (6 P-core + 4 E-core)	10	P-core 3.3GHz / E-core 2.7GHz	Max Turbo up to 4.9GHz / P-core 4.9GHz / E-core 4.4GHz	22MB L2 Cache / 20MB Intel® Smart Cache	DDR5-6400	Intel® Graphics	-
Core Ultra 5 235	14 (6 P-core + 8 E-core)	14	P-core 3.4GHz / E-core 2.9GHz	Max Turbo up to 5.0GHz / P-core 5.0GHz / E-core 4.4GHz	26MB L2 Cache / 24MB Intel® Smart Cache	DDR5-6400	Intel® Graphics	Intel® vPro® Enterprise
Core Ultra 5 245	14 (6 P-core + 8 E-core)	14	P-core 3.5GHz / E-core 3.0GHz	Max Turbo up to 5.1GHz / P-core 5.1GHz / E-core 4.5GHz	26MB L2 Cache / 24MB Intel® Smart Cache	DDR5-6400	Intel® Graphics	Intel® vPro® Enterprise
Core Ultra 5 245K	14 (6 P-core + 8 E-core)	14	P-core 4.2GHz / E-core 3.6GHz	Max Turbo up to 5.2GHz / P-core 5.2GHz / E-core 4.6GHz	26MB L2 Cache / 24MB Intel® Smart Cache	DDR5-6400	Intel® Graphics	Intel® vPro® Enterprise
Core Ultra 7 265	20 (8 P-core + 12 E-core)	20	P-core 2.4GHz / E-core 1.8GHz	Max Turbo up to 5.3GHz / P-core 5.2GHz / E-core 4.6GHz	36MB L2 Cache / 30MB Intel® Smart Cache	DDR5-6400	Intel® Graphics	Intel® vPro® Enterprise
Core Ultra 7 265K	20 (8 P-core + 12 E-core)	20	P-core 3.9GHz / E-core 3.3GHz	Max Turbo up to 5.5GHz / P-core 5.4GHz / E-core 4.6GHz	36MB L2 Cache / 30MB Intel® Smart Cache	DDR5-6400	Intel® Graphics	Intel® vPro® Enterprise
Core Ultra 9 285	24 (8 P-core + 16 E-core)	24	P-core 2.5GHz / E-core 1.9GHz	Max Turbo up to 5.6GHz / P-core 5.4GHz / E-core 4.6GHz	40MB L2 Cache / 36MB Intel® Smart Cache	DDR5-6400	Intel® Graphics	Intel® vPro® Enterprise
Core Ultra 9 285K	24 (8 P-core + 16 E-core)	24	P-core 3.7GHz / E-core 3.2GHz	Max Turbo up to 5.7GHz / P-core 5.5GHz / E-core 4.6GHz	40MB L2 Cache / 36MB Intel® Smart Cache	DDR5-6400	Intel® Graphics	Intel® vPro® Enterprise

#### Processor Sockets

1x FCLGA1851

#### 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.

### AI (Artificial Intelligence)

#### AI PC Category<sup>[1]</sup>

AI-Ready Workstations

#### Notes:

[1] With scalable configurations of higher-performance CPUs and professional NVIDIA® RTX GPUs, in addition to advantage of the same modern AI PC technology, AI-Ready workstation power the demanding AI consumption & development workflows.

## Operating System

### Operating System

- Windows® 11 Pro
- Windows® 11 Home
- Windows® 11 Home Single Language
- Windows® 11 IoT Enterprise LTSC 2024<sup>[1]</sup>
- Ubuntu Linux LTS
- Red Hat Enterprise Linux 10 (certified only, for detailed and latest information, please visit [Red Hat Certified Hardware](#))

Notes:

[1] Available on OEM channel

## Graphics

### Integrated Graphics

Intel® Graphics

### Discrete Graphics Support<sup>[1]</sup>

- Supports up to one NVIDIA® RTX 5000 Ada Generation; or up to two NVIDIA® RTX 2000 Ada Generation
- Supports up to one NVIDIA® RTX PRO 5000 Blackwell; or up to two NVIDIA® RTX PRO 2000 Blackwell

### Discrete Graphics Offering<sup>\*\*\*</sup>

Graphics	Memory	Power	Connector	Form Factor	SLI / NVLink
NVIDIA® RTX PRO 5000 Blackwell	48GB GDDR7 with ECC	300W	4x DP 2.1	Dual slot	-
NVIDIA® RTX PRO 4500 Blackwell	32GB GDDR7 with ECC	200W	4x DP 2.1	Dual slot	-
NVIDIA® RTX PRO 4000 Blackwell	24GB GDDR7 with ECC	140W	4x DP 2.1	Single slot	-
NVIDIA® RTX PRO 2000 Blackwell	16GB GDDR7 with ECC	70W	4x miniDP 2.1	Dual slot	-
NVIDIA® RTX A400	4GB GDDR6	50W	4x miniDP 1.4a	Single slot	None
NVIDIA® RTX A1000	8GB GDDR6	50W	4x miniDP 1.4a	Single slot	None
NVIDIA® RTX 5000 Ada Generation	32GB GDDR6 with ECC	250W	4x DP 1.4a	Dual slot	-
NVIDIA® RTX 4000 Ada Generation	20GB GDDR6 with ECC	130W	4x DP 1.4a	Single slot	-
NVIDIA® RTX 2000 Ada Generation	16GB GDDR6 with ECC	70W	4x miniDP 1.4a	Dual slot	None

Notes:

[1] Blackwell GPUs are already supported, and the exact orderability timeframe is under confirmation and may be slightly later.

## Monitor Support

### Monitor Support

Supports multiple displays via onboard video ports and discrete graphics, the number of maximum monitors supported depends on the graphic card in use

## Chipset

### Chipset

Intel® W880 chipset

## Memory

### Max Memory<sup>[1]</sup>

Up to 256GB (4x 64GB DDR5 CUDIMM)<sup>[2]</sup>

### Memory Type<sup>\*\*[3]</sup>

- DDR5-5600 UDIMM, ECC or non-ECC, maximum transfer speeds of up to 5600 MT/s
- DDR5-6400 CUDIMM, non-ECC, maximum transfer speeds of up to 5600 MT/s

### 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] 64GB CUDIMM will be available after August 15, BIOS version higher than S0MKT11A is required.
- [3] System comes with DDR5-6400 CUDIMM or DDR5-5600 UDIMM memory and will run at lower speed due to platform limitations:  
 1x 8GB / 2x 8GB / 1x 16GB / 2x 16GB / 1x 32GB / 2x 32GB / 1x48GB / 2x 48GB / 1x 64GB / 2x 64GB configurations run at 5600 MT/s;  
 4x 8GB / 4x 16GB configurations run at 4800 MT/s;  
 4x 32GB /4x 48GB / 4x 64GB configurations run at 4400 MT/s.

### Storage

#### Max Storage Support<sup>[1]</sup>

Up to 7 drives (3x SATA HDD / SSD + 4x M.2 SSD); or 6 drives (4x SATA HDD / SSD + 2x M.2 SSD)

- SATA HDD up to 4, up to 12TB each
- SATA SSD up to 4, up to 7.68TB each
- Gen 5 M.2 SSD up to 1, up to 2 TB, for onboard M.2 PCIe® 5.0 slot
- Gen 4 M.2 SSD up to 4, up to 4 TB each, for onboard M.2 PCIe® 5.0 slot, M.2 PCIe® 4.0 slots, and Single M.2 to PCIe® adapter<sup>[2]</sup>

#### Storage Type<sup>\*\*\*</sup>

Disk Type	Interface	RPM	Offering	Security
2.5" SATA SSD for disk bays and front access bay	SATA 6Gb/s	-	3.84TB / 7.68TB	Opal
3.5" SATA HDD for disk bays and front access bay	SATA 6Gb/s	7.2K	2TB / 4TB / 6TB / 12TB	-
M.2 SSD for 1x M.2 PCIe® 3.0 slot (by Single M.2 to PCIe® Adapter) <sup>[3]</sup>	NVMe®, PCIe® 4.0 x4	-	Gen 4 Performance SSD: 512GB / 1TB / 2TB / 4TB Gen 4 SSD: 256GB	Opal 2.0
M.2 SSD for 2x onboard M.2 PCIe® 4.0 slots	NVMe®, PCIe® 4.0 x4	-	Gen 4 Performance SSD: 512GB / 1TB / 2TB / 4TB Gen 4 SSD: 256GB	Opal 2.0
M.2 SSD for 1x onboard M.2 PCIe® 5.0 slot	NVMe®, PCIe® 5.0 x4 or 4.0 x4	-	Gen 5 Performance SSD: 512GB / 1TB / 2TB Gen 4 Performance SSD: 512GB / 1TB / 2TB / 4TB Gen 4 SSD: 256GB	Opal 2.0

#### Storage Controllers<sup>\*\*\*</sup>

Storage Controller	Type	Interface	RAID	Cache
Integrated SATA controller	Standard	SATA 6.0Gb/s	0/1/10/5	None
Integrated NVMe® controller	Standard	PCIe® NVMe®	0/1/5	None

Notes:

- [1] The storage capacity supported is based on the test results with current Lenovo® storage offerings.
- [2] 6 drives configuration with 4x SATA HDD / SSD is only available on models with 500W power supply.
- [3] M.2 slot supports PCIe® 3.0, so Gen 4 SSDs will run on PCIe® 3.0.

### 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® ALC623-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
1100W	Fixed	92%	Autosensing, 80 PLUS Platinum qualified

## DESIGN

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

#### Form Factor

Tower (27L)

#### Dimensions (WxDxH)<sup>[2]</sup>

180 x 370 x 415 mm (7.09 x 14.57 x 16.34 inches)

#### Weight<sup>[3]</sup>

14.38 kg (31.70 lbs, maximum configuration)

#### Bays<sup>[4]</sup>

Up to four disk bays:

- Bay 1 supports one 3.5" / 2.5" drive, standard
- Bay 2 supports one 3.5" / 2.5" drive, optional
- Bay 3 supports one 3.5" / 2.5" drive, optional
- Bay 4 supports one 3.5" / 2.5" drive, optional, only available on 500W PSU models
- Front Access HDD Bay supports one 3.5" / 2.5" drive, optional, occupies Bay 3 location

#### M.2 Slots\*\*\*

- One M.2 slot (for WLAN)
- Up to 4x M.2 slots for M.2 SSD:
  - 2 onboard M.2 PCIe® 4.0 slots, supports M.2 PCIe® 4.0 SSD
  - 1 onboard M.2 PCIe® 5.0 slot, supports M.2 PCIe® 5.0 or M.2 PCIe® 4.0 SSD
  - 1 via Single M.2 to PCIe® adapter, supports M.2 PCIe® 4.0 SSD, running on PCIe® 3.0 protocol

#### Expansion Slots

Supports four PCIe® slots with one PCIe® 5.0 x16, one PCIe® 4.0 x16 and two PCIe® 3.0 x1.

- Slot 1: PCIe® 5.0 x16, full height, full length, 75W, double-width
- Slot 2: PCIe® 3.0 x1, full height, half length, 25W, open-ended
- Slot 3: PCIe® 4.0 x16 (x4 lanes), full height, half length, 25W
- Slot 4: PCIe® 3.0 x1, full height, half length, 25W, open-ended

#### EOU

Tool-less design for side cover, memory, 3.5" HDD, optical, PCIe® card assembly / removal

#### Notes:

[1] The actual data transfer rate of the following PCIe® interface also depends on the capabilities of the connected PCIe® device. The listed values represent theoretical maximums.

PCIe® 3.0 (x1 / x2 / x4 / x8 / x16): 1 GB/s ( 8 Gbps) / 2 GB/s (16 Gbps) / 4 GB/s (32 Gbps) / 8 GB/s (64 Gbps) / 16 GB/s (128 Gbps);

PCIe® 4.0 (x1 / x2 / x4 / x8 / x16): 2 GB/s (16 Gbps) / 4 GB/s (32 Gbps) / 8 GB/s (64 Gbps) / 16 GB/s (128 Gbps) / 32 GB/s (256 Gbps);

PCIe® 5.0 (x1 / x2 / x4 / x8 / x16): 4 GB/s (32 Gbps) / 8 GB/s (64 Gbps) / 16 GB/s (128 Gbps) / 32 GB/s (256 Gbps) / 64 GB/s (512 Gbps).

[2] The system dimensions may vary depending on configurations.

[3] 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.

[4] Front access HDD bay can be selected when disk bays is equal or less than 2. 2.5" drive requires additional 3.5" to 2.5" conversion kit

## CONNECTIVITY

### Network

#### WLAN + Bluetooth<sup>[1]</sup>

- Intel® Wi-Fi® 7 BE200, 802.11be 2x2 Wi-Fi® + Bluetooth® 5.4, Intel® vPro® technology support
- No WLAN and Bluetooth®

#### 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 two additional 25GbE ports

- Gigabit Ethernet, Intel® I210-T1, 1x RJ-45, PCIe® x1
- Gigabit Ethernet, Intel® I350-T4, 4x RJ-45, PCIe® x4
- 2.5 Gigabit Ethernet, Realtek® RTL8125BGS, 1x RJ-45, PCIe® x1
- 10 Gigabit Ethernet, Intel® X710-T2L, 2x RJ-45, PCIe® x8
- 25 Gigabit Ethernet, Intel® E810-XXVDA2, 2x SFP28, PCIe® x8<sup>[2]</sup>

Notes:

[1] Wi-Fi® operation (including Wi-Fi® 6, Wi-Fi® 6E, Wi-Fi® 7, etc.) is subject to the regulatory requirements of each country. Bluetooth® may operate at a lower version than hardware design depending on the factors such as operating system, driver, etc.

[2] Intel® E830-XXVDA2 will be available after June 2025.

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

#### Front Ports

- 1x USB-C® (USB 20Gbps / USB 3.2 Gen 2x2), 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)

#### Optional Front Ports

1x SD card reader

#### Rear Ports

- 2x USB-A (Hi-Speed USB / USB 2.0)
- 2x USB-A (USB 5Gbps / USB 3.2 Gen 1), one supports Smart Power On
- 1x HDMI® 2.1 TMDS
- 2x DisplayPort™ 1.4
- 1x Ethernet (GbE RJ-45)
- 1x line-out (3.5mm)

#### Optional Rear Ports

- 1x USB-C® (USB 5Gbps / USB 3.2 Gen 1), with DisplayPort™ function (Flex IO)
- 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 PCIe® x4 card
- 2x USB-C® (USB4® 40Gbps), via additional PCIe® x4 adapter<sup>[2]</sup>
- 2x USB-A (Hi-Speed USB / USB 2.0), via cable and PCIe® bracket
- 2x USB-A (USB 5Gbps / USB 3.2 Gen 1), via additional PCIe® x1 adapter
- 1x serial (via cable)
- 4x serial (via 4-port serial expansion card, PCIe® x1)

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;

USB4® 20Gbps / USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;

USB4® 40Gbps (USB 40Gbps): 40 Gbit/s;

Thunderbolt™ 3/4: 40 Gbit/s.

Thunderbolt™ 5: 80 Gbit/s (bidirectional), up to 120 Gbit/s in bandwidth boost mode for video-intensive applications.

[2] USB4® card is expected to be available later.

## SECURITY & PRIVACY

### Security

#### Security Chip

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

#### Physical Locks

- (Optional) Cable lock
- (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
- UEFI Secure Boot
- More BIOS security features, please visit [BIOS Simulator](#)

## MANAGEABILITY

### System Management

#### System Management<sup>[1][2]</sup>

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

Notes:

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

[2] Intel® vPro® platform require an eligible Intel® processor, a supported operating system, Intel® LAN and/or WLAN silicon, firmware enhancements, and other hardware and software necessary to deliver the manageability use cases, security features, system performance, and stability that define the platform. See [Intel® vPro® Platform](#) for details.

## 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

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://support.lenovo.com/warrantylookup/warrantypolicy>.

## OPERATING REQUIREMENTS

### 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%

## ENVIRONMENTAL

### Sustainability

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

- 95% PCC ABS bezel
- 95% PCC ABS wired USB keyboard/mouse top/bottom cover
- 16% recycled SGCC metal chassis
- 90% PIC recycled plastic EPE cushion
- 30% OBP used in bag
- FSC certified paper in packaging

Notes:

- [1] PCC: Post Consumer Content, recycled materials from customers.  
PIC: Post Industry Content, recycled materials from internal factories.  
EPE: Expanded Polyethylene.  
OBP: Ocean Bound Plastic, reducing plastic spill into the sea.  
FSC: Forest Stewardship Council.

## CERTIFICATIONS

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

#### Green Certifications

- (Optional) ENERGY STAR® 9.0
- (Optional) EPEAT™ Gold Registered
- ErP Lot 3
- RoHS compliant
- TCO Certified, generation 10

Notes:

- [1] The items listed under the "Green Certifications" section may not only refer to certification but also registration or self-declaration. For ESG & regulatory compliance documents, please visit <https://compliance.lenovo.com>.

### Other Certifications

#### Mil-Spec Test

MIL-STD-810H military test passed

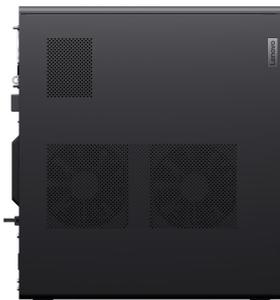
### ISV Certifications

#### ISV Certifications

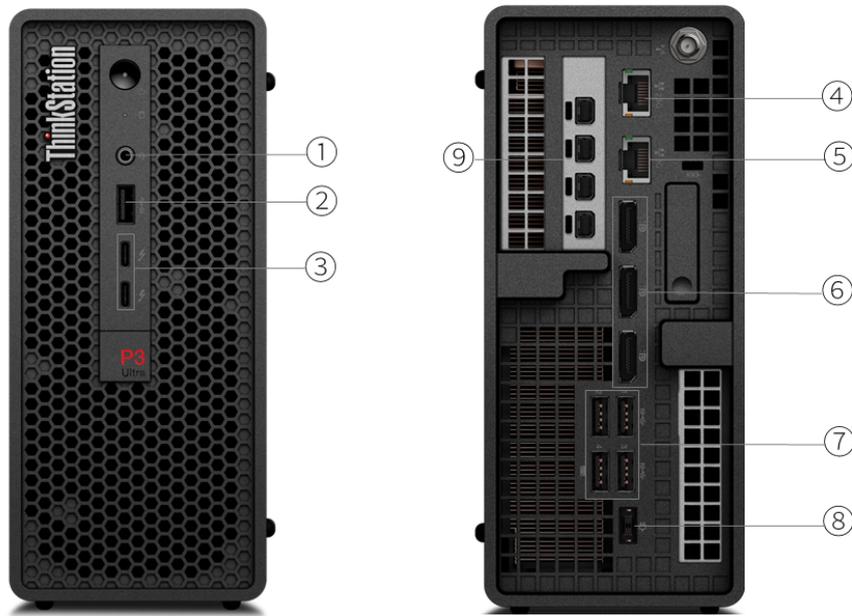
Please visit [ISV certifications for Lenovo® Workstations](#)

- Feature with \*\* means that only one option listed under the feature can be configured on selected models.  
Please refer to the model configuration for specific information.

- Feature with \*\*\* means that one or more options listed under the feature can be configured on selected models. Please refer to the model configuration for specific information.
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## OVERVIEW



1. Headphone jack (3.5mm)	6. 3x DisplayPort
2. USB-A (USB 10Gbps)	7. 4x USB-A (USB 10Gbps)
3. 2x Thunderbolt 4	8. Power connector
4. Ethernet (2.5GbE RJ-45)	9. Optional ports on expansion cards *
5. Ethernet (GbE RJ-45)	

Notes:

- Items with \* are only available on selected models

## PERFORMANCE

### Processor

#### Processor Family

Up to one 125W Intel® Core™ i5 / i7 / i9 (12th Gen) or Intel® Core™ i3 / i5 / i7 / i9 (13th and 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	Intel® vPro® Eligibility
Core i5-12500	6 (6 P-core + 0 E-core)	12	P-core 3.0GHz	P-core 4.6GHz	7.5MB L2 Cache / 18MB Intel® Smart Cache	DDR5-4800	Intel® UHD Graphics 770	Intel® vPro® Enterprise
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	12MB L2 Cache / 25MB Intel® Smart Cache	DDR5-4800	Intel® UHD Graphics 770	Intel® vPro® Enterprise
Core i9-12900	16 (8 P-core + 8 E-core)	24	P-core 2.4GHz / E-core 1.8GHz	Max Turbo up to 5.1GHz / P-core 5.0GHz / E-core 3.8GHz	14MB L2 Cache / 30MB Intel® Smart Cache	DDR5-4800	Intel® UHD Graphics 770	Intel® vPro® Enterprise
Core i3-13100	4 (4 P-core + 0 E-core)	8	P-core 3.4GHz	P-core 4.5GHz	5MB L2 Cache / 12MB Intel® Smart Cache	DDR5-4800	Intel® UHD Graphics 730	-
Core i5-13400T	10 (6 P-core + 4 E-core)	16	P-core 1.3GHz / E-core 1.0GHz	P-core 4.4GHz / E-core 3.0GHz	9.5MB L2 Cache / 20MB Intel® Smart Cache	DDR5-4800	Intel® UHD Graphics 730	-
Core i5-13600	14 (6 P-core + 8 E-core)	20	P-core 2.7GHz / E-core 2.0GHz	P-core 5.0GHz / E-core 3.7GHz	11.5MB L2 Cache / 24MB Intel® Smart Cache	DDR5-4800	Intel® UHD Graphics 770	Intel® vPro® Enterprise
Core i5-13600K	14 (6 P-core + 8 E-core)	20	P-core 3.5GHz / E-core 2.6GHz	P-core 5.1GHz / E-core 3.9GHz	20MB L2 Cache / 24MB Intel® Smart Cache	DDR5-5600	Intel® UHD Graphics 770	Intel® vPro® Enterprise
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	24MB L2 Cache / 30MB Intel® Smart Cache	DDR5-5600	Intel® UHD Graphics 770	-
Core i7-13700K	16 (8 P-core + 8 E-core)	24	P-core 3.4GHz / E-core 2.5GHz	Max Turbo up to 5.4GHz / P-core 5.3GHz / E-core 4.2GHz	24MB L2 Cache / 30MB Intel® Smart Cache	DDR5-5600	Intel® UHD Graphics 770	-
Core i7-13700T	16 (8 P-core + 8 E-core)	24	P-core 1.4GHz / E-core 1.0GHz	Max Turbo up to 4.9GHz / P-core 4.8GHz / E-core 3.6GHz	24MB L2 Cache / 30MB Intel® Smart Cache	DDR5-5600	Intel® UHD Graphics 770	Intel® vPro® Enterprise
Core i9-13900	24 (8 P-core + 16 E-core)	32	P-core 2.0GHz / E-core 1.5GHz	Max Turbo up to 5.6GHz / P-core 5.2GHz / E-core 4.2GHz	32MB L2 Cache / 36MB Intel® Smart Cache	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	32MB L2 Cache / 36MB Intel® Smart Cache	DDR5-5600	Intel® UHD Graphics 770	-

Core i9-13900T	24 (8 P-core + 16 E-core)	32	P-core 1.1GHz / E-core 0.8GHz	Max Turbo up to 5.3GHz / P-core 5.1GHz / E-core 3.9GHz	32MB L2 Cache / 36MB Intel® Smart Cache	DDR5-5600	Intel® UHD Graphics 770	Intel® vPro® Enterprise
Core i3-14100	4 (4 P-core + 0 E-core)	8	P-core 3.5GHz	P-core 4.7GHz	5MB L2 Cache / 12MB Intel® Smart Cache	DDR5-4800	Intel® UHD Graphics 730	-
Core i5-14400T	10 (6 P-core + 4 E-core)	16	P-core 1.5GHz / E-core 1.1GHz	P-core 4.5GHz / E-core 3.2GHz	9.5MB L2 Cache / 20MB Intel® Smart Cache	DDR5-4800	Intel® UHD Graphics 730	-
Core i5-14600	14 (6 P-core + 8 E-core)	20	P-core 2.7GHz / E-core 2.0GHz	P-core 5.2GHz / E-core 3.9GHz	20MB L2 Cache / 24MB Intel® Smart Cache	DDR5-5600	Intel® UHD Graphics 770	Intel® vPro® Enterprise
Core i5-14600K	14 (6 P-core + 8 E-core)	20	P-core 3.5GHz / E-core 2.6GHz	P-core 5.3GHz / E-core 4.0GHz	20MB L2 Cache / 24MB Intel® Smart Cache	DDR5-5600	Intel® UHD Graphics 770	Intel® vPro® Enterprise
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	28MB L2 Cache / 33MB Intel® Smart Cache	DDR5-5600	Intel® UHD Graphics 770	Intel® vPro® Enterprise
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	28MB L2 Cache / 33MB Intel® Smart Cache	DDR5-5600	Intel® UHD Graphics 770	Intel® vPro® Enterprise
Core i7-14700T	20 (8 P-core + 12 E-core)	28	P-core 1.3GHz / E-core 0.9GHz	Max Turbo up to 5.2GHz / P-core 5.0GHz / E-core 3.7GHz	28MB L2 Cache / 33MB Intel® Smart Cache	DDR5-5600	Intel® UHD Graphics 770	Intel® vPro® Enterprise
Core i9-14900	24 (8 P-core + 16 E-core)	32	P-core 2.0GHz / E-core 1.5GHz	Max Turbo up to 5.8GHz / P-core 5.4GHz / E-core 4.3GHz	32MB L2 Cache / 36MB Intel® Smart Cache	DDR5-5600	Intel® UHD Graphics 770	Intel® vPro® Enterprise
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	32MB L2 Cache / 36MB Intel® Smart Cache	DDR5-5600	Intel® UHD Graphics 770	Intel® vPro® Enterprise
Core i9-14900T	24 (8 P-core + 16 E-core)	32	P-core 1.1GHz / E-core 0.8GHz	Max Turbo up to 5.5GHz / P-core 5.1GHz / E-core 4.0GHz	32MB L2 Cache / 36MB Intel® Smart Cache	DDR5-5600	Intel® UHD Graphics 770	Intel® vPro® Enterprise

### 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.

## AI (Artificial Intelligence)

### AI PC Category<sup>[1]</sup>

AI-Ready Workstations

### Notes:

[1] With scalable configurations of higher-performance CPUs and professional NVIDIA® RTX GPUs, in addition to

advantage of the same modern AI PC technology, AI-Ready workstation power the demanding AI consumption & development workflows.

## Operating System

### Operating System\*\*

- Windows® 11 Pro
- Windows® 11 Home
- Windows® 11 Home Single Language
- Windows® 11 DG Windows® 10 Pro 64
- Ubuntu Linux LTS
- Red Hat Enterprise Linux 9.4 (certified only, for detailed and latest information, please visit [Red Hat Certified Hardware](#))
- No preload operating system

## Graphics

### Integrated Graphics\*\*

- Intel® UHD Graphics 730
- Intel® UHD Graphics 770

### Discrete Graphics Support

Supports up to one NVIDIA® RTX 4000 SFF Ada Generation

### Discrete Graphics Offering

Graphics	Memory	Power	Connector	Form Factor	SLI / NVLink
NVIDIA® RTX A5500 Laptop GPU <sup>[1]</sup>	16GB GDDR6 with ECC	115W	4x miniDP 1.4a	MXM Card	None
NVIDIA® RTX A5000 Laptop GPU <sup>[2]</sup>	16GB GDDR6	115W	4x miniDP 1.4a	MXM Card	None
NVIDIA® RTX A400	4GB GDDR6	50W	4x miniDP 1.4a	Single slot	None
NVIDIA® RTX A3000 Laptop GPU <sup>[3]</sup>	12GB GDDR6	80W	4x miniDP 1.4a	MXM Card	None
NVIDIA® RTX A2000 12GB	12GB GDDR6	70W	4x miniDP 1.4a	Dual slot	None
NVIDIA® RTX A1000	8GB GDDR6	50W	4x miniDP 1.4a	Single slot	None
NVIDIA® RTX 4000 SFF Ada Generation	20GB GDDR6 with ECC	70W	4x miniDP 1.4a	Dual slot	None
NVIDIA® RTX 2000 Ada Generation	16GB GDDR6 with ECC	70W	4x miniDP 1.4a	Dual slot	None
NVIDIA® T1000 8GB	8GB GDDR6	50W	4x miniDP 1.4	Single slot	None
NVIDIA® T400 4GB	4GB GDDR6	40W	3x miniDP 1.4	Single slot	None

Notes:

[1], [2], [3] The cards are currently unavailable.

## Monitor Support

### Monitor Support

Supports up to 8 independent displays, 4 via onboard ports (3x DP and 2x Thunderbolt™, simultaneously supports 4 display) and 4 via discrete graphics.

Onboard ports support (with max simultaneous displays):

- DP supports up to 4096x2160@60Hz
- Thunderbolt™ supports up to 5120x2880@60Hz

Discrete graphics ports support (with max simultaneous displays):

- miniDP supports up to 4096x2160@120Hz (RTX A2000)

## Chipset

### Chipset

Intel® W680 chipset

## Memory

### Max Memory<sup>[1]</sup>

Up to 192GB (4x 48GB DDR5 SODIMM)

### Memory Type\*\*<sup>[2]</sup>

- DDR5-4800 SODIMM ECC, maximum transfer speeds of up to 4000 MT/s
- DDR5-4800 SODIMM non-ECC, maximum transfer speeds of up to 4000 MT/s

**Memory Slots**

Four DDR5 SODIMM 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] System comes with DDR5-4800 memory and will run at lower speed due to platform limitations: 4x 32GB configuration runs at 3600 MT/s; other configurations run at 4000 MT/s.

**Storage**

**Max Storage Support<sup>[1]</sup>**

Up to 1x 2.5" HDD or SSD + 2x M.2 SSD

- 2.5" HDD up to 1TB
- 2.5" SSD up to 7.68TB
- M.2 SSD up to 4TB each

**Storage Type<sup>\*\*\*</sup>**

Disk Type	Interface	RPM	Offering	Security
2.5" SATA HDD	SATA 6Gb/s	7.2K	1TB / 1TB FIPS	-
2.5" SATA SSD	SATA 6Gb/s	-	3.84TB / 7.68TB	Opal
M.2 2280 SSD for Onboard M.2 slots	PCIe® NVMe®, PCIe® 4.0 x4	-	256GB	Opal
M.2 2280 SSD for Onboard M.2 slots	PCIe® NVMe®, PCIe® 4.0 x4 Performance	-	256GB / 512GB / 1TB / 2TB / 4TB	Opal 2.0

**Storage Controllers**

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

Notes:

- [1] The storage capacity supported is based on the test results with current Lenovo® storage offerings.

**Multi-Media**

**Audio Chip**

High Definition (HD) Audio, Realtek® ALC897-Q codec

**Speakers**

Single speaker

**Power Supply**

**Power Supply<sup>\*\*</sup>**

Power	Type	Efficiency	Key Features
170W	Adapter	90%	100V - 240V
230W	Adapter	90%	100V - 240V
300W	Adapter	90%	100V - 240V

**DESIGN**

**Mechanical<sup>[1]</sup>**

**Form Factor**

Mini-tower (3.9L)

**Dimensions (WxDxH)<sup>[2]</sup>**

87 x 223 x 202 mm (3.43 x 8.78 x 7.95 inches)

**Weight<sup>[3]</sup>**

3.6 kg (7.94 lbs, maximum configuration)

**Bays**

1x 2.5" disk bay (optional, comes with disk)

**M.2 Slots**

- Two M.2 PCIe® Gen 4x4 slots (for SSD)
- One M.2 slot (for WLAN)

**Expansion Slots**

Two PCIe® slots with one PCIe® 4.0 x16 and one PCIe® 3.0 x8.

- Slot 1: PCIe® 4.0 x16 (via MXM to PCIe® riser card), low profile, 75W, double-width
- Slot 2: PCIe® 3.0 x8 (x4 lanes), low profile, 25W

**EOU**

Tool-less design for side cover and memory

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**Notes:**

[1] The actual data transfer rate of the following PCIe® interface also depends on the capabilities of the connected PCIe® device. The listed values represent theoretical maximums.

PCIe® 3.0 (x1 / x2 / x4 / x8 / x16): 1 GB/s ( 8 Gbps) / 2 GB/s (16 Gbps) / 4 GB/s (32 Gbps) / 8 GB/s (64 Gbps) / 16 GB/s (128 Gbps);

PCIe® 4.0 (x1 / x2 / x4 / x8 / x16): 2 GB/s (16 Gbps) / 4 GB/s (32 Gbps) / 8 GB/s (64 Gbps) / 16 GB/s (128 Gbps) / 32 GB/s (256 Gbps);

PCIe® 5.0 (x1 / x2 / x4 / x8 / x16): 4 GB/s (32 Gbps) / 8 GB/s (64 Gbps) / 16 GB/s (128 Gbps) / 32 GB/s (256 Gbps) / 64 GB/s (512 Gbps).

[2] The system dimensions may vary depending on configurations.

[3] 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.

## CONNECTIVITY

### Network

**WLAN + Bluetooth<sup>[1]</sup>**

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

**Onboard Ethernet**

Two Ethernet, 2.5GbE + GbE, Intel® Ethernet Connection I225-LM and I210-AT, 2x RJ-45, supports Wake-on-LAN

**Optional Ethernet**

One additional Ethernet adapter support, up to one 10GbE or four GbE additional ports

- Gigabit Ethernet, Intel® I350-T2, 2x RJ-45, PCIe® x4
- Gigabit Ethernet, Broadcom BCM5719, 4x RJ-45, PCIe® x4
- Gigabit Ethernet, Broadcom BCM5720, 2x RJ-45, PCIe® x1
- 10 Gigabit Ethernet, Intel® X710-T2L, 2x RJ-45, PCIe® x8
- 10 Gigabit Ethernet, Intel® X710-DA2, 2x SFP+, PCIe® x8

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**Notes:**

[1] Wi-Fi® operation (including Wi-Fi® 6, Wi-Fi® 6E, Wi-Fi® 7, etc.) is subject to the regulatory requirements of each country. Bluetooth® may operate at a lower version than hardware design depending on the factors such as operating system, driver, etc.

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

**Front Ports**

- 2x Thunderbolt™ 4
- 1x USB-A (USB 10Gbps / USB 3.2 Gen 2)
- 1x headphone / microphone combo jack (3.5mm)

## Rear Ports

- 4x USB-A (USB 10Gbps / USB 3.2 Gen 2)
- 3x DisplayPort™ 1.2
- 1x Ethernet (2.5GbE RJ-45)
- 1x Ethernet (GbE RJ-45)

## Optional Rear Ports

- 1x USB-C® (USB 20Gbps / USB 3.2 Gen 2x2), support data transfer, via PCIe® x4 card
- 2x USB-C® (USB 10Gbps / USB 3.2 Gen 2), support data transfer, via additional PCIe® adapter
- 2x USB-A (USB 5Gbps / USB 3.2 Gen 1), via additional PCIe® x1 adapter

---

### 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.

# SECURITY & PRIVACY

## Security

### Security Chip

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

### Physical Locks

Kensington® Security Slot™, 3 x 7 mm

### Chassis Intrusion Switch

Chassis intrusion switch

### BIOS Security

- Administrator password
- Power-on password
- Self-healing BIOS
- UEFI Secure Boot

# MANAGEABILITY

## System Management

### System Management<sup>[1][2]</sup>

- (Optional) Aspeed AST2600 graphics / management processor, IPMI 2.0-compliant baseboard management controller (BMC)
- (Optional) Intel® vPro® Enterprise with Intel® AMT 16
- Non-vPro®

---

### Notes:

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

[2] Intel® vPro® platform require an eligible Intel® processor, a supported operating system, Intel® LAN and/or WLAN silicon, firmware enhancements, and other hardware and software necessary to deliver the manageability use cases, security features, system performance, and stability that define the platform. See [Intel® vPro® Platform](#) for details.

# 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://support.lenovo.com/warrantylookup/warrantypolicy>.

## OPERATING REQUIREMENTS

### 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%

## ENVIRONMENTAL

### Sustainability

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

- 85% PCC ABS bezel
- 95% PCC ABS wired USB keyboard/mouse top/bottom cover
- 90% PIC recycled plastic EPE cushion
- 30% OBP used in bag
- FSC certified paper in packaging

#### Notes:

[1] PCC: Post Consumer Content, recycled materials from customers.  
PIC: Post Industry Content, recycled materials from internal factories.  
EPE: Expanded Polyethylene.  
OBP: Ocean Bound Plastic, reducing plastic spill into the sea.  
FSC: Forest Stewardship Council.

## CERTIFICATIONS

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

#### Green Certifications

- (Optional) ENERGY STAR® 8.0
- (Optional) EPEAT™ Gold Registered<sup>[2]</sup>
- RoHS compliant
- TCO Certified 9.0

#### Notes:

[1] The items listed under the "Green Certifications" section may not only refer to certification but also registration or self-declaration. For ESG & regulatory compliance documents, please visit <https://compliance.lenovo.com>.

[2] EPEAT™ is registered where applicable, please visit [epeat.net](http://epeat.net) for registration status by country.

### Other Certifications

#### Mil-Spec Test

MIL-STD-810H military test passed

### ISV Certifications

#### ISV Certifications

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

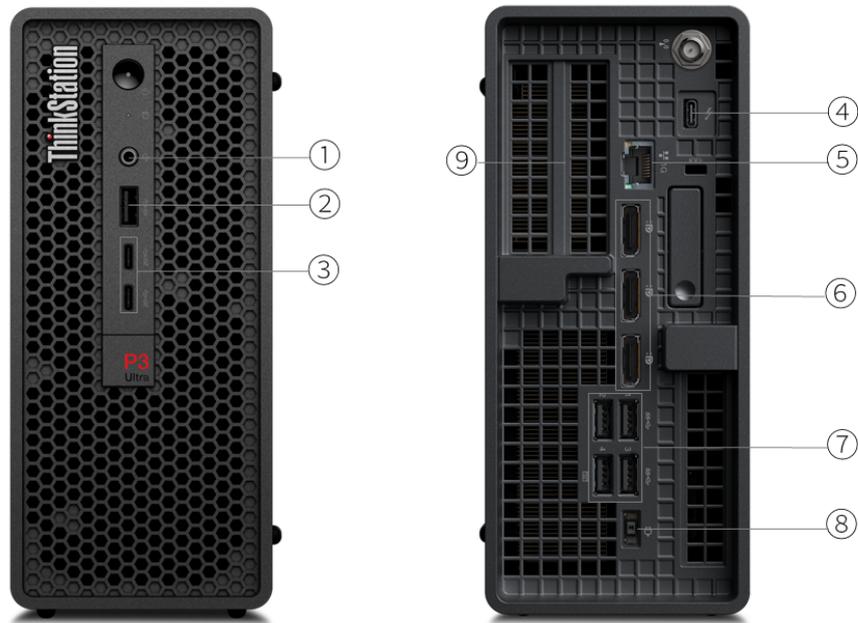
- Feature with \*\* means that only one option listed under the feature can be configured on selected models.

Please refer to the model configuration for specific information.

- Feature with \*\*\* means that one or more options listed under the feature can be configured on selected models. Please refer to the model configuration for specific information.
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## OVERVIEW



1. Headphone jack (3.5mm)	6. 3x DisplayPort
2. USB-A (USB 10Gbps)	7. 4x USB-A (USB 10Gbps)
3. 2x USB-C (USB 20Gbps / USB 3.2 Gen 2x2)	8. Power connector
4. Thunderbolt 4 *	9. Optional parts on expansion cards *
5. Ethernet (GbE RJ-45)	

Notes:

- Items with \* are only available on selected models

## PERFORMANCE

### Processor

#### Processor Family

Up to one 125W Intel® Core™ Ultra (Series 2) processor; supports up to 24 cores; up to 5.7GHz

#### Processor\*\*<sup>[1]</sup>

Processor Name	Cores	Threads	Base Frequency	Max Frequency	Cache	Memory Support	Processor Graphics	Intel® vPro® Eligibility
Core Ultra 5 225	10 (6 P-core + 4 E-core)	10	P-core 3.3GHz / E-core 2.7GHz	Max Turbo up to 4.9GHz / P-core 4.9GHz / E-core 4.4GHz	22MB L2 Cache / 20MB Intel® Smart Cache	DDR5-6400	Intel® Graphics	-
Core Ultra 5 225T	10 (6 P-core + 4 E-core)	10	P-core 2.5GHz / E-core 1.9GHz	Max Turbo up to 4.9GHz / P-core 4.9GHz / E-core 4.4GHz	22MB L2 Cache / 20MB Intel® Smart Cache	DDR5-6400	Intel® Graphics	-
Core Ultra 5 235	14 (6 P-core + 8 E-core)	14	P-core 3.4GHz / E-core 2.9GHz	Max Turbo up to 5.0GHz / P-core 5.0GHz / E-core 4.4GHz	26MB L2 Cache / 24MB Intel® Smart Cache	DDR5-6400	Intel® Graphics	Intel® vPro® Enterprise
Core Ultra 5 245K	14 (6 P-core + 8 E-core)	14	P-core 4.2GHz / E-core 3.6GHz	Max Turbo up to 5.2GHz / P-core 5.2GHz / E-core 4.6GHz	26MB L2 Cache / 24MB Intel® Smart Cache	DDR5-6400	Intel® Graphics	Intel® vPro® Enterprise
Core Ultra 7 265	20 (8 P-core + 12 E-core)	20	P-core 2.4GHz / E-core 1.8GHz	Max Turbo up to 5.3GHz / P-core 5.2GHz / E-core 4.6GHz	36MB L2 Cache / 30MB Intel® Smart Cache	DDR5-6400	Intel® Graphics	Intel® vPro® Enterprise
Core Ultra 7 265K	20 (8 P-core + 12 E-core)	20	P-core 3.9GHz / E-core 3.3GHz	Max Turbo up to 5.5GHz / P-core 5.4GHz / E-core 4.6GHz	36MB L2 Cache / 30MB Intel® Smart Cache	DDR5-6400	Intel® Graphics	Intel® vPro® Enterprise
Core Ultra 7 265T	20 (8 P-core + 12 E-core)	20	P-core 1.5GHz / E-core 1.2GHz	Max Turbo up to 5.3GHz / P-core 5.2GHz / E-core 4.6GHz	36MB L2 Cache / 30MB Intel® Smart Cache	DDR5-6400	Intel® Graphics	Intel® vPro® Enterprise
Core Ultra 9 285	24 (8 P-core + 16 E-core)	24	P-core 2.5GHz / E-core 1.9GHz	Max Turbo up to 5.6GHz / P-core 5.4GHz / E-core 4.6GHz	40MB L2 Cache / 36MB Intel® Smart Cache	DDR5-6400	Intel® Graphics	Intel® vPro® Enterprise
Core Ultra 9 285K	24 (8 P-core + 16 E-core)	24	P-core 3.7GHz / E-core 3.2GHz	Max Turbo up to 5.7GHz / P-core 5.5GHz / E-core 4.6GHz	40MB L2 Cache / 36MB Intel® Smart Cache	DDR5-6400	Intel® Graphics	Intel® vPro® Enterprise
Core Ultra 9 285T	24 (8 P-core + 16 E-core)	24	P-core 1.4GHz / E-core 1.2GHz	Max Turbo up to 5.4GHz / P-core 5.3GHz / E-core 4.6GHz	40MB L2 Cache / 36MB Intel® Smart Cache	DDR5-6400	Intel® Graphics	Intel® vPro® Enterprise

#### Processor Sockets

1x FCLGA1851

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.

### AI (Artificial Intelligence)

**AI PC Category<sup>[1]</sup>**

AI-Ready Workstations

Notes:

[1] With scalable configurations of higher-performance CPUs and professional NVIDIA® RTX GPUs, in addition to advantage of the same modern AI PC technology, AI-Ready workstation power the demanding AI consumption & development workflows.

**Operating System**

**Operating System**

- Windows® 11 Pro
- Windows® 11 Home
- Windows® 11 Home Single Language
- Windows® 11 IoT Enterprise LTSC 2024
- Ubuntu Linux LTS
- Red Hat Enterprise Linux 10 (certified only, for detailed and latest information, please visit [Red Hat Certified Hardware](#))

**Graphics**

**Integrated Graphics**

Intel® Graphics

**Discrete Graphics Support**

Supports up to one NVIDIA® RTX 4000 SFF Ada Generation or two Nvidia RTX A1000

**Discrete Graphics Offering\*\*\***

Graphics	Memory	Power	Connector	Form Factor	SLI / NVLink
NVIDIA® RTX A400	4GB GDDR6	50W	4x miniDP 1.4a	Single slot	None
NVIDIA® RTX A1000	8GB GDDR6	50W	4x miniDP 1.4a	Single slot	None
NVIDIA® RTX 4000 SFF Ada Generation	20GB GDDR6 with ECC	70W	4x miniDP 1.4a	Dual slot	None
NVIDIA® RTX 2000 Ada Generation	16GB GDDR6 with ECC	70W	4x miniDP 1.4a	Dual slot	None

**Monitor Support**

**Monitor Support**

Supports up to 12 independent displays, 4 via onboard ports (3x DP and 1x optional Thunderbolt™ 4) and 8 via two discrete graphics cards (2x NVIDIA® RTX A1000 / A400).

Onboard ports support (with max simultaneous displays):

- DP supports up to 4096x2160@60Hz
- Thunderbolt™ supports up to 5120x2880@60Hz

Discrete graphics cards ports support (with max simultaneous displays):

- miniDP supports up to 7680x4320@60Hz

**Chipset**

**Chipset**

Intel® W880 chipset

**Memory**

**Max Memory<sup>[1]</sup>**

Up to 128GB (2x 64GB DDR5 CSODIMM)

**Memory Type\*\***

- DDR5-5600 SODIMM, ECC or non-ECC, maximum transfer speeds of up to 5600 MT/s
- DDR5-6400 CSODIMM, ECC or non-ECC, maximum transfer speeds of up to 6400 MT/s

**Memory Slots**

Two DDR5 SODIMM slots, dual-channel capable

**Memory Protection**

ECC on models with ECC DIMMs

Notes:

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

## Storage

### Max Storage Support<sup>[1]</sup>

Up to 4x M.2 PCIe® SSD  
• M.2 SSD up to 4TB each

### Storage Type<sup>\*\*\*</sup>

Disk Type	Interface	Offering	Security
M.2 SSD for 1x M.2 PCIe® 3.0 slot (by Single M.2 to PCIe® Adapter) <sup>[2]</sup>	NVMe®, PCIe® 4.0 x4	Gen 4 Performance SSD: 512GB / 1TB / 2TB / 4TB Gen 4 SSD: 256GB / 512GB / 1TB	Opal 2.0
M.2 SSD for 2x onboard M.2 PCIe® 4.0 slots	NVMe®, PCIe® 4.0 x4	Gen 4 Performance SSD: 512GB / 1TB / 2TB / 4TB Gen 4 SSD: 256GB / 512GB / 1TB	Opal 2.0
M.2 SSD for 1x onboard M.2 PCIe® 5.0 slot	NVMe®, PCIe® 5.0 x4 or 4.0 x4	Gen 5 Performance SSD: 512GB / 1TB / 2TB / 4TB Gen 4 Performance SSD: 512GB / 1TB / 2TB / 4TB Gen 4 SSD: 256GB / 512GB / 1TB	Opal 2.0

### Storage Controllers

Storage Controller	Type	Interface	RAID
Integrated NVMe® controller	Standard	PCIe® NVMe®	0/1/5

Notes:

[1] The storage capacity supported is based on the test results with current Lenovo® storage offerings.

[2] M.2 slot supports PCIe® 3.0, so Gen 4 SSDs will run on PCIe® 3.0.

## Multi-Media

### Audio Chip

High Definition (HD) Audio, Realtek® ALC623-CG codec

### Speakers

Single speaker, 2W x1

## Power Supply

### Power Supply<sup>\*\*</sup>

Power	Type	Efficiency	Key Features
170W	Adapter	90%	100V - 240V
230W	Adapter	90%	100V - 240V
245W	Adapter	90%	Autosensing
330W	Adapter	90%	100V - 240V

## DESIGN

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

#### Form Factor

Mini-tower (3.9L)

#### Dimensions (WxDxH)<sup>[2]</sup>

87 x 223 x 202 mm (3.43 x 8.78 x 7.95 inches)

#### Weight<sup>[3]</sup>

3.6 kg (7.94 lbs, maximum configuration)

#### M.2 Slots

- One M.2 slot (for WLAN)
- Up to 4x M.2 slots for M.2 SSD:
  - 2 onboard M.2 PCIe® 4.0 slots, supports M.2 PCIe® 4.0 SSD. Only one slot is available when 3.5" HDD is selected
  - 1 onboard M.2 PCIe® 5.0 slot, supports M.2 PCIe® 5.0 or M.2 PCIe® 4.0 SSD
  - 1 via Single M.2 to PCIe® adapter, supports M.2 PCIe® 4.0 and runs at PCIe® 3.0, can't be available when 3.5" HDD is selected

### Expansion Slots

Three or two PCIe® slots depending on riser card selection.

- Three slots configuration:
  - Slot 1: PCIe® 4.0 x16 (x8 lanes), by riser card
  - Slot 2: PCIe® 4.0 x16 (x8 lanes), by riser card
  - Slot 3: PCIe® 4.0 x8 (x4 lanes), onboard
- Two slots configuration:
  - Slot 1: PCIe® 4.0 x16, by riser card
  - Slot 2: PCIe® 4.0 x8 (x4 lanes), onboard

### EOU

Tool-less design for side cover and memory

#### Notes:

[1] The actual data transfer rate of the following PCIe® interface also depends on the capabilities of the connected PCIe® device. The listed values represent theoretical maximums.

PCIe® 3.0 (x1 / x2 / x4 / x8 / x16): 1 GB/s ( 8 Gbps) / 2 GB/s (16 Gbps) / 4 GB/s (32 Gbps) / 8 GB/s (64 Gbps) / 16 GB/s (128 Gbps);

PCIe® 4.0 (x1 / x2 / x4 / x8 / x16): 2 GB/s (16 Gbps) / 4 GB/s (32 Gbps) / 8 GB/s (64 Gbps) / 16 GB/s (128 Gbps) / 32 GB/s (256 Gbps);

PCIe® 5.0 (x1 / x2 / x4 / x8 / x16): 4 GB/s (32 Gbps) / 8 GB/s (64 Gbps) / 16 GB/s (128 Gbps) / 32 GB/s (256 Gbps) / 64 GB/s (512 Gbps).

[2] The system dimensions may vary depending on configurations.

[3] 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.

## CONNECTIVITY

### Network

#### WLAN + Bluetooth<sup>[1]</sup>

- Intel® Wi-Fi® 7 BE200, 802.11be 2x2 Wi-Fi® + Bluetooth® 5.4, Intel® vPro® technology support
- No WLAN and Bluetooth®

#### Onboard Ethernet

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

#### Optional Ethernet

One additional Ethernet adapter support, up to two additional 25GbE ports

- Gigabit Ethernet, Intel® I350-T2, 2x RJ-45, PCIe® x4
- Gigabit Ethernet, Intel® I350-T4, 4x RJ-45, PCIe® x4
- Gigabit Ethernet, Broadcom BCM5719, 4x RJ-45, PCIe® x4
- Gigabit Ethernet, Broadcom BCM5720, 2x RJ-45, PCIe® x1
- 10 Gigabit Ethernet, Intel® X710-T2L, 2x RJ-45, PCIe® x8
- 25 Gigabit Ethernet, NVIDIA® Mellanox ConnectX-6, 2x SFP28, PCIe® x8

#### Notes:

[1] Wi-Fi® operation (including Wi-Fi® 6, Wi-Fi® 6E, Wi-Fi® 7, etc.) is subject to the regulatory requirements of each country. Bluetooth® may operate at a lower version than hardware design depending on the factors such as operating system, driver, etc.

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

#### Front Ports

- 2x USB-C® (USB 20Gbps / USB 3.2 Gen 2x2), data transfer only
- 1x USB-A (USB 10Gbps / USB 3.2 Gen 2)
- 1x headphone / microphone combo jack (3.5mm)

## Rear Ports

- 4x USB-A (USB 10Gbps / USB 3.2 Gen 2)
- 3x DisplayPort™ 1.4
- 1x Ethernet (GbE RJ-45)

## Optional Rear Ports\*\*\*

- 1x Thunderbolt™ 4
- 1x serial (via cable)
- 4x serial (via 4-port serial expansion card, PCIe® x1)

### 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;

USB4® 20Gbps / USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;

USB4® 40Gbps (USB 40Gbps): 40 Gbit/s;

Thunderbolt™ 3/4: 40 Gbit/s.

Thunderbolt™ 5: 80 Gbit/s (bidirectional), up to 120 Gbit/s in bandwidth boost mode for video-intensive applications.

# SECURITY & PRIVACY

## Security

### Security Chip

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

### Physical Locks

Kensington® Security Slot™, 3 x 7 mm

### Chassis Intrusion Switch

Chassis intrusion switch

### BIOS Security

- Administrator password
- Power-on password
- Self-healing BIOS
- UEFI Secure Boot
- More BIOS security features, please visit [BIOS Simulator](#)

# MANAGEABILITY

## System Management

### System Management<sup>[1][2]</sup>

- (Optional) Aspeed AST2600 graphics / management processor, IPMI 2.0-compliant baseboard management controller (BMC)
- (Optional) Intel® vPro® Enterprise with Intel® AMT 16

### Notes:

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

[2] Intel® vPro® platform require an eligible Intel® processor, a supported operating system, Intel® LAN and/or WLAN silicon, firmware enhancements, and other hardware and software necessary to deliver the manageability use cases, security features, system performance, and stability that define the platform. See [Intel® vPro® Platform](#) for details.

# 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://support.lenovo.com/warrantylookup/warrantypolicy>.

## OPERATING REQUIREMENTS

### 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%

## ENVIRONMENTAL

### Sustainability

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

- 85% PCC ABS bezel
- 95% PCC ABS wired USB keyboard/mouse top/bottom cover
- 90% PIC recycled plastic EPE cushion
- FSC certified paper in packaging

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**Notes:**

[1] PCC: Post Consumer Content, recycled materials from customers.  
PIC: Post Industry Content, recycled materials from internal factories.  
EPE: Expanded Polyethylene.  
OBP: Ocean Bound Plastic, reducing plastic spill into the sea.  
FSC: Forest Stewardship Council.

## CERTIFICATIONS

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

#### Green Certifications

- (Optional) ENERGY STAR® 9.0
- RoHS compliant
- TCO Certified, generation 10

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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. For ESG & regulatory compliance documents, please visit <https://compliance.lenovo.com>.

### Other Certifications

#### Mil-Spec Test

MIL-STD-810H military test passed

### ISV Certifications

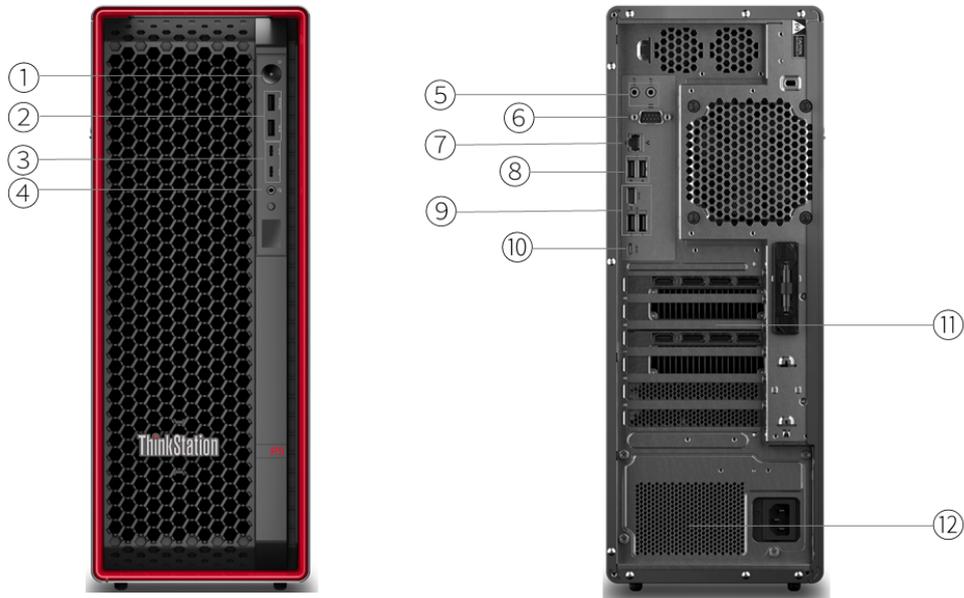
#### ISV Certifications

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

- Feature with \*\* means that only one option listed under the feature can be configured on selected models. Please refer to the model configuration for specific information.
- Feature with \*\*\* means that one or more options listed under the feature can be configured on selected models. Please refer to the model configuration for specific information.
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- The specifications on this page may not be available in all regions, and may be changed or updated without notice.



## OVERVIEW



1. Power button	7. Ethernet (GbE RJ-45)
2. 2x USB-A (USB 10Gbps) *	8. 2x USB-A (Hi-Speed USB)
3. 2x USB-C (USB 10Gbps), data transfer only *	9. 3x USB-A (USB 10Gbps)
4. Headphone jack (3.5mm)	10. USB-C (USB 20Gbps / USB 3.2 Gen 2x2)
5. 2x Audio ports (line-out and line-in)	11. PCIe slots
6. Serial (9-pin) *	12. Power supply

Notes:

- Items with \* are only available on selected models
- Expansion cards are optional. More ports are available through the optional expansion cards

## PERFORMANCE

### Processor

#### Processor Family

Up to one 225W Intel® Xeon® W-2400 Series processor, supports up to 24 cores, up to 4.8GHz

#### Processor\*\*<sup>[1]</sup>

Processor Name	Cores	Threads	Base Frequency	Max Frequency	Cache	Memory Support
Xeon w3-2535	10	20	3.5GHz	4.6GHz	26.25MB	DDR5-4800
Xeon w3-2525	8	16	3.5GHz	4.5GHz	22.5MB	DDR5-4800
Xeon w5-2565X	18	36	3.2Hz	4.8GHz	37.5MB	DDR5-4800
Xeon w5-2545	12	24	3.5GHz	4.7GHz	30MB	DDR5-4800
Xeon w5-2555X	14	28	3.3Hz	4.8GHz	33.75MB	DDR5-4800
Xeon w7-2575X	22	44	3.0Hz	4.8GHz	45MB	DDR5-4800
Xeon w7-2595X	26	52	2.8Hz	4.8GHz	48.75MB	DDR5-4800
Xeon w3-2423	6	12	2.1GHz	4.2GHz	15MB	DDR5-4400
Xeon w3-2425	6	12	3.0GHz	4.4GHz	15MB	DDR5-4400
Xeon w3-2435	8	16	3.1GHz	4.5GHz	22.5MB	DDR5-4400
Xeon w5-2445	10	20	3.1GHz	4.6GHz	26.25MB	DDR5-4800
Xeon w5-2455X	12	24	3.2GHz	4.6GHz	30MB	DDR5-4800
Xeon w5-2465X	16	32	3.1GHz	4.7GHz	33.75MB	DDR5-4800
Xeon w7-2475X	20	40	2.6GHz	4.8GHz	37.5MB	DDR5-4800
Xeon w7-2495X	24	48	2.5GHz	4.8GHz	45MB	DDR5-4800

#### Processor Sockets

1x FCLGA4677

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.

### AI (Artificial Intelligence)

#### AI PC Category<sup>[1]</sup>

AI-Ready Workstations

Notes:

[1] With scalable configurations of higher-performance CPUs and professional NVIDIA® RTX GPUs, in addition to advantage of the same modern AI PC technology, AI-Ready workstation power the demanding AI consumption & development workflows.

### Operating System

#### Operating System\*\*

- Windows® 11 Pro for Workstations
- Windows® 11 DG Windows® 10 Pro 64 for Workstations
- Red Hat Enterprise Linux 9.2 (certified only, for detailed and latest information, please visit [Red Hat Certified Hardware](#))
- No preload operating system

### Graphics

#### Discrete Graphics Support<sup>[1]</sup>

- Supports up to two NVIDIA® RTX 5000 Ada Generation or two NVIDIA® RTX A6000
- Supports up to two NVIDIA® RTX PRO 6000 Blackwell Max-Q Workstation Edition (300W)

#### Discrete Graphics Offering

Graphics	Memory	Power	Connector	Form Factor	SLI / NVLink
NVIDIA® RTX PRO 6000 Blackwell Max-Q Workstation Edition	96GB GDDR7 with ECC	300W	4x DP 2.1	Dual slot	-
NVIDIA® RTX PRO 5000 Blackwell	48GB GDDR7 with ECC	300W	4x DP 2.1	Dual slot	-
NVIDIA® RTX PRO 4500 Blackwell	32GB GDDR7 with ECC	200W	4x DP 2.1	Dual slot	-
NVIDIA® RTX PRO 4000 Blackwell	24GB GDDR7 with ECC	140W	4x DP 2.1	Single slot	-
NVIDIA® RTX PRO 2000 Blackwell	16GB GDDR7 with ECC	70W	4x miniDP 2.1	Dual slot	-
NVIDIA® RTX A6000 <sup>[2]</sup>	48GB GDDR6 with ECC	300W	4x DP 1.4a	Dual slot	NVLink
NVIDIA® RTX A5500	24GB GDDR6 with ECC	230W	4x DP 1.4a	Dual slot	NVLink
NVIDIA® RTX A5000	24GB GDDR6 with ECC	230W	4x DP 1.4a	Dual slot	None
NVIDIA® RTX A4500	20GB GDDR6 with ECC	200W	4x DP 1.4	Dual slot	NVLink
NVIDIA® RTX A4000	16GB GDDR6 with ECC	140W	4x DP 1.4a	Single slot	None
NVIDIA® RTX A400	4GB GDDR6	50W	4x miniDP 1.4a	Single slot	None
NVIDIA® RTX A2000 12GB	12GB GDDR6	70W	4x miniDP 1.4a	Dual slot	None
NVIDIA® RTX A1000	8GB GDDR6	50W	4x miniDP 1.4a	Single slot	None
NVIDIA® RTX 5000 Ada Generation	32GB GDDR6 with ECC	250W	4x DP 1.4a	Dual slot	-
NVIDIA® RTX 4500 Ada Generation	24GB GDDR6 with ECC	210W	4x DP 1.4a	Dual slot	-
NVIDIA® RTX 4000 Ada Generation	20GB GDDR6 with ECC	130W	4x DP 1.4a	Single slot	-
NVIDIA® RTX 2000 Ada Generation	16GB GDDR6 with ECC	70W	4x miniDP 1.4a	Dual slot	None
NVIDIA® T1000 8GB	8GB GDDR6	50W	4x miniDP 1.4	Single slot	None
NVIDIA® T400 4GB	4GB GDDR6	40W	3x miniDP 1.4	Single slot	None

## Notes:

[1] Blackwell GPUs are already supported, and the exact orderability timeframe is under confirmation and may be slightly later.

[2] Available in specific countries and regions.

## 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® W790 chipset

## Memory

**Max Memory**<sup>[1]</sup>

Up to 512GB (8x 64GB RDIMM)

**Memory Type**<sup>[2]</sup>

DDR5-4800 RDIMM ECC, maximum transfer speeds of up to 4800 MT/s

**Memory Slots**

8 DDR5 DIMM slots, 4 channels capable

**Memory Protection**

ECC

Notes:

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

[2] System comes with DDR5-4800 memory and some configurations will run at 4400 MT/s due to the memory support capability of processor.

**Storage****Max Storage Support**<sup>[1]</sup>

Up to ten drives (3x 3.5" SATA HDD + 7x M.2 SSD)

- 3.5" HDD up to 12TB each
- M.2 SSD up to 4TB or 2TB each (see Storage Type)

**Storage Type**\*\*

Disk Type	Interface	RPM	Offering	Security
3.5" SATA HDD	SATA 6Gb/s	7.2K	2TB / 4TB / 6TB / 8TB / 10TB / 12TB	-
M.2 2280 SSD for Onboard / Front access M.2	PCIe® NVMe®, PCIe® 4.0 x4 Performance	-	512GB / 1TB / 2TB / 4TB	Opal 2.0
M.2 2280 SSD for quad M.2 to PCIe® adapter <sup>[2]</sup>	PCIe® NVMe®, PCIe® 4.0 x4 Performance	-	512GB / 1TB / 2TB	Opal 2.0

**Storage Controllers**

Storage Controller	Type	Interface	RAID	Cache
Onboard Intel® RSTe SATA RAID	Standard	SATA 6.0Gb/s	0/1/5	None
Integrated NVMe® controller	Standard	PCIe® NVMe®	-	None
NVMe® Basic	Optional	PCIe® NVMe®	0/1/10	None
NVMe® Premium	Optional	PCIe® NVMe®	0/1/10/5	None

Notes:

[1] The storage capacity supported is based on the test results with current Lenovo® storage offerings.

[2] M.2 2280 SSD for quad M.2 to PCIe® adapter is PCIe® 4.0 x4, and the 4x M.2 slots on quad M.2 to PCIe® adapter are PCIe® 3.0 x4. See M.2 Slots section for more information.

**Removable Storage****Card Reader**

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

**Multi-Media****Audio Chip**

High Definition (HD) Audio, Realtek® ALC897-Q codec

**Speakers**

Single speaker, 1.5W x1

**Power Supply****Power Supply**\*\*

Power	Type	Efficiency	Key Features
750W	Fixed	92%	Autosensing, 80 PLUS Platinum qualified
1000W	Fixed	92%	Autosensing, 80 PLUS Platinum qualified

## DESIGN

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

#### Form Factor

Tower (33L)

#### Dimensions (WxDxH)<sup>[2]</sup>

165 x 453.9 x 440 mm (6.5 x 17.9 x 17.3 inches, with feet)

#### Weight<sup>[3]</sup>

19 kg (41.9 lbs, maximum configuration)

#### Bays

Three internal disk bays plus one front access M.2 bay:

- Bay 1 supports one 3.5" HDD, standard
- Bay 2 supports one 3.5" HDD, standard
- Bay 3 supports one 3.5" HDD, optional
- Front access M.2 bay supports one M.2 SSD, optional

#### M.2 Slots

Up to 7x M.2 SSD:

- 2 via onboard slots, PCIe® 4.0 x4
- 4 via Quad M.2 to PCIe® Gen 4 (4x M.2 PCIe® 4.0 x4) adapter or Quad M.2 to PCIe® Gen 3 (4x M.2 PCIe® 3.0 x4) adapter
- 1 via front access M.2 bay, PCIe® 4.0 x4

#### Expansion Slots

Supports 6 PCIe® slots with 2x PCIe® 5.0 slots and 4x PCIe® 4.0 slots.

- Slot 1: PCIe® 5.0 x16, full height, full length, 75W, double-width, by CPU
- Slot 2: PCIe® 4.0 x4, full height, full length, 25W, by PCH
- Slot 3: PCIe® 5.0 x16, full height, full length, 75W, double-width, by CPU
- Slot 4: PCIe® 4.0 x4, full height, full length, 25W, by PCH
- Slot 5: PCIe® 4.0 x8, full height, full length, 25W, by CPU
- Slot 6: PCIe® 4.0 x4, full height, full length, 25W, by PCH

#### EOU

Tool-less design for side cover, memory, 3.5" HDD, PCIe® card assembly / removal

#### Notes:

[1] The actual data transfer rate of the following PCIe® interface also depends on the capabilities of the connected PCIe® device. The listed values represent theoretical maximums.

PCIe® 3.0 (x1 / x2 / x4 / x8 / x16): 1 GB/s ( 8 Gbps) / 2 GB/s (16 Gbps) / 4 GB/s (32 Gbps) / 8 GB/s (64 Gbps) / 16 GB/s (128 Gbps);

PCIe® 4.0 (x1 / x2 / x4 / x8 / x16): 2 GB/s (16 Gbps) / 4 GB/s (32 Gbps) / 8 GB/s (64 Gbps) / 16 GB/s (128 Gbps) / 32 GB/s (256 Gbps);

PCIe® 5.0 (x1 / x2 / x4 / x8 / x16): 4 GB/s (32 Gbps) / 8 GB/s (64 Gbps) / 16 GB/s (128 Gbps) / 32 GB/s (256 Gbps) / 64 GB/s (512 Gbps).

[2] The system dimensions may vary depending on configurations.

[3] 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.

## CONNECTIVITY

### Network

#### WLAN + Bluetooth<sup>[1]</sup>

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

#### 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, Realtek® RTL8168H, 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, Broadcom BCM5719, 4x RJ-45, PCIe® x4
- Gigabit Ethernet, Broadcom BCM5720, 2x RJ-45, PCIe® x1
- 10 Gigabit Ethernet, Intel® X550-T2, 2x RJ-45, PCIe® x4
- 10 Gigabit Ethernet, Intel® X710-DA2, 2x SFP+, PCIe® x8

Notes:

[1] Wi-Fi® operation (including Wi-Fi® 6, Wi-Fi® 6E, Wi-Fi® 7, etc.) is subject to the regulatory requirements of each country. Bluetooth® may operate at a lower version than hardware design depending on the factors such as operating system, driver, etc.

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

### Front Ports

1x headphone / microphone combo jack (3.5mm)

### Optional Front Ports

- 2x USB-C® (USB 10Gbps / USB 3.2 Gen 2), data transfer only
- 2x USB-A (USB 10Gbps / USB 3.2 Gen 2), one Always On

### Rear Ports

- 1x USB-C® (USB 20Gbps / USB 3.2 Gen 2x2), data transfer only
- 2x USB-A (Hi-Speed USB / USB 2.0)
- 3x USB-A (USB 10Gbps / USB 3.2 Gen 2)
- 1x Ethernet (GbE RJ-45)
- 1x line-in (3.5mm)
- 1x line-out (3.5mm)

### Optional Rear Ports

- 1x Thunderbolt™ 4 (via additional PCIe® adapter)
- 1x serial
- 2x PS/2

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.

## SECURITY & PRIVACY

### Security

#### Security Chip

Discrete TPM 2.0, TCG certified, FIPS 140-2 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

#### Chassis Intrusion Switch

Chassis intrusion switch

#### BIOS Security

- Administrator password
- Power-on password
- Self-healing BIOS
- UEFI Secure Boot

## MANAGEABILITY

## System Management

### System Management<sup>[1][2]</sup>

- (Optional) Aspeed AST2600 graphics / management processor, IPMI 2.0-compliant baseboard management controller (BMC)
- Intel® vPro® Enterprise with Intel® AMT 16

Notes:

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

[2] Intel® vPro® platform require an eligible Intel® processor, a supported operating system, Intel® LAN and/or WLAN silicon, firmware enhancements, and other hardware and software necessary to deliver the manageability use cases, security features, system performance, and stability that define the platform. See [Intel® vPro® Platform](#) for details.

## Diagnostic

### Diagnostic

- ThinkStation® Diagnostics
- Front diagnostic panel with QR code

## SERVICE

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

#### Base Warranty\*\*

- 1-year limited onsite service
- 2-year limited onsite service
- 3-year limited onsite service

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://support.lenovo.com/warrantylookup/warrantypolicy>.

## OPERATING REQUIREMENTS

### 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%

## ENVIRONMENTAL

### Sustainability

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

- 65% PCC ABS bezel
- 95% PCC ABS wired USB keyboard/mouse top/bottom cover
- 90% PIC recycled plastic EPE cushion
- 30% OBP used in bag
- FSC certified paper in packaging

Notes:

[1] PCC: Post Consumer Content, recycled materials from customers.

PIC: Post Industry Content, recycled materials from internal factories.  
EPE: Expanded Polyethylene.  
OBP: Ocean Bound Plastic, reducing plastic spill into the sea.  
FSC: Forest Stewardship Council.

## CERTIFICATIONS

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

#### Green Certifications

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

Notes:

[1] The items listed under the "Green Certifications" section may not only refer to certification but also registration or self-declaration. For ESG & regulatory compliance documents, please visit <https://compliance.lenovo.com>.

### ISV Certifications

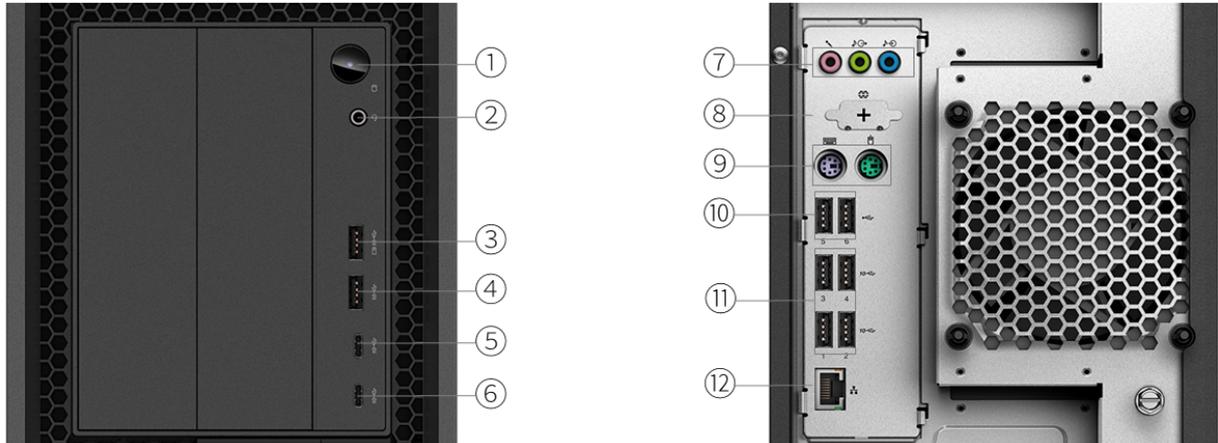
#### ISV Certifications

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

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- The specifications on this page may not be available in all regions, and may be changed or updated without notice.



**OVERVIEW**



1. Power button	7. 3x Audio ports (3.5mm)
2. Headphone / microphone combo jack (3.5mm)	8. Serial *
3. USB 3.2 Gen 2	9. 2x PS/2 ports (keyboard / mouse)
4. USB 3.2 Gen 2	10. 2x USB 2.0
5. USB-C 3.2 Gen 2	11. 4x USB 3.2 Gen 2
6. USB-C 3.2 Gen 2	12. Ethernet (10GbE RJ-45)

Notes:

- Items with \* are only available on selected models

## PERFORMANCE

### Processor

#### Processor Family

Up to one 280W AMD Ryzen™ Threadripper PRO 5000 or 3000 Series Processor

#### Processor\*\*

Processor Name	Cores	Threads	Base Frequency	Max Frequency	Cache	Memory Support
AMD Ryzen™ Threadripper PRO 3945WX	12	24	4.0GHz	4.3GHz	6MB L2 / 64MB L3	DDR4-3200
AMD Ryzen™ Threadripper PRO 3955WX	16	32	3.9GHz	4.3GHz	8MB L2 / 64MB L3	DDR4-3200
AMD Ryzen™ Threadripper PRO 3975WX	32	64	3.5GHz	4.2GHz	16MB L2 / 128MB L3	DDR4-3200
AMD Ryzen™ Threadripper PRO 3995WX	64	128	2.7GHz	4.2GHz	32MB L2 / 256MB L3	DDR4-3200
AMD Ryzen™ Threadripper PRO 5945WX	12	24	4.1GHz	4.5GHz	6MB L2 / 64MB L3	DDR4-3200
AMD Ryzen™ Threadripper PRO 5955WX	16	32	4.0GHz	4.5GHz	8MB L2 / 64MB L3	DDR4-3200
AMD Ryzen™ Threadripper PRO 5965WX	24	48	3.8GHz	4.5GHz	12MB L2 / 128MB L3	DDR4-3200
AMD Ryzen™ Threadripper PRO 5975WX	32	64	3.6GHz	4.5GHz	16MB L2 / 128MB L3	DDR4-3200
AMD Ryzen™ Threadripper PRO 5995WX	64	128	2.7GHz	4.5GHz	32MB L2 / 256MB L3	DDR4-3200

#### Processor Sockets

1x sWRX8

### AI (Artificial Intelligence)

#### AI PC Category<sup>[1]</sup>

AI-Ready Workstations

Notes:

[1] With scalable configurations of higher-performance CPUs and professional NVIDIA® RTX GPUs, in addition to advantage of the same modern AI PC technology, AI-Ready workstation power the demanding AI consumption & development workflows.

### Operating System

#### Operating System\*\*

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

### Graphics

#### Discrete Graphics Support

Supports up to two NVIDIA® RTX 5000 Ada Generation or one AMD Radeon™ PRO W7900

#### Discrete Graphics Offering\*\*\*

Graphics	Memory	Power	Connector	Form Factor	SLI / NVLink

Quadro® RTX 8000	48GB GDDR6	295W	4x DP 1.4, 1x VirtualLink	Dual slot	NVLink
Quadro® RTX 6000	24GB GDDR6	295W	4x DP 1.4, 1x VirtualLink	Dual slot	NVLink
Quadro® RTX 5000	16GB GDDR6	265W	4x DP 1.4, 1x VirtualLink	Dual slot	NVLink
Quadro® RTX 4000	8GB GDDR6	160W	3x DP 1.4, 1x VirtualLink	Single slot	None
Quadro® P620	2GB GDDR5	40W	4x miniDP 1.4	Single slot	None
Quadro® P2200	5GB GDDR5	75W	4x DP 1.4	Single slot	None
Quadro® P1000	4GB GDDR5	50W	4x miniDP 1.4	Single slot	None
Quadro® GV100	32GB HBM2	250W	4x DP 1.4	Dual slot	NVLink
NVIDIA® T600	4GB GDDR6	40W	4x miniDP 1.4	Single slot	None
NVIDIA® RTX A5500	24GB GDDR6 with ECC	230W	4x DP 1.4a	Dual slot	NVLink
NVIDIA® RTX A5000	24GB GDDR6 with ECC	230W	4x DP 1.4a	Dual slot	NVLink
NVIDIA® RTX A4500	20GB GDDR6 with ECC	200W	4x DP 1.4	Dual slot	NVLink
NVIDIA® RTX A4000	16GB GDDR6 with ECC	140W	4x DP 1.4a	Single slot	None
NVIDIA® RTX A2000 12GB	12GB GDDR6	70W	4x miniDP 1.4a	Dual slot	None
NVIDIA® RTX 5000 Ada Generation	32GB GDDR6 with ECC	250W	4x DP 1.4a	Dual slot	-
NVIDIA® RTX 4000 Ada Generation	20GB GDDR6 with ECC	130W	4x DP 1.4a	Single slot	-
NVIDIA® RTX 2000 Ada Generation	16GB GDDR6 with ECC	70W	4x miniDP 1.4a	Dual slot	None
NVIDIA® T1000 8GB	8GB GDDR6	50W	4x miniDP 1.4	Single slot	None
NVIDIA® T1000	4GB GDDR6	50W	4x miniDP 1.4	Single slot	None
NVIDIA® T400 4GB	4GB GDDR6	40W	3x miniDP 1.4	Single slot	None
AMD Radeon™ Pro WX 3200	4GB GDDR5	50W	4x miniDP 1.4	Single slot	-
AMD Radeon™ Pro W5700	8GB GDDR6	205W	5x miniDP 1.4, 1x USB-C®	Dual slot	-
AMD Radeon™ Pro W5500	8GB GDDR6	125W	4x DP 1.4	Single slot	-
AMD Radeon™ Pro VII	16GB HBM2	250W	6x DP 1.4	Dual slot	-
AMD Radeon™ PRO W7900	48GB GDDR6 with ECC	295W	3x DP 2.1, 1x miniDP 2.1	Triple slot	-
AMD Radeon™ PRO W7600	8GB GDDR6	130W	4x DP 2.1	Single slot	-
AMD Radeon™ PRO W6800	32GB GDDR6 with ECC	250W	6x miniDP 1.4a	Dual slot	-
AMD Radeon™ PRO W6600	8GB GDDR6	130W	4x DP 1.4	Single slot	-
AMD Radeon™ PRO W6400	4GB GDDR6	50W	2x DP 1.4	Single slot	-

## 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

AMD WRX80 chipset

## Memory

### Max Memory<sup>[1]</sup>

Up to 1TB (8x 128GB RDIMM)

### Memory Type

DDR4-3200 RDIMM ECC, maximum transfer speeds of up to 3200 MT/s

### Memory Slots

8 DDR4 DIMM slots, 8 channels capable

### Memory Protection

ECC

## Notes:

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

## Storage

### Max Storage Support<sup>[1]</sup>

Up to 5x 3.5" SATA HDD + 11x M.2 SSD

- 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<sup>\*\*\*[2]</sup>

Disk Type	Interface	RPM	Offering
3.5" SATA HDD	SATA 6Gb/s	7.2K	1TB / 2TB / 4TB
M.2 PCIe® SSD	PCIe® NVMe®, PCIe® 3.0	-	256GB / 512GB / 1TB / 2TB
M.2 PCIe® SSD	PCIe® NVMe®, PCIe® 4.0	-	256GB / 512GB / 1TB / 2TB / 4TB

### Storage Controllers

Storage Controller	Type	Interface	RAID	Cache
Integrated NVMe® controller	Standard	PCIe® NVMe®	0/1/10/5	None
Integrated SATA controller	Standard	SATA 6.0Gb/s	0/1/10/5	None

## Notes:

[1] The storage capacity supported is based on the test results with current Lenovo® storage offerings.

[2] 4TB M.2 SSD is for onboard M.2 slots only.

## Removable Storage

### Optical Support

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

### Card Reader

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

## Multi-Media

### Audio Chip

High Definition (HD) Audio, Realtek® ALC4050H codec

### Speakers

Single speaker

## Power Supply

### Power Supply

Power	Type	Efficiency	Key Features
1000W	Fixed	92%	Autosensing, 80 PLUS Platinum qualified

## DESIGN

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

#### Form Factor

Tower (33L)

#### Dimensions (WxDxH)<sup>[2]</sup>

165 x 455x 446 mm (6.5 x 17.9 x 17.6 inches)

#### Weight<sup>[3]</sup>

24 kg (52.91 lbs, maximum configuration)

## Bays

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

## Flex Bays

1x flex bay, supports one of the following:

- Front Access Storage Enclosure
- 5.25" Slim ODD and HDD cage

## M.2 Slots

Up to 11x M.2 SSD:

- 2 via onboard slots
- 8 via Quad M.2 to PCIe® Gen 4 (PCIe® 4.0 x4) adapter or Quad M.2 to PCIe® Gen 3 (PCIe® 3.0 x4) adapter
- 1 via Single M.2 to PCIe® adapter (only supports PCIe® 3.0 SSD)

## Expansion Slots

Supports 6 PCIe® slots with 4x PCIe® 4.0 x16 slots plus 2x PCIe® 4.0 x8 slots.

- Slot 1: PCIe® 4.0 x16, full height, full length, 75W, double-width, by CPU
- Slot 2: PCIe® 4.0 x8, full height, full length, 25W, by CPU
- Slot 3: PCIe® 4.0 x16, full height, full length, 75W, double-width, by CPU
- Slot 4: PCIe® 4.0 x16, full height, full length, 75W, by CPU
- Slot 5: PCIe® 4.0 x16, full height, full length, 75W, by CPU
- Slot 6: PCIe® 4.0 x8, full height, full length, 25W, by IOH

## EOU

Tool-less design for side cover, memory, 3.5" HDD, optical, PCIe® card assembly / removal

## Notes:

[1] The actual data transfer rate of the following PCIe® interface also depends on the capabilities of the connected PCIe® device. The listed values represent theoretical maximums.

PCIe® 3.0 (x1 / x2 / x4 / x8 / x16): 1 GB/s ( 8 Gbps) / 2 GB/s (16 Gbps) / 4 GB/s (32 Gbps) / 8 GB/s (64 Gbps) / 16 GB/s (128 Gbps);

PCIe® 4.0 (x1 / x2 / x4 / x8 / x16): 2 GB/s (16 Gbps) / 4 GB/s (32 Gbps) / 8 GB/s (64 Gbps) / 16 GB/s (128 Gbps) / 32 GB/s (256 Gbps);

PCIe® 5.0 (x1 / x2 / x4 / x8 / x16): 4 GB/s (32 Gbps) / 8 GB/s (64 Gbps) / 16 GB/s (128 Gbps) / 32 GB/s (256 Gbps) / 64 GB/s (512 Gbps).

[2] The system dimensions may vary depending on configurations.

[3] 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.

# CONNECTIVITY

## Network

### WLAN + Bluetooth®\*\*[1]

- Intel® Wireless-AC 9260, Wi-Fi® 5, 802.11ac Dual Band 2x2 Wi-Fi® + Bluetooth® 5.1
- Intel® Wi-Fi® 6E AX210, 802.11ax 2x2 Wi-Fi® + Bluetooth® 5.3
- No WLAN and Bluetooth®

### Onboard Ethernet

10 GbE Ethernet, Marvell AQtion AQN-107, 1x 10GbE RJ-45

### Optional Ethernet

One additional Ethernet adapter support, up to two additional 10 GbE ports

- Gigabit Ethernet, Intel® I350-T4, 4x RJ-45, PCIe® x4
- Gigabit Ethernet, Broadcom BCM5719, 4x RJ-45, PCIe® x4
- Gigabit Ethernet, Broadcom BCM5720, 2x RJ-45, PCIe® x1
- 10 Gigabit Ethernet, Intel® X550-T2, 2x RJ-45, PCIe® x4
- 10 Gigabit Ethernet, Intel® X710-T2L, 2x RJ-45, PCIe® x8
- 10 Gigabit Ethernet, Intel® X710-DA2, 2x SFP+, PCIe® x8
- 10 Gigabit Ethernet, Marvell AQtion AQN-107, 1x RJ-45, PCIe® x4

**Notes:**

[1] Wi-Fi® operation (including Wi-Fi® 6, Wi-Fi® 6E, Wi-Fi® 7, etc.) is subject to the regulatory requirements of each country. Bluetooth® may operate at a lower version than hardware design depending on the factors such as operating system, driver, etc.

**Ports<sup>[1]</sup>****Front Ports**

- 2x USB-C® 3.2 Gen 2 (support data transfer)
- 1x USB 3.2 Gen 2 (Always On and fast charge)
- 1x USB 3.2 Gen 2
- 1x headphone / microphone combo jack (3.5mm)

**Optional Front Ports**

1x USB-C® 3.2 Gen 1 (support data transfer, with flex module)

**Rear Ports**

- 2x USB 2.0
- 4x USB 3.2 Gen 2
- 1x Ethernet (10GbE RJ-45)
- 1x line-in (3.5mm)
- 1x line-out (3.5mm)
- 1x microphone (3.5mm)
- 2x PS/2 ports (keyboard / mouse)

**Optional Rear Ports\*\*\***

- 1x Thunderbolt™ 3
- 2x USB-C® 3.2 Gen 2 (support data transfer, via 2-port USB-C® expansion card, PCIe® x4)
- 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;

USB4® 20Gbps / USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;

USB4® 40Gbps (USB 40Gbps): 40 Gbit/s;

Thunderbolt™ 3/4: 40 Gbit/s.

Thunderbolt™ 5: 80 Gbit/s (bidirectional), up to 120 Gbit/s in bandwidth boost mode for video-intensive applications.

## SECURITY & PRIVACY

### Security

**Security Chip**

Discrete TPM 2.0, TCG certified, FIPS 140-2 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

**Chassis Intrusion Switch**

Chassis intrusion switch

**BIOS Security**

- Administrator password
- Power-on password

## MANAGEABILITY

### System Management

**System Management**

AMD PRO Manageability

## Diagnostic

### Diagnostic

- ThinkStation® Diagnostics
- Photo-audio transfer with Lenovo® PC Diagnostics for Android™ and iOS
- Front 4-digit diagnostic
- Lenovo® UEFI Bootable Diagnostics

## SERVICE

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

#### Base Warranty

3-year limited onsite service

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://support.lenovo.com/warrantylookup/warrantypolicy>.

## OPERATING REQUIREMENTS

### 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
- ENERGY STAR® 8.0 (on model 30E00006US)
- EPEAT™ Silver Registered
- GREENGUARD®
- RoHS compliant

Notes:

[1] The items listed under the "Green Certifications" section may not only refer to certification but also registration or self-declaration. For ESG & regulatory compliance documents, please visit <https://compliance.lenovo.com>.

### ISV Certifications

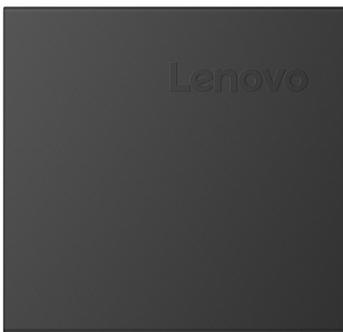
#### ISV Certifications

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

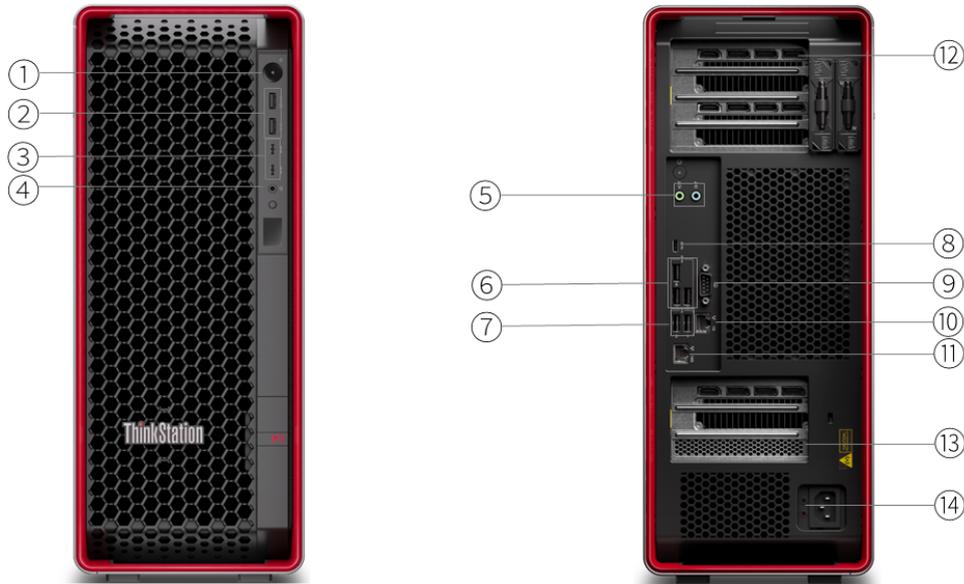
- Feature with \*\* means that only one option listed under the feature can be configured on selected models. Please refer to the model configuration for specific information.
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## OVERVIEW



1. Power button	8. USB-C (USB 20Gbps / USB 3.2 Gen 2x2)
2. 2x USB-A (USB 10Gbps) *	9. Serial (9-pin) *
3. 2x USB-C (USB 10Gbps), data transfer only *	10. Ethernet (GbE RJ-45)
4. Headphone jack (3.5mm)	11. Ethernet (10GbE RJ-45)
5. 2x Audio ports (line-out and line-in)	12. Upper PCIe slots
6. 3x USB-A (USB 10Gbps)	13. Lower PCIe slots
7. 2x USB-A (Hi-Speed USB)	14. Power supply

Notes:

- Items with \* are only available on selected models
- Expansion cards are optional. More ports are available through the optional expansion cards

## PERFORMANCE

### Processor

#### Processor Family

Up to one 350W Intel® Xeon® W-3400 Series processor, supports up to 56 cores, up to 4.8GHz

#### Processor\*\*<sup>[1]</sup>

Processor Name	Cores	Threads	Base Frequency	Max Frequency	Cache	Memory Support
Xeon w5-3525	16	32	3.2GHz	4.8GHz	45MB	DDR5-4800
Xeon w5-3535X	20	40	2.9GHz	4.8GHz	52.5MB	DDR5-4800
Xeon w7-3545	24	48	2.7GHz	4.8GHz	67.5MB	DDR5-4800
Xeon w7-3555	28	56	2.7GHz	4.8GHz	75MB	DDR5-4800
Xeon w7-3565X	32	64	2.5GHz	4.8GHz	82.5MB	DDR5-4800
Xeon w9-3575X	44	88	2.2GHz	4.8GHz	97.5MB	DDR5-4800
Xeon w9-3595X	60	120	2.0GHz	4.8GHz	112.5MB	DDR5-4800
Xeon w5-3423	12	24	2.1GHz	4.2GHz	30MB	DDR5-4400
Xeon w5-3425	12	24	3.2GHz	4.6GHz	30MB	DDR5-4800
Xeon w5-3433	16	32	2.0GHz	4.2GHz	45MB	DDR5-4400
Xeon w5-3435X	16	32	3.1GHz	4.7GHz	45MB	DDR5-4800
Xeon w7-3445	20	40	2.6GHz	4.8GHz	52.5MB	DDR5-4800
Xeon w7-3455	24	48	2.5GHz	4.8GHz	67.5MB	DDR5-4800
Xeon w7-3465X	28	56	2.5GHz	4.8GHz	75MB	DDR5-4800
Xeon w9-3475X	36	72	2.2GHz	4.8GHz	82.5MB	DDR5-4800
Xeon w9-3495X	56	112	1.9GHz	4.8GHz	105MB	DDR5-4800

#### Processor Sockets

1x FCLGA4677

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.

### AI (Artificial Intelligence)

#### AI PC Category<sup>[1]</sup>

AI-Ready Workstations

Notes:

[1] With scalable configurations of higher-performance CPUs and professional NVIDIA® RTX GPUs, in addition to advantage of the same modern AI PC technology, AI-Ready workstation power the demanding AI consumption & development workflows.

### Operating System

#### Operating System\*\*

- Windows® 11 Pro for Workstations
- Windows® 11 DG Windows® 10 Pro 64 for Workstations
- Red Hat Enterprise Linux 9.2 (certified only, for detailed and latest information, please visit [Red Hat Certified Hardware](#))
- No preload operating system

### Graphics

#### Discrete Graphics Support<sup>[1]</sup>

- Supports up to three NVIDIA® RTX 6000 Ada Generation

- Supports up to three NVIDIA® RTX PRO 6000 Blackwell Max-Q Workstation Edition (300W); or up to one NVIDIA® RTX PRO 6000 Blackwell Workstation Edition (600W)

### Discrete Graphics Offering

Graphics	Memory	Power	Connector	Form Factor	SLI / NVLink
NVIDIA® RTX PRO 6000 Blackwell Workstation Edition	96GB GDDR7 with ECC	600W	4x DP 2.1	Dual slot	-
NVIDIA® RTX PRO 6000 Blackwell Max-Q Workstation Edition	96GB GDDR7 with ECC	300W	4x DP 2.1	Dual slot	-
NVIDIA® RTX PRO 5000 Blackwell	48GB GDDR7 with ECC	300W	4x DP 2.1	Dual slot	-
NVIDIA® RTX PRO 4500 Blackwell	32GB GDDR7 with ECC	200W	4x DP 2.1	Dual slot	-
NVIDIA® RTX PRO 4000 Blackwell	24GB GDDR7 with ECC	140W	4x DP 2.1	Single slot	-
NVIDIA® RTX PRO 2000 Blackwell	16GB GDDR7 with ECC	70W	4x miniDP 2.1	Dual slot	-
NVIDIA® RTX A6000 <sup>[2]</sup>	48GB GDDR6 with ECC	300W	4x DP 1.4a	Dual slot	NVLink
NVIDIA® RTX A5500	24GB GDDR6 with ECC	230W	4x DP 1.4a	Dual slot	NVLink
NVIDIA® RTX A5000	24GB GDDR6 with ECC	230W	4x DP 1.4a	Dual slot	None
NVIDIA® RTX A4500	20GB GDDR6 with ECC	200W	4x DP 1.4	Dual slot	NVLink
NVIDIA® RTX A4000	16GB GDDR6 with ECC	140W	4x DP 1.4a	Single slot	None
NVIDIA® RTX A400	4GB GDDR6	50W	4x miniDP 1.4a	Single slot	None
NVIDIA® RTX A2000 12GB	12GB GDDR6	70W	4x miniDP 1.4a	Dual slot	None
NVIDIA® RTX A1000	8GB GDDR6	50W	4x miniDP 1.4a	Single slot	None
NVIDIA® RTX 6000 Ada Generation <sup>[3]</sup>	48GB GDDR6 with ECC	300W	4x DP 1.4a	Dual slot	-
NVIDIA® RTX 5000 Ada Generation	32GB GDDR6 with ECC	250W	4x DP 1.4a	Dual slot	-
NVIDIA® RTX 4500 Ada Generation	24GB GDDR6 with ECC	210W	4x DP 1.4a	Dual slot	-
NVIDIA® RTX 4000 Ada Generation	20GB GDDR6 with ECC	130W	4x DP 1.4a	Single slot	-
NVIDIA® RTX 2000 Ada Generation	16GB GDDR6 with ECC	70W	4x miniDP 1.4a	Dual slot	None
NVIDIA® T1000 8GB	8GB GDDR6	50W	4x miniDP 1.4	Single slot	None
NVIDIA® T400 4GB	4GB GDDR6	40W	3x miniDP 1.4	Single slot	None

#### Notes:

[1] Blackwell GPUs are already supported, and the exact orderability timeframe is under confirmation and may be slightly later.

[2], [3] Available in specific countries and regions.

## 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® W790 chipset

## Memory

### Max Memory<sup>[1]</sup>

Up to 1TB (8x 128GB RDIMM)

### Memory Type\*\*<sup>[2]</sup>

- DDR5-4800 3DS-RDIMM ECC; 128GB DIMM is available; maximum transfer speeds of up to 4800 MT/s
- DDR5-4800 RDIMM ECC; 16GB / 32GB / 64GB DIMMs are available; maximum transfer speeds of up to 4800 MT/s

### Memory Slots

8 DDR5 DIMM slots, 8 channels capable

### Memory Protection

ECC

Notes:

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

[2] System comes with DDR5-4800 memory and some configurations will run at 4400 MT/s due to the memory support capability of processor.

## Storage

### Max Storage Support<sup>[1]</sup>

Up to eleven drives (3x 3.5" SATA HDD + 8x M.2 SSD) or 9 drives (9x M.2 SSD)

- 3.5" HDD up to 12TB each
- M.2 SSD up to 4TB or 2TB each (see Storage Type)

### Storage Type

Disk Type	Interface	RPM	Offering	Security
3.5" SATA HDD	SATA 6Gb/s	7.2K	2TB / 4TB / 6TB / 8TB / 10TB / 12TB	-
M.2 2280 SSD for Onboard / HDD Bay / Front access M.2	PCIe® NVMe®, PCIe® 4.0 x4 Performance	-	512GB / 1TB / 2TB / 4TB	Opal 2.0
M.2 2280 SSD for quad M.2 to PCIe® adapter	PCIe® NVMe®, PCIe® 4.0 x4 Performance	-	512GB / 1TB / 2TB / 4TB	Opal 2.0

### Storage Controllers

Storage Controller	Type	Interface	RAID	Cache
RAID 940-8i RAID Controller	Optional	SAS 12.0Gb/s, SATA 6.0Gb/s	0/1/5	4GB DDR4, SuperCap
Onboard Intel® RSTe SATA RAID	Standard	SATA 6.0Gb/s	0/1/5	None
Integrated NVMe® controller	Standard	PCIe® NVMe®	-	None
NVMe® Basic	Optional	PCIe® NVMe®	0/1/10	None
NVMe® Premium	Optional	PCIe® NVMe®	0/1/10/5	None

Notes:

[1] The storage capacity supported is based on the test results with current Lenovo® storage offerings.

## Removable Storage

### Card Reader

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

## Multi-Media

**Audio Chip**

High Definition (HD) Audio, Realtek® ALC897-Q codec

**Speakers**

Single speaker, 1.5W x1

**Power Supply****Power Supply\*\***

Power	Type	Efficiency	Key Features
1000W	Fixed	92%	Autosensing, 80 PLUS Platinum qualified
1400W <sup>[1]</sup>	Fixed	92%	Autosensing, 80 PLUS Platinum qualified

Notes:

[1] Countries with input voltage is 100 - 111.9V, output power is limited to 1125W; input voltage is 120V, output power is limited to 1250W.

**DESIGN****Mechanical<sup>[1]</sup>****Form Factor**

Tower (39L) or 4U rack, optional rack rail kit needed

**Dimensions (WxDxH)<sup>[2]</sup>**

175 x 508 x 434.4 mm (6.9 x 20 x 17.1 inches, with feet)

**Weight<sup>[3]</sup>**

24.5 kg (50.0 lbs, maximum configuration)

**Bays<sup>[4]</sup>**

Three internal disk bays plus one front access M.2 bay:

- Bay 1 supports one 3.5" HDD, standard, optional support for M.2 SSD
- Bay 2 supports one 3.5" HDD, standard, optional support for M.2 SSD
- Bay 3 supports one 3.5" HDD, optional
- Front access M.2 bay supports one M.2 SSD, optional

**M.2 Slots**

Up to 9x M.2 SSD:

- 3 via onboard slots, 3rd M.2 slot is vertical and optional holder is needed
- 4 via Quad M.2 to PCIe® Gen 4 (4x M.2 PCIe® 4.0 x4) adapter or Quad M.2 to PCIe® Gen 3 (4x M.2 PCIe® 3.0 x4) adapter
- 2 via HDD bay or 1 via front access M.2 bay (choose one)<sup>[5]</sup>

**Expansion Slots**

Supports 7 PCIe® slots with 4x PCIe® 5.0 slots and 3x PCIe® 4.0 slots.

- Slot 1: PCIe® 5.0 x16, full height, full length, 75W, double-width
- Slot 2: PCIe® 4.0 x8, full height, full length, 25W
- Slot 3: PCIe® 5.0 x16, full height, full length, 75W, double-width
- Slot 4: PCIe® 4.0 x4, full height, full length, 25W
- Slot 5: PCIe® 5.0 x16, full height, full length, 75W, double-width
- Slot 6: PCIe® 4.0 x16, full height, full length, 75W
- Slot 7: PCIe® 5.0 x4, full height, full length, 25W

**EOU**

Tool-less design for side cover, memory, 3.5" HDD, PCIe® card assembly / removal

Notes:

[1] The actual data transfer rate of the following PCIe® interface also depends on the capabilities of the connected PCIe® device. The listed values represent theoretical maximums.

PCIe® 3.0 (x1 / x2 / x4 / x8 / x16): 1 GB/s ( 8 Gbps) / 2 GB/s (16 Gbps) / 4 GB/s (32 Gbps) / 8 GB/s (64 Gbps) / 16 GB/s (128 Gbps);

PCIe® 4.0 (x1 / x2 / x4 / x8 / x16): 2 GB/s (16 Gbps) / 4 GB/s (32 Gbps) / 8 GB/s (64 Gbps) / 16 GB/s (128 Gbps) / 32 GB/s (256 Gbps);

PCIe® 5.0 (x1 / x2 / x4 / x8 / x16): 4 GB/s (32 Gbps) / 8 GB/s (64 Gbps) / 16 GB/s (128 Gbps) / 32 GB/s (256 Gbps) / 64

GB/s (512 Gbps).

[2] The system dimensions may vary depending on configurations.

[3] 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.

[4] Only one of the following can be selected per system:

- 2x 3.5" disk bay for M.2 SSD
- 1x front access M.2 bay for M.2 SSD.

[5] M.2 slots on Quad M.2 to PCIe® Gen 5 adapter are PCIe® 5.0 compatible, and currently Lenovo® provides M.2 PCIe® 4.0 SSD.

## CONNECTIVITY

### Network

#### WLAN + Bluetooth<sup>[1]</sup>

- Intel® Wi-Fi® 6E AX210, 802.11ax 2x2 Wi-Fi® + Bluetooth® 5.3, Intel® vPro® technology support
- No WLAN and Bluetooth®

#### Onboard Ethernet

Two Ethernet, GbE + 10GbE, Intel® Ethernet Connection I219-LM and Marvell AQtion AQC-113C, 2x RJ-45, supports Wake-on-LAN

#### Optional Ethernet

Two additional Ethernet adapters support, up to eight additional GbE ports

- Gigabit Ethernet, Intel® I210-T1, 1x RJ-45, PCIe® x1
- Gigabit Ethernet, Realtek® RTL8168H, 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, Broadcom BCM5719, 4x RJ-45, PCIe® x4
- Gigabit Ethernet, Broadcom BCM5720, 2x RJ-45, PCIe® x1

Notes:

[1] Wi-Fi® operation (including Wi-Fi® 6, Wi-Fi® 6E, Wi-Fi® 7, etc.) is subject to the regulatory requirements of each country. Bluetooth® may operate at a lower version than hardware design depending on the factors such as operating system, driver, etc.

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

#### Front Ports

1x headphone / microphone combo jack (3.5mm)

#### Optional Front Ports

- 2x USB-C® (USB 10Gbps / USB 3.2 Gen 2), data transfer only
- 2x USB-A (USB 10Gbps / USB 3.2 Gen 2), one Always On

#### Rear Ports

- 1x USB-C® (USB 20Gbps / USB 3.2 Gen 2x2), data transfer only
- 2x USB-A (Hi-Speed USB / USB 2.0)
- 3x USB-A (USB 10Gbps / USB 3.2 Gen 2)
- 1x Ethernet (10GbE RJ-45)
- 1x Ethernet (GbE RJ-45)
- 1x line-in (3.5mm)
- 1x line-out (3.5mm)

#### Optional Rear Ports

- 1x Thunderbolt™ 4, via additional PCIe® adapter
- 1x serial
- 2x PS/2

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.

## SECURITY & PRIVACY

### Security

#### Security Chip

Discrete TPM 2.0, TCG certified, FIPS 140-2 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

#### Chassis Intrusion Switch

Chassis intrusion switch

#### BIOS Security

- Administrator password
- Power-on password
- Self-healing BIOS
- UEFI Secure Boot

## MANAGEABILITY

### System Management

#### System Management<sup>[1][2]</sup>

- (Optional) Aspeed AST2600 graphics / management processor, IPMI 2.0-compliant baseboard management controller (BMC)
- Intel® vPro® Enterprise with Intel® AMT 16

Notes:

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

[2] Intel® vPro® platform require an eligible Intel® processor, a supported operating system, Intel® LAN and/or WLAN silicon, firmware enhancements, and other hardware and software necessary to deliver the manageability use cases, security features, system performance, and stability that define the platform. See [Intel® vPro® Platform](#) for details.

### Diagnostic

#### Diagnostic

- ThinkStation® Diagnostics
- Front diagnostic panel with QR code

## 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

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://support.lenovo.com/warrantylookup/warrantypolicy>.

## OPERATING REQUIREMENTS

### 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%

## ENVIRONMENTAL

### Sustainability

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

- 65% PCC ABS bezel
- 95% PCC ABS wired USB keyboard/mouse top/bottom cover
- 90% PIC recycled plastic EPE cushion
- 30% OBP used in bag
- FSC certified paper in packaging

#### Notes:

[1] PCC: Post Consumer Content, recycled materials from customers.  
PIC: Post Industry Content, recycled materials from internal factories.  
EPE: Expanded Polyethylene.  
OBP: Ocean Bound Plastic, reducing plastic spill into the sea.  
FSC: Forest Stewardship Council.

## CERTIFICATIONS

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

#### Green Certifications

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

#### Notes:

[1] The items listed under the "Green Certifications" section may not only refer to certification but also registration or self-declaration. For ESG & regulatory compliance documents, please visit <https://compliance.lenovo.com>.

### ISV Certifications

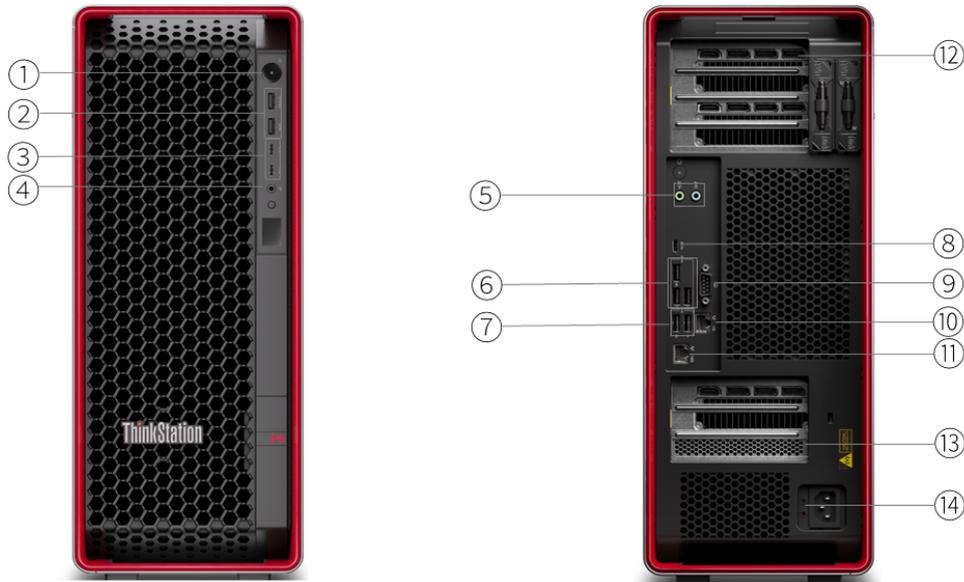
#### ISV Certifications

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

- Feature with \*\* means that only one option listed under the feature can be configured on selected models. Please refer to the model configuration for specific information.
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- The specifications on this page may not be available in all regions, and may be changed or updated without notice.



## OVERVIEW



1. Power button	8. USB-C (USB 20Gbps / USB 3.2 Gen 2x2)
2. 2x USB-A (USB 10Gbps) *	9. Serial (9-pin) *
3. 2x USB-C (USB 10Gbps), data transfer only *	10. Ethernet (GbE RJ-45)
4. Headphone jack (3.5mm)	11. Ethernet (10GbE RJ-45)
5. 2x Audio ports (line-out and line-in)	12. Upper PCIe slots (slots 1-4)
6. 3x USB-A (USB 10Gbps)	13. Lower PCIe slots (slots 5-7)
7. 2x USB-A (Hi-Speed USB)	14. Power supply

Notes:

- Items with \* are only available on selected models
- Expansion cards are optional. More ports are available through the optional expansion cards

## PERFORMANCE

### Processor

#### Processor Family

Up to one AMD Ryzen™ Threadripper PRO 9000 or 7000 WX Series processor, supports up to 96 cores; up to 5.4GHz; up to 350W TDP

#### Processor\*\*

Processor Name	Cores	Threads	Base Frequency	Max Frequency	Cache	Memory Support
AMD Ryzen™ Threadripper PRO 7945WX	12	24	4.7GHz	5.3GHz	12MB L2 / 64MB L3	DDR5-5200
AMD Ryzen™ Threadripper PRO 7955WX	16	32	4.5GHz	5.3GHz	16MB L2 / 64MB L3	DDR5-5200
AMD Ryzen™ Threadripper PRO 7965WX	24	48	4.2GHz	5.3GHz	24MB L2 / 128MB L3	DDR5-5200
AMD Ryzen™ Threadripper PRO 7975WX	32	64	4.0GHz	5.3GHz	32MB L2 / 128MB L3	DDR5-5200
AMD Ryzen™ Threadripper PRO 7985WX	64	128	3.2GHz	5.1GHz	64MB L2 / 256MB L3	DDR5-5200
AMD Ryzen™ Threadripper PRO 7995WX	96	192	2.5GHz	5.1GHz	96MB L2 / 384MB L3	DDR5-5200
AMD Ryzen™ Threadripper PRO 9945WX	12	24	4.7GHz	5.4GHz	12MB L2 / 64MB L3	DDR5-6400
AMD Ryzen™ Threadripper PRO 9955WX	16	32	4.5GHz	5.4GHz	16MB L2 / 64MB L3	DDR5-6400
AMD Ryzen™ Threadripper PRO 9965WX	24	48	4.2GHz	5.4GHz	24MB L2 / 128MB L3	DDR5-6400
AMD Ryzen™ Threadripper PRO 9975WX	32	64	4.0GHz	5.4GHz	32MB L2 / 128MB L3	DDR5-6400
AMD Ryzen™ Threadripper PRO 9985WX	64	128	3.2GHz	5.4GHz	64MB L2 / 256MB L3	DDR5-6400
AMD Ryzen™ Threadripper PRO 9995WX	96	192	2.5GHz	5.4GHz	96MB L2 / 384MB L3	DDR5-6400

#### Processor Sockets

1x sTR5

### AI (Artificial Intelligence)

#### AI PC Category<sup>[1]</sup>

AI-Ready Workstations

Notes:

[1] With scalable configurations of higher-performance CPUs and professional NVIDIA® RTX GPUs, in addition to advantage of the same modern AI PC technology, AI-Ready workstation power the demanding AI consumption & development workflows.

### Operating System

#### Operating System\*\*

- Windows® 11 Pro
- Windows® 11 DG Windows® 10 Pro 64
- Ubuntu Linux LTS
- No preload operating system

### Graphics

#### Discrete Graphics Support<sup>[1]</sup>

- Supports up to three NVIDIA® RTX 6000 Ada Generation
- Supports up to three NVIDIA® RTX PRO 6000 Blackwell Max-Q Workstation Edition (300W); or up to one NVIDIA® RTX PRO 6000 Blackwell Workstation Edition (600W)

**Discrete Graphics Offering\*\*\***

Graphics	Memory	Power	Connector	Form Factor	SLI / NVLink
NVIDIA® RTX PRO 6000 Blackwell Workstation Edition	96GB GDDR7 with ECC	600W	4x DP 2.1	Dual slot	-
NVIDIA® RTX PRO 6000 Blackwell Max-Q Workstation Edition	96GB GDDR7 with ECC	300W	4x DP 2.1	Dual slot	-
NVIDIA® RTX PRO 5000 Blackwell	48GB GDDR7 with ECC	300W	4x DP 2.1	Dual slot	-
NVIDIA® RTX PRO 4500 Blackwell	32GB GDDR7 with ECC	200W	4x DP 2.1	Dual slot	-
NVIDIA® RTX PRO 4000 Blackwell	24GB GDDR7 with ECC	140W	4x DP 2.1	Single slot	-
NVIDIA® RTX PRO 2000 Blackwell	16GB GDDR7 with ECC	70W	4x miniDP 2.1	Dual slot	-
NVIDIA® RTX A6000 <sup>[2]</sup>	48GB GDDR6 with ECC	300W	4x DP 1.4a	Dual slot	NVLink
NVIDIA® RTX A4000	16GB GDDR6 with ECC	140W	4x DP 1.4a	Single slot	None
NVIDIA® RTX A400	4GB GDDR6	50W	4x miniDP 1.4a	Single slot	None
NVIDIA® RTX A2000 12GB	12GB GDDR6	70W	4x miniDP 1.4a	Dual slot	None
NVIDIA® RTX A1000	8GB GDDR6	50W	4x miniDP 1.4a	Single slot	None
NVIDIA® RTX 6000 Ada Generation <sup>[3]</sup>	48GB GDDR6 with ECC	300W	4x DP 1.4a	Dual slot	-
NVIDIA® RTX 5000 Ada Generation	32GB GDDR6 with ECC	250W	4x DP 1.4a	Dual slot	-
NVIDIA® RTX 4500 Ada Generation	24GB GDDR6 with ECC	210W	4x DP 1.4a	Dual slot	-
NVIDIA® RTX 4000 Ada Generation	20GB GDDR6 with ECC	130W	4x DP 1.4a	Single slot	-
NVIDIA® RTX 2000 Ada Generation	16GB GDDR6 with ECC	70W	4x miniDP 1.4a	Dual slot	None
NVIDIA® T1000 8GB	8GB GDDR6	50W	4x miniDP 1.4	Single slot	None
NVIDIA® T400 4GB	4GB GDDR6	40W	3x miniDP 1.4	Single slot	None
AMD Radeon™ PRO W7900	48GB GDDR6 with ECC	295W	3x DP 2.1, 1x miniDP 2.1	Triple slot	-
AMD Radeon™ PRO W7600	8GB GDDR6	130W	4x DP 2.1	Single slot	-
AMD Radeon™ PRO W6400	4GB GDDR6	50W	2x DP 1.4	Single slot	-

**Notes:**

[1] Blackwell GPUs are already supported, and the exact orderability timeframe is under confirmation and may be slightly later.

[2], [3] Available in specific countries and regions.

## 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**

AMD WRX90 chipset

**Memory****Max Memory<sup>[1]</sup>**

Up to 1TB (8x 128GB RDIMM)

**Memory Type<sup>\*\*</sup>**

- DDR5-4800 3DS-RDIMM ECC, maximum transfer speeds of up to 4800 MT/s
- DDR5-4800 RDIMM ECC, maximum transfer speeds of up to 4800 MT/s
- DDR5-6400 RDIMM ECC, maximum transfer speeds of up to 6400 MT/s

**Memory Slots**

8 DDR5 DIMM slots, 8 channels capable

**Memory Protection**

ECC

Notes:

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

**Storage****Max Storage Support<sup>[1]</sup>**

Up to 7 drives (HDD maximum, 3x 3.5" HDD + 4x M.2 SSD);  
or 8 drives (M.2 SSD maximum, 8x M.2 SSD);  
or 6 drives (U.3 SSD maximum, 2x U.3 SSD + 4x M.2 SSD)

- 3.5" HDD up to 12TB each
- M.2 SSD up to 4TB each
- U.3 SSD up to 15.36TB each

**Storage Type<sup>\*\*\*</sup>**

Disk Type	Interface	RPM	Offering	Security
3.5" SATA HDD	SATA 6Gb/s	7.2K	2TB / 6TB / 12TB	-
M.2 2280 SSD for Onboard / HDD Bay / Front access M.2	PCIe® NVMe®, PCIe® 4.0 x4 Performance	-	512GB / 1TB / 2TB / 4TB	Opal 2.0
U.3 2.5" 15mm SSD for HDD Bay	PCIe® NVMe®, PCIe® 4.0	-	15.36TB	Opal 2.0

**Storage Controllers**

Storage Controller	Type	Interface	RAID	Cache
Integrated SATA controller	Standard	SATA 6.0Gb/s	RAID 0/1/5	None
Integrated NVMe® controller	Standard	PCIe® NVMe®	RAID 0/1/5/10	None

Notes:

[1] The storage capacity supported is based on the test results with current Lenovo® storage offerings.

**Removable Storage****Card Reader**

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

**Multi-Media****Audio Chip**

High Definition (HD) Audio, Realtek® ALC897-Q codec

**Speakers**

Single speaker

**Power Supply**

**Power Supply\*\***

Power	Type	Efficiency	Key Features
1000W	Fixed	92%	Autosensing, 80 PLUS Platinum qualified
1400W	Fixed	92%	Autosensing, 80 PLUS Platinum qualified

**DESIGN****Mechanical<sup>[1]</sup>****Form Factor**

Tower (39L) or 4U rack, optional rack rail kit needed

**Dimensions (WxDxH)<sup>[2]</sup>**

175 x 508 x 434.4 mm (6.9 x 20 x 17.1 inches, with feet)

**Weight<sup>[3]</sup>**

22.7 kg (50.0 lbs, maximum configuration)

**Bays**

Three internal disk bays plus one front access M.2 bay:

- Bay 1 supports one 3.5" HDD, standard, optional support for two M.2 SSD or one U.3 SSD
- Bay 2 supports one 3.5" HDD, standard, optional support for two M.2 SSD or one U.3 SSD
- Bay 3 supports one 3.5" HDD, optional
- Front access M.2 bay supports one M.2 SSD, optional

**M.2 Slots**

Up to 8x M.2 SSD slots:

- 3 via onboard slots, PCIe® 4.0 x4
- 4 via HDD bay, PCIe® 4.0 x4
- 1 via front access M.2 bay, PCIe® 4.0 x4

**Expansion Slots**

Supports 7 PCIe® slots with 6x PCIe® 5.0 slots and 1x PCIe® 4.0 slot.

- Slot 1: PCIe® 5.0 x16, full height, full length, 75W, double-width
- Slot 2: PCIe® 5.0 x8, full height, full length, 25W
- Slot 3: PCIe® 5.0 x16, full height, full length, 75W, double-width
- Slot 4: PCIe® 5.0 x8, full height, full length, 25W
- Slot 5: PCIe® 5.0 x16, full height, full length, 75W, double-width
- Slot 6: PCIe® 5.0 x16, full height, full length, 75W
- Slot 7: PCIe® 4.0 x8, full height, half length, 25W

**EOU**

Tool-less design for side cover, memory, 3.5" HDD, PCIe® card assembly / removal

**Notes:**

[1] The actual data transfer rate of the following PCIe® interface also depends on the capabilities of the connected PCIe® device. The listed values represent theoretical maximums.

PCIe® 3.0 (x1 / x2 / x4 / x8 / x16): 1 GB/s ( 8 Gbps) / 2 GB/s (16 Gbps) / 4 GB/s (32 Gbps) / 8 GB/s (64 Gbps) / 16 GB/s (128 Gbps);

PCIe® 4.0 (x1 / x2 / x4 / x8 / x16): 2 GB/s (16 Gbps) / 4 GB/s (32 Gbps) / 8 GB/s (64 Gbps) / 16 GB/s (128 Gbps) / 32 GB/s (256 Gbps);

PCIe® 5.0 (x1 / x2 / x4 / x8 / x16): 4 GB/s (32 Gbps) / 8 GB/s (64 Gbps) / 16 GB/s (128 Gbps) / 32 GB/s (256 Gbps) / 64 GB/s (512 Gbps).

[2] The system dimensions may vary depending on configurations.

[3] 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.

**CONNECTIVITY****Network****WLAN + Bluetooth<sup>®</sup><sup>[1]</sup>**

- AMD Wi-Fi® 6E RZ616, 802.11ax 2x2 Wi-Fi® + Bluetooth® 5.3
- No WLAN and Bluetooth®

**Onboard Ethernet**

Two Ethernet, GbE + 10GbE, Realtek® RTL8111EP and Marvell AQtion AQC-113, 2x RJ-45, supports Wake-on-LAN

**Optional Ethernet**

One additional Ethernet adapter support, up to four additional 25GbE ports

- Gigabit Ethernet, Intel® I350-T2, 2x RJ-45, PCIe® x4
- Gigabit Ethernet, Intel® I350-T4, 4x RJ-45, PCIe® x4
- Gigabit Ethernet, Broadcom BCM5719, 4x RJ-45, PCIe® x4
- Gigabit Ethernet, Broadcom BCM5720, 2x RJ-45, PCIe® x1
- 10 Gigabit Ethernet, Intel® X550-T2, 2x RJ-45, PCIe® x4
- 25 Gigabit Ethernet, NVIDIA® Mellanox ConnectX-6, 2x SFP28, PCIe® x8

**Notes:**

[1] Wi-Fi® operation (including Wi-Fi® 6, Wi-Fi® 6E, Wi-Fi® 7, etc.) is subject to the regulatory requirements of each country. Bluetooth® may operate at a lower version than hardware design depending on the factors such as operating system, driver, etc.

**Ports<sup>[1]</sup>****Front Ports**

1x headphone / microphone combo jack (3.5mm)

**Optional Front Ports**

- 2x USB-C® (USB 10Gbps / USB 3.2 Gen 2), data transfer only
- 2x USB-A (USB 10Gbps / USB 3.2 Gen 2), one Always On

**Rear Ports**

- 1x USB-C® (USB 20Gbps / USB 3.2 Gen 2x2), data transfer only
- 2x USB-A (Hi-Speed USB / USB 2.0)
- 3x USB-A (USB 10Gbps / USB 3.2 Gen 2)
- 1x Ethernet (10GbE RJ-45)
- 1x Ethernet (GbE RJ-45)
- 1x line-in (3.5mm)
- 1x line-out (3.5mm)

**Optional Rear Ports**

- 1x serial (via cable)
- 2x PS/2 (via cable)

**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.

## 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

**Chassis Intrusion Switch**

Chassis intrusion switch

**BIOS Security**

- Administrator password
- Power-on password
- Self-healing BIOS
- UEFI Secure Boot

## MANAGEABILITY

### System Management

#### System Management

- (Optional) Aspeed AST2600 graphics / management processor, IPMI 2.0-compliant baseboard management controller (BMC)
- AMD PRO Manageability

### Diagnostic

#### Diagnostic

- ThinkStation® Diagnostics
- Front diagnostic panel with QR code

## 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

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://support.lenovo.com/warrantylookup/warrantypolicy>.

## OPERATING REQUIREMENTS

### 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%

## ENVIRONMENTAL

### Sustainability

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

- 65% PCC ABS bezel
- 95% PCC ABS wired USB keyboard/mouse top/bottom cover
- 90% PIC recycled plastic EPE cushion
- 30% OBP used in bag
- FSC certified paper in packaging

Notes:

[1] PCC: Post Consumer Content, recycled materials from customers.  
PIC: Post Industry Content, recycled materials from internal factories.  
EPE: Expanded Polyethylene.  
OBP: Ocean Bound Plastic, reducing plastic spill into the sea.  
FSC: Forest Stewardship Council.

## CERTIFICATIONS

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

#### Green Certifications

- (Optional) ENERGY STAR® 8.0
- (Optional) EPEAT™ Gold Registered<sup>[2]</sup>
- (Optional) TCO Certified 9.0
- GREENGUARD®
- RoHS compliant

#### Notes:

[1] The items listed under the "Green Certifications" section may not only refer to certification but also registration or self-declaration. For ESG & regulatory compliance documents, please visit <https://compliance.lenovo.com>.

[2] EPEAT™ is registered where applicable, please visit [epeat.net](http://epeat.net) for registration status by country.

### ISV Certifications

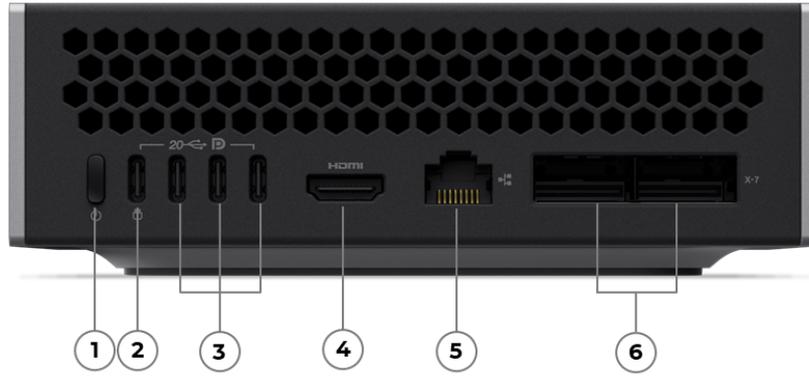
#### ISV Certifications

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

- Feature with \*\* means that only one option listed under the feature can be configured on selected models. Please refer to the model configuration for specific information.
- Feature with \*\*\* means that one or more options listed under the feature can be configured on selected models. Please refer to the model configuration for specific information.
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**OVERVIEW**



1. Power button	4. HDMI 2.1b FRL
2. USB-C (USB4 20Gbps), PD 3.1 in, DP 2.1	5. Ethernet (10GbE RJ-45)
3. 3x USB-C (USB4 20Gbps), DP 2.1	6. 2x QSFP

## PERFORMANCE

### Processor

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

Built into NVIDIA® GB10 Grace Blackwell Superchip, 20-core Arm, 10x Cortex-X925 + 10x Cortex-A725

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.

### AI (Artificial Intelligence)

#### AI Performance

Up to 1 petaFLOP of AI performance using FP4

Up to 200 billion parameters models

up to 405 billion parameters models with two ThinkStation® PGX systems

### Operating System

#### Operating System

NVIDIA® DGX OS

### Graphics

#### Integrated Graphics

NVIDIA® Blackwell Architecture, Built into NVIDIA® GB10 Grace Blackwell Superchip

- NVIDIA® Blackwell Generation CUDA Cores
- 5th Generation Tensor Cores
- 4th Generation RT Cores
- 1x NVENC video encoder
- 1x NVDEC video decoder

### Chipset

#### Chipset

NVIDIA® GB10 Grace Blackwell Superchip

### Memory

#### Memory Type

128 GB LPDDR5x unified system memory, 256-bit, 273 GB/s memory bandwidth

### Storage

#### Max Storage Support<sup>[1][2]</sup>

1 or 4 TB M.2 NVMe® SSD with self-encryption

Notes:

[1] The storage capacity supported is based on the test results with current Lenovo® storage offerings.

[2] For detailed storage bays information and how to upgrade optional drives for ThinkStation® products, please visit

[ThinkStation® Storage Upgrade Guide](#)

### Multi-Media

#### Audio Chip

HDMI® multichannel audio output

### Power Supply

#### Power Supply

240W Adapter

## DESIGN

## Mechanical

### Form Factor

Mini-tower

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

150 x 150 x 50.5 mm (5.91 x 5.91 x 1.99 inches)

### Weight<sup>[2]</sup>

1.2 kg (2.65 lbs)

Notes:

[1] The system dimensions may vary depending on configurations.

[2] 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.

## CONNECTIVITY

### Network

#### WLAN + Bluetooth<sup>[1]</sup>

Wi-Fi® 7, 802.11be Wi-Fi® + Bluetooth® 5.3

#### Onboard Ethernet

10 GbE Ethernet, ConnectX-7 Smart NIC, 1x 10GbE RJ-45

Notes:

[1] Wi-Fi® operation (including Wi-Fi® 6, Wi-Fi® 6E, Wi-Fi® 7, etc.) is subject to the regulatory requirements of each country. Bluetooth® may operate at a lower version than hardware design depending on the factors such as operating system, driver, etc.

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

#### Rear Ports

- 1x USB-C® (USB 20Gbps / USB4®), with USB PD 3.1 in and DisplayPort™ 2.1
- 3x USB-C® (USB4® 20Gbps), with DisplayPort™ 2.1
- 1x HDMI®
- 1x Ethernet (10GbE RJ-45)
- 2x QSFP (200Gbps each, for connecting two ThinkStation® PGX units)

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;

USB4® 20Gbps / USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;

USB4® 40Gbps (USB 40Gbps): 40 Gbit/s;

Thunderbolt™ 3/4: 40 Gbit/s.

Thunderbolt™ 5: 80 Gbit/s (bidirectional), up to 120 Gbit/s in bandwidth boost mode for video-intensive applications.

## SERVICE

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

#### Base Warranty

1-year limited onsite service

Notes:

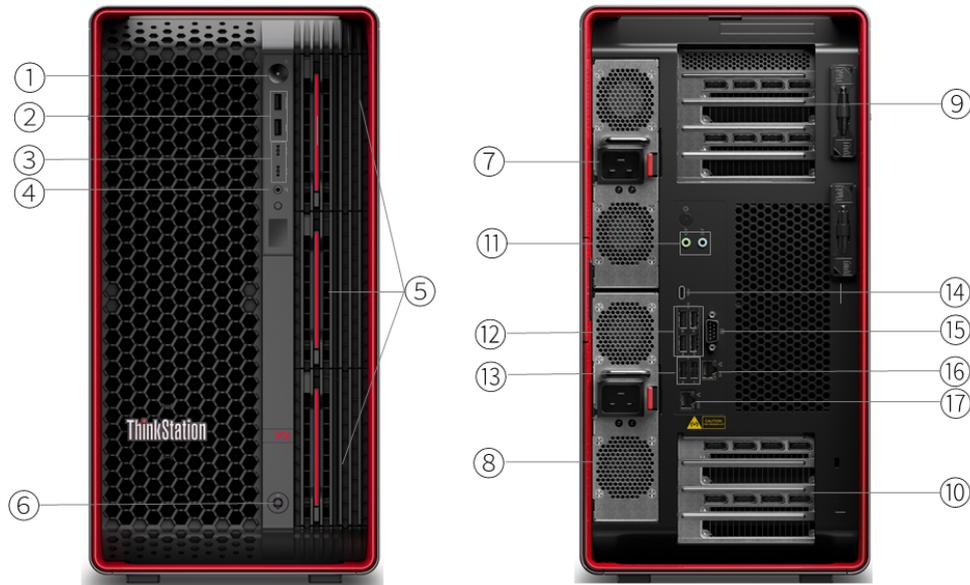
[1] The warranty upgrades may be bundled with some models, please check the "Included upgrade" column in the specific

model's configurations. For more service extensions, please go to <https://smartfind.lenovo.com/>. To learn more details of warranty policy, please access <https://support.lenovo.com/warrantylookup/warrantypolicy>.

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## OVERVIEW



1. Power button	10. PCIe slots 6-9 (top to bottom, by CPU 1)
2. 2x USB-A (USB 10Gbps) *	11. 2x Audio ports (line-out and line-in)
3. 2x USB-C (USB 10Gbps), data transfer only *	12. 4x USB-A (USB 5Gbps)
4. Headphone jack (3.5mm)	13. 2x USB-A (Hi-Speed USB)
5. Front storage bays (HDD or M.2 SSD) *	14. USB-C (USB 20Gbps / USB 3.2 Gen 2x2)
6. Lock for front storage bays *	15. Serial (9-pin) *
7. Power supply 2 *	16. Ethernet (GbE RJ-45)
8. Power supply 1 or rear storage bay *	17. Ethernet (10GbE RJ-45)
9. PCIe slots 1-5 (top to bottom, by CPU 2) *	

Notes:

- Items with \* are only available on selected models
- Expansion cards are optional. More ports are available through the optional expansion cards

## PERFORMANCE

### Processor

#### Processor Family

Up to two 5th or 4th Gen Intel® Xeon® Scalable processors.

- Up to 128 cores (64 cores per processor)
- Core speeds of up to 3.9 GHz
- Cache up to 320MB

#### Processor\*\*<sup>[1]</sup>

Processor Name	Cores	Threads	Base Frequency	Max Frequency	Cache	Memory Support
Xeon Silver 4510	12	24	2.4GHz	4.1GHz	30MB	DDR5-4400 1DPC and 2DPC
Xeon Silver 4410T	10	20	2.7GHz	4.0GHz	26.25MB	DDR5-4000 1DPC and 2DPC
Xeon Silver 4410Y	12	24	2.0GHz	3.9GHz	30MB	DDR5-4000 1DPC and 2DPC
Xeon Silver 4416+	20	40	2.0GHz	3.9GHz	37.5MB	DDR5-4000 1DPC and 2DPC
Xeon Gold 5416S	16	32	2.0GHz	4.0GHz	30MB	DDR5-4400 1DPC and 2DPC
Xeon Gold 5418Y	24	48	2.0GHz	3.8GHz	45MB	DDR5-4400 1DPC and 2DPC
Xeon Gold 5420+	28	56	2.0GHz	4.1GHz	52.5MB	DDR5-4400 1DPC and 2DPC
Xeon Gold 5415+	8	16	2.9GHz	4.1GHz	22.5MB	DDR5-4400 1DPC and 2DPC
Xeon Gold 6534	8	16	3.9GHz	4.2GHz	22.5MB	DDR5-4800 1DPC
Xeon Gold 6544Y	16	32	3.6GHz	4.1GHz	45MB	DDR5-5200 1DPC
Xeon Gold 6548Y+	32	64	2.5GHz	4.1GHz	60MB	DDR5-5200 1DPC
Xeon Gold 6542Y	24	48	2.9GHz	4.1GHz	60MB	DDR5-5200 1DPC
Xeon Gold 6526Y	16	32	2.8GHz	3.9GHz	37.5MB	DDR5-5200 1DPC
Xeon Gold 6530	32	64	2.1GHz	4.0GHz	160MB	DDR5-4800 1DPC
Xeon Gold 6444Y	16	32	3.6GHz	4.0GHz	45MB	DDR5-4800 1DPC, DDR5-4400 2DPC
Xeon Gold 6430	32	64	2.1GHz	3.4GHz	60MB	DDR5-4400 1DPC and 2DPC
Xeon Gold 6438Y+	32	64	2.0GHz	4.0GHz	60MB	DDR5-4800 1DPC, DDR5-4400 2DPC
Xeon Gold 6442Y	24	48	2.6GHz	4.0GHz	60MB	DDR5-4800 1DPC, DDR5-4400 2DPC
Xeon Gold 6416H	18	36	2.2GHz	4.2GHz	45MB	DDR5-4800 1DPC, DDR5-4400 2DPC
Xeon Gold 6418H	24	48	2.1GHz	4.0GHz	60MB	DDR5-4800 1DPC, DDR5-4400 2DPC
Xeon Platinum 8592+	64	128	1.9GHz	3.9GHz	320MB	DDR5-5600 1DPC
Xeon Platinum 8580	60	120	2.0GHz	4.0GHz	300MB	DDR5-5600 1DPC
Xeon Platinum 8568Y+	48	96	2.3GHz	4.0GHz	300MB	DDR5-5600 1DPC
Xeon Platinum 8570	56	112	2.1GHz	4.0GHz	300MB	DDR5-5600 1DPC
Xeon Platinum 8452Y	36	72	2.0GHz	3.2GHz	67.5MB	DDR5-4800 1DPC, DDR5-4400 2DPC
Xeon Platinum 8460Y+	40	80	2.0GHz	3.7GHz	105MB	DDR5-4800 1DPC, DDR5-4400 2DPC
Xeon Platinum 8468	48	96	2.1GHz	3.8GHz	105MB	DDR5-4800 1DPC, DDR5-4400 2DPC
Xeon Platinum 8470	52	104	2.0GHz	3.8GHz	105MB	DDR5-4800 1DPC, DDR5-4400 2DPC
Xeon Platinum 8480+	56	112	2.0GHz	3.8GHz	105MB	DDR5-4800 1DPC, DDR5-4400 2DPC
Xeon Platinum 8490H	60	120	1.9GHz	3.5GHz	112.5MB	DDR5-4800 1DPC, DDR5-4400 2DPC

#### Processor Sockets

2x FCLGA4677

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.

## AI (Artificial Intelligence)

### AI PC Category<sup>[1]</sup>

AI-Ready Workstations

Notes:

[1] With scalable configurations of higher-performance CPUs and professional NVIDIA® RTX GPUs, in addition to advantage of the same modern AI PC technology, AI-Ready workstation power the demanding AI consumption & development workflows.

## Operating System

### Operating System\*\*

- Windows® 11 Pro for Workstations
- Windows® 11 DG Windows® 10 Pro 64 for Workstations
- Red Hat Enterprise Linux 9.2 (certified only, for detailed and latest information, please visit [Red Hat Certified Hardware](#))
- No preload operating system

## Graphics

### Discrete Graphics Support<sup>[1]</sup>

- Supports up to four NVIDIA® RTX 6000 Ada Generation
- Supports up to four NVIDIA® RTX PRO 6000 Blackwell Max-Q Workstation Edition (300W)

### Discrete Graphics Offering

Graphics	Memory	Power	Connector	Form Factor	SLI / NVLink
NVIDIA® RTX PRO 6000 Blackwell Max-Q Workstation Edition	96GB GDDR7 with ECC	300W	4x DP 2.1	Dual slot	-
NVIDIA® RTX PRO 5000 Blackwell	48GB GDDR7 with ECC	300W	4x DP 2.1	Dual slot	-
NVIDIA® RTX PRO 4500 Blackwell	32GB GDDR7 with ECC	200W	4x DP 2.1	Dual slot	-
NVIDIA® RTX PRO 4000 Blackwell	24GB GDDR7 with ECC	140W	4x DP 2.1	Single slot	-
NVIDIA® RTX PRO 2000 Blackwell	16GB GDDR7 with ECC	70W	4x miniDP 2.1	Dual slot	-
NVIDIA® RTX A6000 <sup>[2]</sup>	48GB GDDR6 with ECC	300W	4x DP 1.4a	Dual slot	NVLink
NVIDIA® RTX A5500	24GB GDDR6 with ECC	230W	4x DP 1.4a	Dual slot	NVLink
NVIDIA® RTX A5000	24GB GDDR6 with ECC	230W	4x DP 1.4a	Dual slot	None
NVIDIA® RTX A4500	20GB GDDR6 with ECC	200W	4x DP 1.4	Dual slot	NVLink
NVIDIA® RTX A4000	16GB GDDR6 with ECC	140W	4x DP 1.4a	Single slot	None
NVIDIA® RTX A400	4GB GDDR6	50W	4x miniDP 1.4a	Single slot	None
NVIDIA® RTX A2000 12GB	12GB GDDR6	70W	4x miniDP 1.4a	Dual slot	None
NVIDIA® RTX A1000	8GB GDDR6	50W	4x miniDP 1.4a	Single slot	None
NVIDIA® RTX 6000 Ada Generation <sup>[3]</sup>	48GB GDDR6 with ECC	300W	4x DP 1.4a	Dual slot	-
NVIDIA® RTX 5000 Ada Generation	32GB GDDR6 with ECC	250W	4x DP 1.4a	Dual slot	-

NVIDIA® RTX 4500 Ada Generation	24GB GDDR6 with ECC	210W	4x DP 1.4a	Dual slot	-
NVIDIA® RTX 4000 Ada Generation	20GB GDDR6 with ECC	130W	4x DP 1.4a	Single slot	-
NVIDIA® RTX 2000 Ada Generation	16GB GDDR6 with ECC	70W	4x miniDP 1.4a	Dual slot	None
NVIDIA® T1000 8GB	8GB GDDR6	50W	4x miniDP 1.4	Single slot	None
NVIDIA® T400 4GB	4GB GDDR6	40W	3x miniDP 1.4	Single slot	None

## Notes:

[1] Blackwell GPUs are already supported, and the exact orderability timeframe is under confirmation and may be slightly later.

[2], [3] Available in specific countries and regions.

## 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® C741 chipset

## Memory

### Max Memory<sup>[1]</sup>

Up to 2TB (16x 128GB RDIMMs and dual processor)

### Memory Type<sup>\*\*[2]</sup>

- DDR5-4800 3DS-RDIMM ECC, maximum transfer speeds of up to 4800 MT/s
- DDR5-4800 RDIMM ECC, maximum transfer speeds of up to 4800 MT/s
- DDR5-5600 RDIMM ECC, maximum transfer speeds of up to 5600 MT/s

### Memory Slots

16 DDR5 DIMM slots, 16 channels capable (8 DIMM slots with 8 channels per processor)

### Memory Protection

ECC

## Notes:

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

[2] The processor determines the actual speed of the memory, thus the memory may actually work at a speed such as 5200MT/s, 4800MT/s, 4400MT/s, or lower.

## Storage

### Max Storage Support<sup>[1]</sup>

Up to seven drives (4x 3.5" SATA HDD + 3x M.2 SSD) or 9 drives (2x 3.5" SATA HDD + 7x M.2 SSD)

- 3.5" HDD supports hot-swap
- 3.5" HDD up to 12TB each
- M.2 SSD up to 4TB each

### Storage Type<sup>\*\*\*</sup>

Disk Type	Interface	RPM	Offering	Security
3.5" SATA HDD	SATA 6Gb/s	7.2K	2TB / 4TB / 6TB / 8TB / 10TB / 12TB	-
M.2 2280 SSD	PCIe® NVMe®, PCIe® 4.0 x4 Performance	-	512GB / 1TB / 2TB / 4TB	Opal 2.0

### Storage Controllers

Storage Controller	Type	Interface	RAID	Cache
Onboard Intel® RSTe SATA RAID	Standard	SATA 6.0Gb/s	0/1/10/5	None

Integrated NVMe® controller	Standard	PCIe® NVMe®	-	None
NVMe® Basic	Optional	PCIe® NVMe®	0/1/10	None
NVMe® Premium	Optional	PCIe® NVMe®	0/1/10/5	None

## Notes:

[1] The storage capacity supported is based on the test results with current Lenovo® storage offerings.

## Removable Storage

### Card Reader

No card reader

## Multi-Media

### Audio Chip

High Definition (HD) Audio, Realtek® ALC897-Q codec

### Speakers

Single speaker, 1.5W x1

## Power Supply

### Power Supply<sup>[1]</sup>

Power	Type	Efficiency	Key Features
1850W	Hot-swap	92%	Up to two power supplies, autosensing, 80 PLUS Platinum qualified, team or redundant mode support with two power supplies, up to 2350W configuration under team mode

## Notes:

[1] Countries with input voltage under 110V, output power limited to 1500 watts.

For more information about the ThinkStation® PX Power Supply, please refer to [ThinkStation® PX Power Configurator](#). This document may be updated, so please check the latest version on [Lenovo® Support - Guides & Manuals](#).

## DESIGN

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

#### Form Factor

Tower (54L) or 5U rack, optional rack rail kit needed

#### Dimensions (WxDxH)<sup>[2]</sup>

220 x 575 x 440.4mm (8.7 x 22.6 x 17.3 inches, with feet)

#### Weight<sup>[3]</sup>

35.6 kg (78.5 lbs, maximum configuration)

#### Bays

Three front disk bays and one rear disk bay:

- Front bay 1 supports one 3.5" hot-swap HDD, standard
- Front bay 2 supports one 3.5" hot-swap HDD, standard; or two M.2 SSD via optional front access M.2 bay
- Front bay 3 supports one 3.5" hot-swap HDD, standard; or two M.2 SSD via optional front access M.2 bay
- Rear bay supports one 3.5" hot-swap HDD, optional, occupies 1st PSU cage

#### M.2 Slots

Up to 11x M.2 SSD:

- 3 via onboard slots, PCIe® 4.0 x4
- 4 via front access M.2 bay, PCIe® 4.0 x4
- 4 via Quad M.2 to PCIe® Gen 4 (4x M.2 PCIe® 4.0 x4) adapter<sup>[4]</sup>

#### Expansion Slots

Supports up to 9 PCIe® slots with 4 PCIe® 5.0 slots and 5 PCIe® 4.0 slots, slots 1-5 require 2nd CPU installed.

- Slot 1: PCIe® 4.0 x16, full height, full length, 75W, by CPU 2
- Slot 2: PCIe® 4.0 x16, full height, full length, 75W, by CPU 2
- Slot 3: PCIe® 5.0 x16, full height, full length, 75W, by CPU 2
- Slot 4: PCIe® 5.0 x16, full height, full length, 75W, by CPU 2

- Slot 5: PCIe® 4.0 x8, full height, full length, 25W, by CPU 2
- Slot 6: PCIe® 5.0 x16, full height, full length, 75W, by CPU 1
- Slot 7: PCIe® 4.0 x16, full height, full length, 75W, by CPU 1
- Slot 8: PCIe® 5.0 x16, full height, full length, 75W, by CPU 1
- Slot 9: PCIe® 4.0 x16, full height, full length, 75W, by CPU 1

## EOU

Tool-less design for side cover, memory, 3.5" HDD, PCIe® card assembly / removal

### Notes:

[1] The actual data transfer rate of the following PCIe® interface also depends on the capabilities of the connected PCIe® device. The listed values represent theoretical maximums.

PCIe® 3.0 (x1 / x2 / x4 / x8 / x16): 1 GB/s ( 8 Gbps) / 2 GB/s (16 Gbps) / 4 GB/s (32 Gbps) / 8 GB/s (64 Gbps) / 16 GB/s (128 Gbps);

PCIe® 4.0 (x1 / x2 / x4 / x8 / x16): 2 GB/s (16 Gbps) / 4 GB/s (32 Gbps) / 8 GB/s (64 Gbps) / 16 GB/s (128 Gbps) / 32 GB/s (256 Gbps);

PCIe® 5.0 (x1 / x2 / x4 / x8 / x16): 4 GB/s (32 Gbps) / 8 GB/s (64 Gbps) / 16 GB/s (128 Gbps) / 32 GB/s (256 Gbps) / 64 GB/s (512 Gbps).

[2] The system dimensions may vary depending on configurations.

[3] 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.

[4] M.2 slots on Quad M.2 to PCIe® Gen 5 adapter are PCIe® 5.0 compatible, and currently Lenovo® provides M.2 PCIe® 4.0 SSD.

## CONNECTIVITY

### Network

#### WLAN + Bluetooth®<sup>[1]</sup>

- Intel® Wi-Fi® 6E AX210, 802.11ax 2x2 Wi-Fi® + Bluetooth® 5.3, Intel® vPro® technology support
- No WLAN and Bluetooth®

#### Onboard Ethernet

Two Ethernet, GbE + 10GbE, Intel® Ethernet Connection I219-LM and Marvell AQtion AQC-113C, 2x RJ-45, supports Wake-on-LAN

#### Optional Ethernet

Two additional Ethernet adapters support, up to four additional 25GbE 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, Broadcom BCM5719, 4x RJ-45, PCIe® x4
- Gigabit Ethernet, Broadcom BCM5720, 2x RJ-45, PCIe® x1
- Gigabit Ethernet, Realtek® RTL8168H, 1x RJ-45, PCIe® x1
- 25 Gigabit Ethernet, NVIDIA® Mellanox ConnectX-6, 2x SFP28, PCIe® x8

### Notes:

[1] Wi-Fi® operation (including Wi-Fi® 6, Wi-Fi® 6E, Wi-Fi® 7, etc.) is subject to the regulatory requirements of each country. Bluetooth® may operate at a lower version than hardware design depending on the factors such as operating system, driver, etc.

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

#### Front Ports

1x headphone / microphone combo jack (3.5mm)

#### Optional Front Ports

- 2x USB-C® (USB 10Gbps / USB 3.2 Gen 2), data transfer only
- 2x USB-A (USB 10Gbps / USB 3.2 Gen 2), one Always On

#### Rear Ports

- 1x USB-C® (USB 20Gbps / USB 3.2 Gen 2x2), data transfer only
- 2x USB-A (Hi-Speed USB / USB 2.0)
- 4x USB-A (USB 5Gbps / USB 3.2 Gen 1)
- 1x Ethernet (10GbE RJ-45)

- 1x Ethernet (GbE RJ-45)
- 1x line-in (3.5mm)
- 1x line-out (3.5mm)

**Optional Rear Ports**

- 1x Thunderbolt™ 4 (via additional PCIe® adapter)
- 1x serial
- 2x PS/2

## 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.

## SECURITY & PRIVACY

### Security

**Security Chip**

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

**Physical Locks**

- (Optional) Access panel lock kit with common key
- (Optional) Front storage bay lock with common key
- Kensington® Security Slot™, 3 x 7 mm

**Chassis Intrusion Switch**

Chassis intrusion switch

**BIOS Security**

- Administrator password
- Power-on password
- Self-healing BIOS
- UEFI Secure Boot

## MANAGEABILITY

### System Management

**System Management<sup>[1][2]</sup>**

- (Optional) Aspeed AST2600 graphics / management processor, IPMI 2.0-compliant baseboard management controller (BMC)
- Intel® vPro® Enterprise with Intel® AMT 16

## Notes:

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

[2] Intel® vPro® platform require an eligible Intel® processor, a supported operating system, Intel® LAN and/or WLAN silicon, firmware enhancements, and other hardware and software necessary to deliver the manageability use cases, security features, system performance, and stability that define the platform. See [Intel® vPro® Platform](#) for details.

### Diagnostic

**Diagnostic**

- ThinkStation® Diagnostics
- Front Diagnostic Panel with QR code

## 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://support.lenovo.com/warrantylookup/warrantypolicy>.

## OPERATING REQUIREMENTS

### 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%

## ENVIRONMENTAL

### Sustainability

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

- 65% PCC ABS bezel
- 95% PCC ABS wired USB keyboard/mouse top/bottom cover
- 90% PIC recycled plastic EPE cushion
- 30% OBP used in bag
- FSC certified paper in packaging

---

**Notes:**

[1] PCC: Post Consumer Content, recycled materials from customers.  
PIC: Post Industry Content, recycled materials from internal factories.  
EPE: Expanded Polyethylene.  
OBP: Ocean Bound Plastic, reducing plastic spill into the sea.  
FSC: Forest Stewardship Council.

## CERTIFICATIONS

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

#### Green Certifications

- (Optional) ENERGY STAR® 8.0
- (Optional) EPEAT™ Gold Registered
- RoHS compliant

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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. For ESG & regulatory compliance documents, please visit <https://compliance.lenovo.com>.

### ISV Certifications

#### ISV Certifications

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

- Feature with \*\* means that only one option listed under the feature can be configured on selected models. Please refer to the model configuration for specific information.
- Feature with \*\*\* means that one or more options listed under the feature can be configured on selected models. Please refer to the model configuration for specific information.

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**Limited warranty:** Support unrelated to a warranty issue may be subject to additional charges.

#### **Lenovo Services:**

**Carry-in or Mail-in Service:** Parts and labor repair coverage where the customer is responsible for shipping (including packaging) or delivery to authorized warranty provider or repair center.

**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.

**Onsite / In-home Service:** Parts and labor repair coverage where labor is provided onsite at your place of business.

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.

**International Warranty Service (IWS):** PC repair coverage for customers who require a critical warranty repair while travelling internationally. Visit [www.lenovo.com/internationalwarranty](http://www.lenovo.com/internationalwarranty) for details. Visit [www.lenovo.com/warranty](http://www.lenovo.com/warranty) for Lenovo Warranty Services terms and conditions for complete details and restrictions.

**Included software:** may differ from its retail version (if available), and may not include user manuals or all program functionality. Software license agreements may apply.

**Battery life:** Battery life (and recharge times) will vary based on many factors including screen brightness, applications, features, power management, battery conditioning, and other customer preferences.

Visit <http://psref.lenovo.com/> for the latest version of Product Specifications Reference.

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