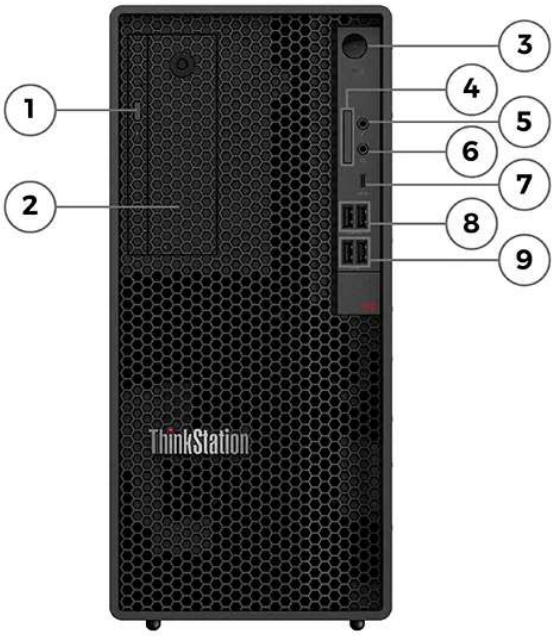
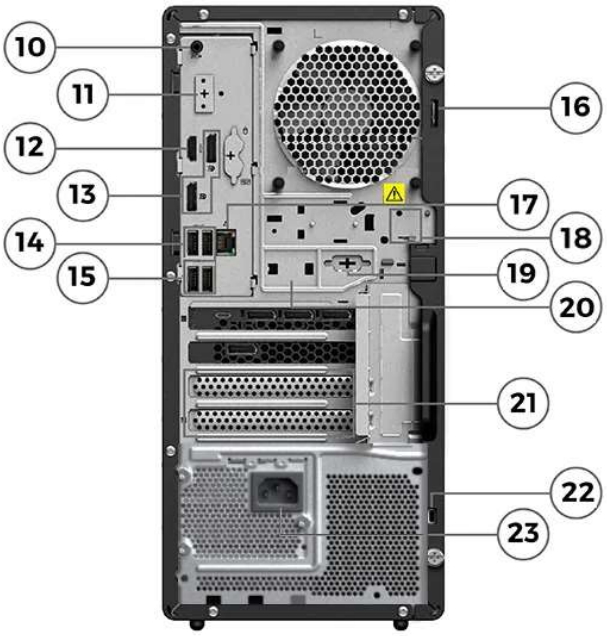
OVERVIEW





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[**][1]

Processor Name	Cores	Threads	Base Frequency	Max Frequency	Cache	Memory Support	Processor Graphics	NPU	Intel® vPro® Eligibility	Overall TOPS
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 235A	14 (6 P-core + 8 E-core)	14	P-core 3.4GHz / E-core 2.9GHz	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, up to 8 TOPS	Intel® AI Boost, up to 13 TOPS	Intel® vPro® Enterprise	Up to 36 TOPS
Core Ultra 9 285K	24 (8 P-core + 16 E-	24	P-core 3.7GHz / E-core 3.2GHz	Max Turbo up to 5.7GHz / P-core 5.5GHz /	40MB L2 Cache / 36MB	DDR5-6400	Intel® Graphics	-	Intel® vPro® Enterprise	-

	core)			E-core 4.6GHz	Intel® Smart Cache					

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[1]

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[1]

- 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 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® RTX A1000	8GB GDDR6	50W	4x miniDP 1.4a	Single slot	None
NVIDIA® RTX A400	4GB GDDR6	50W	4x miniDP 1.4a	Single 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[1]

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

Memory Type[2]

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[1]

Up to 2x 3.5" SATA HDD; also supports up to 4x M.2 SSD (3 by onboard, 1 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 4TB[2]

Storage Type***

Disk Type	Interface	RPM	Offering	Security
3.5" SATA HDD for disk bays and front access bay[3]	SATA 6Gb/s	7.2K	2TB / 4TB / 6TB	-
M.2 SSD for 1x M.2 PCIe® 3.0 slot (by Single M.2 to PCIe® Adapter)[4]	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[5]	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

Storage Controllers

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

Notes:

[1] The storage capacity supported is based on the test results with current Lenovo® 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® 3.0, Gen 4 SSDs will run on PCIe® 3.0.
[5] M.2 slot supports PCIe® 5.0, currently optional M.2 SSD support PCIe® 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® 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

DESIGN

Mechanical[1]

Form Factor

Tower (17L)

Dimensions (WxDxH)[2]

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

Weight[3]

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[4]

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[5]

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®[1]

- 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

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[1]

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)

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[1][2]

- (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[1]

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[1]

- 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[1]

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.
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