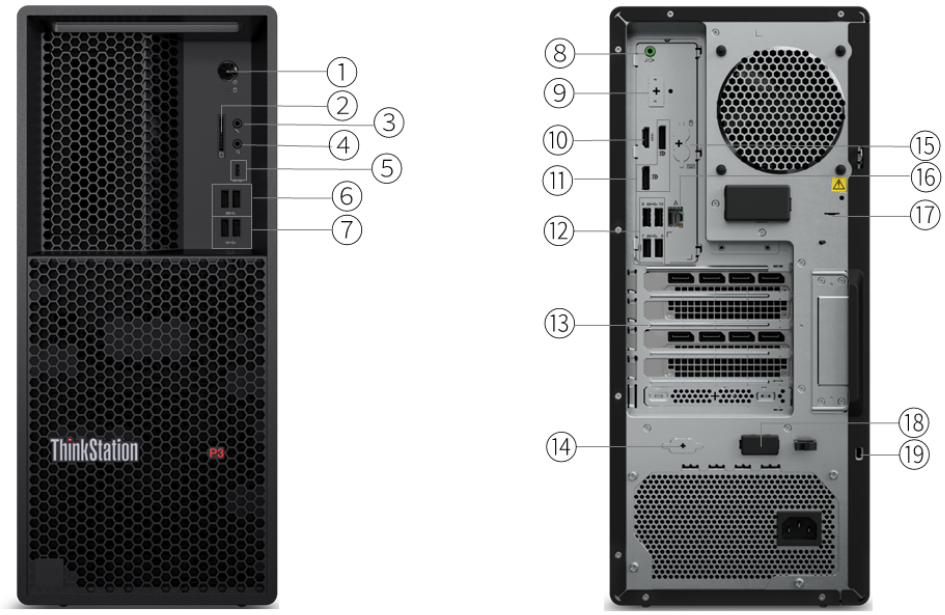
OVERVIEW



1. Power button	11. 2x DisplayPort
2. SD card reader *	12. 4x USB 3.2 Gen 1 (one with Smart Power On)
3. Microphone (3.5mm)	13. Optional ports on expansion cards *
4. Headphone / microphone combo jack (3.5mm)	14. Serial (9-pin) *
5. USB-C 3.2 Gen 2	15. 2x PS/2 ports (keyboard / mouse) *
6. 2x USB 3.2 Gen 1	16. Ethernet (GbE RJ-45)
7. 2x USB 3.2 Gen 2	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 13th Gen Intel® Core™ i3 / i5 / i7 / i9 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
Core i3-13100	4 (4 P-core + 0 E-core)	8	P-core 3.4GHz	P-core 4.5GHz	12MB	DDR5-4800	Intel UHD Graphics 730
Core i5-13400	10 (6 P-core + 4 E-core)	16	P-core 2.5GHz / E-core 1.8GHz	P-core 4.6GHz / E-core 3.3GHz	20MB	DDR5-4800	Intel UHD Graphics 730
Core i5-13500	14 (6 P-core + 8 E-core)	20	P-core 2.5GHz / E-core 1.8GHz	P-core 4.8GHz / E-core 3.5GHz	24MB	DDR5-4800	Intel UHD Graphics 770
Core 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	24MB	DDR5-4800	Intel UHD Graphics 770
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	24MB	DDR5-5600	Intel UHD Graphics 770
Core i7-13700	16 (8 P-core + 8 E-core)	24	P-core 2.1GHz / E-core 1.5GHz	Max Turbo up to 5.2GHz / P-core 5.1GHz / E-core 4.1GHz	30MB	DDR5-5600	Intel UHD Graphics 770
Core 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	30MB	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	36MB	DDR5-5600	Intel UHD Graphics 770
Core i9-13900K	24 (8 P-core + 16 E-core)	32	P-core 3.0GHz / E-core 2.2GHz	Max Turbo up to 5.8GHz / P-core 5.4GHz / E-core 4.3GHz	36MB	DDR5-5600	Intel UHD Graphics 770

Processor Sockets

1x FCLGA1700

Notes:

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

Operating System

Operating System[**]

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

Graphics

Integrated Graphics[**]

- Intel UHD Graphics 730
- Intel UHD Graphics 770

Discrete Graphics Support[1]

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 T400 4GB	4GB GDDR6	40W	3x miniDP 1.4	Single slot	None
NVIDIA T1000 8GB	8GB GDDR6	50W	4x miniDP 1.4	Single slot	None
NVIDIA RTX A2000 12GB	12GB GDDR6	70W	4x miniDP 1.4a	Dual slot	None
NVIDIA RTX A4000	16GB GDDR6 with ECC	140W	4x DP 1.4a	Single slot	None
NVIDIA RTX A4500	20GB GDDR6 with ECC	200W	4x DP 1.4	Dual slot	None
NVIDIA RTX A5000	24GB GDDR6 with ECC	230W	4x DP 1.4a	Dual slot	None
NVIDIA RTX A5500	24GB GDDR6 with ECC	230W	4x DP 1.4a	Dual slot	None
NVIDIA RTX 4000 Ada Generation	20GB GDDR6 with ECC	130W	4x DP 1.4a	Single slot	-
NVIDIA RTX 4500 Ada Generation	24GB GDDR6 with ECC	210W	4x DP 1.4a	Dual slot	-
NVIDIA RTX 5000 Ada Generation	32GB GDDR6 with ECC	250W	4x DP 1.4a	Dual slot	-

Notes:

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

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[1]

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

Memory Type**[2]

- DDR5-4400 UDIMM ECC
- DDR5-4400 UDIMM non-ECC

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

Storage

Storage Support[1][2]

Up to 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[3]

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] For detailed storage bays infomation and how to upgrade optional drives for ThinkStation® products, please visit ThinkStation Storage Upgrade Guide
[3] 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

Form Factor

Tower (27L)

Dimensions (WxDxH)[1]

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

Weight[2]

13.61 kg (30.0. lbs, maximum configuration)

Bays[3]

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

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

CONNECTIVITY

Network

Onboard Ethernet

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

Optional Ethernet

Up to two additional PCIe x1 Ethernet adapters or one PCIe x4 Ethernet adapter support, up to one additional 10 GbE ports
• Gigabit Ethernet, Intel I210-T1, 1x RJ-45, PCIe x1
• Gigabit Ethernet, Intel I350-T2, 2x RJ-45, PCIe x4
• Gigabit Ethernet, 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
• 10 Gigabit Ethernet, Marvell AQtion AQN-107, 1x RJ-45, PCIe x4

WLAN + Bluetooth®

- Intel Wi-Fi® 6E AX211, 802.11ax 2x2 Wi-Fi + Bluetooth 5.1 (Bluetooth 5.3 hardware ready), Intel vPro® technology support [1]
- No WLAN and Bluetooth

Notes:

[1] Bluetooth 5.3 is hardware ready but may run at a lower version due to OS limitations.
Wi-Fi 6E is only enabled on Windows 11 and operates as Wi-Fi 6 with Windows 10.

Ports[1]

Front Ports

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

Rear Ports[2]

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

Optional Rear Ports[3]

- 1x USB-C 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)
- 2x USB 2.0 (via cable and PCIe bracket)
- 1x parallel (via cable and PCIe bracket)
- 1x Thunderbolt™ 4 (via additional PCIe adapter)
- 2x USB 3.2 Gen 1 (via additional PCIe adapter)
- 1x USB-C 3.2 Gen 2x2 (support data transfer, via USB-C expansion card, PCIe x4)
- 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 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.
[2] For video ports on discrete graphics, please see graphics section.
[3] 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
- UEFI Secure Boot
- Self-healing BIOS

MANAGEABILITY

System Management

System Management[1]

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

Notes:

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

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://pcsupport.lenovo.com/warranty.

ENVIRONMENTAL

Operating Environment

Temperature

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

Altitude

- Operating: 0 m (0 ft) to 3048 m (10,000 ft)
- Storage: 0 m (0 ft) to 12192 m (40,000 ft)

Humidity

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

CERTIFICATIONS

Green Certifications[1]

Green Certifications

- (Optional) ENERGY STAR® 8.0
- (Optional) EPEAT™ Gold Registered[2]
- 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.
[2] EPEAT is registered where applicable, please see https://www.epeat.net for registration status by country.

ISV Certifications

ISV Certifications

Please visit ISV certifications for Lenovo Workstations

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