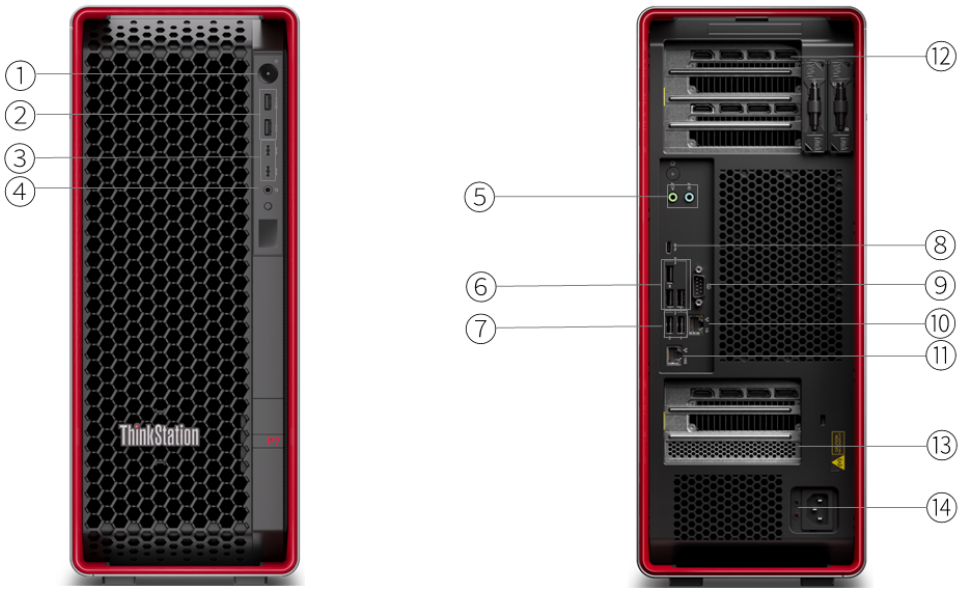
OVERVIEW



1. Power button	8. USB-C 3.2 Gen 2x2
2. 2x USB 3.2 Gen 2 (one Always On) *	9. Serial (9-pin) *
3. 2x USB-C 3.2 Gen 2 *	10. Ethernet (GbE RJ-45)
4. Headphone (3.5mm)	11. Ethernet (10GbE RJ-45)
5. 2x Audio ports (line-out and line-in)	12. Upper PCIe slots
6. 3x USB 3.2 Gen 2	13. Lower PCIe slots
7. 2x USB 2.0	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 Intel® Xeon® W-3400 Series processor, supports up to 56 cores, up to 4.8GHz

Processor**

Processor Name	Cores	Threads	Base Frequency	Max Frequency	Cache	Memory Support
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

Operating System

Operating System**[1]

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

Notes:

1. Some features may not be supported on the system with Linux preload, including but not limited to Intel RST RAID, Human Presence Detection, etc.

Graphics

Discrete Graphics Support[1]

Supports up to three NVIDIA® RTX A6000 at launch, up to three NVIDIA RTX 6000 Ada Generation after July 2023 as planned

Discrete Graphics Offering

Graphics	Memory	Power	Connector	SLI / NVLink
NVIDIA T400 4GB	4GB GDDR6	40W	3x miniDP 1.4	None
NVIDIA T1000 8GB	8GB GDDR6	50W	4x miniDP 1.4	None
NVIDIA RTX A2000 12GB	12GB GDDR6	70W	4x miniDP 1.4a	None
NVIDIA RTX A4000	16GB GDDR6 with ECC	140W	4x DP 1.4a	None
NVIDIA RTX A4500	20GB GDDR6 with ECC	200W	4x DP 1.4	NVLink
NVIDIA RTX A5500	24GB GDDR6 with ECC	230W	4x DP 1.4a	NVLink
NVIDIA RTX A6000	48GB GDDR6 with ECC	300W	4x DP 1.4a	NVLink
NVIDIA RTX 6000 Ada Generation[2]	48GB GDDR6 with ECC	300W	4x DP 1.4a	-

Notes:

1. Discrete graphics support may vary by configurations such as processor selection or power supply wattage.
2. NVIDIA RTX 6000 Ada Generation will be available after July 2023

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[1]

Up to 1TB (8x 128GB 3DS-RDIMM)

Memory Type**[2]

- DDR5-4800 3DS-RDIMM ECC
- DDR5-4800 RDIMM ECC

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. The system may support more memory as the technology develops.
2. ThinkStation® P7 comes with DDR5-4800 memory, and some configurations will run at DDR5-4400 due to the memory support capability of processor

Storage

Storage Support[1]

Up to 11 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 / 6TB / 12TB	-
M.2 2280 SSD for Onboard / HDD Bay / Flex Bay	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	Opal 2.0

Storage Controllers[2]

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. The system may support larger storage as the technology develops.
2. RAID for SATA and NVMe SSD will be available after July 2023 as planned

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[1]	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

Form Factor

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

Dimensions (WxDxH)[1]

175 x 508x 440.4 mm (6.9 x 20 x 17.3 inches, with feet)

Weight[2]

24.5 kg (50.0 lbs, maximum configuration)

Bays[3]

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 adapter
• 2 via HDD bay or 1 via front access M.2 bay (choose one)

Expansion Slots

Three PCIe 5.0 x16
One PCIe 4.0 x16
One PCIe 4.0 x8
One PCIe 5.0 x4
One PCIe 4.0 x4

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. 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

CONNECTIVITY

Network

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

WLAN + Bluetooth®

- Intel Wi-Fi® 6E AX210, 802.11ax 2x2 Wi-Fi + Bluetooth 5.1 (Bluetooth 5.3 hardware ready), Intel vPro® 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

1x headphone / microphone combo jack (3.5mm)

Optional Front Ports

- 2x USB 3.2 Gen 2 (one Always On)
- 2x USB-C® 3.2 Gen 2

Rear Ports[2]

- 1x USB-C 3.2 Gen 2x2
- 2x USB 2.0
- 3x 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
- 2x PS/2

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

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
- UEFI Secure Boot
- Self-healing BIOS

MANAGEABILITY

System Management

System Management[1]

Intel vPro Enterprise with Intel AMT 16

Notes:

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

Diagnostic

Diagnostic

- ThinkStation Diagnostics
- Front diagnostic panel with QR code

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[2]

- (Optional) EPEAT™ Gold Registered
- (Optional) ENERGY STAR® 8.0
- 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.
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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