

PERFORMANCE

Processor

Processor Family

Up to one Intel® Xeon® W-2200 / W-2100 series processor

Processor

Processor Name	Cores	Threads	Base Frequency	Max Frequency	Cache	Memory Support	Processor Graphics
Xeon W-2102	4	4	2.9GHz	-	8.25MB	DDR4-2400	-
Xeon W-2104	4	4	3.2GHz	-	8.25MB	DDR4-2400	-
Xeon W-2123	4	8	3.6GHz	3.9GHz	8.25MB	DDR4-2666	-
Xeon W-2125	4	8	4.0GHz	4.5GHz	8.25MB	DDR4-2666	-
Xeon W-2133	6	12	3.6GHz	3.9GHz	8.25MB	DDR4-2666	-
Xeon W-2135	6	12	3.7GHz	4.5GHz	8.25MB	DDR4-2666	-
Xeon W-2145	8	16	3.7GHz	4.5GHz	11MB	DDR4-2666	-
Xeon W-2155	10	20	3.3GHz	4.5GHz	13.75MB	DDR4-2666	-
Xeon W-2175	14	28	2.5GHz	4.3GHz	19MB	DDR4-2666	-
Xeon W-2195	18	36	2.3GHz	4.3GHz	24.75MB	DDR4-2666	-
Xeon W-2223	4	8	3.6GHz	3.9GHz	8.25MB	DDR4 2666	-
Xeon W-2225	4	8	4.1GHz	4.6GHz	8.25MB	DDR4 2933	-
Xeon W-2235	6	12	3.8GHz	4.6GHz	8.25MB	DDR4 2933	-
Xeon W-2245	8	16	3.9GHz	4.5GHz	16.5MB	DDR4 2933	-

Processor Sockets

1x FCLGA2066

Operating System

- Windows® 10 Pro 64 for Workstations
- Ubuntu Linux LTS
- No operating system

Graphics

Discrete Graphics Support

Supports up to one NVIDIA® Quadro® RTX 5000, or two NVIDIA Quadro P4000

Discrete Graphics Offering

Graphics	Memory	Power	Connector	SLI / NVlink
NVS 810	4GB DDR3	68W	8x miniDP	None
Quadro P400	2GB GDDR5	30W	3x miniDP	None
Quadro P600	2GB GDDR5	45W	4x miniDP	None
Quadro P620	2GB GDDR5	40W	4x miniDP	None
Quadro P1000	4GB GDDR5	50W	4x miniDP	None
Quadro P2000	5GB GDDR5	75W	4x DP	None
Quadro P2200	5GB GDDR5	75W	4x DP	None
Quadro P4000	8GB GDDR5	120W	4x DP	None
Quadro P5000	16GB GDDR5X	180W	1x DVI-D DL, 4x DP	None
Quadro RTX 4000	8GB GDDR6	160W	3x DP, 1x VirtualLink	None
Quadro RTX 5000	16GB GDDR6	265W	4x DP, 1x VirtualLink	None

Monitor Support

Supports multiple displays via discrete graphics

Chipset

Intel C422 chipset

Memory

Memory Type

- DDR4-2666 RDIMM ECC
- DDR4-2933 RDIMM ECC

Memory Slots

4 DIMM sockets with 4 channels

Memory Protection

ECC

Max Memory

Up to 256GB (with 4 x 64GB RDIMMs)

Notes:

- The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

Up to 4x 3.5" SATA HDD / 2.5" SATA HDD / 2.5" SATA SSD + 5x M.2 PCIe SSD

- 3.5" HDD up to 6TB each
- 2.5" SATA HDD up to 500GB each
- 2.5" SATA SSD up to 2TB each
- M.2 SSD up to 2TB each

Storage Controllers

Storage Controller	Type	Interface	RAID	Cache
Onboard Intel RST SATA RAID	Standard	SATA 6.0Gb/s	0/1/10/5	None
9440-8i PCIe	Optional	SAS 12.0Gb/s, SATA 6.0Gb/s	0/1/10/5	None
NVMe Basic	Optional	PCIe NVMe	0/1/10	None
NVMe for Intel SSD	Optional	PCIe NVMe	0/1/10/5	None

Storage Type

Disk Type	Interface	RPM	Offering
3.5" SATA HDD	SATA 6Gb/s	7.2K	1TB/2TB/4TB/6TB
2.5" SATA HDD	SATA 6Gb/s	7.2K	500GB/500GB FIPS
2.5" SATA SSD	SATA 6Gb/s	-	256GB/512GB/1TB/2TB
2.5" SAS HDD	SAS 12Gb/s	10K	300GB/600GB
M.2 PCIe SSD	PCIe NVMe	-	256GB/512GB/1TB/2TB

Removable Storage

Optical Support

Up to two HH or 9.0mm optical drive, DVD-ROM, DVD±RW, and Blu-ray

Card Reader

- SD card reader
- 15-in-1 card reader
- Not configured

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC662 codec

Power Supply

Power	Type	Efficiency	Key Features
500W	Fixed	92%	Autosensing, 80 PLUS Platinum qualified
625W	Fixed	92%	Autosensing, 80 PLUS Platinum qualified

DESIGN

Mechanical

Form Factor

Tower (25L)

Dimensions (WxDxH)

175 x 426 x 376 mm (6.89 x 16.77 x 14.8 inches, with feet)

Weight

14.5 kg (31.96 lbs, maximum configuration)

Bays

2x 3.5" disk bay

Flex Bays

2x flex bays. Supports the following:

- 2x half-height optical drives
- 2x 5.25" 9.0mm optical drives
- 1x 5.25" 9.0mm optical drive + 2x 3.5"/2.5" SATA SSD/HDD
- 1x 3.5"/2.5" SATA SSD/HDD with Front Access Storage Enclosure
- 1x flex module for the following options:

Tray 1: 9.0mm optical

Tray 2: 15-in-1 USB 3.1 Gen 1 reader, 2x Thunderbolt™, or 4-digit diagnostic display

Port 1 and 2: Front USB 3.1 Gen 1 Type-C or eSATA

- 2x M.2 SSD with 2x Front Removable Drive Enclosures

M.2 Slots

Up to 5x M.2 SSD:

- 2 via onboard slots
- 3 via Single M.2 to PCIe adapter

Expansion Slots

- Two PCIe 3.0 x16
- One PCIe 3.0 x4
- One PCIe 3.0 x8

Expansion Slots Offering

Slot 1: PCIe 3.0 x16, full height, full length, 75W, by CPU

Slot 2: PCIe 3.0 x8, full height, full length, 25W, open ended, by CPU

Slot 3: PCIe 3.0 x16, full height, full length, 75W, by CPU,

Slot 4: PCIe 3.0 x4, full height, half length, 25W, open ended, by PCH

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet, Intel Ethernet Connection I219-LM, 1x RJ45, supports Wake-on-LAN

Optional Ethernet

Additional Ethernet options via PCIe adapter

WLAN + Bluetooth™

- Intel Dual Band Wireless-AC 8265, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 4.2
- Not configured

Ports

Front Ports

- 2x USB 3.1 Gen 1
- 1x microphone (3.5mm)
- 1x headphone (3.5mm)

Notes:

- 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;

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

Thunderbolt 3: 40 Gbit/s;

FireWire 400: 400 Mbit/s;

FireWire 800: 800 Mbit/s;

Optional Front Ports

- 1x eSATA (with flex module)
- 2x Thunderbolt (with flex module, USB-C form, one supports video-out)
- 1x USB-C 3.1 Gen 1 (with flex module)

Rear Ports

- 2x USB 2.0
- 4x USB 3.1 Gen 1
- 1x PS/2 ports (keyboard/mouse)
- 1x Ethernet (RJ-45)
- 1x microphone (3.5mm)
- 1x line-in (3.5mm)
- 1x line-out (3.5mm)

Notes:

- For video ports on discrete graphics, please see graphics section

Optional Rear Ports

- 2x USB-C 3.1 Gen 2 (via 2-port USB-C expansion card)
- 1x Thunderbolt
- 1x serial

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified

Physical Locks

Kensington® Security Slot

Chassis Intrusion Switch

- Chassis intrusion switch
- Not configured

BIOS Security

- Power-on password
- Administrator password

MANAGEABILITY

System Management

Intel vPro with Intel AMT 11

Diagnostic

- Photo-audio transfer with Lenovo PC Diagnostics for Android and iOS
- ThinkStation® Diagnostics for Windows
- Front 4-digit diagnostic
- None

SERVICE

Warranty

Base Warranty

3-year limited onsite service (with 9x5 NBD, for most models)

ENVIRONMENTAL

Environmental Specifications

Temperature

Operating: 10° C to 35° C (50° F to 95° F)

Storage: -40°C to 60°C (-40°F to 140°F) in original shipping carton

Storage: -10°C to 60°C (14°F to 140°F) without carton

Altitude

Operating: -15.2m to 3048m (-50ft to 10000ft)

Storage: -15.2m to 10668m (-50ft to 35000ft)

Humidity

Relative Humidity Operating: 10% to 80% (non-condensing)

Relative Humidity Storage/Transit: 10% to 90% (non-condensing)

Wet Bulb Temperature Operating: 25°C (77°F) max

Wet Bulb Temperature Non-operating: 40°C (104°F) max

CERTIFICATIONS

Green Certifications

- EPEAT™ Silver
- ENERGY STAR® 8.0 (On model 30BX0095US)
- GREENGUARD®
- RoHS

ISV Certifications

Please visit www.thinkworkstations.com/isv-certifications/

