Lenovo P4

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Product Name	P4
Product Display Name	ThinkStation P4
Information Date	13-May-26
Hardware Maintenance Manual	TBD
Drivers & Software	TBD
Available Whitepapers	TBD

SECTION I: Platform Overview

Description	The Lenovo ThinkStation P4 is an entry tower workstation that sets a new performance benchmark for its class. Powered by AMD Ryzen™ PRO 9000 Series processors, it delivers the speed, responsiveness, and sustained performance required for demanding professional workflows, enabled by advanced thermals and liquid-cooling for higher-power CPU options.

CPU

Processor Support	AMD Granite Ridge AM5 AMD Phoenix AM5
Socket Type	Socket AM5 (LGA-1718)
Disclaimers	

Operating Systems

Preloaded	Windows 11 Pro Windows 11 Home Ubuntu 24.04 LTS (configuration specific)
Supported	Red Hat Enterprise Linux 10.2

Disclaimers	

Memory

Slots	4
Channels	2
Type	DDR5 ECC and non-ECC UDIMM / CUDIMM
ECC Support	Yes
Speed	Granite Ridge: Up to 5600 MT/s1 Phoenix: Up to 5200 MT/s1
Max DIMM Size	64GB DDR5 CUDIMM 48GB DDR5 UDIMM
Max System Memory	Granite Ridge: Up to 256GB Phoenix: Up to 192GB
Disclaimers	1 Memory speed maybe impacted by number and type of DIMMs installed and dependent on the individual CPU capabilities. 1 For optimal memory performance, install one DIMM per channel. 1 Installing additional DIMMs per channel may reduce performance but increase total memory capacity.

Storage

Total Bays/Size	1 x Standard SATA HDD Bays1 3 x Optional SATA HDD Bays
SATA	4 x SATA 3.0 (6 Gb/s) Connectors3
PCIe (M.2)	1 x M.2 NVMe 2280 / 221102 PCIe 5.0 Connector Onboard 1 x M.2 NVMe 2280 PCIe 5.0 Connector Onboard 1 x M.2 NVMe 2280 PCIe 4.0 Connector Onboard
eSATA	1 x Optional eSATA Connector
Disclaimers	Note: See Storage Whitepaper for details on the available usage options. 1 One single-drop SATA power cable and one single SATA data cable are shell fit. 2 There are no certified 22110 M.2 NVMe drives at this time. 3 One SATA connector can be set as an eSATA port in BIOS.

Video

Integrated Graphics	AMD Radeon Graphics
Discrete Graphics	Nvidia RTX Pro 6000 Blackwell Workstation Edition (DP x4) – GDDR7, 96GB, Dual Slot, PCIe 5.0 Nvidia RTX Pro 6000 Blackwell Max-Q Workstation Edition (DP x4) – GDDR7, 96GB, Dual Slot, PCIe 5.0 Nvidia RTX Pro 5000 Blackwell (DP x4) – GDDR7,

	48GB, Dual Slot, PCIe 5.0 Nvidia RTX Pro 4500 Blackwell (DP x4) – GDDR7, 32GB, Dual Slot, PCIe 5.0 Nvidia RTX Pro 4000 Blackwell (DP x4) – GDDR7, 24GB, Single Slot, PCIe 5.0 Nvidia RTX Pro 2000 Blackwell (miniDP x4) – GDDR7, 16GB, Dual Slot, PCIe 5.0 Nvidia RTX A1000 (miniDP x4) – GDDR6, 8GB, Single Slot, PCIe 4.0 Nvidia RTX A400 (miniDP x4) – GDDR6, 4GB, Single Slot, PCIe 4.0
Multi-GPU Support	Yes
Type	PCIe Add-In-Card
Bus Interface	PCIe x16
Disclaimers	

Slots

Slot 1	PCIe 5.0 x16, Full Height, Full Length, 75W
Slot 2	PCIe 4.0 x1, Full Height, Half Length, 25W, Open Ended2
Slot 3	PCIe 4.0 x1, Full Height, Half Length, 25W, Open Ended2
Slot 4	PCIe 4.0 x4, Full Height, Half Length, 75W1,2
Disclaimers	1 PCIe Slot 4 is a x16 mechanical slot, x4 electrical slot. 2 PCIe Slot 2 and 3 can support full length if SATA ports are not used. PCIe Slot 4 can support full length if front PCIe fan is removed.

Front I/O

USB	2 x USB-A 3.2 Gen 2 (10Gbps) 2 x USB-A 3.2 Gen 1 (5Gbps) 1 x USB-C 3.2 Gen 2×2 (20Gbps), supports 15W charge
Audio	1 x Combo Audio Jack (3.5mm) 1 x Microphone Jack (3.5mm)
Media Card Reader	Optional 3-in-1 Media Card Reader
Flex Bay	Optional Front Access Single SATA HDD Bay OR Optional Slim ODD Bay
Disclaimers	Note: Actual USB throughout will vary depending on the type and quantity of USB devices used.

Rear I/O

USB	4 x USB-A 3.2 Gen 1 (5Gbps)
Audio	1 x Audio Jack Line Out (3.5mm)

DisplayPort	1 x DP2.0 (UHBR10, support DP++) 1 x DP1.4 (HBR3, support DP++) Optional 1 x DP 1.2 (4K) (CPU dependent), via flexible I/O port card
HDMI	1 x HDMI 2.1 Optional 1 x HDMI 2.0(4K) or 1 x HDMI 2.1(8K) (CPU dependent), via flexible I/O port card
Type-C	Optional 1 x USB-C 3.2 Gen 2 (4K) (CPU dependent), via flexible I/O port card
VGA Port	Optional 1 x VGA (2K) (CPU dependent), via flexible I/O port card2
Serial Port	Optional: 1 x Serial (via cable) Optional: 4 x Serial (via 4-port serial expansion card, PCIe 3.0 x1 Adapter)
Ethernet	1 x 2.5G RJ45
Parallel Port	Parallel Port Cable (300mm) Bracket
Optional USB Adapter	USB-C 3.2 Gen 2×2 Single Port PCIe 3.0 x4 Adapter USB-A 3.0 Dual Port PCIe 2.0 x1 Adapter USB 2.0 Dual Port Cable (300mm, 2 ports) Bracket
Optional Network Adapter	Intel I210-T1 Single Port Gigabit Ethernet PCIe 2.1 x1 Adapter Intel I350-T4 Quad Port Gigabit Ethernet PCIe 2.1 x4 Adapter Luxshare RTL8125BGS Single Port 2.5Gigabit Ethernet PCIe 2.1 x1 Adapter Intel E610-XT2 Dual Port 10Gigabit Ethernet PCIe 4.0 x4 Adapter Intel E810-XXVDA2 Dual Port 25Gigabit SFP28 Ethernet PCIe 4.0 x8 Adapter1 Foxconn Wi-Fi 7 MT7925, 802.11be 2×2 Wi-Fi + Bluetooth 5.4
Disclaimers	Note: Actual USB throughout will vary depending on the type and quantity of USB devices used. Note: Network speeds listed are theoretical. 1 The Intel E810-XXVDA2 requires 2 x SFP28 transceivers. 2 Requires alternate rear I/O shield.

Ethernet

Vendor	Realtek RTL8125BP-CG 2.5Gigabit Ethernet
Speeds	10/100/1000/2500 Mbps
Functions	PXE, WOL, Jumbo Frames, AIM-T 3.0
Connectors	1 x RJ45
Disclaimers	Note: Network speeds listed are theoretical.

Audio

Vendor	Realtek
Type	High Definition (HD) Audio
Internal Speaker	1 x 1.5 Watt

Connectors	2 x Front 3.5mm Jacks (Line Out, Microphone) 1 x Rear 3.5mm Audio Jack (Line Out)
Chipset	Realtek ALC623
Number of Channels	2 Channels
Number of Bits/Audio Resolution	6 channels of DAC support 16/20/24-bit PCM format for 5.1 audio solution 2 stereo ADC support 16/20-bit PCM format

Thermal

Temp Sensors	1 x Ambient Cabled Sensor – Motherboard Header cabled to chassis front bezel 2 x CPU VCORE – Thermistor located at CPU VCORE
Fans	1 x CPU FAN1 1 x SYS FAN 1 x AUX1 FAN 1 x AUX2 FAN 1 x Front SYS FAN 1 x Pump2 1 x Liquid CPU FAN12 1 x Liquid CPU FAN22
Disclaimers	1 Air cooled part 2 Liquid cooled parts, this may inhibit certain configurations.

Power Specifications

Power Supply	1100W	750W	500W
Power Efficiency	92% Efficient @ 50% Load	92% Efficient @ 50% Load	92% Efficient @ 50% Load
Main	C14 socket to std C13 line cord	C14 socket to std C13 line cord	C14 socket to std C13 line cord
Operating Voltage Range	100 – 240V	100 – 240V	100 – 240V
Rated Voltage Range	90-264VAC	90-264VAC	90-264VAC
Rated Line Frequency	50Hz / 60Hz	47Hz / 63Hz	47Hz / 63Hz
Operating Line Frequency Range	50Hz / 60Hz	50Hz / 60Hz	50Hz / 60Hz
Rated Input Current	15A	10A	7A
Graphics	1 x 12VHPWR (16-pin)	1 x 8 pin (6+2)	1 x 8 pin (6+2)
Power Supply Fan	Yes	Yes	Yes
ENERGY STAR® Qualified (config dependent)	Yes	Yes	Yes
80 PLUS Compliant	Yes	Yes	Yes
Built-in Self Test (BIST) LED	No	No	No

Aux Power Drop	Yes	Yes	Yes

BIOS

Vendor	AMI
Disclaimers	

Chassis Information

Color	Raven Black
PSU	1100W, 750W and 500W Available, Autosensing, 80 PLUS Platinum
Dimensions	415mm / 16.34" H 180mm / 7.09" W 401.5mm / 15.81" D
Weight	Starting at 8.75 kg / 19.29 lbs

Packaging Dimensions

Height (mm/in)	570mm / 22.44"
Width (mm/in)	315mm / 12.40"
Depth (mm)	500mm / 19.69"
Weight (kgs/lbs)	Starting at 12.8 kg / 28.22 lbs
Disclaimers	

Security & Serviceability

TPM	Infineon SLB9672 (TPM 2.0)
Asset ID	Yes, 1024 x 8bit
Cable Lock Support	Yes, Optional Kensington Cable Lock
Serial, Parallel, USB, Audio, Network, Enable/Disable Port Control	Yes
Power-On Password	Yes
Setup Password	Yes
NIC LEDs (integrated)	Yes
Access Panel Key Lock	No
Boot Sequence Control	Yes
Padlock Support	Yes
Boot without keyboard and/or mouse	Yes

Access Panel	Tool-less Side Cover
Optical Drive	Tool-less
Hard Drives	Tool-less
Expansion Cards	Tool-less2
Processor Socket	Tool-less1
Color coded User Touch Points	Yes
Color-coordinated Cables and Connectors	Yes
Memory	Tool-less
System Board	Retained with Phillips Head Screws
Restore CD/DVD/USB Set	Not Included. Restore Media Available via Lenovo Download Recovery Service or available through Lenovo Support.
Disclaimers	1 Note: CPU Heatsink assembly requires a Phillips #2 bit. 2 Some larger GPUs may require additional hardware.

Operating Environment

Air Temperature	Operating: 10°C to 35°C (50°F to 95°F) Non-Operating: -40°C to 60°C (-40°F to 140°F)
Storage	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
Humidity	Operating: 10% to 90% (Humidity+EELP)
Altitude	Operating: 0 to 3,048 m (0 to 10,000 ft) Storage: 0 to 12,192 m (0 to 40,0000 ft)
Vibration	Operating Vibration: Random Vibration: 5 to 500 Hz, 0.27 G rms; 30 min/axis, X,Y,Z axes Non-Operating Vibration: Random Vibration: 2 to 200 Hz, 1.04 G rms; 15 min/face, 6 faces
Shock	Operating: Half-sine wave, 15G/3ms(X,Y), 30G/3ms(Z) Operating (Rack mounted): Half-sine wave, 15G/5ms Non-operating: Trapezoidal wave, 45G/11ms
Disclaimers	Extended operating temperatures are possible – please contact your Lenovo Rep

SECTION II: Platform Detail

Board Size	13.18" x 10.63" (334.76mm x 270mm)

Layout	Lenovo Customized
Disclaimers	

Motherboard Core

Processor Support	AMD Granite Ridge AM5 Phoenix AM5
Socket Type	Socket AM5 (LGA-1718)
Memory Support	PC5-5600 ECC / Non-ECC UDIMM / CUDIMM Memory1
Voltage Regulator	AMD SV13 – 170W TDP Capable
Chipset (PCH)	AMD Pro 675 Chipset
Flash	1 x 64Mb
Super I/O	IT5652
Audio	Realtek ALC623
Ethernet	Realtek 2.5Gb RTL8125BP-CG
Disclaimers	1 Memory speed dependent on CPU support.

Supported Components

Processor Level	AMD Granite Ridge AM5 & Phoenix AM5
Processor	AM5 Granite Ridge AMD Ryzen 9 PRO 9965X3D (4.3GHz / 16C / 32T / 16M / GT2 / DDR5 5600MHz / 170W) AMD Ryzen 9 PRO 9965 (4.3GHz / 16C / 32T / 16M / GT2 / DDR5 5600MHz / 170W) AMD Ryzen 9 PRO 9955 (3.4GHz / 12C / 24T / 12M / GT2 / DDR5 5600MHz / 120W) AMD Ryzen 7 PRO 9755X3D (4.7GHz / 8C / 16T / 8M / GT2 / DDR5 5600MHz / 120W) AMD Ryzen 7 PRO 9755 (3.8GHz / 8C / 16T / 8M / GT2 / DDR5-5600MHz / 120W) AMD Ryzen 7 PRO 9655 (3.9GHz / 6C / 12T / 6M / GT2 / DDR5-5600MHz / 120W) AMD Ryzen 7 PRO 9745 (3.8GHz / 8c / 16T / 8M / GT2 / DDR5-5600MHz / 65W) AM5 Phoenix AMD Ryzen 7 PRO 8700G (4.3GHz / 8C / 16T / 6M / GT12 / DDR5 5200MHz / 65W) AMD Ryzen 5 PRO 8600G (4.3GHz / 6C / 12T / 6M / GT8 / DDR5 5200MHz / 65W)
Memory Type	DDR5 ECC and non-ECC UDIMM / CUDIMM
Memory	16GB DDR5 5600 MT/s ECC UDIMM 32GB DDR5 5600 MT/s ECC UDIMM 48GB DDR5 5600 MT/s ECC UDIMM 8GB DDR5 5600 MT/s non-ECC UDIMM 16GB DDR5 5600 MT/s non-ECC UDIMM 32GB DDR5 5600 MT/s non-ECC UDIMM 48GB DDR5 5600 MT/s non-ECC UDIMM 48GB DDR5 6400 MT/s non-ECC CUDIMM 64GB DDR5 6400 MT/s non-ECC CUDIMM

Disclaimers	NOTE: Lenovo does not support CPU overclocking on ThinkStation platforms.

Storage

3.5" SATA Hard Disk Drive (HDD)	2TB SATA – 5400rpm, 6Gb/s, 3.5" 2TB SATA – 7200rpm, 6Gb/s, 3.5" 2TB SATA – 7200rpm, 6GB/s, Enterprise, 3.5" 4TB SATA – 7200rpm, 6GB/s, Enterprise, 3.5" 6TB SATA – 7200rpm, 6Gb/s, Enterprise, 3.5" 12TB SATA – 7200rpm, 6Gb/s, Enterprise, 3.5"
M.2 PCIe Solid State Drive (SSD)	512GB M.2 PCIe – SSD, 2280, Gen5 (x4), NVMe, TLC, OPAL2.0 1TB M.2 PCIe – SSD, 2280, Gen5 (x4), NVMe, TLC, OPAL2.0 2TB M.2 PCIe – SSD, 2280, Gen5 (x4), NVMe, TLC, OPAL2.0 4TB M.2 PCIe – SSD, 2280, Gen5 (x4), NVMe, TLC, OPAL2.0 256GB M.2 PCIe – SSD, 2280, Gen4 (x4), NVMe, TLC, OPAL2.0 512GB M.2 PCIe – SSD, 2280, Gen4 (x4), NVMe, TLC, OPAL2.0 1TB M.2 PCIe – SSD, 2280, Gen4 (x4), NVMe TLC, OPAL2.0

RAID

RAID Levels and Requirements	M.2 and SATA RAID via Integrated AMD RAID Controller
Notes	Supported RAID levels for a system will vary from the stated capabilities of the RAID controller due to dependencies on the number and capacity of physical disks in the system and on customer requirements for performance, fault tolerance, or data redundancy. M.2 Max supported RAID 0/1. SATA Max supported RAID 0/1/5/10.

Optical Drive/Removable Media

DVD-ROM Drive	Slim DVD-ROM Drive
DVD Burner/CD-RW Drive	Slim DVD Burner/CD-RW Drive
Media Card Reader Specifications	Optional: Front 3-in-1 Media Card Reader (SD, SDHC, SDXC)

Keyboard and Pointing Devices

Keyboard	USB Calliope AI Keyboard USB Traditional AI Keyboard Wireless AI Keyboard
Pointing Devices	USB Calliope Mouse

Disclaimers	

Expansion Bays

5.25" External Access Bays	Front Access Single SATA HDD Bay
Disclaimers	

PCIe Adapters

Network	Intel I210-T1 Single Port Gigabit Ethernet PCIe 2.1 x1 Adapter Intel I350-T4 Quad Port Gigabit Ethernet PCIe 2.1 x4 Adapter Realtek RTL8125BGS Single Port 2.5Gigabit Ethernet PCIe 2.1 x1 Adapter Intel E610-XT2 Dual Port 10Gigabit Ethernet PCIe 4.0 x4 Adapter Intel E810-XXVDA2 Dual Port 25Gigabit SFP28 Ethernet PCIe 4.0 x8 Adapter1
USB	USB-C 3.2 Gen 2×2 Single Port PCIe 3.0 x4 Adapter USB-A 3.0 Dual Port PCIe 2.0 x1 Adapter USB 2.0 Dual Port Cable (300mm, 2 ports) Bracket
WiFi Cards	Foxconn Wi-Fi 7 MT7925, 802.11be 2×2 Wi-Fi + Bluetooth 5.4
Serial Card	Optional: 1 x Serial (via cable) Optional: 4 x Serial (via 4-port serial expansion card, PCIe 3.0 x1 Adapter)
Other	Parallel Port Cable (300mm) Bracket
Disclaimers	Note: Actual USB throughout will vary depending on the type and quantity of USB devices used. Note: Network speeds listed are theoretical. 1 The Intel E810-XXVDA2 requires 2 x SFP28 transceivers.

SECTION III: Supported Component Detail

CPU Specifications Group 1

CPU	AMD Ryzen 9 PRO 9965X3D	AMD Ryzen 9 PRO 9965	AMD Ryzen 9 PRO 9955
# of Cores	16	16	12
# of Threads	32	32	24
Processor Base Frequency	4.3GHz	4.3	3.4
Max Turbo Frequency	5.5GHz	5.5	5.4
Cache	16MB	16MB	12MB

TDP	170W	170W	120W

CPU

# of Cores	8	8	8	8
# of Threads	16	16	16	12
Processor Base Frequency	4.7	3.8	3.8	3.8
Max Turbo Frequency	5.2	5.4	5.4	5.4
Cache	12MB	8MB	8MB	6MB
TDP	170W	120W	65W	120W

HDD Specifications

Drive	2TB SATA – 7200rpm, 6Gb/s, 3.5"	2TB SATA – 7200rpm, 6Gb/s, Enterprise 3.5"	4TB SATA – 7200rpm, 6Gb/s, 3.5" Enterprise	6TB SATA – 7200rpm, 6Gb/s, 3.5" Enterprise	12TB SATA 7200 RPM 6Gb/s 3.5" Enterprise
3.5" SATA Hard Disk Drive (HDD)	Yes	Yes	Yes	Yes	Yes
2.5" SATA Hard Disk Drive (HDD)	Not Available	Not Available	Not Available	Not Available	Not Available
Connector	SATA	SATA	SATA	SATA	SATA
Transfer Rate (Gb/sec)	Average Data Rate, Read/Write 156MB/s	215 MB/s	Sustained Data Transfer Rate 216-226MB/s	Sustained Data Transfer Rate 216-226MB/s	Max Sustained Data Transfer Rate 268MB/s
Spindle Speed (RPM)	7,200	7,200	7,200	7,200	7,200
Power Off to Spindle Stop (sec)	NA	NA	NA	NA	NA
DC Power to Drive Ready (sec)	<30.0	<30.0	<30.0	<30.0	<30.0
Average Latency (msec)	4.16	4.16	4.16	4.16	4.16
Input (VDC)	5 & 12	5 & 12	5 & 12	5 & 12	5 & 12
Typical (Watts)	5.6Max	8.28Max	9.5(Max)	11(Max)	8(Max)
Idle (Watts)	3.7Max	3.5Max	5.2(Max)	5.9(Max)	5.3(Max)
Physical Dimensions	101.6mm x 147mm x 26.1mm	101.85mm x 147mm x 26.1mm	101.85mm x 147mm x 26.1mm	101.85mm x 147mm x 26.1mm	101.85mm x 147mm x 26.1mm
Weight (grams)	<535	<710	<715	<715	<700

Operating (C) Ambient	0 to 55°C	5 to 55	5 to 55	5 to 55	5 to 55
Operating (C) Base Casting	<60	<60	<60	<60	<60
Non-Operating (C) Ambient	(-40 to 70)	(-40 to 70)	(-40 to 70)	(-40 to 70)	(-40 to 70)
Gradient (C per Hour)	20	20	20	20	20
Operating (Gs @ 2ms)	80	Read 70 Gs / Write 40 Gs	Read 70 Gs / Write 40 Gs	Read 70 Gs / Write 40 Gs	50 Gs
Non-Operating (Gs @ 2ms)	300	250	250	250	250

Solid State Storage Specifications Group 1

Drive	NVMe 2280 M.2 Value 256GB M.2 NVMe OPAL Gen4	NVMe 2280 M.2 Value 512GB M.2 NVMe OPAL	NVMe 2280 M.2 Value 1TB M.2 NVMe OPAL	NVMe 2280 M.2 512GB OPAL TLC 2280 Gen5	NVMe 2280 M.2 1TB OPAL TLC 2280 Gen5
Dimensions Millimeters (W x D x H)	22 x 80 x 2.38	22 x 80 x 2.38	22 x 80 x 2.38	22 x 80 x 2.38	22 x 80 x 2.38
Interface Type	PCIe Gen 4×4	PCIe Gen 4×4	PCIe Gen 4×4	PCIe Gen 5×4	PCIe Gen 5×4
Power Active (AVG)	5.9W	5.0W	5.0W	8W(default)10 W(performanc e)	8W(default)10 W(performanc e)
Power Idle	100 mW	50 mW	50 mW	10mW	10mW
Typical Sequential Read	3500 MB/s	7000 MB/s	7000 MB/s	12200 MB/s	14000 MB/s
Typical Sequential Write	450 MB/s	6600 MB/s	6600 MB/s	6300 MB/s	12500 MB/s
Burst Random Read (4K Queue Depth 32/8 thread);	250K IOPS	800K IOPS	800K IOPS	800K IOPS	1600K IOPS
Burst Random Write (4K Queue Depth 32/8 thread)	90K IOPS	1300K IOPS	1300K IOPS	360K IOPS	1600K IOPS
Operating Temperature Range	0 to 55°C	0 to 70°C	0 to 70°C	0 to 70°C	0 to 70°C
Endurance Rating (Lifetime Writes)	150 TB	200 TB	400 TB	300TB	600TB
Mean Time Between Failures (MTBF)	1.5M POH	1.5M POH	1.5M POH	2M POH	2M POH
Hardware Encryption	AES 256 bit	AES 256 bit	AES 256 bit	AES 256 bit	AES 256 bit

Solid State Storage Specifications Group 2

Drive	NVMe 2280 M.2 2TB OPAL TLC 2280 Gen5	NVMe 2280 M.2 4TB OPAL TLC 2280 Gen5
Dimensions Millimeters (W x D x H)	22 x 80 x 2.38	22mm x 80mm x 2.38mm
Interface Type	PCIe Gen 5×4	PCIe Gen5
Power Active (AVG)	8W(default)10W(performance)	8.92W Read/8.21W Write
Power Idle	10mW	50mW
Typical Sequential Read	14000 MB/s	14000 MB/s
Typical Sequential Write	12500 MB/s	12000 MB/s
Burst Random Read (4K Queue Depth 32/8 thread);	1600K IOPS	
Burst Random Write (4K Queue Depth 32/8 thread)	1600K IOPS	
Operating Temperature Range	0 to 70°C	0C to 70C
Endurance Rating (Lifetime Writes)	1200TB	1600 TBW
Mean Time Between Failures (MTBF)	2M POH	2.0 million hours
Hardware Encryption	AES 256 bit	OPAL

Optical Drive Specifications

Description	9mm Slim DVD ROM Drive (SATA)	9mm Slim DVD Burner/CD-RW Drive (SATA)
Interface Type	SATA 1.5 Gb/s	SATA 1.5 Gb/s
Dimensions	128±0.4×9.0 ±0.4×127±0.4(Max) Unit:mm Without Bezel-W x H x D)	128±0.4×9.0 ±0.4×127±0.4(Max) Unit:mm Without Bezel-W x H x D)
Disc Capacity	NA	NA
Type	DVDROM	DVDWriter
External Dimensions	NA	NA
Speed	NA	NA
Bay Type	9.0mm Tray	9.0mm Tray
Color	Business Black or without bezel	Business Black or without bezel
Removable	No	No
Internal Buffer Size	0.5MB Min	0.5MB Min
Writes	NA	8XDVD+R / 8XDVD+RW / 6XDVD+R DL 8XDVD-R / 6XDVD-RW / 6XDVD-R DL 24XCD-R / 16XCD-RW
Reads	8XDVD-ROM / 24XCD-ROM	8XDVD-ROM / 24XCD-ROM

Source	DC Power 5V	DC Power 5V
DC Power Requirements	+5V±5%	+5V±5%
DC Current	Max 2.5A@5v	Max 2.5A@5v
Operating Systems Supported	Windows OS/Linux	Windows OS/Linux
Temperature	Operating: 5°C to 45 °C Non-Operating:-30°C to 60°C	Operating: 5°C to 45 °C Non-Operating:-30°C to 60°C
Relative Humidity	Operating > Read: 15 % to 85 % (Non-Condensing) Write 15 % to 80 % (Depend on the Temperature) Storage/Transportation> 10 % to 80 % (Non-Condensing)	Operating > Read: 15 % to 85 % (Non-Condensing) Write 15 % to 80 % (Depend on the Temperature) Storage/Transportation> 10 % to 80 % (Non-Condensing)

Integrated Graphics Adapter

Bus Interface	Processor onboard
Display Interface	DP/DP/HDMI
Video Resolution (max)	DP: 4K 60Hz
	HDMI 4K 60Hz
Graphics Cover Name	AMD Radeon™ Graphics

Discrete Graphics Adapter Group 1

Adapter	NVIDA RTX A400	NVIDA RTX A1000	NVIDIA RTX PRO 2000 Blackwell	NVIDIA RTX PRO 4000 Blackwell	NVIDIA RTX Pro 4500 Blackwell
Bus Interface	PCI Express 4.0×16	PCI Express 4.0×16	PCIe 5.0 x 8	PCIe 5.0 x16	PCIe 5.0 x16
Display Interface	DP *4	DP *4	4x DP 2.1b	4x DP 2.1b	4x DP 2.1b
Graphics Chipset	PG172 SKU 570	PG172 SKU 550	GB206 (Blackwell)	GB203 (Blackwell)	GB203 (Blackwell)
Memory Clock Frequency (MHz)	6001 MHz	6001 MHz	1125 MHz	1230 MHz	1635 MHz
Memory Size	4GB GDDR6	8GB GDDR6	16 GB GDDR7 with ECC	24 GB GDDR7 with ECC	32 GB GDDR7 with ECC
Memory Interface	64 bits	64 bits	128-bit	192-bit	256-bit
Memory Bandwidth	Up to 96 GB/s	Up to 192 GB/s	288 GB/s	672 GB/s	896 GB/s
GPU Cores	CUDA Cores: 768	CUDA Cores: 2048	CUDA Cores: 4,352 Tensor Cores: 136 RT Cores: 34	CUDA Cores: 8,960 Tensor Cores: 280 RT Cores: 70	CUDA Cores: 10,496 Tensor Cores: 328 RT Cores: 82

GPU Core Frequency (MHz)	420MHz (base)/2100MHz (max boost)	1417MHz (base)/2100MHz (max boost)	1957 MHz	2055 MHz	2407 MHz
Maximum Power Consumption	30W	50W	70 W	140 W	200 W
Supported Resolutions and Max Refresh Rates (Hz) (Note: Analog and/or Digital)	7680 x 4320 x 24 bpp @ 120Hz 7680 x 4320 x 24 bpp @ 60Hz 7680 x 4320 x 36 bpp @ 60Hz 5120 x 3200 x 24 bpp @ 60Hz 5120 x 2880 x 24 bpp @ 60Hz	7680 x 4320 x 24 bpp @ 120Hz 7680 x 4320 x 24 bpp @ 60Hz 7680 x 4320 x 36 bpp @ 60Hz 5120 x 3200 x 24 bpp @ 60Hz 5120 x 2880 x 24 bpp @ 60Hz	4x 3840 x 2160 @ 165 Hz 2x 3840 x 2160 @ 360 Hz 2x 7680 x 4320 @ 100 Hz	4x 3840 x 2160 @ 165 Hz 2x 7680 x 4320 @ 100 Hz	4x 3840 x 2160 @ 165 Hz 2x 7680 x 4320 @ 100 Hz
Thermal Solution	Ultra-quiet Active Fansink	Ultra-quiet Active Fansink	Active	Active	Active
Dimension	2.713” H x 6.137” L Single Slot, Low Profile	2.713” H x 6.137” L Single Slot, Low Profile	2.7” H x 6.6” L, dual slot	4.4” H x 9.5” L, single slot, full height	4.4” H x 10.5” L, dual slot, full height
Advanced Display	Not Available	Not Available	NA	RTX PRO Sync	RTX PRO Sync
SLI/NVLink Support	Not Available	Not Available	NA	NA	NA

Discrete Graphics Adapter Group 2

Adapter	NVIDIA RTX Pro 5000 Blackwell	NVIDIA RTX Pro 5000 Blackwell	NVIDIA RTX PRO 6000 Blackwell Max-Q Workstation Edition	NVIDIA RTX PRO 6000 Blackwell Workstation Edition
Bus Interface	PCIe 5.0 x16	PCIe 5.0 x16	PCIe 5.0 x16	PCIe 5.0 x16
Display Interface	4x DP 2.1b	4x DP 2.1b	4x DP 2.1b	4x DP 2.1b
Graphics Chipset	GB202 (Blackwell)	GB202 (Blackwell)	GB202 (Blackwell)	GB202 (Blackwell)
Memory Clock Frequency (MHz)	1755 MHz	1755 MHz	3500 MHz	3500 MHz
Memory Size	48 GB GDDR7 with ECC	72 GB GDDR7 with ECC	96 GB GDDR7 with ECC	96 GB GDDR7 with ECC
Memory Interface	384-bit	384-bit	512-bit	512-bit
Memory Bandwidth	1344 GB/s	1344 GB/s	1792 GB/s	1792 GB/s
GPU Cores	CUDA Cores: 14,080 Tensor Cores: 440 RT Cores: 110	CUDA Cores: 14,080 Tensor Cores: 440 RT Cores: 110	CUDA Cores: 24,064 Tensor Cores: 752 RT Cores: 188	CUDA Cores: 24,064 Tensor Cores: 752 RT Cores: 188
GPU Core Frequency (MHz)	2377 MHz	2377 MHz	2280 MHz	2617MHz
Maximum Power Consumption	300 W	300 W	300 W	600W

Supported Resolutions and Max Refresh Rates (Hz) (Note: Analog and/or Digital)	4x 3840 x 2160 @ 165 Hz 2x 7680 x 4320 @ 100 Hz	4x 3840 x 2160 @ 165 Hz 2x 7680 x 4320 @ 100 Hz	4x 4096 x 2160 @ 120 Hz 4x 5120 x 2880 @ 60 Hz 2x 7680 x 4320 @ 60 Hz	4x 4096 x 2160 @ 120 Hz 4x 5120 x 2880 @ 60 Hz 2x 7680 x 4320 @ 60 Hz
Thermal Solution	Active	Active	Active	Active
Dimension	4.4” H x 10.5” L, dual slot, full height	4.4” H x 10.5” L, dual slot, full height	4.4” H x 10.5” L, dual slot, full height	4.4” H x 10.5” L, dual slot, full height
Advanced Display	RTX PRO Sync	RTX PRO Sync	RTX PRO Sync	RTX PRO Sync
SLI/NVLink Support	NA	NA	NA	NA

Ethernet Specifications Group 1 Part 1

Card	Intel I210-T1 Single Port Gigabit Ethernet Adapter (Springville)	Intel I350-T4 Quad Port Gigabit Ethernet Adapter (Stony Lake T4)	RTL8125BGS 2.5G Single Port PCIex1	Intel E610-XT2 10GBASE-T 2-port PCIex4 Gen4 Ethernet Adapter	Intel® E810-XXVDA2 10/25GbE SFP28 2-Port PCIe Ethernet Adapter
Supplier PN	I210T1, MM# 941033	I350T4G1P20, MM# 928942	RTL8125BGS-CG	99CFRH	999P08
Data Rates Supported	10/100/1000Mbps copper	10/100/1000Mbps (Copper), 1000Mbps (Fiber)	10/100/1000/2500Mbps copper	100M / 1G / 2.5G / 5G / 10GBASE-T	25/10/1G
Controller Details	Intel® Ethernet Controller I210	Intel Ethernet Controller I351	Ethernet Controller RTL8125B	E610	E810
Controller Bus Architecture	PCIe 2.1 (5GT/s)	PCIe 2.1 (5GT/s)	PCIe 2.1 (5GT/s)	PCIE4.0	PCIE4.0
Data Transfer Mode	Ethernet	Ethernet	Ethernet	Ethernet	Ethernet
Power Consumption	0.81W	Copper: I350T4V2= 5W LC-Fiber: I350F4= 6W	0.8W	5.1	13.7
IEEE Standards Compliance	IEEE 802.3/10BASE-T, 100BASE-TX, 1000BASE-T	IEEE 802.3/10BASE-T, 100BASE-TX, 1000BASE-T	IEEE 802.3 10BASE-Te 100/1000/2.5G BASE-T	IEEE 802.3/10BASE-T, 100BASE-TX, 1000BASE-T	IEEE802.3by/IEEE802.3ae/IEEE802.3z
Boot ROM Support	PXE boot, Intel iSCSI Remote Boot for Windows, Linux and Vmware, Intel BootAgent Software via PXE or BootP, WDMS or UEFI	PXE boot, Intel iSCSI Remote Boot for Windows, Linux and Vmware, Intel BootAgent Software via PXE or BootP, WDMS or UEFI	PXE /UEFI Boot	PXE/UEFI boot	PXE/UEFI boot
Network Transfer Mode (Full/Half Duplex)	Supported	Supported	Supported	Supported	Supported

Network Transfer Rate	1,000Mbps Full Duplex	1,000Mbps Full Duplex	2500Mbps Full Duplex	10Gbps Full	25Gbps Full
Operating System Driver Support	Windows 7/8/10, Linux, Free BSD, XEN,Vmware	Windows 7/8/10, Linux, Free BSD, XEN,Vmware	Windows 11 64	Windows 11 64	Windows 11 64
Manageability	–	–	–	–	–
Manageability Capabilities Alerting	–	–	–	–	–
Lithography	–	–	–	–	–
TDP	Firmware Based Thermal Management	Firmware Based Thermal Management	Thermal Management	–	–
Operating Temperature Range	0°C to 55°C (32°F to 131°F)	0°C to 55°C (32°F to 131°F)	'-5℃~50℃(23°F to 122°F)	0°C to 55°C (32°F to 131°F)	0°C to 55°C (32°F to 131°F)
# of Ports	1	4	1	2	2
Data Rate Per Port	10/100/1000Mbps (copper)	10/100/1000Mbps (copper), 1000Mbps (fiber)	10/100/1000/2500Mbps	10/5/2.5/1Gbps and 100Mbps	25/10/1Gbps
System Interface Type	PCIe Gen 2.1	PCIe Gen 2.1	PCIe Gen 2.1	PCIE4.0 x4	PCIE4.0 x8
NC Sideband Interface	Not Available	Not Available	Not Available	No	No
Jumbo Frames Supported	Yes	Yes	Yes	Yes	Yes
1000Base-T	Yes	Yes	Yes	Yes	No
MACsec IEEE 802.1 AE	Coming Soon	Coming Soon	Not Available	No	No
IEEE 1588	Supported	Supported	Supported	No	Yes
Supported Under vPro	Not Available	Not Available	Not Available	Not Available	Not Available
Disclaimers	–	–	–	–	–

Ethernet Specifications Group 1 Part 2

Model	i210-T1	I350-T4	RTL8125BGS 2.5G Single Port PCIex1	Intel® E610-T2 10GBASE-T 2-port PCIe Ethernet Adapter	Intel® E810-XXVDA2 10/25GbE SFP28 2-Port PCIe Ethernet Adapter
Connector	RJ-45 Copper	4 x Ports RJ-45 Copper	RJPA54-5JE3-M1A-0R	2 x Ports RJ-45 Copper	2 x SFP28
Website	i210 T1	i350 T4	RTL8125BGS	E610-XT2	E810-XXDA2
10BASE-T (IEEE 802.3 specification conformance)	–	–	–	Y	N

100BASE-TX (IEEE 802.3 specification conformance)	–	–	–	Y	N
1000BASE-T (IEEE 802.3 specification conformance)	–	–	–	Y	N
Auto-Negotiation	IEEE* 802.3* Auto-negotiaton	IEEE* 802.3* Auto-negotiaton	suported	IEEE* 802.3* Auto-negotiaton	IEEE* 802.3* Auto-negotiaton
Intel® vPro™	Not Available	Not Available	Not Available	Not Available	Not Available
Intel® Stable Image Platform Program (SIPP)	–	–	–	–	–
Intel® Standard Manageablity	Supported	Supported	–	–	–
Power Optimizer Platform Low-power Management Systems	Supported	Supported	–	–	–
Energy Efficient Ethernet	Supported	Supported	Supported	Supported	Supported
TCP/UDP Checksum and Segmentation Offload (IPv4 and IPv6)	Supported	Supported	Supported	Supported	Supported
Receive Side Scaling	Supported	Supported	Supported	Supported	Supported
Dual Tx and Rx Queues	Yes	Yes	Yes	–	–
Jumbo Frames (up to 9KB)	Supported	Supported	Jumbo Frames (up to 16KB)	–	–
Teaming	Supported	Supported	Supported	Supported	Supported
Integrated Auto Connect Battery Saver (ACBS) Battery Savings	–	–	–	–	–
Timing and Synchronizatio n	–	–	–	–	Supported
Integrated Switched Voltage Regulator (iSVR)	–	–	Yes	–	–
Shared Flash with System BIOS	–	–	Not Available	Not Available	Not Available

Wake from Deep Sx	Supported	Supported	Supported	Supported	–
Server Operating System Support	Windows Server 2008, 2012, 2016. 2019 Linux (RHEL/SLES), Free BSD, Xen, Vmware	Windows Server 2008, 2012, 2016. 2019 Linux (RHEL/SLES), Free BSD, Xen, Vmware	–	–	–
Network Proxy/ARP Support	Supported	Supported	Supported	Supported	Supported
Disclaimers	–	–	–	–	–

Ethernet Specifications Group 2 Part 1

Card	WLAN MT7925 WIFI7 2*2be+BT5.4 PCIE M.2 2230 module
Supplier PN	T99H493.01
Data Rates Supported	2.4G/5G/6G
Controller Details	MediaTek Wi-Fi7 MT7925
Controller Bus Architecture	WiFi:PCIe 2.1 Bluetooth: USB 2.0
Data Transfer Mode	WLAN
Power Consumption	M.2 power supply: supply: 3.3V worst case: 2000mA
IEEE Standards Compliance	IEEE 802.11 be IEEE 802.11 a/b/d/e/g/h/i/k/n/r/v/w/ac/ax
Boot ROM Support	Wireless Functionality inPre-boot Environment WiFi UEFI
Network Transfer Mode (Full/Half Duplex)	NA
Network Transfer Rate	NA
a	Windows11, Linux, Free BSD
Manageability	Supported
Manageability Capabilities Alerting	Supported
Lithography	NA
TDP	NA
Operating Temperature Range	0°C to 50°C
# of Ports	NA
Data Rate Per Port	2×2
System Interface Type	M.2:PCIe*, USB
NC Sideband Interface	Not Available
Jumbo Frames Supported	Yes
1000Base-T	NA

MACsec IEEE 802.1 AE	NA
IEEE 1588	NA
Supported Under vPro	NA

Ethernet Specifications Group 2 Part 2

Model	WLAN MT7925 WIFI7 2*2be+BT5.4 PCIE M.2 2230 module
Connector	2 x WiFi6E Antenna_Lux
Website	NA
10BASE-T (IEEE 802.3 specification conformance)	NA
100BASE-TX (IEEE 802.3 specification conformance)	NA
1000BASE-T (IEEE 802.3 specification conformance)	NA
Auto-Negotiation	NA
Intel® vPro™	Not Available
Intel® Stable Image Platform Program (SIPP)	NA
Intel® Standard Manageablity	NA
Wake from Deep Sx	Supported
Server Operating System Support	Supported
Network Proxy/ARP Support	Supported

Media Card Reader

Description	Media Card reader (3 in 1) TWR
Interface Type	USB2.0
Form Factor	USB 2.0 Mass Storage Device

SECTION IV: BIOS / Certifications / Standards / Environmental

BIOS Specifications

WMI Support	Compliant With Microsoft WBEM and the DMTF Common Information Model
ROM-Based Setup Utility (F1)	System Configuration Setup Program, Available at Power-on With F1 Key

Bootblock Recovery	Recovers System BIOS if the Flash ROM Becomes Corrupted
Replicated Setup	Saves System Configuration Settings to a File That Can Then be Used to Replicate the Settings to Other Systems
Boot Control	Boot Control Available Through ROM-based Setup Utility or With F12 Key at Power-on
Memory Change Alert	Power-on Error Message in the Event of a Decrease in System Memory
Thermal Alert	Power-on Error message in the Event of a Fan Failure
Asset Tag	Supports Ability to Set SMBIOS Type 2 Baseboard Asset Tag Field
System/Emergency ROM Flash Recovery with Video	Supports Process to Recover the System BIOS if the Flash ROM Becomes Corrupted
Remote Wakeup/Remote Shutdown	System Admin Can Power On/Off a Client Computer from a Remote Location to Provide Maintenance
Quick Resume Time	Supports Low Power S3 (suspend to RAM) and Prompt Resume Times
ROM Revision Level	System UEFI (BIOS) Version Reported in SMBIOS Type 0 Structure and in BIOS Setup
Keyboard-less Operation	System Can be Booted Without a Keyboard
Per-port Control	Allows I/O Ports to be Individually Enabled/Disabled Through ROM-based Setup or WMI Interface
Adaptive Cooling	Offers Multiple Settings for Fan Control Ranging Between Better Performance and Better Acoustics
Security	Supervisor, SMP and Power-On Passwords Can Protect Boot and ROM-based Setup – Support Electronic Lock – Chassis Intrusion Detection – UEFI Secure Boot Support – HDD Password Can Protect HDD Data – Windows UEFI Firmware Update Support – Device Guard Support – Optional Access Panel Lock, Kensington Lock, and Pad Lock, BIOS Guard, Boot Guard -BIOS Self-Healing Gen 2 (RoT: EC) -Secure Wipe 2.0 -Subscription Certificate Storage -Certificate-based BIOS Authentication and Management – Phase 2 -BIOS Modification and Event Logging – Phase 1 -Customized BIOS Defaults -BIOS Settings in Intune Settings Catalog -Microsoft Modern (Cloud) Bare Metal Recovery “cBMR” -BIOS Initialization to Factory Default
DASH	Allows System to be Supported from a Remote Location
AMD Platform Secure Boot (PSB)	Provides a Security Foundation to Build Protections Against Software Based Attacks
Memory Modes	Supports Mirroring, Lock Step, and Sparing Memory Modes

Windows 10 Ready	Supports Windows 10 Requirements for Secure Flash, UEFI v 2.9 Device Guard Support Spec

Industry Standard Specification Support

UEFI	Unified Extensible Firmware Interface v2.9
ACPI (Advanced Configuration and power Management Interface)	Advanced Configuration and Power Interface v6.5
ASF 2.0	DMTF Alert Standard Format Specification v2.0
ATA (IDE)	AT Attachment 6 with Packet Interface (ATA/ATAPI-6)
CD Boot	El Torito Bootable CD-Rom Format Specification, v1.0
EHCI	Enhanced Host Controller Interface for Universal Serial Bus, Revision v1.0
PCI	NA (No PCI slot)
PCI Express	PCI Express Base Specification v5.0
SATA	Serial ATA Revision 3.0 Specification
TPM	Trusted Computing Group TPM Specification v2.0
UHCI	Universal Host Controller Interface Design Guide, Revision v1.1
USB	Universal Serial Bus Revision v1.1 Universal Serial Bus v2.0 Universal Serial Bus v3.0 Universal Serial Bus v3.2
SMBIOS	DMTF System Management Spec v3.7
XHCI	XHCI SPEC Revision v1.2

Social and Environmental Responsibility

Quality Control	Lenovo is a member of an eco declaration system that enforces regular independent quality control
Hazardous Substances and Preparation	GDX Scip control
Batteries	UN38.3,MSDS
Safety, EMC Connection to the Telephone Network and Labeling	Not applicable

Acoustic Noise Emissions Declaration

LWAd(bels) Idle	3.5
LWAd(bels) Oper	3.5

Safety, EMC Connection to the Telephone Network and Labeling

Industry Standard Specifications	not applicable
Remote Manageability Software Solutions	not applicable
System Software Manager	Lenovo ThinkStation supports software management tools by Lenovo Vantage.

Regulations & Standards

EMC & Safety	FCC/IC VCCI BSMI KC RCM GS UL IEC62368 CB Report/Certificate Saudi Arabia EQM Kuwait KUCAS China CCC Mark Singapore PSB South Africa SABS Russia/Belarus/Kazakhstan/Kyrgyzstan/Armenia-EAC Morocco-CM Mexico-NOM Serbia KVALITET Ukraine UKrCEPRO India-BIS China SRRC Indonesia-DJID Malaysia-SIRIM Philippines-NTC Chile-SUBTEL Thailand-NBTC Morocco-ANRT Singapore-IMDA India-ETA

Environmentals

Energy Star	ENERGY STAR 9.0
EPEAT	EPEAT Certification Available on Select Models
ErP Lot-3 2013	Yes
Hazardous Substances	GDX Scip control
Materials Used	System 95% PCC recycled plastic front bezel Packaging Carton: 90% Recycled and/or FSC certified content3 Cushion: 90% Recycled EPE
TCO Certification	10.0
Disclaimers	EPEAT registered where applicable. EPEAT registration varies by country. See www.epeat.net for registration status by country.