Lenovo P16 Gen 1

Version: 1.0 | 05/17/2022

Downloads

Hardware Maintenance Manual	P16 Gen 1 HMM
Drivers & Software	ThinkPad P16 Gen 1 Drivers & Software

SECTION I: SYSTEM OVERVIEW

Description	ThinkPad P16 Introducing the ThinkPad® P16, a power-packed mobile workstation built for the ultimate professional user. Packed with a new class of Intel® Core™ processors and unmatched NVIDIA RTX™ A5500 graphics support, the P16 is built for those who demand the highest level of power and performance, all in a 16-inch modernized design.

CPU

Processor Support	Intel 12th gen Alder Lake HX Series (55W) Core i5, i7, i9
Socket Type	BGA

Operating Systems

Preloaded	Windows 11 Pro 64-bit (21H2) Windows 11 Home 64-bit (21H2) Windows 10 Pro 64-bit preinstalled through downgrade rights in Windows 11 Pro 64-bit (21H2) Windows 10 China Government Edition Ubuntu Linux 64-bit (Version 20.04 LTS, running the 4.15.0 kernel) Ubuntu Linux Data Science Workstation

	Fedora 36 Linux No Operating System
Supported	Ubuntu Linux 22.04 Cert only Red Hat Enterprise Linux (RHEL) 8.6

Memory

Number of DIMM Slots	4 DIMM sockets: Top x2; Bot x2
Channels	Single Channel w/ 2DIMMs Dual Channel w/ 4DIMMs
Type	DDR5 SO-DIMM, ECC / non-ECC
ECC Support	Yes
Speed	Native: Up to 4800MHz Actual: Up to 4000Mhz
Max DIMM Size	32GB
Max System Memory	128GB
Min System Memory	8GB
Soldered Memory	None
Disclaimers	No 8GB ECC memory Install 2DPC with 2R DIMMs, that will lower memory speeds to 3600MHz

Storage

Storage Slots	2x M.2 2280
SATA	None
PCIe	Solid State Drive, 2x OPAL2 PCIe-NVMe M.2 2280-S3 – TLC
SAS	None
Interface	PCIe Gen 4 Performance or Gen 4 Value
Security	OPAL2 for NVMe SSD
Optional Hard Disk Drive Controllers	None

Video

Integrated Graphics	For Intel® i5-12600HX vPro Processor Graphics Intel® UHD Graphics Utilized via “Hybrid Mode” in BIOS For Intel® i7-12800HX Processor Graphics Intel® UHD Graphics Utilized via “Hybrid Mode” in BIOS For Intel® i7-12850HX vPro Processor Graphics Intel® UHD Graphics Utilized via “Hybrid Mode” in BIOS

	For Intel® i9-12900HX Processor Graphics Intel® UHD Graphics Utilized via “Hybrid Mode” in BIOS For Intel® i9-12950HX vPro Processor Graphics Intel® UHD Graphics Utilized via “Hybrid Mode” in BIOS
Discrete Graphics	NVIDIA RTX A1000, NVIDIA RTX A2000 8GB, NVIDIA RTX A3000 12GB, NVIDIA RTX A4500, NVIDIA RTX A5500 Intel Arc Pro A30M
Adapter	None
Bus Interface	PEG

Display

Resolutions	WUXGA (FHD+) / WQXGA (QHD+) / WQUXGA (UHD+)

Camera

Resolution	FHD 1080p / IR Camera
Frames per Second	30 fps
Focus	Fixed 50cm
Camera Interface	USB 2.0
IR Camera	Yes, On Select Model

Keyboard

Number of Keys	US : 105 / UK : 106 / JP : 110
Numpad	Yes
Size	100% ISO
Function Key Features	Yes
Backlit	Yes
Keyboard size	Como 2022 Full size KB with NumPad (Top loading)
Key stroke	1.5mm
Key pitch	19.05 mm(Vertical & Horizontal)
Keyboard backlight	Yes
Keyboard thickness	4.55mm

Touchpad / Fingerprint Reader

TrackPoint Details	COMO TrackPoint module (t5.55mm)

Finger Print Reader Model	Synaptics Metallica 8×8 FPR, MoC – integrated with Power button
Multi-Touch	Yes
Resolution	1000 ppi
TouchPad/Trackpad thickness	3.3mm
TouchPad/Trackpad type	2 Buttons Clickpad
Trackpad size	115mm x 67.6mm
Trackpad material/finish	Glass-like Mylar surface

I/O – Ports and Connectors

USB	2x USB-A 3.2 Gen1 (1x Powered) 1 x USB-C 3.2 Gen 2
Thunderbolt	2x Thunderbolt 4 (USB-C/DP/PD) (DP 1.4 for discrete, DP 1.2 for integrated graphics)
HDMI	1x HDMI 2.1
Audio Combo Jack	1x Microphone & Headphone Combo Jack (3.5mm)
Media Card Reader	Dedicated SD Express 7.0 Card Reader (UHS-II) (MMC,SD,SDHC SDXC)
Smart Card Reader	Yes (optional)
Power Connector	DC-In
Docking Port	Docking Via Thunderbolt 4 / USB-C
VirtualLink	None
Network adapter	No native RJ-45 port RJ-45 functionality provided via USB-C to Ethernet Adapter
Disclaimers	HDMI 2.1: Up to 8K/60Hz for NV discrete graphics or Up to 4K/60Hz for Intel integrated/discrete graphics

Power Connector

Main	DC-In
USB-C	2x Thunderbolt 4 (USB-C/DP/PD)

Ethernet

Vendor	N/A
Count	N/A
EEPROM	N/A
Speeds	N/A
Functions	N/A

Connectors	No native RJ-45 port RJ-45 functionality provided via USB-C to Ethernet Adapter

WWAN

Model	Fibocom L860-GL 4G LTE CAT16 (Optional)

Near Field Communications

Model	Foxconn NXP NPC300 NFC

Audio

Vendor	Realtek
Type	Intel High Definition Audio (2 channel)
Internal Speaker	2 channel
Connectors	Microphone & Headphone Combo Jack (3.5mm)
Chipset	ALC3306 w/ Smart Amp
Number of Channels	4-channel DAC, 4-channel ADC
Number of Bits/Audio Resolution	16/20/24-bit PCM format
Sampling Rate (Recording/Playback)	44.1k/48k/96k/192kHz sample rate
Signal to Noise Ratio	Mic In: 95dB FSA Headphone Out@32ohm: 100dB FSA
Analog Audio	None
Dolby Digital	Dolby ATMOS
Digital Out (S/PDIF)	No
Speaker Power Rating	2W@4ohm/ch

Power adapter

Type	Slim 170W AC Adapter	Slim 230W AC Adapter
Dimensions	240cc (142 x 77 x 22mm) Max 475g	353cc (160 x 87 x 25.4mm) Max 815g
Input Voltage	100-240V	100-240V

Security

TPM	Version 2.0
Asset ID	Yes
vPro	Intel vPro for WS

Chassis Information

Format	16″ Performance
Color	Aluminum Storm Gray
Thermal Solutions	Internal Dual FAN, Intelligent Cooling Vapor Chamber, High performance grease KBD air intake, Dual by-pass design, Heat pipes
Dimensions	Length 14.33 inches 364 millimeters Width 10.47 inches 266 millimeters Height 1.19 inches 30.23mm
Weight	with 6 cell 94WHr Battery, Min 6.5lbs/2.95kgs

Packaging Parameters

Height (mm)	341
Height (inch)	13.43
Width (mm)	105
Width (inch)	4.13
Depth (mm)	493
Depth (inch)	19.41
Weight (kgs)	4.6
Weight (lbs)	10.14

Security & Serviceability

Hardware Maintenance Manual	P16 Gen 1 HMM – need link
Drivers & Software	P16 Gen 1 Drivers & Software — need link
Self Healing BIOS	Yes
Access Panel	Removeable bottom cover

Number of Screws	See Hardware Maintenance Manual for Details
Swappable Components	Bottom cover, memory module, M.2 solid-state drive, speaker assembly, coin-cell battery, TrackPoint pointing cap, keyboard, WLAN Card, WWAN Card, Power Button Cable, Hinge Caps, LCD Unit, Chassis Assembly, Dummy Smart Card Reader, System Board, SIM Tray
Storage Slots	2 slots
Memory	4 SODIMM slots
Restore CD/DVD/USB Set	None, Restore Media available via Lenovo Customer Support Center
Cable Lock Support	Security-lock slot, Optional Kensington Cable Lock
Power-On Password	Yes
Hard Disk Password	Yes; User and Master hard disk password
Supervisor Password	Yes
NIC LEDs (integrated)	None
Security Chip	Yes (for TMP 2.0)
Access Panel Key Lock	Bottom Cover Tamper Detection
Boot Sequence Control	Yes

Operating Environment

Operating – Air Temperature	At altitudes up to 2438 m (8000 ft) – Operating: 5°C to 35°C (41°F to 95°F)
Non Operating – Air Temperature	At altitudes up to 2438 m (8000 ft) – Storage: 5°C to 43°C (41°F to 109°F)
Humidity	Operating: 8% to 95% at wet-bulb temperature 23°C (73°F) Storage: 5% to 95% at wet-bulb temperature 27°C (81°F)
Corrosive Gas	G1
Particulates	P1

SECTION II: SUPPORTED COMPONENTS

Supported Components

Processor	Intel® Core™ i5-12600HX vPro processor (E-cores up to 3.30 GHz P-cores up to 4.60 GHz) Intel® Core™ i7-12800HX non-vPro processor (E-cores up to 3.40 GHz P-cores up to 4.80 GHz) Intel® Core™ i7-12850HX vPro processor (E-cores up to 3.40 GHz P-cores up to 4.80 GHz) Intel® Core™ i9-12900HX non-vPro processor (E-cores up to 3.60 GHz P-cores up to 5.00 GHz) Intel® Core™ i9-12950HX vPro processor (E-cores up to 3.60 GHz P-cores up to 5.00 GHz)

Memory Support	DDR5 SoDIMM ECC/non-ECC Native: 4800MHz Actual: 4000MHz
Chipset (PCH)	Mobile Intel® WM690 Chipset
Size of BIOS Flash	32MB
Super I/O	None
Clock	Crystal
Audio	Realtek High Definition Audio
Ethernet	No native RJ-45 port RJ-45 functionality provided via USB-C to Ethernet Adapter
Disclaimers	No 8GB ECC memory Install 2DPC with 2R DIMMs, that will lower memory speeds to 3600MHz

Memory

System Capacity Options	8GB 16GB 32GB 64GB 128GB
non-ECC	8GB DDR5 (Native: 4800MHz, Actual: 4000MHz) SoDIMM 16GB DDR5 (Native: 4800MHz, Actual: 4000MHz) SoDIMM 32GB DDR5 (Native: 4800MHz, Actual: 4000MHz) SoDIMM
Brand of non-ECC Memory	Samsung SK Hynix Micron Ramaxel
ECC	16GB DDR5 (Native: 4800MHz, Actual: 4000MHz) ECC SoDIMM 32GB DDR5 (Native: 4800MHz, Actual: 4000MHz) ECC SoDIMM
Brand of ECC Memory	SK Hynix Samsung
Memory clock frequency(MHz)	Native: 4800MHz, Actual: 4000MHz
Disclaimers	No 8GB ECC memory Install 2DPC with 2R DIMMs, that will lower memory speeds to 3600MHz

Storage

2.5″ SAS Hard Disk Drive (HDD)	None
2.5″ SATA Hard Disk Drive (HDD)	None
2.5″ SATA Solid State Drive (SSD)	None
M.2 (NGFF) PCIe Solid State Drive (SSD)	256GB OPAL2 PCIe 4x4 Value TLC (M.2 2280-S3) 512GB OPAL2 PCIe 4x4 Value TLC (M.2 2280-S3) 1TB OPAL2 PCIe 4x4 Value TLC (M.2 2280-S3)

	512GB OPAL2 PCIe 4x4 Performance TLC (M.2 2280-S3) 1TB OPAL2 PCIe 4x4 Performance TLC (M.2 2280-S3) 2TB OPAL2 PCIe 4x4 Performance TLC (M.2 2280-S3) 4TB OPAL2 PCIe 4x4 Performance TLC (M.2 2280-S3)
2.5" PCIe Solid State Drive (SSD)	None
Brand of Drive	Samsung Western Digital Hynix Kioxia Micron
Intel Optane Storage Technology	None
RAID	Optional, Selectable in BIOS
RAID Level and Requirements	RAID-0/1

Removeable Media

Media Card Reader Specifications	SD Express 7.0 UHS-II

SECTION III: Supported Component Detail

CPU Specifications

CPU	Intel® Core™ i5-12600HX vPro (E-cores up to 3.30 GHz, P-cores up to 4.60 GHz)	Intel® Core™ i7-12800HX (E-cores up to 3.40 GHz, P-cores up to 4.80 GHz)	Intel® Core™ i7-12850HX vPro (E-cores up to 3.40 GHz, P-cores up to 4.80 GHz)	Intel® Core™ i9-12900HX (E-cores up to 3.60 GHz, P-cores up to 5.00 GHz)	Intel® Core™ i9-12950HX vPro (E-cores up to 3.60 GHz, P-cores up to 5.00 GHz)
Integrated Graphics	Intel® UHD Graphics	Intel® UHD Graphics	Intel® UHD Graphics	Intel® UHD Graphics	Intel® UHD Graphics
# of Cores	4 P-cores and 8 E-cores	8 P-cores and 8 E-cores	8 P-cores and 8 E-cores	8 P-cores and 8 E-cores	8 P-cores and 8 E-cores
# of Threads	16	24	24	24	24
Processor Base Frequency	2.5GHz on P-cores and 1.8GHz on E-cores	2.0GHz on P-cores and 1.5GHz on E-cores	2.1GHz on P-cores and 1.5GHz on E-cores	2.3GHz on P-cores and 1.7GHz on E-cores	2.3GHz on P-cores and 1.7GHz on E-cores
Max Turbo Frequency	4.6Ghz on P-cores and 3.3GHz on E-cores	4.8Ghz on P-cores and 3.4GHz on E-cores	4.8Ghz on P-cores and 3.4GHz on E-cores	5.0Ghz on P-cores and 3.6GHz on E-cores	5.0Ghz on P-cores and 3.6GHz on E-cores

Cache	18MB	25MB	25MB	30MB	30MB
TDP	55W	55W	55W	55W	55W

Display Specifications

Model	WUXGA Non-Touch	WQXGA Non-Touch	WQUXGA Non-Touch	WQUXGA OLED with Touch
Resolution	FHD+ (1920 x 1200)	QHD+ (2560 x 1600)	UHD+ (3840 x 2400)	UHD+ (3840 x 2400)
Diagonal	16″	16″	16″	16″
Aspect Ratio	16:10	16:10	16:10	16:10
Backlight	LED	LED	LED	LED
PPI	FHD+: 142	QHD+: 189	UHD+: 283	UHD+: 283
Active Area	345.67mm x 216.63mm	345.67mm x 216.63mm	345.67mm x 216.63mm	345.67mm x 216.63mm
Refresh Rate	Max 60Hz	Max 60Hz	Max 60Hz	Max 60Hz
Contrast Ratio	FHD+: 1200:1	QHD+: 1200:1	UHD+: 1500:1	UHD+: 100000:1
Viewing Angle (*1)	FHD+: 85/85/85/85 degree	QHD+: 85/85/85/85 degree	UHD+: 85/85/85/85 degree	UHD+: 85/85/85/85 degree
Color gamut	100% sRGB	100% sRGB	100% Adobe	100% DCI-P3
Brightness	300 nits	400 nits	600 nits	400 nits
HDR	N/A	N/A	HDR400 Dolby Vision	HDR500 True Black Dolby Vision
Color Depth	FHD+: 16M (RGB 6-bit + FRC)	QHD+: 16.7M (8-bit)	UHD+: 1064M (8-bit + FRC)	UHD+: 1064M (8-bit + FRC)
Interface	FHD+: eDP 1.4	QHD+: eDP 1.4	UHD+: eDP 1.4	UHD+: eDP 1.4
Panel ID Recognition	EDID in BIOS Table	EDID in BIOS Table	EDID in BIOS Table	EDID in BIOS Table
Weight	330g max	330g max	330g max	330g max
Color Calibrator	X-Rite Pantone Color Calibration	X-Rite Pantone Color Calibrationne	X-Rite Pantone Color Calibration	X-Rite Pantone Color Calibration
Panel Technology	IPS, Anti-Glare	IPS, Anti-Glare	IPS, Anti-Glare	OLED, Anti-Reflection / Anti-Smudge
Touch Panel	None	None	None	Multi-Finger Touch Panel with Pen Controller, Wacom. Pen Tilt support

SSD Specifications

2.5" SATA Solid State Drive (SSD)	N/A
M.2 (NGFF) PCIe Solid State Drive (SSD)	2x M.2 2280-S3 PCIe
2.5" PCIe Solid State Drive (SSD)	N/A
Intel Optane Storage Technology	N/A

Solid State Storage Devices

Supported Types	M.2	M.2
Dimensions inches/centimeters (W x D x H)	22.0 (+-0.15) x 80.0 (+-0.15) x 2.3 (max)	22.0 (+-0.15) x 80.0 (+-0.15) x 2.3 (max)
Size	M.2 2280-S3	M.2 2280-S3
Interface Type	PCIe NVMe	PCIe NVMe
Read/Write IOPS Specifications	Read: 250K (512GB/1TB/2TB), 200K (256GB) Write: 240K (512GB/1TB/2TB), 190K (256GB) IOPS, 4K Random, 32 q depth, 4 threads	Read: 550K (1TB/2TB), 350K (512GB), 190K (256GB) Write: 400K (1TB/2TB), 370K (512GB), 200K (256GB) IOPS, 4K Random, 32 q depth, 8 threads
Bandwidth Performance	PCIe Gen4x4 Value (8Gb/S)	PCIe Gen4x4 Performance (16Gb/S)
Power Consumption (Max)	5.0W	8.0W
Active(AVG)	5.0W (Sequential read)	8.0W (Sequential read)
Idle	5mW (Low power state)	5mW (Low power state)
Min MTBF	2,000,000 (h)	2,000,000 (h)
Min Sequential Read	3000MB/s (512GB/1TB/2TB), 2900MB/s (256GB)	6400MB/s (1TB/2TB), 6000MB/s (512GB), 5000MB/s (256GB)
Min Sequential Write	1600MB/s (512GB/1TB/2TB), 900MB/s (256GB)	5000MB/s (2TB), 3800MB/s (1TB), 3200MB/s (512GB), 1600MB/s (256GB)
Hardware Encryption	Yes	Yes for OPAL, No for Pyrite

Discrete Graphics Adapter

Laptop GPUs	NVIDIA RTX A1000 Laptop GPU	NVIDIA RTX A2000 8GB Laptop GPU	NVIDIA RTX A3000 12GB Laptop GPU	NVIDIA RTX A4500 Laptop GPU	NVIDIA RTX A5500 Laptop GPU
NVIDIA CUDA Processing Cores	1024	2560	4096	5,888	7,424
NVIDIA RT Cores	16 (2nd Gen)	20 (2nd Gen)	32 (2nd Gen)	46 (2nd Gen)	58 (2nd Gen)
Tensor Cores	64 (3rd Gen)	80 (3rd Gen)	128 (3rd Gen)	184 (3rd Gen)	232 (3rd Gen)

GPU Memory	4GB	8GB	12GB, ECC	16GB, ECC	16GB, ECC
Peak Memory Bandwidth	224 GB/s	224 GB/s	336 GB/s	512 GB/s	512 GB/s
Memory Type	GDDR6	GDDR6	GDDR6	GDDR6	GDDR6
Memory Interface	128-bit	128-bit	192-bit	256-bit	256-bit
TGP Max Power Consumption	–	–	–	–	–
DisplayPort	1.4	1.4	1.4	1.4	1.4
Open GL	4.6	4.6	4.6	4.6	4.6
Shader Model	7.0	7.0	7.0	7.0	7.0
DirectX	12 Ultimate	12 Ultimate	12 Ultimate	12 Ultimate	12 Ultimate
PCIe Generation	4	4	4	4	4
Single Precision Floating-Point Performance	7.5	9.3	14.2	18.5	24.7
Tensor Performance	59.7	74.3	113	148.4	197.8
NVIDIA FXAA/TXAA Anti-Aliasing	Yes	Yes	Yes	Yes	Yes
NVIDIA RTX Desktop Manager	Yes	Yes	Yes	Yes	Yes
Vulkan Support	Yes	Yes	Yes	Yes	Yes
NVIDIA Optimus	Yes	Yes	Yes	Yes	Yes
3rd Gen Max-Q Technology	Yes	Yes	Yes	Yes	Yes
NVENC/NVDEC	Yes	Yes	Yes	Yes	Yes

WLAN

Model	Garfield Peak 2 Intel Wi-Fi 6E AX211 (Gig+) + BT5.2
Antenna Diversity	Supported
MIMO	Supported
Radio ON/OFF Control	Supported
Connector interface	M.2 PCIe
Operating Temperature (Adapter Shield)	0c to +80c
Humidity Non-Operating	50%~90% Rh non condensing (at temperatures of 25c to 35c)
Operating Systems	Microsoft Windows 10, Linux
Wi-Fi Alliance	Wi-Fi CERTIFIED 6, Wi-Fi CERTIFIED a/b/g/n/ac, WMM, WMM-PowerSave, WPA3, Protected Management Frames, Wi-Fi Direct, Wi-Fi Agile Multiband
IEEE WLAN Standard	IEEE 802.11-2016 and select amendments (selected feature coverage) IEEE 802.11a, b, d, e, g, h, i, k, n, r, u, v, w, ac, ax; Fine Timing Measurement based on 802.11-2016, Wi-Fi Location R2 (802.11az) HW readiness
Roaming	Support seamless roaming between access points
Bluetooth	BT 5.2
Authentication Protocols	802.1X EAP-TLS, EAP-TTLS/MSCHAPv2, PEAPv0 – MSCHAPv2 (EAP-

	SIM, EAP-AKA, EAP-AKA')
Encryption	128-bit AES-CCMP, 256-bit AES-GCMP
Regulatory	For a list of country approvals, please contact your local Intel representatives
US Government	FIPS 140-2
Product Safety	UL,C-UL,CB (IEC 60950-1)

Battery

Dimension	L: 310mm*W: 63.9mm*T 11mm
Weight	Max 384.7g
Type (Chemistry and Cell)	Li-Polymer (3S2P), 6-cell
Voltage	13.2V
Battery Life	Up to 9hrs (Condition: FHD/i5-11500H/8GB DIMM/1x 256GB SSD/T1200/Hybrid Graphics Mode/Better Battery Mode/MobileMark2018)
Battery Capacity	94Wh
Charging Time	On Charge Time (0- 100%) * 125 min Off Charge Time (0 – 80%) ** 59 min Off Charge Time (0 – 100%) ** 118 min
Operating Temperature Range	between 10°C (50°F) and 35°C (95°F)
Warranty	1 Year/ 3 Year Available
Coin Cell Battery (Model)	CR2032

SECTION IV: BIOS / Certifications / Standards / Environmental

WMI Support	Yes, if it is BIOS Setup change by WMI.
ROM-Based Setup Utility (F1)	Yes
Replicated Setup	Yes, it supported with SRSETUP tool.
Boot Control	Yes, it means Boot order change.
Discrete Mode	Yes
Memory Change Alert	N/A
Thermal Alert	N/A
Asset Tag	Yes
System/Emergency ROM	N/A

Flash Recovery with Video	
Remote Wakeup/Remote Shutdown	Yes, if Remote wakeup is Wake on LAN from S4/S5.
Keyboard-less Operation	N/A
Per-port Control	Yes, if it is I/O port enable/disable by BIOS Setup.
Adaptive Cooling	Yes, if it is thermal & fan control.
Security	Yes, BIOS password / Hard disk password / Finger print
Intel(R) AMT (includes ASF 2.0)	Yes. If you select vPro model
Intel(R) TXT	Yes. If you select vPro model
Memory Modes	N/A

EMC & Safety

EMC	Published, Certified Existing Reports EMC – Australia EMC – Belarus EMC – Canada EMC – China EMC – EU/EFTA EMC – Japan EMC – Kazakhstan EMC – New Zealand EMC – Russia EMC – South Korea EMC – Taiwan EMC – USA/Territories Not Applicable / Not Required EMC – Israel EMC – Moldova EMC – Serbia EMC – Turkey EMC – Uzbekistan EMC – Vietnam
Safety	To access the latest User Guide and Safety and Warranty Guide, go to: https://support.lenovo.com Low Halogen Declaration of Conformance TNOT-2017-0040 Section 9 – Low Halogen Scorecard Homologation PCRB Compliant In the following countries: Albania, Algeria, Andorra, Angola, Antigua and Barbuda, Argentina, Armenia, Aruba, Australia, Azerbaijan, Bahamas, Bahrain, Bangladesh, Barbados, Belarus, Belize, Benin, Bermuda, Bolivia, Botswana, Burkina Faso, Burundi, Cambodia, Cameroon, Canada, Cape Verde, Cayman Islands, Central African Republic, Chad, China, Colombia, Comoros, Congo, Costa Rica, Dijbouti, Dominican Republic, Egypt, El Salvador, Eritrea, Ethiopia, EU/EFTA, Fiji, Gabon, Gambia, Georgia, Ghana, Grenada, Guatemala, Guinea, Haiti, Honduras, Hong Kong, India, Indonesia, Israel, Jamaica, Japan, Jordan, Kazakhstan, Kenya, Kuwait, Laos, Lebanon, Liberia, Macau, Madagascar, Malawi, Malaysia, Mali, Mauritania, Mauritius, Mexico, Moldova, Mongolia, Morocco, Mozambique, Namibia, Nepal, New Zealand, Nicaragua, Niger, Nigeria, Oman, Pakistan, Panama, Papua New Guinea, Paraguay, Peru, Philippines, Qatar, Russia, Saudi Arabia, Senegal, Serbia, Seychelles, Sierra Leone, Singapore, South Africa, South Korea, Sri Lanka, Swaziland, Taiwan, Tajikistan, Tanzania, Thailand, Togo, Tunisia, Turkey, Turkmenistan, Uganda, Ukraine, United Arab Emirates, Uruguay, USA/Territories, Uzbekistan, Venezuela, Vietnam, Zambia, Zimbabwe, Brazil – Inmetro 170 Govt Bids, Guinea-Bissau, Lesotho

Environmentals

Energy Star	ENERGY STAR® Version 8.0 For more information about ENERGY STAR, go to: https://www.energystar.gov
EPEAT	EPEAT Certification Available on select models
IT ECO declaration	The latest environmental information about Lenovo products is available at: https://www.lenovo.com/ecodeclaration
Hazardous Substances	The latest environmental information about Lenovo products is available at: https://www.lenovo.com/ecodeclaration European Union RoHS This Lenovo product, with included parts (cables, cords, and so on) meets the requirements of Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment ("RoHS recast" or "RoHS 2"). For more information about Lenovo worldwide compliance on RoHS, go to: https://www.lenovo.com/rohs-communication

Manageability

Industry Standard Specifications	This product meets the following industry standard specifications for manageability functionality:
Remote Manageability Software Solutions	Lenovo ThinkManagement Console Microsoft System Center Configuration Manager LANDesk Management Suite for Lenovo Vantage Technologies (www.landesk.com/lenovo)
System Software Manager	Lenovo ThinkStation supports software management tools from the ThinkVantage System Update suite: System Update Update Retriever
Service, Support, and Warranty	On-site Warranty and Service: Three-years, limited warranty and service offering delivers on-site, next business-day service for parts and labor and includes free telephone support 8am to 5pm. Global coverage ensures that any product purchased in one country and transferred to another, non-restricted country will remain fully covered under the original warranty and service offering.