

# Lenovo ThinkPad P15 Gen 2

Version: 2.0 | 05/22/2024

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Product Name	P15
Product Display Name	ThinkPad P15 Gen 2
Information Date	24-Aug-21

## SECTION I: SYSTEM OVERVIEW

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### CPU

Processor Support	Intel 11th gen Tiger Lake H Series Core i5, i7, i9, and Xeon
Socket Type	BGA
Disclaimers	Unlock ultimate power configured your way with the ThinkPad® P15 Gen 2. Packed with the latest Intel® Core™ or Xeon® processors and unmatched NVIDIA® RTX™ A5000 graphics support, the P15 is built for those who demand the highest level of power and performance.

### Operating Systems

Preloaded	Windows 10 Pro 64-bit for Workstations (20H2) Windows 10 Pro 64-bit (20H2) Windows 10 Home 64-bit (20H2) Windows 10 Single Language Home 64-bit (20H2) Ubuntu 64-bit (Version 20.04 LTS, running the 4.15.0-1039-oem kernel) No Operating System Windows 10 China Government Edition
Supported	Windows 10 Pro 64-bit for Workstations (20H2) Windows 10 Pro 64-bit (20H2) Windows 10 Home 64-bit (20H2) Windows 10 Single Language Home 64-bit (20H2) Ubuntu 64-bit (Version 20.04 LTS, running the 4.15.0-1039-oem kernel) Red Hat (RHEL) 8.4 No Operating System Windows 10 China Government Edition

## Memory

Number of DIMM Slots	4 DIMM sockets: Top x2; Bot x2
Channels	Single Channel w/ 1DIMM Dual Channel w/ 2DIMMs
Type	DDR4 SO-DIMM, ECC / non-ECC
ECC Support	Yes
Speed	Up to 3200 MHz on Non-ECC Memory Up to 3200 MHz on ECC Memory
Max DIMM Size	32GB
Max System Memory	128GB
Min System Memory	8GB
Soldered Memory	None

## Storage

Storage Slots	3x M.2 2280-S3
SATA	None
PCIe	Solid State Drive, 3x OPAL2 PCIe-NVMe M.2 2280-S3 – TLC
SAS	None
Interface	PCIe Gen 4 or Gen 3
Security	OPAL2 for NVMe SSD
Optional Hard Disk Drive Controllers	None

## Video

Integrated Graphics	For Intel® i5-11500H vPro Processor Graphics Intel® UHD Graphics Utilized via “Hybrid Mode” in BIOS For Intel® i7-11800H Processor Graphics Intel® UHD Graphics Utilized via “Hybrid Mode” in BIOS For Intel® i7-11850H vPro Processor Graphics Intel® UHD Graphics Utilized via “Hybrid Mode” in BIOS For Intel® i9-11950H vPro Processor Graphics Intel® UHD Graphics Utilized via “Hybrid Mode” in BIOS For Intel® Xeon® W-11855M vPro Processor Graphics Intel® UHD Graphics Utilized via “Hybrid Mode” in BIOS For Intel® Xeon® W-11955M vPro Processor Graphics Intel® UHD Graphics Utilized via “Hybrid Mode” in BIOS
Discrete Graphics	NVIDIA T1200, NVIDIA RTX A2000, NVIDIA RTX A3000, NVIDIA RTX A4000, NVIDIA RTX A5000
Adapter	None
Bus Interface	PEG

## Display

Resolutions	FHD / UHD
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## Camera

Resolution	HD 720p / IR Camera
Frames per Second	30 fps
Focus	Fixed 50cm
Camera Interface	USB 2.0
IR Camera	Select models

## Keyboard

Number of Keys	US : 105 / UK : 106 / JP : 110
Numpad	Yes
Size	100% ISO
Function Key Features	Yes
Backlit	Yes
Keyboard size	Como 2020 Full size KB with NumPad (Top loading)
Key stroke	1.8mm
Key pitch	19.05 mm (Vertical & Horizontal)
Keyboard backlight	Optional
Keyboard thickness	4.55mm

## TrackPad / Fingerprint Reader

TrackPoint Details	COMO TrackPoint module (t5.55mm)
Finger Print Reader Model	8x8 FPR, MoC w/o LED Prometheus 8x8
Multi-Touch	Yes
Resolution	1000 ppi
TrackPad/TouchPad thickness	0.8mm
TrackPad/TouchPad type	TouchPad
TrackPad size	99mm x 58.4mm
TrackPad material/finish	Mylar surface

## I/O – Ports and Connectors

USB	2x USB-A 3.2 Gen1 (1x Powered) 1 x USB-C
Thunderbolt	2 x Thunderbolt 4 (USB Type-C)
HDMI	1x HDMI (2.1/2.0) DP1.4
Audio Combo Jack	1x Microphone & Headphone Combo Jack (3.5mm)
Media Card Reader	Dedicated microSD 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	2.5 Gbps Ethernet (RJ45)

## Power Connector

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

## Ethernet

Vendor	Intel
Count	x1
EEPROM	BIOS/MEFW SPI ROM TBT FW SPI ROM VBIOS SPI ROM
Speeds	10/100/1000/2500 Mbps
Functions	Wake On LAN MAC Address Pass Through PXE Boot Flash Over LAN
Connectors	RJ45

## WWAN

Model	Quectel EM160R-GL 4G LTE CAT16 (Optional)
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## Near Field Communications

Model	None
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## 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)	353cc (160 x 87 x 25.4mm)
Input Voltage	Max 475g	Max 815g
Disclaimers	100-240V	100-240V

## Security

TPM	Version 2.0
Asset ID	Yes
vPro	Intel vPro for WS

## Chassis Information

Format	Clamshell
Color	Midnight Black
Thermal Solutions	Internal Dual FAN, Intelligent Cooling
Dimensions	Length 14.78 inches 375.4 millimeters Width 9.93 inches 252.3 millimeters

	Height 0.96 inches (front) 24.5mm (front) (Thinnest) 1.23 inches (rear) 31.45mm (rear) (Thickest)
Weight	with 6 cell 94WHr Battery, Min 6.32lbs/2.87kgs

## 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	P15 Gen 2 HMM
Drivers & Software	P15 Gen 2 Drivers & Software
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	3 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

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### Supported Components

Processor	Intel® Core™ i5-11500H vPro processor (2.9 GHz/6 Core/12M/vPro) Intel® Core™ i7-11800H processor (2.3 GHz/8 Core/24M) Intel® Core™ i7-11850H vPro processor (2.5 GHz/8 Core/24M/vPro) Intel® Core™ i9-11950H vPro processor (2.6 GHz/8 Core/24M/vPro) Intel® Xeon™ W-11855M vPro processor (3.2 GHz/6 Core/18M/vPro) Intel® Xeon™ W-11955M vPro processor (2.6 GHz/8 Core/24M/vPro)
Memory Support	DDR4 3200MHz SO-DIMM with non-ECC Memory DDR4 3200MHz SO-DIMM with ECC Memory
Chipset (PCH)	Mobile Intel® WM590 Chipset
Size of BIOS Flash	32MB + 32MB (for backup)
Super I/O	None
Clock	Crystal
Audio	Realtek High Definition Audio
Ethernet	Intel® Ethernet Connection I225-LM for vPro, I225-V for non-vPro

### Memory

System Capacity Options	8GB 16GB 32GB 64GB 128GB
non-ECC	8GB DDR4 3200MHz SoDIMM 16GB DDR4 3200MHz SoDIMM 32GB DDR4 3200MHz SoDIMM
Brand of non-ECC Memory	Samsung SK Hynix Micron Ramaxel
ECC	8GB DDR4 3200MHz ECC SoDIMM 16GB DDR4 3200MHz ECC SoDIMM

	32GB DDR4 3200MHz ECC SoDIMM
Brand of ECC Memory	SK Hynix Samsung
Memory clock frequency(MHz)	3200MHz with non-ECC Memory 3200MHz with ECC Memory

## 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 3x4 TLC (M.2 2280-S3) 512GB OPAL2 PCIe 3x4 TLC (M.2 2280-S3) 1TB OPAL2 PCIe 3x4 (M.2 2280-S3) 512GB OPAL2 PCIe 4x4 TLC (M.2 2280-S3) 1TB OPAL2 PCIe 4x4 (M.2 2280-S3) 2TB OPAL2 PCIe 4x4 (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	UHS-II
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## SECTION III: Supported Component Detail

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### CPU Specifications Part 1

CPU	Intel® Core™ i5-11500H (2.9 GHz/6 Core/12M/vPro)	Intel® Core™ i7-11800H processor (2.3 GHz/8 Core/24M)	Intel® Core™ i7-11850H vPro processor (2.5 GHz/8	Intel® Core™ i9-11950H vPro processor (2.6 GHz/8	Intel® Xeon™ W-11855M vPro processor (3.2 GHz/6
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			Core/24M/vPro)	Core/24M/vPro)	Core/18M/vPro)
Integrated Graphics	Intel® UHD Graphics	Intel® UHD Graphics	Intel® UHD Graphics	Intel® UHD Graphics	Intel® UHD Graphics
# of Cores	6	8	8	8	6
# of Threads	12	16	16	16	12
Processor Base Frequency	2.90 GHz	2.30 GHz	2.50 GHz	2.60 GHz	3.20 GHz
Max Turbo Frequency	4.60 GHz	4.60 GHz	4.80 GHz	5.00 GHz	4.90 GHz
Cache	12 MB	24 MB	24 MB	24 MB	18 MB
TDP	35 – 45 W	35 – 45 W	35 – 45 W	35 – 45 W	35 – 45 W

## CPU Specifications Part 2

CPU	Intel® Xeon™ W-11955M vPro processor (3.2 GHz/6 Core/18M/vPro)
Integrated Graphics	Intel® UHD Graphics
# of Cores	8
# of Threads	16
Processor Base Frequency	2.60 GHz
Max Turbo Frequency	5.00 GHz
Cache	24 MB
TDP	35 – 45 W

## Display Specifications

Model	FHD	FHD	UHD Non-Touch	OLED with Touch
Resolution	FHD (1920 x 1080)	FHD (1920 x 1080)	4K UHD (3840 x 2160)	4K UHD (3840 x 2160)
Diagonal	15.6"	15.6"	15.6"	15.6"
Aspect Ratio	16:09	16:09	16:09	16:09
Backlight	LED	LED	LED	OLED
PPI	FHD : 141	FHD : 141	UHD : 282	UHD : 282
Active Area	FHD : 344.16mm x 193.59mm	FHD : 344.16mm x 193.59mm	UHD : 344.2176mm x 193.6224	UHD : 344.2176mm x 193.6224
Refresh Rate	Max 60Hz	Max 60Hz	Max 60Hz	Max 60Hz
Contrast Ratio	FHD : Typ 700	FHD : Typ 1200	UHD : Typ 1200	UHD : Typ 100000
Viewing Angle (*1)	FHD: 85/85/85/85 degree	FHD: 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	500 nits	600 nits	400 nits

HDR	N/A	Dolby Vision	HDR400 Dolby Vision	HDR500 True Black Dolby Vision
Contrast	FHD: 700:1	FHD: 1200:1	UHD 1200:1	UHD 100,000:1
Color Depth	FHD: 16M (RGB 6-bit + FRC)	FHD: Native 1B (RGB 6-bit + FRC)	UHD: Native 1B (RGB 8-bit data driver)	UHD: Native 1B (RGB 8-bit + FRC)
Interface	FHD: eDP 1.2	FHD: eDP 1.4	UHD: eDP 1.3	UHD: eDP 1.4
Panel ID Recognition	EDID in BIOS Table	EDID in BIOS Table	EDID in BIOS Table	EDID in BIOS Table
Weight	FHD: 304g	FHD: 305g	UHD: 300g	UHD: 200g
Color Calibrator	None	None	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	10-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)	3x 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 Gen3x4 (8Gb/S)	PCIe Gen4x4 (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 T1200 with Max-P	NVIDIA RTX A2000 with Max-P	NVIDIA RTX A3000 with Max-P	NVIDIA RTX A4000 with Max-Q	NVIDIA RTX A5000 with Max-Q
NVIDIA CUDA Processing Cores	1024	2560	4096	5120	6144
NVIDIA RT Cores	N/A	20 (2nd Gen)	32 (2nd Gen)	40 (2nd Gen)	48 (2nd Gen)
Tensor Cores	N/A	80 (3rd Gen)	128 (3rd Gen)	160 (3rd Gen)	192 (3rd Gen)
GPU Memory	4GB	4GB	6GB	8GB	16GB
Peak Memory Bandwidth	192GB/s	192GB/s	264GB/s	384GB/s	448GB/s
Memory Type	GDDR6	GDDR6	GDDR6	GDDR6	GDDR6
Memory Interface	128-bit	128-bit	192-bit	256-bit	256-bit
TGP Max Power Consumption	60W	60W	90W	90W	90W
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	12.1	12 Ultimate	12 Ultimate	12 Ultimate	12 Ultimate
PCIe Generation	4	4	4	4	4
Single Precision Floating-Point Performance	3.7	9.3	12.8	17.8	21.7
Tensor Performance	N/A	74.7	102.2	142.5	174.0
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	Typhoon Peak 2 Intel Wi-Fi 6E AX210 (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

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## BIOS Specifications

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 Flash Recovery with Video	N/A
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	<p>Published, Certified Existing Reports</p> <ul style="list-style-type: none"> <li>EMC – Australia</li> <li>EMC – Belarus</li> <li>EMC – Canada</li> <li>EMC – China</li> <li>EMC – EU/EFTA</li> <li>EMC – Japan</li> <li>EMC – Kazakhstan</li> <li>EMC – New Zealand</li> <li>EMC – Russia</li> <li>EMC – South Korea</li> <li>EMC – Taiwan</li> <li>EMC – USA/Territories</li> </ul> <p>Not Applicable / Not Required</p> <ul style="list-style-type: none"> <li>EMC – Israel</li> <li>EMC – Moldova</li> <li>EMC – Serbia</li> <li>EMC – Turkey</li> <li>EMC – Uzbekistan</li> <li>EMC – Vietnam</li> </ul>
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Safety	<p>To access the latest User Guide and Safety and Warranty Guide, go to:  <a href="https://support.lenovo.com">https://support.lenovo.com</a>  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, Djibouti, 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</p>
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## Environmentals

Energy Star	<p>ENERGY STAR® Version 8.0  For more information about ENERGY STAR, go to:  <a href="https://www.energystar.gov">https://www.energystar.gov</a></p>
EPEAT	EPEAT Certification Available on select models
IT ECO declaration	<p>The latest environmental information about Lenovo products is available at:  <a href="https://www.lenovo.com/ecodeclaration">https://www.lenovo.com/ecodeclaration</a></p>
Hazardous Substances	<p>The latest environmental information about Lenovo products is available at:  <a href="https://www.lenovo.com/ecodeclaration">https://www.lenovo.com/ecodeclaration</a>  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:  <a href="https://www.lenovo.com/rohs-communication">https://www.lenovo.com/rohs-communication</a></p>

## Manageability

Industry Standard Specifications	This product meets the following industry standard specifications for manageability functionality:
Remote Manageability Software Solutions	<p>Lenovo ThinkManagement Console  Microsoft System Center Configuration Manager  LANDesk Management Suite for Lenovo Vantage Technologies  (<a href="http://www.landesk.com/lenovo">www.landesk.com/lenovo</a>)</p>
System Software Manager	<p>Lenovo ThinkStation supports software management tools from the ThinkVantage System Update suite:  System Update  Update Retriever</p>

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.