

User Guide

Lenovo
ThinkCentre



Lenovo

ThinkCentre X Tower

About this documentation

This documentation applies to the Lenovo product models listed below.

Model name	Machine types (MT)
ThinkCentre X Tower	13K4, 13LD, 13LE, 13LF, 13ME, 13MF, 13MG, 91EA

Before using this documentation and the product it supports, ensure that you read and understand the following:

- *Safety and Warranty Guide*
- *Generic Safety and Compliance Notices*
 - For computers purchased in mainland China: https://iknow.lenovo.com.cn/detail/dc_191404.html
 - For computers purchased outside mainland China: https://pcsupport.lenovo.com/docs/generic_notices
- *Setup Guide (if provided with your computer)*

Notes:

- Illustrations in this documentation may look slightly different from your product model.
- For more compliance information, refer to:
 - For computers purchased in mainland China
Generic Safety and Compliance Notices at https://iknow.lenovo.com.cn/detail/dc_191404.html
 - For computers purchased outside mainland China
Regulatory Notice at https://support.lenovo.com/docs/common_commercial_rn and *Generic Safety and Compliance Notices* at <https://www.lenovo.com/compliance>
- Depending on the model, some optional accessories, features, and software programs might not be available on your computer.
- Depending on the version of the operating systems and programs, some user interface instructions might not be applicable to your computer.
- Documentation content is subject to change without notice. Lenovo makes constant improvements to the documentation of your computer, including this *User Guide*. To get the latest documentation, go to:
 - For computers purchased in mainland China: <https://newsupport.lenovo.com.cn>
 - For computers purchased outside mainland China: <https://pcsupport.lenovo.com>
- Microsoft® makes periodic feature changes to the Windows® operating system through Windows Update. As a result, some information in this documentation might become outdated. Refer to Microsoft resources for the latest information.

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Chapter 1. Meet your computer

Top



Item	Description	Item	Description
1	Power button	2	Headset connector
3	USB-C® connector (USB 20Gbps)	4	USB-A connectors (USB 10Gbps)
5	USB-A connectors (USB 5Gbps)	6	SD-card slot
7	Healthy indicator		

Notes:

- Ensure that the top cover of the computer remains unobstructed and free of any items.
- For more information about the USB connector name update, see Appendix A “Supplementary information” on page 59.

Statement on USB transfer rate

Depending on many factors such as the processing capability of the host and peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and will be slower than the data rate listed in the connector name or below for each corresponding device.

USB device	Data rate (Gbit/s)
Thunderbolt 3	40
Thunderbolt 4	40

Power indicator

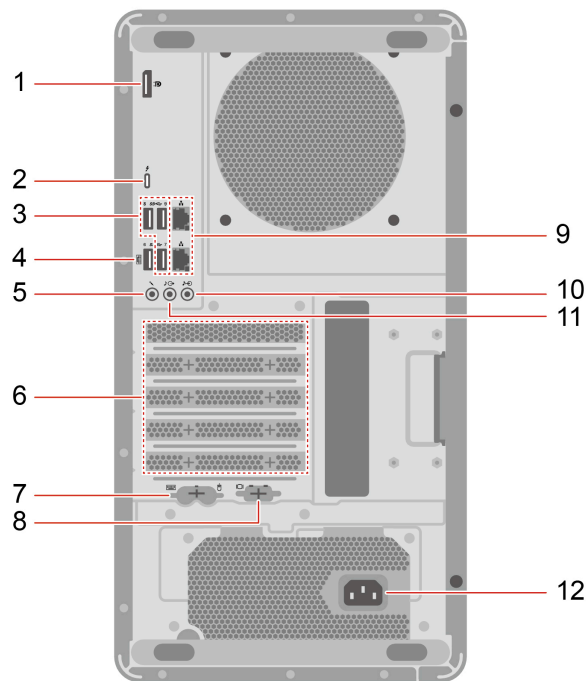
Show the system status of your computer.

- **On:** The computer is starting up or working.
- **Off:** The computer is off or in hibernation mode.
- **Blinking:** The computer is in sleep mode.
- **Breathing:** The computer is in modern standby mode.

Related topics

- “USB specifications” on page 5
- “All ports” on page 20

Bottom



Item	Description	Item	Description
1	DisplayPort™ out connector (8K/60Hz)	2	USB-C connector (Thunderbolt™ 4) (8K/30Hz)
3	USB-A connectors (USB 5Gbps)	4	USB-A connector (USB 5Gbps) with smart power-on feature
5	Microphone connector	6	PCI-Express card area
7	PS/2 connector*	8	Serial connector*
9	Ethernet connectors (1 Gbps)	10	Audio line-in connector
11	Audio line-out connector	12	Power cord connector

* for selected models

Notes:

- When installing the computer at a visual display workplace, ensure that the unpainted bottom and stand are not positioned within the direct field of view to avoid potential reflections.
- The actual resolution of external displays may vary by the connected display device and the cable being used.

Serial connector

Connect an external modem, a serial printer, or other devices that use a serial connector.

Related topics

- “USB specifications” on page 5
- “Change display settings” on page 8
- “Smart power-on feature” on page 9
- “Lock the computer” on page 10
- “All ports” on page 20

Specifications

Specification	Description
Dimensions	• Width: 220 mm (8.7 inches) • Height: 497 mm (19.6 inches) • Depth: 420 mm (16.5 inches)
Weight (without packaging)	Maximum configuration as shipped: 19.3 kg (42.5 lb)
Hardware configuration	Type Device Manager in the Windows search box and then press Enter. Type the administrator password or provide confirmation, if prompted.
Power supply	• 500-watt automatic voltage-sensing power supply • 850-watt automatic voltage-sensing power supply • 1200-watt automatic voltage-sensing power supply
Electrical input	• Input voltage: From 100 V ac to 240 V ac • Input frequency: 50/60 Hz
Memory	Memory type: double data rate 5 (DDR5) unbuffered dual in-line memory module (UDIMM) Maximum memory capacity: 64 GB
Storage device	• 3.5-inch hard disk drive* • M.2 solid-state drive To view the storage drive capacity of your computer, type Disk Management in the Windows search box and then press Enter. Note: The storage drive capacity indicated by the system is less than the nominal capacity.
Video features	• The integrated graphics card supports the following connectors: – DisplayPort out connector – USB-C connector • The optional discrete graphics card provides an enhanced video experience and extended capabilities.
Expansion	• Card reader • Memory slots • M.2 solid-state drive slot • Storage drive bay • PCI Express slots
Network features	• Bluetooth • Ethernet LAN • Wireless LAN

* for selected models

Operating environment

Maximum altitude (without pressurization)

- Operating: From 0 m (0 ft) to 3048 m (10 000 ft)
- Storage: From 0 m (0 ft) to 12192 m (40 000 ft)

Temperature

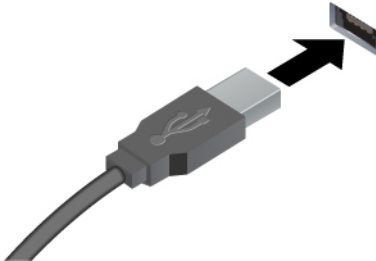
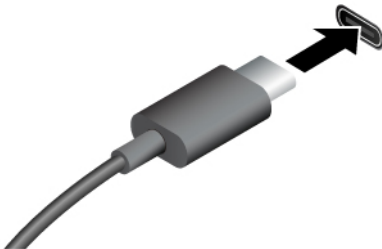
- Operating: From 5°C (41°F) to 35°C (95°F)
- Storage: From -40°C (-40°F) to 60°C (140°F)

Relative humidity

- Operating: 20%-80% (non-condensing)
- Storage: 10%-90% (non-condensing)

USB specifications

Note: Depending on the model, some USB connectors might not be available on your computer.

Connector name	Description
	Connect USB-A compatible devices, such as a USB-A keyboard, USB-A mouse, USB-A storage device, or USB-A printer.
•  USB-A connector (USB 5Gbps) •  USB-A connector (USB 10Gbps)	
	• Charge USB-C compatible devices with the output voltage and current of 5 V and 3 A. • Connect to USB-C accessories to help expand your computer functionality. To purchase USB-C accessories, go to https://www.lenovo.com/accessories.
•  USB-C connector (USB4 20Gbps) •  USB-C connector (Thunderbolt 4)	

The Vantage app

The Vantage app is a customized one-stop solution to help you maintain your computer with automated updates and fixes, configure hardware settings, and get personalized support.

To access the Vantage app, type **Vantage** in the Windows search box.

Notes:

- The available features vary depending on the computer model.
- The Vantage app makes periodic updates of the features to keep improving your experience with your computer. The description of features might be different from that on your actual user interface. You can download the latest version of Vantage app from Microsoft Store.

The Vantage app enables you to:

- Know the device status easily and customize device settings.
- Download and install UEFI BIOS, firmware, and driver to keep your computer up-to-date.
- Monitor your computer health, and secure your computer against outside threats.
- Scan your computer hardware and diagnose hardware problems.
- Look up warranty status (online).
- Access *User Guide* and helpful articles.

Chapter 2. Get started with your computer

Set up the computer

Step 1. Connect wired or wireless external displays on the computer.

- **Wired external displays:** Connect the cables of wired external displays to any of the following connectors on the computer:
 - DisplayPort out connector
 - USB-C connector (Thunderbolt 4)
- **Wireless external displays:** Press Windows logo key + K and then select a wireless display to connect. Ensure that both your computer and the wireless display support Miracast®.

To change display settings, refer to “Change display settings” on page 8.

Step 2. Connect the following peripheral devices on the computer if any.

- Keyboard and mouse
- Dust shield
- Air deflector
- Vertical stand

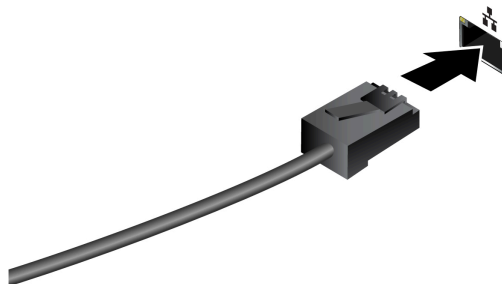
Step 3. Connect the power cord to the power cord connector on the computer and then connect it to a properly-grounded electrical outlet.

Step 4. Press the power button to turn on the computer.

Step 5. Follow the on-screen instructions to complete the setup procedures.

Step 6. Connect to a wired or wireless network.

- **Wired network:** Connect Ethernet cable of local network to the Ethernet connector on the computer.



- **Wireless network:** Click  on the bottom right of your display to connect to an available network. Provide required information if needed.

Note: The wireless LAN module on your computer may support different standards. For some countries or regions, use of 802.11ax may be disabled according to local regulations.

Shut down the computer

To prevent damage to hardware/software systems or loss of data, do not arbitrarily use the power button to shut down the computer. Instead, shut down the computer as follows.

1. Click  →  →  **Shut down**.
2. Wait for the computer to shut down and then turn off the monitor and other peripheral devices.

Note: After you turn off the system, please wait at least 20 seconds before turning the computer back on to avoid hardware faults.

Change display settings

1. Right-click a blank area on the desktop and select display settings.
2. Select the display that you want to configure and change display settings of your preference.

Transfer data

You can install a media card to transfer data.

Use a media card

If your computer has an SD-card slot, read the following information.

Install a media card

1. Locate the SD-card slot.
2. Ensure that the metal contacts on the card are facing the ones in the SD-card slot. Insert the card firmly into the SD-card slot until it is secured in place.

Remove a media card

Attention: Before removing the card:

1. Click the triangular icon in the Windows notification area to show hidden icons. Right-click the icon prompting you to safely remove hardware and eject media.
2. Select the corresponding item to eject the card from the Windows operating system.
3. Press the card and remove it from your computer. Store the card safely for future use.

Connect to a Bluetooth device

You can connect all types of Bluetooth-enabled devices to your computer, such as a keyboard, a mouse, a smartphone, or speakers. To ensure successful connection, place the devices at most 10 meters (33 feet) from the computer.

Conventional pair

This topic helps you connect to a Bluetooth device by conventional pair.

- Step 1. Type **Bluetooth** in the Windows search box and then press Enter.
- Step 2. Turn on both the Bluetooth on your computer and the Bluetooth device. Make sure the device is discoverable.
- Step 3. Select the device when it is displayed on the **Add a device** list, and then follow the on-screen instructions.

Notes: If the Bluetooth connection failed, do the following:

1. Type **Device Manager** in the Windows search box and then press Enter.
2. Locate the Bluetooth adapter. Right-click and select **Update driver**.

3. Select **Search automatically for drivers**, and then follow the on-screen instructions.

Swift pair

This topic helps you connect to a Bluetooth device by swift pair.

If your Bluetooth device supports swift pair, do the following:

- Step 1. Enable swift pair notification on Bluetooth settings page.
- Step 2. Turn on both the Bluetooth on your computer and the Bluetooth device. Make sure the device is discoverable.
- Step 3. Click **Connect** when a swift pair notification appears on your computer.

Notes: If the Bluetooth connection failed, do the following:

1. Type **Device Manager** in the Windows search box and then press Enter.
2. Locate the Bluetooth adapter. Right-click and select **Update driver**.
3. Select **Search automatically for drivers**, and then follow the on-screen instructions.

ICE performance mode

The ICE performance mode helps you adjust the acoustic and thermal performance of your computer. Three options are available:

- **Balance mode:** The computer works at the balance mode with balanced noise and better performance.
- **Performance mode** (default setting): The computer works at the best performance with normal acoustic level.

Note: The term “best” only refers to the best effect among different settings of the product itself.

- **Full Speed:** All fans in the computer will run at full speed.

Change the ICE performance mode

To change the ICE performance mode:

- Step 1. Restart the computer. When the logo screen is displayed, press F1 or Fn+F1.
- Step 2. Select **Power → Intelligent Cooling** and press Enter.
- Step 3. Select **Performance Mode** and press Enter.
- Step 4. Set the performance mode as desired.
- Step 5. Press F10 or Fn+F10 to save the changes and exit.

Smart power-on feature

The smart power-on feature helps you start up or wake up the computer from the hibernation mode simply by pressing Alt+P.

Note: Ensure that the keyboard is connected to a USB connector supporting the smart power-on feature.

Enable or disable the smart power-on feature

To enable or disable the smart power-on feature:

- Step 1. Restart the computer. When the logo screen is displayed, press F1 or Fn+F1.
- Step 2. Select **Power → Smart Power On** and press Enter.
- Step 3. Enable or disable the feature as desired.
- Step 4. Press F10 or Fn+F10 to save the changes and exit.

Set the power plan

For ENERGY STAR® compliant computers, the following power plan takes effect when your computers have been idle for a specified duration:

- Turn off the display: After 10 minutes
- Put the computer to sleep: After 10 minutes

To awaken the computer from Sleep mode, press any key on your keyboard.

To set the power plan:

1. Type Power Options in the Windows search box and then press Enter.
2. Choose or customize a power plan of your preference.

Security

This computer offers a wealth of security measures to protect both the device and data safety.

Lock the computer

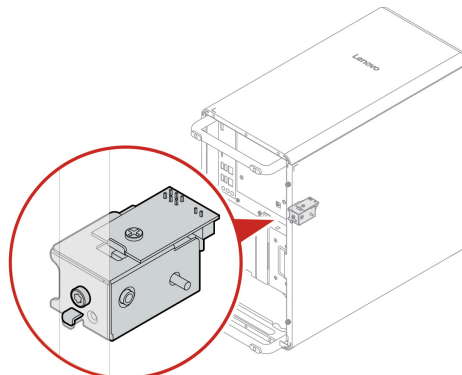
Note: Lenovo makes no comments, judgments, or warranties about the function, quality, or performance of the locking device and security feature. You can purchase computer locks from Lenovo.

E-lock

Your computer might have a security lock solution installed to protect the computer from unauthorized tampering of the internal components. Using the E-Lock, you can mechanically lock or unlock the computer cover.

To enable or disable the E-Lock:

1. Restart the computer. When the logo screen is displayed, press F1 or Fn+F1.
2. Select **Security → Electronic Lock** to enable or disable the E-lock.
3. Press F10 or Fn+F10 to save the changes and exit. Your computer will restart automatically and then changes take effect.



Use software security solutions

The following software solutions help secure your computer and information.

- **Windows Security**

Windows Security is a software built-in to the operating system. It continually scans for malicious software, viruses, and other security threats. Besides, Windows updates are downloaded automatically to help keep your computer safe. Windows Security also enables you to manage tools including firewall, account protection, application and browser control, and so on.

- **Antivirus programs (for selected models)**

Lenovo preinstalls a full-version antivirus software on selected models of computer. It helps defend the computer against viruses, safeguard your identity, and keep your personal information secured.

Note: For more information about how to use these software solutions, refer to their help systems respectively.

Use BIOS security solutions

This section provides BIOS solutions to secure your computer and information.

Wipe the storage drive data (for selected models)

It is recommended that you wipe the storage drive data before recycling the storage drive or the computer.

To wipe the storage drive data:

1. Restart the computer. When the logo screen is displayed, press F1 or Fn+F1.
2. Select **Security** → **secure wipe** → **Enabled**.
3. Press F10 or Fn+F10 to save the changes and exit.
4. Restart the computer. When the logo screen is displayed, press F12 or Fn+F12.
5. Select **App Menu** → **secure wipe** and press Enter.
6. Select the storage drive you will wipe and click **NEXT**.
7. Select the entire storage drive or partition to wipe as desired.
8. Select the method as desired and click **NEXT**.
9. Click **Yes** to confirm your option when the prompting window is displayed.
10. If you have set a hard disk password for the storage drive, enter the password. Otherwise, set a temporary password following the on-screen instructions. Then, click **NEXT**. The wiping process begins.

Note: Duration of the wiping process varies depending on the storage drive capacity.

11. Click **Reboot** when you are prompted to reset the system, and then one of the following will happen:
 - If the system storage drive data is wiped, you will be prompted that no operating system is found.
 - If the non-system storage drive data is wiped, the computer restarts automatically.

Cover presence switch (for selected models)

The cover presence switch prevents the computer from logging in to the operating system when the computer cover is not properly installed or closed.

To enable or disable the cover presence switch on the system board:

1. Restart the computer. When the logo screen is displayed, press F1 or Fn+F1.
2. Select **Security** → **Cover Tamper Detected** and press Enter.
3. Select **Enabled** or **Disabled** and press Enter.

4. Press F10 or Fn+F10 to save the changes and exit.

If the cover presence switch is enabled and the computer cover is not correctly installed or closed, an error message will be displayed when you turn on the computer. To bypass the error message and log in to the operating system:

1. Properly install or close the computer cover.
2. Enter the BIOS menu, save and then exit.

Intel BIOS guard

The Intel® BIOS Guard module cryptographically verifies all BIOS updates. This hardware-based security helps prevent software and malware attacks on the computer's BIOS.

Smart USB Protection

The Smart USB Protection function is a security function that helps prevent data from being copied from the computer to USB storage devices connected to the computer. You can set the Smart USB Protection function to one of the following modes:

- **Disabled** (default setting): You can use the USB storage devices without limitation.
- **Read Only**: You cannot copy data from the computer to the USB storage devices. However, you can access data on the USB storage devices.
- **No Access**: You cannot access the USB storage devices from the computer.

To configure the Smart USB Protection function:

1. Restart the computer. When the logo screen is displayed, press F1 or Fn+F1.
2. Select **Security → Smart USB Protection** and press Enter.
3. Select the desired setting and press Enter.
4. Press F10 or Fn+F10 to save the changes and exit.

Absolute Persistence

Absolute Persistence technology is embedded in BIOS. It detects changes that happen on the hardware, software, or the call-in location. It keeps you always knowing what condition the computer is in. To activate the technology, you have to purchase a subscription to Absolute.

UEFI BIOS passwords

You can set passwords in UEFI (Unified Extensible Firmware Interface) BIOS (Basic Input/Output System) to strengthen the security of your computer.

Password types

You can set a power-on password, supervisor password, system management password, or hard disk password in UEFI BIOS to prevent unauthorized access to your computer. However, you are not prompted to enter any UEFI BIOS password when your computer resumes from sleep mode.

- **Power-on password**
When a power-on password is set, you are prompted to enter a valid password each time the computer is turned on.
- **Supervisor password**
Setting a supervisor password deters unauthorized users from changing configuration settings. If you are responsible for maintaining the configuration settings of several computers, you might want to set a supervisor password.

When a supervisor password is set, you are prompted to enter a valid password each time you try to enter the BIOS menu.

If both the power-on password and supervisor password are set, you can enter either password. However, you must use your supervisor password to change any configuration settings.

- **Hard disk password (for selected models)**

Setting a hard disk password prevents unauthorized access to the data on the storage drive. When a hard disk password is set, you are prompted to enter a valid password each time you try to access the storage drive.

Note: After you set a hard disk password, your data on the storage drive is protected even if the storage drive is removed from one computer and installed in another.

- **System management password (for selected models)**

You can enable the system management password to have the same authority as the supervisor password to control security related features. To customize the authority of the system management password through the UEFI BIOS menu:

1. Restart the computer. When the logo screen is displayed, press F1 or Fn+F1.
2. Select **Security → System Management Password Access Control**.
3. Follow the on-screen instructions.

If you have set both the supervisor password and the system management password, the supervisor password overrides the system management password.

Set, change, and remove a password

Before you start, print these instructions.

1. Restart the computer. When the logo screen is displayed, press F1 or Fn+F1.
2. Select **Security**.
3. Depending on the password type, select **Set Supervisor Password**, **Set Power-On Password**, **Set System Management Password**, or **Hard Disk Password** and press Enter.
4. Follow the on-screen instructions to set, change, or remove a password.
5. Press F10 or Fn+F10 to save the changes and exit.

You should record your passwords and store them in a safe place. If you forget the passwords, contact a Lenovo-authorized service provider.

Note: If the hard disk password is forgotten, Lenovo cannot remove the password or recover data from the storage drive.

Chapter 3. Intelligent features

Lenovo PCs are continuously developing convenient and intelligent features to enhance users' computing experiences. This section explores the intelligent features and software that may be available on your computer.

Next Gen AI PC

Overview

An AI PC is a next-generation personal computer designed to deliver advanced artificial intelligence capabilities directly on the device. Unlike traditional PCs, AI PCs combine powerful hardware, optimized software, and intelligent design to accelerate AI-driven tasks, enhance user experience, and enable smarter workflows without relying solely on cloud services.

What is an AI PC

An AI PC is more than just a computer—it is a personal assistant built into your device. Powered by advanced artificial intelligence, it learns your habits, anticipates your needs, and helps you work smarter and faster—whether you are working, creating, or just having fun. An AI PC is designed to save you time and make life simpler. It's not just a PC—it's your personal assistant.

Core performance

Your AI PC is equipped with specialized processors that are optimized for handling AI workloads. These include:

- **CPU (Central Processing Unit):** Executes general computing tasks. Integrates instructions optimized for AI acceleration.
- **GPU (Graphics Processing Unit):** Handles parallel processing for multimedia and visual AI tasks. Supports neural network inference and image processing.
- **NPU (Neural Processing Unit) — the core of AI PC capabilities:** Dedicated chip designed specifically for AI. Runs on-device AI tasks with high efficiency and low power consumption. Enables real-time processing without relying on cloud services.

Together, these components allow the device to run AI features quickly, efficiently, and privately—directly on your PC.

AI-powered assistant on your AI PC

- **Lenovo Qira:** Helps you organize files, summarize documents, generate content, and even adjust system settings—all while protecting your data. It is your intelligent companion for work, creativity, and everyday tasks.
- **Microsoft Copilot:** Helps you work smarter by understanding natural language and turning ideas into action. Whether you're writing, analyzing data, creating presentations, or searching the web. For more details, visit the official Microsoft website.

Lenovo Qira

What is Lenovo Qira

Lenovo Qira is a personal ambient intelligence that supports live voice or text interactions and can generate outputs such as text, images, summaries, and transcriptions based on your prompts. It supports multiple processing modes, including both on-device processing and hybrid processing that may use secure cloud-based services. The mode used depends on your settings, the feature requirements, and device capabilities.

Lenovo Qira is integrated into the system and works with supported apps and services. If you use multiple Lenovo devices and sign in with the same Lenovo ID, you can enjoy a consistent experience across supported Lenovo PCs, Lenovo tablets, and Motorola smartphones. This allows you to switch between devices and maintain continuity of your tasks, subject to feature availability, permissions, and your settings.

Notes:

- Lenovo Qira receives periodic updates to enhance functionality. Features may change as updates are installed.
- Lenovo Qira may generate inaccurate, incomplete or biased information. It is not a substitute for professional advice or independent judgement, and may not be suitable for some minors. You should review and verify the outputs before use. If you share unverified content, clearly label it as “generated by artificial intelligence”. For more information, refer to the [Lenovo AI Acceptable Use Policy](#).
- Lenovo Qira follows strict, regulatory-compliant consent rules and does not share your data without your explicit permission.

Upgrade Lenovo AI Now to Lenovo Qira

Depending on the manufacturing date, your PC may come pre-installed with Lenovo AI Now, the predecessor to Lenovo Qira. Lenovo Qira succeeds Lenovo AI Now by providing an updated and enhanced AI experience.

To help eligible devices upgrade smoothly, Lenovo has deployed an online upgrade program. If your PC qualifies, you will receive an on-screen upgrade prompt.



Select **Learn More** to view upgrade details and then select **Update** to begin the upgrade process.

Note: The upgrade may take some time to complete. Before starting, make sure your PC is plugged in and connected to a stable internet connection.

Learn about Lenovo Qira

Launch Lenovo Qira

Type Qira in the Windows search box and select the matching result.

Set up Lenovo Qira

To begin using Lenovo Qira, you must first sign in and configure your preferred interaction settings.

Sign in to Lenovo Qira

After launching the Lenovo Qira prompt bar, a sign-in webpage automatically appears. Follow the on-screen instructions to sign in with your Lenovo ID.

Alternatively, hover over the prompt bar, select the Lenovo Qira icon  to open the main window, and navigate to **Settings** → **Account**.

Configure Lenovo Qira

In the Lenovo Qira window, access the **Settings** menu to customize your preferences.

Table 1. Lenovo Qira settings

Setting	Description
Language	Choose the response language.
Launch Options	Enable or disable the wake word feature, which allows you to invoke Lenovo Qira by saying “Hey, Qira.” Note: The wake word feature requires microphone permission. To manage this, go to Start → Settings → Privacy & security → Microphone under App permissions , and ensure Lenovo Qira is allowed to access the microphone.
Voice	- Set up the voiceprint recognition and select the voice tone. Voiceprint recognition is used only to identify your voice on the device. - Select whether Lenovo Qira responds using audio or text.
Sync Data	Enable or disable data synchronization.
Processing Mode	Choose how requests are processed: Hybrid Mode: Uses a combination of on-device AI and cloud-based services. Certain requests may be processed using cloud services. Local Mode: Uses on-device AI only. Some features may be limited or unavailable compared to Hybrid Mode.
Personalized Answers	Select whether Lenovo Qira is allowed to access your stored personal data to provide personalized and contextual responses.
Connectors	Select the apps, services, and device defaults that Lenovo Qira is permitted to connect to.
Close Behavior	Select whether Lenovo Qira is allowed to run in the background after it is closed.
Catch Me Up	Select the apps whose notifications you want summarized.

Invoke Lenovo Qira

When Lenovo Qira is minimized as a pill  on your desktop, you can invoke it by:

- Clicking the Lenovo Qira pill on your desktop.
- Saying “Hey, Qira” when the wake word feature and microphone permission are enabled.

Close Lenovo Qira

You can close Lenovo Qira as follows:

Table 2. How to close Lenovo Qira

Current view	Action to close
Prompt bar	1. Hover over the prompt bar and select the Minus (–) button to minimize Lenovo Qira into a pill on the desktop. 2. Right-click the pill icon  and select Close.
Full window	Select the Close (X) button in the upper-right corner.

After closing, Lenovo Qira minimizes to the system tray and remains inactive until you launch it again.

If you want to fully exit Lenovo Qira:

- Right-click the Lenovo Qira icon in the system tray and select **Exit**.
- Open Task Manager, locate Lenovo Qira, and select **End task**.

Explore Lenovo Qira

Lenovo Qira is built around the following attributes:

- Presence: Lenovo Qira is easily accessible when you choose to use it.
- Actions: Lenovo Qira can assist with tasks such as drafting emails or editing documents, subject to your review and confirmation.
- Perceptions: When enabled and permitted by you, Lenovo Qira can analyze information from supported apps or device inputs to provide contextual assistance.

Table 3. Key features of Lenovo Qira

Feature	Description
Question answering	Responds to your prompts with helpful information.
Proactive suggestions (Next Move)	Provides suggestions based on your activity, supporting you with relevant guidance while you remain control of all actions.
Content generation & editing (Write for me)	Helps draft, rewrite, and edit content for emails, documents, messages, and notes, subject to your review and approval before anything is shared or saved.
Local Mode	Performs select tasks using on-device AI when Local Mode is enabled or the device is offline. Some features may be limited or unavailable.
Hybrid Mode	Combines on-device AI with cloud-based services to enable additional features and capabilities when Hybrid Mode is enabled and an internet connection is available. Certain requests may be processed using cloud services.
Live interaction (Live Mode)	Supports real-time voice conversations and camera-enabled interactions when you actively invoke Lenovo Qira and grant necessary microphone or camera permissions.

Table 3. Key features of Lenovo Qira (continued)

Feature	Description
Notifications summary (Catch Me Up)	Summarizes recent notifications from the apps you choose, helping stay informed while giving you full control over which apps are included and how notifications are synced.
Live recording (Pay Attention)	Supports meetings and conversations with transcriptions, optional translations, and summaries.
AI image creation (Creator Zone)	Creates AI-generated images in Creator Zone , a dedicated creative workspace with built-in safety checks and watermarking.
Knowledge base (Knowledge)	Helps you build and access a personal knowledge library by storing and recalling information you choose to save such as notes, documents, or meeting summaries.

Note: All features operate only when enabled by you, in accordance with your device settings and permissions.

Frequently asked questions

What should I do if saying “Hey, Qira” does not elicit a response

Try any of the following solutions to resolve the issue.

- In Lenovo Qira window, go to **Settings → Launch Options**, and ensure the wake word feature is enabled.
- Ensure your microphone is working properly and not muted.
- Make sure the volume on your PC is turned up.
- Exit and restart Lenovo Qira.
- In Windows Settings, go to **Start → Settings → Privacy & security → Microphone** under **App permissions**, and check if Lenovo Qira is permitted to access the microphone.
- Confirm you are using the latest version of Lenovo Qira.
- Restart your PC.
- Ensure that no other apps are using the microphone at the same time, as this may prevent Lenovo Qira from responding.
- Navigate to **Settings → Feedback** for assistance within the Lenovo Qira app.

If the issue persists, consult Lenovo support resources or forums for further assistance.

What should I do with Lenovo Qira transcription or translation quality issues

Try any of the following solutions to resolve the issue.

- Ensure the audio input is clear. Background noise may affect the accuracy.
- Keep your PC stable during live interaction.
- Confirm you are using the latest version of Lenovo Qira.
- Navigate to **Settings → Feedback** for assistance within the Lenovo Qira app.

If the issue persists, consult Lenovo support resources or forums for further assistance.

Lenovo AI Turbo Engine (for selected models)

Lenovo AI Turbo Engine is a smart audio and video enhancement software. Powered by plentiful sensing and computing adaption technologies, it can optimize your experience in video and audio capture and playback.

Access the app

- Use the Lenovo AI Turbo Engine icon  if present on the taskbar.
- Or type the app name in the Windows search box and press Enter.

Key features

All ports

Introduction

Your computer provides a comprehensive set of ports suitable for hybrid work environments. With all the necessary ports and additional features, you can easily connect peripherals, transfer files, charge devices, and connect monitors. This helps you work more efficiently with seamless multitasking.

Get your computer well-prepared

To ensure a seamless start with your computer, it is essential to understand the basic connections to ensure your desktop is ready for use.

Basic connections

- **Connect to power**

Power cord connector:

Use the power cord connector to connect your computer to a power source. Always use the power cord provided with the computer to ensure stable operation and optimal performance.

Notes:

- To reduce the risk of electric shock, fire, or equipment damage, it is recommended to use only the power cord provided for your specific computer model. Do not use damaged power cords.
- Ensure that the power outlet is properly grounded and matches the adapter's input voltage rating.

- **Connect to an external display**

Expand your workspace by using various video connectors, depending on the model:

- **DisplayPort out connector:**

Ideal for high-resolution displays and multi-monitor setups, offering superior refresh rates and resolutions for professional creative work.

- **USB-C connector (Thunderbolt 4):**

Supports video output to compatible USB-C or Thunderbolt displays that require high-speed data transfers.

You can use one or more supported display connectors to extend or duplicate your desktop display, subject to system capabilities.

- **Connect to other peripherals**

To support everyday tasks, the product provides multiple connectors for peripheral devices:

- **USB-A connector:**

Connects devices such as keyboards, mice, printers, USB storage devices, webcams, and other USB-A accessories.

- **USB-C connector:**

Connects compatible peripherals such as docking stations, external storage devices, cameras, and other USB-C accessories.

- **PS/2 connector:**

Most commonly used for connecting compatible keyboards and mice to computers. It can also be used for other devices such as trackballs, barcode scanners, and fingerprint readers. Some industrial equipment also uses PS/2 ports for data input and output.

- **Serial connector:**

Serial connectors are commonly used for communication with devices such as modems, printers, barcode scanners, and medical equipment.

- **Connect to network**

- Ethernet connector:**

Provides a stable wired network connection for reliable data transmission in office and enterprise environments.

- **Connect to audio devices**

- **Microphone connector:**

Connects an external microphone for voice input or recording.

- **Headset connector:**

Connects a headset with a microphone for calls, meetings, or multimedia use.

- **Audio line-out connector:**

Connects to external speakers or audio systems, allowing audio output from the computer.

- **Audio line-in connector:**

Connects to external audio sources, such as music players or mixers, allowing audio signals to be input directly into the computer.

Transfer data

High-speed data transfer is made easy through versatile connectors. The USB-A and USB-C connectors are designed to support efficient data exchange in professional work environments.

FAQ

My USB connector does not work

For solutions to this issue, you can refer to: [FAQ: My USB connector does not work](#).

The external monitor is not functioning

For solutions to this issue, you can refer to: [FAQ: The external display does not work](#).

Durability and reliable performance

Durability

Your computer is designed for longevity, meeting multiple durability certifications to operate reliably in extreme temperatures, high altitudes, and varying humidity. It also features robust security solutions to ensure a safe, private, and long-term user experience.

Maintenance

Your computer is designed with industry standards and high compatibility, using universal interfaces and replaceable components that are easy for you to maintain or upgrade the computer. You can also manage your device using the pre-installed management tools, such as the Vantage app, reducing the risk of malware and cyber threats.

Warranty and protection

Lenovo offers various warranty options that provide comprehensive protection for your devices. You can extend or upgrade warranties according to your needs.

Warranty extensions

It is recommended to match service coverage duration with the expected lifecycle of your device. Minimize unplanned break/fix maintenance expenses and enjoy consistent service levels for multinational organizations, with in-region and local-language support.

Warranty upgrades

Depending on your hardware, you can upgrade your warranties to depot service and onsite service. It enables you to vary response time and level of service to match critical support needs.

Global service

Lenovo's global service system ensures standardized professional support, even for organizations with branches in multiple locations.

Reliable performance

Your computer is equipped with advanced computing architectures that maintain stability across demanding workloads. It incorporates high-end processors and high-speed memory configurations to handle complex tasks efficiently. With enhanced data integrity features and optimized resource management, your system delivers consistent performance, ensuring productive multitasking and robust application support.

FAQ

Where can I purchase warranty

For warranty extensions and upgrades, please visit [FAQ: Warranty Entitlement](#).

How to locate a repair center or service provider

For repair centers and service providers list, please visit [Find A Lenovo Service Provider](#).

Sustainability

Sustainable design

Lenovo is committed to sustainable development. Your computer uses advanced power management tools to optimize energy efficiency. Its packaging features plastic-free design and is made from recyclable materials.

Sustainability programs

Lenovo is committed to delivering smarter technology that contributes to a brighter, more sustainable future for all. In our product design and manufacturing processes, we manage a global supply chain through responsible procurement policies. We actively engage in Environmental, Social, and Governance (ESG) initiatives, ensuring sustainability is central to both our products and operations.

To learn more about our sustainability programs, please visit [Lenovo ESG Resources](#).

Chapter 4. UEFI BIOS

Enter the UEFI BIOS menu

Turn on or restart the computer. When the logo screen is displayed, press F1 or Fn+F1 to enter the UEFI BIOS menu.

Note: If you have set UEFI BIOS passwords, enter the correct passwords when prompted. You can also select **No** or press Esc to skip the password prompt and enter the UEFI BIOS menu. However, you cannot change the system configurations that are protected by passwords.

Navigate the UEFI BIOS menu

Follow the on-screen instructions to navigate in the UEFI BIOS menu.

The table below introduces the available settings of the UEFI BIOS menu. You can follow the on-screen instruction to navigate in the UEFI BIOS menu.

Note: The UEFI BIOS menu might vary depending on system configurations.

Menu	Introduction
Main	This category provides the general product-related and firmware information including system summary, machine type, product serial number, UUID number, etc.
Devices	This category introduces how to configure various devices such as USB ports and audio controllers.
Advanced	This category provides advanced information about the computer such as the CPU features.
Power	This category introduces power and thermal management solutions.
Security	This category introduces various passwords, locks, and software to protect your computer.
Startup	This category introduces how to set the boot priority order.
Exit	This category introduces how to exit as you prefer.

To explore the detailed settings:

- For computers purchased in mainland China
You can contact Lenovo Customer Support Center as shown at <https://newsupport.lenovo.com.cn/contacts.html>.
- For computers purchased outside mainland China
You can go to Lenovo BIOS Simulator Center <https://download.lenovo.com/bSCO/index.html> to explore the detailed settings by your product name.

Note: The Lenovo BIOS Simulator Center makes periodic updates of the settings. The UEFI BIOS simulator interface and description of settings might be different from that on your actual user interface.

Enable or disable the ErP LPS compliance mode

Lenovo computers meet the eco-design requirements of the ErP Lot 3 regulation. Follow the instruction to enable or disable the ErP LPS compliance mode.

For more information about the eco-design requirements, go to: <https://www.lenovo.com/us/en/compliance/eco-declaration>.

You can enable the ErP LPS compliance mode to reduce the consumption of electricity when the computer is off. To enable or disable the ErP LPS compliance mode:

- Step 1. Restart the computer. When the logo screen is displayed, press F1 or Fn+F1.
- Step 2. Select **Power → Enhanced Power Saving Mode** and press Enter.
- Step 3. Enable or disable the feature as desired.

Note: Please note that when the Enhanced Power Saving Mode is disabled, the power consumption might be increased when the computer is off.

- Step 4. Press F10 or Fn+F10 to save the changes and exit.

When the ErP LPS compliance mode is enabled, you can wake up the computer by doing one of the following:

- Press the power button.
- Enable the Wake Up on Alarm feature to make the computer wake up at a set time.

To meet the off mode requirement of ErP compliance, you need to disable the Fast Startup function.

1. Go to **Control Panel** and view by large icons or small icons.
2. Click **Power Options → Choose what the power buttons do → Change settings that are currently unavailable**.
3. Clear the **Turn on fast startup (recommended)** option from the **Shutdown settings** list.

Update the UEFI BIOS

When you install a new program, device driver, or hardware component, you might need to update the UEFI BIOS.

Download and install the latest UEFI BIOS update package by one of the following methods:

From the Vantage app

Follow the instructions to update the UEFI BIOS from the Vantage app.

- Step 1. Open the Vantage app, and then click **System Update**.
- Step 2. If the latest UEFI BIOS update package is available, follow the on-screen instructions to download and install the package.

From the Lenovo Support Web site

Follow the instructions to update the UEFI BIOS from the Lenovo Support Web site.

For computers purchased in mainland China

1. Go to <https://newsupport.lenovo.com.cn>.
2. Click **Download drivers and software**, and select or search product.
3. Follow the on-screen instructions to download and install the latest UEFI BIOS update package.

For computers purchased outside mainland China

1. Go to <https://pcsupport.lenovo.com> and select the entry for your computer.

2. Click **Drivers & Software → Manual Update → BIOS/UEFI**.
3. Follow the on-screen instructions to download and install the latest UEFI BIOS update package.

From the Windows Update

Follow the instructions to update the UEFI BIOS from the Windows Update.

- Step 1. Type **Settings** in the Windows search box and press Enter.
- Step 2. Click **Windows Update → Check for Updates**.
- Step 3. If a BIOS update package appears in your update list, click **Download or Install** to initiate the update.

Chapter 5. RAID

What is RAID

Redundant Array of Independent Disks (RAID) is a technology that provides increased storage functions and reliability through redundancy. It can also improve data storage reliability and fault tolerance compared with single-drive storage systems. Data loss resulting from a drive failure can be prevented by reconstructing missing data from the remaining drives.

When a group of independent physical storage drives is set up to use RAID technology, they are in a RAID array. This array distributes data across multiple storage drives, but the array appears to the host computer as one single storage unit. Creating and using RAID arrays provides high performance, such as the expedited I/O performance, because several drives can be accessed simultaneously.

Configure RAID with Intel Rapid Storage Technology

If your computer comes with the Intel RSTe configuration utility, you can follow the sections below to configure RAID with Intel RSTe.

Storage drive requirements for RAID levels

Your computer supports the following RAID levels:

- RAID 0: striped disk array
 - Consists of at least two SATA storage drives
 - Supported strip size: 4 KB, 8 KB, 16 KB, 32 KB, 64 KB, or 128 KB
 - Better performance without fault tolerance
- RAID 1: mirrored disk array
 - Consists of two SATA storage drives
 - Improved reading performance and 100% redundancy
- RAID 5: block-level striped disk array with distributed parity
 - Consists of at least three SATA storage drives
 - Supported strip size: 16 KB, 32 KB, 64 KB, or 128 KB
 - Better performance and fault tolerance

Create a RAID volume

Attention: All the existing data stored on the selected drives will be erased while the RAID volume is being created.

Step 1. Enable **RAID** by doing the following:

- a. Restart the computer. When the logo screen is displayed, press F1 or Fn+F1.
- b. Select **Devices → Storage Setup** and press Enter.
- c. Select **Configure Storage as** and press Enter. Then, select **RAID** and press Enter.
- d. Press F10 or Fn+F10 to save the changes and exit.

Step 2. Enter the BIOS menu again.

- Step 3. Select **Storage Setup → Intel Rapid Storage Technology** and press Enter.
- Step 4. Select **Create RAID Volume** and press Enter.
- Step 5. Select and configure the options one by one.
- Name:** You can use the default name **Volume1** or type a preferred name for the RAID volume.
 - RAID Level:** You can set the RAID level to one of the following:
 - **RAID0(Stripe)**
 - **RAID1(Mirror)**
 - **RAID5(Parity)**
 - Select Disks:** Select a storage drive and press Enter. Then, select **X** and press Enter to add it to a group.
 - Strip Size** (if applicable): Select a strip size and press Enter.
 - Capacity:** Customize the capacity of the RAID volume. The default RAID volume is the largest value.
- Step 6. Select **Create Volume** and press Enter to create a RAID volume.
- Step 7. Exit the BIOS menu.

View the information about a RAID volume

- Step 1. Restart the computer. When the logo screen is displayed, press F1 or Fn+F1.
- Step 2. Select **Devices → Storage Setup** and press Enter.
- Step 3. Select **Intel Rapid Storage Technology** and press Enter.
- Step 4. Select a RAID volume and press Enter to view the detailed information.
- Step 5. Press F10 or Fn+F10 to save the changes and exit.

Delete a RAID volume

Attention: All the existing data stored on the selected drives will be erased after you delete RAID volumes.

- Step 1. Restart the computer. When the logo screen is displayed, press F1 or Fn+F1.
- Step 2. Select **Devices → Storage Setup** and press Enter.
- Step 3. Select **Intel Rapid Storage Technology** and press Enter.
- Step 4. Select a RAID volume and press Enter.
- Step 5. Select **Delete** and press Enter. When prompted, select **Yes** and press Enter to confirm the deletion of the selected RAID volume.
- Step 6. Press F10 or Fn+F10 to save the changes and exit.

Chapter 6. CRU replacement

What is CRU

Important: For users in mainland China, the information provided in this chapter is for reference by professional maintenance service providers or technicians authorized by Lenovo only. Users shall not perform maintenance on their own. Any faults or damage due to improper operation, modification, or failure to use parts provided by Lenovo are not covered by the warranty for this product. For product warranty information, refer to the warranty document provided with the product or go to the official Lenovo website at <https://newsupport.lenovo.com.cn>.

Customer Replaceable Units (CRUs) are parts that can be replaced by the customer. Lenovo computers contain the following types of CRUs:

- **Self-service CRUs:** Refer to parts that can be replaced easily by customer themselves or by trained service technicians at an additional cost.
- **Optional-service CRUs:** Refer to parts that can be replaced by customers with a greater skill level. Trained service technicians can also provide service to replace the parts under the type of warranty designated for the customer's machine.

If you intend on installing the CRU, Lenovo will ship the CRU to you. CRU information and replacement instructions are shipped with your product and are available from Lenovo at any time upon request. You might be required to return the defective part that is replaced by the CRU. When return is required: (1) return instructions, a prepaid shipping label, and a container will be included with the replacement CRU; and (2) you might be charged for the replacement CRU if Lenovo does not receive the defective CRU within thirty (30) days of your receipt of the replacement CRU. For full details, see the Lenovo Limited Warranty documentation at:

https://www.lenovo.com/warranty/llw_02

CRU list

The following is the CRU list of your computer.

Self-service CRUs

- Dongles*
- Dust filter
- Memory module
- Mouse and keyboard
- Power cord
- Side cover
- Top cover

Optional-service CRUs

- AI fusion card*
- Dual graphics card bracket*
- Dual graphics card extender*
- E-lock*
- Fans

- Graphics card
- Graphics card extender assembly
- Hard disk drive*
- Hard disk drive tray
- Main bezel
- M.2 solid-state drive
- M.2 solid-state drive heat sink
- M.2 solid-state drive bracket
- PCIe card*
- Sensor hub
- Side fan cage
- Side fan duct*
- Side fan kit holder
- Top graphics card support bracket
- Top guide bracket for dual graphics card*

* for selected models

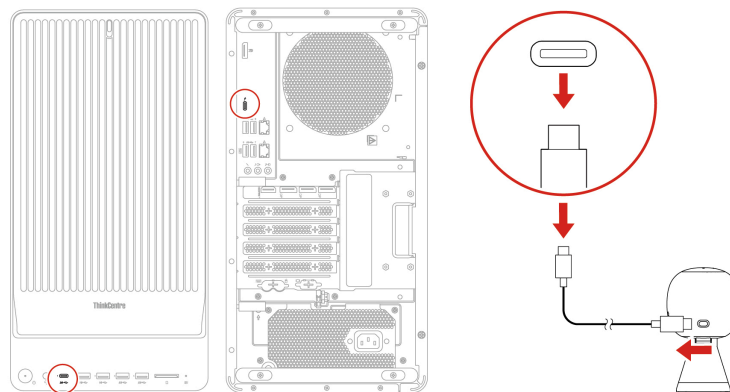
Sensor hub

Prerequisite

Before you start, read *Generic Safety and Compliance Notices*, and print the following instructions.

Removal step

Lay down the computer. Disconnect the USB-C cable from the computer and the sensor hub, and then remove the sensor hub.



Top cover

Prerequisite

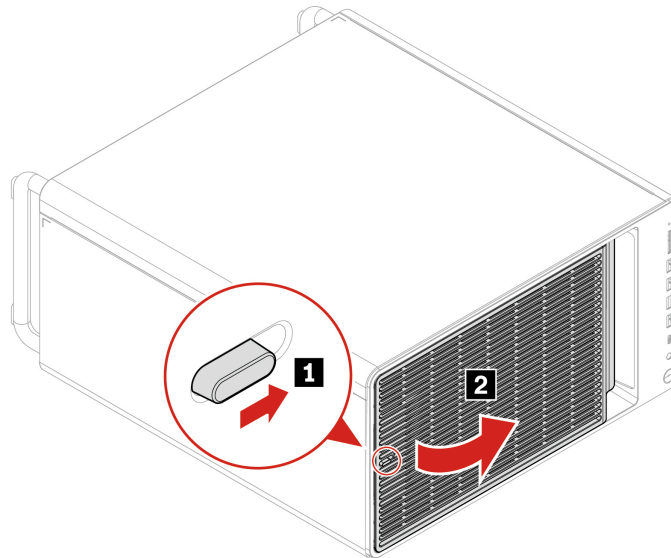
Before you start, read *Generic Safety and Compliance Notices*, and print the following instructions.

For access, do the following:

1. Remove any media from the drives and turn off all connected devices and the computer.
2. Lay down the computer. Disconnect all power cords from electrical outlets and disconnect all cables from the computer.
3. Remove the sensor hub. See “Sensor hub” on page 29.

Removal steps

1. Hold the latch on the top cover and slide it to the right.
2. Lift the left side of the top cover to remove it.



Dust filter

Prerequisite

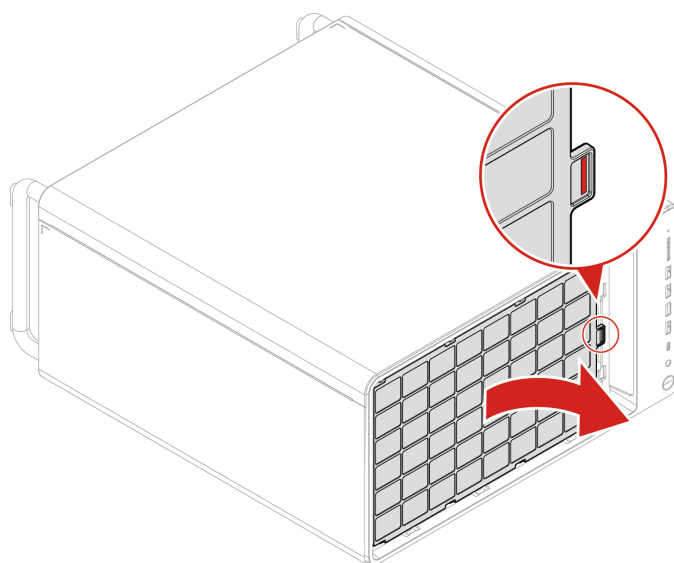
Before you start, read *Generic Safety and Compliance Notices*, and print the following instructions.

For access, remove these parts in order:

- “Sensor hub” on page 29
- “Top cover” on page 29

Removal step

Pull the red tab on the right side of the dust filter diagonally upward to remove the dust filter.



Side cover

Prerequisite

Before you start, read *Generic Safety and Compliance Notices*, and print the following instructions.



Before you open the side cover, turn off the computer and wait several minutes until the computer is cool.

For access, do the following:

1. Remove any media from the drives and turn off all connected devices and the computer.
2. Lay down the computer. Disconnect all power cords from electrical outlets and disconnect all cables from the computer.
3. Unlock any locking device that secures the side cover.
4. Remove the sensor hub. See “Sensor hub” on page 29.

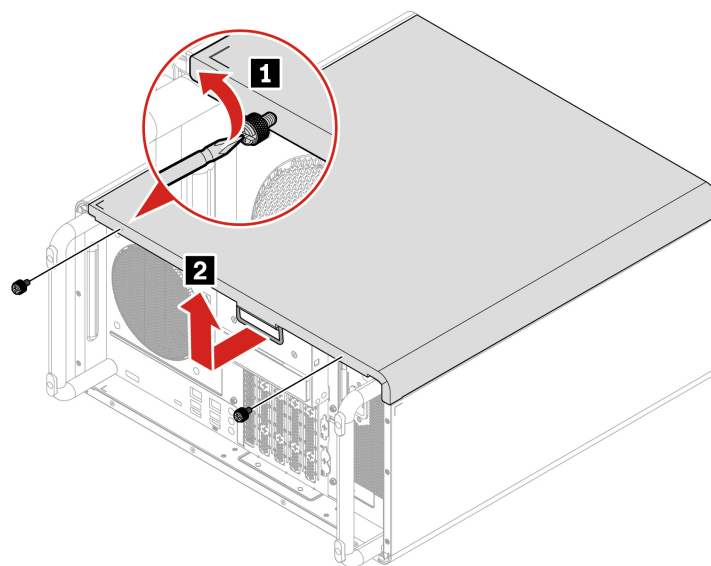
Removal steps

1. Remove the two screws which secure the side cover to the chassis, one screw at each edge of the chassis. Find screw specification like torque in the following screw table.

Screw (quantity)	Color	Torque
6-32 x 6 mm (2)	Black	3 ± 0.5 lb/in

Note: The screws can be conveniently removed by hand without the need for any special tools.

2. Grab the metal handle and pull the side cover backward to remove it.



Note: If a locking device is available, use it to lock the computer after installing the side cover.

Main bezel

Prerequisite

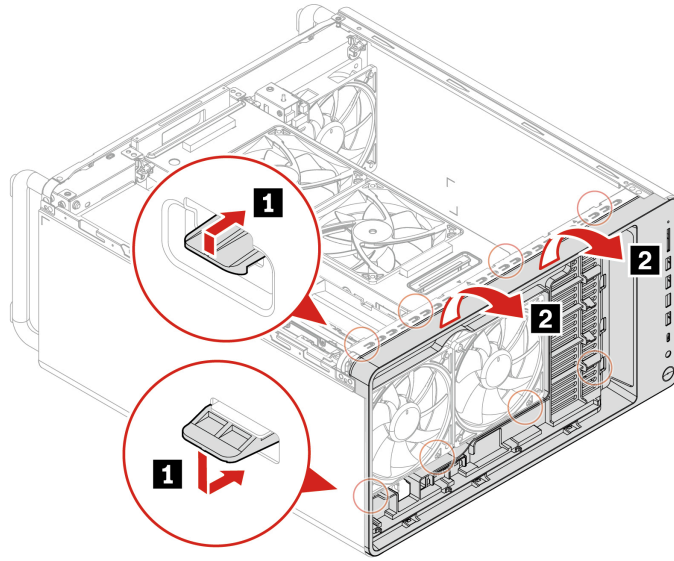
Before you start, read *Generic Safety and Compliance Notices*, and print the following instructions.

For access, remove these parts in order:

- “Sensor hub” on page 29
- “Top cover” on page 29
- “Dust filter” on page 30
- “Side cover” on page 31

Removal steps

1. Unlock the two latches on the upper and lower left corners of the front bezel.
2. Pivot the main bezel outwards to remove it from the chassis.



Hard disk drive and tray

Prerequisite

Before you start, read *Generic Safety and Compliance Notices*, and print the following instructions.

Attention: The internal storage drive is sensitive. Inappropriate handling might cause damage and permanent loss of data. When handling the internal storage drive, observe the following guidelines:

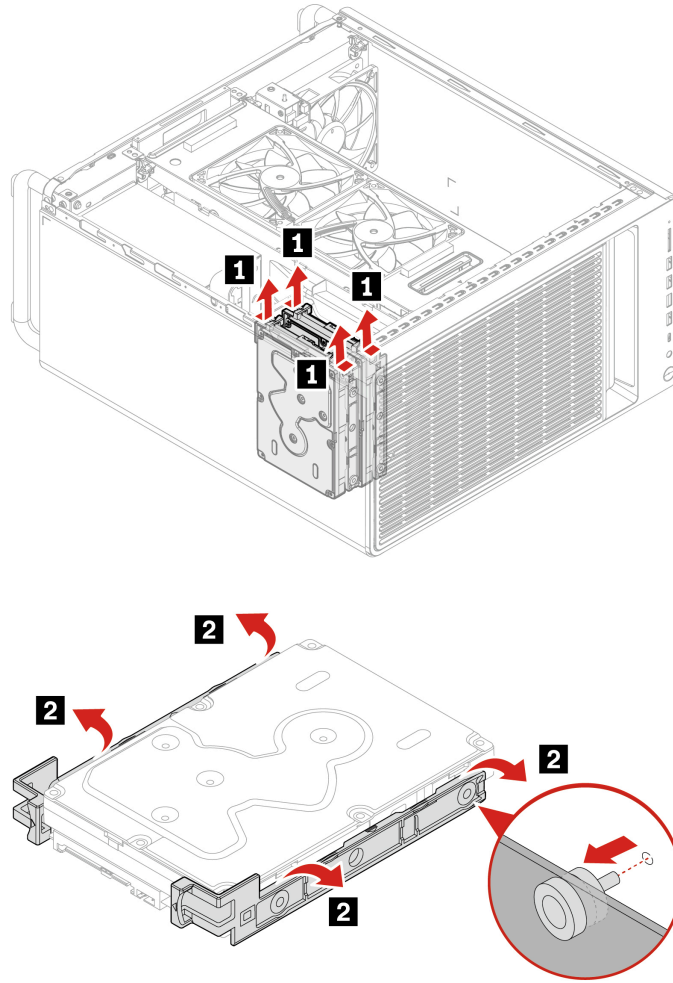
- Replace the internal storage drive only for repair. The internal storage drive is not designed for frequent changes or replacement.
- Before replacing the internal storage drive, make a backup copy of all the data that you want to keep.
- Do not touch the contact edge of the internal storage drive. Otherwise, the internal storage drive might get damaged.
- Do not apply pressure to the internal storage drive.
- Do not make the internal storage drive subject to physical shocks or vibration. Put the internal storage drive on a soft material, such as cloth, to absorb physical shocks.

For access, remove these parts in order:

- “Sensor hub” on page 29
- “Side cover” on page 31

Removal steps

1. Push the locking latches on both sides of the hard disk drive tray towards the center and remove the hard disk drive and tray.
2. Remove the pins of the tray from the holes on the hard disk drive to remove it.



Side fan and side fan cage

Prerequisite

Before you start, read *Generic Safety and Compliance Notices*, and print the following instructions.

For access, remove these parts in order:

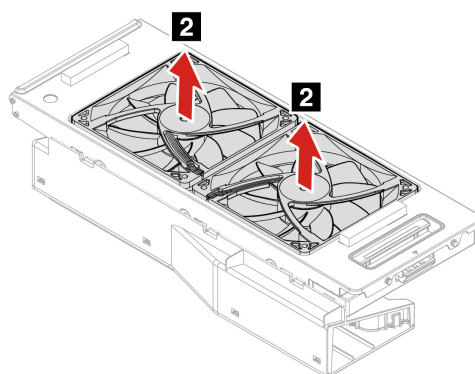
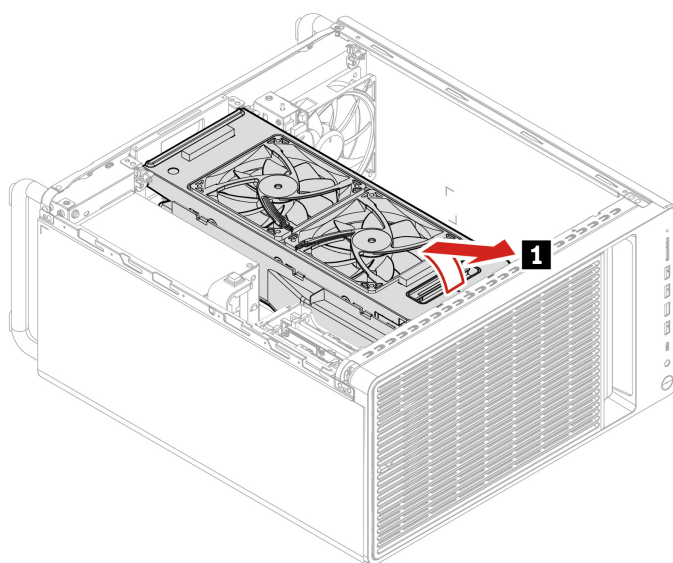
- “Sensor hub” on page 29
- “Side cover” on page 31

Removal steps

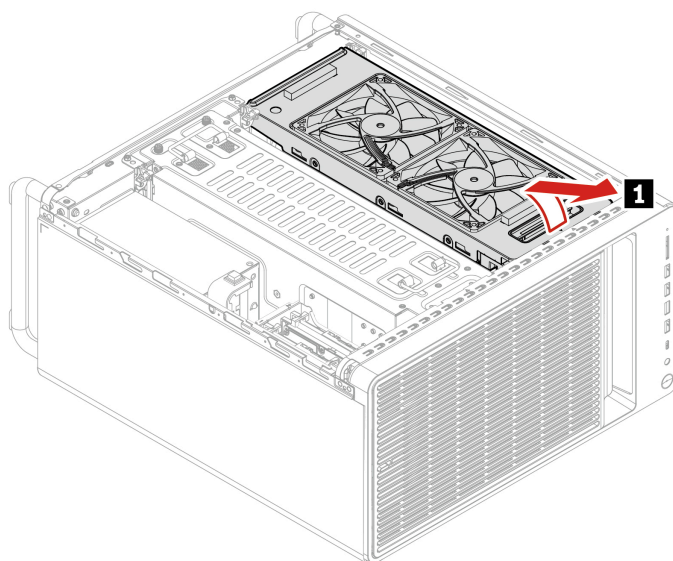
1. Release the locking latch and lift the side fan assembly upward to remove it.
2. Remove the two side fans from the side fan cage.

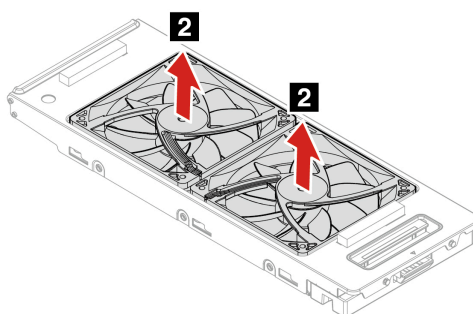
Note: The fan is attached to the chassis by four insert pins. Pull the insert pins to release the fan.

- **Location 1**



- Location 2





Side fan duct

Prerequisite

Before you start, read *Generic Safety and Compliance Notices*, and print the following instructions.

For access, remove these parts in order:

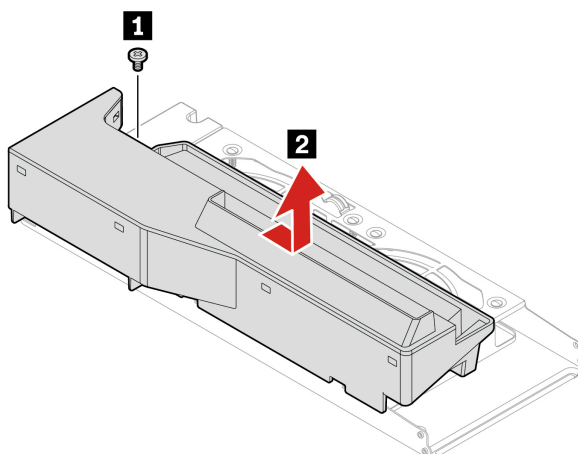
- “Sensor hub” on page 29
- “Side cover” on page 31
- “Side fan and side fan cage” on page 34

Removal steps

1. Remove the one screw which secures the side fan duct to the side fan cage. Find screw specification like torque in the following screw table.

Screw (quantity)	Color	Torque
6-32 x 8 mm, Ni coated (1)	Silver	5 ± 0.5 lb/in

2. Remove the side fan duct from the side fan cage.



Side fan kit holder

Prerequisite

Before you start, read *Generic Safety and Compliance Notices*, and print the following instructions.

For access, remove these parts in order:

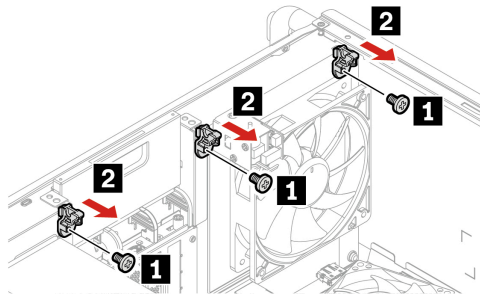
- “Sensor hub” on page 29
- “Side cover” on page 31
- “Side fan and side fan cage” on page 34

Removal steps

1. Remove the three screws which secure the side fan kit holders to the chassis. Find screw specification like torque in the following screw table.

Screw (quantity)	Color	Torque
6-32 x 8 mm, Zn coated (3)	Blue	5 ± 0.5 lb/in

2. Remove the side fan kit holders from the chassis.



Top fan

Prerequisite

Before you start, read *Generic Safety and Compliance Notices*, and print the following instructions.

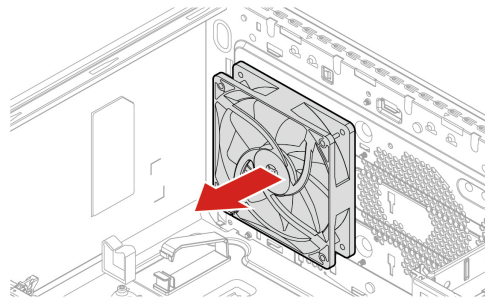
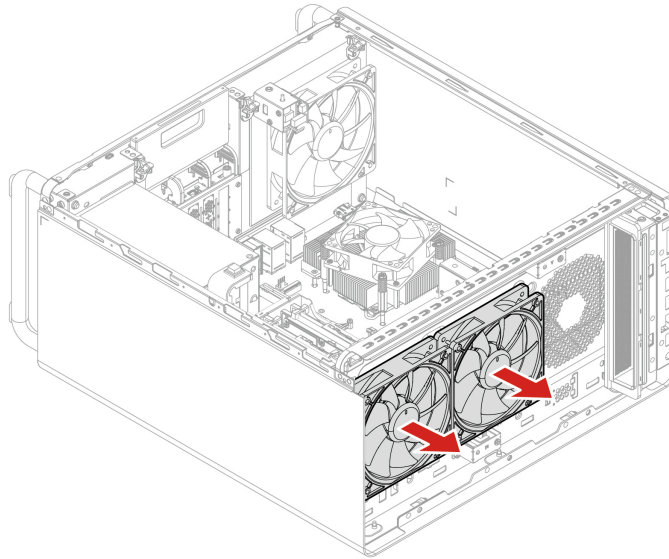
For access, do the following:

1. Remove these parts in order:
 - “Sensor hub” on page 29
 - “Top cover” on page 29
 - “Dust filter” on page 30
 - “Side cover” on page 31
 - “Main bezel” on page 32
 - “Side fan and side fan cage” on page 34
2. Disconnect the fan cables from the system board.

Removal step

Locate and remove the three top fans from the chassis.

Note: The fan is attached to the chassis by four insert pins. Pull the insert pins to release the fan.



Bottom fan

Prerequisite

Before you start, read *Generic Safety and Compliance Notices*, and print the following instructions.

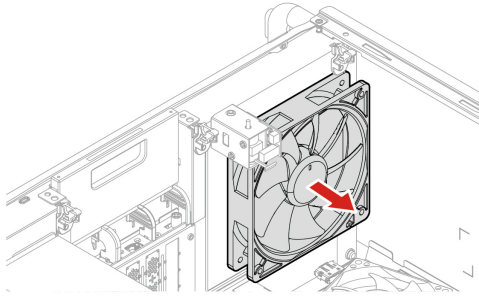
For access, do the following:

1. Remove these parts in order:
 - “Sensor hub” on page 29
 - “Side cover” on page 31
 - “Side fan and side fan cage” on page 34
2. Disconnect the fan cable from the system board.

Removal step

Locate and remove the bottom fan from the chassis.

Note: The fan is attached to the chassis by four insert pins. Pull the insert pins to release the fan.



E-lock

Prerequisite

Before you start, read *Generic Safety and Compliance Notices*, and print the following instructions.

For access, remove these parts in order:

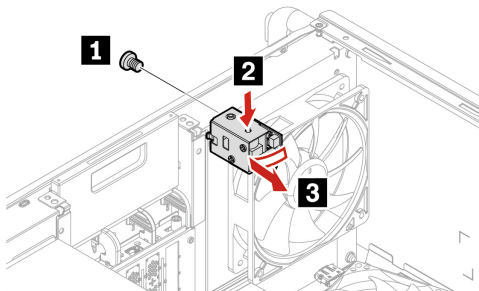
- “Sensor hub” on page 29
- “Side cover” on page 31
- “Side fan kit holder” on page 37

Removal steps

1. Remove the one screw which secures the E-lock to the chassis. Find screw specification like torque in the following screw table.

Screw (quantity)	Color	Torque
M3 x 5 mm, Ni coated (1)	Silver	5 ± 0.5 lb/in

2. Slide down the E-lock and remove it from the chassis.

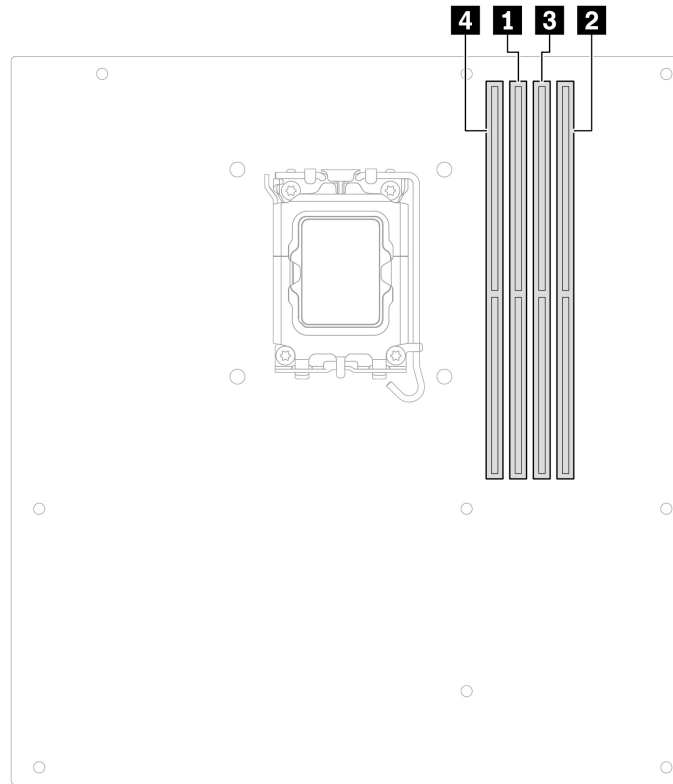


Memory module

Prerequisite

Before you start, read *Generic Safety and Compliance Notices*, and print the following instructions.

Ensure that you follow the installation order for memory modules shown in the following illustration.

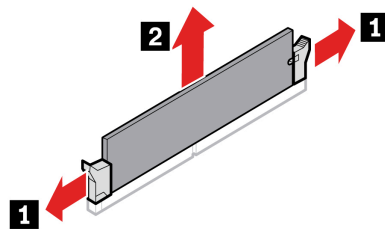


For access, remove these parts in order:

- “Sensor hub” on page 29
- “Side cover” on page 31

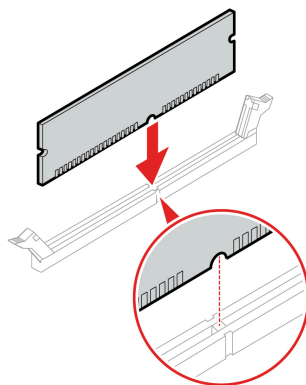
Removal steps

1. Open the two retaining clips.
2. Gently pull the memory module out of the memory slot.



Installation step

Align the memory module to the slot and press down on both ends until the latches are fully engaged with a click.



Graphics card, graphics card extender assembly, dual graphics card bracket, and dual graphics card extender

Prerequisite

Before you start, read *Generic Safety and Compliance Notices*, and print the following instructions.



Before you open the computer cover, turn off the computer and wait several minutes until the computer is cool.

For access, do the following:

1. Remove these parts in order:
 - “Sensor hub” on page 29
 - “Side cover” on page 31
2. Disconnect the power cable from the graphics card.

Removal steps

• Type 1

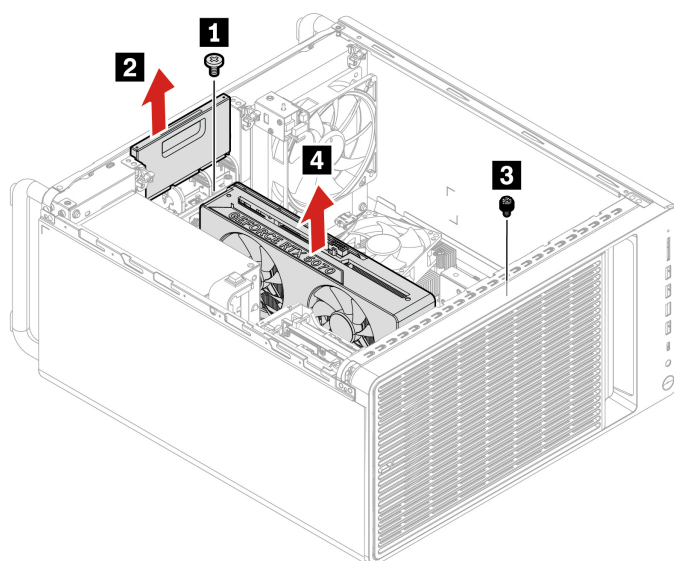
1. Remove the one screw which secures the PCIe retainer latch to the graphics card. Find screw specification like torque in the following screw table.

Screw (quantity)	Color	Torque
6-32 x 8 mm, Zn coated (1)	Blue	5 ± 0.5 lb/in

2. Lift the PCIe latch pressure plate.
3. Remove the one screw which secures the graphics card extender assembly to the top graphics card support bracket. Find screw specification like torque in the following screw table.

Screw (quantity)	Color	Torque
6-32 x 6 mm (1)	Black	3 ± 0.5 lb/in

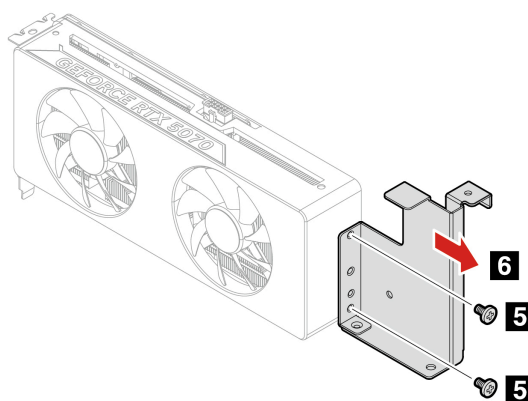
4. Gently pull the graphics card and graphics card extender assembly out of the slot.



5. Remove the two screws which secure the graphics card extender assembly to the graphics card. Find screw specification like torque in the following screw table.

Screw (quantity)	Color	Torque
M3 x 8 mm, Zn coated (2)	Blue	5 ± 0.5 lb/in

6. Remove the graphics card extender assembly.



• Type 2

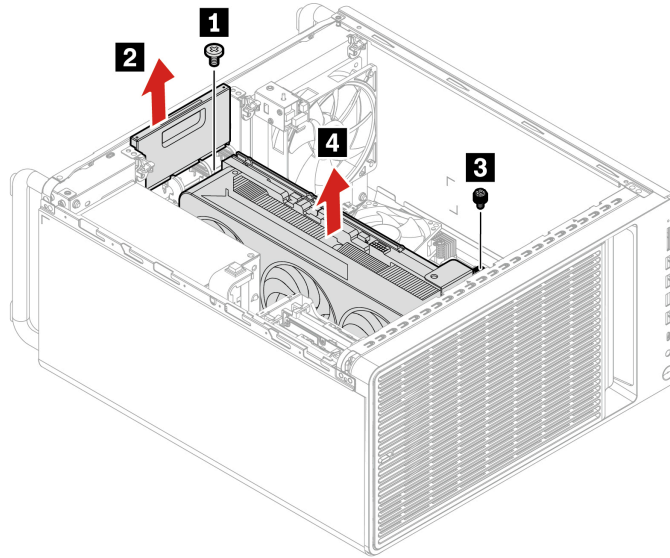
1. Remove the one screw which secures the PCIe retainer latch to the graphics card. Find screw specification like torque in the following screw table.

Screw (quantity)	Color	Torque
6-32 x 8 mm, Zn coated (1)	Blue	5 ± 0.5 lb/in

2. Lift the PCIe latch pressure plate.
3. Remove the one screw which secures the graphics card extender assembly to the top graphics card support bracket. Find screw specification like torque in the following screw table.

Screw (quantity)	Color	Torque
6-32 x 6 mm (1)	Black	3 ± 0.5 lb/in

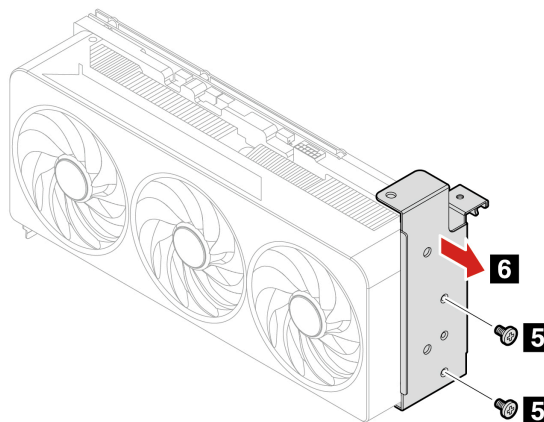
- Gently pull the graphics card and graphics card extender assembly out of the slot.



- Remove the two screws which secure the graphics card extender assembly to the graphics card. Find screw specification like torque in the following screw table.

Screw (quantity)	Color	Torque
M3 x 8 mm, Zn coated (2)	Blue	5 ± 0.5 lb/in

- Remove the graphics card extender assembly.

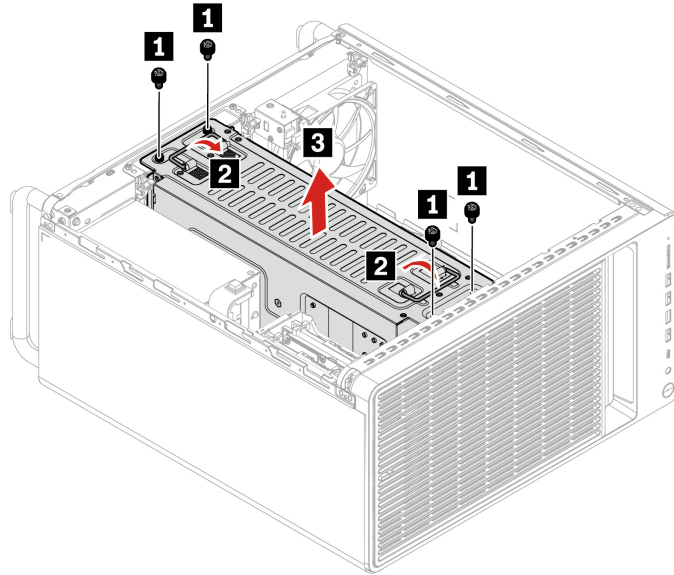


- Type 3**

- Remove the four screws which secure the dual graphics card bracket to the chassis. Find screw specification like torque in the following screw table.

Screw (quantity)	Color	Torque
6-32 x 6 mm (4)	Black	3 ± 0.5 lb/in

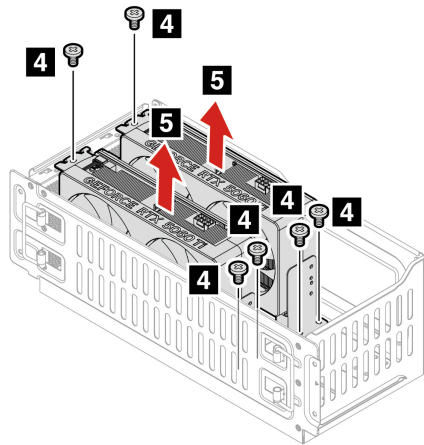
2. Lift the two handles on the dual graphics card bracket.
3. Gently pull the dual graphics card bracket out of the chassis.



4. Remove the six screws which secure the graphics cards and dual graphics card extenders to the dual graphics card bracket. Find screw specification like torque in the following screw table.

Screw (quantity)	Color	Torque
6-32 x 8 mm, Ni coated (6)	Silver	5 ± 0.5 lb/in

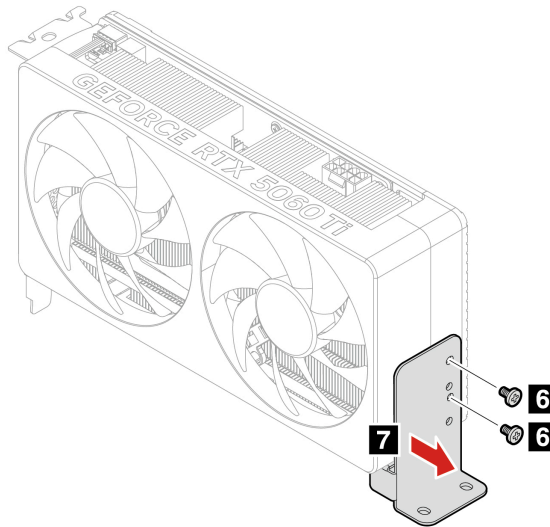
5. Remove the two graphics cards from the dual graphics card bracket.



6. Remove the two screws on each graphics card, which secure the dual graphics card extender to the graphics card. Find screw specification like torque in the following screw table.

Screw (quantity)	Color	Torque
M3 x 8 mm, Zn coated (4)	Blue	5 ± 0.5 lb/in

7. Remove the dual graphics card extenders.



PCIe card

Prerequisite

Before you start, read *Generic Safety and Compliance Notices*, and print the following instructions.



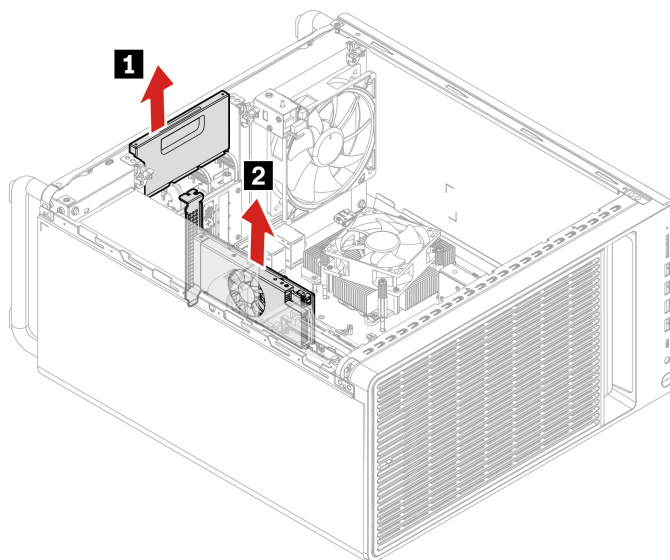
Before you open the computer cover, turn off the computer and wait several minutes until the computer is cool.

For access, remove these parts in order:

- “Sensor hub” on page 29
- “Side cover” on page 31
- “Graphics card, graphics card extender assembly, dual graphics card bracket, and dual graphics card extender” on page 41

Removal steps

1. Lift the PCIe latch pressure plate.
2. Gently pull the PCIe card out of the slot.



Top guide bracket for dual graphics card

Prerequisite

Before you start, read *Generic Safety and Compliance Notices*, and print the following instructions.



Before you open the computer cover, turn off the computer and wait several minutes until the computer is cool.

For access, remove these parts in order:

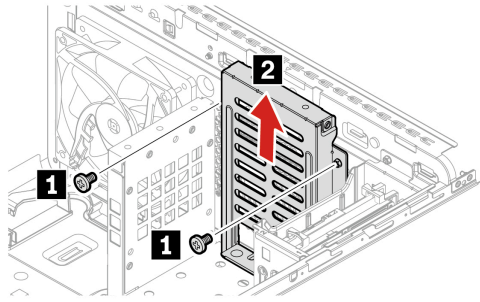
- “Sensor hub” on page 29
- “Side cover” on page 31
- “Side fan and side fan cage” on page 34
- “Graphics card, graphics card extender assembly, dual graphics card bracket, and dual graphics card extender” on page 41

Removal steps

1. Remove the two screws which secure the top guide bracket for dual graphics card to the chassis. Find screw specification like torque in the following screw table.

Screw (quantity)	Color	Torque
6-32 x 8 mm, Ni coated (2)	Silver	5 ± 0.5 lb/in

2. Pull the top guide bracket for dual graphics card out of the chassis.



Top graphics card support bracket

Prerequisite

Before you start, read *Generic Safety and Compliance Notices*, and print the following instructions.



Before you open the computer cover, turn off the computer and wait several minutes until the computer is cool.

For access, remove these parts in order:

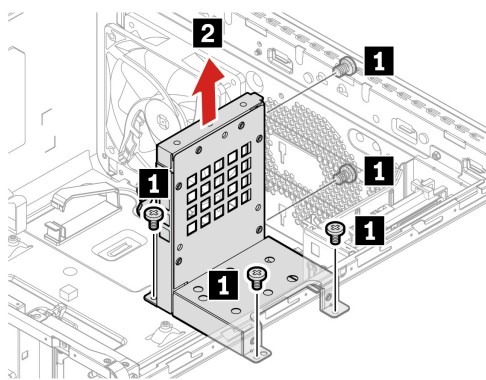
- “Sensor hub” on page 29
- “Top cover” on page 29
- “Dust filter” on page 30
- “Side cover” on page 31
- “Main bezel” on page 32
- “Side fan and side fan cage” on page 34
- “Top fan (the two located beneath the main bezel)” on page 37
- “Graphics card, graphics card extender assembly, dual graphics card bracket, and dual graphics card extender” on page 41

Removal steps

1. Remove the five screws which secure the top graphics card support bracket to the chassis. Find screw specification like torque in the following screw table.

Screw (quantity)	Color	Torque
6-32 x 8 mm, Ni coated (5)	Silver	5 ± 0.5 lb/in

2. Pull the top graphics card support bracket out of the chassis.



M.2 solid-state drive and heat sink

Prerequisite

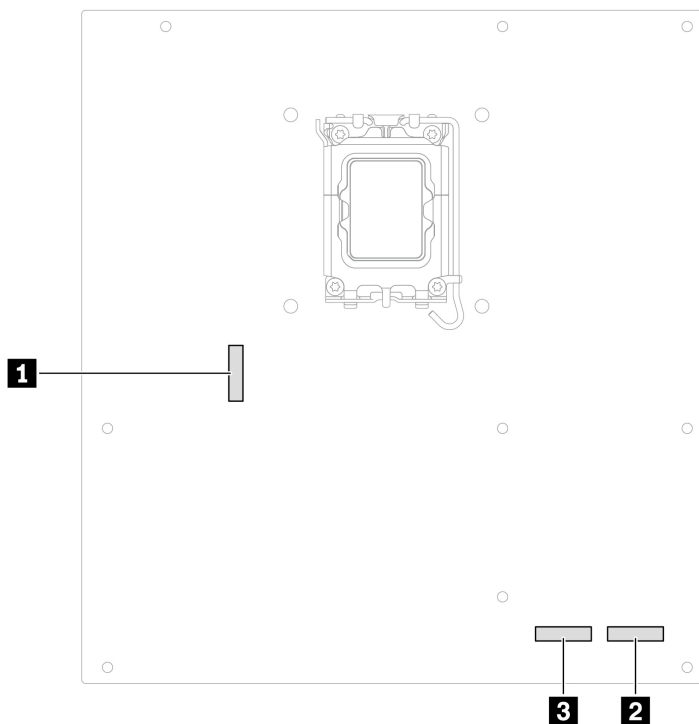
Before you start, read *Generic Safety and Compliance Notices*, and print the following instructions.



The heat sink might be very hot. Before you open the computer cover, turn off the computer and wait several minutes until the computer is cool.

Important notice for installing the M.2 solid-state drive

For better performance, it's recommended that you follow the installation order for M.2 solid-state drives shown in the following illustration.



Attention:

- The internal storage drive is sensitive. Inappropriate handling might cause damage and permanent loss of data. When handling the internal storage drive, observe the following guidelines:
 - Replace the internal storage drive only for repair. The internal storage drive is not designed for frequent changes or replacement.
 - Before replacing the internal storage drive, make a backup copy of all the data that you want to keep.
 - Do not touch the contact edge of the internal storage drive. Otherwise, the internal storage drive might get damaged.
 - Do not apply pressure to the internal storage drive.
 - Do not make the internal storage drive subject to physical shocks or vibration. Put the internal storage drive on a soft material, such as cloth, to absorb physical shocks.

For access, remove these parts in order:

- “Sensor hub” on page 29
- “Side cover” on page 31
- “Side fan and side fan cage” on page 34
- “Graphics card, graphics card extender assembly, dual graphics card bracket, and dual graphics card extender” on page 41

Removal steps for M.2 solid-state drive without heat sink

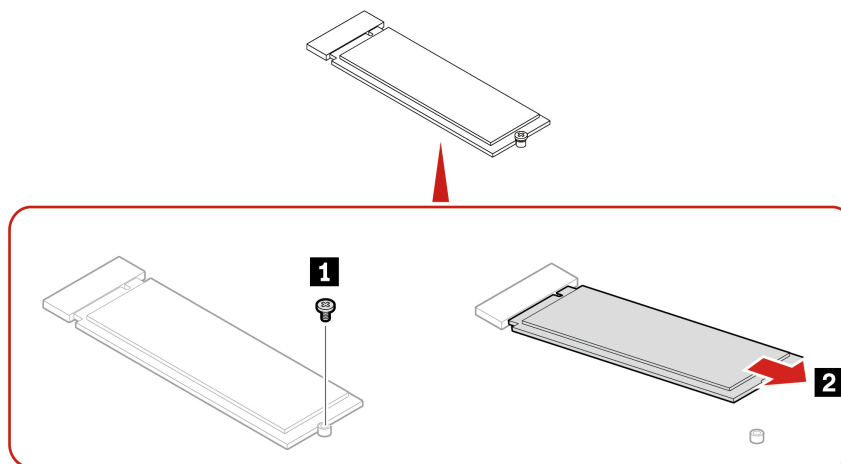
The M.2 solid-state drive is installed on the system board.

- **Type 1**

1. Remove the screw which secures the M.2 solid-state drive to the system board. Find screw specification like torque in the following screw table.

Screw (quantity)	Color	Torque
M2 x 4 mm, Ni coated (1)	Silver	1.5 ± 0.5 lb/in

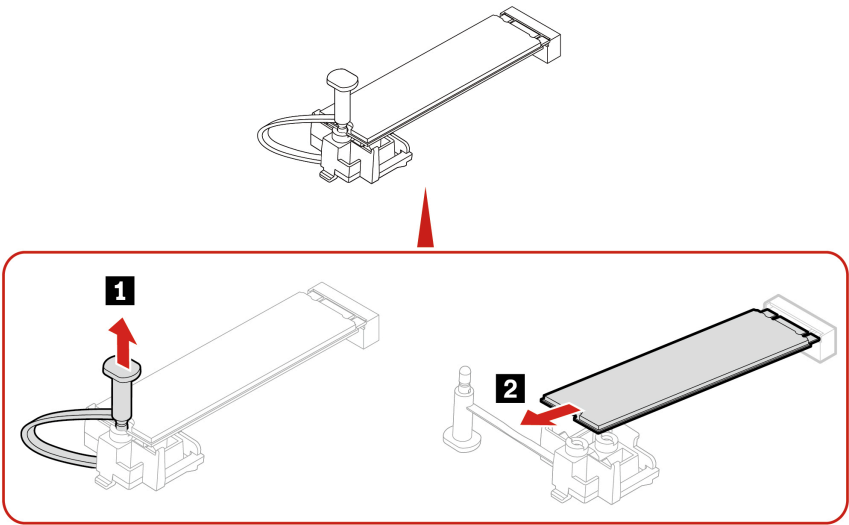
2. Remove the M.2 solid-state drive.



- **Type 2**

1. Pull the locking latch upward to release the M.2 solid-state drive from the M.2 solid-state drive bracket.

2. Remove the M.2 solid-state drive.



Removal steps for M.2 solid-state drive with heat sink

The M.2 solid-state drive is installed on the system board with its heat sink.

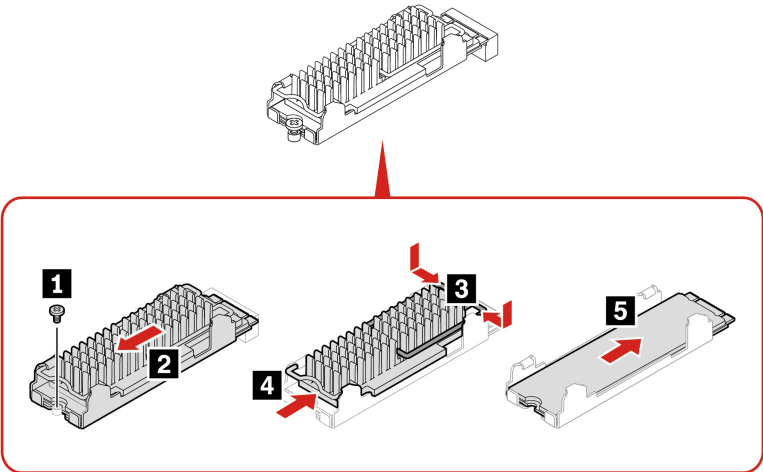
• **Type 1**

The M.2 solid-state drive with heat sink is secured with one screw.

1. Remove the screw which secures the M.2 solid-state drive with heat sink to the system board. Find screw specification like torque in the following screw table.

Screw (quantity)	Color	Torque
M2 x 4 mm, Ni coated (1)	Silver	1.5 ± 0.5 lb/in

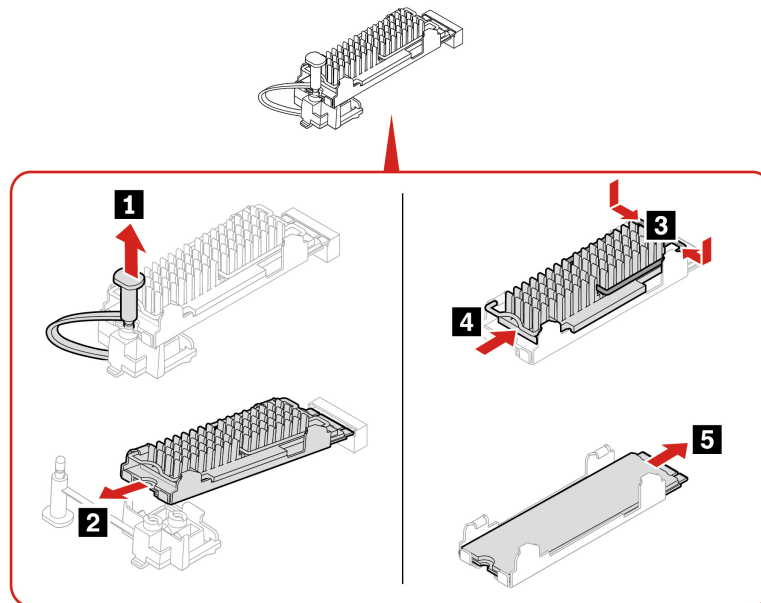
2. Remove the M.2 solid-state drive with heat sink.
3. Pinch the two latches on top of the heat sink to release the heat sink cover.
4. Remove the heat sink cover.
5. Remove the M.2 solid-state drive.



• **Type 2**

The M.2 solid-state drive with heat sink is secured with the bracket.

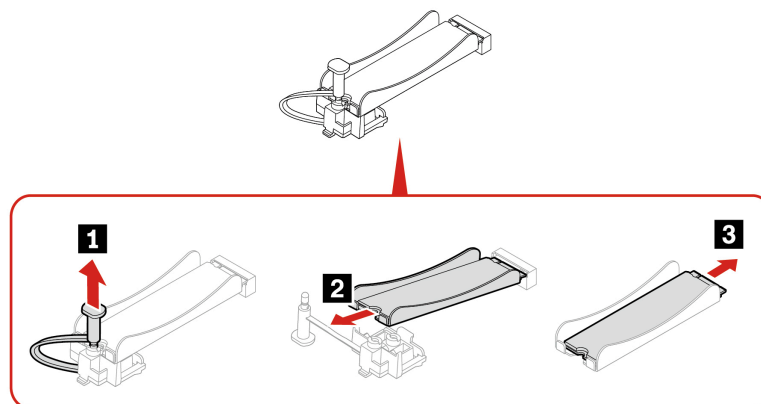
1. Pull the locking latch upward to release the M.2 solid-state drive with heat sink from the M.2 solid-state drive bracket.
2. Remove the M.2 solid-state drive with heat sink.
3. Pinch the two latches on top of the heat sink to release the heat sink cover.
4. Remove the heat sink cover.
5. Remove the M.2 solid-state drive.



- **Type 3**

The M.2 solid-state drive with heat sink is secured with the bracket.

1. Pull the locking latch upward to release the M.2 solid-state drive with heat sink from the M.2 solid-state drive bracket.
2. Remove the M.2 solid-state drive with heat sink.
3. Remove the M.2 solid-state drive from the heat sink.



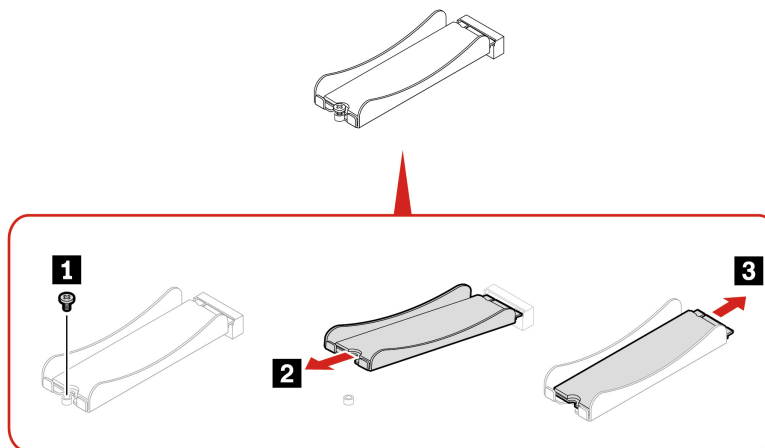
- **Type 4**

The M.2 solid-state drive with heat sink is secured with one screw.

1. Remove the screw which secures the M.2 solid-state drive with heat sink to the system board. Find screw specification like torque in the following screw table.

Screw (quantity)	Color	Torque
M2 x 4 mm, Ni coated (1)	Silver	1.5 ± 0.5 lb/in

2. Remove the M.2 solid-state drive with heat sink.
3. Remove the M.2 solid-state drive from the heat sink.



AI fusion card

Prerequisite

Before you start, read *Generic Safety and Compliance Notices*, and print the following instructions.



The heat sink might be very hot. Before you open the computer cover, turn off the computer and wait several minutes until the computer is cool.

Attention:

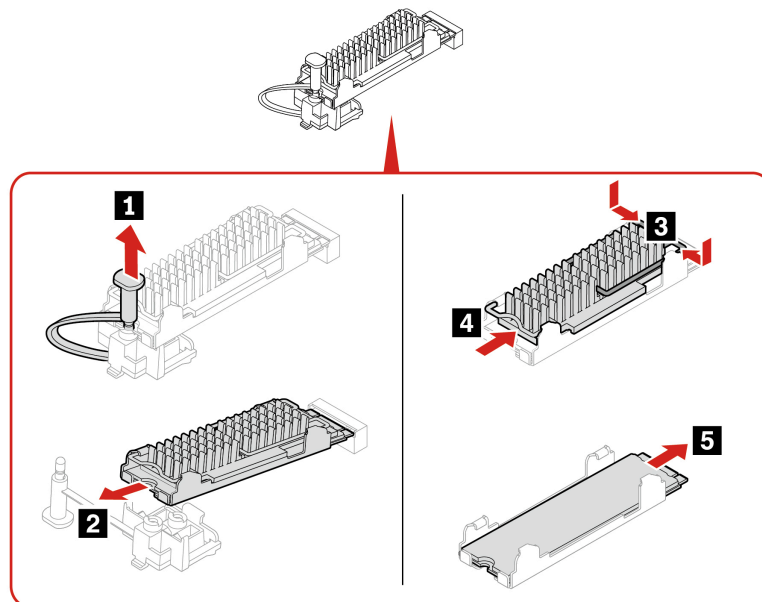
- The internal storage drive is sensitive. Inappropriate handling might cause damage and permanent loss of data. When handling the internal storage drive, observe the following guidelines:
 - Replace the internal storage drive only for repair. The internal storage drive is not designed for frequent changes or replacement.
 - Before replacing the internal storage drive, make a backup copy of all the data that you want to keep.
 - Do not touch the contact edge of the internal storage drive. Otherwise, the internal storage drive might get damaged.
 - Do not apply pressure to the internal storage drive.
 - Do not make the internal storage drive subject to physical shocks or vibration. Put the internal storage drive on a soft material, such as cloth, to absorb physical shocks.

For access, remove these parts in order:

- “Sensor hub” on page 29
- “Side cover” on page 31
- “Side fan and side fan cage” on page 34
- “Graphics card, graphics card extender assembly, dual graphics card bracket, and dual graphics card extender” on page 41

Removal steps

1. Pull the locking latch upward to release the AI fusion card with heat sink from the M.2 solid-state drive bracket.
2. Remove the AI fusion card with heat sink.
3. Pinch the two latches on top of the heat sink to release the heat sink cover.
4. Remove the heat sink cover.
5. Remove the AI fusion card.



M.2 solid-state drive bracket

Prerequisite

Before you start, read *Generic Safety and Compliance Notices*, and print the following instructions.

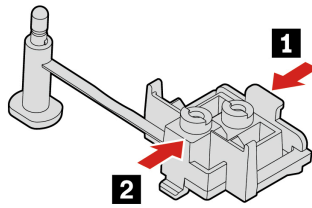
For access, remove these parts in order:

- “Sensor hub” on page 29
- “Side cover” on page 31
- “Side fan and side fan cage” on page 34
- “Graphics card, graphics card extender assembly, dual graphics card bracket, and dual graphics card extender” on page 41

- “M.2 solid-state drive and heat sink” on page 48

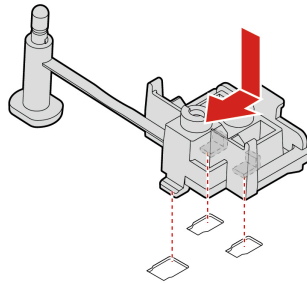
Removal steps

Release the M.2 solid-state drive bracket from the chassis by pushing its retaining clip toward the center.



Installation step

Align the M.2 solid-state drive bracket with the three holes on the chassis.



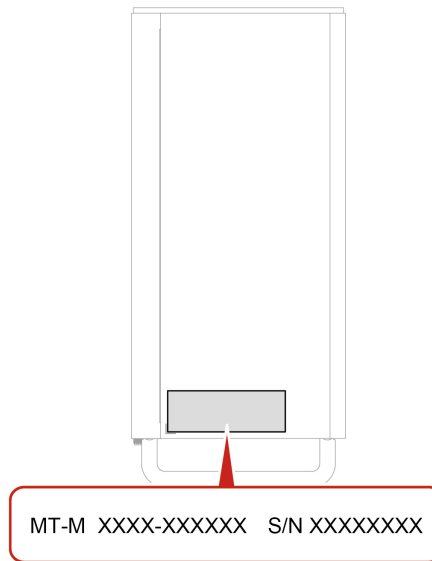
Chapter 7. Help and support

Find your serial number

This topic helps you find computer serial number.

You can find your serial number via:

- **Dashboard** or **Device** in the **Vantage** app
- The lower left corner of the rear side of your computer (shown as below illustration)



Diagnose and troubleshoot your computer

This section provides introduction to a set of diagnostics and troubleshooting tools at Lenovo Support Web site and the Vantage app. They can help you diagnose common software and hardware issues.

The following table lists these diagnostics tools and the recommended conditions for each tool.

Diagnostics tool	Recommended scenario
Troubleshoot and diagnose at Lenovo Support Web site	You want to have an online troubleshooting or scan of hardware and drivers on your computer.
Hardware scan	• Your computer is installed with the Vantage app. • You want to perform basic examinations of the hardware components.

Troubleshoot and diagnose at Lenovo Support Web site

Lenovo provides two different diagnosing solutions to help you identify and resolve problems on your computer.

For computers purchased in mainland China

1. Go to <https://newsupport.lenovo.com.cn/>.
2. Enter the troubleshooting section and find the question you are encountering.

For computers purchased outside mainland China

1. Go to <https://www.pcsupport.lenovo.com/> and enter your product name in the search box.
2. Click **Troubleshoot & Diagnose** and select the option that fits your need.

Notes:

- Before launching any automatic diagnosing process, a pop-up window will be prompted to install Lenovo Service Bridge. Lenovo Service Bridge helps to connect your computer with Lenovo diagnosing tools.
- Lenovo Support Web site makes periodic updates of the sections to keep improving your experience with your computer. The Web site interface and descriptions of sections might be different from that on your actual interface.
- If you are unaware of what problem your computer goes with, it is recommended that you select **Easy** and follow on-screen instructions to get your firmware updated and obtain the hardware status.
- If you have identified the problem on your computer, you can select **Custom** and follow on-screen instructions to resolve the problem.

If solutions can not resolve problems on your computer, you can follow on-screen instructions to submit an e-ticket or contact Lenovo for professional assistance.

Hardware scan

Hardware scan is an effective hardware testing tool to help you identify existing hardware issues.

To run the Hardware scan:

- Step 1. Type **Vantage** in the Windows search box and then press Enter.
- Step 2. Click **Hardware scan** or **Support → Hardware scan**.
- Step 3. Select **QUICK SCAN** or **CUSTOMIZE** and then follow the on-screen instructions to run the hardware scan.

Notes:

- The Quick Scan tool contains a pre-selected suite of tests that performs basic examinations of the hardware components found in the system. The Customize tool enables you to select one or several hardware components to perform the examinations.
 - Before selecting **QUICK SCAN**, click **Refresh Modules** to ensure that the list of hardware components is the components currently available for the computer.
- Step 4. If any hardware failure is detected, the result varies depending on the warranty status and varies by country or region. Follow the on-screen instructions to resolve the issue.

Recover your Windows operating system

When you encounter some unexpected issues with your operating system, you can choose to recover your operating system by yourself or call Lenovo Customer Support Center.

Note: Microsoft constantly makes updates to the Windows operating system. Before installing a particular Windows version, check the compatibility list for the Windows version. For details, go to <https://support.lenovo.com/us/en/solutions/ht512575>.

For computers purchased in mainland China

Go to https://iknow.lenovo.com.cn/detail/199198_1.html.

For computers purchased outside mainland China

To recover your operating system to...	See.
Factory defaults	Refer to the instructions in https://support.lenovo.com/HowToCreateLenovoRecovery
A previous system point	Refer to the instructions in Popular Topics: https://support.lenovo.com/solutions/ht118590

Call Lenovo

If you have tried to correct the problem yourself and still need help, you can call Lenovo Customer Support Center.

Before you contact Lenovo

Prepare the needed information before you contact Lenovo.

1. Record the problem symptoms and details:
 - What is the problem? Is it continuous or intermittent?
 - Any error message or error code?
 - What operating system are you using? Which version?
 - Which software applications were running at the time of the problem?
 - Can the problem be reproduced? If so, how?
2. Record the system information:
 - Product name
 - Machine type and serial number.

Self-help resources

Use the following self-help resources to learn more about the computer and troubleshoot problems.

Resources	How to access?
Lenovo Support Web Site	• For computers purchased in mainland China https://www.lenovo.com.cn • For computers purchased outside mainland China https://pcsupport.lenovo.com
Tips	• For computers purchased in mainland China https://iknow.lenovo.com.cn • For computers purchased outside mainland China https://www.lenovo.com/tips

Resources	How to access?
Lenovo Community	- For computers purchased in mainland China https://iknow.lenovo.com.cn - For computers purchased outside mainland China https://forums.lenovo.com
Accessibility information (for computers purchased outside China)	https://www.lenovo.com/accessibility
Windows help information	- Open the Start menu and click Get Help or Tips. - Use Windows Search. - Microsoft support Web site: https://support.microsoft.com

Purchase accessories or additional services

This topic provides instructions on how to purchase accessories or additional services.

Accessories

Lenovo has a number of hardware accessories and upgrades to help expand the functionalities of your computer. Accessories include memory modules, storage devices, network cards, power adapters, keyboards, mice, and so on.

To shop at Lenovo, go to:

- For computers purchased in mainland China
<https://www.lenovo.com.cn>
- For computers purchased outside mainland China
<https://www.lenovo.com/accessories>

Additional services

During and after the warranty period, you can purchase additional services from Lenovo at:

- For computers purchased in mainland China
<https://newsupport.lenovo.com.cn>
- For computers purchased outside mainland China
<https://pcsupport.lenovo.com/warrantyupgrade>

Service availability and service names might vary by country or region.

Accessibility features

Lenovo is committed to making information technology accessible to everyone, including individuals with hearing, vision, mobility, cognitive, or speech disabilities. To get the most up-to-date and detailed accessibility features information for the product, go to https://support.lenovo.com/docs/product_accessibility_features.

Appendix A. Supplementary information

This section contains the notice for USB connector name update. The USB Implementers Forum published a revision of the guideline for USB connector names in September, 2022. Lenovo follows the revised guideline and updates USB connector names accordingly. You can refer to the table below for naming update details.

Notice for USB connector name update

Current name	Previous name
USB-A connector (Hi-Speed USB)	USB-A 2.0 connector
USB-A connector (USB 5Gbps)	USB-A 3.2 Gen 1 connector
USB-A connector (USB 10Gbps)	USB-A 3.2 Gen 2 connector
USB-A connector (USB 5Gbps, Always On USB)	Always on USB-A 3.2 Gen 1 connector
USB-A connector (USB 10Gbps, Always On USB)	Always on USB-A 3.2 Gen 2 connector
USB-C connector (USB 5Gbps)	USB-C (3.2 Gen 1) connector
USB-C connector (USB 10Gbps)	USB-C (3.2 Gen 2) connector
USB-C connector (USB 20Gbps)	USB 3.2 Gen 2x2
USB-C connector (USB4 20Gbps)	USB 4 Gen 2x2
USB-C connector (USB4 40Gbps)	USB-C (USB 4) connector
USB-C connector (Thunderbolt 3)	USB-C (Thunderbolt 3) connector
USB-C connector (Thunderbolt 4)	USB-C (Thunderbolt 4) connector

효율관리기자재 소비전력량

효율관리기자재 표시사항	소비효율 정보
컴퓨터 유형	D
연간소비 전력량 (kWh)	95.4
슬립모드 소비전력 (W)	1.51
오프모드 소비전력 (W)	1.09

Appendix B. Important notice for Quebec consumers

In regard to section 79.18 of Quebec's Regulation respecting the application of the Consumer Protection Act, Lenovo in no way guarantees the availability of (a) replacement parts; (b) repair services; and (c) information necessary to maintain or repair the goods. For up-to-date information on the technical support and parts available for your purchase, please consult <https://support.lenovo.com/ca/en>.

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Appendix C. Notices and trademarks

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