

User Guide

Lenovo
ThinkPad



ThinkPad X13 Detachable Gen 1

Lenovo

Read this first

This *User Guide* provides the essential hardware and setup information for your notebook computer. It includes product illustrations, specifications, instructions for basic configuration, and guidance on hardware replacement.

Before operating your notebook computer for the first time, read the safety-related documents listed below to understand important safety and regulatory information.

- [Safety and Warranty Guide](#)
- [Generic Safety and Compliance Notices](#)

For more supporting documents, go to [Lenovo Documentation Center](#) and search by the product name.

First Edition (June 2026)

© Copyright Lenovo 2026.

LIMITED AND RESTRICTED RIGHTS NOTICE: If data or software is delivered pursuant to a General Services Administration "GSA" contract, use, reproduction, or disclosure is subject to restrictions set forth in Contract No. GS-35F-05925.

Contents

Read this first.....	i
----------------------	---

Preface: Discover your Lenovo notebook.....	iv
---	----

Chapter 1 Meet your computer..... 1

Front view.....	1
Left-side view.....	3
Right-side view.....	4
Rear view.....	5
Features and specifications.....	6
USB specifications.....	6
Folio keyboard (for selected models).....	8
Get ready with the keyboard.....	10
Log in with fingerprint recognition.....	10
Use the keyboard in different modes.....	11
Use the keyboard shortcuts.....	12
Use the TrackPoint pointing device.....	14
Use the Trackpad.....	15
Lenovo Slim Pen 2 (for selected models).....	18
Store and charge the pen.....	19
Pen settings.....	19
Replace the pen tip.....	20

Chapter 2 Get started with your computer.....21

Set up your computer.....	21
Turn on the computer.....	21
Complete the operating system setup.....	22
Access networks.....	22
Connect to Wi-Fi networks.....	22
Connect to the wired Ethernet.....	22
Connect to a cellular network (for selected models).....	23
Turn on Airplane mode.....	24
Interact with your computer.....	24
Use the touch screen.....	24
Connect to an external display.....	26

Chapter 3 Explore your computer.....28

Lenovo apps.....	28
Lenovo Commercial Vantage.....	28
TrackPoint Quick Menu.....	28
Copilot in Windows.....	30
Color calibration (for selected models).....	30
Manage power.....	31
Check the battery status.....	31
Charge the computer with ac power.....	31
Maximize the life of the battery.....	31
Use the computer-to-computer charging function.....	32
Change the power settings.....	32
Transfer data.....	32
Connect to a Bluetooth device.....	33
Set up an NFC connection.....	33

Chapter 4 Secure your computer and information..... 35

Lock the computer.....	35
Associate your fingerprints with passwords (for selected models).....	35
Log in with facial recognition (for selected models).....	36
User Presence Sensing (for selected models).....	36
Change the settings from the Vantage app.....	37
Protect data against power loss.....	38
USB-C Restricted Mode.....	38
FIDO (Fast Identity Online) authentication.....	38
Register FIDO2 USB device in ThinkShield Passwordless Power-On Device Manager.....	39
Log in to the System with Passwordless Power-On Authentication.....	39
Supervisor Certificate.....	39
Chapter 5 Help and support.....	41
Error messages.....	41
Battery-charge LED indicator status and diagnosis.....	42
Diagnostics tool.....	44
Troubleshoot and diagnose at Lenovo Support Web site.....	45
Hardware scan.....	45
UEFI Diagnostics tool.....	46
Lenovo Memory Self Repair.....	46
Windows label.....	47
Call Lenovo.....	47
Before you contact Lenovo.....	47
Find your service QR code and serial number.....	48
Lenovo Customer Support Center.....	48
Chapter 6 CRU replacement.....	50
What are CRUs.....	50
CRU list.....	50
Before you replace any CRU.....	50
Disable Fast Startup.....	50
Disable the built-in battery.....	51
Appendix A Compliance information.....	52
Certification-related information.....	52
Operating environment.....	52
Appendix B Important notice for Quebec consumers.....	54
Appendix C Accessibility features.....	55
Appendix D Notice for USB connector name update.....	56
Appendix E Notices and trademarks.....	57

Discover your Lenovo notebook

Thank you for choosing a Lenovo® notebook! We are dedicated to delivering the best solution to you.

Before starting your tour, please read the following information:

- Illustrations in this documentation might look different from your product.
- Depending on the model, some optional accessories, features, software programs, and user interface instructions might not be applicable to your computer.
- Documentation content is subject to change without notice. To get the latest documentation, go to <https://pcsupport.lenovo.com>.

HEVC Standard

This product may support digital video coding under certain versions of HEVC (High Efficiency Video Coding) standard and, if so, may be covered by patents at <https://accessadvance.com/advance-patent-lists/>.

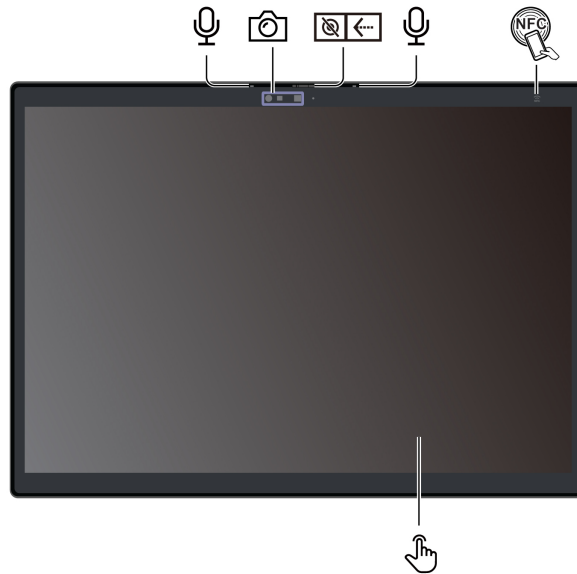


Chapter 1 Meet your computer

This chapter introduces the appearance, features and specifications of your computer.

Front view

Have a quick glance at the front view of your computer.



Microphone

Turn on the microphone to capture sound and voice when it is used with an application program capable of handling audio.

Infrared camera

Use the infrared camera to take pictures, shoot videos or scan barcodes in Camera or other application programs that provide features such as photographing, video capturing, and video conferences.

Webcam privacy shutter

Slide the webcam privacy shutter left to cover the camera lens when not in use or in public network to prevent unauthorized access and enhance privacy.

NFC (near field communication) label*

Simply tap and connect your computer and another NFC-enabled device over a few centimeters or inches. To set up an NFC connection, see [Set up an NFC connection](#) on page 33.

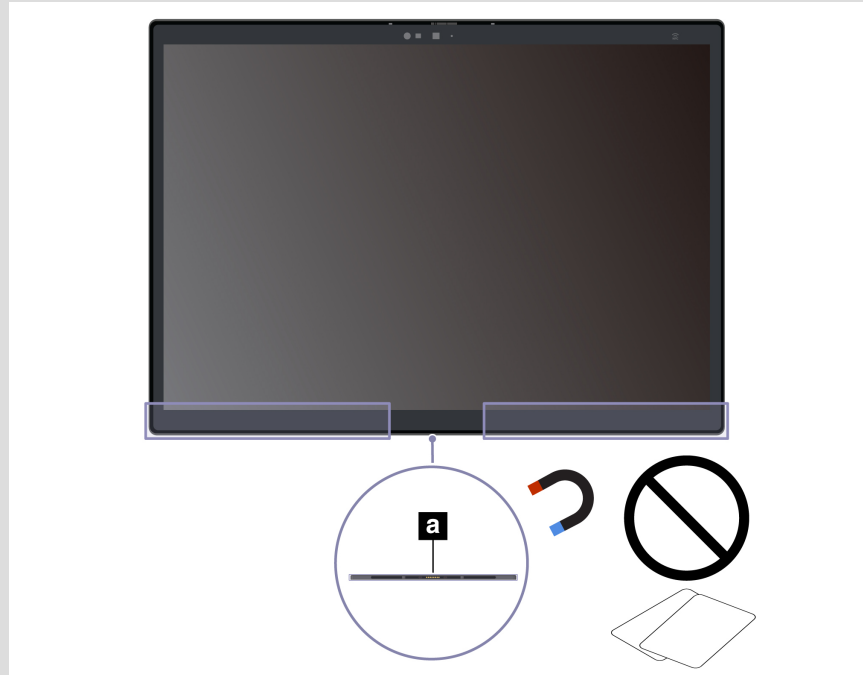
Touch screen

Interact with your computer through intuitive controls like tapping, swiping, pinching, and zooming. For more information about the frequently used touch gestures, see [Use the touch screen](#) on page 24.

* for selected models

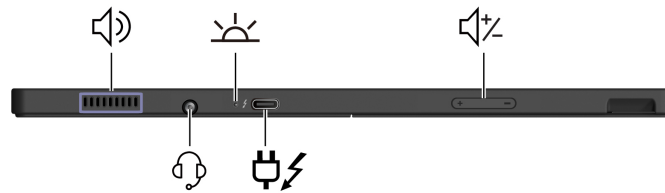
Note:

Keep other magnetic objects, for example, credit cards, away from the magnetic areas highlighted including the bottom area marked up as **a**. Otherwise, it might have impact on the functionality of the object.



Left-side view

Have a quick glance at the left side of your computer.



Speaker

The built-in dual stereo speakers deliver clear, balanced audio for everyday tasks from streaming movies to video calls.

LED indicator bump

The LED indicator bump provides a tactile anchor cue for locating the USB-C connector below.

The LED indicator bump also serves as a battery charging indicator and has the following behaviors when the power adapter is connected.

- Illuminating amber: The battery is less than 90% charged.
- Illuminating white: The battery is 90% charged or higher.

USB-C power connector (Thunderbolt™ 4)

Experience high-speed data transfer, power delivery, or multi-device support through USB-C power connector.

- For more information about USB specifications, see [USB specifications](#) on page 6.
- For more information about power charging, see [Manage power](#) on page 31.

Note:

For more information about the USB connector name update, see [Notice for USB connector name update](#) on page 56.

Audio connector

Connect wired headphones, headsets, external speakers, or microphones for audio playback and recording through the audio connector.

Volume button

Press the Volume Up button or Volume Down button to adjust the speaker volume as desired.

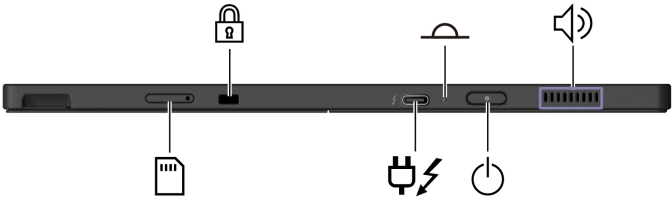
Statement on USB transfer rate

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 (Gbps)
Thunderbolt 3	40
Thunderbolt 4	40

Right-side view

Have a quick glance at the right side of your computer.



 Speaker

The built-in dual stereo speakers deliver clear, balanced audio for everyday tasks from streaming movies to video calls.

 Power button

Press the power button to power on the computer.

 Tactile bump

The tactile bump serves as a tactile anchor cue for locating the USB-C connector below.

 USB-C power connector (Thunderbolt 4)

Experience high-speed data transfer, power delivery, or multi-device support through the USB-C connector.

- For more information about USB specifications, see [USB specifications](#) on page 6.
- For more information about power charging, see [Manage power](#) on page 31.

Security slot

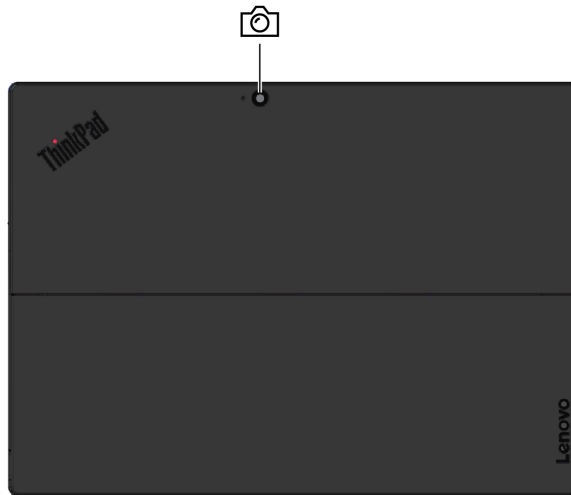
Lock your computer to a desk, table, or other fixtures through a compatible security cable lock. For more information about the security slot, see [Lock the computer](#) on page 35.

Nano-SIM card slot*

Insert a nano-SIM card to connect to a cellular network. For more information about connecting to a cellular network, see [Connect to a cellular network \(for selected models\)](#) on page 23.

Rear view

Have a quick glance at the rear part of your computer.



Integrated camera

Use the integrated camera to take pictures, shoot videos or scan barcodes in Camera or other application programs that provide features such as photographing, video capturing, and video conferences.

Cool and Quiet on Lap

When your computer is on your lap in Best Performance mode, it detects lap-specific unsteady movement and temporarily lowers performance to reduce heat and discomfort. Once stable, full performance is automatically restored.

Features and specifications

Get to know more hardware and software details of your computer.

Specification	Description
Memory	Low Power Double Data Rate 5x (LPDDR5x) soldered on the system board, up to 64 GB
Storage device	One slot, 2242 M.2 solid-state drive, up to 1 TB
Audio	• Dolby Atmos® • Dolby Audio™ Premium
Display	• Color display with In-Plane Switching (IPS) technology • Display ratio: 3:2 • Display resolution: 2880 x 1920 pixels • Multi-touch technology*
Security features	• Face authentication* • Human presence detection* • Fingerprint reader*
Wireless features	• Bluetooth • NFC* • GPS (on wireless WAN model)* • Wireless LAN • Wireless WAN (4G or 5G)*  Note: The 4G or 5G cellular service is provided by authorized mobile service carriers in some countries or regions. You must have a cellular plan from a service carrier to connect to the cellular network. The cellular data plan might vary by location.

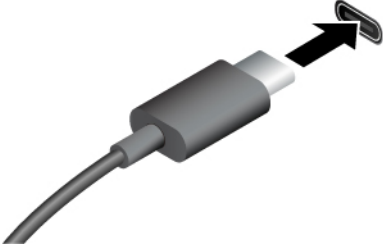
* for selected models

USB specifications

Get to know more USB specifications.

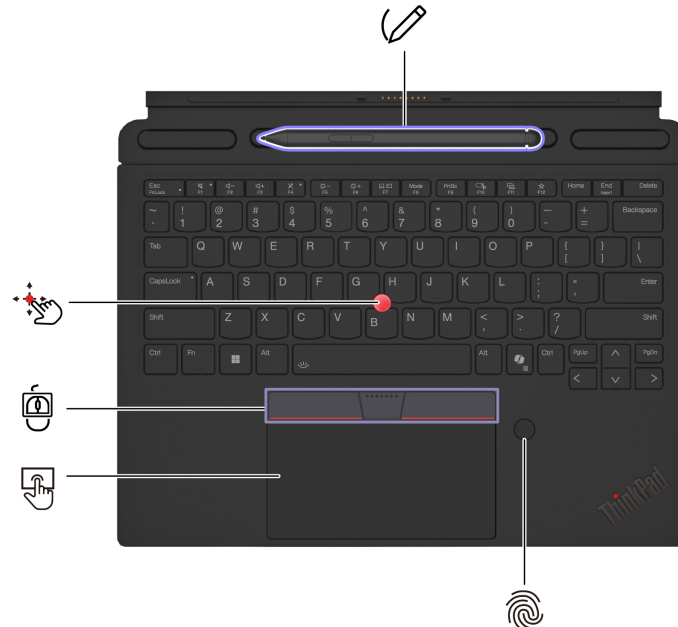
Note:

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

Connector name	Description
 • USB-C connector (USB 5Gbps) • USB-C connector (USB 10Gbps) • USB-C connector (Thunderbolt 3) • USB-C connector (Thunderbolt 4) • USB-C connector (USB4 40Gbps) • USB-C connector (DP Alt mode DP 2.1)	• Charge USB-C compatible devices with the output voltage and current of 5 V and 3 A. • Connect to an external display: - USB-C to VGA: up to 1920 x 1200 pixels, 60 Hz - USB-C to DP: up to 7680 x 4320 pixels, 60 Hz • Connect to USB-C accessories to help expand your computer functionality. To purchase USB-C accessories, go to https://www.lenovo.com/accessories.

Folio keyboard (for selected models)

Attach Folio keyboard (hereafter referred to as “the keyboard”) to your computer so that you can transform your computer into a portable notebook computer.



Pen slot

Store and charge the pen with pogo pins.

TrackPoint pointing stick

Use your finger to apply pressure to the pointing-stick nonslip cap in any direction parallel to the keyboard. The pointer on the screen moves accordingly.

TrackPoint Three Buttons

The TrackPoint left button and TrackPoint right button correspond to the left and right buttons of a traditional mouse. Press and hold the TrackPoint center button while using your finger to applying pressure to the pointing stick in the vertical or horizontal direction. Then, you can scroll through the document, Web site, or apps.

Trackpad

Experience all the pointing, clicking, and scrolling functions of a traditional mouse through Trackpad.

Fingerprint reader

Place your finger to log into your computer. For more information about the fingerprint enrollment, see [Log in with fingerprint recognition](#) on page 10.

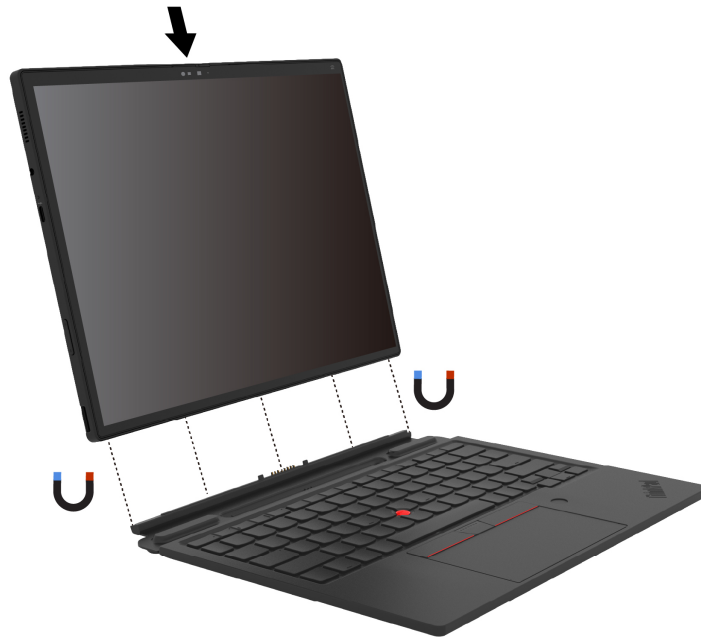
Note:

Keep other magnetic objects, for example, credit cards, away from the magnetic areas highlighted. Otherwise, it might have impact on the functionality of the object.

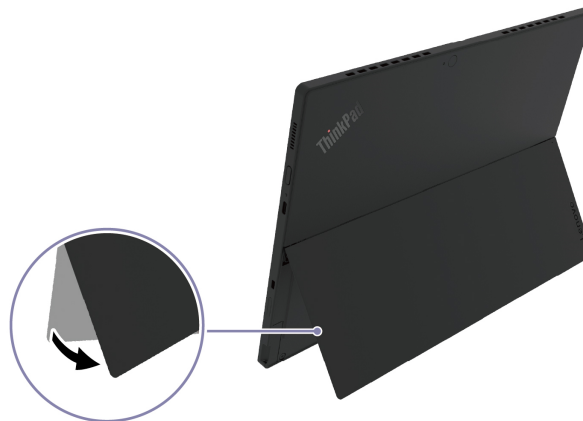


Get ready with the keyboard

1. The keyboard magnetically attaches to your computer. When the keyboard gets close enough, it aligns and snaps into place.



2. Open the kickstand to make the computer stand firm.



Log in with fingerprint recognition

You can log in to the computer with your fingerprint. It eliminates the need to enter complex passwords, saving your time and boosting your productivity.

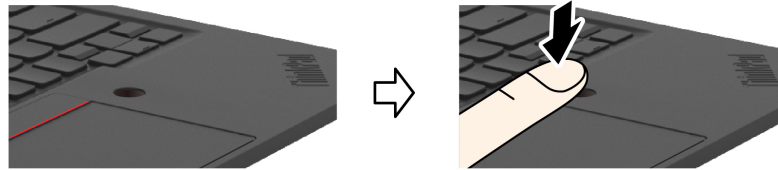
To enroll your fingerprints, do the following:

1. Type **Sign-in options** in the Windows search box and then press Enter.
2. Select **Fingerprint recognition (Windows Hello)** and then follow the on-screen instruction to enroll your fingerprint.

Note:

It is recommended that you put your finger at the center of the fingerprint reader key during enrollment and enroll more than one fingerprint in case of any injuries to your fingers. After the enrollment, the fingerprints are associated with the Windows password automatically.

3. Log in with your fingerprint.



Associate your fingerprints with UEFI BIOS passwords

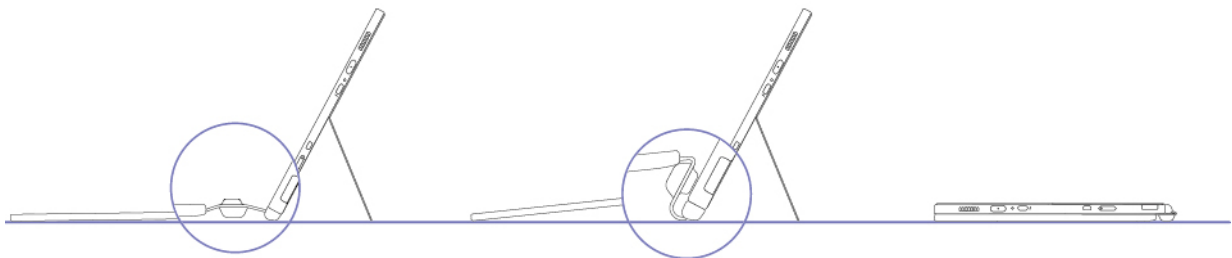
You can associate your fingerprints with your power-on password and NVMe password. See [Associate your fingerprints with passwords \(for selected models\)](#) on page 35.

Maintenance tips:

- Do not scratch the surface of the reader with anything hard or sharp.
- Do not use or touch the reader with a wet, dirty, wrinkled, or injured finger.

Use the keyboard in different modes

With the keyboard attached to your computer, you can use the keyboard in the following modes.



Lay-flat mode

Keep the keyboard laid flat on the table surface as shown.



Tilt mode

Fold the living hinge as shown. The magnetic bars on the living hinge attach to the computer automatically. The angle between the thin keyboard and the table surface is about 6.5 degrees to 7.0 degrees.



Cover mode

Close the keyboard as shown to put the computer into sleep mode and protect the touch screen.
Open the cover to wake up the computer from sleep mode.

Use the keyboard shortcuts

Keyboard shortcuts are keys or combinations of keys that provide a quick way to perform particular functions. They help you work more efficiently.

The following tables introduce the functions of keyboard shortcuts.

FnLock and function keys

Key / Key combination	Function description
Fn+FnLock	Switch between the special and standard functions of the function keys (F1–F12). Function keys provide two sets of functions: special function and standard function. Icons on the key denote the special function, such as  and . Characters on the key denote the standard function, such as F1 and F2. LED indicator on Esc key indicates which function of the function keys is enabled: - When the indicator is off, the special function is enabled. - When the indicator is on, the standard function is enabled.
	Mute / Unmute (Speakers).
	Decrease volume.
	Increase volume.
	Enable / Disable the microphone.
	Decrease screen brightness.
	Increase screen brightness.
	Select and set up display devices.
Mode	Change power mode.
PrtSc	Print screen.
	Open Snipping Tool.
	Open Smart Connect .
☆	Customize the function of this key on the Vantage app.

Other general keyboard shortcuts

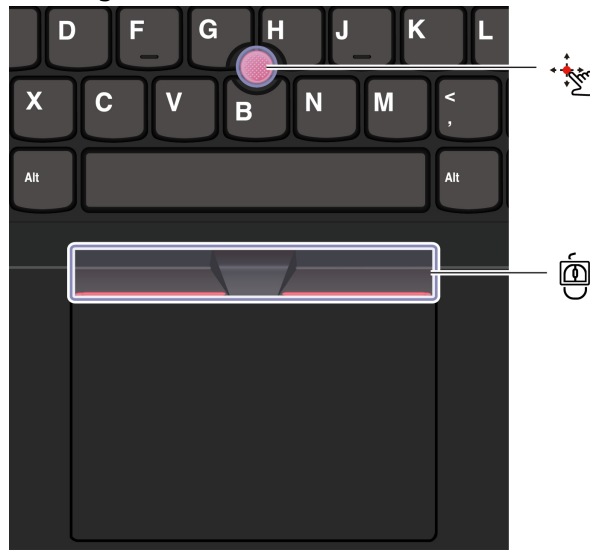
Key / key combination	Function description
	- Launch Copilot in Windows. - Launch Windows Search.  Note: The function varies by countries or regions.
Fn+ 	Open the context menu of the current active app.
Fn+ 	Open the Snipping Tool.
Fn+ 	Open the Snipping Tool.
Fn+ 	Put the computer to sleep.
Fn+ 	Adjust the keyboard backlight.
Fn+ 	Adjust the keyboard backlight.
Fn+<	Go to beginning.
Fn+>	Go to end.
Fn+Tab	Open Magnifier.  Note: Press the Windows logo key+Esc to turn it off.
Fn+4	Enter sleep mode.
Fn+B	Break operation.
Fn+K	Scroll lock.
Fn+P	Pause operation.
Fn+S	Send system request.
Fn+N	Open system information Window.
Fn+G	Enable / Disable the tapping gesture to launch TrackPoint Quick Menu.

You can customize keyboard settings in Vantage app. To customize detailed settings, open the Vantage app, and then click **Device > Input & Accessories**.

For more keyboard shortcuts, go to <https://support.lenovo.com/solutions/windows-support>.

Use the TrackPoint pointing device

The TrackPoint pointing device enables you to perform all the functions of a traditional mouse, such as pointing, clicking, and scrolling.



TrackPoint pointing stick

Use your finger to apply pressure to the pointing-stick nonslip cap (hereafter referred to as the red cap) in any direction parallel to the keyboard. The pointer on the screen moves accordingly. The higher the pressure applied, the faster the pointer moves.

TrackPoint Three Buttons

TrackPoint left button and TrackPoint right button correspond to the left and right buttons on a traditional mouse. Press and hold the TrackPoint center button while using your finger to applying pressure to the pointing stick in the vertical or horizontal direction. Then, you can scroll through the document, Web site, or apps.

Press Ctrl+TrackPoint center button+TrackPoint pointing stick at the same time to zoom in or zoom out.

Disable the TrackPoint pointing device

The TrackPoint pointing device is enabled by default. You can disable the device and change settings such as the speed of cursor when using the TrackPoint pointing stick and the TrackPoint center button.

To change the settings, do the following:

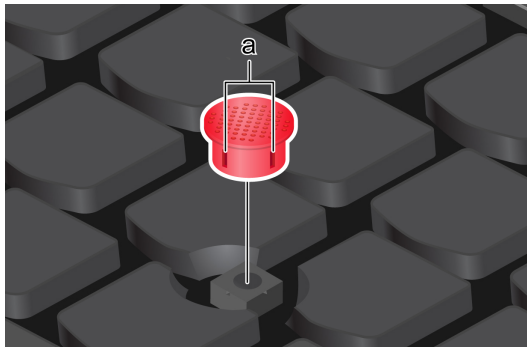
1. Type **Mouse settings** in the Windows search box and then press Enter.
2. Click **TrackPoint settings** and then follow the on-screen instructions to change the settings.

Replace the pointing-stick nonslip cap

Follow below illustration to replace the pointing-stick nonslip cap.

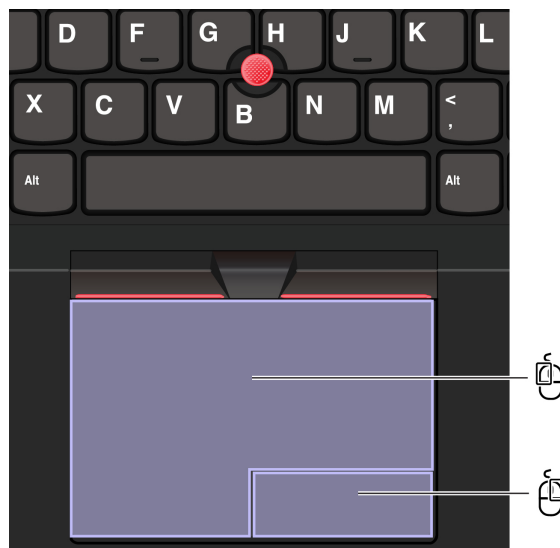
Note:

Ensure that the new red cap has grooves **a**.



Use the Trackpad

You can use the Trackpad to perform all the pointing, clicking, and scrolling functions of a traditional mouse. It is ideal for you to use for occasions with high portability requirements, for example, business trips.



Item	Description	Item	Description
	Left-click zone		Right-click zone

Note:

- Some gestures are not available in the following cases:
 - if the last action was done from the TrackPoint pointing device.
 - when you are using certain apps.
 - when you are using two or more fingers and your fingers are too close.
- Trackpad might be insensitive in the following cases:
 - when you position your fingers too close to the edge of Trackpad.
 - when you touch the Trackpad with wet fingers.
 - if the Trackpad surface is stained with water or oil. Turn off the computer first. Then, gently wipe the Trackpad surface with a soft and lint-free cloth that is moistened with lukewarm water or computer cleaner.

Use the touch gestures

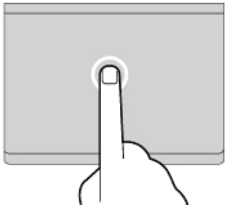
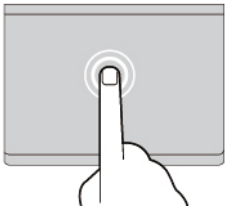
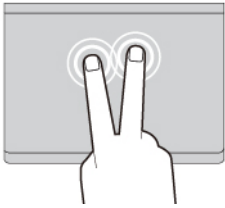
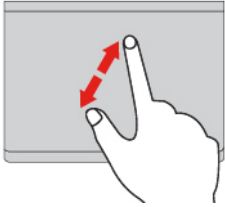
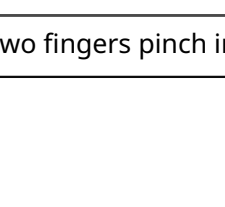


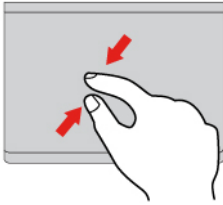
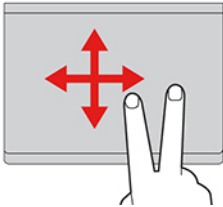
Note:

- When using two or more fingers, ensure that you position your fingers slightly apart.
- Some gestures are not available if the last action was done from the TrackPoint pointing device.
- Some gestures are only available when you are using certain apps.
- If the Trackpad surface is stained with oil, turn off the computer first. Then, gently wipe the Trackpad surface with a soft and lint-free cloth moistened with lukewarm water or computer cleaner.

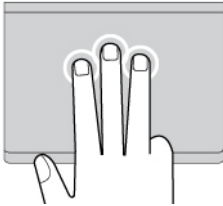
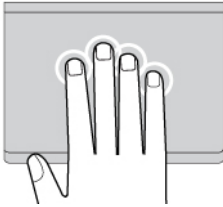
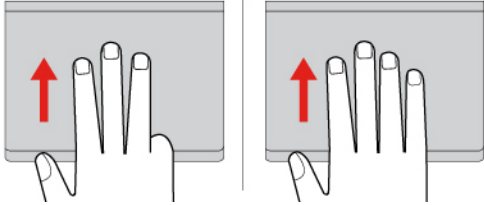
For more gestures, see the help information of the pointing device.

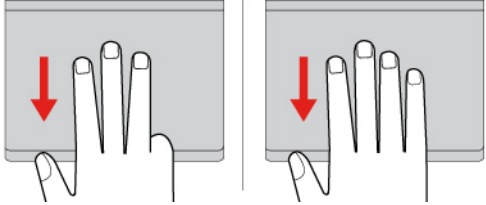
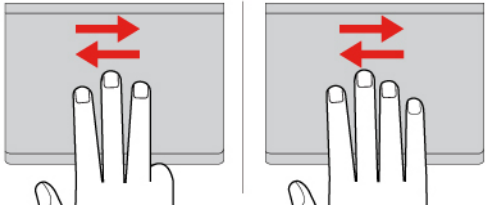
One-and-two-finger touch gestures

To do this	Gesture
Select an item.	One finger taps once. 
Open an item.	One finger taps twice. 
Display a shortcut menu.	Two fingers tap twice quickly. 
Zoom in.	Two fingers stretch out. 
Zoom out.	Two fingers pinch in. 

To do this	Gesture
	
Scroll through items.	Two fingers slide horizontally or vertically. 

Three-and-four-finger touch gestures

To do this	Gesture
Open search window.	Three fingers tap once. 
Open notification center.	Four fingers tap once. 
Show all windows.	Three- or four-finger swipes up. 
Show the desktop.	Three- or four-finger swipes down.

To do this	Gesture
	
Switch between open apps or windows.	Three- or four-finger swipes left or right. 

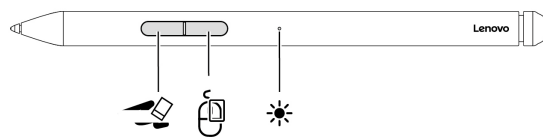
Disable the Trackpad

The Trackpad is enabled by default. To disable the device:

1. Open the **Start** menu, and then click **Settings** > **Bluetooth & devices** > **Touchpad**.
2. In the **Touchpad** section, turn off the **Touchpad** control.

Lenovo Slim Pen 2 (for selected models)

Lenovo Slim Pen 2 (hereafter referred to as the pen) is designed for your touchscreen — slim, responsive, and always ready when inspiration strikes. It moves with you intuitively, featuring pressure sensitivity and tilt support that make every stroke feel truly natural. Combined with low latency and easy recharging, it keeps up with your workflow, whether you're taking notes, sketching ideas, or exploring daily creativity.



Item		Description
	Eraser button	To erase text or drawings, hold the button to erase the object in supported apps. Note: The default function of each button may vary in different apps.
	Click button	To right-click, hold the button and tap the screen in supported apps.

Item		Description
	LED indicator	• Solid amber: The pen is charging. • Solid white: The pen has been fully charged.
	Pogo Pin	Charge and store the pen by connecting its pogo pin to the contact pin on the back of the computer.

Store and charge the pen

The pen is designed for both convenient storage and fast charging. When not in use, it can be securely stored to protect the tip and prevent accidental activation, making it easy to carry and keep ready for your next task. Powered by a super capacitor, the pen charges instantly via its pogo-pin connector, keeping up with your workflow so you can create without interruptions or power worries. With a full charge achieved in just two minutes, it provides around two hours of continuous use. Actual usage time depends on individual use patterns.

Note:

The pen battery is set to shipping mode at the factory to prevent over-discharge during transit. Connect the pen to a power source to deactivate its shipping mode before using it for the first time.



Pen settings

To customize the barrel button functions, use Lenovo Pen Settings. You can also check the battery life on your pen in Lenovo Pen Settings. If Lenovo Pen Settings is not installed on your computer, download and install the latest WinTab driver from <https://support.lenovo.com> or from Microsoft Store.

From Lenovo Pen Settings, you can configure the following settings:

- View the battery status of the pen
- Change the functions of the pen buttons
- Enable or disable hovering click
- Set one pen button as the radial menu for quick access
- Make other software adjustments such as pen tip sensitivity

Replace the pen tip

To replace the pen tip, follow the steps below.

1. Pull out the damaged tip by the tip remover.

Note:

If the damaged tip cannot be extracted, do not disassemble the pen body. You can call Lenovo Customer Center. For the latest Lenovo Support phone numbers for your country or region, go to <https://pcsupport.lenovo.com/supportphonenumberlist>.

2. Insert a brand-new tip with fingers until the tip touches the bottom of the hole.



To purchase the pen tip, go to <https://www.lenovo.com/accessories>.

Chapter 2 Get started with your computer

This chapter introduces the instructions of setting up your computer, various ways to connect to networks, and to interact with your computer.

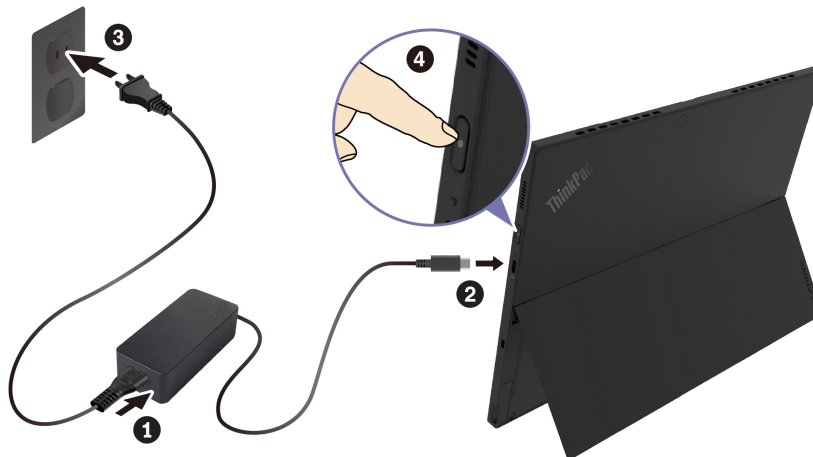
Set up your computer

This section helps you to set up your computer and get it ready for use.

Turn on the computer

Follow the instructions to turn on your computer.

1. Connect the power cord to the ac power adapter.
2. Connect the power adapter to your computer.
3. Plug the power cord into the ac power.
4. Press the power button to turn on your computer.



i Note:

- The appearance varies depending on the computer model.
- Some models might not ship with ac adapters or power cords. Use only the certified adapters and power cords that comply with the requirements of relevant national standards (such as UL/EN/IEC 62368-1) to charge the product. It is recommended to use the Lenovo qualified adapters. Unqualified adapters may cause hazards. You can refer to <https://www.lenovo.com/us/en/compliance/eu-doc>.
- It is recommended to fully charge the computer when using it for the first time. Click the battery status icon at the bottom right of your desktop to check the battery status.

Related topics

- [Check the battery status](#) on page 31
- [Charge the computer with ac power](#) on page 31

Complete the operating system setup

Before exploring your computer, you need to complete the operating system setup. The setup includes but is not limited to:

- Select the country or region.
- Connect to an available network.
- Accept the license agreement.
- Create a Microsoft account or log in with your Microsoft account.
- Set up your password, fingerprint, or facial recognition as preferred.
- Customize your experience.

Note:

- Depending on the model, some settings might not be available on your computer.
- Do not turn off your computer and ensure it is connected to the ac power during the whole process.

Follow the instructions to set up the operating system.

1. Connect the computer to the ac power and turn it on.
2. Follow the on-screen instructions to complete the operating system setup.

Related topics

- [Log in with your fingerprint](#) on page 10
- [Log in with facial recognition \(for selected models\)](#) on page 36

Access networks

This section helps you connect to a wireless or wired network.

Connect to Wi-Fi networks

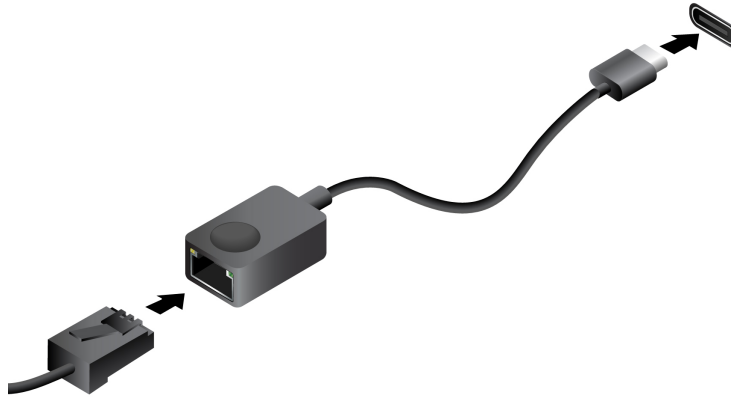
Click the network icon  on the bottom right of your display to connect to an available network. Provide required information, if needed.

Note:

The wireless LAN module on your computer might support different standards. For some countries or regions, use of 802.11ax/be and/or 6 GHz frequency band might be disabled according to local regulations.

Connect to the wired Ethernet

To connect your computer to a local network, you need a Lenovo USB-C to Ethernet Adapter. Lenovo USB-C to Ethernet Adapter is available as an option and shipped with some computer models. You can purchase one from Lenovo at <https://www.lenovo.com/accessories>.



Connect to a cellular network (for selected models)

This section introduces how to establish a cellular connection.

To connect a 4G or 5G cellular data network, you must have a wireless wide area network (WWAN) module and a nano-SIM card installed. The nano-SIM card might come with your computer by countries or regions. If no nano-SIM card is shipped, you will need to purchase one from authorized service carriers.

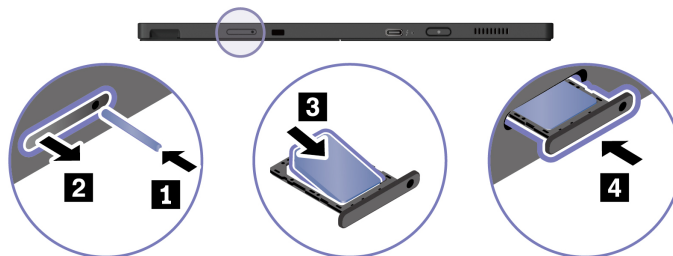
Note:

- Depending on the model, your computer might have no WWAN module installed.
- The 4G or 5G cellular service is provided by authorized mobile service carriers in some countries or regions. You must have a cellular plan from a service carrier to connect to the cellular network. The cellular data plan might vary by location.
- Network connection speeds might also vary by location, environment, network conditions and other factors.

Establish a cellular connection

This section introduces how to establish a cellular connection.

1. Turn off the computer.
2. Insert a straightened paper clip into the hole in the nano-SIM-card tray. The tray ejects. Install a nano-SIM card as shown and insert the tray into the nano-SIM-card slot. Note the orientation of the card and ensure that it is seated correctly.



3. Turn on the computer.
4. Click the network icon, and then select the cellular network icon  from the list. Provide required information, if needed.

Turn on Airplane mode

You might need to turn on Airplane mode if you board an airplane. When Airplane mode is on, all wireless features are turned off automatically. Click the network icon  on the bottom right of your display to turn on Airplane mode.

Note:

You can enable Wi-Fi networks in this mode according to your actual needs.

Interact with your computer

Explore various ways to interact with your computer.

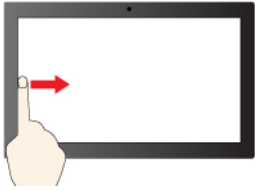
Use the touch screen

For computers with a touch-enabled screen, you can touch the screen directly with your fingers and interact with computer in a simple way. The following sections introduce frequently used touch gestures.

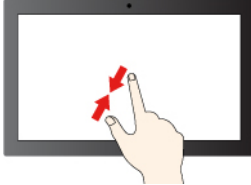
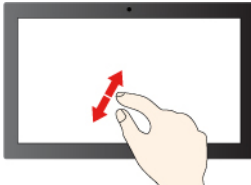
Note:

- Some gestures might not be available when you are using certain apps.
- Do not use gloved fingers or incompatible pens for input on the screen. Otherwise, the touch screen might be not sensitive or does not respond.
- The touch screen is delicate. Do not apply pressure on the screen or touch the screen with anything hard or sharp. Otherwise, the touch panel might malfunction or get damaged.

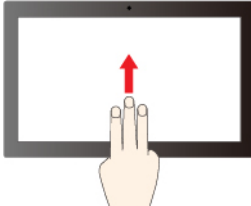
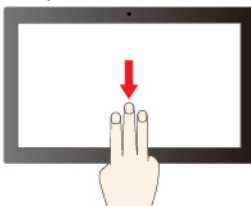
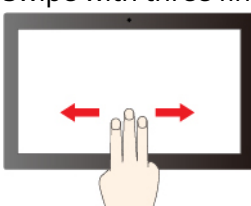
One-finger touch gesture

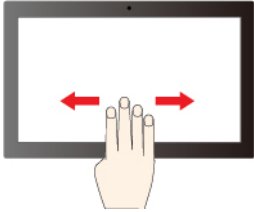
To do this	Gesture
Open a shortcut menu.	Tap and hold. 
Open the widget panel.	Swipe from the left. 
Open notification center.	Swipe from the right. 

Two-finger touch gesture

To do this	Gesture
Zoom out.	Move two fingers towards. 
Zoom in.	Spread two fingers apart. 

Three-and-four-finger touch gesture

To do this	Gesture
Show all open windows.	Swipe with three fingers up. 
Show the desktop.	Swipe with three fingers down. 
Switch apps.	Swipe with three fingers to the left or right. 
Switch desktops.	Swipe with four fingers to the left or right.

To do this	Gesture
	

Enable three-and-four-finger touch gestures (for selected models)

1. Type **touch gesture** in the Windows search box and then press Enter.
2. Turn on the **Three- and four-finger touch gestures** switch.

What to do if the touch screen is not sensitive or does not respond

Follow the instructions to troubleshoot the touch screen.

1. Turn off the computer.
2. Use a dry, soft, and lint-free cloth or a piece of absorbent cotton to remove fingerprints or dust from the touch screen. Do not apply solvents to the cloth.
3. Restart the computer and check if the touch screen works normally.
4. If the touch screen cannot work normally, type **Windows Update** in the Windows search box and then press Enter.
5. Follow the on-screen instructions to update Windows.
6. After updating Windows, check if the touch screen works normally.
7. If the touch screen still cannot work normally, the touch screen might get damaged. You can call Lenovo Customer Support Center to get further help.

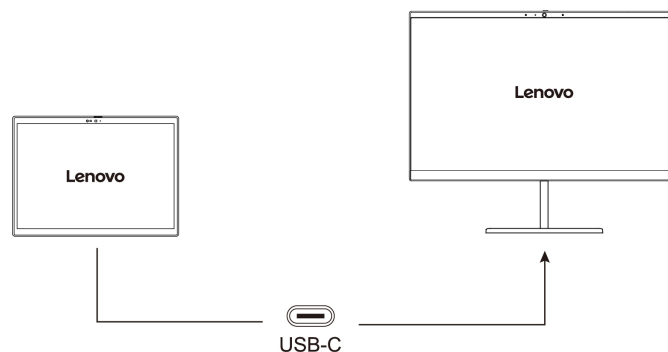
Connect to an external display

Connect your computer to a projector or a monitor to give presentations or expand your workspace.

Connect to a wired display

You can connect a wired display with your computer through the USB-C connector.

If your computer cannot detect the external display, right-click a blank area on the desktop and select **Display settings**. Then follow the on-screen instructions to detect the external display.



Supported resolution

The following table lists the supported maximum resolution of the external display.

Connect the external display to	Supported resolution
USB-C connector (Thunderbolt 4)	Up to 8K / 60 Hz



Note:

The refresh rate higher than 60 Hz can also be supported. If you set the refresh rate higher than 60 Hz, the maximum resolution might be limited.

Connect to a wireless display

To use a wireless display, ensure that both your computer and the external display support the Miracast® feature.

Press Windows logo key+K and then select a wireless display to connect with.

Set the display mode

Press  or Fn key+ and then select a display mode of your preference.

Change display settings

You can change the settings for both the computer display and the external display, such as the main or the secondary display, brightness, resolution, and orientation.

To change the settings, do the following:

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.

Chapter 3 Explore your computer

This chapter helps you get full use of your computer.

Lenovo apps

This section introduces Lenovo apps that can enrich your computing experience and improve productivity.

Lenovo Commercial Vantage

The Lenovo Commercial Vantage app (hereafter referred to as 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 **Lenovo Commercial Vantage** in the Windows search box.

Note:

- 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. Ensure that you use the latest version of Vantage app, and apply Windows Update to get the latest updates.

The Vantage app enables you to:

- Know the device status easily and customize device settings.
- Download and install UEFI BIOS, firmware, and driver updates 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.
- Temporarily disable the keyboard, screen, Trackpad, and TrackPoint pointing device for cleaning.

TrackPoint Quick Menu

TrackPoint Quick Menu is a clickable app. It offers rapid access to functions, such as camera and microphone. You can adjust the function settings in this app.

Launch the TrackPoint Quick Menu

Double-tap the TrackPoint pointing stick to launch the TrackPoint Quick Menu. You can also set single-tapping as the launch gesture.

Note:

If the TrackPoint Quick Menu does not pop up after you use the launch gesture, this case might be caused by the displacement of the TrackPoint pointing stick due to too much force applied on it. Wait 15 to 30 seconds and try again.

To change the settings, do the following:

1. Click the flyout ⓘ and click **ADVANCED SETTINGS**.
2. Select **Single-tapping** under **TrackPoint Quick Menu Launch**.

The TrackPoint Quick Menu is enabled by default. Press Fn+G to disable or enable the tapping gesture. When disabled, it cannot be launched by tapping the TrackPoint pointing stick.



Use the TrackPoint Quick Menu

You can click the edit button ✎ to rearrange the features in the preview panel, or drag and drop the features on the right to the preview panel to customize your quick menu.

- **Camera**

You can adjust the brightness and contrast of the camera, and restore the settings to default by tapping the reset button ↺.

- **Microphone**

You can mute your computer, and adjust the sound effect of your microphone by selecting the following modes:

- Center mode: Capture the speaker's voice.
- Spatial mode: Capture the speaker's voice and the ambience.

ⓘ **Note:**

When internal microphone is not supported by Dolby or the Dolby driver is disabled, an input device list will be displayed instead. The list provides options and one volume bar to test your microphone.

- **Voice typing**

You can convert the speech to text in the text box. Click **START VOICE TYPING** to invoke the text box.

- **Battery**

You can extend the battery lifespan and health by setting the charging threshold below 100%.

To set the threshold, enable the feature and click **ADJUST THRESHOLD**. Then set the charge threshold in the Vantage app.

- **Audio playback**

You can select the output device of your preference and set the volume of your selected channel or mute it.

- **Quick Clean**

You can temporarily disable the keyboard, screen, Trackpad, and TrackPoint pointing device to clean your computer.

- **Night light**

You can reach out to enable **Night light** in the Windows settings to show warmer colors on the display.

Note:

The features might vary due to periodic updates. For details of the version installed on your computer, click the flyout ⓘ at the top-right corner of the page and click **LEARN MORE**.

Copilot in Windows

Copilot in Windows is an AI-powered assistant to help enhance work efficiency and creativity.

To access Copilot in Windows, do one of the following:

- Press the Copilot key .
- Click the Copilot icon  on the task bar.

Key functions

- Provide answers or suggestions to your questions through live chat. For example, you could ask Copilot how to change your Windows password.
- Assist you to analyse image by clicking the image button at the bottom right of the chat box. For example, you could ask Copilot to summarize the image you have uploaded.

Note:

- This app might not be available in your country or region.
- This app makes periodic updates of the features. Explore this app on your actual user interface.

Color calibration (for selected models)

The factory color calibration feature is available on computer models with the embedded display. This feature enables you to render color images or graphics on your display close to the original intent as much as possible.

For computer with the factory color calibration feature, the AICCP color profiles are preinstalled. You can switch between calibrated color profiles and non-calibrated color profiles as desired:

1. Open the **Start** menu, and then click **Settings > Display**.
2. Follow the on-screen instructions to select a color profile as desired.

Note:

The calibration data is stored in the embedded display nonvolatile memory. It can be restored after you reset the computer.

Manage power

Use the information in this section to achieve the best balance between performance and power efficiency.

Check the battery status

Check the battery status to help use computer properly.

Go to **Settings > System** to check the battery status. For more details about your battery, refer to the Vantage app.

Charge the computer with ac power

Power source of the ac power adapter:

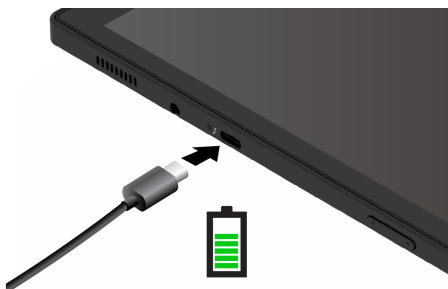
- Power: 65 W
- Sine-wave input at 50 Hz to 60 Hz
- Input rating of the ac power adapter: 100 V to 240 V ac, 50 Hz to 60 Hz
- Output rating of the ac power adapter: 20 V dc, 3.25 A

When the battery power is low, charge your battery by connecting your computer to ac power with the supplied power adapter. The 65 W ac power adapter supports the rapid charge function, the battery is 80% charged in about one hour when the computer is turned off. The actual charging time depends on the battery size, the physical environment, and whether you are using the computer.

Battery charging is also affected by its temperature. The recommended temperature range for charging the battery is between 10°C (50°F) and 35°C (95°F).

Note:

Some models might not ship with ac adapters or power cords. Use only the certified adapters and power cords that comply with the requirements of relevant national standards (such as UL/EN/IEC 62368-1) to charge the product. It is recommended to use the Lenovo qualified adapters. Unqualified adapters may cause hazards. You can refer to <https://www.lenovo.com/us/en/compliance/eu-doc>.



Maximize the life of the battery

Follow the instructions to maximize the life of the battery.

- Use the battery until the charge is depleted and recharge the battery completely before using it. Once the battery is fully charged, it must discharge to 94% or lower before it will be allowed to recharge again.
- Keep the battery from full charge when it is not in heavy use. For more information, refer to the **Battery settings** tab in the **Power** section of the Vantage app.
- The battery might optimize its full charge capacity based on your usage. After prolonged periods of limited use, full battery capacity might not be available until you discharge to as low as 20%

and recharge completely. For more information, refer to the **Battery settings** tab in the **Power** section of the Vantage app.

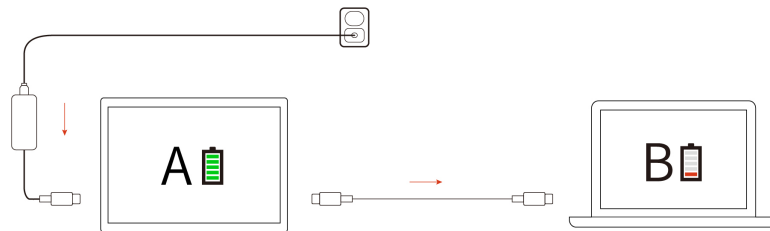
Use the computer-to-computer charging function

Your computer supports charging between two Lenovo computers. Before using this function, ensure the following requirements are met:

- Use a USB-C to USB-C charging cable. The data-transfer cable will not deliver power.
- The USB-C connectors must support charging function.
- Both computers must be Lenovo computers and support the computer-to-computer charging function.

To use this function, do the following:

1. Connect the power adapter to either of the computers (computer A).
2. Use a USB-C to USB-C charging cable to connect computer A and computer B via their USB-C connectors.



Note:

The charging speed might vary depending on many factors, such as the battery level of both computers, the wattage of the ac power adapter, and whether the computers are in use during charging.

Change the power settings

Follow the instructions to change the power settings of your preference.

For ENERGY STAR® compliant computers, the following power plan takes effect by default when your computer is on ac power and has been idle for a specified duration:

- Turn off the display: After 5 minutes
- Put the computer to sleep: After 5 minutes

To change the power plan, the power button function and other settings, do the following:

1. Go to **Control Panel** and view by Large icons or Small icons.
2. Click **Power Options**.
3. Change the settings as you prefer.

Transfer data

Quickly share your files using the built-in Bluetooth among devices with the same features. You also can insert a microSD card or smart card to transfer data.

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.

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

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

Set up an NFC connection

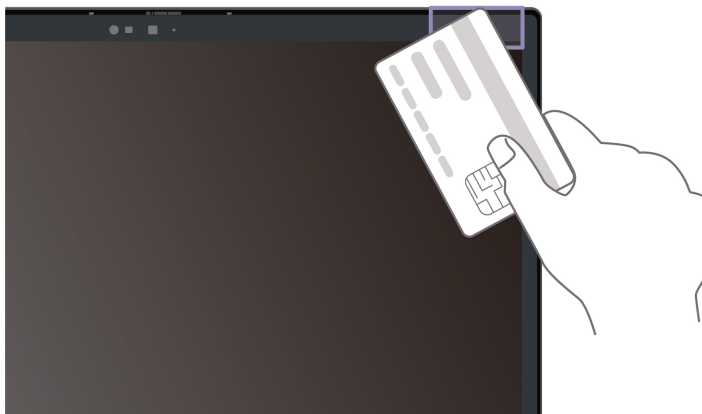
Simply tap and connect your computer and another NFC-enabled device over a few centimeters or inches.

If your computer supports NFC, you will see an NFC mark or label  on the top right corner of the computer.

To turn on NFC:

1. Type **Airplane mode** in the Windows search box and then press Enter.
2. Ensure that Airplane mode is off and turn on the NFC function.

By using NFC, you can simply tap and connect your computer and another NFC-enabled device over a few centimeters or inches. To pair with an NFC card or smartphone:



 Note:

Ensure that the NFC card is in NFC Data Exchange Format (NDEF), otherwise the card cannot be detected.

Chapter 4 Secure your computer and information

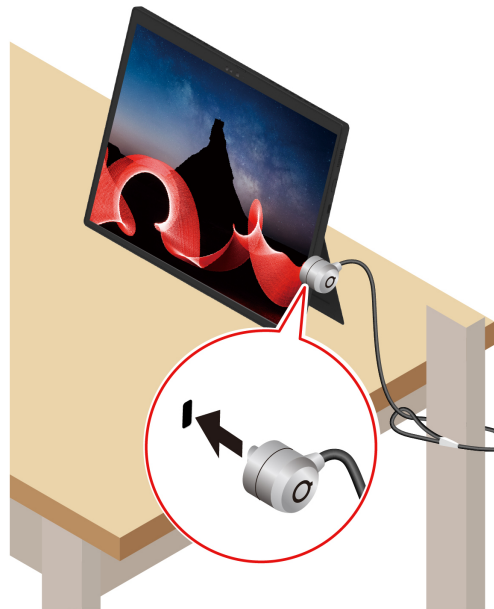
Your computer can safeguard your privacy and information through some privacy protection functions.

Lock the computer

Lock your computer to a desk, table, or other fixtures through a compatible security cable lock.

Note:

The slot supports cable locks that conform to the Kensington NanoSaver® lock standards using Cleat™ locking technology. You are responsible for evaluating, selecting, and implementing the locking device and security feature. Lenovo is not responsible for the locking device and security feature. You can purchase the cable locks at <https://smartfind.lenovo.com>.



Associate your fingerprints with passwords (for selected models)

You can associate the fingerprints with passwords to get quick access to the computer and the data on the storage drive without entering the power-on password or NVMe password.

Do the following to associate your fingerprints with the power-on password and NVMe password:

1. Turn off and then turn on the computer.
2. When prompted, scan your finger on the fingerprint reader.
3. Enter your power-on password, NVMe password, or both as required. The association is established.

When you start the computer again, you can use your fingerprints to log in to the computer without entering your Windows password, power-on password, or NVMe password. To change settings, press F1 to enter the UEFI BIOS menu, and then select **Security** > **Fingerprint**.

**Attention:**

If you always use your fingerprint to log in to the computer, you might forget your passwords. Write down your passwords, and keep them in a safe place.

Log in with facial recognition (for selected models)

You can log in to the computer with your facial recognition. It provides precise and secure authentication.

For models come with a webcam privacy shutter, slide the webcam privacy shutter to uncover the camera lens before using the Windows Hello face recognition.

Set up facial recognition and unlock your computer by scanning your face:

1. Type **Sign-in options** in the Windows search box and then press Enter.
2. Select **Facial recognition (Windows Hello)** and then follow the on-screen instruction to enroll your facial ID.

User Presence Sensing (for selected models)

For models with computer vision sensor, your computer supports User Presence Sensing feature. This feature offers smarter privacy protection, simpler login convenience, and better energy management for your computer. You can customize this feature in the Vantage app.

**Note:**

Before using this feature, ensure you set up Windows Hello facial recognition with the IR camera.

This feature provides the following functions:

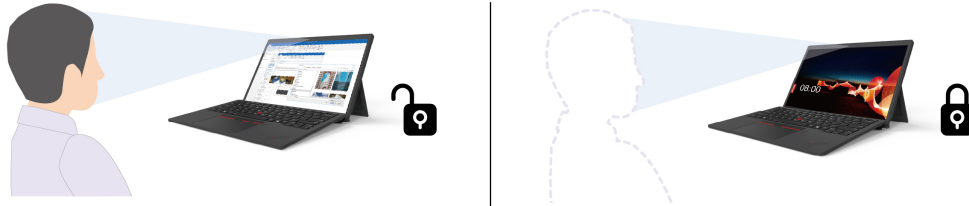
- **Face Sensing:** Wake your computer from sleep mode without touching when you have set up Windows Hello facial recognition.
- **Zero Touch Login:** Wake your computer from sleep mode. With Windows Hello facial recognition, you can log in without touching your computer.

**Note:**

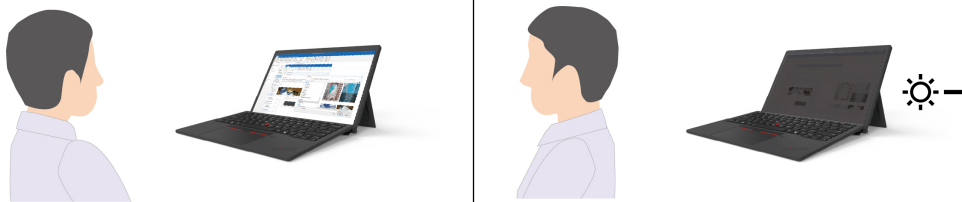
When **Face Sensing** is enabled, only users who have set up Windows Hello facial recognition can wake the computer up.



- **Zero Touch Lock:** Lock the computer automatically when you leave.



- **Adaptive Dimming:** Track your attention based on head position and eye contact with the display. When your focus is not on your computer screen, the display will dim to save battery power.



Note:

- The feature does not work in the following cases:
 - the computer is in tent, tablet, or stand mode.
 - the computer is in hibernation mode or has been turned off.
 - the camera shutter is closed.
 - you set the power options to never turn off the display in the OS settings.
- The feature might not work properly in the following cases:
 - when used in bright back light or very dark environment.
 - when your face is partially hidden by your clothing or mask.
 - when the camera recognizes a face image behind you like a poster or picture.
- For some countries or regions, this feature might be disabled according to local regulations.

Change the settings from the Vantage app

Follow the instructions to change the settings.

1. Open the Vantage app, and then click **Device > Smart Assist**.
2. Turn on the **User Presence Sensing** toggle to enable the feature.
3. Customize the sub-features such as **Zero Touch Login**, **Zero Touch Lock**, and **Adaptive Dimming** according to your preference.

Protect data against power loss

NVMe (Non-Volatile Memory express) M.2 solid-state drive features the Lenovo-unique PLP (Power Loss Protection) function to avoid data loss or damage.

If your computer is not responding and you might have to shut down your computer by pressing and holding the power button for several seconds. In this case, the PLP function enables your computer data to be saved timely. However, there is no guarantee that all data is saved in any situation.

To check the type of your M.2 solid-state drive:

1. Restart the computer. When the logo screen is displayed, press F10 to enter the Lenovo diagnostics window.
2. On the TOOLS tab, select **SYSTEM INFORMATION** > **STORAGE** using the arrow keys.
3. Locate the **Device Type** section to check the information.

USB-C Restricted Mode

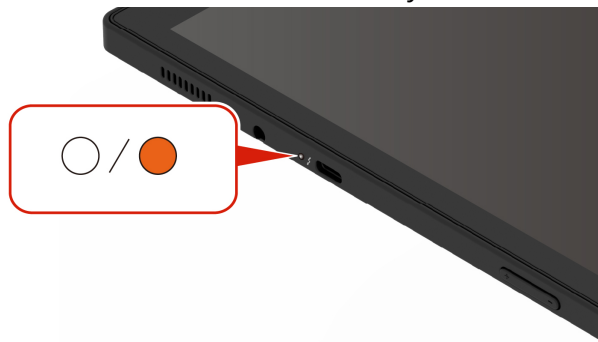
USB-C Restricted Mode is a security feature that allows you to disable data transfer through USB-C connectors while the charge function of the USB-C connectors is kept. It helps prevent data from being copied from the computer to USB storage devices connected to the computer. By enabling this feature, you can use public USB charging stations, such as those found in cafes and hotel lobbies, without worrying about data leakage from the USB-C connector.

Note:

- Before using this feature, ensure that the remaining battery power is not less than 5%. Otherwise, this feature can not be enabled.
- This feature can be enabled or disabled by key combinations only when the computer is turned on.

To enable or disable this feature, press Fn+U, and then press Fn+S.

After this feature is enabled, the LED indicator blinks briefly when a USB device is connected.



FIDO (Fast Identity Online) authentication

Your computer supports FIDO (Fast Identity Online) authentication feature. This feature works as an alternative to password-based authentication to achieve passwordless authentication.

This feature only works when a power-on password is set in UEFI BIOS and the FIDO2 USB device is registered in ThinkShield™ Passwordless Power-On Device Manager. With this feature, you can input the power-on password or use the registered FIDO2 USB device to power on your computer.

Register FIDO2 USB device in ThinkShield Passwordless Power-On Device Manager

Follow the instructions to register FIDO2 USB device in ThinkShield Passwordless Power-On Device Manager.

1. Turn on the computer.
2. Press F12 during the power-on process.
3. If you set a power-on password, you are prompted to enter the correct password.
4. Select **App Menu > ThinkShield Passwordless Power-On Device Manager** and press Enter
5. Insert the FIDO2 USB device to register the device by following steps:
 - a. Select the available FIDO2 USB device that you want to register in the **Discovered Devices** field.
 - b. Click **Yes** in the displayed window to confirm the device you selected
 - c. If you set a power-on password, you are prompted to enter the correct password.
 - d. The **User operation request** window is displayed. You are prompted to press the button on the connected FIDO2 USB device, and then follow the on-screen instructions to close the window.
 - e. Press Esc to exit and restart your computer.

Note:

- If you want to unregister your devices, click the available FIDO2 USB device that you want to unregister in the **My Device** field and enter the correct power-on password for verification.
- If you use more than one FIDO2 USB device with a common identifier for registration, only one device is available.

Log in to the System with Passwordless Power-On Authentication

Follow the instructions to log in to the System with Passwordless Power-On Authentication.

1. Restart the computer.
2. **ThinkShield Passwordless Power-On Authentication** window is displayed.
3. Insert your registered FIDO2 USB device for detection.
4. Then follow the on-screen instructions to press the button on your FIDO2 USB device for verification.
5. After your device is verified, the power-on process continues.

Note:

You should insert the FIDO2 USB device or enter the power-on password within 60 seconds. Otherwise, your computer will shut down automatically.

Supervisor Certificate

Supervisor Certificate (also called the password-less management mode) provides more secure UEFI BIOS management with password-free solution. It is used to replace the supervisor password / system management password for authentication if you have set one.

Note:

Supervisor password / system management password are disabled automatically when certificate mode is enabled. But the power-on password / NVMe password still can be used normally in certificate mode if you have set one.

For certificate enrollment, go to: [Certificate-based BIOS Authentication](#) .

Enter the BIOS menu with certificate

Once you have enrolled the certificate, you can enter the BIOS menu with the certificate.

1. Restart the computer. When the logo screen is displayed, press F1 to enter the BIOS menu.
2. The QR code is displayed. Scan the QR code to save the request data and send the request data to IT admin by e-mail or phone.

Note:

If you choose to authenticate without the QR code, save the request data in a USB key and send the request data to IT admin by e-mail or phone.

3. Enter the unlock code provided by IT admin and click **OK**.

Note:

- The unlock encode is a one-time password and is valid only during logon prompt (in one power-on cycle) for up to two hours.
- If you click **Skip**, you can enter the BIOS setup menu without BIOS management authority. But certificate reset is allowed.

Reset certificate

The enrolled certificate cannot be disabled. You can reset or remove it:

1. Restart the computer. When the logo screen is displayed, press F1.
2. Enter the BIOS menu with the certificate or skip the certification authentication process.
3. Select **Security > Reset Certificate**.
4. Follow the on-screen instructions to enter the reset code provided by IT admin.

Chapter 5 Help and support

This chapter provides solutions to some hardware and software issues.

Error messages

An error message is displayed for each error detected in POST or system operation. Refer to the error messages in the table below to solve your computer problems.

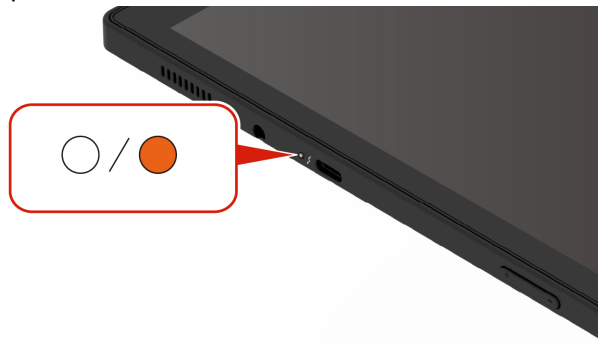
If you see a message that is not included in the following table, record the error message first, then shut down the computer and call Lenovo for help. See [Lenovo Customer Support Center](#) on page 48.

Message	Solution
0190: Critical low-battery error	The computer turned off because the battery power is low. Connect the ac power adapter to the computer and charge the batteries.
0191: System Security - Invalid remote change requested	The system configuration change has failed. Confirm the operation and try again.
0199: System Security - Security password retry count exceeded.	This message is displayed when you enter a wrong supervisor password more than three times. Confirm the supervisor password and try again.
0271: Check Date and Time settings.	The date or the time is not set in the computer. Enter the UEFI BIOS menu and set the date and time.
210x/211x: Detection/Read error on HDDx/SSDx	The storage drive is not working. Reinstall the storage drive. If the problem still exists, replace the storage drive.
Error: The non-volatile system UEFI variable storage is nearly full.	 Note: This error indicates that the operating system or programs cannot create, modify, or delete data in the non-volatile system UEFI variable storage due to insufficient storage space after POST. The non-volatile system UEFI variable storage is used by the UEFI BIOS and by the operating system or programs. This error occurs when the operating system or programs store large amounts of data in the variable storage. All data needed for POST, such as UEFI BIOS setup settings, chipset, or platform configuration data, are stored in a separate UEFI variable storage.

Message	Solution
	Press F1 after the error message is displayed to enter the UEFI BIOS menu. A dialog asks for confirmation to clean up the storage. If you select "Yes", all data that were created by the operating system or programs will be deleted except global variables defined by the Unified Extensible Firmware Interface Specification. If you select "No", all data will be kept, but the operating system or programs will not be able to create, modify, or delete data in the storage. If this error happens at a service center, Lenovo-authorized service personnel will clean up the non-volatile system UEFI variable storage using the preceding solution.

Battery-charge LED indicator status and diagnosis

The battery-charge LED indicator (hereafter referred to as LED indicator) blinks to help you diagnose and solve some computer problems.



Indicator blinking patterns

The LED indicator blinks amber first and then white continually, consisting of different blinking patterns. Each blinking pattern corresponds to an error code. For example, when the LED indicator blinks amber once ● and then blinks white twice ○○, the blinking pattern ●○○ corresponds to error code 0001.

Note:

- The LED indicator blinks automatically only when the error in the following table occurs.
- The LED indicator blinks continually until the computer turns off. If you need to interrupt the process, press power button for a few seconds.
- We recommend that you speak to our Customer Support Center before attempting to service the computer yourself so that you can be directed to the correct documentation and repair information. It might be recommended to have a Lenovo-authorized service provider repair your computer depending on the complexity of the error or fault.

Refer to the blinking patterns and error codes in the table below to solve your computer problems.

Blinking patterns	Error codes	Solutions
● ○ ○	0001: Reset error (platform reset not de-asserted)	- Do the following to perform a hard reset: - Disconnect your computer from ac power. - Press and hold the power button for at least 14 seconds, or insert a straightened paper clip into the emergency reset hole to cut off power supply temporarily. - Restart the computer with ac power connected. Note: When performing a hard reset via power button, the LED indicator might stop blinking in a few seconds. Keep holding the power button for at least 14 seconds to complete the hard reset. - If step 1 does not work, replace the system board (service provider only).
● ○ ○ ○	0002: Internal bus error	Replace the system board (service provider only).
● ○ ○ ○ ○	0003: Non-Volatile Memory programming error in system power circuit	Replace the system board (service provider only).
● ● ○	0282: Memory module error	- Reinstall or replace the memory module. - If step 1 does not work, replace the system board (service provider only).
● ● ○ ○	0283: PCI resource error	- Remove PCIe devices (the M.2 card, PCIe card, and so on) (service provider only). - If step 1 does not work, replace the system board (service provider only).

Blinking patterns	Error codes	Solutions
	0284: TCG-compliant functionality-related error (might be the BIOS code validation failure)	Replace the system board (service provider only).
	0285: TCG-compliant functionality-related error (might be the TPM initialization failure)	Replace the system board (service provider only).
	0286: Integrated graphics error	Replace the system board (service provider only).
	0287: Discrete graphics error	1. Reinstall or replace the discrete graphics card (service provider only). 2. If step 1 does not work, replace the system board (service provider only).
	0288: Computer display error	1. Reconnect the display cable on both the system board side and the computer display side (service provider only) and check the LCD panel. 2. If step 1 does not work, connect an external display to your computer and check the status (customer or service provider). • If the external display works, replace the LCD panel (service provider only). • If the external display does not work, replace the system board (service provider only).
	0281: General embedded controller error	Replace the system board (service provider only).

Diagnostics tool

This section provides introduction to a set of diagnostics and troubleshooting tools at Lenovo Support Web site, the Vantage app, and in your computer. 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.
UEFI Diagnostics tool	- You cannot log in to the operating system. - Your computer cannot connect to the network.

Troubleshoot and diagnose at Lenovo Support Web site

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

- Go to <https://www.pcsupport.lenovo.com/> and enter your product name in the search box.
- Click **Troubleshoot & Diagnose** and select from the following two options depending on your needs.
 - If you are unsure of the problem with your computer, 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.

Note:

- Before launching any automatic diagnosing process, a pop-up window will prompt you 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 solutions cannot 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:

- Launch the Lenovo Commercial Vantage app.
- Select **Device diagnostics** from the expanded menu on the left.
- Choose one of the following ways to run the hardware scan:
 - Select **Hardware scan > Quick scan > Scan** to test all detected components.
 - Select **Hardware scan > Quick scan > Custom** to choose one or more components to test.

- Select **Hardware scan > Manual tests > Continue > Scan** to choose one or more components to test.
4. For any detected issues, the required action varies depending on the product's warranty status and your geographic location. Follow the on-screen instructions to resolve the issue.

Note:

Lenovo Commercial Vantage makes periodic updates to keep improving your experience. The setting path might be different from that on your actual interface.

UEFI Diagnostics tool

UEFI Diagnostics tool enables you to view system information and identify hardware issues when you cannot log in to the operating system, or the computer cannot connect to the network.

To use the UEFI Diagnostics tool:

1. Connect your computer to ac power.
2. Turn on your computer, and press F10 immediately to enter the UEFI Diagnostics tool.
3. Follow the on-screen instructions to run the test.
4. Press Esc to exit the tool. Your computer will restart immediately.
5. If any hardware failure is detected and you are unable to locate and resolve the problem, you can call Lenovo Customer Support Center. See [Call Lenovo](#) on page 47.

Lenovo Memory Self Repair

Lenovo Memory Self Repair (hereafter referred to as repair tool) enables you to repair memory single-bit or single-row failure with internal redundant resources.

It is recommended that you use the repair tool in the following situations:

- The operating system is unstable, such as having blue screen error or system crash.
- Any application operates abnormally, such as crashing or quitting unexpectedly.
- Any test result indicates memory-related errors.

Note:

The repair tool can be used only when your computer can be turned on normally.

1. Restart the computer.
2. When the logo screen is displayed, trigger the repair tool by one of the following methods:
 - Press F4.
 - Press Enter to enter **Startup Interrupt Menu**, and then press F4.
 - Press F12 to enter **App Menu**, and then select **Lenovo Memory Self Repair**.
3. Read through the important information in the displayed window and click **Yes** to run the tool.
4. Check the repair result on the pop-up dialog box. There are three types of results.
 - **Memory Repaired:** it means that the memory failure is detected and repaired.
 - **Memory failure detected but repair was unsuccessful:** it means that the memory failure is detected but cannot be repaired.
 - **No failure detected:** it means that no memory failure is detected.

If the issue persists, you can try again or contact Lenovo for additional support.

5. Click **Continue** to turn on the computer.

Related topics

[Call Lenovo](#) on page 47

Windows label

Windows Genuine Microsoft label indicates the edition of Windows preinstalled on your computer and whether the device is preinstalled with or licensed for genuine Windows.

Your computer might have a Windows Genuine Microsoft label affixed to its cover depending on the following factors:

- Your geographic location
- Edition of Windows that is preinstalled

Go to <https://www.microsoft.com/howtotell/Hardware.aspx> for illustrations of the various types of Genuine Microsoft labels.

- In the People's Republic of China, the Genuine Microsoft label is required on all computer models preinstalled with any edition of the Windows operating system.
- In other countries and regions, the Genuine Microsoft label is required only on computer models licensed for Windows Pro editions.

The absence of a Genuine Microsoft label does not indicate that the preinstalled Windows version is not genuine. For details on how to tell whether your preinstalled Windows product is genuine, refer to the information provided by Microsoft at <https://www.microsoft.com/howtotell/default.aspx>.

There are no external, visual indicators of the Product ID or Windows version for which the computer is licensed. Instead, the Product ID is recorded in the computer firmware. Whenever a Windows product is installed, the installation program checks the computer firmware for a valid, matching Product ID to complete the activation.

In some cases, an earlier Windows version might be preinstalled under the terms of the Windows Pro edition license downgrade rights.

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](#) on page 48.

Find your service QR code and serial number

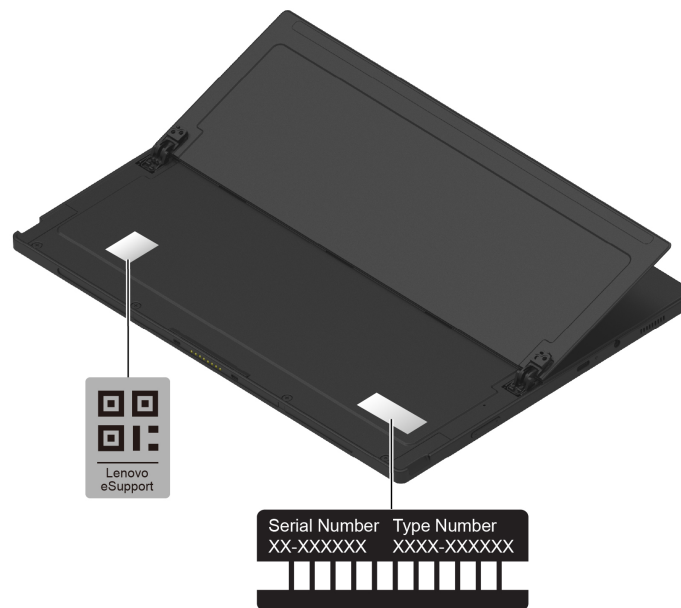
This topic helps you find service QR code and serial number.

Scan the QR code on the base cover assembly to view the following information:

- Your product information and warranty status
- The latest Lenovo-verified drivers and software
- Troubleshooting and diagnosing solutions when hardware or software issue is encountered
- Customer support center and e-ticket entry for professional support

You can find your serial number via:

- **Dashboard** or **Device** in the **Vantage** app
- Serial-number label of your computer (shown as below illustration)



Lenovo Customer Support Center

During the warranty period, you can call Lenovo Customer Support Center for help.

Telephone numbers

For a list of the Lenovo Support phone numbers for your country or region, go to <https://pcsupport.lenovo.com/supportphonelist> for the latest phone numbers.

Note:

Phone numbers are subject to change without notice. If the number for your country or region is not provided, contact your Lenovo reseller or Lenovo marketing representative.

Services available during the warranty period

- Problem determination - Trained personnel are available to assist you with determining if you have a hardware problem and deciding what action is necessary to fix the problem.
- Lenovo hardware repair - If the problem is determined to be caused by Lenovo hardware under warranty, trained service personnel are available to provide the applicable level of service.

- Engineering change management - Occasionally, there might be changes that are required after a product has been sold. Lenovo or your reseller, if authorized by Lenovo, will make selected Engineering Changes (ECs) that apply to your hardware available.

Services not covered

- Replacement or use of parts not manufactured for or by Lenovo or nonwarranted parts
- Identification of software problem sources
- Configuration of UEFI BIOS as part of an installation or upgrade
- Changes, modifications, or upgrades to device drivers
- Installation and maintenance of network operating systems (NOS)
- Installation and maintenance of programs

For the terms and conditions of the Lenovo Limited Warranty that apply to your Lenovo hardware product, go to:

- https://www.lenovo.com/warranty/llw_02
- <https://pcsupport.lenovo.com/warrantylookup>

Chapter 6 CRU replacement

This section provides instructions on how to replace Customer Replaceable Units (CRUs).

What are CRUs

Customer Replaceable Units (CRUs) are parts that can be replaced by the customer. The 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 a 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

This topic provides the CRU list of your computer.

Self-service CRUs

- ac power adapter*
- Folio Keyboard*
- Lenovo Slim Pen 2*
- Nano-SIM-card tray*
- Power cord*

* for selected models



Note:

Replacement of any parts not listed above should be done by a qualified repair technician or by ensuring that you carefully follow all instructions provided by Lenovo. You can also find Lenovo-authorized repair facilities by going to <https://support.lenovo.com/partnerlocator> for more information.

Before you replace any CRU

Before replacing any CRU, ensure that you disable Fast Startup first and then disable the built-in battery.

Disable Fast Startup

Follow the instructions to disable Fast Startup.

1. Go to **Control Panel** and view by Large icons or Small icons.
2. Click **Power Options**, and then click **Choose what the power buttons do** on the left pane.
3. Click **Change settings that are currently unavailable** at the top.
4. If prompted by User Account Control (UAC), click **Yes**.
5. Clear the **Turn on fast startup** check box, and then click **Save changes**.

Disable the built-in battery

Follow the instructions to disable the built-in battery.

1. Restart your computer. When the logo screen is displayed, immediately press F1 to enter the UEFI BIOS menu.
2. Select **Config > Power**. The **Power** submenu is displayed.
3. Select **Disable Built-in Battery** and press Enter.
4. Select **Yes** in the Setup Confirmation window.

The built-in battery is disabled and the computer turns off automatically.

Wait three to five minutes to let the computer cool.

Note:

If your computer cannot enter the UEFI BIOS menu, you cannot disable the built-in battery. To ensure safety when you replace a CRU, it is recommended to do the following:

- For the built-in battery connected to the system board with cables: Disconnect the battery cables.
- For the CRUable built-in battery connected to the system board with comb connectors: Remove the battery. For the removal procedure, refer to the built-in battery replacement instructions in this documentation.
- For the non-CRUable built-in battery connected to the system board with comb connectors: Call Lenovo Customer Support Center for help.

To check whether the built-in battery on your computer is a CRU, see the CRU list in [CRU replacement](#) on page 50.

Appendix A Compliance information

This chapter provides the compliance information of your computer.

For compliance information, refer to *Regulatory Notice* at <https://pcsupport.lenovo.com> and *Generic Safety and Compliance Notices* at https://pcsupport.lenovo.com/docs/generic_notices.

Certification-related information

This section provides certification-related information, such as product name and machine type.

Table 1: Product information

Product name	Compliance ID	Machine type(s)
ThinkPad X13 Detachable Gen 1	TP00179A	21U6 and 21U7

Further compliance information related to your product is available at <https://www.lenovo.com/compliance>.

Table 2: Korean Minimum Energy Performance Standard (MEPS) value

Energy efficiency labeling	Energy efficiency information
Computer type	A
Annual power consumption (kWh)	5.9
Power consumption in sleep mode (W)	0.79
Power consumption in off mode (W)	0.32

Operating environment

This section provides information about the operating environment of your computer.

Maximum altitude (without pressurization)

3048 m (10 000 ft)

Temperature

- Operating: 5°C to 35°C (41°F to 95°F)
- Storage and transportation in original shipping packaging: -20°C to 60°C (-4°F to 140°F)
- Storage without packaging: 5°C to 43°C (41°F to 109°F)

i Note:

When you charge the battery, its temperature must be no lower than 10°C (50°F).

Relative humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

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>.

En ce qui concerne l'article 79.18 du Règlement d'application de la Loi sur la protection du consommateur du Québec, Lenovo ne garantit en aucune façon la disponibilité des éléments suivants: (a) les pièces de rechange; (b) les services de réparation; et (c) les renseignements nécessaires à l'entretien à la réparation du bien. Pour obtenir des renseignements à jour sur le soutien technique et les pièces disponibles pour votre achat, veuillez consulter <https://support.lenovo.com/ca/fr>.

Appendix C 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 D 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.

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

Appendix E Notices and trademarks

Notices

Lenovo may not offer the products, services, or features discussed in this document in all countries. Consult your local Lenovo representative for information on the products and services currently available in your area. Any reference to a Lenovo product, program, or service is not intended to state or imply that only that Lenovo product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any Lenovo intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any other product, program, or service.

Lenovo may have patents or pending patent programs covering subject matter described in this document. The furnishing of this document does not give you any license to these patents. You can send license inquiries, in writing, to:

Lenovo (United States), Inc.

8001 Development Drive

Morrisville, NC 27560

U.S.A.

Attention: Lenovo Director of Licensing

LENOVO PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some jurisdictions do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement may not apply to you.

Changes are made periodically to the information herein; these changes will be incorporated in new editions of the publication. To provide better service, Lenovo reserves the right to improve and/or modify the products and software programs described in the manuals included with your computer, and the content of the manual, at any time without additional notice.

The software interface and function and hardware configuration described in the manuals included with your computer might not match exactly the actual configuration of the computer that you purchase. For the configuration of the product, refer to the related contract (if any) or product packing list, or consult the distributor for the product sales. Lenovo may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation to you.

The products described in this document are not intended for use in implantation or other life support applications where malfunction may result in injury or death to persons. The information contained in this document does not affect or change Lenovo product specifications or warranties. Nothing in this document shall operate as an express or implied license or indemnity under the intellectual property rights of Lenovo or third parties. All information contained in this document was obtained in specific environments and is presented as an illustration. The result obtained in other operating environments may vary.

Lenovo may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation to you.

Any references in this publication to non-Lenovo Web sites are provided for convenience only and do not in any manner serve as an endorsement of those Web sites. The materials at those Web sites are not part of the materials for this Lenovo product, and use of those Web sites is at your own risk.

Any performance data contained herein was determined in a controlled environment. Therefore, the result obtained in other operating environments may vary significantly. Some measurements may have been made on development-level systems and there is no guarantee that these measurements will be the same on generally available systems. Furthermore, some measurements may have been

estimated through extrapolation. Actual results may vary. Users of this document should verify the applicable data for their specific environment.

This document is copyrighted by Lenovo and is not covered by any open source license, including any Linux® agreement(s) which may accompany software included with this product. Lenovo may update this document at any time without notice.

For the latest information or any questions or comments, contact or visit the Lenovo Web site:

<https://pcsupport.lenovo.com>

Trademarks

Lenovo, Lenovo logo, ThinkPad, ThinkPad logo, and TrackPoint are trademarks of Lenovo. Intel, Intel Optane, and Thunderbolt are trademarks of Intel Corporation or its subsidiaries in the U.S. and/or other countries. Linux is the registered trademark of Linus Torvalds in the U.S. and other countries. Microsoft, Microsoft Teams, Windows, Windows Hello, One Drive, Outlook, Skype, Office 365, Direct3D, BitLocker, and  are trademarks of the Microsoft group of companies. Mini DisplayPort (mDP) and DisplayPort are trademarks of the Video Electronics Standards Association. NVIDIA is a registered trademark of NVIDIA Corporation. Dolby, Dolby Voice, Dolby Audio and Dolby Atmos are trademarks of Dolby Laboratories Licensing Corporation. The terms HDMI and HDMI High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI Licensing LLC in the United States and other countries. USB4® and USB-C® are registered trademarks of USB Implementers Forum. Wi-Fi and Miracast are registered trademarks of Wi-Fi Alliance. All other trademarks are the property of their respective owners.