User Guide

Lenovo ThinkBook



Lenovo ThinkBook Plus Gen 7 Auto Twist

Read this first

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

- *Generic Safety and Compliance Notices*
- *Safety and Warranty Guide*
- *Setup Guide*

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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 patentlist.accessadvance.com.



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About this *User Guide*

This *User Guide* is intended for users of the Lenovo personal computer (PC) products listed in the table below. It provides feature descriptions, specifications, and operating instructions to assist users with the daily operation of their PCs. Additionally, it offers support resources to help users troubleshoot issues independently or obtain assistance when needed.

Table 1: Models supported by this User Guide

Model name	Machine type
ThinkBook Plus G7 Auto Twist	22A9
ThinkBook Plus G7 Auto Twist 1	

PCs are general-purpose computing devices. Users interact with a PC through the interface provided by the operating system, on top of which additional applications can be installed to enhance and extend the PC's functionality. In fact, the ability to add and install applications is what makes PCs so versatile and popular. Given the open nature of PCs, it is impossible to cover every aspect of PC usage in this guide. Instead, this guide provides information on features and functions available out of the box, focusing on essential, security, and convenience features that enable you to use the PC effectively, securely, and efficiently. We hope the information provided here serves as a starting point from which your knowledge and creativity will guide you in transforming this PC into a valuable companion for learning, leisure, entertainment, and academic or professional endeavors. For questions not covered in this guide, please refer to the included support resources.

Other supporting documents

This *User Guide* is part of a comprehensive documentation set designed to support your use of the PC product. The documents may be specific to your product model or applicable to all Lenovo PC products and are available either as printed materials or digitally on the Lenovo Support website.

Setup Guide

A printed material included in the product packaging that provides instructions to help you connect your PC to a power source and turn it on for the first time.

Safety and Warranty Guide

A printed material included in the product packaging that contains important safety information you must read before using your PC. It also provides compliance statements and disclosures required by applicable laws and regulations.

Note:

This is a generic document intended for use with all Lenovo PC products and may contain information that does not apply to your specific product model.

Generic Safety and Compliance Notice

A digital document in Portable Document Format (PDF) that contains important safety information you should know while using your PC. It also provides compliance statements and disclosures required by applicable laws and regulations.

Note:

This is a generic document intended for use with all Lenovo PC products and may contain information that does not apply to your specific product model.

Hardware Maintenance Manual

A digital document in Portable Document Format (PDF) and Hypertext Markup Language (HTML), primarily intended for Lenovo service technicians, contains instructions for disassembling and servicing the product. This document is made available to users in accordance with applicable laws and regulations that protect customers' rights to independently service their products.

Regulatory Notice

A digital document in Portable Document Format (PDF) containing radio frequency-related statements or disclosures as required by applicable laws and regulations.

Notice regarding the accuracy of information

Product illustrations in this *User Guide* are intended to demonstrate features and may include details that differ from those of the actual product. This *User Guide* may cover multiple product models or configurations and, as such, may include feature descriptions that do not apply to your specific model or configuration.

Many operating instructions, especially those on device configuration and setup are closely related to the operating system. If you install a different operating system than what is described in this guide, some instruction provided may not apply.

Both the operating system and applications can now be updated over the Internet. As a result, the feature descriptions and operating instructions related to the operating system and applications may differ from the actual features and operations.

Chapter 1 Product overview and specifications

Front view

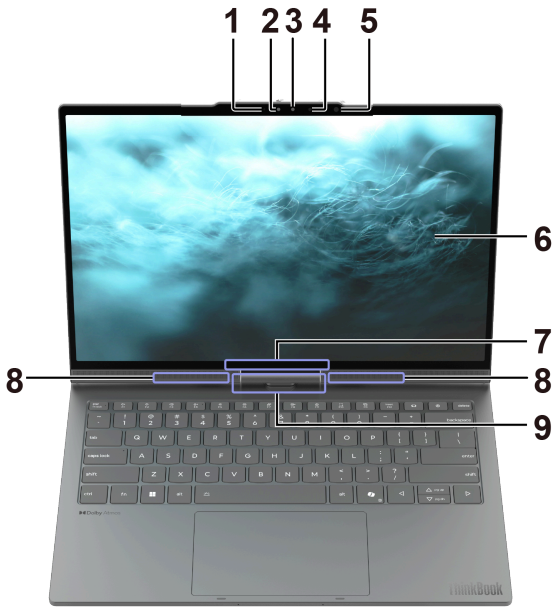


Figure 1: front view

No.	Description
1	Camera light
2	Camera
3	Infrared camera
4	Ambient light sensor
5	Color sensor
6	Screen
7	Indicator light bar (hidden inside the bezel)
8	Speakers
9	Dual-degree auto rotation hinge

Camera light

The camera light indicates whether the camera is activated.

Table 2: Camera light status and description

Camera light status	Description
On	The camera is activated.
Off	The camera is not activated.

Camera

The built-in camera captures visible light and converts it to digital signals. It is used for video recordings and video conferencing.

Infrared camera

The infrared camera receives near-infrared waves emitted by an infrared LED and reflected by a human face. It is used for facial recognition.

Ambient light sensor

The ambient light sensor detects and measures the intensity of light in the user's environment. The data collected by this sensor can be used to enable adaptive brightness for the PC's built-in display.

Color sensor

A color sensor is a device that detects and identifies the colors of objects in its field of view. It captures color information by analyzing the light reflected from surfaces and converts this data into a digital format that can be processed by the PC.

Screen

The screen of the built-in display is where text, graphics, and videos are displayed.

The screen is touch-enabled, allowing you to interact with your PC by intuitively touching buttons, icons, and menu items displayed on the screen. Touch-enabled screens also support multi-finger gestures.

Indicator light bar (hidden inside the bezel)

The indicator light bar (hidden inside the bezel) displays different lighting effects for different screen actions during auto-twist.

Find the methods of auto-twist in Auto-tracking on page 34 and Auto lid control on page 35.

Table 3: Indicator light bar status and screen action

Screen action	Indicator light bar status
Screen opening or closing	Amber; Blinks in the center section
Screen turning left	Amber; Blinks in the left section
Screen turning right	Amber; Blinks in the right section
Screen encountering an obstacle or approaching its rotation limit	Red; Blinks across the entire light bar

The indicator light bar also responds to voice commands with lighting effects. After you enable the voice command feature in the Plus Center app, white lights appear on both sides of the light bar. When you say “Hi Tiko”, the lights move from both sides to the center, indicating that the device is ready for your next voice command. If no valid command is received over 5 seconds, the lights return to both sides.

Find the list of supported voice commands in Voice commands on page 36.

Speakers

The speakers are the PC's built-in sound output devices.

Dual-degree auto rotation hinge

The dual-degree auto rotation hinge is a movable joint that allows the screen to rotate smoothly.

Note:

You may hear gears meshing when the screen opens or closes.

Top view

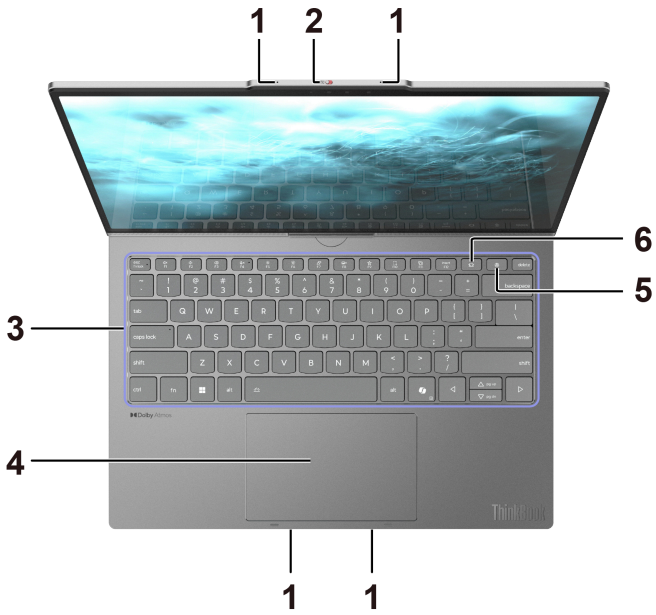


Figure 2: top view

No.	Description
1	Microphones
2	Camera switch
3	Keyboard
4	Touchpad
5	Plus Center key
6	Auto-tracking key

Microphones

The microphones are the PC's built-in sound input devices. They capture your voice and ambient sound and convert them into digital form. Microphones are essential components when you use your PC for video conferencing or voice recording.

Camera switch

This toggle switch is used to enable or disable the built-in camera.

Note:

This switch is designed for privacy protection. The default state of the camera is on. If you don't need to use the camera, slide the switch to the off position to prevent any apps from using the camera.

Keyboard

The keyboard is the PC's built-in input device for typing characters. It also includes keys that can make you more productive when interacting with the PC, apps, and the Windows operating system.

Note:

Keyboard layouts vary by language and geographical location. The keyboard on your PC may look slightly different from those depicted in the product illustrations in this publication.

Touchpad

The touchpad is the PC's built-in pointing device. Slide your finger on the touchpad to move the pointer on the screen and tap or double-tap to select or execute a screen item.

The touchpad also supports Windows multi-finger gestures, which provide shortcuts to frequently used apps and functions.

Plus Center key

Press the key to launch the Plus Center app. When the app interface is open, pressing this shortcut will minimize the window.

Auto-tracking key

Press the key to enable or disable the auto-tracking function.

Left view



Figure 3: left view

No.	Description
1	USB Standard-A connector (always-on connector)
2	Multi-purpose USB Type-C® connector (Thunderbolt™ 4 enabled)
3	Charging light
4	Combo audio jack

USB Standard-A connector

The USB Standard-A connector is used to connect storage or peripheral devices that follow the universal serial bus (USB) specification for data transfer and device interconnection.

Always-on connector

A USB connector with a battery icon ( ) supports the always-on function. The PC can supply power to a USB device connected to this type of connector even when the PC is powered off, in sleep mode, or in hibernation mode.

The always-on function can be turned on and off in:

- The PC's firmware setup utility, or
- Lenovo Vantage or Lenovo Baiying

Multi-purpose USB Type-C connector

You can use the included power adapter and this USB Type-C® connector to supply power to the PC.

Note:

This multi-purpose USB Type-C connector complies with the USB Power Delivery specification. If your PC is sold without an included ac power adapter, you can reuse an existing USB Power

Delivery-capable charger or purchase one separately. Refer to the specifications section in this publication for the minimum and maximum negotiable power levels supported by this connector.

When this connector is not used by the included power adapter, it can also be used to connect:

- Storage or peripheral devices that follow the universal serial bus (USB) specification for data transfer and device interconnection
- Display devices

> **Note:**
>
> When connecting display devices, you need to use appropriate cables and adapters (if needed) according to the connection capabilities of the display device.

- Thunderbolt™-enabled docks or devices

Tips for selecting a certified charger

When selecting or reusing a third-party USB Type-C charger for this PC, choose a product that is safety-approved or certified.

> **Attention:**
>
> An uncertified charger may damage your PC or pose an electrical hazard.

In many countries and regions, manufacturers or importers of electric chargers can submit their products to certification authorities or approved and recognized testing laboratories. These products typically bear a mark indicating that they meet the relevant quality and safety standards. In some countries and regions, this certification process is mandatory.

If you live in mainland China, choose a charger with the "CCC" mark. For users in many European countries, select one with the "CE" mark. For users in the United States and Canada, choose a charger listed by one of the Nationally Recognized Testing Laboratories (for example, the "UL Listed" mark). For people living in other countries or regions, consult a qualified electrical engineer to learn how to select a safety-approved electric charger.

Charging light

The charging light indicates whether the PC is plugged into an electrical outlet. When the PC is plugged into an electrical outlet, the color of the light indicates whether the battery is fully charged (or will shortly be fully charged).

Table 4: Charging light status and description

Light status	Plugged in?	Battery charge level
Off	No	/
On, amber	Yes	1%–90%
On, white	Yes	91%–100%

Combo audio jack

The combo audio jack is used to connect single-plug headsets, headphones, or external speakers.

Right view



Figure 4: right view

No.	Description
1	USB Standard-A connector
2	HDMI connector
3	Power button
4	Power light

USB Standard-A connector

The USB Standard-A connector is used to connect storage or peripheral devices that follow the universal serial bus (USB) specification for data transfer and device interconnection.

HDMI connector

The HDMI connector is used to connect an external display device, such as a television, a projector, or a monitor.

Power button

Press the power button to turn on your PC.

Note:

By default, on a Windows PC, pressing the power button when the PC is turned on will put the PC into sleep mode.

Fingerprint sensor

The fingerprint sensor scans your finger to unlock your PC or verify your identity.

Note:

You need to enroll one or more fingerprints before using them for identity verification. On a Windows PC, go to **Settings** > **Accounts** > **Sign-in options** to enroll your fingerprints.

Power light

The power light indicates the current power state of the PC: whether it is powered on, powered off, in sleep mode, or in hibernation mode.

Table 5: Power light status and description

Light status	Power state
Solid on	Powered on
Blinking slowly	In sleep mode
Off	Powered off or in hibernation mode

Bottom view



Figure 5: bottom view

No.	Description
1	Antennas (cannot be seen from the outside)
2	Air vents (inlet)
3	Speakers
4	Novo button hole

Antennas

The antennas transmit and receive radio waves to allow data to be transferred between your PC and a Wi-Fi network device or a Bluetooth device.

Note:

The antennas are hidden inside the PC.

Air vents (inlet)

The air vents allow air to be sucked inside of the PC to cool the internal components.

Important:

When the PC is operating, do not place it on a bed, sofa, carpet, or other flexible surfaces. Otherwise, the air vents will be blocked and the PC may overheat, reducing performance or causing the PC to be unresponsive or even shut down.

Speakers

The speakers are the PC's built-in sound output devices.

Novo button hole

When the PC is powered off, you can press the Novo button to display the Novo button menu. From the menu, you can then choose to:

- Open the firmware setup utility
- Display the boot device selection menu
- Display the Windows advanced startup options page

Note:

The Novo button is rarely used during normal PC operations. To prevent users from accidentally pressing it, the Novo button is placed in a recessed hole. You can use a straightened paper clip to press this button.

Rear view



Figure 6: rear view

No.	Description
1	Air vents (outlet)

Air vents (outlet)

The air vents allow hot air to be discharged out of the PC.

Important:

When the PC is operating, do not place it on a bed, sofa, carpet, or other flexible surfaces. Otherwise, the air vents will be blocked and the PC may overheat, reducing performance or causing the PC to be unresponsive or even shut down.

Specifications

Dimensions

Item	Value or specification
Width	313 mm
Depth	233 mm
Thickness	• 15.85 mm (thinnest part) • 23.9 mm (thickest part)

ac power adapter

Item	Value or specification
Input	100 V ac–240 V ac, 50 Hz–60 Hz
Output voltage	20 V
Maximum output current	5 A
Maximum output power	100 W

Note:

This PC is available in certain countries or regions without an included ac power adapter.

Rechargeable battery pack

Item	Value or specification
Capacity	75 Wh **Note:** The battery capacity is the typical or average capacity as measured in a specific test environment. Capacities measured in other environments may differ but are no lower than the rated capacity (see product label).
Cell type	Rechargeable Li-ion Battery
Number of cells	4

Memory

Item	Value or specification
Type	LPDDR5X
Installation	On-board

Mass storage device

Item	Value or specification
Type	Solid-state drive (SSD)
Slot quantity	1
Slot type	M.2 (2242 or 2280)
Slot interface	• PCIe Gen4 x 4 • PCIe Gen5 x 4

Display

Item	Value or specification
Size	14 inches
Type	OLED
Resolution	2880 x 1800
Maximum refresh rate	120 Hz

Connectors

Item	Value or specification
USB Standard-A connector	• Quantity: 2 • Power level (output) - 5 V, 0.9 A - 5 V, 2 A (for always-on connector) **Note:** The USB Standard-A connector on the left side of the PC supports maximum power output of 5 V and 2 A. • Data protocol - USB 2.0 480 Mbps - SuperSpeed USB 10 Gbps

Item	Value or specification

Multi-purpose USB Type-C connector	• Quantity: 2
	• Power level
	  - Output
	  - Voltage: 5 V
	  - Maximum current: 3 A
	  - Input
	  - USB Power Delivery
	  • Minimum: 65 W (20 V, 3.25 A)
	  • Maximum: 100 W (20 V, 5 A)
	Note:
	The minimum power represents the lowest acceptable power level to keep the PC operational and initiate charging of the internal battery, while the maximum power allows for the fastest charging speed. Both power levels are negotiated according to the protocols specified in the *USB Power Delivery Specification* .
	• Data protocol
	  - Thunderbolt 4 40 Gbps
	  - DisplayPort™ Alt Mode (DisplayPort 2.1 compliant)
	  - Maximum data rate: 80 Gbps
	  - Maximum output resolution: 7680 × 4320 (60 Hz)
	Note:
	Data rates and performance ratings are dependent on connected devices and cables if they are used. For DisplayPort connection through a USB Type-C connector, the listed maximum output capacity is only available on external displays with a DisplayPort, a Mini DisplayPort, or a USB Type-C connector that supports DisplayPort Alternate Mode. For connections using a converter or an adapter, the actual output resolution may be lower.

HDMI connector	• Data protocol
	  - Fixed-rate link (FRL)
	  - Transition minimized differential signaling (TMDS)
	• Maximum output resolution: 7680 × 4320 (60 Hz)

Combo audio jack	• Diameter: 3.5 mm • Supported plug: - 3-pole, TRS

Item	Value or specification
	- 4-pole, TRRS (CTIA and OMTP)

Note:

Data transmission rates are presented as maximum theoretical values in compliance with applicable specifications. The actual data transmission rates depend on various factors, including the performance of the connected devices and the quality of the cables being used. These rates are typically slower than the maximum theoretical values listed.

Networking

Item	Value or specification
Wi-Fi®	• 802.11a/b/g • 802.11n • 802.11ac • 802.11ax (Wi-Fi 6, Wi-Fi 6E) • 802.11be (Wi-Fi 7) **Note:** Different Wi-Fi standards may operate on different frequency bands. In some countries or regions, certain frequency bands may be prohibited for unlicensed use or may require specific conditions. Wi-Fi 6E and Wi-Fi 7 on this PC are disabled in some countries or regions in accordance with local regulations.
Bluetooth®	Bluetooth 5.4

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 below for each corresponding device.

USB device	Data rate (Gbit/s)
USB 3.2 Gen 2	10
Thunderbolt 4	40

Operating environment

Maximum altitude (without pressurization)

3048 m (10 000 ft)

Temperature

- At altitudes up to 2438 m (8000 ft)
  - Operating: 5°C to 35°C (41°F to 95°F)
  - Storage: 5°C to 43°C (41°F to 109°F)
- At altitudes above 2438 m (8000 ft)
  - Maximum temperature when operating under the unpressurized condition: 31.3°C (88°F)

> **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: 5% to 95% at wet-bulb temperature 27°C (81°F)

Avoid constant body contact with specific hot sections

> **CAUTION:**
>
> **When the computer is operating, it should be placed on a hard and flat surface with its bottom area not in contact with user's bare skin. Under normal operating conditions, the temperature of the bottom surface will remain within an acceptable range as defined in IEC 62368-1, but such temperatures can still be high enough to cause discomfort or harm to the user if directly touched for over 10 seconds at a time. As such, it is recommended that users avoid prolonged direct contact with the bottom of the computer.**

Chapter 2 Daily use

This chapter provides instructions to help you set up your PC and get it running, while also highlighting out-of-the-box features that enable you to use the PC efficiently and effectively. Please keep in mind that many of the instructions in this chapter are closely related to the preinstalled operating system and applications and may become outdated due to updates delivered over the Internet.

Your PC and its operating system

The operating system is essential software for a PC. It manages the hardware devices of the PC, provides utility applications and user interfaces, and enables the installation of various applications for a wide range of purposes.

Your PC comes with Windows 11 pre-installed.

Initial setup of the Windows operating system

When you turn on your PC for the first time, the Windows operating system will guide you through the initial setup process. Most importantly, you will:

- Create a user account
- Connect to a wireless network that has Internet access
- Select language-related settings

> **Note:**
>
> If you choose to set up Windows for personal use, you must either use an existing Microsoft account or create a new one. You can switch to a local account after the initial setup.

Set up facial recognition

Apart from text-based passwords, Windows 11 supports additional user authentication methods for PCs with the required hardware devices. For PCs equipped with a built-in infrared LED and an infrared camera, you can enable facial recognition to sign into Windows using your face.

1. Select **Start** > **Settings** > **Accounts** > **Sign-in options** > **Facial recognition**.
2. Select **Set up** > **Get started** and follow on-screen instructions to enroll your face.

> **Note:**
>
> If you are using a local account to sign into Windows, you must set a password for the account before you can enable facial recognition.

Windows Update

From time to time, your PC receives update notifications. These notifications may include new features, security updates, and device drivers. While security-related updates are typically downloaded and installed automatically, you can manually control the installation of other available updates.

In Windows Update, you can view available updates, manually check for updates, and configure settings related to updates. To navigate to Windows Update, select **Settings** > **Windows Update**.

Windows recovery options

While using your PC, you may encounter various issues. Windows provides several recovery options to help restore your system to normal functionality. The table below will help you choose the right option for different situations.

Table 6: Windows recovery options

Situations	Recovery options
Windows runs much slower after you install an app.	Restore Windows from a system restore point.
Windows hasn't been functioning properly for some time.	Reset your PC while keeping your personal files.
Your PC won't start.	Utilize Windows startup repair function.
Your PC won't start and cannot be repaired using Windows startup repair function.	Use a recovery drive to restore Windows.

Reset Windows

Resetting Windows allows you to reinstall the operating system while retaining your personal files. This gives the operating system a fresh start and, in some cases, restores the PC's original performance.

1. Select **Settings** > **System** > **Recovery**.
2. Under recovery options, select **Reset PC**.
   When prompted, choose between **Keep my files** and **Remove everything**.
3. Follow the on-screen instructions to complete the reset process.

Create a recovery drive

It is advisable to create a recovery drive after completing the initial setup of Windows. If you encounter a significant issue that prevents Windows from starting, you can use the recovery drive to restore the operating system on your PC.

1. Prepare an empty USB drive with a storage capacity of 32 GB or more.
2. In the search box on the taskbar, type **Create a recovery drive** and select the matched app.
3. Make sure **Back up system files to the recovery drive** checkbox is selected and select **Next**.
4. When prompted, connect the USB drive to your PC, select it, and then select **Next**.
5. Select **Create**.

Restore Windows using a recovery drive

If the Windows operating system fails to start, you can use a previously created recovery drive to restore Windows onto your PC.

1. Shut down your PC.
2. Connect the recovery drive to your PC.
3. Press the Novo button or the Lenovo Smart Key ☆ to open the Novo button menu.
4. Select **Boot Menu**.

5. Select the USB drive as the boot device.
   The PC will start to the Windows Recovery Environment.
6. Follow the on-screen instructions to restore Windows onto your PC.

Use power efficiently

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

Shut down your PC

When you have finished using your PC and do not plan to resume shortly, shut it down.

1. Select **Start** > **Power**.
2. Select **Shut down**.

Put your PC into sleep mode

If you need to stop using your PC but plan to resume shortly, you can put it into sleep mode. Your PC will wake up more quickly from sleep mode, allowing you to return to where you left off with your work.

1. Select **Start** > **Power**.
2. Select **Sleep**.

Adjust timeout settings for saving power

Setting appropriate timeouts for your PC to enter sleep mode and for the built-in screen to turn off is an effective method of reducing your PC's power consumption. The Windows operating system comes with default timeout settings for these two items, which you can adjust to better suit your preferences.

1. Select **Start** > **Settings** > **System** > **Power & battery** > **Screen, sleep, & hibernation timeouts**.
2. Adjust the settings.
   For notebook PCs, you can set distinct timeouts for two usage scenarios: when the PC is plugged in and when it is running on battery power.

Default timeout settings for power saving

The operating system on your PC has the following timeouts enabled by default. You can adjust these settings to better suit your preferences.

> **Note:**
>
> Setting appropriate timeouts is an effective method of reducing your PC's power consumption. Avoid setting excessively long timeouts to effectively disable this power-saving feature.

Table 7: Default timeout settings for the PC to enter sleep mode and the screen to turn off

Power saving action	Power state	Timeout (minute)
Turn off the screen	Plugged in	5
	On battery	3

Power saving action	Power state	Timeout (minute)
Put the PC into sleep mode	Plugged in	5
	On battery	3

Note:

To wake the PC from sleep mode, press the power button or any key on the keyboard.

Rechargeable battery pack

Your computer includes a built-in, rechargeable battery pack that makes mobile computing a reality. When the computer is plugged into an electrical outlet, the battery charges. If you use the computer when you don't have access to an electrical outlet, the battery discharges to supply electricity that the computer system requires for operation.

You can charge the battery any time you want. The battery packs of Lenovo computers support multiple charging modes that are suitable for different power usage habits. You can switch the battery's active charging mode in Lenovo Vantage.

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:

You can check the battery temperature in Lenovo Vantage.
To maximize the life of the battery, once the battery is fully charged, it must discharge to 94% or lower before it will be allowed to recharge again.

Conservation mode

If your computer is constantly plugged into an electrical outlet, consider switching the battery charging to conservation mode. In conservation mode, the battery will not be fully charged. Instead, the battery's charge will be kept within 75%–80%. This is beneficial to the long-term health of the battery.

Note:

If you want the battery to be fully charged before bringing the computer to work, disable conservation mode by switching the battery charging to normal or rapid charge mode.

Overnight battery charging mode

Some people follow a regular pattern when using their computers. They finish their workday with the computer at a low battery charge level. They plug in their computers at night and need the battery to be fully charged the next morning so they can unplug the computer and bring it to work. These activities happen at approximately the same time each day. If this sounds like you, consider enabling overnight battery charging mode for the battery.

Overnight battery charging mode affects battery charging during the night hours, the time when you're usually asleep. When it is enabled, the computer regularly adapts its charging behavior based on observation of when you plug in the computer at night and unplug it in the morning. During the nighttime, the battery is charged to a particular range and is kept within that range for an extended period, before being further charged to 100%. Overnight battery charging mode ensures safe charging during the night and is beneficial to the long-term health of the battery.

Note:

With overnight battery charging enabled, if you break your routine one day by unplugging the computer much earlier than usual in the morning, you may find that the battery is not fully charged.

If the battery pack of your computer supports overnight battery charging, it can be enabled in Lenovo Vantage.

Recover full battery capacity

If your computer is constantly plugged in to an electrical outlet and the battery rarely discharges, the battery may not be charged to its full capacity even if the battery meter reports 100% charge. You can recover the battery's full charging potential simply by discharging and re-charging the battery.

1. Unplug the computer and use it until the battery charge drops below 20%.
2. Plug in the computer and charge the battery to 100%.

Set up Internet access

In your home or office, Internet access is typically provided through Wi-Fi-enabled networks. You can connect to such a network to access the Internet. The Windows operating system provides utilities that assist in searching, connecting to, and managing wireless networks within range.

1. Select the Network, Sound, and Battery icons ( ) on the right side of the taskbar to open quick settings.
2. On the quick settings pane, select the > symbol next to the network icon.
   Wireless networks within range should be displayed.
3. Select the network you want to connect to and then select **Connect**.
4. Enter the network security key when prompted.

Interact effectively with your PC

You interact with your PC through its input and output devices. You spend a significant amount of time looking at the screen, where the user interface and content are displayed. The speakers produce sound, allowing you to listen to music or a voice recording. You type with the keyboard and navigate with the touchpad. You can join and participate in a web conference using the built-in camera and microphone.

Apart from the built-in devices, you can connect both wired and wireless external devices to enhance your interaction with your PC.

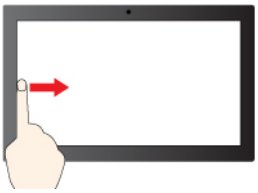
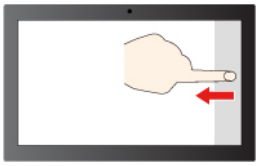
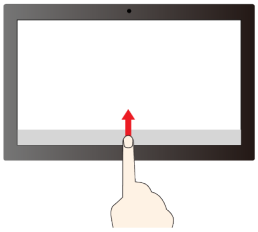
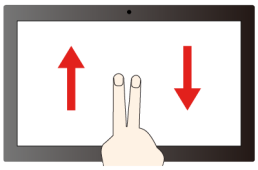
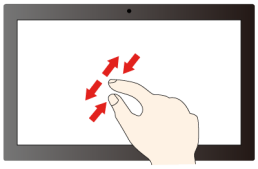
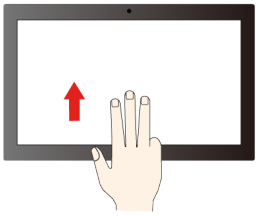
Built-in display

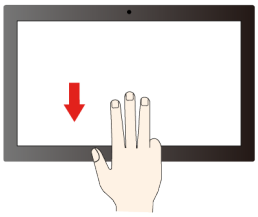
The built-in display is your PC's primary visual output device. The display for select models is touch-enabled. For those models, you can tap and swipe directly on the screen. You can also use multi-touch gestures on the screen to navigate within Windows more efficiently.

Touch screen gestures

The screen of your PC's built-in display is touch-enabled. You can tap or swipe on the screen to interact with your PC. In addition, the Windows operating system also supports multi-finger gestures on the touch screen to enhance productivity while interacting with the operating system.

Table 8: Touch screen gestures

Gesture	Function
Swipe in from the left edge of the screen 	Shows Widgets
Swipe in from the right edge of the screen 	Opens Click to Do
Swipe in from the bottom edge of the screen 	Shows the Start menu
Swipe vertically with two fingers 	Scrolls pages
Place two fingers on the screen and pinch in or stretch out 	Zooms out / zooms in
Swipe up with three fingers 	Shows all open windows
Swipe down with three fingers	Returns to the desktop

Gesture	Function
	

Note:

Features are subject to change. Please refer to Microsoft's support website for details.

Adjustable display refresh rate

Your eyes might not notice it but the content displayed on the computer screen refreshes constantly. Display refresh rate refers to the number of times per second the screen content refreshes itself and is measured in hertz (Hz).

A refresh rate of 60 Hz is adequate for most situations and is energy efficient. However, when viewing videos or playing video games, a higher refresh rate usually provides a smoother viewing experience.

The displays of some Lenovo computers support dual refresh rates. For such a computer, you can manually switch its display to work at either the higher or lower refresh rate. For Windows operation systems, the manual settings are usually found in **Settings** > **System** > **Display**. As a shortcut, you can also use the key combination fn + R to switch the display refresh rate.

Note:

Not all displays support dual refresh rates. If you cannot find settings to change the display refresh rate, the refresh rate of the display might be fixed or cannot be manually changed.

Turn on night light

The night light feature in Windows 11 enables users to switch to warmer color tones, reducing blue light emission to alleviate eye strain or fatigue.

1. Open the quick settings menu by selecting the network, sound, or battery icons ( ) on the far right of the taskbar or by using the keyboard shortcut + A.
2. Select the button for night light to turn it on or off.

For more tips on reducing eye strain or fatigue, visit https://www.lenovo.com/us/en/compliance/visual-fatigue.

Adjust color temperature

If Windows 11 night light mode is turned on, you can adjust the color temperature of the screen.

1. Select **Start** > **Settings**.
2. Select **System** > **Display** > **Night light settings**.
3. Move the slider to adjust the color temperature.

Note:

Selected Lenovo PCs are low blue-light certified. These PCs undergo testing with the night light turned on and the color temperature value set at 48 or above.

Connecting external displays

You can use both the USB Type-C connectors on your PC to connect external display devices. Depending on the connection capability of the display device, you have several options for connecting displays.

Direct connection

If the external display is equipped with a USB Type-C connector that is Thunderbolt-enabled or supports DisplayPort™ Alt Mode, you can use a double-sided USB Type-C cable to connect the display to any of the USB Type-C connectors on your PC.

Connection using an adapter

If the display is equipped with a DisplayPort or an HDMI connector, you can use an adapter to connect the display to your PC. The adapter features a USB Type-C connector (plug) on one end and a DisplayPort or an HDMI connector (socket) on the other. Connect the adapter to your PC and then connect the display to the adapter.

Connection using a docking station

A USB4 or Thunderbolt certified docking station can be connected to expand your PC's connectivity capabilities. Use a double-sided USB Type-C cable to connect the PC to the downstream USB Type-C connector on the docking station. You can then connect the display to the DisplayPort or HDMI connector on the docking station.

Change display settings

1. Right-click on a blank area on the desktop, and then select **Display settings**.
   Your computer shows the **Display** window.
2. Select the display for which you want to change the settings.
3. Change the display settings as necessary.

Set the display mode

1. Press or fn + .
   Your computer shows a list of display modes, with the current mode highlighted.
2. Select a display mode from the list.

Shortcut keys

A Lenovo keyboard usually includes the following shortcut keys that you can use to quickly access apps or adjust settings.

- Functions keys (F1–F12)
- Hotkeys
- Combination keys using the fn key
- Combination keys using the Windows logo key
- The Copilot key

Hotkeys

Hotkeys provide quick access to settings and apps that you may frequently use. They are located in the top row of the keyboard and usually share keys with function keys (F1–F12) and other keys. The function that each hotkey provides is denoted by the icon printed on the key.

Table 9: Hotkey functions

Hotkey icon	Function description
	Mutes/Unmutes sound.
	Decreases volume.
	Increases volume.
	Enables/Disables the microphone.
	Decreases screen brightness.
	Increases screen brightness.
	Selects and sets up display devices.
	Disables/enables the touchpad.
	Opens Lenovo Smart Connect app.
	Opens an AI experience, an application launch panel, or a pre-installed PC management application.
	Opens the Snipping tool.
insert	Toggles between typing mode and overtype mode. **Note:** In typing mode, characters that you type will be inserted after the cursor on the screen. While in overtype mode, characters that you type will replace the existing characters after the cursor.

The fn lock switch

The fn lock is an electronic switch that affects how you use hotkey functions. To turn it on and off, press fn + esc.

Note:

The esc key is in the upper left corner of the keyboard. It has an LED that indicates the status of the fn lock switch.

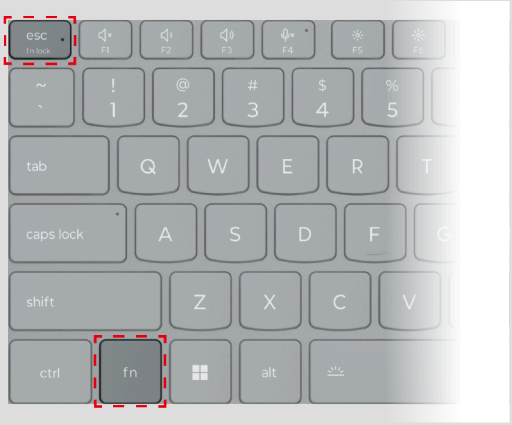


Figure 7: Locations of the fn lock key and the fn key

A Lenovo keyboard usually contains hotkeys in the top row. These hotkeys share keys with the function keys (F1–F12) and other keys. For these dual-function keys, the icons or characters denoting the primary functions are printed on top of the icons and characters denoting the secondary functions.

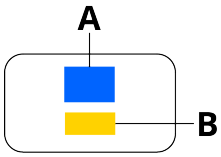


Figure 8: The layout of a dual-function key

- A: an icon or character denoting the primary function
- B: an icon or character denoting the secondary function

Table 10: fn lock and dual-function keys

fn lock (esc) LED	fn lock status	Pressing the hotkey alone	Pressing the hotkey while holding down the fn key
Off	Disabled	Primary function	Secondary function
On	Enabled	Secondary function	Primary function

Combination keys using the fn key

The fn key can be used in combination with certain keys to adjust device settings or activate additional functions.

Table 11: fn-based key combinations

Key combination	Function
fn + Q	Switches the PC's active power mode
fn + R	Switches the refresh rates of the built-in display
fn + M	Enables/disables the touchpad

Key combination	Function
fn + N	Shows key device information
fn + Space	Adjusts keyboard backlight
fn + T	PrtScr
fn + left arrow	Home
fn + right arrow	End
fn + up arrow	PgUp
fn + down arrow	PgDn

Combination keys using the Windows logo key

The Windows logo key is located in the lower-left corner of the keyboard. It can be used alone or in combination with certain keys to quickly change settings and access utilities of the Windows operating system. The following table lists frequently used combination keys. For the complete list of all Windows logo key-based key combinations, please refer to Microsoft online documentation.

Table 12: Windows logo key-based key combinations

Key or key combination	Function
Windows logo key ⊞	Opens or closes the Start menu
+ A	Opens or closes Quick Settings
+ D	Returns to the desktop
+ E	Opens File Explorer
+ I	Opens Settings
+ L	Locks the screen
+ M	Minimizes all open windows
+ N	Opens or closes the Notification Area
+ P	Switches multi-screen modes
+ W	Opens or closes Widgets
+ ; (semicolon)	Opens the emoji panel
+ tab	Opens or closes Task View

The Copilot key

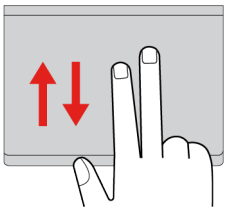
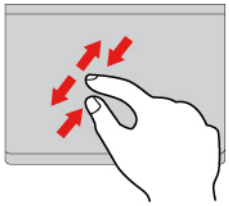
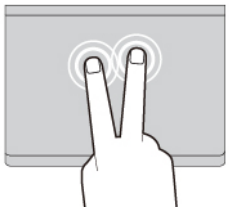
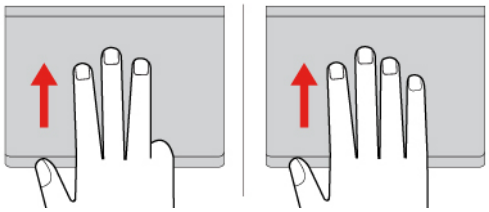
The era of AI has arrived, and many Lenovo PCs now include a Copilot key on the keyboard. It is located either in the bottom or the top row of the keyboard and is marked with .

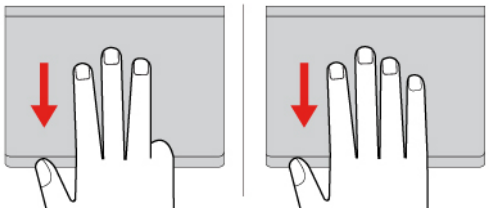
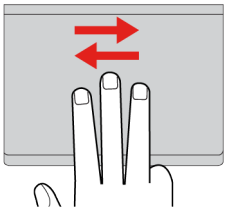
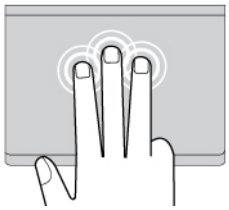
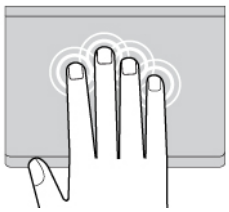
For Windows PCs with Copilot in Windows available and enabled, pressing the Copilot key opens Copilot in Windows. Otherwise, pressing the Copilot key opens Windows Search.

Touchpad gestures

The touchpad is your PC's built-in pointing device. You can tap and swipe on the touchpad to navigate within the operating system and within apps. In addition, the Windows operating system also supports multi-finger gestures on the touchpad to enhance productivity while interacting with the operating system.

Table 13: Multi-finger touchpad gestures

Gesture	Function
Swipe vertically with two fingers 	Scrolls pages
Place two fingers on the touchpad and pinch in or stretch out 	Zooms out / zooms in
Tap two fingers on the touchpad 	Displays the context menu (right-clicking)
Swipe up with three fingers or four fingers 	Shows all open windows
Swipe down with three fingers or four fingers	Returns to the desktop

Gesture	Function
	
Swipe left or right with three fingers 	Switches between open apps
Tap three fingers on the touchpad 	Opens Windows Search
Tap four fingers on the touchpad 	Opens Notification Center

Modify the default functions for touchpad gestures

The functions for three-finger and four-finger touchpad gestures can be modified in Windows Settings.

1. Select **Settings** > **Bluetooth & devices** > **Touchpad**.
2. Under **Three-finger gestures** and **Four-finger gestures**, use the drop-down lists to modify the functions for the swipe or tap gestures.

Bluetooth connectivity

Bluetooth is a short-range wireless technology commonly used for connections between nearby devices. Your PC is equipped with a built-in Bluetooth adapter. You can connect other Bluetooth-enabled devices to your PC. Bluetooth-enabled headphones, earbuds, loudspeakers, keyboards, and mice are among the devices you may consider connecting to your PC.

Connect a Bluetooth-enabled device to your PC

Establishing a Bluetooth connection requires actions on both the device and your PC. Turn on the device and make it discoverable before performing any actions on your PC.

1. Select **Settings** > **Bluetooth & devices** > **Add device** > **Bluetooth**.
2. Select the device you want to connect to, and then select **Connect**.
3. Depending on the type of device, you may need to either confirm the connection on the device side or enter a pairing code on your PC.

When a Bluetooth-enabled device is connected to your PC, its name and status are displayed under **Bluetooth & devices** on your PC.

Installing applications

Applications are software programs developed by individuals and software companies. They are typically installed on top of the operating system to provide specialized functions. To install an application on your PC, you generally have two options.

- Download and install the application from your operating system's app store.
- Download the installation package from the developer's website and run the installation file to install it on your PC.

> **Note:**
>
> Applications are usually licensed for use. When downloading and installing applications, be sure to check their license files, which contain the terms and conditions for use. For proprietary applications, you typically need to pay a licensing fee to install and use the software.

Pre-installed Lenovo-developed applications

As a PC manufacturer, Lenovo develops applications and may preinstalled some of them on PCs that come with an operating system to help users maximize their PC experience, especially when they are just getting started. This section highlights the Lenovo-developed applications that we believe will be particularly useful to you.

Plus Center

The Plus Center app is specifically designed for your PC. You can switch auto-tracking modes and select auto lid control modes.

To launch the Plus Center app, click the icon  on the taskbar or press the key  on the first row of the keyboard.

> **Note:**
>
> Plus Center makes periodic feature updates to keep improving your experience. The description described here might be different from that on your actual user interface.

Lenovo Vantage

PCs are complex computing devices composed of numerous components, which can be categorized into power, display, sound, input, network, and other devices. Typically, these devices operate as intended without user intervention. However, there are times when you may want to adjust their settings to enable specific functions or enhance your experience for particular use cases.

The settings for these devices can be accessed through the operating system's settings utility. Lenovo also offers an app called Lenovo Vantage, which provides comprehensive, centralized, and more advanced control over the devices included in the PC. Additionally, it features combined, pre-defined settings for common usage scenarios in the form of modes. Instead of adjusting multiple individual settings, you can simply select or switch a mode, making PC usage much easier.

Lenovo Vantage is typically pre-installed on Lenovo PCs that come with a Windows operating system. You can open the application from the Windows Start menu by locating it in the app list or by searching for its name. If Lenovo Vantage is not pre-installed or if you need to install it after reinstalling Windows, you can download it from the Microsoft Store.

Frequently used settings within Lenovo Vantage

The following table highlights settings within Lenovo Vantage that you may want to enable or adjust to enhance your PC experience for specific use cases or to better suit your preferences.

Table 14: Frequently used settings within Lenovo Vantage

Settings	Section within Lenovo Vantage	Description	Benefits
Power modes	Power	A list of power-related modes for selection. **Note:** The keyboard shortcut fn + Q can be used to cycle through the available power modes.	Provides a quick and easy way for users to balance performance and power consumption on their PC or to allow the PC to automatically make this decision based on usage scenarios.
Flip to start	Power	A toggle switch. When enabled, the PC can be turned on by flipping open the display.	Provides an easy and alternative way to turn on the PC.
Conser-vation mode	Power	A toggle switch. When enabled, the battery stops charging once it reaches 80% of its full capacity.	It is beneficial for the battery's lifespan, especially if your PC is constantly connected to a power source.
Overni-ght battery charging	Power	A toggle button designed for users who typically charge their PCs overnight. Enabling this feature ensures the battery is fully charged by morning while minimizing the time the battery remains at full charge.	It is beneficial for the battery's lifesp-an.
Eye care mode	Display	A toggle switch and an adjustment control for color temperature.	Reduces the chances of developing eye strain or fatigue.
Color manage-ment	Display	A list of popular color spaces for selection.	Provides a quick and easy method for switching between popular color spaces.
OLED power	Display	Timer settings to dim the entire OLED screen or specific sections of it.	Reduces power consumption and is beneficial for the lifespan of the OLED display.
Dolby Atmos®	Sound	Lenovo has partnered with Dolby® to design and fine-tune the built-in speakers of its PCs, delivering	Provides a quick and easy way to apply settings that deliver a profes-

Settings	Section within Lenovo Vantage	Description	Benefits
		a spatial and immersive audio experience. A variety of audio profiles are available, each optimized for common use cases. Users can manually select a profile or allow the PC to automatically switch profiles based on the active application.	sionally tuned, spatial, and immersive audio experience.
Smart noise cancelling	Sound	For the microphone, you can choose from several options that allow it to suppress or filter out non-voice sounds. You can even configure the microphone to pick up only your voice, filtering out other voices and ambient noise. A toggle switch for speakers is available to enable voice-only audio output.	Enhances sound quality for recordings and teleconferences, especially in noisy environments.

Smart Connect

In addition to PCs, many people today own other smart devices, such as smartphones and tablets, which they use daily. There is a growing demand for sharing files and pictures between these devices. Lenovo offers Smart Connect to enable fast, secure, and easy sharing between devices. Additionally, when connected through Smart Connect, you can check your phone's messages, view notifications, and even open its apps directly on your PC.

To connect through Smart Connect, the application must be installed on all devices. Smart Connect is typically pre-installed on Lenovo PCs that come with a Windows operating system. You can open the application from the Windows Start menu by locating it in the app list or by searching for its name.

To download Smart Connect on your phone or tablet, open Smart Connect on your PC, select **Add a device**, then select **Download Smart Connect** to display the QR code for the download link. Use your phone or tablet to scan the QR code to download the app.

Lenovo Smart Meeting

Lenovo Smart Meeting is a video conferencing app with multiple features for enhancing your professional image and protecting your privacy.

If you want your settings in this app to also take effect on other mainstream video conferencing apps, such as Microsoft Teams and Zoom, ensure that you select Lenovo Virtual Camera in the app.

Access the app

If your computer is pre-installed with Lenovo Smart Meeting, type **Lenovo Smart Meeting** in the Windows search box and then press Enter to open this app.

Explore key features

- **Video enhancer**: Adjust the brightness automatically for better image quality during the video call.



- **Customized background**: Customize your background during the video call to protect your privacy.



- **Temporary Avatar**: Create and display a temporary portrait of you as if you were still in the video conference when you are temporarily away.



Note:

- Lenovo Smart Meeting may not be available on all product models.
- Lenovo does not collect any personal data from this app.
- The available features vary depending on the computer model.
- Lenovo Smart Meeting makes periodic feature updates to keep improving your experience. The description described here might be different from that on your actual user interface.

Maximize your productivity

With auto-tracking, auto lid control, and voice commands, you can work more efficiently and hands-free.

Auto-tracking

Auto-tracking enables the screen to follow the movement of your face or the direction of your voice, which is particularly helpful during public speaking.

Enable the auto-tracking feature by clicking **Start tracking** in the Plus Center app or by pressing the key on the first row of your keyboard. After auto-tracking is enabled, you can select a tracking mode.

Table 15: Auto-tracking mode and description

Tracking mode	Description
Face Tracking	• Single user: Automatically tracks the movement of your face. • Multiple users: Automatically tracks the person closest to the camera. You can tap another face on the screen to switch the tracking target.
Facial Recognition Tracking	Identifies and tracks the default user based on Face ID. **Note:** This feature requires Face ID. To add a Face ID profile, select and follow the on-screen instructions.
Voice Tracking	Automatically tracks nearby voices.

Note:

- Make sure the camera is enabled and camera access is allowed before using Face Tracking or Facial Recognition Tracking.
- Make sure the microphone is not muted and microphone access is allowed before using Voice Tracking.
- For optimal user experience while using Voice Tracking, we recommend opening the lid to an angle between 90 and 120 degrees.

Screen rotation angle

Whether the screen rotates automatically through auto-tracking or is manually twisted by you, the rotation angle must not exceed 180 degrees to the left or 90 degrees to the right.



Auto lid control

Your PC supports multiple intelligent lid control options for added convenience and security.

To enable these auto lid control modes, open the Plus Center app and go to **Settings** > **Rotation Settings** > **Lid control**.

Auto lid opening

Check **Press Power Button to Open Lid** to enable an effective method of auto lid opening.

When your PC is closed, pressing the power button automatically opens the screen to a 110-degree angle—the optimal viewing position. This allows you to start working right away without opening the lid manually.

Auto lid closing

Check **Close lid when user leaves** or **Auto-close lid on hibernation and shutdown** to enable one of the effective methods of auto lid closing.

- Close lid when user leaves

  When Facial Recognition Tracking is enabled and you step away from your PC, the screen automatically lowers to a safe standby angle of 30 degrees. This helps protect your privacy and allows you to resume work quickly when you return.
- Auto-close lid on hibernation and shutdown

  When your PC enters hibernation mode or shuts down, the screen automatically closes completely. This helps protect your screen from dust and dirt.

Voice commands

Voice commands allow you to interact with your PC by voice, reducing the need for manual operations. After enabling this feature in the Plus Center app, you can say “Hi Tiko” and then give the desired voice command.

The following table lists commonly used voice commands and the corresponding screen actions.

Table 16: Voice command and screen action

Voice command	Screen action
open lid	Opens the screen to a 110-degree angle.
close lid	Closes the screen completely.
turn left	Turns the screen to the left.
turn right	Turns the screen to the right.
face to me*	Enables the auto-tracking feature.
auto track off*	Disables the auto-tracking feature.
laptop mode	Switches to laptop mode.
tablet mode	Switches to tablet mode.
share mode*	Switches to share mode.

Note:

- Except for the “face to me” command, executing any other voice command disables auto-tracking.

- To adjust the rotation angle for the “turn left” and “turn right” voice commands, go to **Plus Center** > **Settings** > **Rotation Settings**.
- The “turn left” and “turn right” voice commands are not available in tablet mode.
- Voice commands marked with an asterisk (*) are available only when your PC is powered on and in use. Other commands are available regardless of your PC's status after you check **Voice control during hibernation and shutdown** in **Plus Center** > **Settings** > **Rotation Settings**.
- For the best experience, please unlock your PC before using voice commands if you have a lock screen password enabled.

Device modes

Your PC supports multiple device modes for different usage scenarios.

Device mode	Usage scenario
Laptop mode 	• Entering text • Giving presentations
Tablet mode 	• Playing touch-enabled games • Drawing and photo editing
Share mode 	Sharing your screen with others

Secure data erasure

It is advisable to reuse or recycle your PC when it is no longer needed. Options include selling, donating, or using a reputable recycling service. Properly reusing and recycling your PC can help minimize its environmental impact.

When reusing or recycling a PC, data security is a major concern due to the potential storage of personal and sensitive information. Before selling, donating, or recycling your Lenovo PC, it is essential to erase all personal data from its storage device to safeguard your privacy and prevent data breaches. Lenovo offers free data erasure tools on your PC, or you can choose third-party tools based on your specific needs.

Data erasure tools available on your PC

Two free data erasure tools are available on your PC. The reset function in Windows allows you to erase the storage device and reinstall the operating system simultaneously, eliminating the need for the next user to install a new operating system. However, the clean data option in Windows Reset does not adhere to widely recognized data erasure standards. If your organization mandates a specific data erasure standard, you may want to consider using ThinkShield Secure Wipe.

ThinkShield Secure Wipe is initiated within the firmware setup utility. It can erase both built-in and external storage devices and supports widely recognized data erasure standards. Unless you have specifically selected only data partitions for erasure, the boot and system partitions will be overwritten, rendering the device unbootable after the data erasure process. The new owner of this PC will need to install an operating system. The data erasure function provided by ThinkShield Secure Wipe complies with the “clean” method of data sanitization as defined by *IEEE Standard for Sanitizing Storage* .

Table 17: Available data erasure options

Data erasure options	Where to start the utility	Provider	Reinstall Windows	Support data erasure standards	Erase external storage devices
Windows Reset	Windows Settings or the Windows recovery environment	Microsoft	Yes	No	No
ThinkShield Secure Wipe	The Setup Utility of the PC's firmware	Lenovo	No	Yes	Yes

Use the Windows reset feature to erase user data

Before selling or donating a PC, you can use the reset feature in Windows to erase user data.

1. In Windows 11, select **Start** > **Settings** > **System** > **Recovery**.
2. Under **Recovery options**, select **Reset PC**.
3. On the **Choose an option** page, select **Remove everything**.
4. On the **Additional settings** page, select **Change settings**.
5. Click the toggle button for **Clean data** to activate it, select **Confirm**, and then select **Next**.

> **Note:**
>
> If users do not activate the clean data option, personal files are only deleted and can be recovered using data recovery tools. Activating clean data enables the utility to perform data erasure on the storage device, significantly reducing the chances of data recovery by others.

6. On the **Ready to reset this PC** page, select **Reset**.

> **Important:**
>
> Make sure to back up all personal files that you want to keep to an external storage device before selecting **Reset**. This is your last chance to cancel the reset process.

After selecting **Reset**, the utility will reinstall Windows and erase data on the storage device. This process may take several hours to complete. Ensure your PC is plugged in during this process.

Use ThinkShield Secure Wipe to erase the built-in storage device

Supervisor password must be set for the firmware setup utility prior to using ThinkShield Secure Wipe.

Some Lenovo PCs include a utility called ThinkShield Secure Wipe. Before selling or donating a Lenovo PC, you can use this software utility to overwrite or block erase the PC's built-in storage device.

1. Disconnect all external storage devices from your PC.
2. Open the PC's firmware setup utility.
3. On the start page, select **Security** > **ThinkShield Secure Wipe** and press Enter.

   ThinkShield Secure Wipe will start.

   > **Note:**
   >
   > If supervisor password is not set, you must set it, save changes and exit the setup utility, and then repeat the above steps.

4. Make sure the storage device displayed is correct and select **Next**.
5. Choose options to erase the entire device or selected partitions of the device.
6. Choose a data erasure standards from the list of available standards according to your needs or your organization's requirements, and then select **Next**.
7. On the final confirmation page, select **Yes**.

   > **Important:**
   >
   > Make sure to back up all personal files that you want to keep to an external storage device before selecting **Yes**. This is your last chance to cancel the device erasure process.

After selecting **Yes**, the utility will either overwrite or perform a block erase on the built-in storage device using the data erasure standards you have selected. Unless you have only selected data partitions for erasure, the boot and system partitions will also be overwritten, rendering the device unbootable. The new owner of this PC will need to install a new operating system.

> **Note:**
>
> This process may take several hours to complete and the time needed varies greatly based on the selected data erasure standards. Ensure your PC is plugged in during this process.

Data erasure standards supported by ThinkShield Secure Wipe

Data erasure standards are established by military organizations, government agencies, and private institutions to ensure quality and consistency in data sanitization. These standards primarily differ in the number of overwrite or erase stages and the bit patterns used to overwrite or block erase the addressable storage space. The following table lists the data erasure standards supported by ThinkShield Secure Wipe.

Table 18: Data erasure standards supported by ThinkShield Secure Wipe

Standard	Number of overwrite stages	Verification
Single pass zeros	1	No

Standard	Number of overwrite stages	Verification
DoD 5220.22-M	3	Yes
US Navy and Airforce	3	Yes
CSE Canada ITSG-06	3	No
British HMG Infosec Standard 5	3	Yes
German VSITR	7	No
Russian GOST P50739-95 Level 1	1	No
Russian GOST P50739-95 Level 4	4	No
RCMP TSSIT OPS-II	7	Yes

Chapter 3 Firmware setup

When you power on your PC, a series of instructions are executed to initialize devices, identify a boot device, and locate a program called the bootloader. The bootloader then searches for the operating system installed on your PC and transfers control to it. Once the operating system has started, your PC is ready for use.

These instructions are stored on a flash memory chip located on the PC's system board. The flash memory chip and the instructions it contains are collectively referred to as the PC's firmware.

Generally, firmware code executes automatically without user intervention. However, some configurations remain firmware-related, such as setting a password for the PC’s mass storage device or enabling a specific feature of an integrated device. When users need to perform these operations, they can do so through an interface called the firmware setup utility.

Firmware setup utility

Lenovo PCs typically include a setup utility in the firmware that allows you to:

- View information about your PC and its devices
- Change device settings
- Change the order of boot devices
- Set passwords for the firmware and the mass storage device

> **Note:**
>
> You should rarely need to use the setup utility for your daily PC usage. To view device information, you can use the utilities provided by the operating system or applications provided by Lenovo (Lenovo Vantage). You can use the Novo button menu to temporarily change the order of boot devices.

There are several ways to open the setup utility:

- Utilize the Advanced startup feature of the Windows operating system
- Use the Novo button menu
- Start or restart your PC and press an interrupt key (F1)

Change settings in firmware setup utility

This section introduces what firmware is and the operations you can perform in its setup utility.

Open the firmware setup utility

1. Turn on or restart the computer.
2. When the Lenovo logo appears on the screen, press F1 repeatedly.

Select boot devices

Normally, the computer starts with a boot manager loaded from the secondary storage device of the computer. Occasionally, you may need to start the computer with a program or boot manager loaded from another device or a network location. After the system firmware initializes all devices, you can press an interruption key to display the boot menu and select a desired boot device.

1. Turn on or restart the computer.
2. Press F12.
3. From the boot device menu, select a boot device to start the computer.

You can make a permanent change on boot devices in the firmware setup utility. Select the **Boot menu**; in the **EFI** section, select the desired boot device and move it to the top of the device list. Save changes and exit the setup utility for the change to take effect.

Enable or disable F1-F12 as primary function

1. Open the firmware setup utility.
2. Select **Config** > **Keyboard** > **F1-F12 as Primary Function** and press Enter.
3. Change the setting to **Disabled** or **Enabled**.
4. Select **Restart** > **Exit Saving Changes**.

Enable or disable always-on

For some Lenovo computers with always-on connectors, the always-on function can be enabled or disabled in the UEFI/BIOS setup utility.

1. Open the firmware setup utility.
2. Select **Config** > **USB** > **Always On USB** and press Enter.
3. Change the setting to **Disabled** or **Enabled**.
4. Select **Restart** > **Exit Saving Changes**.

Set passwords in the firmware setup utility

You can set passwords in the firmware setup utility to secure access to the utility program or the mass storage device.

Password types

You can set various types of passwords in the UEFI/BIOS setup utility.

Password type	Pre-requisite	Usage
Supervisor password	No	You must enter it to start the setup utility.
User password	The supervisor password must be set.	You can use the user password to start the setup utility.
Master hard disk password	No	You must enter it to start the operating system.
User hard disk password	The master hard disk password must be set.	You can use the user hard disk password to start the operating system.

Note:

- All passwords set in the setup utility consist of alphanumeric characters only.
- If you start the setup utility using the user password, you can only change a few settings.

Set supervisor password

You set the supervisor password to prevent unauthorized access to the firmware setup utility.

> **Attention:**
>
> If you forget the supervisor password, a Lenovo authorized service personnel cannot reset your password. You must take your computer to a Lenovo authorized service personnel to have the system board replaced. Proof of purchase is required and a fee will be charged for parts and service.

1. Open the UEFI/BIOS setup utility.
2. Select **Security** > **Password** > **Set Supervisor Password** and press Enter.
3. Enter a password string that contains only letters and numbers and then press Enter.
4. Enter the password again and press Enter.
5. Select **Restart** > **Exit Saving Changes**.

Next time you start the computer, you must enter the Supervisor Password to open the setup utility. If **Power on Password** is enabled, you must enter the Supervisor Password or the user password to start the computer.

Change or remove supervisor password

Only the administrator can change or remove the supervisor password.

1. Open the UEFI/BIOS setup utility using the supervisor password.
2. Select **Security** > **Password** > **Set Supervisor Password** and press Enter.
3. Enter the current password.
4. In the **Enter New Password** text box, enter the new password.
5. In the **Confirm New Password** text box, enter the new password again.

> **Note:**
>
> If you want to remove the password, press Enter in both text boxes without entering any character.

6. Select **Restart** > **Exit Saving Changes**.

If you remove the supervisor password, the user password is also removed.

Set user password

You must set the supervisor password before you can set the user password.

The administrator of the setup utility might need to set a user password for use by others.

1. Open the UEFI/BIOS setup utility using the supervisor password.
2. Select **Security** > **Password** > **Set User Password** and press Enter.
3. Enter a password string that contains only letters and numbers and then press Enter.
   The user password must be different from the supervisor password.
4. Enter the password again and press Enter.
5. Select **Restart** > **Exit Saving Changes**.

Enable power-on password

If the supervisor password has been set, you can enable the power-on password to enforce greater security.

1. Open the UEFI/BIOS setup utility.
2. Select **Security** > **Password** > **Power on Password** and press Enter.

> **Note:**
>
> The supervisor password must be set in advance.

3. Change the setting to **Enabled**.
4. Select **Restart** > **Exit Saving Changes**.

If the power-on password is enabled, a prompt appears on the screen every time you turn on the computer. You must enter the administrator or user password to start the computer.

Set hard disk password

You can set a hard disk password in the setup utility to prevent unauthorized access to your data.

> **Attention:**
>
> Be extremely careful when setting a hard disk password. If you forget the hard disk password, a Lenovo authorized service personnel cannot reset your password or recover data from the hard disk. You must take your computer to a Lenovo authorized service personnel to have the hard disk drive replaced. Proof of purchase is required and a fee will be charged for parts and service.

1. Open the UEFI/BIOS setup utility using the supervisor password.
2. Select **Security** > **Password** > **Set Hard Disk Password** and press Enter.

> **Note:**
>
> If you start the setup utility using the user password, you cannot set the hard disk password.

3. Follow on-screen instructions to set both master and user hard disk passwords.

> **Note:**
>
> The master and user hard disk passwords must be set at the same time.

4. Select **Restart** > **Exit Saving Changes**.

If the hard disk password is set, you must provide the correct password to start the operating system.

Change or remove hard disk password

1. Open the UEFI/BIOS setup utility.
2. Select **Security** > **Password**.
3. Change or remove the hard disk password.
   - To change or remove the master password, select **Change Master Password** and press Enter.

     > **Note:**
     >
     > If you remove the master hard disk password, the user hard disk password is also removed.

   - To change the user hard disk password, select **Change User Password** and press Enter.

> **Note:**
>
> The user hard disk password cannot be removed separately.

4. Select **Restart** > **Exit Saving Changes**.

Set strong password

You can set a strong password to strengthen the password security.

1. Open the firmware setup utility.
2. Select **Security** > **Password** > **Set Strong Password** and press Enter.
3. Change the setting to **Disable** or **Enabled**.
4. Select **Restart** > **Exit Saving Changes**.

If the strong password is enabled, supervisor password, user password, and hard disk password lengths must range between eight and 128 characters. Each password must include at least one uppercase character, one lowercase character, and one number.

Chapter 4 PC and accessibility

PCs are powerful general-purpose computing devices that many individuals rely on for accessing information, connecting with friends, pursuing education, conducting research, and completing work tasks. This reliance extends to individuals with vision, hearing, cognitive, or mobility impairments, as well as to those whose abilities may decline due to illness or aging.

This chapter explores the accessibility features available on your Lenovo PC, including both hardware components and those offered by the pre-installed operating system. By gaining a comprehensive understanding of the available accessibility features and how to activate and configure them, you can enhance your PC's usability for individuals with disabilities.

Accessibility features of the PC hardware

Lenovo PCs are designed with accessibility in mind. Throughout the design process, special considerations are prioritized for individuals with disabilities and best industry practices are implemented in hardware design.

USB connectors for connecting assistive technology devices

Several types of assistive technology devices are available on the market that can be connected to a PC to enhance its accessibility. For example, a refreshable braille display is an assistive technology device that enables individuals who are both deaf and blind to use a PC. When connected to a PC, a refreshable braille display can work in conjunction with a compatible screen reader to provide tactile output in braille characters. Blind individuals who have been trained to read braille can run their fingers over the display to comprehend the information presented on the PC.

Many assistive technology devices utilize USB technology for connectivity. Most Lenovo PCs are equipped with at least one USB connector that adheres to the relevant USB specifications and is backward compatible. A Lenovo PC may feature a USB Standard-A connector, a USB Type-C connector, or both. If the plug type of the assistive technology device does not match the USB connector on your PC, you can easily purchase and use a USB adapter to resolve the issue.

Keyboard accessibility

The keyboard serves as the primary input device for many PC users. Lenovo keyboards, whether integrated or supplied separately with the PC, are designed and manufactured with accessibility in mind. This section highlights the accessibility features of Lenovo keyboards that benefit all users, including those with disabilities.

keyboard layout

The alphabetic keys on a Lenovo keyboard are arranged in a QWERTY layout, which is standard for input devices featuring alphabetic keys. The F and J keys have bumps that make them tactilely distinguishable from other keys. This feature serves as an orientation aid for skilled typists, allowing them to rest their index fingers without looking at the keys. Some Lenovo keyboards include a separate numeric keypad. The numeric keys are organized in four rows and three columns, arranging in ascending order from left to right and bottom to top. Additionally, the 5 key features a bump to make it tactilely distinguishable.

Standard modifier keys

Lenovo keyboards are equipped with standard modifier keys for PCs, including:

- the alt key

the ctrl key
the shift key
the Windows logo key

These keys are extensively used as the modifier key for shortcuts by the operating system and other applications.

The tab key

The tab key is located in the leftmost column of the keyboard. For operating systems, applications, and web documents that are designed with accessibility in mind, users can press the tab key and alt + tab (in reverse order) to cycle through the interactive elements.

Hotkeys

Many Lenovo keyboards feature hotkeys in the top row, offering convenient access to frequently used settings.

The fn key and the fnlock

The fn key is a Lenovo-defined modifier key. It can be used with the top-row dual-function keys to switch their functionalities. It can also be used with several other keys to access Lenovo defined settings.

The fnlock is a switch that can be turned on and off by pressing fn + esc. Instead of holding down the fn key to switch the functionality of dual-functionkeys, you can turn on fnlock. This feature allows users to access both hotkey and function key functionalities without the need to press two keys simultaneously.

Keyboard backlight

Many Lenovo keyboards are equipped with backlights to help you use the keyboard in dark lighting conditions. The backlights can be controlled by pressing fn + Space.

Biometric devices

Some Lenovo PCs are equipped with biometric devices that facilitate easy and secure identity authentication. If your PC includes an IR LED and an IR camera, you can enable facial recognition in Windows 11. Additionally, you can use your fingerprint for authentication on PCs with a fingerprint reader. Biometric identity authentication can be particularly beneficial for users who find it difficult typing passwords.

Note:

When biometric devices are used for device authentication, they are not the only available method for this purpose. If biometric authentication fails, you can use a password or PIN to sign in to Windows.

Accessibility features of Windows 11

An operating system is a crucial piece of software installed on a PC. It plays a vital role in the PC's basic functionality by providing a user interface, various tools for system management, and a foundation upon which additional specialized applications can be installed.

Microsoft's Windows 11 is a modern operating system that comes preinstalled on many Lenovo PCs. It offers a rich set of accessibility features designed for individuals with diverse disabilities. This

section outlines the accessibility features available in Windows 11, explains how to activate them, and discusses the benefits they provide.

Configuring accessibility features in the Settings app

Windows 11 provides a centralized location within the Settings app for activating and configuring all accessibility features. You can access this section by selecting **Start** > **Settings** > **Accessibility**. Additionally, the keyboard shortcut Windows logo key + U provides quick access to this interface.

Narrator

Narrator is Windows 11's built-in screen-reading application. It can read screen content aloud to users and also accept input from the keyboard, enabling individuals with visual impairments to navigate effectively within Windows 11, use applications, and browse the web.

Start and stop Narrator

You can start and stop Narrator by selecting the toggle button for Narrator in the centralized Accessibility section of the Settings app. Additionally, the keyboard shortcut Windows logo key + ctrl + enter provides quick access to both the start and stop functions.

Customize Narrator

Narrator offers a variety of controls that allow you to customize it to suit your preferences. For example, you can install additional text-to-speech voices and select your preferred voice for Narrator. You also have the option to adjust the verbosity level to choose the type of content to be read. All Narrator settings are conveniently located in the centralized Accessibility section of the Settings app. Additionally, the keyboard shortcut Windows logo key + ctrl + N offers quick access to these settings.

Adjusting text sizes, applying a high-contrast theme, and using Magnifier

For individuals who find it difficult to see text clearly on the screen, Windows offers the options of adjusting text sizes, applying a high-contrast theme, and using Magnifier.

Adjust text sizes

If you find the text on the screen is too small to read, you can scale up the size of text displayed by Windows and other applications.

1. Select **Start** > **Settings** > **Accessibility** > **Text size**.
2. Use the slider and the preview pane to select a size that fits your need and then select **Apply**.

Apply a high-contrast theme

For individuals with low vision, Windows 11 offers contrast themes that enhance text readability by using a background color that sharply contrasts with the text.

1. Select **Start** > **Settings** > **Accessibility** > **Contrast themes**.
2. In the dropdown list for **Contrast themes**, select one option and then select **Apply**.

To exit a contrast theme, select **None** from the dropdown list. The keyboard shortcut for turning on and off contrast theme is left alt + left shift + prt sc.

Enable Magnifier

You can enable Windows 11 Magnifier to enlarge specific areas or the entire screen, making text and images easier to see.

1. Select **Start** > **Settings** > **Accessibility** > **Magnifier**.
2. Select the toggle to enable or disable Magnifier.

The keyboard shortcuts for enabling and disabling Magnifier are Windows logo key + Plus sign (+) and Windows logo key + esc, respectively. When Magnifier is enabled, you can use Windows logo key + plus sign (+) and minus sign (-) to zoom in and zoom out.

Sticky Keys

Microsoft Windows offers numerous keyboard shortcuts that require users to hold down a modifier key (such as shift, ctrl, alt, or the Windows logo key) before pressing one or more additional keys. While these shortcuts provide significant convenience for many users, they can pose accessibility challenges for individuals who have difficulty holding down multiple keys at the same time.

Sticky Keys is an accessibility feature in Windows that, when enabled, allows users to press keys in sequence to activate shortcut functions. For example, instead of holding down the ctrl key and the C key simultaneously, users can press each key individually to copy text to the clipboard.

To enable Sticky Keys, press the shift key five times in quick succession. When the confirmation dialog box appears, select **Yes** to disable Sticky Keys, press the shift key five times again and choose **No** when prompted.

Accessible user documentation

Documentation containing instructions for the use of the product, including its accessibility features, is available in accessible formats (such as HTML and PDF) on the Lenovo Support Website. When creating documentation, a series of industry standards and best practices are followed to ensure that the content is useful to as broad an audience as possible. Additionally, automated testing tools are employed to identify issues that may hinder the accessibility of information. These issues are addressed to the extent permitted by commonly available technologies.

Accessibility features of user documentation

By adhering to industry standards and best practices, Lenovo documentation offers numerous features that facilitate the perception and understanding of the content. Additionally, several of these features are specifically designed to ensure that users of assistive technology devices can access information comparable to that available to those who do not rely on such devices.

Perceivable content

Text content is presented using popular and easy-to-read fonts. Text colors are in high contrast with the background. Non-text elements, such as graphics and videos that convey important information, are accompanied by alternative text descriptions. Users with visual impairments can utilize screen readers to access information comparable to that available to sighted users.

Understandable content

The documentation is presented visually in a well-structured and simple layout. It also includes hidden tags or other markup information that store the content's structure, which can be utilized programmatically by assistive technologies to convey this structure to users.

Operable content

Documentation includes industry-standard tags for sectioning and interactive elements, such as titles, headings, various structural components, links, buttons, and input fields. Screen reader users can utilize standard modifier keys on the keyboard to effectively navigate and interact with the documentation.

Testing documentation accessibility

Before being officially released, Lenovo documentation undergoes testing with automated tools to evaluate its accessibility. HTML documents are assessed for compliance with the success criteria outlined in the *Web Content Accessibility Guidelines* (WCAG), a widely accepted set of standards designed to enhance web document accessibility. PDF documents are evaluated for accessibility using the accessibility checker in Adobe Acrobat for the same purpose. Automated testing tools help identify elements within a document that may present challenges when rendered by screen readers and other assistive technology devices. Accessibility issues identified by these automated tools are subsequently analyzed manually and corrected as needed.

Chapter 5 Warranty, help, and support

Given the complexity and open nature of PCs, it is not uncommon to encounter issues during daily use. Lenovo PCs come with a limited warranty. During the warranty period, if you experience problems caused by defects in workmanship, you may contact Lenovo for warranty service.

Most other issues are often related to software settings that prevent the PC from functioning as expected. This chapter provides information about warranty service, as well as help and support resources you can use to resolve issues yourself or receive assistance from Lenovo, the operating system manufacturer, or other users like you.

Lenovo Limited Warranty

Lenovo PC products come with a limited warranty. The general terms and conditions, along with country- or region-specific warranty provisions, are detailed in the Lenovo Limited Warranty document. If you experience issues during the warranty period due to defects in materials or workmanship, you can contact Lenovo to receive warranty service, which is available through one of the following service types.

- Customer Replaceable Unit (CRU) Service
- On-site Service
- Courior or Depot Service
- Customer Carry-in Service
- Mail-in Service
- Customer Two-Way Mail-in Service

Note:

Not all service types are available for every PC model and availability varies by geographic location.

Customer Replaceable Unit Service

Customer Replaceable Unit Service is a type of warranty service offered by Lenovo. One or more components of a Lenovo PC may be designated by Lenovo as Customer Replaceable Units (CRUs) based on their ease of replacement. During the warranty period, if a part designated by Lenovo as a Customer Replaceable Unit becomes defective, and if this service is available for your model and geographic location, the warranty service may be performed using this service type.

If you intend to install a CRU, Lenovo will ship the CRU to you. 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 document.

A Lenovo computer may contain the following types of CRUs:

CRU type	Description
Self-service CRU	Parts that can be installed or replaced easily by customer themselves or by trained service technicians at an additional cost.

CRU type	Description
Optional-service CRU	Parts that can be installed or replaced by customers with a greater skill level. Trained service technicians can also provide service to install or replace the parts under the type of warranty designated for the customer's machine.

CRUs for your product model

The table below lists the CRUs and CRU types that are defined for your product model.

Note:

Laws and regulations in certain countries or regions are enacted to protect customers' rights to independently service a product both during and after the warranty period. The designation of CRUs for your product model is intended solely for performing warranty service and does not affect customers' statutory rights. Parts not classified as CRUs are not eligible for CRU service but may still be replaceable by customers in accordance with applicable laws and regulations.

Part	Self-service CRU	Optional-service CRU
Power cord*	X	
ac power adapter*	X	

*for selected models

Note:

- CRU replacement instruction is provided in one or more of the following publications and are available from Lenovo at any time upon your request.

  the product *User Guide*
  the printed publications that came with the product
- Replacement of any parts not listed above, including the built-in rechargeable battery, 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.

Lenovo Support Website

The Lenovo Support Website offers tools and resources that allow you to check your warranty status, purchase parts and services, and troubleshoot issues independently. It also provides links to access additional help and support from Lenovo.

To access tools and resources relevant to your PC product, select **PC** from the product categories on the support homepage. Then, navigate to your product model's support page by entering the product name, choosing from a list of models, or allowing the website to automatically detect your product.

Lenovo Support Community

The Lenovo Support Community is an online forum organized into a series of subcommunities dedicated to sub-brands and specific product categories. It enables customers to share knowledge and discuss issues they may be experiencing. Should you encounter an issue with your product, you can search for a solution or post a question in the Community. Using an AI translation solution, Lenovo Community content can be created and viewed in twenty-one different languages, with the number potentially increasing.

The Community homepage offers intuitive navigation. You can select the product group, then narrow down to the subcategory and product name that matches your device. Viewing and searching content does not require an account. A one-time guest post is possible without registration; however, creating a Community account with your Lenovo ID provides full access and a better experience. Before posting, we recommend reviewing the Community Guidelines, which explain how to search, post, and maintain respectful interactions.

Note:

Please note that while Lenovo representatives may participate in discussions by responding to questions, the Community is primarily a peer to peer Community and not an official support channel. Most solutions are provided by users from around the world. As products and services vary across countries and regions, we advise that customers approach solutions shared on the forum with caution, carefully evaluating and validating them for their product and symptoms.

Support from the operating system manufacturer

Practically speaking, you cannot use a PC without its operating system. The operating system's manufacturer provides the official and usually the most comprehensive information about it.

Windows 11 is an operating system developed by Microsoft®. If you encounter any issues or would like to learn more about Windows 11, you can visit the official Microsoft support website for Windows.

Frequently asked questions

What should I do if my PC won’t start

Try any of the following solutions to resolve the issue.

- Disconnect all external devices, including the USB drive, portable hard disk, printer, docking station, and even the mouse and keyboard, because a malfunctioning external device may prevent the PC from starting up.
- Change a compliant power adapter to connect your PC to a working electrical outlet.
- Use the Windows startup repair tool if you can still see the Windows logo.

  1. Start your PC and wait for the Windows logo (or other logos) to appear.
  2. As soon as the logo appears, press and hold the power button until the PC shuts down.
  3. Turn your PC on again and repeat the previous step.
  4. Turn your PC on again. Windows should display the **Automatic Repair** screen.
  5. Select **Advanced options** > **Startup Repair**.
- Use a restore point recorded on your PC or use a recovery drive to restore Windows.

What should I do if my PC gets stuck in sleep or hibernate mode

Try any of the following solutions to resolve the issue.

- Reset your graphics driver by pressing Windows logo key + Ctrl + Shift + B.
- Restart your PC.

  1. Press and hold the power button until your PC shuts down completely.
  2. Wait about 15 seconds.
  3. Press the power button to start your PC.
- Identify the root cause of the problem after restarting your PC.
  - Allow your desired mouse to wake up your PC.

    1. Type **device manager** in the Windows search box and then press enter.
    2. Under **Mice and other pointing devices**, select your desired mouse.
    3. Under **Power Management**, check **Allow this device to wake the computer**.
    4. Select **OK**.
  - Disable fast startup because it may conflict with sleep or hibernate mode.

    1. Type **control panel** in the Windows search box and then press enter.
    2. Select **Hardware and Sound** > **Power Options** > **Choose what the power button does** > **Change settings that are currently unavailable**.
    3. Uncheck **Turn on fast startup (recommended)**.
    4. Select **Save changes**.
  - Disable wake timers because they may cause system instability or a black screen.

    1. Type **control panel** in the Windows search box and then press enter.
    2. Select **Hardware and Sound** > **Power Options** > **Change when the computer sleeps** > **Change advanced power settings**.
    3. Select **Sleep** > **Allow wake timers**.
    4. Next to **On battery** and **Plugged in**, disable wake timers.
    5. Select **Apply** > **OK**.

Why does my computer start automatically when I open the lid

Your computer may have Flip to Start enabled. Many Lenovo notebook computers include a sensor that can detect the angle at which the lid is opened. When you open the lid, the sensor can detect this behavior. If Flip to Start is enabled, the computer will respond by starting up automatically.

If you don’t like this feature, you can disable it. Flip to Start can be enabled or disabled in the setup utility program for the PC’s firmware or the Lenovo Vantage app.

What should I do if my PC is plugged in but not charging

Try any of the following solutions to resolve the issue.

- Make sure the power adapter is plugged in securely to both the wall outlet and your PC.
- Make sure the power adapter and the connector are not damaged. Plug the power adapter into a different wall outlet.
- Ensure that you use the power adapter with proper wattage. Low-wattage power adapters might cause a battery charging problem.
- Restart your PC.
- Roll back the battery driver.

  1. Type **device manager** in the Windows search box and then press enter.
  2. Under **Batteries**, select **Microsoft AC Adapter** or **Microsoft ACPI-Compliant Control Method Battery**.

3. Select the **Driver** tab and then select **Roll Back Driver**.
4. Select **Yes** to roll back your battery driver and restart your PC.

> **Note:**
>
> If the **Roll Back Driver** option is unavailable, Windows does not have a previous driver to roll back to. In this scenario, you can try updating or uninstalling the battery driver in the **Driver** tab.

- Check the battery charging mode in Lenovo Vantage. In certain modes, charging will stop when the battery reaches a specific threshold to extend battery life.
- Update the firmware setup utility in Lenovo Vantage.

What should I do if the battery drains fast

Try any of the following solutions to resolve the issue.

- Avoid your PC in high heat or freezing cold because extreme temperatures affect battery performance.
- Disconnect all unnecessary external devices.
- Restrict background activities of high-power-consuming apps.

  1. Select **Settings** > **System** > **Power & battery** > **Battery usage**.
  2. Under **Battery usage per app**, you can check the high-power-consuming apps. Then limit the background activity of a desired app by selecting **More options** ••• > **Manage background activity**.
  3. Under **Background app permissions**, select **Power optimized (recommended)** or **Never** to manage the background activity for the app.
- Disable all unnecessary startup apps.

  1. Select **Settings** > **Apps** > **Startup**.
  2. Disable all unnecessary startup apps.
- Adjust Power & battery settings.

  1. Select **Settings** > **System** > **Power & battery**.
  2. In **Screen, sleep and hibernate timeouts** > **On battery**, set the **Turn my screen off after** and **Make my device sleep after** timeouts shorter.
  3. In **Power Mode** > **On battery**, select **Best Power Efficiency**.
- Decrease the screen brightness using F5 (or fn + F5) or in **Settings** > **System** > **Display** > **Brightness**.
- Decrease or turn off the keyboard backlight using fn + Space or fn + down arrow key.

How to fix blue screen errors

1. Restart your PC.
2. Type **get help** in the Windows search box and then press enter.
3. In the search box of the Get Help app, type **troubleshoot BSOD error**.
4. Follow the guided walkthrough.

What should I do if my screen flickers

Try any of the following solutions to resolve the issue.

- Reset your graphics driver by pressing Windows logo key + Ctrl + Shift + B.
- Restart your PC.
- Check whether Task Manager flickers by pressing Ctrl + Alt + Delete or Ctrl + Shift + Esc.

- If Task Manager also flickers, roll back your display driver.

  1. Type **device manager** in the Windows search box and then press enter.
  2. Under **Display adapters**, select a display adapter.
  3. Select the **Driver** tab and then select **Roll Back Driver**.
  4. Select **Yes** to roll back your display driver and restart your PC.

  > **Note:**
  >
  > If the **Roll Back Driver** option is unavailable, Windows does not have a previous driver to roll back to. In this scenario, you can try updating or uninstalling your display driver in the **Driver** tab.

- If Task Manager does not flicker, update or uninstall incompatible apps that are probably causing the problem.

  1. Keep all apps updated from the Microsoft Store or the manufacturer's site.
  2. Check whether the screen flickers in a specific app. If yes, uninstall the app.

Why can’t I adjust the display brightness

If you are unable to adjust the display brightness, it may be due to adaptive brightness being enabled or an outdated display driver. You can try the following solutions to troubleshoot and fix the issue:

- Disable adaptive brightness:

  1. Go to **Start** > **Settings** > **System** > **Display**.
  2. Under **Brightness**, select the switch for **Change brightness automatically when lighting changes** to turn it off.
  3. Under **Brightness**, set the **Change brightness based on content** option to **Off**.

- Update the display driver:

  1. Type **Device Manager** in the Windows search box and then press enter.
  2. Select the arrow icon > next to **Display adapters** to expand the section.
  3. Right-click your display adapter, select **Update driver**, and follow the on-screen instructions.

What should I do if I spill liquid on the computer

1. Carefully unplug the ac power adapter and turn off the computer immediately. The more quickly you stop the current from passing through the computer the more likely you will reduce damage from short circuits.

   > **Attention:**
   >
   > Although you might lose some data or work by turning off the computer immediately, leaving the computer on might make your computer unusable.

2. Wait until you are certain that all the liquid is dry before turning on your computer.

   > **CAUTION:**
   >
   > **Do not try to drain out the liquid by turning over the computer. If your computer has keyboard drainage holes on the bottom, the liquid will be drained out through the holes.**

What should I do if my computer stops responding

Press and hold the power button until the computer turns off. Then restart the computer.

What should I do if my computer responds slowly

Try the following solutions to troubleshoot and fix the problem:

- Restart your computer.
- Delete temporary files and free up more drive space on your computer. For details, go to https://support.microsoft.com/disk_cleanup.
- Remove unnecessary programs from the startup programs:

  1. Open the **Start** menu, and then select **Settings** > **Apps** > **Startup**.
  2. In the **Startup** section, turn off the switch of programs that are not necessary to start automatically when you log in to Windows.
- Uninstall unnecessary or unused software.
- Scan for viruses and malware using the anti-virus software that is installed on your computer.
- Update the Windows operating system.

  Get the latest updates from the Windows Update. For details, go to https://support.microsoft.com/windows_update.
- Recover your Windows operating system.

  Depending on your specific situation, you can choose from different recovery options. For details, go to https://support.microsoft.com/windows_recovery.
- Repair missing or corrupted system files using the System File Checker tool. For details, go to https://support.microsoft.com/system_file_checker.

What should I do if my camera can't be launched or found

If your camera can't be launched or found, try the following solutions one by one to troubleshoot and fix the issue:

1. Ensure that your camera is not disconnected or covered:
   - If you are using an external camera, ensure that you have connected it to a working USB connector on your computer.
   - If you are using an integrated camera, slide the camera shutter or camera switch to the on position.
2. If you are using an integrated camera, it might be disabled. To enable your camera:
   a. Open the **Start** menu, and click **Settings** > **Bluetooth & devices** > **Camera**.
   b. Check if the camera is connected or disabled. If it is disabled, enable the camera.
3. The apps you are using might not have access to your camera. To authorize access to your camera:
   a. Open the **Start** menu, and select **Settings** > **Privacy & security** > **Camera**.
   b. Turn on **Camera access** switch and **Let apps access your camera** switch.
4. Your antivirus software settings might block access to your camera. Go to your antivirus software settings and unblock the access.
5. Your camera driver might be uninstalled or out-of-date. To update the camera driver:
   a. Type **device manager** in the Windows search box and then press Enter.
   b. Click **Device Manager** from the list of results. The Device Manager window opens.
   c. Click arrow icon > next to **Camera** to expand the section.
   d. Right-click the camera that you would like to update.
   e. Select **Update driver** and follow the on-screen instructions.
6. If your camera still does not work, run the automated camera troubleshooter in the Get Help app. To open the Get help app:
   a. Open the **Start** menu, and click **Settings** > **Privacy & security** > **Camera**.
   b. Scroll down to the bottom. Click **Get help** and follow the on-screen instructions.

What should I do if the audio does not work

If you encounter any audio problems, such as no audio or malfunctioning audio, try the following solutions to troubleshoot and fix the issue:

- Go to **Start** > **Settings** > **System** > **Sound** to verify that the sound output or input devices are selected correctly, and the volume is properly set.
- Run the audio troubleshooter:

  1. Go to **Start** > **Settings** > **System** > **Sound**.
  2. Under **Advanced**, find **Troubleshoot common sound problems**, select **Output devices** or **Input devices**, and follow the on-screen instructions to troubleshoot and fix the problem.

For more solutions to audio problems, go to https://support.lenovo.com/solutions/ht501860.

What should I do if my keyboard does not work

If your keyboard does not work or types wrong characters, try the following solutions to troubleshoot and fix the issue:

1. Ensure that the keyboard is well connected.
   - If you are using a wired keyboard, check if it is connected to your computer correctly or try to connect the keyboard to another compatible connector on your computer.
   - If you are using a wireless keyboard, ensure that your keyboard is powered on. Check if the dongle is connected to your computer correctly or the Bluetooth connection with your computer is established.
2. Ensure that the keyboard layout settings are correct. Take the following steps:
   a. Go to **Settings** > **Time & language** > **Language & region**.
   b. Under **Preferred languages**, click on the three horizontal dots next to your primary language preference and select **Language options**.
   c. Under **Installed keyboards**, check the keyboard layout and add the corresponding keyboard if you're not using the right one.
3. Ensure that the keyboard is in good status. Take the following steps:
   a. Type **device manager** in the Windows search box and then press Enter.
   b. Click **Device Manager** from the list of results. The Device Manager window opens.
   c. Click arrow icon > next to **Keyboard** to expand the section.
   d. Double-click the keyboard that is not working and check the status.
   e. If it is not working properly, select **Driver** from the tabs on the top and click **Uninstall device** to uninstall the device.
   f. Apply Windows Update to install the latest driver automatically.
4. Ensure that the sticky keys and filter keys are disabled. Take the following steps:
   a. Open the **Start** menu, and click **Settings** > **Accessibility** > **Keyboard**.
   b. Disable **Sticky keys** switch and **Filter keys** switch.
5. Restart your computer.

What should I do if my keyboard types wrong characters

- Ensure that the keyboard layout settings are correct. Take the following steps:

  1. Go to **Settings** > **Time & language** > **Language & region**.
  2. Under **Preferred languages**, select the three horizontal dots next to your primary language preference and select **Language options**.
  3. Under **Installed keyboards**, check the keyboard layout and add the corresponding keyboard if you're not using the right one.

- Sometimes the keyboard types wrong characters because you may have enabled the feature of auto-correcting misspelled words. Take the following steps to disable this feature:

  1. Go to **Settings** > **Time & language** > **Typing**.
  2. Select the switch for **Autocorrect misspelled words** to turn it off.
- Ensure that the keyboard driver is in good status. Take the following steps:

  1. Type **Device Manager** in the Windows search box and then press Enter.
  2. Select **Device Manager** from the list of results. The Device Manager window opens.
  3. Select arrow icon > next to **Keyboard** to expand the section.
  4. Double-click the keyboard that is not working and check the status.
  5. If it is not working properly, select **Driver** from the tabs on the top and select **Uninstall device** to uninstall the device.
  6. Apply Windows Update to install the latest driver automatically.

What should I do if my keyboard backlight does not work

If your keyboard backlight does not work, try the following solutions to troubleshoot and fix the issue:

1. Adjust the keyboard backlight by pressing the key combination fn + Space.
2. Open the firmware setup utility and press the key combination fn + Space to check if the keyboard backlight works. If the backlight works in the firmware setup utility, update the UEFI/BIOS to the latest version.
3. Update the keyboard driver:

   a. Type **Device Manager** in the Windows search box and then press Enter.
   b. Click the arrow icon next to **Keyboards** to expand the section.
   c. Right-click the keyboard you would like to update.
   d. Select **Update driver** and follow the on-screen instructions.

What should I do if my touchpad or trackpad does not respond

If your touchpad does not respond, it might be because you have disabled the touchpad or your touchpad driver is out-of-date or malfunctioning. To solve the problem, you can try the following solutions.

- Enable the touchpad:

  1. Go to **Start** > **Settings** > **Bluetooth & devices** > **Touchpad**.
  2. Turn on the **Touchpad** toggle.

  > **Note:**
  >
  > Alternatively, you can also press the touchpad hotkey or the key combination fn + M to enable or disable the touchpad.
- Update the touchpad driver:

  1. Type **Device Manager** in the Windows search box and then press enter.
  2. Select the arrow icon > next to **Human Interface Devices** to expand the section.
  3. Right-click the touchpad, select **Update driver**, and follow the on-screen instructions.
- If a touchpad problem occurs after a recent driver update, follow the instructions below to roll back to the previously installed driver:

  1. Type **Device Manager** in the Windows search box and then press enter.
  2. Select the arrow icon > next to **Human Interface Devices** to expand the section.
  3. Right-click the touchpad, and select **Properties**.
  4. Under **Driver**, select **Roll Back Driver** and follow the on-screen instructions.

What should I do if my touchpad or trackpad responds slowly

If your touchpad is not responding as quickly or accurately as you expect, you can try the following solutions.

- Ensure the touchpad surface is clean, dry, and free from dirt or oils. Gently clean it with a soft, lint-free cloth.
- Disconnect any external mouse, keyboard or other USB devices. A faulty peripheral can sometimes cause cursor lag.
- Go to **Start** > **Settings** > **Bluetooth & devices** > **Touchpad** and then adjust the cursor speed.
- Update the touchpad driver:

  1. Type **Device Manager** in the Windows search box and then press enter.
  2. Select the arrow icon > next to **Human Interface Devices** to expand the section.
  3. Right-click **HID-compliant touch pad**, select **Update driver**, and follow the on-screen instructions.

What should I do if my fan makes unusual noise

If your fan makes unusual noise, you can try the following solutions.

- Terminate power-consuming applications or processes that are not in use to reduce fan noise:

  1. Type **Task Manager** in the Windows search box and press enter.
  2. Terminate power-consuming applications or processes that are not in use.
- Adjust your computer operation mode in the pre-installed app Lenovo Vantage. As a shortcut, you can also use the key combination fn + Q.
- Update the operating system or device drivers to the latest version.

What should I do if I cannot connect to the network

If you're unable to access email, browse the web, or stream music, it's likely you're not connected to your network and can't access the internet. To solve the problem, you can try the following solutions.

- Check your network connection status:

  1. Select the quick setting area  on the right side of the side bar.
  2. Make sure that Wi-Fi is turned on.
  3. Check if your network name shows **Connected** below it. If it displays a status other than **Connected**, select a Wi-Fi network you recognize from the list of available networks. Then, click on the network and attempt to connect
- Check Airplane mode:

  1. Select **Start** > **Settings** > **Network & Internet** > **Airplane mode**.
  2. Ensure Airplane mode is turned off.
- Run automated diagnostics process:

  1. Right-click on the network icon  on the right side of the task bar
  2. Select **Diagnose network problems** and then follow the on-screen instructions.
- Forget and reconnect to the Wi-Fi network:

  1. Select **Start** > **Settings** > **Network & Internet** > **Wi-Fi** > **Manage known networks**.
  2. Select your Wi-Fi network and then select **Forget**
  3. Reconnect to the network by selecting it and entering the password.
- Restart your modem and wireless router.

What should I do if I cannot connect to Bluetooth

If you cannot connect to Bluetooth, try the following solutions one by one.

- Ensure Bluetooth is supported and enabled on both your computer and your Bluetooth device. To turn on Bluetooth on your computer, take the following steps:

  1. Select the quick settings area on the right side of the taskbar.
  2. In the Bluetooth quick setting, ensure that Bluetooth is turned on. If not, select the Bluetooth icon to turn it on.
- Restart your Bluetooth device.
- Ensure that your Bluetooth device is charged or has enough power.
- Ensure that your Bluetooth device is placed within the required Bluetooth connection distance range of your computer.
- Ensure that airplane mode is turned off on your computer. Take the following steps:

  1. Select the quick settings area on the right side of the taskbar.
  2. In the Airplane mode quick setting, ensure that Airplane mode is turned off. If not, select the Airplane mode icon to turn it off.
- Ensure that your Bluetooth device is not too close to other USB devices that are connected to your computer. Unshielded USB devices might interfere with Bluetooth connections.
- Remove your Bluetooth device, and then add it again:

  1. Select **Start** > **Settings** > **Bluetooth & devices** > **Devices**.
  2. Select **More options** of the Bluetooth device you are having the problem with.
  3. Select **Remove device** to remove the Bluetooth device.
  4. Select the quick settings area on the right side of the taskbar.

     Note:

     Ensure that the Bluetooth on both your computer and the Bluetooth device is turned on. Ensure that the device is discoverable.
  5. Select **Manage Bluetooth devices** (>) on the Bluetooth quick setting to expand the section.
  6. Select the device when it is displayed on the **New devices** list, and then follow the on-screen instructions.
- Run the Bluetooth troubleshooter:

  1. Select **Start** > **Settings** > **System** > **Troubleshoot** > **Other troubleshooters**.
  2. Locate the Bluetooth section, select **Run** and then follow the on-screen instructions.
- Uninstall the driver of the Bluetooth adapter. Windows will automatically install the latest driver.

  1. Type **Device Manager** in the Windows search box.
  2. Select **Device Manager** from the list of results. The Device Manager window opens.
  3. Select the arrow icon > next to **Bluetooth** to expand the section.
  4. Right-click the Bluetooth device you are having problem with, and then select **Uninstall device**.
  5. Confirm that you want to uninstall this device from your system in the Uninstall Device window, and then select **Uninstall**.
  6. After the driver is uninstalled, restart your computer. Windows will automatically install the latest driver.
  7. If Windows does not reinstall the driver automatically, open device manager and select **Scan for hardware changes** on the tool bar (the magnifying glass icon).

How to reset my Windows password

If you forget your Windows password and want to reset one, you can take the following actions.

- Do the following if you have set security questions.
  1. Click **Reset password** on the sign-in screen after you have entered an incorrect password.

     Note:

     Contact your administrator if you do not see an option to reset your password.

  2. Follow on-screen instructions to reset a new password.
- Do the following if you have created a password reset disk.
  1. Connect a password reset disk to a USB-compatible connector on your computer.
  2. Follow on-screen instructions to reset your password.
- Do the following if you have an administrator account.
  1. Sign in to your computer with the local administrator account.
  2. Follow on-screen instructions to reset your password.

Where can I get the latest device drivers and UEFI/BIOS

- Lenovo Vantage
- Lenovo Support Web site at https://support.lenovo.com.
- Windows Update

Why does my screen brightness change constantly?

Your computer may include an ambient light sensor and the adaptive brightness feature is enabled. The light sensor can detect the intensity of the surrounding light. Using data provided by the sensor, the operating system can dynamically adjust the screen brightness.

The adaptive brightness feature of the operating system can be disabled. For Windows operating systems, adaptive brightness settings are usually found in **Settings** > **System** > **Display**.

What should I do if my fingerprint can’t be recognized

If your computer comes with a fingerprint reader and it fails to recognize your enrolled fingerprint, please try the following solutions to troubleshoot and fix the issue:

- Clean the fingerprint reader with a soft microfiber cloth and ensure the fingerprint reader is completely dry before you attempt to use it again.
- Remove your fingerprint and enroll it again:
  1. Select **Start** > **Settings** > **Accounts** > **Sign-in options** > **Fingerprint recognition (Windows Hello)**.
  2. Select **Remove** to remove the enrolled fingerprint.
  3. Enroll the fingerprint again.
- Update the fingerprint driver:
  1. Type **Device Manager** in the Windows search box and then press enter.
  2. Select the arrow icon > next to **Biometric devices** to expand the section.
  3. Right-click the fingerprint driver, click **Update driver**, and follow the on-screen instructions.

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

Record product information and problem details before you contact Lenovo.

Product information	Problem symptoms and details
• Product name • Machine type and serial number	• 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?

Note:

The product name and serial number can usually be found on the bottom of the computer, either printed on a label or etched on the cover.

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.

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, see “Warranty information” in the *Safety and Warranty Guide* that comes with your computer.

Purchase additional services

During and after the warranty period, you can purchase additional services from Lenovo at https://pcsupport.lenovo.com/warrantyupgrade.

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

Appendix A 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.

Appendix B Notices and trademarks

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Appendix C Compliance statements

This appendix provides compliance statements that are applicable to your product and contains model-specific information, such as the model name and values determined as part of the conformity assessment procedures. Compliance statements relevant to your product that do not include model-specific information are available in a separate publication titled *General Safety and Compliance Notices* . The PDF version of this publication can be found on the Lenovo Support website.