User Guide

Lenovo Legion 9i (18", 10)

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*

First Edition (June 2025)

Contents

About this guide

- This guide applies to Lenovo product model(s) listed below. Illustrations in this guide may look slightly different from your product model.

Model name	Machine type (MT)
– Legion 9 18IAX10 – Lenovo Legion 9 18IAX10 D1	83EY

- For further compliance information, refer to the *Generic Safety and Compliance Notices* at https://pcsupport.lenovo.com/docs/generic_notices.
- This guide may contain information about accessories, features, and software that are not available on all models.
- This guide contains instructions that are based on the Windows operating system. These instructions are not applicable if you install and use other operating systems.
- Microsoft® makes periodic feature changes to the Windows® operating system through Windows Update. As a result, the operating system related instructions may become outdated. Refer to Microsoft resources for the latest information.
- The content of the guide is subject to change without notice. To obtain the latest version, go to https://support.lenovo.com.

Chapter 1. Meet your PC

Front view

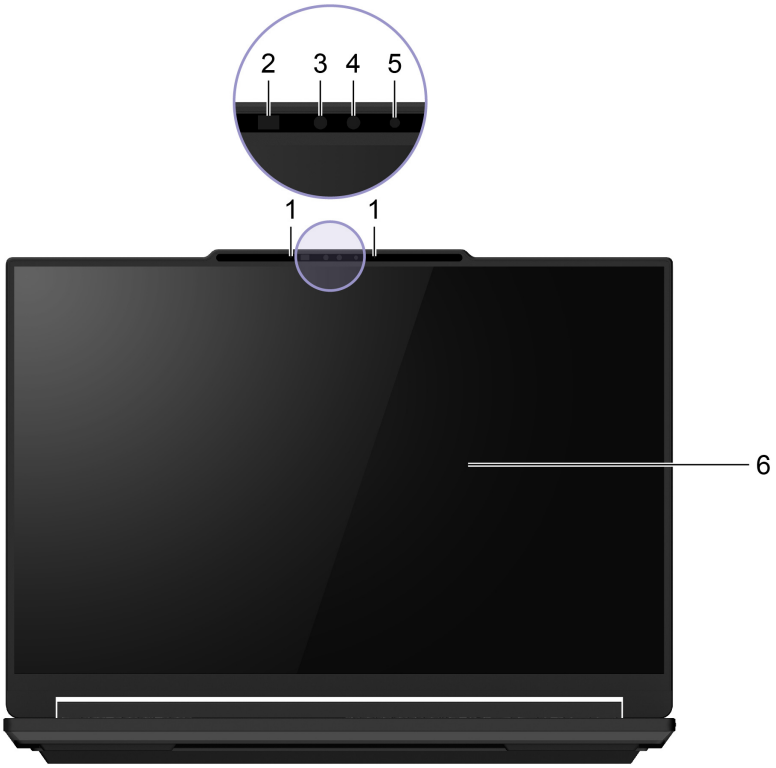


Figure 1. 2D model

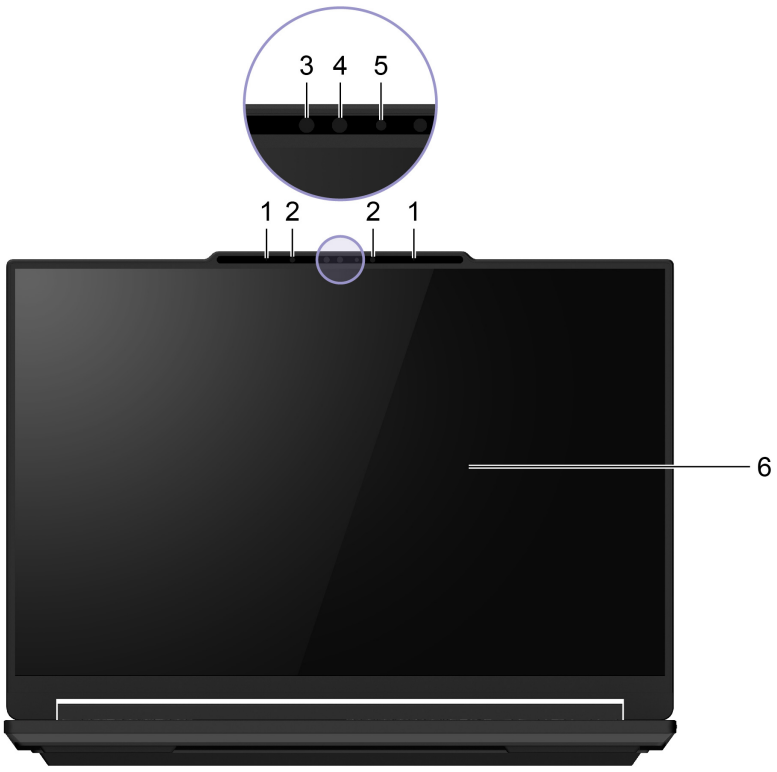


Figure 2. 3D model

No.	Description
1	Microphones
2	IR LED
3	IR camera
4	Camera
5	Camera light
6	Screen

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.

Infrared LED

The infrared LED generates and emits near-infrared waves that are received and used by a camera (or a dedicated infrared camera) for facial recognition.

Related tasks

“Set up facial recognition” on page 17

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.

Related tasks

“Set up facial recognition” on page 17

Camera

The integrated camera can be used for:

- video chatting
- video conferencing
- video recordings

If your PC supports face authentication, the camera is also used for face recognition.

Camera light

The camera light indicates whether the camera is activated.

Table 1. Camera light status and description

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

Screen

The screen of the built-in display is where text, graphics, and videos are displayed. The screen for select models supports two display modes: 2D and 3D.

Related topics

“Switching to three-dimensional (3D) display mode (on select models)” on page 24

Top view

No.	Description
1	Wireless antennas (hidden inside)
2	Power button
3	Power light
4	Keyboard
5	Touchpad

Antennas

Transmits and receives radio waves for Wi-Fi and Bluetooth connections.

Note: The antennas are hidden inside the PC.

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.

Related tasks

“Shut down your PC” on page 20

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 2. Power light status and description

Light status	Power state
White/Blue/Red/Purple (solid on)	Powered on
White (blinking slowly)	In sleep mode
Off	Powered off or in hibernation mode

The colors of the power light can indicate the PC's current operation mode.

Table 3. Power light colors and the PC's operation modes

Light color	Operation mode
White	Balanced
Blue	Quiet
Red	Performance
Purple	Customized

Note: You can create your customized operation mode in Legion Space or Legion Zone.

Keyboard

The keyboard is the primary input device for a PC, designed for typing characters. A Lenovo keyboard also includes shortcut keys that enhance productivity when interacting with the PC, applications, and the Windows operating system.

Note: Keyboard layouts vary by language and region, so your PC's keyboard may differ from the illustrations in this publication.

Related topics

"Hotkeys" on page 26

"The fn lock switch" on page 27

"Combination keys using the fn key" on page 28

"Combination keys using the Windows logo key" on page 28

"The Copilot key" on page 29

"Adjusting lighting brightness and switching lighting effects" on page 30

Touchpad

The touchpad is the PC's built-in pointing device, which provides the basic functionality of an external mouse. 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.

Related topics

"Touchpad gestures" on page 29

Left view

No.	Description
1	USB Standard-A connector (supports always-on)
2	Ethernet connector
3	Multi-purpose USB Type-C connector
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

Ethernet connector

The Ethernet connector connects a cable modem or router to the PC to establish wired Internet access.

Multi-purpose USB Type-C® connector

This multi-purpose connector can be used to connect:

- devices that conform to the USB data transfer protocol
- 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 devices

Related topics

“Connecting external displays” on page 25

“Using a USB Power Delivery-compliant charger with the PC” on page 19

Combo audio jack

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

Right view

No.	Description
1	Camera switch
2	USB Type-C connector
3	SD slot
4	USB Standard-A connector

Camera switch

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

Note: This switch is designed for privacy protection. If you don't need to use the camera, slide the switch to the off position to prevent any apps from using the camera.

USB Type-C connector

This USB Type-C® connector is used to connect storage or peripheral devices that follow the universal serial bus (USB) specifications for data transfer and device interconnection.

Note: This USB Type-C connector does not support DisplayPort™ Alt Mode and cannot be used to connect external display devices.

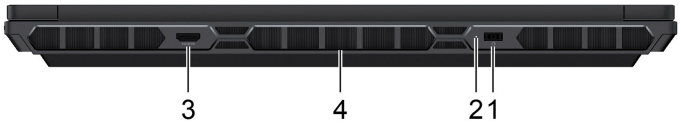
SD card slot

The SD card slot is used to insert an SD, SDHC, or SDXC memory card to transfer data between the memory card and your PC.

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.

Rear view



No.	Description
1	Power connector
2	DC-in and battery charging light
3	HDMI connector
4	Ventilation slots (outlet)

Power connector

Use this connector and the included ac power adapter to connect your PC to an electrical outlet.

Related tasks

"Connect the PC to a power source" on page 19

DC-in and battery charging light

This dual-purpose light indicates whether the PC is plugged into a functioning electrical outlet. Additionally, when the battery is charging, it indicates whether the battery is approaching a full charge.

Table 4. DC-in and battery charging light status and description

Light status	Description
Amber (solid on)	The battery charge level is between 1%–90% of its full capacity.
White (solid on)	The battery charge level is between 91%–100% of its full capacity.
Off	The PC is not plugged into an electrical outlet.

HDMI connector

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

Related topics

"Connecting external displays" on page 25

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	403 mm
Depth	• 296.9 mm (typical) • 300.2 mm (maximum)
Thickness	• T1: 23.9 mm • T4: 27.95 mm

ac power adapter

Item	Value or specification
Input	100 V ac–240 V ac, 50 Hz–60 Hz
Output voltage	20 V
Maximum current	20 A
Maximum power	400 W

Rechargeable battery pack

Item	Value or specification
Capacity	99.9 Wh
Cell type	Rechargeable Li-ion Battery
Number of cells	4

Memory

Item	Value or specification
Type	DDR5
Installation	Slot mounted
Slot type	SO-DIMM
Slot quantity	4

Mass storage device

Item	Value or specification
Type	SSD
Slot quantity	4

Item	Value or specification
Slot type	• Slot 1: M.2 (2280) • Slot 2: M.2 (2280/2242) • Slot 3: M.2 (2280/2242) • Slot 4: M.2 (2280/2242)
Slot interface	• Slot 1: PCIe Gen5 • Slot 2: PCIe Gen4 • Slot 3: PCIe Gen4 • Slot 4: PCIe Gen4

Display

Item	Value or specification
Size	18 inches
Resolution	3840 × 2400 (240 Hz)
Maximum refresh rate	240 Hz / 440 Hz*
Screen type	LCD

Note: The high refresh rate of the integrated display can be set to either 240 Hz or 440 Hz in the PC's firmware setup utility.

Connectors and slots

Item	Value or specification
USB Standard-A connector	• Quantity: 3 • Maximum power output: 5 V, 0.9 A* • Supported protocols or data performance specifications: – USB 2.0 480 Mbps – USB 5Gbps – USB 10Gbps **Note:** The USB Standard-A connector on the left side of the PC support maximum power output of 5V and 2A.
USB Type-C connector	• Quantity: 1 • Maximum power output: 5 V, 3 A • Supported protocols or data performance specifications: – USB 2.0 480 Mbps – USB 5Gbps – USB 10Gbps

Item	Value or specification
Multi-purpose USB Type-C connector	• Quantity: 2 • Maximum power output: 5 V, 3 A • Maximum power input: 20 V, 7 A (Lenovo private charging protocol) • Supported protocols or data performance specifications: – USB 2.0 480 Mbps – USB 5Gbps – USB 10Gbps – USB 40Gbps – USB 80Gbps – DisplayPort 2.1 – Maximum data rate: 80 Gbps – Maximum output resolution: 10240 × 4320 (60 Hz) – Thunderbolt 5 80/120 Gbps – Power Delivery 3.0 (maximum power input: 100 W) – Lenovo private charging protocol (maximum power input: 140 W)
HDMI connector	• Supported signaling protocols: – Fixed-rate link (FRL) – Transition minimized differential signaling (TMDS) • Maximum output resolution: 7680 × 4320 (60 Hz)
SD slot	Supported card types: • Standard Capacity SD (SDSC) • High Capacity SD (SDHC) • Extended Capacity SD (SDXC)
Audio jack	• Diameter: 3.5 mm • Supported plug: – 3-pole, TRS – 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
Wired Ethernet	2.5 Gbps
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

Guidelines on SO-DIMM slot usage

The system board of the PC provides two memory channels distributed across four SO-DIMM slots, labeled A1, A2, B1, and B2. Slots A1 and A2 share one memory channel, while B1 and B2 share the other.

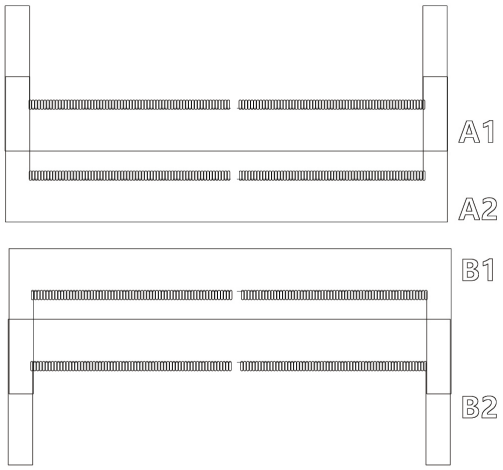


Figure 3. The four SO-DIMM slots

The following guidelines must be followed when installing one or more memory modules. Failure to adhere to these guidelines may prevent the PC from powering on.

Installing one memory module

When installing a single memory module, it should be placed in the slot labeled A2 or B2, with A2 being the preferred option for optimal performance.

Installing two memory modules

When installing two memory modules, they can be placed in three slot pairs:

- A2 and B2

- A1 and A2
- B1 and B2

The preferred configuration is to use slot pair A2 and B2, as this arrangement fully utilizes both memory channels.

Installing three memory modules

When installing three memory modules, they can be placed in two slot trios:

- A1, A2, and B2
- A2, B1, and B2

Installing three memory modules is not recommended due to performance considerations. It is recommended that you install either two or four memory modules instead.

Installing four memory modules

A maximum of four memory modules can be installed on the system board, occupying all four SO-DIMM slots.

The following table illustrates the guidelines on slot usage, with “V” representing occupied slots and “O” representing vacant slots. The asterisks (*) are used to indicate preferred arrangement based on performance considerations. The two memory modules installed on the same channel must have identical specifications and be from the same manufacturer.

Slot	1 SO-DIMM		2 SO-DIMMs			3 SO-DIMMs		4 SO-DIMMs
A1	○	○	V	○	○	○	V	V*
A2	V*	○	V	○	V*	V	V	V*
B1	○	○	○	V	○	V	○	V*
B2	○	V	○	V	V*	V	V	V*

If the SO-DIMM module(s) or the slot configuration is altered, the memory controller will be re-initialized the next time the PC is powered on. This process may take several minutes or longer to complete before the PC can start normally.

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 5Gbps	5
USB 10Gbps	10
USB 40Gbps	40
USB 80Gbps	80

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)

Chapter 2. Explore your PC

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.

This PC has been tested with the Windows 11 operating system. Lenovo offers models of this PC with Windows 11 pre-installed. If you purchased the PC without a pre-installed operating system, you can purchase Windows 11 separately and install it on your PC.

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.

Step 1. Select **Start → Settings → Accounts → Sign-in options → Facial recognition**.

Step 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 5. 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.

Step 1. Select **Settings → System → Recovery**.

Step 2. Under recovery options, select **Reset PC**.
When prompted, choose between **Keep my files** and **Remove everything**.

Step 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.

Step 1. Prepare an empty USB drive with a storage capacity of 32 GB or more.

Step 2. In the search box on the taskbar, type `Create a recovery drive` and select the matched app.

Step 3. Make sure **Back up system files to the recovery drive** checkbox is selected and select **Next**.

Step 4. When prompted, connect the USB drive to your PC, select it, and then select **Next**.

Step 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.

Step 1. Shut down your PC.

Step 2. Connect the recovery drive to your PC.

Step 3. Press the power button to turn on the PC and press the F12 key repeatedly when the LEGION wordmark appears on the screen.
The boot device selection menu will be displayed.

Step 4. Select the USB drive as the boot device.
The PC will start to the Windows Recovery Environment.

Step 5. Follow the on-screen instructions to restore Windows onto your PC.

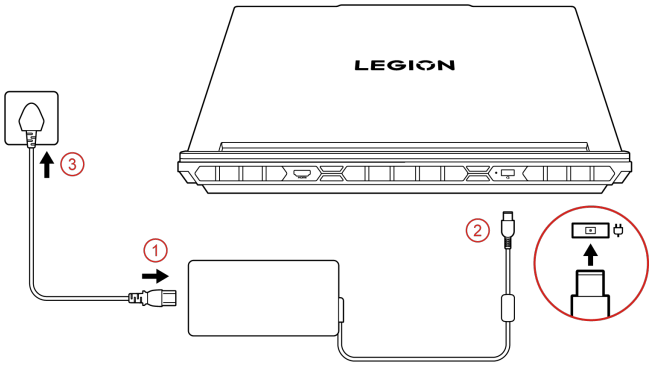
Use power efficiently

As an electronic device, your PC requires electricity to operate. The Windows operating system provides advanced power management features for the devices included in your PC. You can take advantage of these features to use your PC in an energy-efficient manner.

Connect the PC to a power source

Use the power connector located on the rear side of the PC, along with the included power supply unit, to connect the PC to the main power source.

Step 1. Connect the power cord to the ac power adapter.



Step 2. Plug the ac power adapter into the power connector located on the rear side of the PC.

Step 3. Plug the power cord into a wall outlet.

Once connected, the ac power adapter converts mains power to direct current, supplying power to the PC and charging its battery pack.

Using a USB Power Delivery-compliant charger with the PC

Both USB Type-C connectors located on the left side of the PC comply with the *USB Power Delivery Specification*. If the included 400 W power supply is temporarily unavailable, you can use a compatible USB Type-C charger (not included) to charge the PC while it is powered off, in sleep mode, or in hibernation mode.

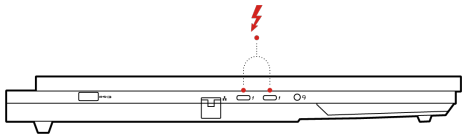


Figure 4. The two multi-purpose USB Type-C connectors located on the left side of the PC

To use a USB Type-C charger with the PC, it must comply with the *USB Power Delivery Specification* and is able to provide power at one of the following voltage and current levels.

- 20 V, 4.75 A
- 20 V, 5 A

Some Lenovo-branded USB Type-C chargers not only comply with the *USB Power Delivery Specification* but also support Lenovo's private charging protocols. The following voltage and current levels are additionally supported by the PC when using Lenovo’s private charging protocols.

- 20 V, 6.75 A
- 20 V, 7 A

Note: The two USB Type-C connectors located on the left side of the PC are not intended to serve as the primary power input. When the PC is in operation, the power supplied by the USB Type-C charger may be insufficient. As a result, the PC may not operate at its full capacity, and battery charging may be slow or may stop entirely. It is recommended to use the included ac power adapter (400 W) whenever possible.

Shut down your PC

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

Step 1. Select **Start → Power**.

Step 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.

Step 1. Select **Start → Power**.

Step 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.

Step 1. Select **Start → Settings → System → Power & battery → Screen, sleep, & hibernation timeouts**.

Step 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 6. 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
Put the PC into sleep mode	Plugged in	15
	On battery	10

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

System operation modes

Lenovo has preset several modes in which your computer can operate. The maximum attainable performance, power consumption, and speed limit for the heat sink fan vary between the operation modes. Consider the following conditions when you want to switch operation modes.

- The environment where you use your computer, and
- The tasks running on your computer

You switch the operation mode in the pre-installed app Lenovo Space or Legion Zone. As a shortcut, you can also use the key combination fn + Q. The following table lists the available operation modes on your computer and the recommended conditions for each mode.

Table 7. Operation modes and their recommended usage conditions

Icon	Operation mode	Recommended conditions
	Performance	• Your computer is plugged into an electrical outlet. • You want the best performance, and • You don't care if the fan makes a little noise.
	Balance	You plan to frequently switch between different computer tasks over a period time.
	Quiet	• Your computer is operating on battery power, or • You want the computer to be as quiet as possible

Note: When the computer is operating on battery power or is plugged in using an under-rated power adapter, you may not be able to switch it to Performance mode.

Selecting and switching GPU modes

The PC is equipped with two graphics processing units (GPU) for graphics-related processing and display: an integrated graphics processing unit (IGPU) within the CPU and a discrete graphics processing unit (DGPU). The IGPU is more power-efficient, while the DGPU offers superior performance in rendering graphics but typically consumes more power than the IGPU. You can switch between the active graphics processing unit to achieve a balance between performance and power consumption.

You can either manually switch the PC's active graphics processing unit or allow the PC to dynamically select it by choosing a graphics mode in Legion Space.

Note: If your PC was purchased in mainland China, Legion Zone is pre-installed instead and you can select and switch between similar GPU modes within that application.

GPU mode	Description
Hybrid IGPU-only	The IGPU is set as the active graphics processing unit.
DGPU	The DGPU is set as the active graphics processing unit.

GPU mode	Description
Hybrid	The PC dynamically switches the active graphics processing unit based on the type of application that is running.
Hybrid Auto	When the PC is plugged in using the included power supply (400 W), the DGPU is set as the active graphics processing unit. When the PC is unplugged or plugged using a power supply that does not provide sufficient power, the IGPU is set as the active graphics processing unit.

Note: To switch to DGPU mode, you must restart the PC for the changes to take effect.

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 or Lenovo PC Manager.

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.

Normal mode

Normal mode is the most basic charging mode. In normal mode, it typically takes 2 to 4 hours for the battery to charge from 0% to 100%.

Rapid charge mode

If you want the battery to be charged faster than in normal mode, switch the battery charging to rapid charge mode. The following table lists the estimated time needed for batteries in rapid charge mode to be charged to 70% and 100% respectively.

Table 8. Estimated charge time for batteries in rapid charge mode

Mode	Time needed to charge from 0% to 70%	Time needed to charge from 0% to 100%
Rapid charge	30 minutes	80 minutes

Note: The estimated charge time assumes that the battery is charged when the PC is in sleep, hibernation, or powered-off state using the included ac power adapter.

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

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 for the battery.

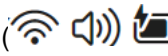
Overnight battery charging affects battery charging during the night hours, the time when you're usually asleep. When it is enabled, the computer regularly adapts its charging behavior based on observation of when you plug in the computer at night and unplug it in the morning. During the nighttime, the 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 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 or Lenovo PC Manager.

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.

Step 1. Select the Network, Sound, and Battery icons () on the right side of the taskbar to open quick settings.

Step 2. On the quick settings pane, select the > symbol next to the network icon.
Wireless networks within range should be displayed.

Step 3. Select the network you want to connect to and then select **Connect**.

Step 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.

The display device

The built-in display is your PC's primary visual output device. Your PC is equipped with one HDMI connector located on the rear and two multi-purpose USB Type-C connectors on the left side. Using one or several of those connectors, you can connect external display devices to your PC to enhance productivity.

Switching between the low and high 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 75 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 integrated display for your PC support dual refresh rates (high and low). You can manually switch the display to work at either the high (240 Hz or 440 Hz) or low refresh rate (75 Hz). For Windows operation systems, the manual settings are usually found in **Settings → System → Display**. As a shortcut, you can also use the keyboard shortcut fn + R to switch the display refresh rate.

Set the display's high refresh rate

The high refresh rate for the PC's integrated display can be set to one of two values: 240 Hz or 440 Hz. You can adjust the high refresh rate for the display in the PC's firmware setup utility.

Step 1. Turn on or restart the PC. When the LEGION wordmark appears on the screen, repeatedly press the F2 key until the home page of the setup utility appears.

Step 2. Select **More Settings**.

Step 3. Select **Display Settings** and use the drop-down menu next to **Refresh rate of internal display** to set the high refresh rate for the integrated display.

Step 4. Select **Exit → Exit Saving Changes**.

The high refresh rate for the display will be set to the value you selected.

Note: If you set the high refresh rate to 440 Hz, the highest resolution for the display will be limited to 1920 × 1200.

Switching to three-dimensional (3D) display mode (on select models)

The display of select models incorporates a layer of lenticular lenses over the screen. When activated in 3D mode, these lenses can be programmed and controlled to reflect slightly different images to the left and right eyes, thereby creating the illusion of three-dimensional objects.

If the display for your PC model supports 3D display mode, Lenovo provides a pre-installed application called Lenovo 3D Studio, allowing you to enjoy an immersive 3D experience while watching films, videos, viewing design objects, or playing video games. To switch to 3D display mode, open Lenovo 3D Studio by typing the application name in the Windows search box and selecting the matching result.

Note: If Lenovo 3D Studio is not pre-installed, your PC model's display does not support three-dimensional display mode.

3D-related applications in Lenovo 3D Studio

If the display for your PC model supports 3-dimensional display mode, you can find all 3D related applications provided by Lenovo in Lenovo 3D Studio. This section provides an overview of the applications that are accessible from Lenovo 3D Studio.

Note: Applications may be added, modified, or removed from Lenovo 3D Studio through online update.

3D Media Player

This player is intended to play local or online native 3D resources.

Media Converter

When started, the Media Converter functions as a background service. When an image or video is opened full-screen, you can enable the 2D-to-3D conversion to view the image or video in 3D mode.

Use the default keyboard shortcut Ctrl + B to enable the 2D-to-3D conversion. You can also change the keyboard shortcut in the settings page of Media Converter.

Design Engine

When started, the Design Engine functions as a background service. When designing an object with one of the supported design applications, you can click **Render** in Design Engine to view the objects in 3D mode.

Note: Before using Design Engine with a design application, the supported design application must be installed on your PC. You should then install the plug-in for the supported design application from the App Center of Design Engine.

Game Engine

For supported video games, the Game Engine functions as a background service to display the game in 3D mode by utilizing the depth information available in the game.

To play a game in 3D mode, first check if it is supported by reviewing the game list in the Game Center of Game Engine. If a supported game is installed on the PC, select the game in the Game Center of Game Engine, and then select **Play** to play the game in 3D mode.

3D Model Viewer

3D Model Viewer is used to render a 3D model and display it in 3D mode. Currently, 3D models with the following list file formats are supported by 3D Model Viewer.

- fbx
- obj
- stl
- ply
- 3mf
- dae
- gltf2

Connecting external displays

You can use the HDMI connector or either of the two multi-purpose USB Type-C connectors on the left side of 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 using the HDMI connector

HDMI is a leading digital interface for transmitting high-definition video, audio, and data, specifically designed for connecting display devices. Many devices, such as computer monitors and projectors, are equipped with either an HDMI plug or an HDMI input connector. To connect such an external display device to your computer, simply plug the HDMI cable into the HDMI connector on your PC.

Connection using a USB Type-C connector

Both USB Type-C connectors on the left side of your PC support DisplayPort Alt Mode. Some modern computer monitors are equipped with a USB Type-C connector that also supports DisplayPort Alt Mode. To connect such a monitor to your PC, use a double-sided USB Type-C cable (not included with the PC). Plug one end of the cable into either of the two USB Type-C connectors on your PC and the other end into the USB Type-C connector on the monitor.

Some computer monitors are equipped with a DisplayPort connector but do not have a USB Type-C connector. To connect these monitors, you will need to purchase and use a USB Type-C to DisplayPort adapter. Simply plug the adapter into one of the two USB Type-C connectors on your PC, and then connect the monitor to the adapter's DisplayPort.

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.

Keyboard

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 frequently used settings and applications. Typically located in the top row of the keyboard, they often share keys with the function keys (F1–F12) and several other keys. Each hotkey's function 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.
	Enables/Disables airplane mode.
	Opens the pre-installed AI experience.

Table 9. Hotkey functions (continued)

Hotkey icon	Function description
	Enables/disables the touchpad.
	Opens the pre-installed device collaboration app.
	Opens the Calculator app.

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.

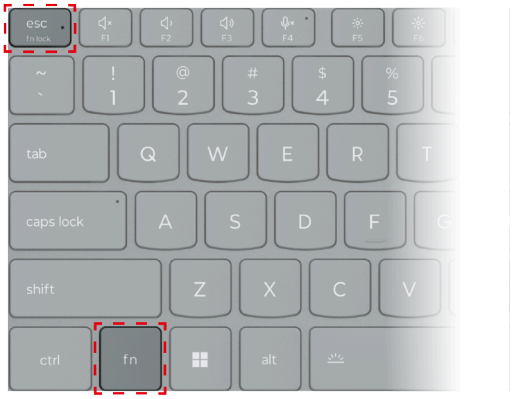


Figure 5. Locations of the fn lock key and the fn key

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.

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

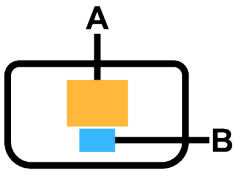


Figure 6. The layout of a dual-function key

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 specific 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 operation mode
fn + R	Switches the refresh rates of the built-in display
fn + N*	Shows key device information
fn + Space	Switches lighting effects of the programmable LED lights
fn + Up/Down Arrow	Adjusts the brightness of the programmable LED lights
fn + B	Break
fn + P	Pause
fn + S	SysRq
fn + K	ScrLk
fn + I	Insert

Note: The fn + N keyboard shortcut may not function on models sold in mainland China. You can view the device information in Lenovo PC Manager instead.

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 specific keys to quickly change settings and access utilities within the Windows operating system. The table below lists frequently used key combinations. For a complete list of all key combinations that utilize the Windows logo key, please refer to the official Microsoft online documentation.

Table 12. Windows logo 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

Table 12. Windows logo key combinations (continued)

Key or key combination	Function
+ 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
+ PrtSc	Takes a full-screen screenshot and saves it to a file

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	Shows all open windows
Swipe down with three fingers	Returns to the desktop
Swipe left or right with three fingers	Switches between open apps
Tap three fingers on the touchpad	Opens Windows Search

Modify the default functions for touchpad gestures

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

Step 1. Select **Settings → Bluetooth & devices → Touchpad**.

Step 2. Under **Three-finger gestures**, use the drop-down lists to modify the functions for the swipe or tap gestures.

Programmable LED lights

There are programmable LED lights on several locations of the PC. You can adjust the brightness of the lights and change their lighting effects to give your PC a more personalized look and feel.

The programmable LED lights are located:

- On the LEGION wordmark on the front cover of the PC
- Along the front frame of the PC
- Underneath the keyboard keys

Change the controller for the programmable LED lights

There may be several controllers available that can manage the programmable LED lights of the PC. The controller that appears first in the controller list in Windows Settings will be designated as the active controller.

Step 1. Select **Start → Settings → Personalization**.

Step 2. Select **Dynamic Lighting → Background light control**.
All light controllers are listed. The default controller should be **Legion Lighting Controller**.

Step 3. Click and drag the title for a controller to the top of the list to make it active.

Adjusting lighting brightness and switching lighting effects

If the Legion Lighting Controller is set as the active controller (the default setting), you can adjust the brightness and switch effects for the programmable LED lights of the PC in Legion Space.

Note: If your PC was purchased in mainland China, Legion Zone is pre-installed instead and you can perform lighting related operations within that application.

Alternatively, you can use fn-based keyboard shortcuts to quickly adjust the brightness and switch between the factory-provided lighting effects.

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 mouses 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.

Step 1. Select **Settings → Bluetooth & devices → Add device → Bluetooth**.

Step 2. Select the device you want to connect, and then select **Connect**.

Step 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 .

Firmware

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.

Firmware setup program

Lenovo PCs typically include a setup program 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 program 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 or Lenovo PC Manager). You can use the Novo button menu to temporarily change the order of boot devices.

There are several ways to open the setup program:

- 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 or F2)

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 firmware setup utility.

Password type	Pre-requisite	Usage
Administrator password	No	You must enter it to start the setup utility.
User password	The administrator 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: If you start the setup utility using the user password, you can only change a few settings.

Set administrator password

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

Attention: If you forget the administrator 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.

Step 1. Open the firmware setup utility.

Step 2. Select **Security → Set Administrator Password** and press Enter.

Step 3. Enter a password string that contains only letters and numbers and then press Enter

Step 4. Enter the password again and press Enter.

Step 5. Select **Exit → Exit Saving Changes**.

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

Change or remove administrator password

Only the administrator can change or remove the administrator password.

Step 1. Open the firmware setup utility using the administrator password.

Step 2. Select **Security → Set Administrator Password** and press Enter.

Step 3. Enter the current password.

Step 4. In the **Enter New Password** text box, enter the new password.

Step 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.

Step 6. Select **Exit → Exit Saving Changes**.

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

Set user password

You must set the administrator 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.

Step 1. Open the firmware setup utility using the administrator password.

Step 2. Select **Security → Set User Password** and press Enter.

Step 3. Enter a password string that contains only letters and numbers and then press Enter.
The user password must be different from the administrator password.

Step 4. Enter the password again and press Enter.

Step 5. Select **Exit → Exit Saving Changes**.

Enable power-on password

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

Step 1. Open the firmware setup utility.

Step 2. Select **Security → Power on Password** and press Enter.

Note: The administrator password must be set in advance.

Step 3. Change the setting to **Enabled**.

Step 4. Select **Exit → Exit Saving Changes**.

If 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 passwords for the mass storage device

You can set a hard disk password in the setup utility to secure access to your data storage on the PC's mass storage device.

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.

Step 1. Open the firmware setup utility.

Step 2. Select **Security → Set Hard Disk Password** and press Enter.

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

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

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

Step 4. Select **Exit → Exit Saving Changes**.

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

Change or remove passwords for the mass storage device

Step 1. Open the firmware setup utility.

Step 2. Select **Security**.

Step 3. Change or remove the hard disk password.

To change or remove 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 user password, select **Change User Password** and press Enter.

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

Step 4. Select **Exit → Exit Saving Changes**.

Chapter 3. Help and support

Frequently asked questions

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 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.

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 and disabled in:

- Lenovo Vantage or Lenovo PC Manager
- Firmware Setup Utility

What is the battery’s ship mode

When your PC’s rechargeable battery is set in ship mode, it is disconnected and does not supply power to the PC.

A battery’s ship mode is designed to prevent the battery from over-discharging, a phenomenon that is known to significantly reduce the battery capacity. Over-discharge happens when a lithium battery is at a low charge level for an extended period.

In the real world, it may take a considerable amount of time for the PC to be delivered from the manufacturer to your reseller and then from the reseller to you. The PC’s rechargeable battery is set to ship mode at the factory to prevent over-discharge during this process. Before turning on your PC for the first time, plug your PC into an electrical outlet, and the battery’s ship mode is instantly disabled.

I opened Lenovo 3D Studio, but instead of viewing objects with depth, I see blurred images with ghosting around them. What could be the possible causes of this issue?

One possibility is that the calibration parameter may not be configured to match your pupillary distance. This could be due to either not having set it yet or it being altered by someone else who used your PC. On the home page of Lenovo 3D Studio, select the cubic icon and follow the on-screen instructions to reset the calibration parameter.

I am currently watching a 2D film using an online streaming service. I have opened the Media Converter and enabled the 2D-to-3D conversion feature, but the film does not appear to be in 3D. What could be the possible causes?

One possibility is that the application or the web browser window in which the film is playing is not set to full-screen mode. Set the window to full-screen and re-enable the 2D-to-3D conversion to see if that resolves the issue.

I have opened Lenovo 3D Studio, but the 3D display mode is not activated. The software indicates that this is due to the HSR being in a specific state. What could be the possible causes, and what steps should I take to resolve this issue?

The HSR (HardwareSuper Resolution) feature is currently enabled, which prevents the activation of 3D display mode. You can disable it in the PC's firmware setup utility.

Related tasks

“Set the display’s high refresh rate” on page 24

When I open Lenovo 3D Studio or activate the 3D display mode, the camera light turns on. Why does this happen?

When the 3D display mode is activated, the runtime service of Lenovo 3D Studio uses the PC's camera to capture the positions of your eyes in real time. This positional information will be utilized by 3D applications to deliver a seamless 3D viewing experience.

Self-help resources

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

Resources	How to access?
Troubleshooting and frequently asked questions	• https://www.lenovo.com/tips • https://forums.lenovo.com
Accessibility information	https://www.lenovo.com/accessibility
Product documentation: • *Generic Safety and Compliance Notices* • *Safety and Warranty Guide* • *Setup Guide* • This *User Guide* • *Regulatory Notice*	1. Go to https://support.lenovo.com. 2. Detect your computer or select computer model manually. 3. Select **Guides & Manuals** and filter out the documentation you want.

Resources	How to access?
Lenovo Support Web site with the latest support information of the following: • Product and service warranty • Product and parts details • Knowledge base and frequently asked questions	Visit https://support.lenovo.com
Windows help information	• Use **Get Help** or **Tips**. • Use Windows Search. • Microsoft support Web site: https://support.microsoft.com

What is a CRU?

Customer replaceable units (CRUs) are parts that can be upgraded or replaced by the customer. A Lenovo computer may contain the following types of CRUs:

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

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

CRUs for your product model

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

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

Notes:

- 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, must be done by a Lenovo-authorized repair facility or technician. Go to https://support.lenovo.com/partnerlocation for more information.
- Products sold in specific countries or regions may be available without an included power cord or ac power adapter.

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.

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.

Notes: The following accessibility features of Windows have been tested and confirmed to deliver their essential functionalities on Lenovo PCs that come pre-installed with Windows 11.

- Narrator

- Magnifier

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.

Step 1. Select **Start → Settings → Accessibility → Text size**.

Step 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.

Step 1. Select **Start → Settings → Accessibility → Contrast themes**.

Step 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.

Step 1. Select **Start → Settings → Accessibility → Magnifier**.

Step 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.

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