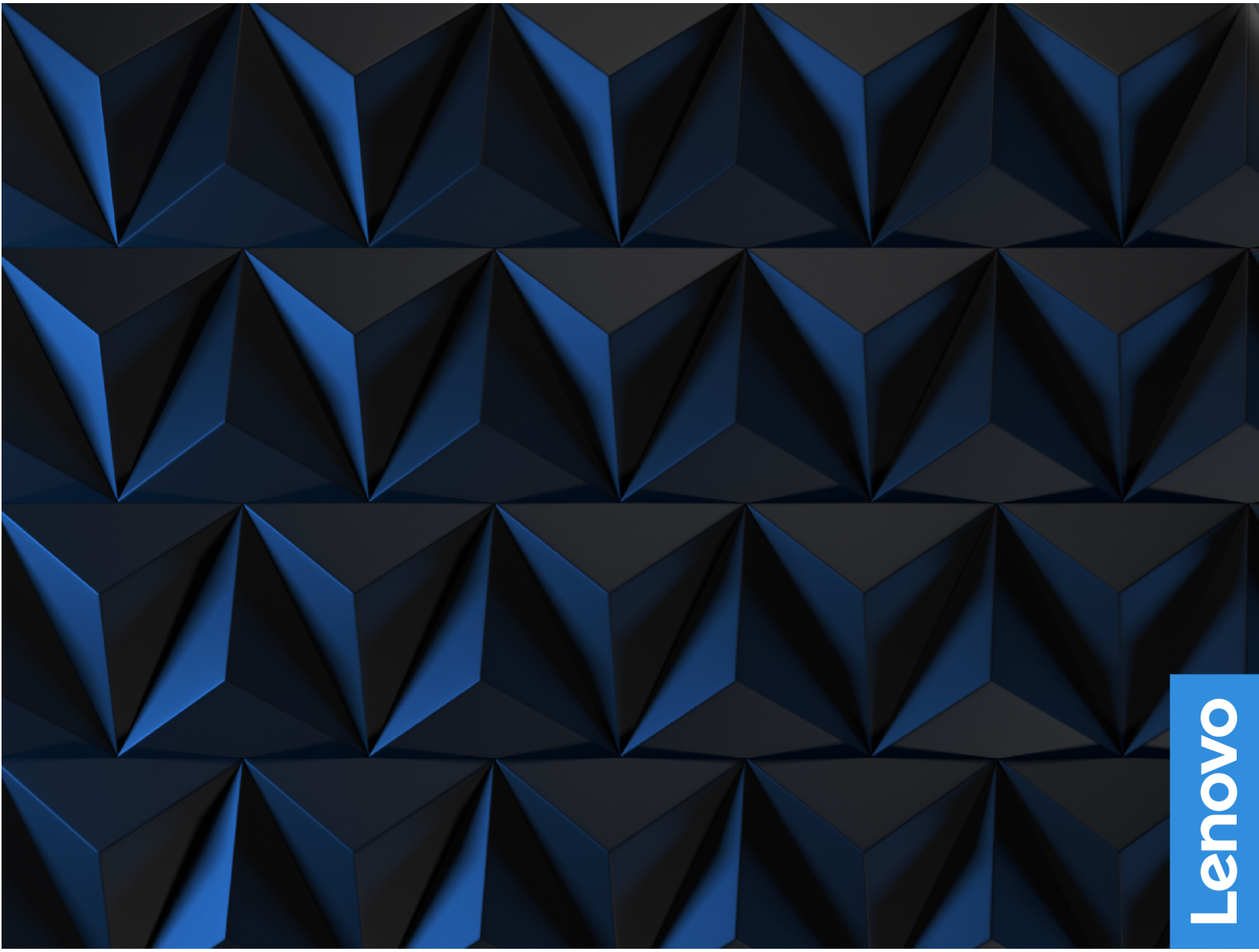
User Guide



Lenovo Legion 9i (16″, 8)

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 (July 2023)

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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 16IRX8	83AG
Lenovo Legion 9 16IRX8	83AG
Lenovo Legion 9 16IRX8 D1	83AG

- 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.

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Chapter 1. Meet your PC

Top view

Figure 1. Legion 9 16IRX8—top view

No.	Description
1	Charging light
2	Rear connector lights
3	Water pump light
4	Antennas (cannot be seen from the outside)
5	Power button (with an embedded fingerprint sensor)
6	Power light
7	Air vents (intake)
8	Keyboard
9	Touchpad

Charging light

The charging light is used to indicate whether the PC is plugged into an electrical outlet. When the PC is plugged into an electrical outlet, the color of the light also helps you determine if the battery is fully charged (or will be fully charged in a short while).

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Table 1. Charging light status and description

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

Rear connector lights

The rear connector lights are used to designate the locations of the rear connectors, allowing you to plug in cables or devices without turning around your PC.

The rear connector lights can be turned on and off using the keyboard shortcut Fn + U.

Water pump light

The water pump light is used to indicate whether the built-in water pump is working.

Table 2. Water pump light status and description

Light status	Description
Off	The water pump is not working.
On	The water pump is working.

Note: The water pump operates automatically. It only starts to work when the internal temperature of the PC reaches a preset value.

Antennas

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

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-based 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-based PC, go to **Settings → Accounts → Sign-in options** to enroll your fingerprints.

Power light

The power light is used to indicate the PC's current power state: turned on, sleep, turned off or in hibernation mode.

When the PC is turned on or in sleep mode, this light can also indicates low battery by blinking fast.

Table 3. Power light status and description

Light status	Description
White (solid on)	The PC is turned on.
White (fast blinking)	The PC is turned on or in sleep mode. The battery charge level is below 20%.
White (slow blinking)	The PC is in sleep mode.
Off	The PC is turned off or in hibernation mode.

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

Table 4. 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 Lenovo Vantage or Lenovo PC Manger.

If the PC's power button includes an embedded fingerprint sensor, the power light turns solid green to prompt you to enroll or scan your fingerprint.

Air vents (intake)

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

Important:

Do not block the air vents. Otherwise, the PC may overheat, causing performance compromises, unresponsiveness, or even shutdown of the PC.

Wipe the air vents regularly

Dust tends to build up near the air vents that are located above the keyboard. The accumulated dust may then be drawn into the internal of the PC and build up on the heat sink and the fan blades. This may eventually result in the reduction of the PC's heat dissipation capability.

To prevent dust from entering the internal of the PC, we recommend that you wipe the air vents regularly with a lint-free cloth dampened with mild soap and water.

Keyboard

The keyboard is the PC's built-in input device for entering characters. The keyboard also includes the following keys that can be used to improve productivity when interacting with the PC, apps, or the Windows operating system.

Table 5. Keys used for improving productivity

Keys	Location on the keyboard	Function
Function keys (F1 through F12)	In the top row	Activating app-defined commands or functions
Hotkeys	In the top row	• Changing some of the PC's frequently used settings • Opening an app or a Windows gadget
Fn key	In the lower left corner	• Toggling the functions of dual-function keys • Used with several letter keys to change some of the PC's frequently used settings
Windows key	In the lower left corner	Used with certain keys to change some frequently used Windows settings

Hotkeys share keys with function keys. To toggle the functions for these keys, you hold down the Fn key or activate FnLock.

Note: Keyboard layout varies by country and language. The keyboard on your PC may look slightly different from what is shown in the product illustrations in this publication.

Touchpad

The touchpad is the built-in pointing device and has 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.

Front view

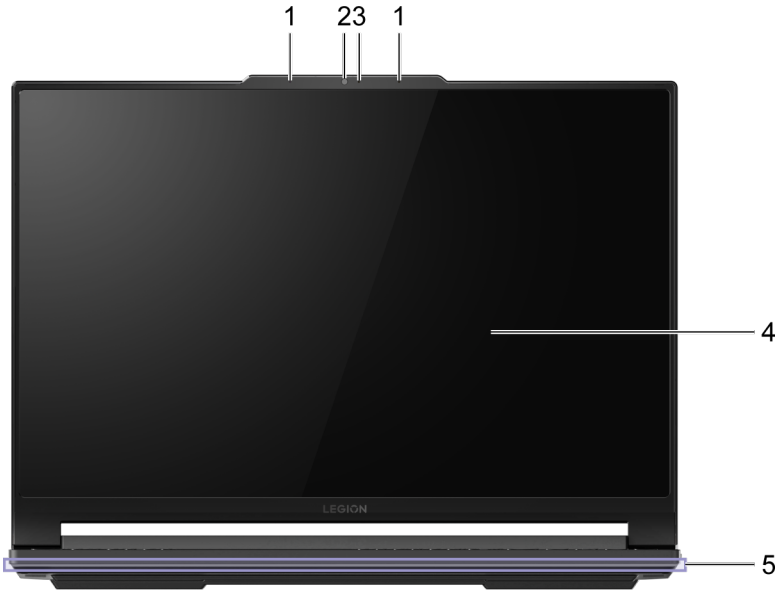

Figure 2. Legion 9 16IRX8—front view

No.	Description
1	Microphones
2	Camera
3	Camera light
4	Screen
5	Light belt

Microphones

The microphones are the PC's built-in sound input devices for video conferencing or voice recordings.

Camera

The built-in camera is used for video chatting or video conferencing.

Camera light

The camera light is used to indicate whether the camera is activated.

Table 6. Camera light status and description

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

Screen

The screen is the PC’s built-in display device.

Light belt

You can adjust the brightness of the light belt using the keyboard shortcut Fn + +/−. The effects of the light belt can be changed using the keyboard shortcut Fn + .

Note: The factory pre-defined lighting effects can be customized in Lenovo Vantage or Legion Zone.

Left view

Figure 3. Legion 9 16IRX8—left-side view

No.	Description
1	Combo audio jack
2	Air vents (outlet)
3	SD slot
4	Light belt

Combo audio jack

The combo audio jack is used to connect a single-plug headset, a pair of headphones, or external speakers.

Air vents (outlet)

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

Important:

Do not block the air vents. Otherwise, the PC may overheat, causing performance compromises, unresponsiveness, or even shutdown of the PC.

SD slot

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

Right view

Figure 4. Legion 9 16IRX8—right-side view

No.	Description
1	Camera switch
2	USB Type-C connector
3	Air vents (outlet)
4	USB Standard-A connector

Camera switch

The camera switch enables or disables 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

The USB Type-C connector is used to connect a USB hub or a USB device for data transfer or charging the device.

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

Air vents (outlet)

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

Important:

Do not block the air vents. Otherwise, the PC may overheat, causing performance compromises, unresponsiveness, or even shutdown of the PC.

USB Standard-A connector

The USB Standard-A connector is used to connect a USB hub or a USB device for data transfer or charging the device.

Rear view

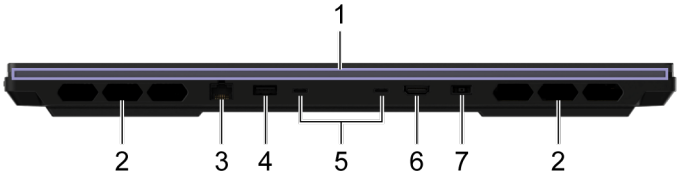

Figure 5. Legion 9 16IRX8—rear-side view

No.	Description
1	Light belt
2	Air vents (outlet)
3	RJ45 connector
4	USB Standard-A connector
5	Multi-purpose USB Type-C connector
6	HDMI connector
7	Power connector

Air vents (outlet)

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

Important:

Do not block the air vents. Otherwise, the PC may overheat, causing performance compromises, unresponsiveness, or even shutdown of the PC.

RJ45 connector

The RJ45 connector is used to connect a cable modem or router for wired Internet access.

USB Standard-A connector

The USB Standard-A connector is used to connect a USB hub or a USB device for data transfer or charging the device.

Always-on connectors

A USB connector labeled with a battery icon (⊟) supports the always-on function. The PC can supply power to a USB device connected to such a connector when the PC is shut down, in sleep or hibernation mode.

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

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

Multi-purpose USB Type-C® connector

The multi-purpose USB Type-C connector is used to connect:

- a USB hub or USB device for data transfer or charging the device

- a display device

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

Note: USB Type-C connectors with a lightning bolt icon (⚡) are Thunderbolt™-enabled. You can also connect Thunderbolt-enabled devices to such a connector.

Related topics

"Use the rear USB Type-C connectors to supply power to your PC" on page 20

HDMI connector

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

Power connector

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

Bottom view

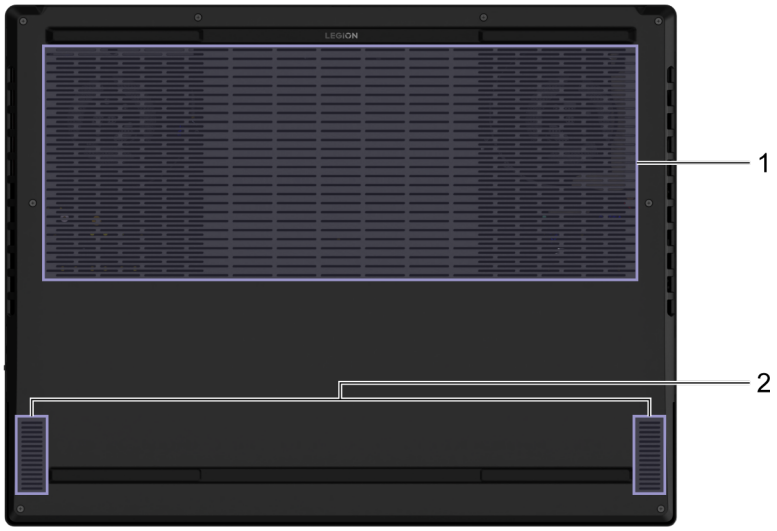

Figure 6. Legion 9 16IRX8—bottom view

No.	Description
1	Air vents (intake)
2	Speakers

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.

Air vents (intake)

The air vents allow air to be sucked into the 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 surface. Otherwise, the air vents will be blocked and the PC may overheat, causing performance compromises, unresponsiveness, or even shutdown of the PC.

Speakers

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

Specifications

Dimensions

Width	357.7 mm
Depth	277.7 mm
Thickness (thinnest part)	18.9 mm

ac power adapter

Input	100 V ac–240 V ac, 50 Hz–60 Hz
Output voltage	20 V
Maximum output current	16.5 A
Maximum output power	330 W

Notes: Selected models came with an additional USB Type-C power adapter.

Table 7. USB Type-C power adapter (140 W)

Input	**100 V ac–240 V ac, 50 Hz–60 Hz**
Output voltages and maximum currents	• **5 V, 3 A** • **9 V, 3 A** • **15 V, 3 A** • **20 V, 7 A**
Maximum output power	**140 W**

Rechargeable battery pack

Capacity	99.9 Wh
Cell type	Lithium-polymer
Number of cells	4

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).

Memory

Type	DDR5
Installation	Slot mounted
Number of slots	2

Mass storage device

Type	Solid-state drive (SSD)
Slot type	M.2 (2280)

Number of slots	2
Interface	PCIe Gen4

Display

Screen size (diagonal)	16.0 inches
Resolution	3200 × 2000
Supported refresh rates	• 60 Hz • 165 Hz

Connectors and slots

USB Standard-A connector	• Quantity: 2 • Maximum power output: 5 V, 0.9 A* • Supported signaling protocols: – USB 2.0 480 Mbps – SuperSpeed USB 5 Gbps **Note:** The USB Standard-A connector on the rear side of the PC supports maximum power output of 5 V and 2 A.
USB Type-C® connector	• Quantity: 1 • Maximum power output: 5 V, 3 A • Supported signaling protocols: – USB 2.0 480 Mbps – SuperSpeed USB 5 Gbps
Multi-purpose USB Type-C connector	• Quantity: 2 • Maximum power output: 5 V, 3 A • Maximum power input: 20 V, 7 A • Supported signaling protocols: – USB 2.0 480 Mbps – SuperSpeed USB 5 Gbps – SuperSpeed USB 10 Gbps – DisplayPort 1.4 – Thunderbolt 4 41.25 Gbps
HDMI™ connector	Supported signaling protocols: • Fixed-rate link (FRL) • Transition minimized differential signaling (TMDS)

Combo audio jack	• Diameter: 3.5 mm • Supported plug: – 3-pole, TRS – 4-pole, TRRS (CTIA and OMTP)
SD slot	Supported card types: • SD™ • SD High Capacity (SDHC™) • SD Extended Capacity (SDXC™)

Note: Data rates and performance ratings are dependent on connected devices and cables if they are used. USB Type-C connectors that are DisplayPort 1.4 compliant through DisplayPort alternate mode provide maximum output resolution of 5120 x 3200, at 60 Hz frame rate and color depth of 24 bpp (bits per pixel). The actual maximum output resolution is dependent on the connected display device and the cable being used.

Networking

Ethernet	2.5 Gbps
Wi-Fi®	• Wi-Fi 7, or • Wi-Fi 6E
Bluetooth®	Bluetooth 5.1/5.3*

Note: Support of Bluetooth 5.3 may require a future operating system update.

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)
3.2 Gen 1	5
3.2 Gen 2	10

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

Hotkeys

Look at the top row of the keyboard of your Lenovo computer and you'll find keys with printed icons. These keys are called hotkeys and they provide shortcuts to functions that you'll use frequently. The function that each hotkey provides is denoted by the icon printed on the key.

Hotkeys share keys with function keys (F1–F12) and other keys. Depending on the FnLock setting, you use hotkey functions by pressing the key directly or in combination with the Fn key.

Note: The FnLock switch does not apply to hotkeys not found in the first row of the keyboard. To use these hotkeys, always hold down the Fn key while pressing the key.

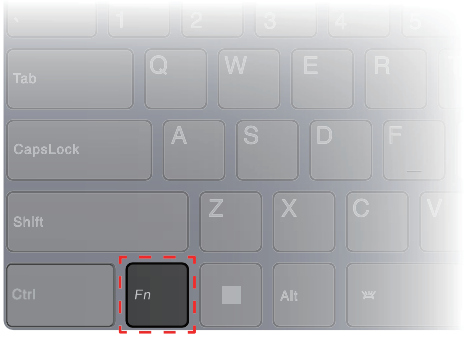

Figure 7. Location of the Fn key

The FnLock switch

The FnLock 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 FnLock switch.

Figure 8. Locations of the FnLock key and the Fn key

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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

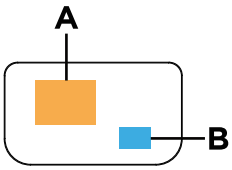

Figure 9. The layout of a dual-function key

Table 8. **FnLock** *and dual-function keys*

FnLock (Esc) **LED**	FnLock **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

Fn key shortcuts

Some letter keys on your keyboard can be used in combination with the Fn key to activate frequently used settings. To use the Fn key shortcuts, hold down the fn key and press one of the following keys.

Keys that can be used with the Fn key	**Function**
Q	Switching the PC's active operation mode
U	Turning rear connector lights on and off
R	Switching the screen's refresh rate
L	Turning the Legion branding light on and off

An old-fashioned keyboard usually includes keys that provide Break, Pause, ScrLk, and Insert functions for special purposes. These functions are used very rarely nowadays. However, these functions are supported as Fn key shortcuts by your keyboard.

Keys that can be used with the Fn key	**Function**
B	Break
P	Pause
S	ScrLk
K	Insert

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 Vantage or Lenovo 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 9. 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. In Balance mode, the computer dynamically switches between Performance mode and Quiet mode based on the tasks that are running on the computer.

Related topics

"Why can't I switch the PC to performance mode" on page 27

Choose or switch power plans

A power plan is a collection of power-saving settings made available by an operating system. With a power plan, you can set idle time-outs for different hardware components to enter a low-power state.

Lenovo has pre-defined a power plan for each operation mode. By switching the PC's active operation mode, you also switch the active power plan. For each of the power plan, the following table lists the default time-out settings to turn off the display and put the PC to sleep mode.

Power plan name	Turn off the display (plugged in)	Put the PC to sleep mode (plugged in)
Legion balance mode	5 minutes	15 minutes
Legion quiet mode	5 minutes	15 minutes
Legion performance mode	15 minutes	Never

Note: The listed settings are active when the computer is connected to an electrical outlet. If your PC includes a built-in battery pack, a different collection of time-out settings is set to take effect when the

computer is operating on battery power. To wake the computer from the sleep mode, press the power button or any key on the keyboard.

Use the rear USB Type-C connectors to supply power to your PC

In addition to the standard ac power adapter, some models came with an included USB Type-C power adapter. If you take your PC with you for travel or mobile computing, you may carry the USB Type-C power adapter and use it and either of the rear USB Type-C connectors to supply power to the PC.

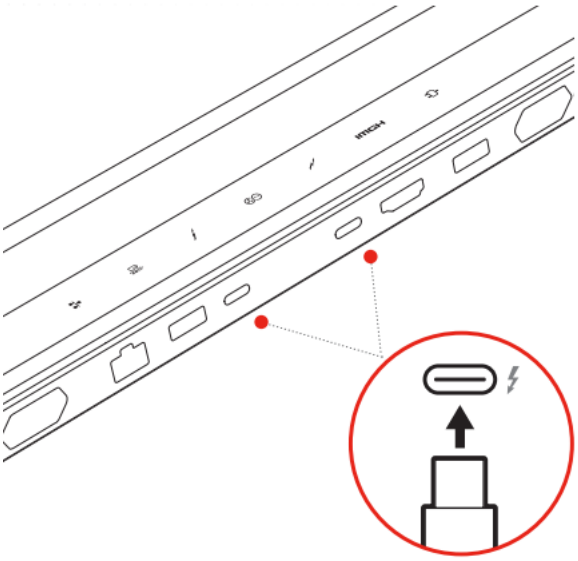

Figure 10. Either of the rear USB Type-C connectors can be used for supplying power to the PC

Note: The rear USB Type-C connectors are not designed as the primary power input connector. When the computer is operating, the power supplied by a USB Type-C power adapter may be insufficient. As a result, the computer may not operate at its full capacity and the battery charging may stop or is very slow. Use the standard ac power adapter whenever possible.

If your PC model does not come with an included USB Type-C power adapter, you may purchase a Lenovo-branded USB Type-C power adapter with the maximum output power of 140 W (20 V, 7 A). Power adapters with the maximum output power lower than 140 W (20 V, 7 A) should only be used to charge your PC when the PC is powered off or in sleep mode. Lenovo branded USB Type-C power adapters with the following listed output powers have been tested and found to work with the PC. Power adapters of other brands with the same ratings should also work but have not been thoroughly tested.

- 95 W (20 V, 4.75 A)
- 100 W (20 V, 5 A)
- 135 W (20 V, 6.75 A)

CAUTION:
When purchasing third-party USB Type-C chargers for use with the computer, choose a product that is safety approved or certified. A disqualified charger may cause damage to your computer or pose an electrical hazard. In many countries and regions, manufacturers or importers of electric chargers can submit their products to a certification authority or approved and recognized testing laboratories. Such a product usually carries a mark if it was tested to pass relevant quality and safety standards. For some countries and regions, this certification process is even mandatory. If you live in mainland China, choose a charger with the "CCC" mark; for users in many European countries, choose one with the "CE" mark; for users in the United States and Canada, choose a Listed charger that carries a mark by one of the Nationally Recognized Testing Laboratories. (for example, the "UL Listed" mark). For

people living in other countries and regions, consult a qualified electrical engineer for how to select a safety approved electric charger.

The Novo Button menu

The Novo Button menu can be displayed before the operating system starts. From the menu, you can choose to

- Open the BIOS/UEFI setup utility
- Open the boot device selection menu
- Open the Windows startup options screen

Note: From the Windows startup options screen, you can then choose to

Start your computer using a recovery drive

Reset your computer

Open advanced options screen

Open the Novo Button menu

Step 1. Turn on or restart the computer.

Step 2. Press F9 repeatedly.

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, Lenovo PC Manager, or Lenovo Smart Engine.

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 10. 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	Less than 0.5 hour	Less than 1.5 hours

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

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 charge optimization

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 charge optimization for the battery.

Overnight charge optimization 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 charge optimization ensures safe charging during the night and is beneficial to the long-term health of the battery.

Note: With overnight charge optimization 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 charge optimization, it can be enabled in Lenovo Vantage, Lenovo PC Manager, or Lenovo Smart Engine.

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.

Step 1. Unplug the computer and use it until the battery charge drops below 20%.

Step 2. Plug in the computer and charge the battery to 100%.

Chapter 3. Firmware setup utility

Your PC's firmware is a piece of software that is stored on the PC's Flash ROM chip. Firmware plays a key role in the operation of the PC. When you turn on the PC, the firmware checks and initiates the PC's hardware devices. It also checks the boot device for completeness and security, before executing the code to start up the operating system.

A Lenovo PC usually provides a setup utility for you to change some firmware settings. You can use Windows advanced startup to restart your PC and open the firmware setup utility. Alternatively, you can access the setup utility from the Novo button menu.

Many firmware settings are also available in Lenovo developed apps, such as Lenovo PC Manager and Lenovo Vantage. For daily use of your PC, you should use the firmware setup utility very rarely.

Use Windows advanced startup to open the PC's firmware setup utility

From the Windows operating system, you can use the advanced startup to restart your PC and open the firmware setup utility.

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

Step 2. Under **Advanced startup**, select **Restart now**.
Your PC will restart.

Step 3. Select **Troubleshoot** on the **Choose an option** page.

Step 4. Select **Advanced options** on the **Troubleshoot** page.

Step 5. Select **UEFI firmware settings** on the **Advanced options** page.

Step 6. Click **Restart**.

Your PC will restart to open the firmware's welcome screen. Select **More Settings** to open the setup utility of the firmware.

Set passwords in UEFI/BIOS setup utility

This section introduces the types of passwords that you can set in the UEFI (Unified Extensible Firmware Interface) or BIOS (Basic Input/Output System) setup utility.

Password types

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

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Password type	Pre-requisite	Usage
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.

Notes:

- 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 administrator password

You set the administrator password to prevent unauthorized access to the UEFI/BIOS 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 UEFI/BIOS 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 UEFI/BIOS 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 UEFI/BIOS 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 UEFI/BIOS 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 password for the secondary storage device

Permanent data is stored on secondary storage devices. Your computer may include one or more solid-state drive or hard disk drive as secondary storage device(s). You can set passwords for secondary storage devices 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.

Step 1. Open the UEFI/BIOS setup utility.

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

Note: If your computer model includes more than one secondary storage device, you can set separate password for each device. 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 hard disk password

Step 1. Open the UEFI/BIOS 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 4. Help and support

Frequently asked questions

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, Lenovo PC Manager or Lenovo Smart Engine
- Firmware Setup Utility

Which connector should I use to connect my PC to an external display device

Your PC includes three connectors that you may use to connect an external display device.

Connector that supports video output	Quantity	Location on the PC	Connector labeled by
HDMI connector	1	Rear side	HDMI
Multi-purpose USB Type-C connector	2	Rear side	⚡

You need to check the connection capabilities of the external display device to determine which connector to use.

Why can't I switch the PC to performance mode

Your PC cannot be switched to performance mode if it is running on battery power. Plug your PC into an electrical outlet and try again.

How can I open my PC's firmware setup utility

You have several options to open your PC's firmware setup utility.

- Turn on or restart your PC and press the F2 key.
- Open the Novo button menu and choose **BIOS Setup**.
- Use Windows advanced startup to restart your PC.

Related topics

"The Novo Button menu" on page 21

Related tasks

"Use Windows advanced startup to open the PC's firmware setup utility" on page 23

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How can I open the Novo button menu if my PC does not have a Novo button

If your PC does not include a Novo button, you can press an interruption key when the PC is starting up to open the Novo button menu.

Step 1. Turn on or restart your PC.

Step 2. When the Lenovo or a branding logo appears on the screen, immediately press the F9 key.

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.

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
Reset or restore Windows	• Use Lenovo recovery options. 1. Go to https://support.lenovo.com/HowToCreateLenovoRecovery. 2. Follow the on-screen instructions. • Use Windows recovery options. 1. Go to https://pcsupport.lenovo.com. 2. Detect your computer or manually select your computer model. 3. Click **Diagnostics → Operating System Diagnostics** and then follow the on-screen instructions.
Use Lenovo Vantage or Lenovo PC Manager to: • Download and install the latest drivers and firmware. • Configure hardware settings • Diagnose computer hardware problems. • Check the computer warranty status.	Use Windows Search.

Resources	How to access?
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 **Documentation** and filter out the documentation you want.
Lenovo Support Web site with the latest support information of the following: • Drivers and software • Diagnostic solutions • 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 or the Cortana® personal assistant. • 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:

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 (330 W)	X	
ac power adapter (140 W)*	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.
- Parts labeled with an asterisk ("*") are available on selected product models.

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. Function descriptions for Lenovo hotkeys

Hotkey functions are denoted by the icons printed on the keys. The following table describes the functions for all Lenovo hotkeys. The keyboard of your Lenovo computer should only support a subset of the listed hotkeys.

Table 11. Hotkey icons and denoted functions

Hotkey icon	Function description
	Mutes/Unmutes sound.
+	Increases volume.
−	Decreases volume.
	Enables/Disables the microphone.
+	Increases screen brightness.
−	Decreases screen brightness.
	Selects and sets up display devices.
	Enables/Disables airplane mode. (Windows operating systems)
	Displays the Lenovo Smart Key quick launch panel.
	Enables/Disables the touch pad.
	Displays all open apps as thumbnails. (Windows operating systems)
	Opens the Calculator app. (Windows operating systems)
	Opens the Snipping tool. (Windows operating systems)
	Opens the Settings app. (Windows operating systems)
	Locks the screen. (Windows operating systems)
	Opens the clipboard history. (Windows operating systems)
	Puts the computer to sleep.
	Opens the context menu of the current active app.
	Opens an associated voice app, voice service, or Microsoft Cortana.
	Adjusts the keyboard backlight.
+	Increases the brightness of the keyboard backlight.
−	Decreases the brightness of the keyboard backlight.
	Answers an incoming Microsoft Teams call.
	Rejects an incoming Microsoft Teams call.
	Accesses Lenovo Support resources.
▶/II	Starts/Pauses audio or video playback.
■	Stops audio or video playback.
⏮	Plays the previous audio or video in the playlist.

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Table 11. Hotkey icons and denoted functions (continued)

Hotkey icon	Function description
▶▶|	Plays the next audio or video in the playlist.
	Switches the computer's active operation mode.
	Blurs the background for videoconferencing.
	Switches the computer's active audio mode.
	Turns on/off night light mode. (Windows operating systems)

Note: Hotkey functions may change if the associated app or the Windows operating system is updated.

Appendix B. Notices and trademarks

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