

E14 Gen 2 and E15 Gen 2 User Guide

ThinkPad



Lenovo

Read this first

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

- Appendix A “Important safety information” on page 51
- *Safety and Warranty Guide*
- *Setup Guide*

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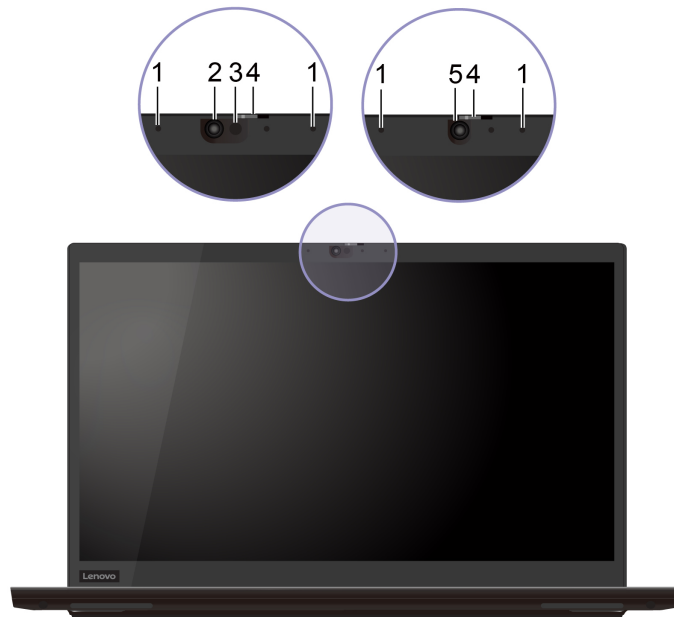
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About this documentation

- Illustrations in this documentation might look different from your product.
- Depending on the model, some optional accessories, features, and software programs might not be available on your computer.
- Depending on the version of operating systems and programs, some user interface instructions might not be applicable to your computer.
- Documentation content is subject to change without notice. Lenovo makes constant improvements on the documentation of your computer, including this *User Guide*. To get the latest documentation, go to <https://pcsupport.lenovo.com>.
- Microsoft® makes periodic feature changes to the Windows® operating system through Windows Update. As a result, some information in this documentation might become outdated. Refer to Microsoft resources for the latest information.

Chapter 1. Meet your computer

Front



1. Microphones	Capture or record sound.
2. Infrared LED*	Emit infrared (IR) light. Note: Do not block the IR light-emitting diode (LED). Otherwise, the IR function might not work.
3. Camera with IR function*	Take pictures or record videos by clicking Camera from the Start menu. The indicator next to the camera is on when the camera is in use. Log in to your computer with face authentication. See “Use face authentication (for selected models)” on page 28. If you use other apps that support photographing, video chatting, and video conference, the camera starts automatically when you enable the camera-required feature from the app.
4. ThinkShutter	Slide ThinkShutter to cover or uncover the camera lens. It is designed to protect your privacy.
5. Camera*	Take pictures or record videos by clicking Camera from the Start menu. The indicator next to the camera is on when the camera is in use. If you use other apps that support photographing, video chatting, and video conference, the camera starts automatically when you enable the camera-required feature from the app.

* for selected models

Base

E14 Gen 2



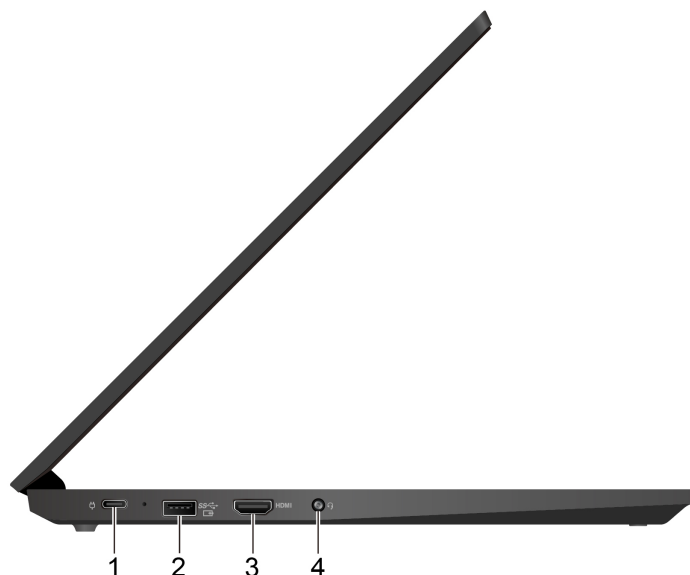
E15 Gen 2



1. Power button / fingerprint reader*	Use as power button Press to turn on the computer or put the computer to sleep mode. To turn off the computer, open the Start menu, click  Power, and then select Shut down. The indicator in the power button shows the system status of your computer. • White, Blinking for three times: The computer is initially connected to power. • White, On: The computer is on. • Off: The computer is off or in hibernation mode. • White, Blinking rapidly: The computer is entering sleep or hibernation mode. • White, Blinking slowly: The computer is in sleep mode. Use as fingerprint reader Log in to your computer with enrolled fingerprints. See “Use the fingerprint reader (for selected models)” on page 28. The indicator shows the status of the fingerprint reader: • Green, blinking for two seconds, then turn solid on: The computer is ready for fingerprint scan. • White, solid on: The scan is successful.
2. Numeric keypad	Quickly input numbers.
3. Speakers	Enable you to experience high-quality sound.
4. Trackpad	Perform finger touch and all the functions of a traditional mouse. See “Use the trackpad” on page 16.
5. TrackPoint® pointing device	Perform all the functions of a traditional mouse. See “Use the TrackPoint pointing device” on page 15.

* for selected models

Left



1. USB-C™ connector (USB 3.2 Gen 1)

- Charge your computer.
- Charge USB-C compatible devices with the output voltage and current of 5 V and 3 A.
- Transfer data at USB 3.2 speed, up to 5 Gbps.
- Connect to an external display:
 - USB-C to VGA: 1920 x 1080 pixels, 60 Hz
 - USB-C to DP: 3840 x 2160 pixels, 60 Hz
- Supply power to another computer using P-to-P (Peer to Peer) 2.0 charging function. See “Use P-to-P 2.0 charging function” on page 21.
- Connect to USB-C accessories to help expand your computer functionality. To purchase USB-C accessories, go to <https://www.lenovo.com/accessories>.

Note: When the battery power is below 10%, the connected USB-C accessories might not work correctly.

2. Always On USB 3.2 connector Gen 1

With the Always On USB feature enabled, the Always On USB 3.2 connector Gen 1 can charge a USB-compatible device when the computer is on, off, in sleep mode, or in hibernation mode.

Notes:

- By default, **Always On USB** is enabled and **Charge in Battery Mode** is disabled in UEFI BIOS.
- When the computer is off or in hibernation mode, and **Charge in Battery Mode** is disabled in UEFI BIOS, ensure that you have connected the computer to ac power.

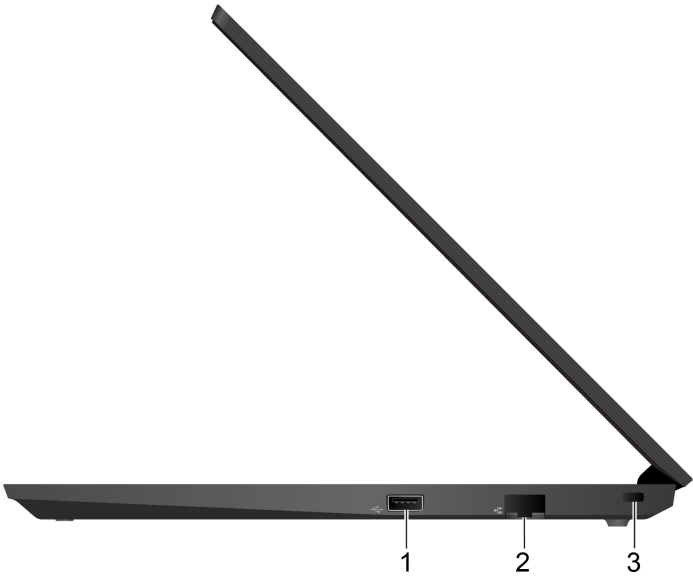
To enable the Always On USB feature:

1. Enter the UEFI BIOS menu. See “Enter the UEFI BIOS menu” on page 31.
 2. Click **Config → USB → Always On USB** to enable the Always On USB feature.
-

3. HDMI™ connector	Connect to a compatible digital audio device or video monitor, such as an HDTV.
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4. Audio connector	• Connect headphones with a 3.5-mm (0.14-inch) and 4-pole plug to listen to the sound from the computer. • Connect a headset with a 3.5-mm (0.14-inch) and 4-pole plug to listen to the sound from the computer or talk with others. Note: This connector does not support standalone external microphones.
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Right



1. USB 2.0 connector	Connect a USB-compatible device, such as a USB keyboard, USB mouse, USB storage device, or USB printer.
2. Ethernet connector	Connect to a local area network (LAN).
3. Security-lock slot	Lock your computer to a desk, table, or other fixtures through a compatible security cable lock. See “Lock the computer” on page 25.

Features and specifications

Dimensions	E14 Gen 2 • Width: 324 mm (12.76 inches) • Depth: 220.7 mm (8.69 inches) • Thickness: 18.65 mm to 21.05 mm (0.73 inches to 0.83 inches)
	E15 Gen 2 • Width: 365 mm (14.37 inches) • Depth: 240 mm (9.45 inches) • Thickness: 18.9 mm to 19.65 mm (0.74 inches to 0.77 inches)
Maximum heat output (depending on the model)	• 45 W (154 Btu/hr) • 65 W (222 Btu/hr)
Power source (ac power adapter)	• Sine-wave input at 50 Hz to 60 Hz • Input rating of the ac power adapter: 100 V to 240 V ac, 50 Hz to 60 Hz
Microprocessor	To view the microprocessor information of your computer, right-click the Start button and then click System .
Memory	• Double data rate 4 (DDR4) small outline dual in-line memory module (SODIMM) *, up to 16 GB • Double data rate 4 (DDR4) memory module soldered on the system board, up to 8 GB
Storage device	M.2 solid-state drive
Display	• Brightness control • Color display with Thin Film Transistor (TFT) technology • Color display with In-Plane Switching (IPS) or Twisted Nematic (TN) technology • Display size: – E14 Gen 2: 355.6 mm (14 inches) – E15 Gen 2: 396.24 mm (15.6 inches) • Display resolution: 1920 x 1080 pixels • Integrated graphics
Keyboard	• Function keys • Numeric keypad (for E15 Gen 2 only) • Six-row keyboard or six-row keyboard with backlight • Trackpad • TrackPoint pointing device
Connectors and slots	• Audio connector • Ethernet connector • Always On USB 3.2 connector Gen 1 • HDMI connector • USB 2.0 connector • USB-C connector (USB 3.2 Gen 1)

Security features	• Face authentication* • Fingerprint reader* • Password • Security-lock slot • Trusted Platform Module (TPM)
Wireless features	• Bluetooth • Wireless LAN
Others	• Camera* • Microphones

* for selected models

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 / 3.1 Gen 1	5
3.2 Gen 2 / 3.1 Gen 2	10
3.2 Gen 2 × 2	20

Chapter 2. Get started with your computer

Get started with Windows 10

Learn the basics of Windows 10 and start working with it right away. For more information about Windows 10, see the Windows help information.

Windows account

A user account is required to use the Windows operating system. It can either be a Windows user account or a Microsoft account.

Windows user account

When you start Windows for the first time, you are prompted to create a Windows user account. This first account you created is of the “Administrator” type. With an Administrator account, you can create additional user accounts or change account types by doing the following:

1. Open the **Start** menu and select **Settings → Accounts → Family & other users**.
2. Follow the on-screen instructions.

Microsoft account

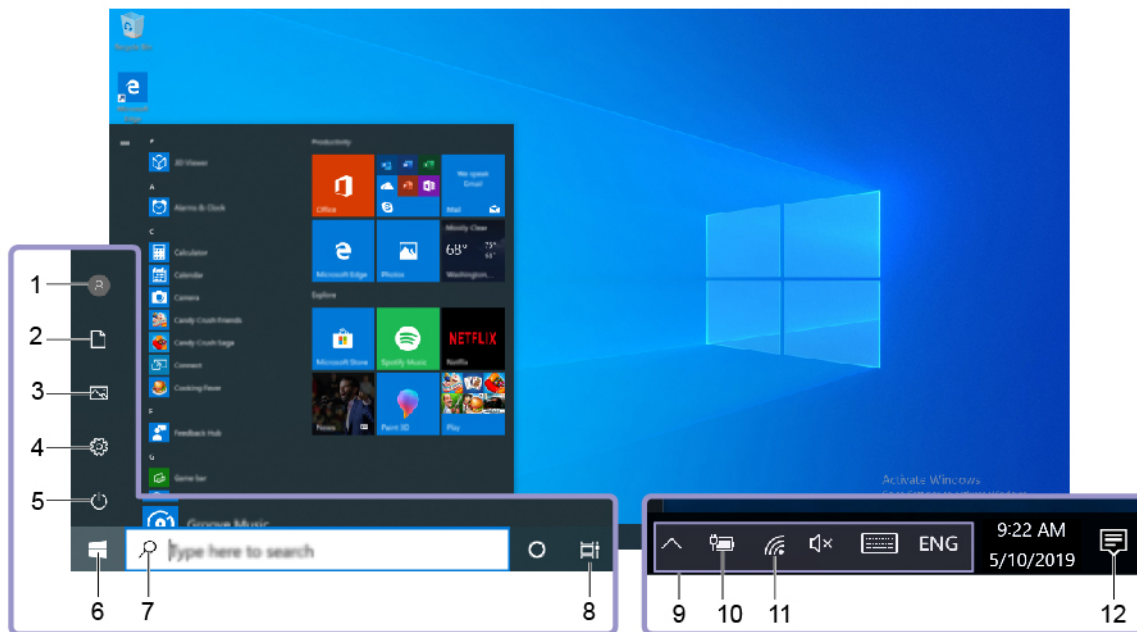
You can also log in to the Windows operating system with a Microsoft account.

To create a Microsoft account, go to the Microsoft sign-up page at <https://signup.live.com> and follow the on-screen instructions.

With a Microsoft account, you can:

- Enjoy one-time signing in if you are using other Microsoft services, such as OneDrive, Skype, and Outlook.com.
- Sync personalized settings across other Windows-based devices.

Windows user interface



1. Account 	Change account settings, lock the computer, or sign out from the current account.
2. Documents 	Open the Documents folder, a default folder to save your received files.
3. Pictures 	Open the Pictures folder, a default folder to save your received pictures.
4. Settings 	Launch Settings.
5. Power 	Shut down, restart, or put the computer into sleep mode.
6. Start button 	Open the Start menu.
7. Windows Search 	Type what you are looking for in the search box and get search results from your computer and the Web.
8. Task View 	Display all opened apps and switch among them.
9. Windows notification area	Display notifications and status of some features.
10. Battery status icon	Display power status and change battery or power settings. When your computer is not connected to ac power, the icon changes to  .
11. Network icon	Connect to an available wireless network and display the network status. When connected to a wired network, the icon changes to  .
12. Action center 	Display the latest notifications from apps and provide quick access to some features.

Open the Start menu

- Click the **Start** button.
- Press the Windows logo key on the keyboard.

Access Control Panel

- Open the **Start** menu and click **Windows System → Control Panel**.

- Use Windows Search.

Launch an app

- Open the **Start** menu and select the app you want to launch.
- Use Windows Search.

Windows label

Your computer might have a Windows 10 Genuine Microsoft label affixed to its cover depending on the following factors:

- Your geographic location
- Edition of Windows 10 that is preinstalled

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

- In the People's Republic of China, the Genuine Microsoft label is required on all computer models preinstalled with any version of Windows 10.
- In other countries and regions, the Genuine Microsoft label is required only on computer models licensed for Windows 10 Pro.

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

There are no external, visual indicators of the Product ID or Windows version for which the computer is licensed. Instead, the Product ID is recorded in the computer firmware. Whenever a Windows 10 product is installed, the installation program checks the computer firmware for a valid, matching Product ID to complete the activation.

In some cases, an earlier Windows version might be preinstalled under the terms of the Windows 10 Pro license downgrade rights.

Connect to networks

Your computer helps you connect to the world through a wired or wireless network.

Connect to the wired Ethernet

Connect your computer to a local network through the Ethernet connector on your computer with an Ethernet cable.

Note: If the computer is connected to a supported docking station or dock, use the Ethernet connector on the docking station or dock instead of the one on the computer.

Connect to Wi-Fi networks

1. Click the network icon in the Windows notification area. A list of available wireless networks is displayed.
2. Select a network available for connection. Provide required information, if needed.

Use Lenovo Vantage



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

Access Lenovo Vantage

Open the **Start** menu and click **Lenovo Vantage**. You also can type **Lenovo Vantage** in the search box.

To download the latest version of Lenovo Vantage, go to Microsoft Store and search by the app name.

Key features

Lenovo Vantage enables you to:

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

Notes:

- The available features vary depending on the computer model.
- Lenovo Vantage makes periodic updates of the features to keep improving your experience with your computer. The description of features might be different from that on your actual user interface.

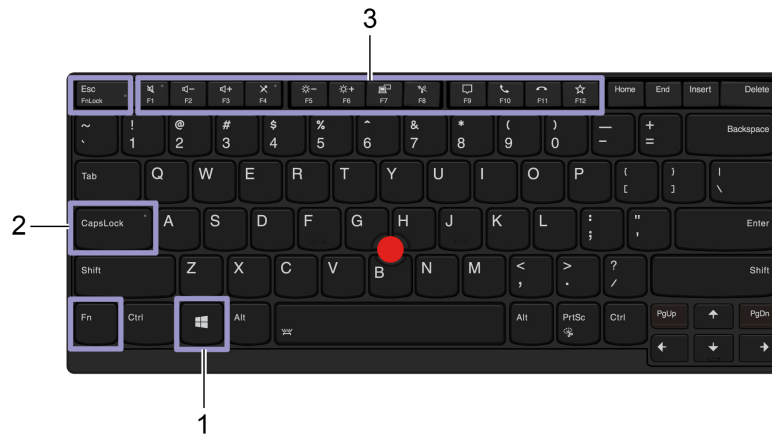
Interact with your computer

Your computer provides you various ways to navigate the screen.

Use the keyboard shortcuts

The special keys on the keyboard help you work more easily and effectively.

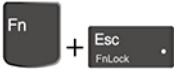
E14 Gen 2



E15 Gen 2



	Open the Start menu.
1. Windows logo key	For information about using this key with other keys, see the Windows help information.
2. Caps Lock key	Switch the letter case between the upper case and lower case. When the key indicator is on, you can type uppercase letters.
3. F1–F12 function keys	Invoke the special function printed as an icon on each key or standard function. To choose whether to invoke the special function or standard function: 1. Go to Control Panel and view by Large icons or Small icons. 2. Click Keyboard or Lenovo - Keyboard Manager and select the option of your preference.
4. Numeric keypad (for E15 Gen 2 only)	Input numbers quickly when the Numeric Lock indicator is on.

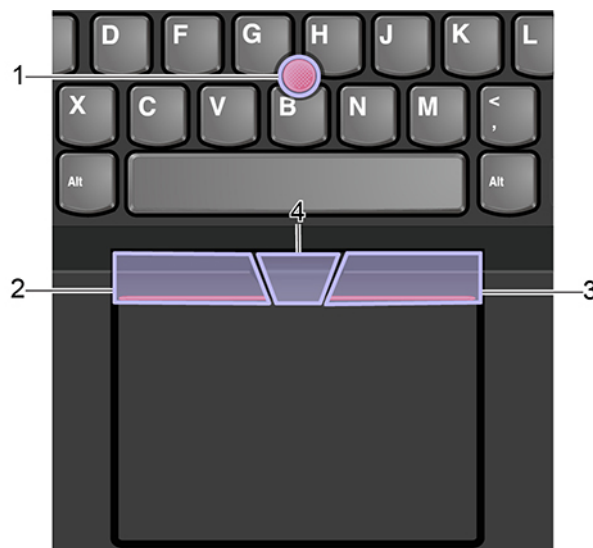
	Switch the function of the F1–F12 keys between the standard function and special function printed as an icon on each key.
	When the Fn Lock indicator is on: • Press F1-F12 to use the standard function. • Press Fn+F1-F12 to use the special function.
	When the Fn Lock indicator is off: • Press Fn+F1-F12 to use the standard function. • Press F1-F12 to use the special function.
	Mute or unmute the speakers. When the key indicator is on, the speakers are muted. If you mute the speakers and turn off your computer, the speakers remain muted when you turn on your computer.
	Decrease the speaker volume.
	Increase the speaker volume.
	Mute or unmute the microphones. When the key indicator is on, the microphones are muted.
	Darken the computer display.
	Brighten the computer display.
	Manage external displays.
	Enable or disable the built-in wireless features.
	Open or collapse the notification center.
	Answer incoming calls. This function only works with some apps, such as Skype for Business 2016 and Microsoft Teams 1.0. By default, the function works with Skype for Business 2016. You can change the default setting on Lenovo Vantage.
	Decline incoming calls. This function only works with some apps, such as Skype for Business 2016 and Microsoft Teams 1.0. By default, the function works with Skype for Business 2016. You can change the default setting on Lenovo Vantage.
	Note: You can also press F11 to hang up ongoing calls on Skype for Business 2016. Invoke the function defined by yourself. Open Lenovo Vantage, and you can define different functions for the F12 key.

 +  (for E15 Gen 2 only)	Open the calculator.
 +  (for E15 Gen 2 only)	Put your computer to sleep mode.
 + 	Open the Snipping Tool program.
Fn+Spacebar	Switch between different keyboard backlight statuses if your computer supports keyboard backlight.
Fn+B	Equal the Break key on a conventional external keyboard.
Fn+K	Equal the ScrLK or Scroll Lock key on a conventional external keyboard.
Fn+P	Equal the Pause key on a conventional external keyboard.
Fn+S	Equal the SysRq key on a conventional external keyboard.
Fn+4	Put the computer to sleep mode. To wake up the computer, press Fn or the power button.
Fn+Left arrow key	Equal the Home key.
Fn+Right arrow key	Equal the End key.

Use the TrackPoint pointing device

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

Use the TrackPoint pointing device



1. Pointing stick

Use your index finger or middle finger to apply pressure to the pointing-stick nonslip cap in any direction parallel to the keyboard. The pointer on the screen moves accordingly but the pointing stick itself does not move. The higher the pressure applied, the faster the pointer moves.

2. **Left-click button**

Press to select or open an item.

3. **Right-click button**

Press to display a shortcut menu.

4. **Middle button**

Press and hold the dotted middle button while applying pressure to the pointing stick in the vertical or horizontal direction. Then, you can scroll through the document, Web site, or apps.

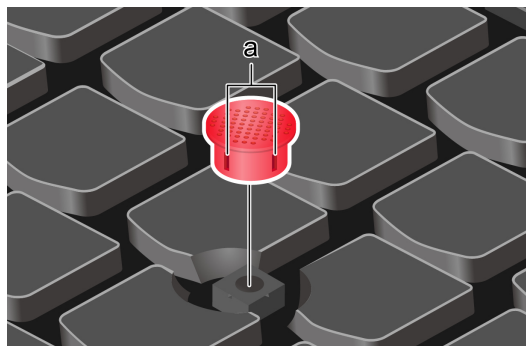
Disable the TrackPoint pointing device

The TrackPoint pointing device is active by default. To disable the device:

1. Open the **Start** menu, and then click **Settings → Devices → Mouse**.
2. Follow the on-screen instructions to disable TrackPoint.

Replace the pointing-stick nonslip cap

Note: Ensure that the new cap has grooves **a**.



Use the trackpad

The entire trackpad surface is sensitive to finger touch and movement. You can use the trackpad to perform all the pointing, clicking, and scrolling functions of a traditional mouse.

Use the trackpad



1. Left-click zone

Press to select or open an item.

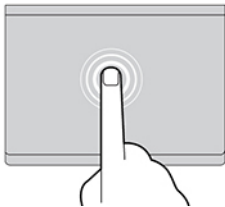
You also can tap anywhere on the surface of the trackpad with one finger to perform the left-click action.

2. Right-click zone

Press to display a shortcut menu.

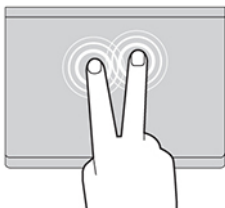
You also can tap anywhere on the surface of the trackpad with two fingers to perform the right-click action.

Use the touch gestures



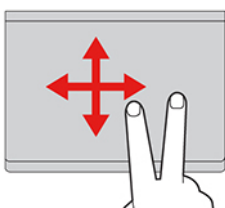
Tap

Tap anywhere on the trackpad with one finger to select or open an item.



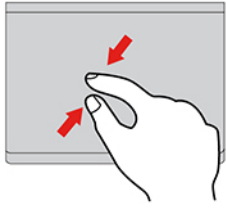
Two-finger tap

Tap anywhere on the trackpad with two fingers to display a shortcut menu.



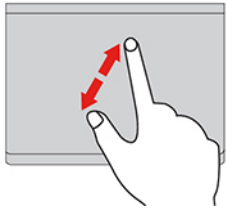
Two-finger scroll

Put two fingers on the trackpad and move them in the vertical or horizontal direction. This action enables you to scroll through the document, Web site, or apps.



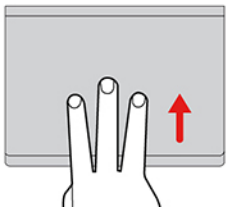
Two-finger zoom out

Put two fingers on the trackpad and move them closer together to zoom out.



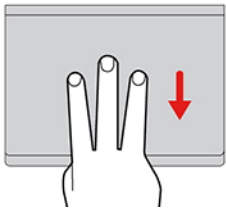
Two-finger zoom in

Put two fingers on the trackpad and move them farther apart to zoom in.



Swipe three fingers up

Put three fingers on the trackpad and move them up to open the task view to see all your open windows.



Swipe three fingers down

Put three fingers on the trackpad and move them down to show the desktop.

Notes:

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

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

Disable the trackpad

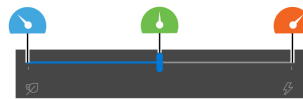
The trackpad is active by default. To disable the device:

1. Open the **Start** menu, and then click **Settings → Devices → Touchpad**.
2. In the Touchpad section, turn off the **Touchpad** control.

Use the Intelligent Cooling feature

The Intelligent Cooling feature enables your computer to work in the following three modes:

- Quiet mode : the quietest fan noise.
- Balanced mode : balanced performance and fan noise.
- Performance mode : the highest performance and normal fan noise.



on ac power



on battery power

For computers with Windows operating system, do the following to select the preferred mode:

1. Click the battery status icon in the Windows notification area.
2. Move the slider to the left or right to select your preferred mode.

Use multimedia

Use your computer for business or entertainment with the built-in components (camera, speakers, and audio features) or connected external devices (an external projector, monitor, and HDTV).

Use audio

To enhance your audio experience, connect speakers, headphones, or a headset with a 3.5-mm (0.14-inch), 4-pole plug to the audio connector.

Adjust the speaker volume

Press  to increase the speaker volume or press  to decrease the speaker volume.

Change the sound settings

1. Go to **Control Panel** and view by category.
2. Click **Hardware and Sound** → **Sound**.
3. Change the settings as you prefer.

Connect to an external display

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

Connect to a wired display

1. Connect the external display to an appropriate video connector on your computer, such as an HDMI connector or USB-C connector.
2. Connect the external display to an electrical outlet.
3. Turn on the external display.

If your computer cannot detect the external display, right-click a blank area on the desktop, and then click **Display settings** → **Detect**.

Supported resolution

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

Connect the external display to	Supported resolution
the USB-C connector	Up to 4096 x 2160 pixels / 60 Hz
the HDMI connector	Up to 4096 x 2160 pixels / 30 Hz

Connect to a wireless display

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

- Open the **Start** menu, and then click **Settings → Devices → Bluetooth & other devices → Add Bluetooth or other device**. In the Add a device window, click **Wireless display or dock**. Then, follow the instructions on the screen.
- Click the action center icon  in the Windows notification area and click **Connect**. Select the wireless display and follow the on-screen instructions.

Set the display mode

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

- **Duplicate these displays:** Display the same video output on both your computer screen and an external display.
- **Extend these displays:** Extend the video output from your computer display to an external display. You can drag and move items between the two displays.
- **Show only on 1:** Display the video output only on your computer screen.
- **Show only on 2:** Display the video output only on an external display.

If you show programs using DirectDraw or Direct3D® in full-screen mode, only the main display shows the video output.

Change display settings

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

You can change the settings for both the computer display and the external display. For example, you can define which one is the main display and which one is the secondary display. You also can change the resolution and orientation.

Note: If you set a higher resolution for the computer display than the external display, only part of the screen can be displayed on the external display.

Chapter 3. Explore your computer

Manage power

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

Check the battery status and temperature

Check the battery status

The battery status icon  or  is in the Windows notification area. You can click the icon to check the battery status, view the current power plan, change the power mode, and access battery settings quickly.

Check the battery temperature

Open Lenovo Vantage, and then follow the on-screen instructions to view battery details.

Charge the computer

Use ac power

When the battery power is low, charge your battery by connecting your computer to ac power.

The battery is fully charged in about four to eight hours. If the power adapter shipped with your computer supports the rapid charge function, the battery is 80% charged in about one hour when the computer is turned off. The actual charging time depends on the battery size, the physical environment, and whether you are using the computer.

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

Note: To maximize the life of the battery, the computer does not recharge the battery if the remaining power is greater than 95%.

Use P-to-P 2.0 charging function

The USB-C connector on the computer features the Lenovo-unique P-to-P 2.0 charging function. When no ac power is available, this feature enables one computer to supply power to another computer through a USB-C to USB-C cable.

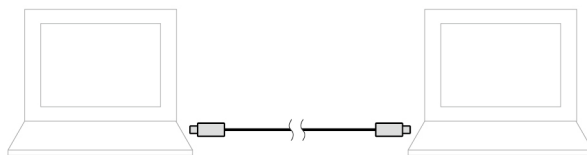
Before using the function, ensure that:

- The selected connectors support the P-to-P 2.0 charging function and power delivery function.
- **Always On USB** and **Charge in Battery Mode** are enabled in UEFI BIOS of both computers, so that the function works even when the computers are off or in hibernation mode. To enable **Always On USB** and **Charge in Battery Mode**:
 1. Enter the UEFI BIOS menu. See “Enter the UEFI BIOS menu” on page 31.
 2. Click **Config** → **USB** to enable **Always On USB** and **Charge in Battery Mode**.

To use the function (when no ac power is available):

The remaining battery power of computer A should be at least 30% and be 3% higher than that of computer B. To check the battery status, see “Check the battery status and temperature” on page 21. Connect the

computers to each other with a USB-C to USB-C cable. In this situation, computer A works as the power supply. Once the remaining battery power of computer A is lower than 30%, computer A stops supplying power to computer B.



Note: The actual charging speed using the Lenovo-unique P-to-P 2.0 charging function varies depending on many factors, such as the remaining battery power of the computers, the wattage of the ac power adapter, and whether you are using the computers.

Maximize the battery life

- Lower the brightness of the computer display.
- Turn off the wireless features when not in use.
- Use the battery until the charge is depleted.
- Recharge the battery completely before using it.

Set power button behaviors

You can define what the power button does according to your preference. For example, by pressing the power button, you can turn off the computer or put the computer to sleep or hibernation mode.

To change what the power button does:

1. Right-click the battery status icon in the Windows notification area.
2. Click **Power Options** → **Choose what the power buttons do**.
3. Change the settings as you prefer.

Set the power plan

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

Table 1. Default power plan (when plugged into ac power)

- | |
|--|
| <ul style="list-style-type: none">• Turn off the display: After 10 minutes• Put the computer to sleep: After 30 minutes |
|--|

To reset the power plan to achieve the best balance between performance and power saving:

1. Right-click the battery status icon and select **Power Options**.
2. Choose or customize a power plan of your preference.

Transfer data

Quickly share your files using the built-in Bluetooth among devices with the same features.

Connect to a Bluetooth-enabled device

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

1. Turn on Bluetooth on the computer.
 - Click the action center icon  in the Windows notification area. Enable the Bluetooth feature.
 - Open the **Start** menu, and then click **Settings → Devices → Bluetooth & other devices**. Turn on the **Bluetooth** switch.
2. Click **Add Bluetooth or other device → Bluetooth**.
3. Select a Bluetooth device, and then follow the on-screen instructions.

Your Bluetooth-enabled device and computer will automatically connect the next time if the two devices are in range of each other with Bluetooth turned on. You can use Bluetooth for data transfer or remote control and communication.

Airplane mode

When the Airplane mode is enabled, all wireless features are disabled.

To enable or disable the Airplane mode:

1. Open the **Start** menu.
2. Click **Settings → Network & Internet → Airplane mode**.
3. Turn on or turn off the **Airplane mode** switch.

Purchase options

Lenovo has a number of hardware accessories and upgrades to help expand the capabilities of your computer. Options include memory modules, storage devices, network cards, port replicators or docking stations, batteries, power adapters, keyboards, mice, and more.

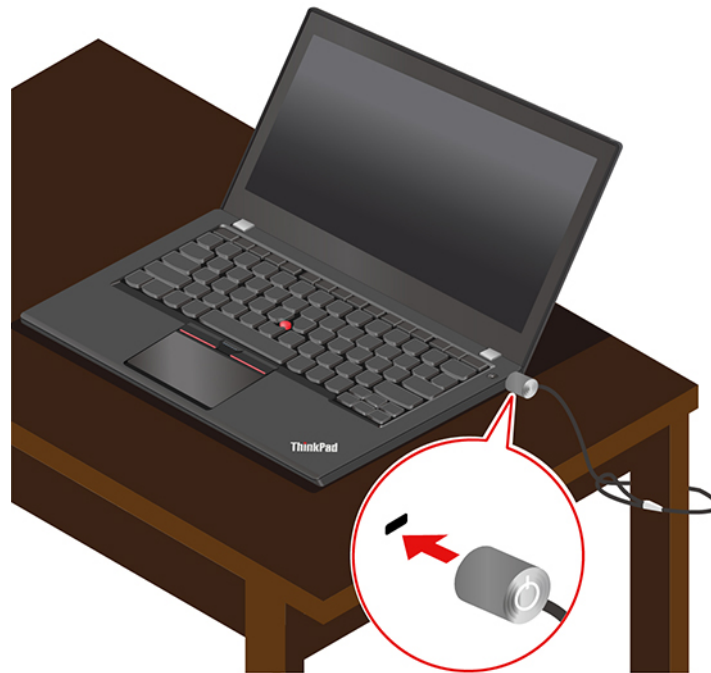
To shop at Lenovo, go to <https://www.lenovo.com/accessories>.

Chapter 4. Secure your computer and information

Lock the computer

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

Note: You are responsible for evaluating, selecting, and implementing the locking device and security feature. Lenovo makes no comments, judgments, or warranties about the function, quality, or performance of the locking device and security feature. Cable locks for your product are available from Lenovo at <https://smartfind.lenovo.com>.



Use passwords

This section introduces types of passwords in UEFI (Unified Extensible Firmware Interface) BIOS (Basic Input/Output System) and how to set, change, and remove a password.

Password types

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

Power-on password

If you set a power-on password, a window is displayed on the screen when you turn on the computer. Enter the correct password to use the computer.

Supervisor password

The supervisor password protects the system information stored in UEFI BIOS. When entering the UEFI BIOS menu, enter the correct supervisor password in the window prompted. You also can press Enter to

skip the password prompt. However, you cannot change most of the system configuration options in UEFI BIOS.

If you have set both the supervisor password and power-on password, you can use the supervisor password to access your computer when you turn it on. The supervisor password overrides the power-on password.

System management password

The system management password can also protect the system information stored in UEFI BIOS like a supervisor password, but it has lower authority by default. The system management password can be set through the UEFI BIOS menu or through Windows Management Instrumentation (WMI) with the Lenovo client-management interface.

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

1. Enter the UEFI BIOS menu. See “Enter the UEFI BIOS menu” on page 31.

Note: When you are prompted to enter the password, enter the correct supervisor password if a supervisor password has been set, or enter the correct system management password if no supervisor password has been set. Otherwise, you cannot change the configurations in the following steps.

2. Select **Security → Password → System Management Password Access Control**.
3. Follow the on-screen instructions.

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

Hard disk passwords

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

To set the hard disk password, select one of the following types:

- **User hard disk password only**

When a user hard disk password is set without a master hard disk password, the user must enter the user hard disk password to access files and applications on the storage drive.

- **Master hard disk password + User hard disk password**

The master hard disk password is set and used by a system administrator. It enables the administrator to access any storage drive in a system or any computer connected in the same network. The administrator can also assign a user hard disk password for each computer in the network. The user of the computer can change the user hard disk password as desired, but only the administrator can remove the user hard disk password.

When prompted to enter a hard disk password, press F1 to switch between the master hard disk password and user hard disk password.

Note: The hard disk password is not available in the following situations:

- A Trusted Computing Group (TCG) Opal-compliant storage drive and a TCG Opal management software program are installed in the computer, and the TCG Opal management software program is activated.
- An eDrive storage drive is installed in the computer preinstalled with the Windows 10 operating system.

Set, change, and remove a password

Before you start, print these instructions.

1. Restart the computer. When the logo screen is displayed, press F1 to enter the UEFI BIOS menu.
2. Select **Security → Password** by using the arrow keys.
3. Select the password type. Then, follow the on-screen instructions to set, change, or remove a password.

You should record all your passwords and store them in a safe place. If you forget any of your passwords, any potential repair actions required are not covered under warranty.

What to do if you forget your power-on password

If you forget your power-on password, do the following to remove the power-on password:

- If you have set a supervisor password and remember it:
 1. Restart the computer. When the logo screen is displayed, immediately press F1.
 2. Type the supervisor password to enter the UEFI BIOS menu.
 3. Select **Security → Password → Power-On Password** by using the arrow keys.
 4. Type the current supervisor password in the **Enter Current Password** field. Then, leave the **Enter New Password** field blank, and press Enter twice.
 5. In the Changes have been saved window, press Enter.
 6. Press F10 to save changes and exit the UEFI BIOS menu.
- If you have not set a supervisor password, contact a Lenovo authorized service provider to have the power-on password removed.

What to do if you forget your hard disk password

If you forget your user hard disk password or both user and master hard disk passwords, Lenovo cannot reset your passwords or recover data from the storage drive. You can contact a Lenovo authorized service provider to have the storage drive replaced. A fee will be charged for parts and service. If the storage drive is a CRU (Customer Replaceable Unit), you can also contact Lenovo to purchase a new storage drive to replace the old one by yourself. To check whether the storage drive is a CRU and the relevant replacement procedure, see Chapter 6 “CRU replacement” on page 37.

What to do if you forget your supervisor password

If you forget your supervisor password, there is no service procedure to remove the password. You have to contact a Lenovo authorized service provider to have the system board replaced. A fee will be charged for parts and service.

What to do if you forget your system management password

If you forget your system management password, do the following to remove the system management password:

- If you have set a supervisor password and remember it:
 1. Restart the computer. When the logo screen is displayed, immediately press F1.
 2. Type the supervisor password to enter the UEFI BIOS menu.
 3. Select **Security → Password → System Management Password** by using the arrow keys.
 4. Type the current supervisor password in the **Enter Current Password** field. Then, leave the **Enter New Password** field blank, and press Enter twice.
 5. In the Changes have been saved window, press Enter.

6. Press F10 to save changes and exit the UEFI BIOS menu.
- If you have not set a supervisor password, contact a Lenovo authorized service provider to have the system management password removed.

Use Power Loss Protection function (for selected models)

For models shipped with an NVMe (Non-Volatile Memory express) M.2 solid-state drive, the M.2 solid-state drive features the Lenovo-unique PLP (Power Loss Protection) function to avoid data loss or damage. On very rare occasions, your computer is not responding and you might have to shut down your computer by pressing and holding the power button for about seven seconds. In this case, the PLP function enables key data of your computer to be saved timely. However, there is no guarantee that all data is saved in any situation. To check the type of your M.2 solid-state drive:

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

Use the fingerprint reader (for selected models)

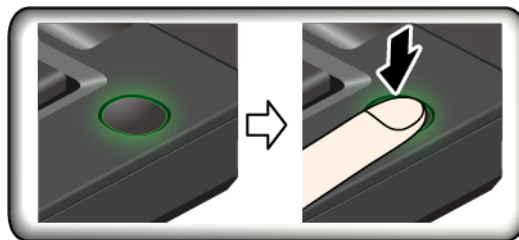
The fingerprint reader is combined with the power button on selected models. You can use it to enroll your fingerprints. After enrollment, you can tap your finger on the fingerprint reader to log in to Windows.

Enroll your fingerprints

Open the **Start** menu and then click **Settings → Accounts → Sign-in options**. Then, follow the on-screen instructions to finish the enrollment.

During the enrollment, the fingerprints are associated with the Windows password automatically. It is recommended that you enroll more than one fingerprint in case of any injuries to your fingers.

Log in with your fingerprint



When the fingerprint reader indicator is solid green, tap your finger on the fingerprint reader for authentication.

Maintain the fingerprint reader

To ensure that the fingerprint reader works correctly, do not:

- Scratch the surface of the reader with anything hard.
- Use or touch the reader with a wet, dirty, wrinkled, or injured finger.

Use face authentication (for selected models)

If your computer comes with a Windows Hello-compatible infrared camera, you can unlock your computer by scanning your face instead of using a password.

Create face ID

1. Open the **Start** menu and click **Settings → Accounts → Sign-in options**.
2. Scroll down to the **Password** section and click **Add** to create a password.
3. Follow the on-screen instructions to create a Personal Identification Number (PIN).
4. Locate the **Windows Hello** section and click **Set up** under **Face Recognition**. Then, click **Get Started**.
5. Enter the PIN you have set earlier. The camera preview starts.
6. Follow the on-screen instructions to complete the setup.
7. Click **Improve Recognition** to improve the image so that **Windows Hello** can recognize you in different light conditions or when your appearance changes.

Log in with face authentication

1. On the Windows lock screen, select the smiling face icon 😊 from the sign-in options.
2. Follow the on-screen instructions and ensure that you are centered and looking directly at the camera. When the program recognizes your face, it automatically unlocks the screen and signs you in to the Windows operating system.

Use firewalls and antivirus programs

Your computer might be preinstalled with a firewall program. The firewall protects against computer Internet security threats, unauthorized access, intrusions, and Internet attacks. It also protects your privacy.

A full version of antivirus program is provided with a free 30-day subscription. After 30 days, you must renew the license to continue receiving the antivirus program updates.

For more information, see the help system of the program.

Chapter 5. Configure advanced settings

This chapter provides information about UEFI BIOS, recovery, operating system installation, and system management.

UEFI BIOS

This section introduces what is UEFI BIOS and the operations you can perform in UEFI BIOS.

What is UEFI BIOS

UEFI BIOS is the first program that the computer runs when the computer is turned on. UEFI BIOS initializes the hardware components and loads the operating system and other programs. Your computer comes with a setup program with which you can change UEFI BIOS settings.

Enter the UEFI BIOS menu

Restart the computer. When the logo screen is displayed, press F1 to enter the UEFI BIOS menu.

Note: If you have set the supervisor password, enter the correct password when prompted. You also can press Enter to skip the password prompt and enter the UEFI BIOS menu. However, you cannot change the system configurations that are protected by the supervisor password.

Navigate in the UEFI BIOS interface

Attention: The default configurations are already optimized for you in **boldface**. Improper change of the configurations might cause unexpected results.

You can navigate in the UEFI BIOS interface by pressing the following keys:

F1	Display the General Help screen.
F9	Restore to the default settings.
F10	Save your configuration and exit.
F5 / -	Change to a lower value.
F6 / +	Change to a higher value.
↑ ↓	Locate an item.
← →	Select a tab.
Esc	Exit the submenu and return to the parent menu.
Enter	Enter the selected tab or submenu.

Change the startup sequence

1. Restart the computer. When the logo screen is displayed, press F1.
2. Select **Startup** → **Boot**. Then, press Enter. The default device order list is displayed.

Note: No bootable device is displayed if the computer cannot start from any devices or the operating system cannot be found.

3. Set the startup sequence as desired.

4. Press F10 to save the changes and exit.

To change the startup sequence temporarily:

1. Restart the computer. When the logo screen is displayed, press F12.
2. Select the device that you want the computer to start from and press Enter.

Set the system date and time

1. Restart the computer. When the logo screen is displayed, press F1.
2. Select **Date/Time** and set the system date and time as desired.
3. Press F10 to save changes and exit.

Update UEFI BIOS

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

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

- Open Lenovo Vantage to check the available update packages. If the latest UEFI BIOS update package is available, follow the on-screen instructions to download and install the package.
- Go to <https://pcsupport.lenovo.com> and select the entry for your computer. Then, follow the on-screen instructions to download and install the latest UEFI BIOS update package.

Recovery information

This section introduces the recovery information of the Windows 10 operating system. Ensure that you read and follow the on-screen recovery instructions. The data on your computer might be deleted during the recovery process. To avoid data loss, make a backup copy of all the data that you want to keep.

Restore system files and settings to an earlier point

1. Go to **Control Panel** and view by Large icons or Small icons.
2. Click **Recovery → Open System Restore**. Then, follow the on-screen instructions.

Restore your files from a backup

Note: If you use the File History tool to restore your files from a backup, ensure that you backed up your data earlier with the tool.

1. Go to **Control Panel** and view by Large icons or Small icons.
2. Click **File History → Restore personal files**. Then, follow the on-screen instructions.

Reset your computer

In the resetting process, you can choose to keep your files or remove them when you reinstall the operating system.

Note: The items in the graphical user interface (GUI) might change without notice.

1. Open the **Start** menu, and then click **Settings → Update & Security → Recovery**.
2. In the **Reset this PC** section, click **Get started**.
3. Follow the on-screen instructions to reset your computer.

Use advanced options

Note: The items in the graphical user interface (GUI) might change without notice.

1. Open the **Start** menu, and then click **Settings → Update & security → Recovery**.
2. In the **Advanced startup** section, click **Restart now → Troubleshoot → Advanced options**.
3. Select a preferred option, and then follow the on-screen instructions.

Windows automatic recovery

Note: Ensure that your computer is connected to ac power during the recovery process.

The Windows recovery environment on your computer operates independently from the Windows 10 operating system. It enables you to recover or repair the operating system even if the Windows 10 operating system fails to start.

After two consecutive failed boot attempts, the Windows recovery environment starts automatically. Then you can choose repair and recovery options by following the on-screen instructions.

Create and use a recovery USB device

It is recommended that you create a recovery USB drive as early as possible as a backup for the Windows recovery programs. With the recovery USB drive, you can troubleshoot and fix the problems even if the preinstalled Windows recovery programs are damaged. If you did not create a recovery USB drive as a precautionary measure, you can contact Lenovo Customer Support Center and purchase one from Lenovo. For a list of the Lenovo Support phone numbers for your country or region, go to:

<https://pcsupport.lenovo.com/supportphonenumberlist>

Create a recovery USB drive

Attention: The creation process deletes anything stored on the USB drive. To avoid data loss, make a backup copy of all the data that you want to keep.

1. Ensure that your computer is connected to ac power.
2. Prepare a USB drive with at least 16 GB of storage capacity. The actual USB capacity required depends on the size of the recovery image.
3. Connect the prepared USB drive to the computer.
4. Type **recovery** in the search box. Then, click **Create a recovery drive**.
5. Click **Yes** in the User Account Control window to allow the Recovery Media Creator program to start.
6. In the Recovery Drive window, follow the on-screen instructions to create a recovery USB drive.

Use the recovery USB drive

1. Ensure that your computer is connected to ac power.
2. Connect the recovery USB drive to the computer.
3. Turn on or restart the computer. When the logo screen is displayed, press F12. The Boot Menu window opens.
4. Select the recovery USB drive as the boot device.
5. Click **Troubleshoot** to display optional recovery solutions.
6. Select a recovery solution as desired. Then, follow the on-screen instructions to complete the process.

Install Windows 10 and drivers

This section provides instructions on installing a Windows 10 operating system and device drivers.

Install a Windows 10 operating system

Microsoft constantly makes updates to the Windows 10 operating system. Before installing a particular Windows 10 version, check the compatibility list for the Windows version. For details, go to <https://support.lenovo.com/us/en/solutions/windows-support>.

Attention:

- It is recommended that you update your operating system through official channels. Any unofficial update might cause security risks.
 - The process of installing a new operating system deletes all the data on your internal storage drive, including the data stored in a hidden folder.
1. If you are using the Windows BitLocker Drive Encryption feature and your computer has a Trusted Platform Module, ensure that you have disabled the feature.
 2. Ensure that the security chip is set to **Active**.
 - a. Restart the computer. When the logo screen is displayed, press F1 to enter the UEFI BIOS menu.
 - b. Select **Security → Security Chip** and press Enter. The **Security Chip** submenu opens.
 - c. Ensure that the security chip for TPM 2.0 is set to **Active**.
 - d. Press F10 to save the settings and exit.
 3. Connect the drive that contains the operating system installation program to the computer.
 4. Restart the computer. When the logo screen is displayed, press F1 to enter the UEFI BIOS menu.
 5. Select **Startup → Boot** to display the **Boot Priority Order** submenu.
 6. Select the drive that contains the operating system installation program, for example, **USB HDD**. Then, press Esc.

Attention: After you change the startup sequence, ensure that you select the correct device during a copy, a save, or a format operation. If you select the wrong device, the data on that device might be erased or overwritten.

7. Select **Restart** and ensure that **OS Optimized Defaults** is enabled. Then, press F10 to save the settings and exit.
8. Follow the on-screen instructions to install the device drivers and necessary programs.
9. After installing the device drivers, apply Windows Update to get the latest updates, for example the security patches.
10. Go to Microsoft Store to download and install the latest version of Lenovo Vantage.

Note: After installing the operating system, do not change the initial **UEFI/Legacy Boot** setting in the UEFI BIOS menu. Otherwise, the operating system will not start correctly.

Install device drivers

You should download the latest driver for a component when you notice poor performance from that component or when you added a component. This action might eliminate the driver as the potential cause of a problem. Download and install the latest driver by one of the following methods:

- Open Lenovo Vantage to check the available update packages. Select the update packages you want, and then follow the on-screen instructions to download and install the packages.

- Go to <https://pcsupport.lenovo.com> and select the entry for your computer. Then, follow the on-screen instructions to download and install necessary drivers and software.

Chapter 6. CRU replacement

What are CRUs

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

- **Self-service CRUs:** Refer to parts that can be installed or replaced easily by customer themselves or by trained service technicians at an additional cost.
- **Optional-service CRUs:** Refer to 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 on installing a CRU, Lenovo will ship the CRU to you. CRU information and replacement instructions are shipped with your product and are available from Lenovo at any time upon request. You might be required to return the defective part that is replaced by the CRU. When return is required: (1) return instructions, a prepaid shipping label, and a container will be included with the replacement CRU; and (2) you might be charged for the replacement CRU if Lenovo does not receive the defective CRU within thirty (30) days of your receipt of the replacement CRU. For full details, see the Lenovo Limited Warranty documentation at https://www.lenovo.com/warranty/llw_02.

Refer to the following CRU list for your computer.

Self-service CRUs

- ac power adapter
- Power cord

Optional-service CRUs

- Base cover assembly
- Memory module*
- Memory module bracket*
- M.2 solid-state drive

* for selected models

Disable Fast Startup and the built-in battery

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

To disable Fast Startup:

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

To disable the built-in battery:

1. Restart your computer. When the logo screen is displayed, immediately press F1 to enter the UEFI BIOS menu.
2. Select **Config → Power**. The **Power** submenu is displayed.
3. Select **Disable Built-in Battery** and press Enter.
4. Select **Yes** in the Setup Confirmation window. The built-in battery is disabled and the computer turns off automatically. Wait three to five minutes to let the computer cool.

Replace a CRU

Follow the replacement procedure to replace a CRU.

Base cover assembly

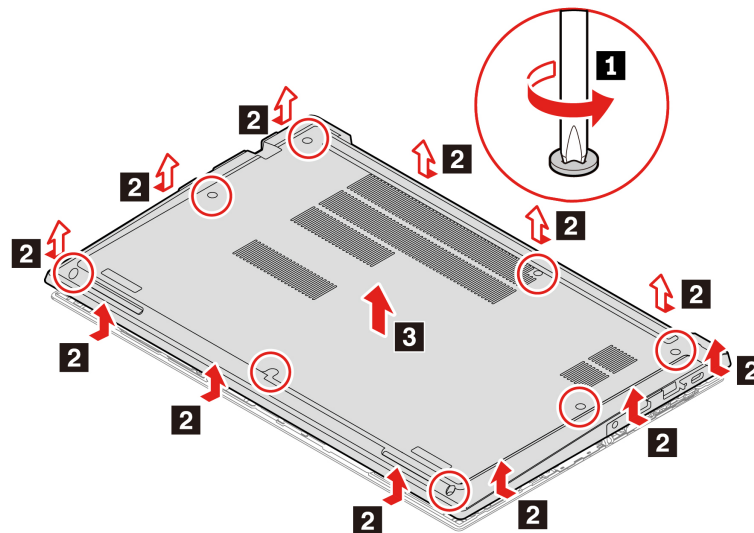
Prerequisite

Before you start, read Appendix A “Important safety information” on page 51 and print the following instructions.

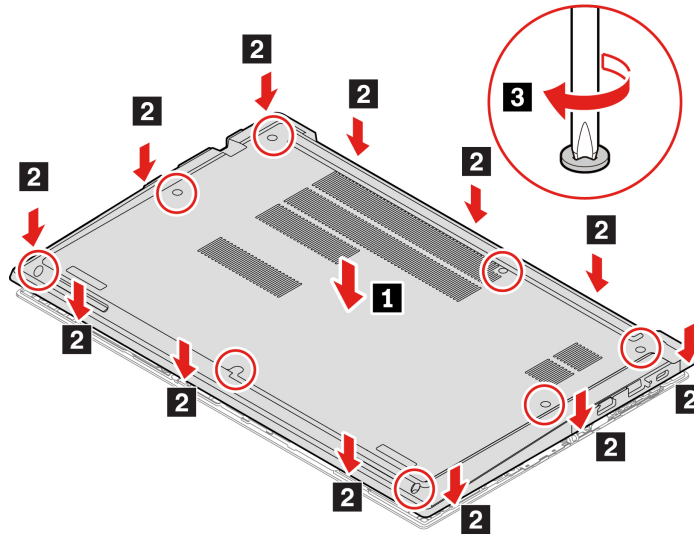
Note: Do not remove the base cover assembly when your computer is connected to ac power. Otherwise, there might be a risk of short circuits.

Replacement procedure

1. Disable the built-in battery. See “Disable Fast Startup and the built-in battery” on page 37.
2. Turn off the computer and disconnect the computer from ac power and all connected cables.
3. Close the computer display and turn over the computer.
4. Loosen the screws that secure the base cover assembly **1**. Then, Pry up the latches **2** and remove the base cover assembly **3**.



5. Install the new base cover assembly in place **1**. Ensure that the latches of the base cover assembly are secured under the base cover assembly **2**. Then, tighten the screws to secure the base cover assembly **3**.



6. Reinstall the base cover assembly.
7. Turn over the computer. Connect the ac power adapter and all disconnected cables to the computer.

Troubleshooting

If the computer does not start up after you reinstall the base cover assembly, disconnect the ac power adapter and then reconnect it to the computer.

Memory module (for selected models)

Prerequisite

Before you start, read Appendix A “Important safety information” on page 51 and print the following instructions.

Attention: Do not touch the contact edge of the memory module. Otherwise, the memory module might get damaged.

Replacement procedure

To replace a memory module:

1. Disable the built-in battery. See “Disable Fast Startup and the built-in battery” on page 37.
2. Turn off the computer and disconnect the computer from ac power and all connected cables.
3. Close the computer display and turn over the computer.
4. Remove the base cover assembly. See “Base cover assembly” on page 38.