

ThinkCentre neo 50a 24 Gen 5  
ThinkCentre neo 50a 27 Gen 5  
User Guide

Lenovo  
**ThinkCentre**

**Lenovo**

## **Read this first**

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

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

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## About this documentation

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

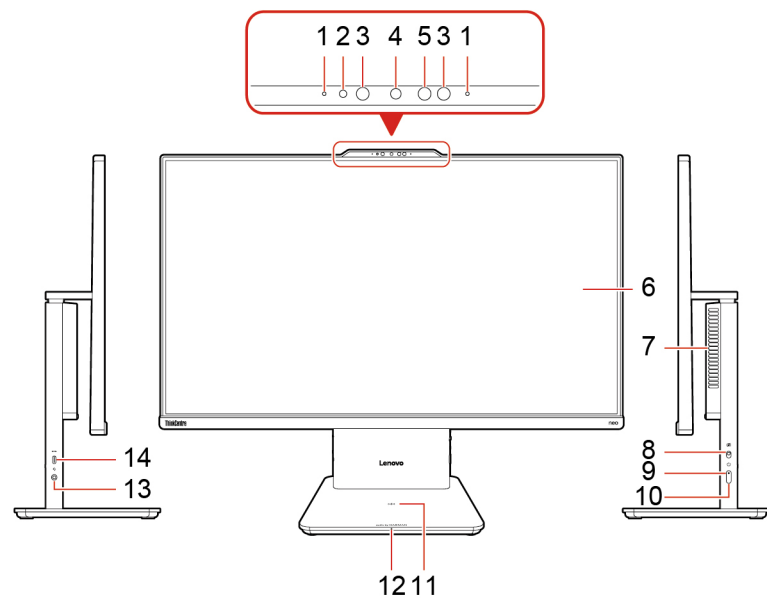
| Model name                   | Machine types (MT) |
|------------------------------|--------------------|
| ThinkCentre neo 50a 24 Gen 5 | 12SC, 12SD         |
| ThinkCentre neo 50a 27 Gen 5 | 12SA, 12SB         |

- For more compliance information, refer to *Regulatory Notice* at <https://pcsupport.lenovo.com> and *Generic Safety and Compliance Notices* at [https://pcsupport.lenovo.com/docs/generic\\_notices](https://pcsupport.lenovo.com/docs/generic_notices).
- Depending on the model, some optional accessories, features, and software programs might not be available on your computer.
- Depending on the version of the 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 to 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 As a result, some information in this documentation might become outdated.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

## Overview



| Item | Description            | Item | Description                          |
|------|------------------------|------|--------------------------------------|
| 1    | Microphones            | 2    | Integrated camera activity indicator |
| 3    | Infrared LED*          | 4    | Integrated camera                    |
| 5    | Infrared camera*       | 6    | Multi-touch screen*                  |
| 7    | Air vent               | 8    | Camera switch                        |
| 9    | Power button indicator | 10   | Power button                         |
| 11   | Wireless charging pad* | 12   | Wireless charging indicator*         |
| 13   | Combo audio jack       | 14   | USB-C® (3.2 Gen 2) connector         |

\* for selected models

**Note:** Place the phone horizontally on the center of the wireless charging pad to activate wireless charging.

### 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                 |
| 3.2 Gen 2 × 2 | 20                 |

| USB device    | Data rate (Gbit/s) |
|---------------|--------------------|
| Thunderbolt 3 | 40                 |
| Thunderbolt 4 | 40                 |

**Power indicator**

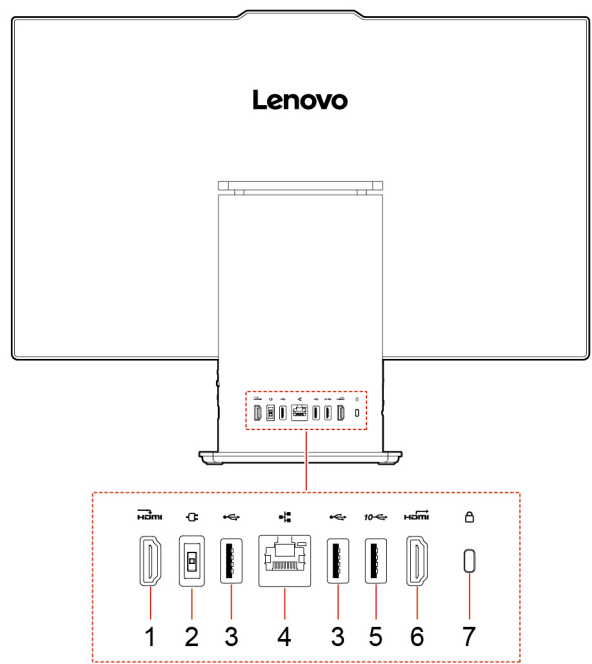
Show the system status of your computer.

- **On:** The computer is on.
- **Off:** The computer is off or in hibernation mode.
- **Blinking slowly:** The computer is in sleep mode.

**Related topics**

- “Use the touch screen (for selected models)” on page 6.
- “USB specifications” on page 4.

**Rear**



| Item | Description               | Item | Description                 |
|------|---------------------------|------|-----------------------------|
| 1    | HDMI™ in connector        | 2    | Power connector             |
| 3    | USB-A 2.0 connectors      | 4    | Ethernet connector          |
| 5    | USB-A 3.2 Gen 2 connector | 6    | HDMI 2.1 TMDS out connector |
| 7    | Security-lock slot        |      |                             |

**Related topics**

- “USB specifications” on page 4.

## Specifications

| Specification                     | Description                                                                                                                                                                                                                         |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Dimensions</b>                 | ThinkCentre neo 50a 24 Gen 5 <ul style="list-style-type: none"><li>• Width: 539.5 mm (21.2 inches)</li><li>• Height: 431.2 mm (17.0 inches)</li><li>• Depth: 192.1 mm (7.6 inches)</li></ul>                                        |
|                                   | ThinkCentre neo 50a 27 Gen 5 <ul style="list-style-type: none"><li>• Width: 611.7 mm (24.1 inches)</li><li>• Height: 471.7 mm (18.6 inches)</li><li>• Depth: 192.1 mm (7.6 inches)</li></ul>                                        |
| <b>Weight (without packaging)</b> | Maximum configuration as shipped: <ul style="list-style-type: none"><li>• ThinkCentre neo 50a 24 Gen 5 : 6 kg (13.2 lb)</li><li>• ThinkCentre neo 50a 27 Gen 5 : 7.1 kg (15.7 lb)</li></ul>                                         |
| <b>Hardware configuration</b>     | Type Device Manager in the Windows search box and then press Enter. Type the administrator password or provide confirmation, if prompted.                                                                                           |
| <b>Power supply</b>               | <ul style="list-style-type: none"><li>• 90-watt automatic voltage-sensing power supply*</li><li>• 135-watt automatic voltage-sensing power supply*</li></ul>                                                                        |
| <b>Electrical input</b>           | <ul style="list-style-type: none"><li>• Input voltage: From 100 V ac to 240 V ac</li><li>• Input frequency: 50/60 Hz</li></ul>                                                                                                      |
| <b>Memory</b>                     | Double data rate 5 (DDR5) small outline dual in-line memory module (SODIMM)                                                                                                                                                         |
| <b>Storage device</b>             | <ul style="list-style-type: none"><li>• M.2 solid-state drive (SSD)</li></ul>                                                                                                                                                       |
|                                   | To view the storage drive capacity of your computer, type Disk Management in the Windows search box and then press Enter.<br><br><b>Note:</b> The storage drive capacity indicated by the system is less than the nominal capacity. |
| <b>Video features</b>             | Maximum resolution: <ul style="list-style-type: none"><li>• HDMI out connector: 4096 × 2160 pixels, 60Hz</li><li>• HDMI in connector: 1920 x 1080 pixels, 100 Hz</li></ul>                                                          |
| <b>Expansion</b>                  | M.2 slot × 2 (1 for Wireless LAN card, 1 for SSD)                                                                                                                                                                                   |
| <b>Network features</b>           | <ul style="list-style-type: none"><li>• Bluetooth*</li><li>• Ethernet LAN</li><li>• Wireless LAN*</li></ul>                                                                                                                         |

\* for selected models

### Operating environment

#### Maximum altitude (without pressurization)

- Operating: From 0 m (0 ft) to 3048 m (10 000 ft)

- Storage: From 0 m (0 ft) to 12192 m (40 000 ft)

### Temperature

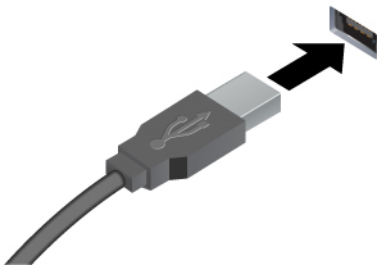
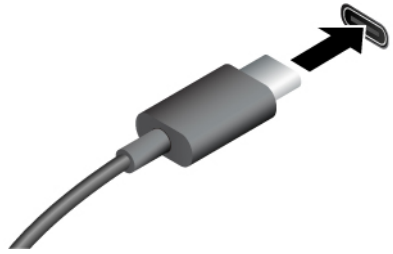
- Operating: From 5°C (41°F) to 35°C (95°F)
- Storage:
  - For common desktop computers: From -40°C (-40°F) to 60°C (140°F)
  - For all-in-one desktop computers: From -20°C (-4°F) to 60°C (140°F)

### Relative humidity

- Operating: 20%-80% (non-condensing)
- Storage: 10%-90% (non-condensing)

## USB specifications

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

| Connector name                                                                                                                                                                                                                                                                                                                                                          | Description                                                                                                                                                                                                                                                                                                                                           |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <ul style="list-style-type: none"> <li>•  USB-A 2.0 connector</li> <li>•  USB-A 3.2 Gen 2 connector</li> </ul> | <p>Connect USB-A compatible devices, such as a USB-A keyboard, USB-A mouse, USB-A storage device, or USB-A printer.</p>                                                                                                                                                                                                                               |
|  <ul style="list-style-type: none"> <li>•  USB-C (3.2 Gen 2) connector</li> </ul>                                                                                                                 | <ul style="list-style-type: none"> <li>• Charge USB-C compatible devices with the output voltage and current of 5 V and 3 A.</li> <li>• Connect to USB-C accessories to help expand your computer functionality. To purchase USB-C accessories, go to <a href="https://www.lenovo.com/accessories">https://www.lenovo.com/accessories</a>.</li> </ul> |

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## Chapter 2. Get started with your computer

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### Access networks

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

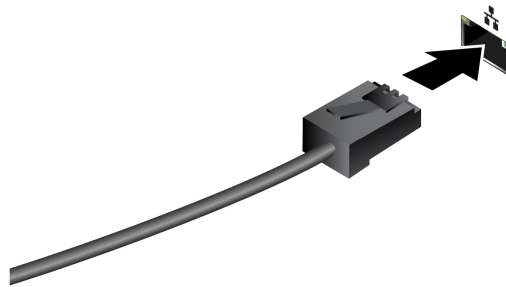
#### Connect to Wi-Fi networks (for selected models)

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

**Note:** The wireless LAN module on your computer may support different standards. For some countries or regions, use of 802.11ax may be disabled according to local regulations.

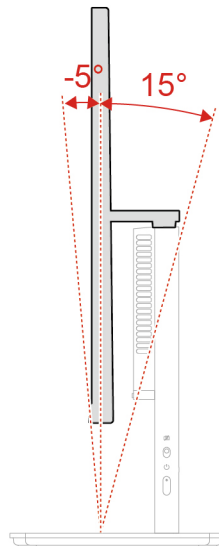
#### Connect to the wired Ethernet

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



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### Adjust the computer stand



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## Connect an external display

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

### 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 and change display settings of your preference.

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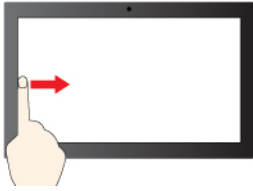
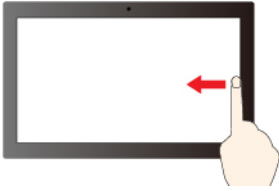
## Use the touch screen (for selected models)

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

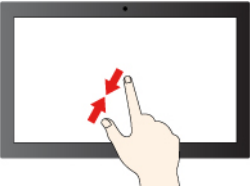
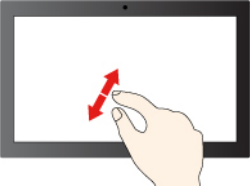
### Notes:

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

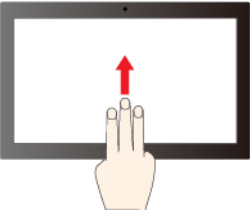
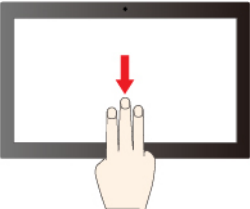
### One finger touch gesture

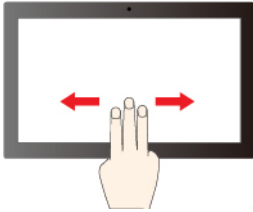
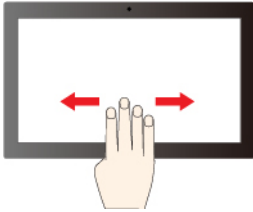
| To do this                | Gesture                                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------------------------------|
| Open a shortcut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

### Two-finger touch gesture

| To do this | Gesture                                                                                                             |
|------------|---------------------------------------------------------------------------------------------------------------------|
| Zoom out.  | <p>Move two fingers towards.</p>  |
| Zoom in.   | <p>Spread two fingers apart.</p>  |

### Three- and four-finger touch gesture

| To do this             | Gesture                                                                                                                    |
|------------------------|----------------------------------------------------------------------------------------------------------------------------|
| Show all open windows. | <p>Swipe with three fingers up.</p>     |
| Show the desktop.      | <p>Swipe with three fingers down.</p>  |

| To do this       | Gesture                                                                                                                                  |
|------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| Switch apps.     | <p>Swipe with three fingers to the left or right.</p>  |
| Switch desktops. | <p>Swipe with four fingers to the left or right.</p>   |

To enable three- and four-finger touch gestures, do the following:

Step 1. Type touch gesture in the Windows search box and then press Enter.

Step 2. Turn on the Three- and four-finger touch gestures switch.

**Notes:** If the touch screen is not sensitive or does not respond, do the following:

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

## Face authentication (for selected models)

Create your face ID and unlock your computer by scanning your face:

1. Type Sign-in options in the Windows search box and then press Enter.
2. Select the face ID setting and then follow the on-screen instruction to create your face ID.

## Connect to a Bluetooth device

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

## Conventional pair

This topic helps you connect to a Bluetooth device by conventional pair.

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

**Notes:** If the Bluetooth connection failed, do the following:

1. Type **Device Manager** in the Windows search box and then press Enter.
2. Locate the Bluetooth adapter. Right-click and select **Update driver**.
3. Select **Search automatically for drivers**, and then follow the on-screen instructions.

## Swift pair

This topic helps you connect to a Bluetooth device by swift pair.

If your Bluetooth device supports swift pair, do the following:

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

**Notes:** If the Bluetooth connection failed, do the following:

1. Type **Device Manager** in the Windows search box and then press Enter.
2. Locate the Bluetooth adapter. Right-click and select **Update driver**.
3. Select **Search automatically for drivers**, and then follow the on-screen instructions.

---

## 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:

- Turn off the display: After 10 minutes
- Put the computer to sleep: After 10 minutes

To awaken the computer from Sleep mode, press any key on your keyboard.

To reset the power plan:

1. Type **Power Options** in the Windows search box and then press Enter.
2. Choose or customize a power plan of your preference.

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## Security

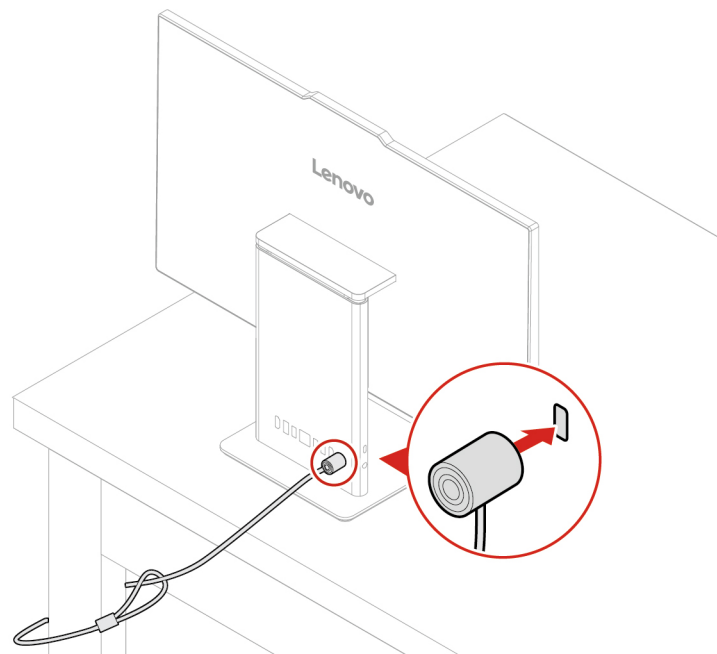
This computer offers a wealth of security measures to protect both the device and data safety.

## Lock the computer

**Note:** Lenovo makes no comments, judgments, or warranties about the function, quality, or performance of the locking device and security feature. You can purchase computer locks from Lenovo.

### Security lock

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



## Use software security solutions

The following software solutions help secure your computer and information.

- **Windows Security**

Windows Security is a software built-in to the operating system. It continually scans for malicious software, viruses, and other security threats. Besides, Windows updates are downloaded automatically to help keep your computer safe. Windows Security also enables you to manage tools including firewall, account protection, application and browser control, and so on.

- **Antivirus programs**

Lenovo preinstalls a full-version antivirus software on selected models of computer. It helps defend the computer against viruses, safeguard your identity, and keep your personal information secured.

- **Absolute Persistence**

Absolute Persistence technology is embedded in firmware. It detects changes that happen on the hardware, software, or the call-in location. It keeps you always knowing what condition the computer is in. To activate the technology, you have to purchase a subscription to Absolute.

**Note:** For more information about how to use these software solutions, refer to their help systems respectively.

---

## ICE performance mode

The ICE performance mode helps you adjust the acoustic and thermal performance of your computer. Three options are available:

- **Balance mode:** The computer works at the balance mode with balanced noise and better performance.
- **Performance mode** (default setting): The computer works at the best performance with normal acoustic level.

**Note:** The term “best” only refers to the best effect among different settings of the product itself.

- **Full Speed:** All fans in the computer will run at full speed.

### **Change the ICE performance mode**

To change the ICE performance mode:

- Step 1. Restart the computer. When the logo screen is displayed, press F1 or Fn+F1.
- Step 2. Select **Power → Intelligent Cooling** and press Enter.
- Step 3. Select **Performance Mode** and press Enter.
- Step 4. Set the performance mode as desired.
- Step 5. Press F10 or Fn+F10 to save the changes and exit.



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## Chapter 3. UEFI BIOS

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### Enter the UEFI BIOS menu

Turn on or restart the computer. When the logo screen is displayed, press F1 or Fn+F1 to enter the UEFI BIOS menu.

**Note:** If you have set UEFI BIOS passwords, enter the correct passwords when prompted. You also can select **No** or press Esc to skip the password prompt and enter the UEFI BIOS menu. However, you cannot change the system configurations that are protected by passwords.

---

### Navigate the UEFI BIOS menu

Follow the on-screen instructions to navigate in the UEFI BIOS menu.

The table below introduces the available settings of the UEFI BIOS menu. You can follow the on-screen instruction to navigate in the UEFI BIOS menu.

**Note:** The UEFI BIOS menu might vary depending on system configurations.

| Menu     | Introduction                                                                                                                                                 |
|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Main     | This category provides the general product-related and firmware information including system summary, machine type, product serial number, UUID number, etc. |
| Devices  | This category introduces how to configure various devices such as USB ports and audio controllers.                                                           |
| Advanced | This category provides advanced information about the computer such as the CPU features.                                                                     |
| Power    | This category introduces power and thermal management solutions.                                                                                             |
| Security | This category introduces various passwords, locks, and software to protect your computer.                                                                    |
| Startup  | This category introduces how to set the boot priority order.                                                                                                 |
| Exit     | This category introduces how to exit as you prefer.                                                                                                          |

You can go to Lenovo BIOS Simulator Center <https://download.lenovo.com/bsco/index.html> to explore the detailed settings by your product name.

**Note:** The Lenovo BIOS Simulator Center makes periodic updates of the settings. The UEFI BIOS simulator interface and description of settings might be different from that on your actual user interface.

---

### Enable or disable the ErP LPS compliance mode

Lenovo computers meet the eco-design requirements of the ErP Lot 3 regulation. Follow the instruction to enable or disable the ErP LPS compliance mode.

For more information about the eco-design requirements, go to: <https://www.lenovo.com/us/en/compliance/eco-declaration>.

You can enable the ErP LPS compliance mode to reduce the consumption of electricity when the computer is off. To enable or disable the ErP LPS compliance mode:

Step 1. Restart the computer. When the logo screen is displayed, press F1 or Fn+F1.

Step 2. Select **Power → Enhanced Power Saving Mode** and press Enter.

Step 3. Enable or disable the feature as desired.

**Note:** Please note that when the Enhanced Power Saving Mode is disabled, the power consumption might be increased when the computer is off.

Step 4. Press F10 or Fn+F10 to save the changes and exit.

When the ErP LPS compliance mode is enabled, you can wake up the computer by doing one of the following:

- Press the power button.
- Enable the Wake Up on Alarm feature to make the computer wake up at a set time.

To meet the requirement of ErP/KES off mode compliance, you need to disable the Fast Startup function.

1. Go to **Control Panel** and view by large icons or small icons.
2. Click **Power Options → Choose what the power buttons do → Change settings that are currently unavailable**.
3. Clear the **Turn on fast startup (recommended)** option from the **Shutdown settings** list.

---

## Update the UEFI BIOS

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

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

### From the Vantage app

Follow the instructions to update the UEFI BIOS from the Vantage app.

Step 1. Open the Vantage app, and then click **Device → System Update**.

Step 2. If the latest UEFI BIOS update package is available, follow the on-screen instructions to download and install the package.

### From the Lenovo Support Web site

Follow the instructions to update the UEFI BIOS from the Lenovo Support Web site.

Step 1. Go to <https://pcsupport.lenovo.com> and select the entry for your computer.

Step 2. Click **Drivers & Software → Manual Update → BIOS/UEFI**.

Step 3. Follow the on-screen instructions to download and install the latest UEFI BIOS update package.

### From the Windows Update

Follow the instructions to update the UEFI BIOS from the Windows Update.

Step 1. Type Settings in the Windows search box and press Enter.

Step 2. Click **Update & Security → Windows Update → Check for Updates**.

Step 3. If a BIOS update package appears in your update list, click **Download or Install** to initiate the update.

---

## Chapter 4. CRU replacement

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

- **Self-service CRUs:** Refer to parts that can be replaced easily by customer themselves or by trained service technicians at an additional cost.
- **Optional-service CRUs:** Refer to parts that can be replaced by customers with a greater skill level. Trained service technicians can also provide service to replace the parts under the type of warranty designated for the customer's machine.

If you intend on installing the 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](https://www.lenovo.com/warranty/llw_02)

---

### CRU list

The following is the CRU list of your computer.

#### Self-service CRUs

- ac power adapter
- Keyboard\*
- Mouse\*
- Power cord

\* for selected models



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## Chapter 5. Help and support

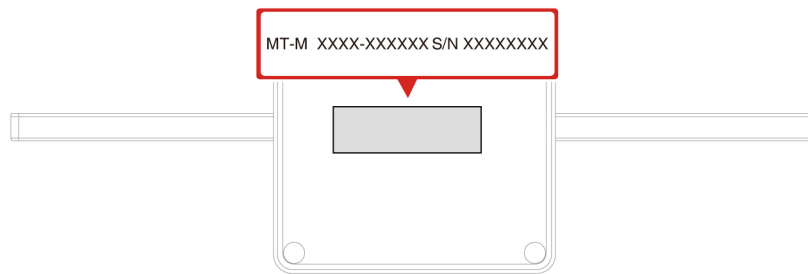
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### Find your serial number

This topic helps you find computer serial number.

You can find your serial number via:

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



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### Diagnose and troubleshoot your computer

This section provides introduction to a set of diagnostics and troubleshooting tools at Lenovo Support Web site and the Vantage app. They can help you diagnose common software and hardware issues.

The following table lists these diagnostics tools and the recommended conditions for each tool.

| Diagnostics tool                                     | Recommended scenario                                                                                                                                                            |
|------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Troubleshoot and diagnose at Lenovo Support Web site | You want to have an online troubleshooting or scan of hardware and drivers on your computer.                                                                                    |
| Hardware scan                                        | <ul style="list-style-type: none"><li>• Your computer is installed with the Vantage app.</li><li>• You want to perform basic examinations of the hardware components.</li></ul> |

### Troubleshoot and diagnose at Lenovo Support Web site

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

- Step 1. Go to <https://www.pcsupport.lenovo.com/> and enter your product name in the search box.
- Step 2. Click **Troubleshoot & Diagnose** and select the option that fits your need.

#### Notes:

- Before launching any automatic diagnosing process, a pop-up window will be prompted to install Lenovo Service Bridge. Lenovo Service Bridge helps to connect your computer with Lenovo diagnosing tools.
- Lenovo Support Web site makes periodic updates of the sections to keep improving your experience with your computer. The Web site interface and descriptions of sections might be different from that on your actual interface.
- If you are unaware of what problem your computer goes with, it is recommended that you select **Easy** and follow on-screen instructions to get your firmware updated and obtain the hardware status.
- If you have identified the problem on your computer, you can select **Custom** and follow on-screen instructions to resolve the problem.

If solutions can not resolve problems on your computer, you can follow on-screen instructions to submit an e-ticket or contact Lenovo for professional assistance.

## Hardware scan

Hardware scan is an effective hardware testing tool to help you identify existing hardware issues.

To run the Hardware scan:

- Step 1. Type Vantage in the Windows search box and then press Enter.
- Step 2. Click **Hardware scan** or **Support → Hardware scan**.
- Step 3. Select **QUICK SCAN** or **CUSTOMIZE** and then follow the on-screen instructions to run the hardware scan.

### Notes:

- The Quick Scan tool contains a pre-selected suite of tests that performs basic examinations of the hardware components found in the system. The Customize tool enables you to select one or several hardware components to perform the examinations.
  - Before selecting **QUICK SCAN**, click **Refresh Modules** to ensure that the list of hardware components is the components currently available for the computer.
- Step 4. If any hardware failure is detected, the result varies depending on the warranty status and varies by country or region. Follow the on-screen instructions to resolve the issue.

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## Recovery

Use the following recovery options to reset or restore your computer when your computer comes with issues.

- 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. Navigate to the troubleshooting menu to diagnose the operating system for recovery instructions.

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## Call Lenovo

If you have tried to correct the problem yourself and still need help, you can call Lenovo Customer Support Center.

## Before you contact Lenovo

Prepare the needed information before you contact Lenovo.

1. Record the problem symptoms and details:
  - What is the problem? Is it continuous or intermittent?
  - Any error message or error code?
  - What operating system are you using? Which version?
  - Which software applications were running at the time of the problem?
  - Can the problem be reproduced? If so, how?
2. Record the system information:
  - Product name
  - Machine type and serial number.

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## Self-help resources

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

| Resources                 | How to access?                                                                                                                                                                                                                                                |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Lenovo Support Web Site   | <a href="https://pcsupport.lenovo.com">https://pcsupport.lenovo.com</a>                                                                                                                                                                                       |
| Tips                      | <a href="https://www.lenovo.com/tips">https://www.lenovo.com/tips</a>                                                                                                                                                                                         |
| Lenovo Community          | <a href="https://forums.lenovo.com">https://forums.lenovo.com</a>                                                                                                                                                                                             |
| Accessibility information | <a href="https://www.lenovo.com/accessibility">https://www.lenovo.com/accessibility</a>                                                                                                                                                                       |
| Windows help information  | <ul style="list-style-type: none"><li>• Open the Start menu and click <b>Get Help</b> or <b>Tips</b>.</li><li>• Use Windows Search.</li><li>• Microsoft support Web site: <a href="https://support.microsoft.com">https://support.microsoft.com</a></li></ul> |

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## Purchase accessories

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, power adapters, keyboards, mice, and more.

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

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## 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.

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## Appendix A. Notices and trademarks

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