

# ThinkEdge SE30

## User Guide

Lenovo  
**ThinkEdge**



**Lenovo**

## Read this first

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

- *Generic Safety and Compliance Notices*
- *Safety and Warranty Guide*
- *Setup Guide*
- The latest compliance information is available at:  
<https://www.lenovo.com/us/en/compliance>

## Restricted access location statement



“Equipment intended for Restricted Access Location” or equivalent. (instruction)

**Attention:** This product is used in restricted access location. During operation, the temperature of the computer surface might become very high and burn the skin. Avoid keeping your hands or any other part of your body in contact with the computer.

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# Contents

## About this guide . . . . . iii

## Chapter 1. Meet your computer. . . . . 1

Front . . . . .	1
Rear . . . . .	2
Left . . . . .	3
Right . . . . .	4
Bottom . . . . .	4
Features and specifications . . . . .	6
USB specifications . . . . .	7
Operating environment . . . . .	7

## Chapter 2. Get started with your computer. . . . . 9

Use the IO expansion box (for selected models) . . . . .	9
Get started with Win10 IoT Enterprise 2021 LTSC . . . . .	9
Connect to networks . . . . .	10
Connect to the wired Ethernet . . . . .	10
Connect to Wi-Fi networks (for selected models) . . . . .	10
Connect to a cellular network (for selected models) . . . . .	10
Use multimedia . . . . .	11
Use audio . . . . .	11
Connect an external display . . . . .	11
Set power button behaviors . . . . .	12
Connect to a Bluetooth-enabled device (for selected models) . . . . .	12
Use the software development kit (SDK) . . . . .	12

## Chapter 3. Secure your computer and information . . . . . 13

Lock the computer . . . . .	13
Use passwords . . . . .	13
Use software security solutions. . . . .	14
Use Windows firewalls . . . . .	14
Use Computrace Agent software embedded in firmware (for selected models) . . . . .	15
Use BIOS security solutions . . . . .	15
Wipe the storage drive data . . . . .	15
Use the cover presence switch . . . . .	15
Use Intel BIOS guard . . . . .	16

## Chapter 4. UEFI BIOS . . . . . 17

What is UEFI BIOS. . . . .	17
Enter the BIOS menu. . . . .	17
Navigate in the BIOS interface . . . . .	17
Change the display language of UEFI BIOS . . . . .	17

Change the display mode of UEFI BIOS . . . . .	18
Set the system date and time . . . . .	18
Change the boot priority order . . . . .	18
Enable or disable the configuration change detection feature . . . . .	19
Enable or disable the automatic power-on feature . . . . .	19
Enable or disable the ErP LPS compliance mode . . . . .	19
Change BIOS settings before installing a new operating system . . . . .	20
Update UEFI BIOS. . . . .	20
Recover from a BIOS update failure . . . . .	20
Clear CMOS . . . . .	21

## Chapter 5. Troubleshooting and recovery . . . . . 23

Basic procedure for resolving computer problems . . . . .	23
Troubleshooting . . . . .	23
Startup problems . . . . .	24
Audio problems . . . . .	25
Network problems . . . . .	25
Performance problems . . . . .	28
Storage drive problems . . . . .	29
Serial connector problems. . . . .	29
USB device problems . . . . .	29
Software problems. . . . .	30
Recovery . . . . .	30
Restore system files and settings to an earlier point . . . . .	30
Restore your files from a backup . . . . .	30
Reset your computer . . . . .	30
Use advanced options . . . . .	30
Windows automatic recovery. . . . .	31
Create and use a recovery USB device . . . . .	31
Update the device driver . . . . .	31

## Chapter 6. CRU replacement . . . . . 33

CRU list . . . . .	33
Replace a CRU . . . . .	34
Power adapter and power cord . . . . .	34
IO expansion box . . . . .	35
DIN rail bracket kit . . . . .	36
Physical lock kit and VESA mount bracket kit . . . . .	39
Power adapter bracket kit . . . . .	43
Z hook kit . . . . .	50
Rear Wi-Fi antenna. . . . .	51

Wireless WAN antenna . . . . .	52
Bottom cover . . . . .	53
M.2 solid-state drives. . . . .	55
Wi-Fi card . . . . .	57
Wireless WAN card . . . . .	59
<b>Chapter 7. Help and support . . . . .</b>	<b>61</b>
Self-help resources . . . . .	61
Call Lenovo . . . . .	61

Before you contact Lenovo . . . . .	61
Lenovo Customer Support Center. . . . .	62
Certification-related information . . . . .	63
Compliance information . . . . .	63
Purchase accessories . . . . .	63
Purchase additional services. . . . .	63

<b>Appendix A. Notices and trademarks. . . . .</b>	<b>65</b>
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## About this guide

**Thank you for choosing a ThinkEdge® computer! We are dedicated to delivering the best solution to you.**

Before starting your tour, please read the following information:

- This guide applies to Lenovo product model(s) listed below:

Product name	Machine types
ThinkEdge SE30	11NA, 11NB, 11NC, 11ND, 11NE, 11NF, 11NG, 11NH, and 11NK

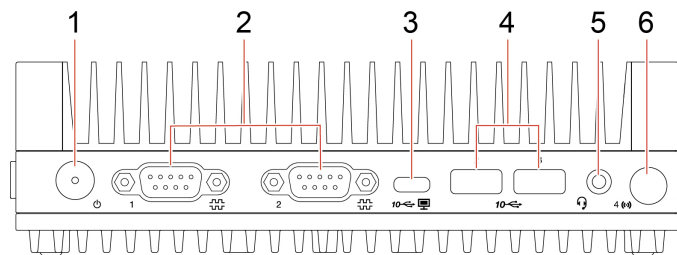
- Illustrations in this documentation might look different from your product.
- Depending on the model, some optional accessories, features, and software programs might not be available on your computer.
- Depending on the version of operating systems and programs, some user interface instructions might 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://smartsupport.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

**Attention:** During operation, the computer surface might become very hot and burn the skin. Avoid keeping your hands or any other part of your body in contact with the computer.

## Front



Item	Description	Item	Description
1	Power button	2	Serial connectors (2)
3	USB-C (3.2 Gen 2) connector	4	USB-A 3.2 Gen 2 connectors (2)
5	Headset connector	6	Wireless WAN antenna slot*

\* 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	5
3.2 Gen 2	10
3.2 Gen 2 × 2	20
Thunderbolt 3	40
Thunderbolt 4	40

### Power button

Press to turn on the computer.

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.

- **On:** The computer is starting up or working.
- **Off:** The computer is off or in hibernation mode.

### Serial connectors

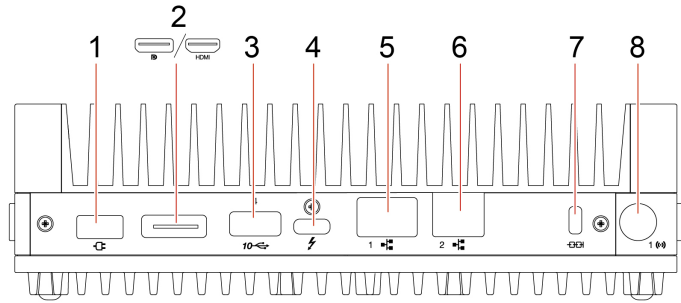
Used to connect an external modem, a serial printer, or other devices that use a serial connector.

### Wireless WAN antenna slot

Used to install the wireless WAN antenna cable connector that is available on some models. The wireless WAN antenna is installed on the wireless WAN antenna cable connector.

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## Rear



Item	Description	Item	Description
1	Power adaptor connector	2	DisplayPort™ out connector / HDMI™ out connector
3	USB-A 3.2 Gen 2 connector	4	USB-C (Thunderbolt™ 4) connector
5	Ethernet connector (1G)	6	Ethernet connector (2.5G)
7	Security-lock slot	8	Wireless WAN antenna slot*

\* for selected models

### DisplayPort™ out connector / HDMI™ out connector

Send audio and video signals from the computer to another audio or video device, such as a high-performance monitor.

### Ethernet connector (1G)

In industrial environments, it is recommended to use shielded network cables.

Connect to a local area network (LAN). When the yellow indicator is on, the computer is connected to a LAN. When the green/orange indicator blinks, data is being transmitted.

### Ethernet connector (2.5G)

In industrial environments, it is recommended to use shielded network cables.

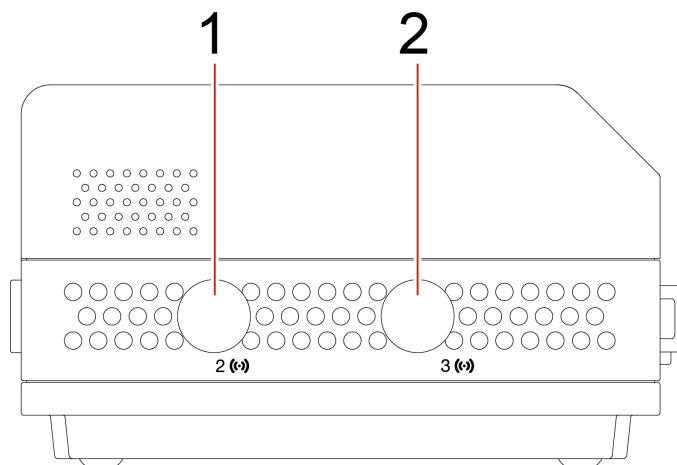
Connect to a local area network (LAN). When the yellow indicator is on, the computer is connected to a LAN. When the green/orange indicator blinks, data is being transmitted.

You also can use this connector if your computer supports Intel vPro® technology.

**Wireless WAN antenna slot**

Used to install the wireless WAN antenna cable connector that is available on some models. The wireless WAN antenna is installed on the wireless WAN antenna cable connector.

**Left**



Item	Description	Item	Description
1	Wi-Fi® antenna slot*	2	Wireless WAN antenna slot

\* for selected models

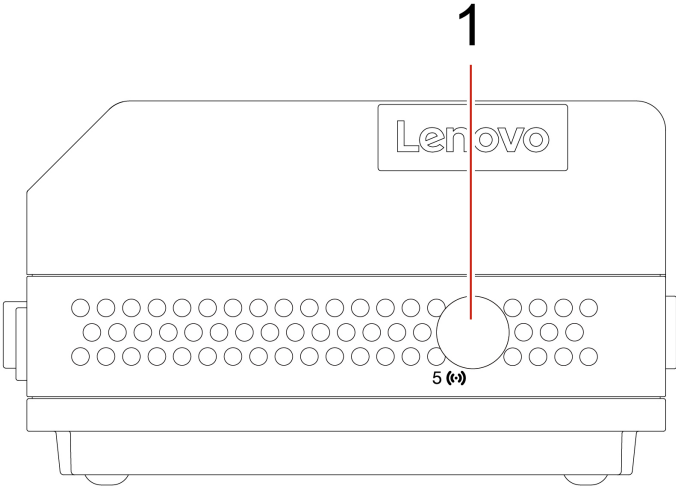
**Wi-Fi® antenna slot**

Used to install the rear Wi-Fi antenna cable connector that is available only on some models. The rear Wi-Fi antenna is installed on the rear Wi-Fi antenna cable connector.

**Wireless WAN antenna slot**

Used to install the wireless WAN antenna cable connector that is available on some models. The wireless WAN antenna is installed on the wireless WAN antenna cable connector.

# Right



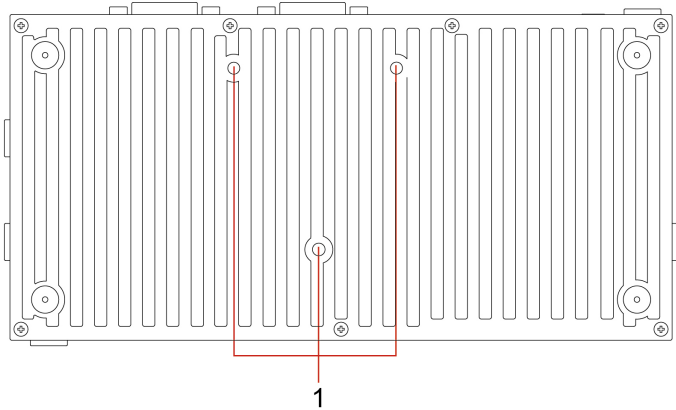
Item	Description
1	Reserved antenna slot*

\* for selected models

## Reserved antenna slot

Reserved to install the LoRa antenna that is available only on some models.

# Bottom



Item	Description
1	VESA® threaded holes

**VESA® threaded holes**

Connect the matched Z hook kit, DIN rail bracket kit, power adapter bracket kit, or VESA mount bracket kit with the screws (M3 x 4 mm x 3 pcs) provided by Lenovo when you install the computer on a wall or other non-flammable mounting surface.



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## Features and specifications

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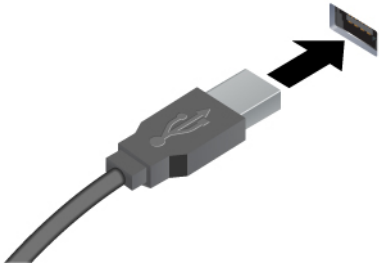

Specification	Description
<b>Dimensions</b>	<ul style="list-style-type: none"><li>• Width: 179 mm (7.05 inches)</li><li>• Height: 51.5 mm (2.03 inches)</li><li>• Depth: 88 mm (3.46 inches)</li></ul>
<b>Weight (without packaging)</b>	Maximum configuration as shipped: 1.02 kg (2.25 lb)
<b>Hardware configuration</b>	<ol style="list-style-type: none"><li>1. Right-click the <b>Start</b> button to open the Start context menu.</li><li>2. Click <b>Device Manager</b>. Type the administrator password or provide confirmation if prompted.</li></ol>
<b>Power supply</b>	65-watt automatic voltage-sensing power adapter
<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>Microprocessor</b>	<p>To view the microprocessor information of your computer, right-click the <b>Start</b> button and then click <b>System</b>.</p> <p><b>Note:</b> The Intel® Turbo Boost is disabled. The maximum Thermal Design Power (TDP) of microprocessor might be 12W, 15W, or 28W, which depends on different microprocessor series. The max frequency might not be obtainable at high work levels, so the microprocessor will adjust the frequency to obtain the maximum TDP allowed.</p>
<b>Memory</b>	Double data rate 4 (DDR4) synchronous dynamic random-access memory module (SDRAM), soldered on the system board
<b>Storage device</b>	<p>Your computer supports up to two M.2 solid-state drives:</p> <p>To view the storage drive capacity of your computer, right-click the <b>Start</b> button to open the Start context menu and then click <b>Disk Management</b>.</p> <p><b>Note:</b> The storage drive capacity indicated by the system is less than the nominal capacity.</p>
<b>Video features</b>	<p>The integrated graphics card supports the following:</p> <ul style="list-style-type: none"><li>• DisplayPort out connector*</li><li>• HDMI out connector*</li><li>• USB-C (Thunderbolt 4) connector</li></ul>
<b>Audio features</b>	<p>The integrated audio card supports the following:</p> <ul style="list-style-type: none"><li>• Headset connector</li><li>• Internal speaker*</li></ul>

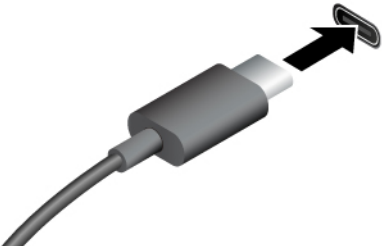


Specification	Description
Expansion	<ul style="list-style-type: none"> <li>• IO expansion box*</li> <li>• M.2 solid state drive slots (2)</li> <li>• M.2 Wi-Fi slot</li> <li>• M.2 wireless WAN card slot</li> </ul>
Network features	<ul style="list-style-type: none"> <li>• Bluetooth*</li> <li>• Ethernet LAN</li> <li>• Wireless LAN*</li> <li>• Wireless WAN* (4G/5G)</li> </ul>

\* for selected models

## 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 3.2 Gen 2 connector</li> </ul>	<p>Charge USB-A compatible devices with the output voltage and current of 5 V dc and 0.9 A.</p> <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> <li>•  USB-C (Thunderbolt 4) connector</li> <li>• </li> </ul>	<ul style="list-style-type: none"> <li>• For USB-C (3.2 Gen 2) connector, the output voltage and current are 5 V dc and 0.9 A.</li> <li>• For USB-C (Thunderbolt 4) connector, the output voltage and current are 5 V dc and 3 A.</li> <li>• Connect to an external display: <ul style="list-style-type: none"> <li>– USB-C to VGA: 1920 x 1200 pixels, 60 Hz</li> <li>– USB-C to DP: 3840 x 2160 pixels, 60 Hz</li> </ul> </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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## Operating environment

**Note:** The operating environment is not applicable for hardware accessories. The operating temperature of various accessories depends on the corresponding accessory temperature specification.

The operating environment for the industrial device must be:

- Over Voltage Category II
- Pollution degree 2
- Dry location

**For machine types: 11NA, 11NB, 11NC, 11ND, 11NE, 11NF, and 11NG**

Maximum altitude (without pressurization):

- Operating: From -15.2 m (-50 ft) to 4572 m (15 000 ft)
- Storage: From -15.2 m (-50 ft) to 10 668 m (35 000 ft)

Temperature:

- Operating: From -20°C (-4°F) to 60°C (140°F) (with the air flow speed at 0.7 m/s)
- Storage in original shipping packaging: From -40°C (-40°F) to 60°C (140°F)
- Storage without packaging: From -40°C (-40°F) to 85°C (185°F)

**Note:** If your computer is stored or transported in temperatures less than -20°C (-4°F), allow the computer to rise slowly to an optimal operating temperature before use. Using the computer in a lower operating temperature might result in irreparable damage to your computer.

Relative humidity:

- Operating: 95% (non-condensing) at 40°C (104°F)
- Storage: 10%-90% (non-condensing) at 60°C (140°F)

**For machine types: 11NH and 11NK**

Maximum altitude (without pressurization):

- Operating: From 0 m (0 ft) to 3048 m (10 000 ft)
- Storage: From 0 m (0 ft) to 12 192 m (40 000 ft)

Temperature:

- Operating: From 0°C (32°F) to 50°C (122°F)
- Storage in original shipping packaging: From -40°C (-40°F) to 60°C (140°F)
- Storage without packaging: From -40°C (-40°F) to 85°C (185°F)

**Note:** If your computer is stored or transported in temperatures less than 0°C (32°F), allow the computer to rise slowly to an optimal operating temperature before use. Using the computer in a lower operating temperature might result in irreparable damage to your computer.

Relative humidity:

- Operating: 95% (non-condensing) at 40°C (104°F)
- Storage: 10%-90% (non-condensing) at 60°C (140°F)

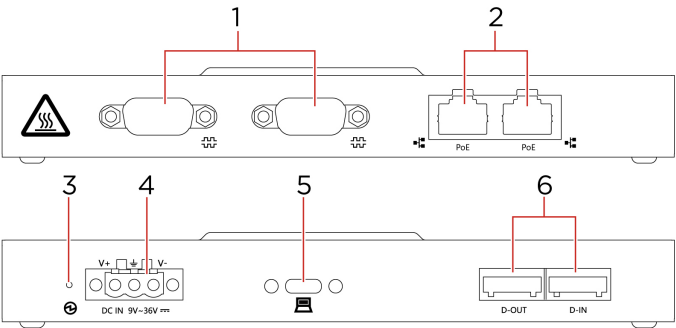
# Chapter 2. Get started with your computer

## Use the IO expansion box (for selected models)

If your computer has an IO expansion box, you can use it to supply power to your computer and expand your computer functionality.

 <https://support.lenovo.com/solutions/iobox>

### Overview



Item	Description	Item	Description
1	Serial connectors (2)	2	PoE connectors (2)
3	DC-in power LED indicator	4	DC-in power connector
5	USB-A 3.2 Gen 1 connector	6	Digital input and Digital output (DI/DO) connectors

### PoE connector

**Note:** The Power over Ethernet (PoE) feature does not work if the IO expansion box gets power supply from the computer through the USB-A 3.2 Gen 1 connector.

For detailed information about the IO expansion box, refer to its hardware and software manual. To access the manual:

1. Go to <https://pcsupport.lenovo.com>.
2. Search by your computer product name to enter the support web page for your computer. Then, follow the on-screen instructions to locate the section for downloading product manuals. Search by box to select manuals for the IO expansion box.

## Get started with Win10 IoT Enterprise 2021 LTSC

Connect your computer with an external display, a keyboard, and a mouse before deploying software configuration.

Learn the basics of Win10 IoT Enterprise 2021 LTSC and start working with it right away. For more information about Win10 IoT Enterprise 2021 LTSC, see the following:

- Use Windows Search.
- Microsoft support Web site:



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## 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.

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

If your computer includes a wireless LAN module, you can connect your computer to Wi-Fi® networks. 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.

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.

### Connect to a cellular network (for selected models)

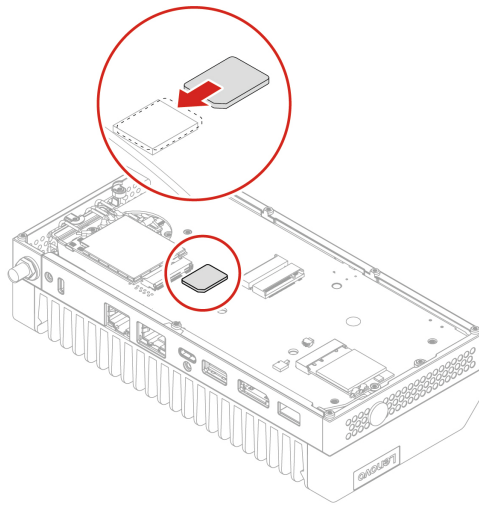
If your computer supports wireless WAN connections, you can purchase a nano-SIM card to establish wireless WAN connections and get online using the cellular signal.

**Note:** The cellular service is provided by authorized mobile service carriers in some countries and regions. You must have a cellular plan from a service carrier to connect to the cellular network.

To establish a wireless WAN connection:

1. Install a nano-SIM card:
  - a. Turn off the computer and disconnect the power adapter.
  - b. Remove the bottom cover. See “Bottom cover” on page 53.
  - c. Remove the M.2 solid-state drive from the M.2 solid-state drive slot 1, if any. See “M.2 solid-state drives” on page 55.

- d. Install the nano-SIM card. Pay attention to the orientation of the card and ensure that it is seated correctly.



2. Reinstall all removed parts.
3. Install the wireless WAN antennas. See “Wireless WAN antenna” on page 52. Pay attention to the silk print number of each wireless WAN antenna and ensure that it matches the silk print number of the corresponding wireless WAN antenna slot.
4. Reconnect the power adapter and all disconnected cables to the computer.
5. Turn on the computer. Click the network icon in the Windows notification area, and then select the cellular icon from the list.
6. Provide required information, if needed.

---

## Use multimedia

Use your computer for business or entertainment with the devices (such as a camera, a monitor, or speakers).

### Use audio

To enhance the audio experience, connect speakers, headphones, or a headset to the audio connector.

#### Adjust the volume

1. Click the volume icon in the Windows notification area on the taskbar.
2. Follow the on-screen instructions to adjust the volume. Click the speaker icon to mute the audio.

#### Change the sound settings

1. Type Control Panel in the Windows search box and then press Enter. View by category.
2. Click **Hardware and Sound → Sound**.
3. Change the settings as you prefer.

## Connect an external display

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

## Connect a wireless display

Ensure that both your computer and the wireless display support Miracast®.

Press Windows logo key + K and then select a wireless display to connect.

## 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.

---

## 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 hibernation mode.

To change what the power button does:

1. Go to **Control Panel** and view by large icons or small icons.
2. Click **Power Options → Choose what the power buttons do**.
3. Change the settings as you prefer.

---

## Connect to a Bluetooth-enabled device (for selected models)

You can connect all types of Bluetooth-enabled devices to your computer, such as a keyboard, a mouse, a smartphone, or speakers. Place the device that you are attempting to connect to less than 10 meters (33 feet) from the computer.

1. Type Bluetooth in the Windows search box and then press Enter.
2. Turn on Bluetooth, if it is off.
3. Select a Bluetooth device, and then follow the on-screen instructions.

Your Bluetooth 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.

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## Use the software development kit (SDK)

Lenovo provides a software development kit (SDK) for your computer. You can use the SDK to develop functions based on your needs. For example, you can collect signals and transfer data with sensors and relay modules connected to the serial connectors and DI/DO connectors on the IO expansion box. You can also create a watchdog timer to monitor whether your computer is running correctly and to restart your computer automatically when your computer hangs without human intervention.

To download the software development kit (SDK):

1. Go to [https://support.lenovo.com/docs/thinkedge\\_sdk](https://support.lenovo.com/docs/thinkedge_sdk).
2. Follow the on-screen instructions to select the correct software development kit for your computer.



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## Chapter 3. Secure your computer and information

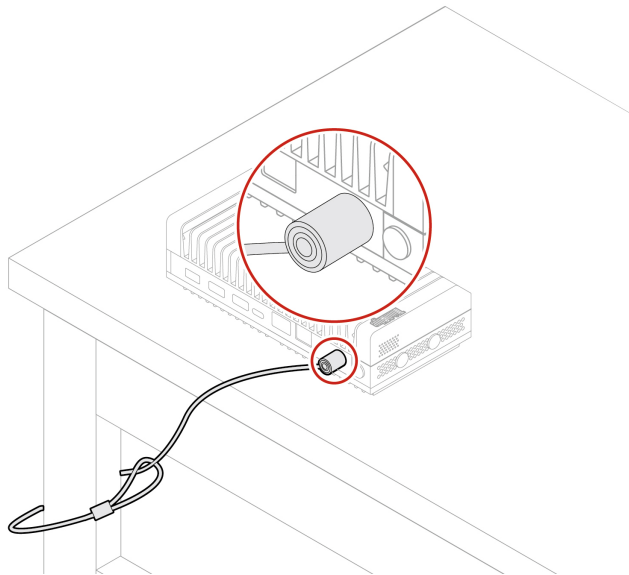
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### Lock the computer

**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. You can purchase computer locks from Lenovo.

#### Kensington-style cable lock

Lock your computer to a desk, table, or other fixtures through a Kensington-style cable lock.



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### Use passwords

#### Password types

You can set the following passwords in UEFI (Unified Extensible Firmware Interface) BIOS (Basic Input/Output System) to prevent unauthorized access to your computer.

- Power-on password

When a power-on password is set, you are prompted to enter a valid password each time the computer is turned on. The computer cannot be used until the valid password is entered.

- Supervisor password

Setting a supervisor password deters unauthorized users from changing configuration settings. If you are responsible for maintaining the configuration settings of several computers, you might want to set a supervisor password.

When a supervisor password is set, you are prompted to enter a valid password each time you try to enter the BIOS menu.

If both the power-on password and supervisor password are set, you can enter either password. However, you must use your supervisor password to change any configuration settings.

- Hard disk password

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

**Note:** After you set a hard disk password, your data on the storage drive is protected even if the storage drive is removed from one computer and installed in another.

- System management password (for selected models)

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. Restart the computer. When the logo screen is displayed, press F1 or Fn+F1.
2. Select **Security → 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.

### Set, change, and remove a password

Before you start, print these instructions.

1. Restart the computer. When the logo screen is displayed, press F1 or Fn+F1.
2. Select **Security**.
3. Depending on the password type, select **Set Supervisor Password**, **Set Power-On Password**, **Set System Management Password**, or **Hard Disk Password** and press Enter.
4. Follow the on-screen instructions to set, change, or remove a password.
5. Press F10 or Fn+F10 to save the changes and exit.

You should record your passwords and store them in a safe place. If you forget the passwords, contact a Lenovo-authorized service provider to have the passwords removed.

**Note:** If the hard disk password is forgotten, Lenovo cannot remove the password or recover data from the storage drive.

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## Use software security solutions

This section provides software solutions to secure your computer and information.

### Use Windows firewalls

A firewall can be hardware, software, or a combination of both depending on the level of security required. Firewalls work on a set of rules to determine which inbound and outbound connections are authorized. If the computer is preinstalled with a firewall program, it helps protect against computer Internet security threats, unauthorized access, intrusions, and Internet attacks. It also protects your privacy. For more information about how to use the firewall program, refer to the help system of your firewall program.

To use Windows firewalls:

1. Type Control Panel in the Windows search box and then press Enter. View by large icons or small icons.
2. Click **Windows Defender Firewall**, and then follow the on-screen instructions.

## Use Computrace Agent software embedded in firmware (for selected models)

The Computrace Agent software is an IT asset management and computer theft recovery solution. The software detects if changes have been made on the computer, such as hardware, software, or the computer call-in location. You might have to purchase a subscription to activate the Computrace Agent software.

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## Use BIOS security solutions

This section provides BIOS solutions to secure your computer and information.

### Wipe the storage drive data

It is recommended that you wipe the storage drive data before recycling the storage drive or the computer.

To wipe the storage drive data:

1. Restart the computer. When the logo screen is displayed, press F1 or Fn+F1.
2. Select **Security** → **secure wipe** → **Enabled**.
3. Press F10 or Fn+F10 to save the changes and exit.
4. Restart the computer. When the logo screen is displayed, press F12 or Fn+F12.
5. Select **App Menu** → **secure wipe** and press Enter.
6. Select the storage drive you will wipe and click **NEXT**.
7. Select the entire storage drive or partition to wipe as desired.
8. Select the method as desired and click **NEXT**.
9. Click **Yes** to confirm your option when the prompting window is displayed.
10. If you have set a hard disk password for the storage drive, enter the password. Otherwise, set a temporary password following the on-screen instructions. Then, click **NEXT**. The wiping process begins.  
  
**Note:** Duration of the wiping process varies depending on the storage drive capacity.
11. Click **Reboot** when you are prompted to reset the system, and then one of the following will happen:
  - If the system storage drive data is wiped, you will be prompted that no operating system is found.
  - If the non-system storage drive data is wiped, the computer restarts automatically.

### Use the cover presence switch

The cover presence switch prevents the computer from logging in to the operating system when the computer cover is not properly installed or closed.

To enable the cover presence switch connector on the system board:

1. Restart the computer. When the logo screen is displayed, press F1 or Fn+F1.
2. Select **Security** → **Cover Tamper Detected** and press Enter.
3. Select **Enabled** and press Enter.
4. Press F10 or Fn+F10 to save the changes and exit.

If the cover presence switch is enabled and the computer cover is not correctly installed or closed, an error message will be displayed when you turn on the computer. To bypass the error message and log in to the operating system:

1. Properly install or close the computer cover.
2. Enter the BIOS menu, save and then exit.

## **Use Intel BIOS guard**

The Intel® BIOS Guard module cryptographically verifies all BIOS updates. This hardware-based security helps prevent software and malware attacks on the computers BIOS.

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## Chapter 4. UEFI BIOS

This chapter provides information about configuring and updating UEFI BIOS, and clearing CMOS.

---

### What is UEFI BIOS

**Note:** The operating system settings might override any similar settings in 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.

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### Enter the BIOS menu

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

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

---

### Navigate in the BIOS interface

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

Depending on your keyboard, you can navigate in the BIOS interface by pressing the following keys, or combinations of Fn and the following keys:

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

---

### Change the display language of UEFI BIOS

UEFI BIOS supports three or four display languages: English, French, simplified Chinese, and Russian (for selected models).

To change the display language of UEFI BIOS:

1. Select **Main → Language** and press Enter.
2. Set the display language as desired.

---

## Change the display mode of UEFI BIOS

You can use UEFI BIOS in the graphic mode or the text mode according to your needs.

To change the display mode of UEFI BIOS:

1. Restart the computer. When the logo screen is displayed, press F1 or Fn+F1.
2. Select **Main → Setup Mode Select** and press Enter.
3. Set the display mode as desired.

---

## Set the system date and time

1. Restart the computer. When the logo screen is displayed, press F1 or Fn+F1.
2. Select **Main → System Time & Date** and press Enter.
3. Set the system date and time as desired.
4. Press F10 or Fn+F10 to save the changes and exit.

---

## Change the boot priority order

If the computer does not boot from a device as expected, you can change the boot priority order permanently or select a temporary boot device.

### Change the boot priority order permanently

1. Depending on the type of the storage device, do one of the following:
  - If the storage device is internal, go to step 2.
  - If the storage device is a disc, ensure that the computer is on or turn on the computer. Then, insert the disc into the optical drive.
  - If the storage device is an external device other than a disc, connect the storage device to the computer.
2. Restart the computer. When the logo screen is displayed, press F1 or Fn+F1.
3. Select **Startup → Boot Priority Order**, and then follow the on-screen instructions to change the boot priority order.
4. You can also select the first priority device group by selecting **Startup → First Boot Device**, and then follow the on-screen instructions to select the first boot device within this group. Your computer will boot from the first boot device before trying the boot priority order you set in the previous step.
5. Press F10 or Fn+F10 to save the changes and exit.

### Select a temporary boot device

**Note:** Not all discs and storage drives are bootable.

1. Depending on the type of the storage device, do one of the following:
  - If the storage device is internal, go to step 2.
  - If the storage device is a disc, ensure that the computer is on or turn on the computer. Then, insert the disc into the optical drive.
  - If the storage device is an external device other than a disc, connect the storage device to the computer.
2. Restart the computer. When the logo screen is displayed, press F12 or Fn+F12.
3. Select the storage device as desired and press Enter.

If you want to change the boot priority order permanently, select **Enter Setup** on Startup Device Menu and press Enter to enter the BIOS menu.

---

## Enable or disable the configuration change detection feature

If you enable configuration change detection, when the POST detects configuration changes of some hardware devices (such as storage drives or memory modules), an error message will be displayed when you turn on the computer.

To enable or disable the configuration change detection feature:

1. Restart the computer. When the logo screen is displayed, press F1 or Fn+F1.
2. Select **Security → Configuration Change Detection** and press Enter.
3. Enable or disable the feature as desired.
4. Press F10 or Fn+F10 to save the changes and exit.

To bypass the error message and log in to the operating system, press F2 or Fn+F2. To clear the error message, enter the BIOS menu, save and then exit.

---

## Enable or disable the automatic power-on feature

The Automatic Power On item in UEFI BIOS provides various options for you to make your computer start up automatically.

To enable or disable the automatic power-on feature:

1. Restart the computer. When the logo screen is displayed, press F1 or Fn+F1.
2. Select **Power → Automatic Power On** and press Enter.
3. Select the feature as desired and press Enter.
4. Enable or disable the feature as desired.
5. Press F10 or Fn+F10 to save the changes and exit.

---

## Enable or disable the ErP LPS compliance mode

Lenovo computers meet the eco-design requirements of the ErP regulation. For more information, 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:

1. Restart the computer. When the logo screen is displayed, press F1 or Fn+F1.
2. Select **Power → Enhanced Power Saving Mode** and press Enter.
3. Depending on whether you select **Enabled** or **Disabled**, do one of the following:
  - If you select **Enabled**, press Enter. Then, go to the next step.
  - If you select **Disabled**, press Enter. Then, select **Automatic Power On** and press Enter. You can select **Enabled** or **Disabled** the Wake on LAN feature and the Wake from Serial Port Ring feature as you preferred.

**Note:** When the Enhanced Power Saving Mode is disabled, the computer power consumption might be increased in standby mode.



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 off mode requirement of ErP 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.

---

## Change BIOS settings before installing a new operating system

BIOS settings vary by operating system. Change the BIOS settings before installing a new operating system.

Microsoft constantly makes updates to the Windows operating system. Before installing a particular Windows version, check the compatibility list for the Windows version. For details, go to:

<https://support.lenovo.com/us/en/solutions/windows-support>

To change the BIOS settings:

1. Restart the computer. When the logo screen is displayed, press F1 or Fn+F1.
2. From the main interface, select **Security** → **Secure Boot** and press Enter.
3. Depending on the operating system to be installed, do one of the following:
  - To install a Windows operating system that supports secure boot, select **Enabled** for **Secure Boot**.
  - To install an operating system that does not support secure boot, such as some Linux operating systems, select **Disabled** for **Secure Boot**.
4. Press F10 or Fn+F10 to save the changes and exit.

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## Update UEFI BIOS

When you install a new program, device driver, or hardware component, you might need to update UEFI BIOS. You can update the BIOS from your operating system or a flash update disc (supported only on selected models).

Download and install the latest UEFI BIOS update package from the Lenovo Support Web site:

1. Go to <https://pcsupport.lenovo.com>.
2. Download the flash BIOS update driver for the operating system version or the ISO image version (used to create a flash update disc). Then, download the installation instructions for the flash BIOS update driver you have downloaded.
3. Print the installation instructions and follow the instructions to update the BIOS.

---

## Recover from a BIOS update failure

1. Remove all media from the drives and turn off all connected devices.
2. Insert the BIOS update disc into the optical drive, and then turn off the computer.
3. Disconnect all power cords from electrical outlets. Then, remove any parts that impede access to the Clear CMOS jumper.

4. Move the jumper from the standard position to the maintenance position.
5. Reconnect the power cords for the computer and the monitor to electrical outlets.
6. Turn on the computer and the monitor. When the computer beeps, the recovery process begins.
7. After the recovery process is completed, the computer will be turned off automatically.

**Note:** Depending on the computer model, the recovery process will take two to three minutes.

8. Disconnect all power cords from electrical outlets.
9. Move the jumper back to the standard position.
10. Reinstall all the parts that have been removed. Then, reconnect the power cords for the computer and the monitor to electrical outlets.
11. Turn on the computer and the monitor. When the logo screen is displayed, press F1 or Fn+F1.
12. To prevent data loss, ensure that BIOS settings are restored to an earlier point.

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## Clear CMOS

1. Remove all media from the drives and turn off all connected devices and the computer.
2. Disconnect all power cords from electrical outlets. Then, remove any parts that impede access to the Clear CMOS jumper.
3. Move the jumper from the standard position to the maintenance position.
4. Reconnect the power cords for the computer and the monitor to electrical outlets.
5. Turn on the computer and the monitor. When the computer beeps, wait for approximately 10 seconds.
6. Turn off the computer by holding the power button for approximately four seconds.
7. Disconnect all power cords from electrical outlets.
8. Move the jumper back to the standard position.
9. Reinstall all the parts that have been removed. Then, reconnect the power cords for the computer and the monitor to electrical outlets.
10. Turn on the computer and the monitor. When the logo screen is displayed, press F1 or Fn+F1.
11. To prevent data loss, ensure that BIOS settings are restored to an earlier point.



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## Chapter 5. Troubleshooting and recovery

This chapter provides solutions to resolve computer problems. Use the basic procedure as a starting point for resolving computer problems.

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### Basic procedure for resolving computer problems

#### Prerequisite

Before you start, read *Generic Safety and Compliance Notices*, and print the following instructions.

1. Check that:
  - a. The cables for all connected devices are connected correctly and securely.
  - b. All components have been reassembled correctly.
  - c. All connected devices that require ac power are connected to properly grounded and working electrical outlets.
  - d. All connected devices are enabled in UEFI BIOS.
2. Use an antivirus program (if any) to see if the computer has been infected by a virus. If the program detects a virus, remove the virus.
3. See “Troubleshooting” on page 23 to resolve the problem you are experiencing and recover your operating system.
4. If the problem persists, contact Lenovo. See Chapter 7 “Help and support” on page 61.

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### Troubleshooting

Use the troubleshooting information to find solutions to problems that have definite symptoms.

## Startup problems

Problem	Solution
The computer does not start up when you press the power button.	<ul style="list-style-type: none"><li>• Ensure that the power cord is correctly connected to the rear of the computer and to a working electrical outlet.</li><li>• If the computer has a secondary power switch on the rear of the computer, ensure that it is switched on.</li><li>• The power indicator on the front of the computer is on.</li><li>• The computer voltage matches the voltage available at the electrical outlet for your country or region.</li></ul>
The operating system does not start up from the correct storage drive or fails to start up	<ul style="list-style-type: none"><li>• Ensure that all storage drive signal cables and power cables are connected correctly.</li><li>• Ensure that the storage drive the computer starts up from is listed as the first startup device in UEFI BIOS.</li><li>• In rare cases, the storage drive with the operating system might get corrupted or damaged. In such cases, you might need to replace the storage drive.</li><li>• If the computer is installed with an Optane memory:<ul style="list-style-type: none"><li>– Ensure that the Optane memory is not removed.</li><li>– Ensure that the Optane memory is not damaged. Check the Optane memory using diagnostic tools.</li></ul></li></ul>
The computer beeps multiple times before the operating system starts up.	Ensure that no keys are stuck.

## Audio problems

Problem	Solution
The audio cannot be heard on the Windows operating system.	<ul style="list-style-type: none"><li>• If you are using powered external speakers that have an On/Off control, ensure that:<ul style="list-style-type: none"><li>– The On/Off control is set to the <b>On</b> position.</li><li>– The speaker power cable is connected to a properly grounded, functional ac electrical outlet.</li></ul></li><li>• If your external speakers have a volume control, ensure that the volume is not set too low.</li><li>• Click the volume icon in the Windows notification area on the taskbar. Check the speaker and volume settings. Do not mute the speaker or set the volume at a very low level.</li><li>• If your computer has a front audio panel, ensure that the volume is not set too low.</li><li>• Ensure that your external speakers (and headphones, if used) are connected to the correct audio connector on the computer. Most speaker cables are color-coded to match the audio connector.</li></ul> <p><b>Note:</b> When external-speaker or headphone cables are connected to the audio connector, the internal speaker, if present, is disabled. In most cases, if an audio adapter is installed in one of the expansion slots, the audio function built into the system board is disabled. Therefore, you must use the audio connectors on the audio adapter.</p> <ul style="list-style-type: none"><li>• Ensure that the program you are running is designed for use in the Microsoft Windows operating system. If the program is designed to run in DOS, the program does not use the Windows sound feature. The program must be configured to use SoundBlaster Pro or SoundBlaster emulation.</li><li>• Ensure that the audio device drivers are correctly installed.</li></ul>
The sound does not come from the headset or headphones.	Select the headset or headphones as the default audio output device in advanced sound settings.
The sound comes from one of the external speakers.	<ul style="list-style-type: none"><li>• Ensure that the speaker cable is inserted completely into the connector on the computer.</li><li>• Ensure that the cable that connects the left speaker to the right speaker is securely connected.</li><li>• Ensure that the balance settings are set correctly.<ol style="list-style-type: none"><li>1. Right-click the volume icon in the Windows notification area on the taskbar. Then, click <b>Open Volume Mixer</b> and select the desired speaker.</li><li>2. Click the speaker icon on top of the volume control, and then click the <b>Levels</b> tab.</li></ol></li></ul>

## Network problems

**Note:** The Wi-Fi and Bluetooth features are optional.

Problem	Solution
The computer cannot connect to an Ethernet LAN.	<ul style="list-style-type: none"> <li>• Connect the cable from the Ethernet connector to the RJ45 connector of the hub.</li> <li>• Enable the Ethernet LAN feature in UEFI BIOS.</li> <li>• Enable the Ethernet LAN adapter. <ol style="list-style-type: none"> <li>1. Go to <b>Control Panel</b> and view by large icons or small icons.</li> <li>2. Click <b>Network and Sharing Center → Change adapter settings</b>.</li> <li>3. Right-click the Ethernet LAN adapter icon and click <b>Enable</b>.</li> </ol> </li> <li>• Update or reinstall the Ethernet LAN driver.</li> <li>• Install all networking software that is necessary for your network environment. Check with your LAN administrator for the necessary networking software.</li> <li>• Set the same duplex for the switch port and the adapter. If you configured the adapter for full duplex, ensure that the switch port is also configured for full duplex. Setting a wrong duplex mode might degrade performance, cause data loss, or result in lost connections.</li> </ul>
When a Gigabit Ethernet model computer is used at a speed of 1000 Mbps, the Ethernet LAN connection fails or errors occur.	Connect the network cable to the Ethernet connector using Category 5 wiring and a 100 BASE-T hub/switch (not 100 BASE-X).
The Wake On LAN (WOL) feature does not work.	Enable the Wake On LAN feature in UEFI BIOS.
The Wi-Fi feature does not work.	<ul style="list-style-type: none"> <li>• Enable the Wi-Fi feature in UEFI BIOS.</li> <li>• Enable all Wi-Fi devices. <ol style="list-style-type: none"> <li>1. Right-click the <b>Start</b> button to open the <b>Start</b> context menu.</li> <li>2. Click <b>Device Manager</b>. Type the administrator password or provide confirmation, if prompted.</li> <li>3. Expand <b>Network adapters</b> to display all network devices.</li> <li>4. Right-click each Wi-Fi device, and then click <b>Enable device</b>.</li> </ol> </li> <li>• Enable the Wi-Fi feature in Windows Settings. <ol style="list-style-type: none"> <li>1. Open the <b>Start</b> menu.</li> <li>2. Click <b>Settings → Network &amp; Internet → Wi-Fi</b>.</li> <li>3. Enable the Wi-Fi feature.</li> </ol> </li> <li>• Update or reinstall the Wi-Fi driver.</li> </ul>



Problem	Solution
The Bluetooth feature does not work.	<ul style="list-style-type: none"> <li>• Enable the Bluetooth feature in UEFI BIOS.</li> <li>• Enable all Bluetooth devices. <ol style="list-style-type: none"> <li>1. Right-click the <b>Start</b> button to open the <b>Start</b> context menu.</li> <li>2. Click <b>Device Manager</b>. Type the administrator password or provide confirmation if prompted.</li> <li>3. Expand <b>Bluetooth</b> to display all Bluetooth devices. Right-click each Bluetooth device, and then click <b>Enable device</b>.</li> <li>4. Expand <b>Network adapters</b> to display all network devices. Right-click each Bluetooth device, and then click <b>Enable device</b>.</li> </ol> </li> <li>• Turn on the Bluetooth radio. <ol style="list-style-type: none"> <li>1. Open the <b>Start</b> menu.</li> <li>2. Click <b>Settings → Devices → Bluetooth &amp; other devices</b>.</li> <li>3. Turn on the <b>Bluetooth</b> switch to enable the Bluetooth feature.</li> </ol> </li> <li>• Update or reinstall the Bluetooth driver.</li> </ul>
Sound does not come from the Bluetooth headset or headphones.	Select the Bluetooth headset or headphones as the default audio output device in advanced sound settings.

## Performance problems

Problem	Solution
Excessive fragmented files exist on the storage drives.	<p><b>Note:</b> Depending on the volume of the storage drives and amount of data stored on the storage drives, the disk-defragmentation process might take up to several hours.</p> <ol style="list-style-type: none"> <li>1. Close any open programs and windows.</li> <li>2. Open the <b>Start</b> menu.</li> <li>3. Click <b>Windows System → File Explorer → This PC</b>.</li> <li>4. Right-click your C drive and then click <b>Properties</b>.</li> <li>5. Click the <b>Tools</b> tab.</li> <li>6. Click <b>Optimize</b>. Select the drive as desired, and then click <b>Optimize</b>.</li> <li>7. Follow the on-screen instructions.</li> </ol>
The free storage drive space is insufficient.	<ul style="list-style-type: none"> <li>• Clean out your Inbox, Sent Items, and Deleted Items folders from your e-mail application.</li> <li>• Clean up your C drive. <ol style="list-style-type: none"> <li>1. Open the <b>Start</b> menu.</li> <li>2. Click <b>Windows System → File Explorer → This PC</b>.</li> <li>3. Right-click your C drive and then click <b>Properties</b>.</li> <li>4. Check the amount of free space, and then click <b>Disk Cleanup</b>.</li> <li>5. A list of unnecessary file categories is displayed. Select the category you want to delete, and then click <b>OK</b>.</li> </ol> </li> <li>• Disable some Windows features or remove some unnecessary programs. <ol style="list-style-type: none"> <li>1. Go to <b>Control Panel</b> and view by large icons or small icons.</li> <li>2. Click <b>Programs and Features</b>.</li> <li>3. Do one of the following: <ul style="list-style-type: none"> <li>– To disable some Windows features, click <b>Turn Windows features on or off</b>. Follow the on-screen instructions.</li> <li>– To remove some unnecessary programs, select the program you want to remove, and then click <b>Uninstall/Change</b> or <b>Uninstall</b>.</li> </ul> </li> </ol> </li> </ul>
The free memory space is insufficient.	<ul style="list-style-type: none"> <li>• Right-click a blank area on the taskbar and open Task Manager. Then, end some tasks you are not performing.</li> <li>• Install additional memory modules.</li> </ul>

## Storage drive problems

Problem	Solution
Some or all storage drives are missing from the BIOS menu.	<ul style="list-style-type: none"><li>• Ensure that the signal cables and power cables for all the storage drives are connected correctly.</li><li>• Ensure that the computer is configured correctly to support the storage drives.<ul style="list-style-type: none"><li>– If the computer is installed with SATA storage drives, ensure that the SATA storage drive enablement module (one to five storage drives) is installed.</li><li>– If the computer is installed with SAS storage drives, ensure that the SAS storage drive enablement module (one to five storage drives) or the LSI MegaRAID SAS adapter is installed.</li></ul></li></ul>

## Serial connector problems

Problem	Solution
The serial connector cannot be accessed.	<ul style="list-style-type: none"><li>• Connect the serial cable from the serial connector on the computer to the serial device. If the serial device has its own power cord, connect the power cord to a grounded electrical outlet.</li><li>• Turn on the serial device and keep the device online.</li><li>• Install any programs supplied with the serial device. Refer to the documentation that comes with the serial device for more information.</li><li>• If you added one serial-connector adapter, ensure that the adapter is installed correctly.</li></ul>

## USB device problems

Problem	Solution
A USB device cannot be accessed.	<ul style="list-style-type: none"><li>• Connect the USB cable from the USB connector to the USB device. If the USB device has its own power cord, connect the power cord to a grounded electrical outlet.</li><li>• Turn on the USB device and keep the device online.</li><li>• Install any device drivers or programs supplied with the USB device. Refer to the documentation that comes with the USB device for more information.</li><li>• Disconnect and reconnect the USB connector to reset the USB device.</li><li>• Ensure that the Smart USB Protection function is disabled in UEFI BIOS.</li></ul>

## Software problems

Problem	Solution
Some programs do not work as expected.	<ol style="list-style-type: none"><li>1. Check whether the problem is caused by a program.<ol style="list-style-type: none"><li>a. Ensure that the software is compatible with the computer. Refer to the information supplied with the software for more information.</li><li>b. Verify that other software works correctly on the computer.</li><li>c. Verify that the software you are using works on another computer.</li></ol></li><li>2. If the problem is caused by a program:<ul style="list-style-type: none"><li>• Refer to the printed documentation that comes with the program or the help system of the program.</li><li>• Update the program.</li><li>• Uninstall the program and then reinstall it. To download a program that is preinstalled on your computer, go to <a href="https://pcsupport.lenovo.com">https://pcsupport.lenovo.com</a> and follow the on-screen instructions.</li></ul></li></ol>

## Recovery

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

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 capacity of at least 16 GB. 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

If your computer cannot be started, go to Chapter 7 “Help and support” on page 61 first to try to solve the problem by yourself. If the problem persists, use the recovery USB drive to recover your computer.

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. Then, follow the on-screen instructions to complete the process.

## Update the device driver

**Attention:** Reinstalling device drivers will change the current configuration of the computer.

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:

- From the Lenovo Support Web site:

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.

- From Windows Update:

**Note:** The device drivers provided by Windows Update might not be tested by Lenovo. It is recommended that you get device drivers from Lenovo.

1. Open the **Start** menu.
2. Click **Settings → Update & Security → Windows Update**.
3. Follow the on-screen instructions.

---

## Chapter 6. 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

- Bottom cover
- DIN rail bracket kit\*
- IO expansion box\*
- Keyboard\*
- M.2 solid-state drive
- Mouse\*
- Physical lock kit\*
- Power adapter\*
- Power adapter bracket kit\*
- Power cord\*
- Rear Wi-Fi antenna\*
- VESA mount bracket kit\*
- Wireless WAN antenna\*
- Z hook kit\*

#### Optional-service CRUs

- Wi-Fi card\*
- Wireless WAN card\*

\* for selected models

---

## Replace a CRU

Follow the replacement procedure to replace a CRU.

## Power adapter and power cord

### Prerequisite

Before you start, read *Generic Safety and Compliance Notices*, and print the following instructions.

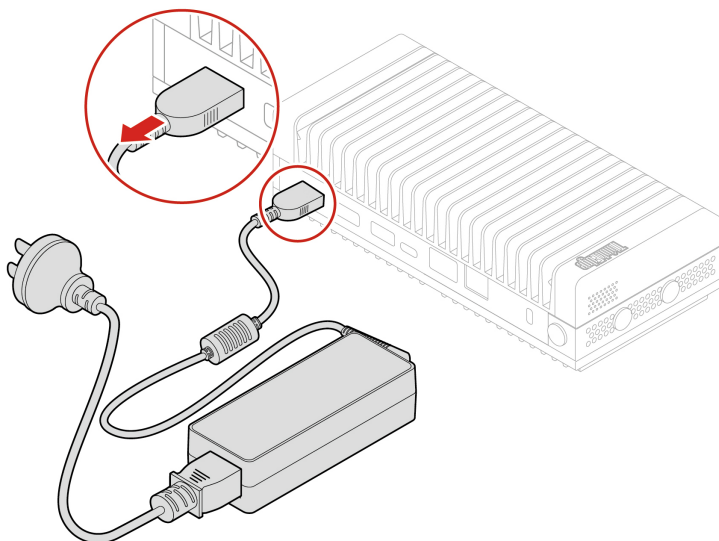


Avoid contact with the hot computer. During operation, the computer becomes hot enough to burn the skin. Before you touch the computer, turn off the computer, disconnect power, and wait approximately 30 minutes for the computer to cool.

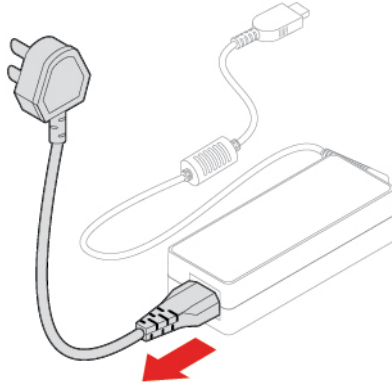
For access, do the following:

1. Remove any media from the drives and turn off all connected devices and the computer.
2. Disconnect all power cords from electrical outlets and disconnect all cables from the computer.

### Removal steps







## IO expansion box

**Note:** After you install the IO expansion box to the computer, you can still mount the IO expansion box and the computer together to the wall by using a matched DIN rail bracket, power adapter bracket kit, or a VESA mount bracket.

### Prerequisite

Before you start, read *Generic Safety and Compliance Notices*, and print the following instructions.

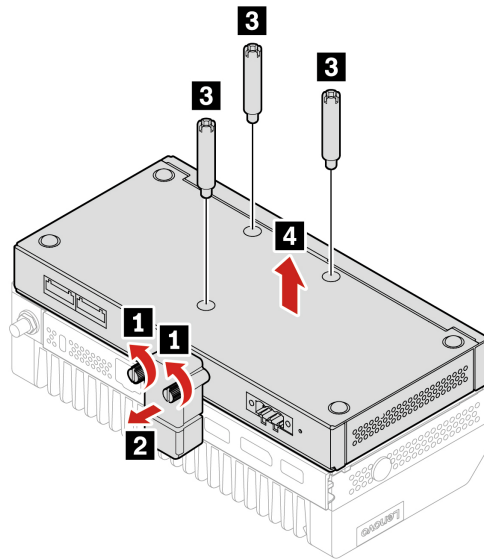


Avoid contact with the hot computer. During operation, the computer becomes hot enough to burn the skin. Before you touch the computer, turn off the computer, disconnect power, and wait approximately 30 minutes for the computer to cool.

For access, do the following:

1. Remove any media from the drives and turn off all connected devices and the computer.
2. Disconnect all power cords from electrical outlets and disconnect all cables from the computer.
3. Turn over the computer and the IO expansion box together so that the IO expansion box is on top.

## Removal steps



## DIN rail bracket kit

### Prerequisite

Before you start, read *Generic Safety and Compliance Notices*, and print the following instructions.



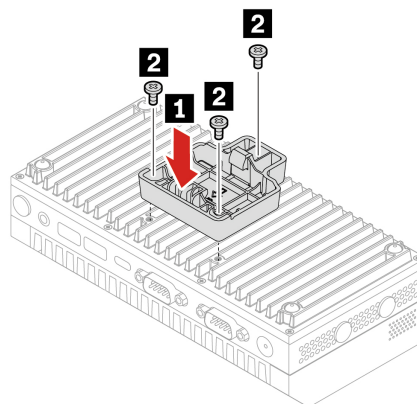
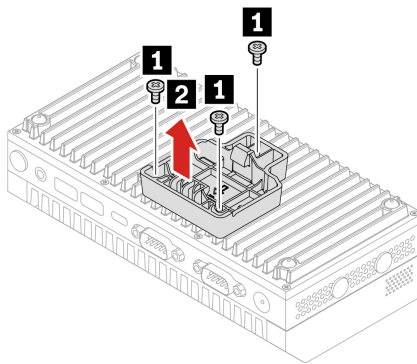
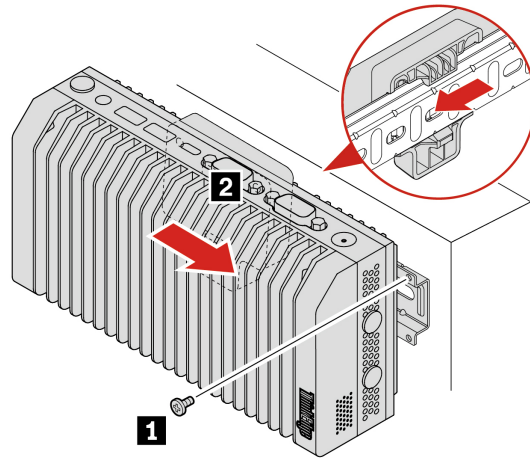
Avoid contact with the hot computer. During operation, the computer becomes hot enough to burn the skin. Before you touch the computer, turn off the computer, disconnect power, and wait approximately 30 minutes for the computer to cool.

For access, do the following:

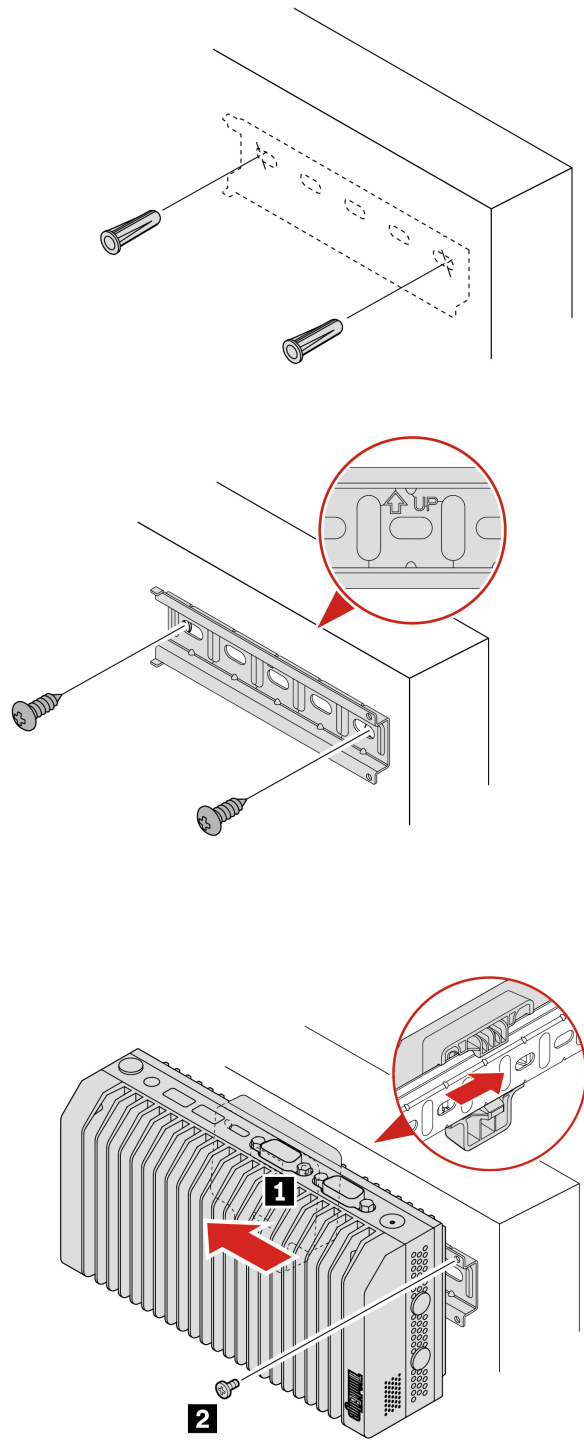
1. Remove any media from the drives and turn off all connected devices and the computer.
2. Disconnect all power cords from electrical outlets and disconnect all cables from the computer.

### Replacement steps

**Attention:** Use the screws (M3 x 4 mm x 3 pcs) provided by Lenovo to avoid any unpredictable damage to your computer.



**Note:** The shipped plastic expansion bolts might not be applicable if you need to install the DIN rail to a hard surface such as the metal workbench.



The replacement steps also apply to the computer with an IO expansion box installed. See “IO expansion box” on page 35.

## Physical lock kit and VESA mount bracket kit

### Prerequisite

Before you start, read *Generic Safety and Compliance Notices*, and print the following instructions.



Avoid contact with the hot computer. During operation, the computer becomes hot enough to burn the skin. Before you touch the computer, turn off the computer, disconnect power, and wait approximately 30 minutes for the computer to cool.

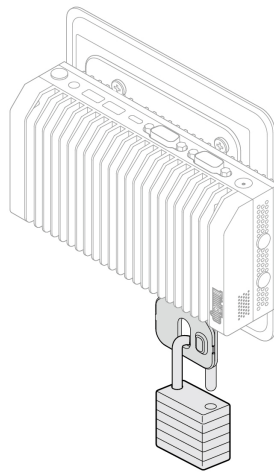
**Note:** The VESA mount bracket kit must work with the physical lock kit.

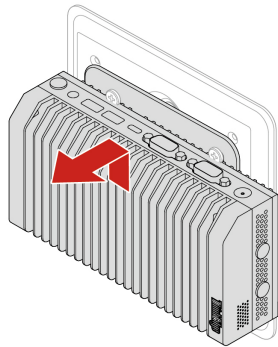
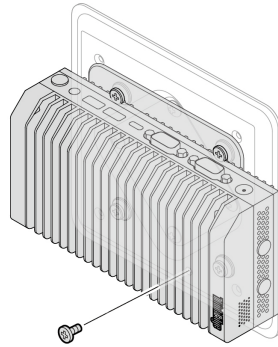
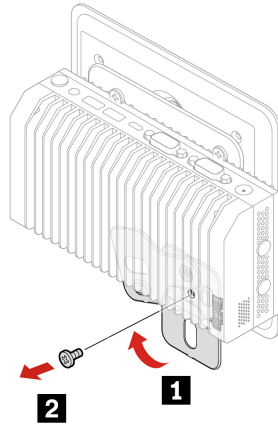
For access, do the following:

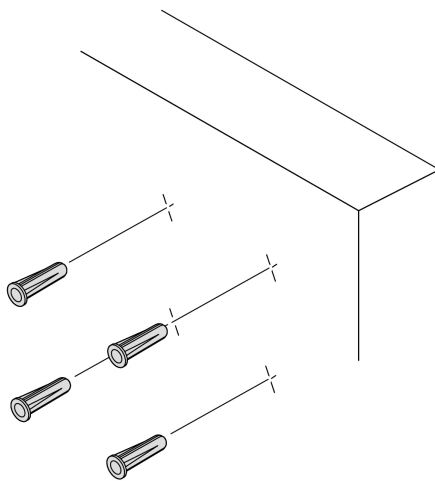
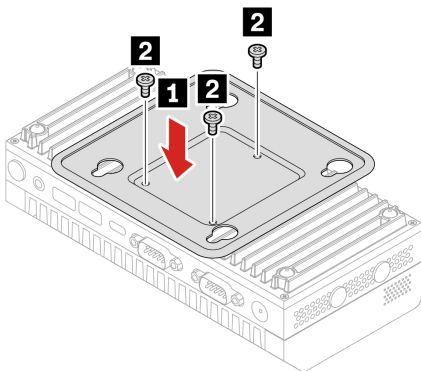
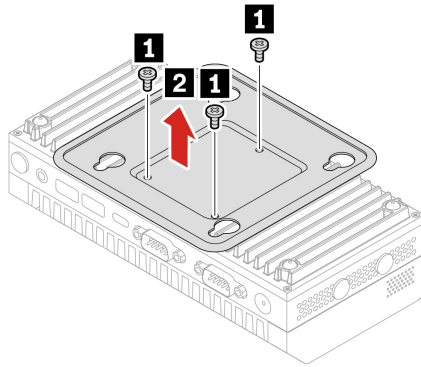
1. Remove any media from the drives and turn off all connected devices and the computer.
2. Disconnect all power cords from electrical outlets and disconnect all cables from the computer.

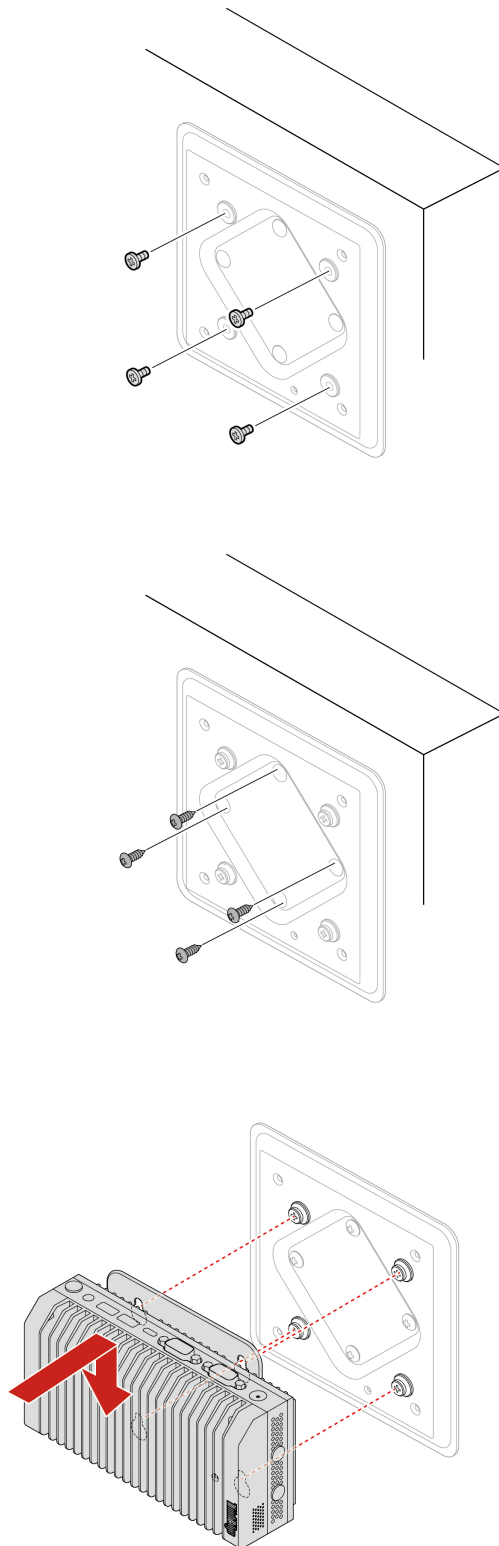
### Replacement steps

**Attention:** Use the screws (M3 x 4 mm x 3 pcs) provided by Lenovo to avoid any unpredictable damage to your computer.

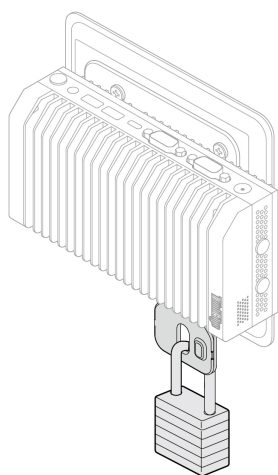
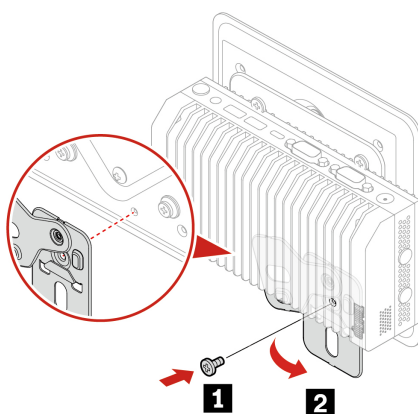
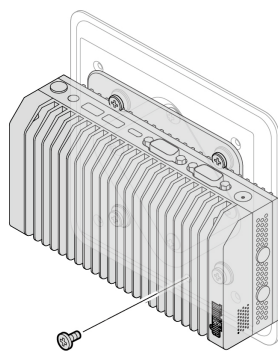












The replacement steps also apply to the computer with an IO expansion box installed. See “IO expansion box” on page 35.

## Power adapter bracket kit

### Prerequisite

Before you start, read *Generic Safety and Compliance Notices*, and print the following instructions.



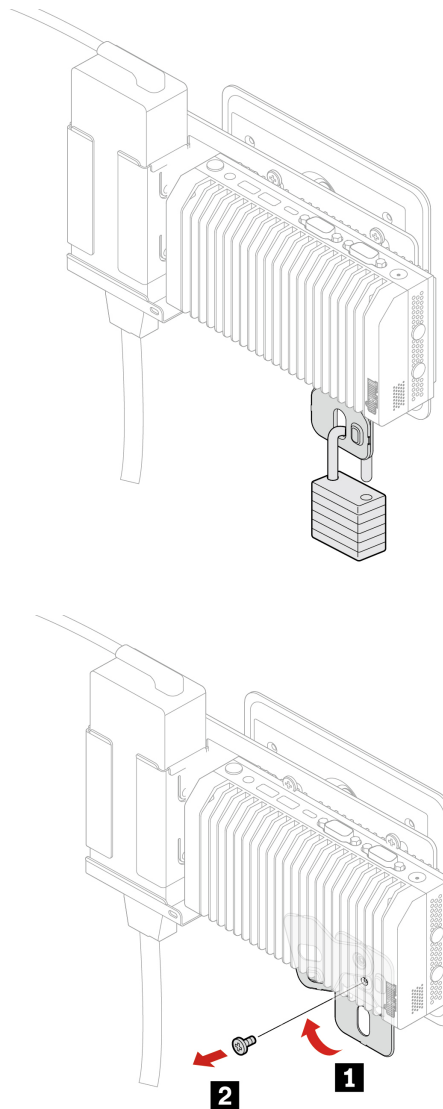
Avoid contact with the hot computer. During operation, the computer becomes hot enough to burn the skin. Before you touch the computer, turn off the computer, disconnect power, and wait approximately 30 minutes for the computer to cool.

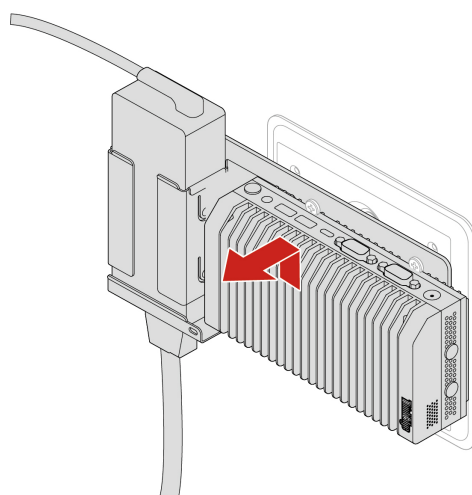
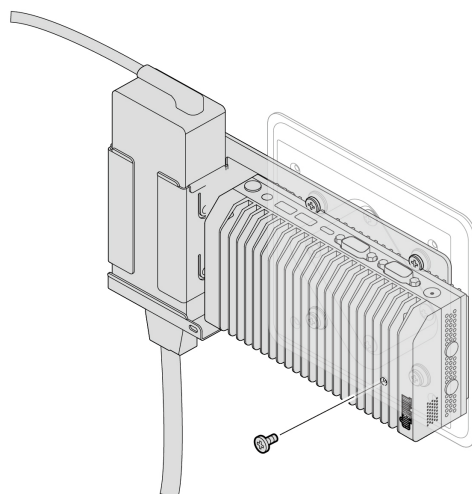
**Note:** The power adapter bracket kit must work with the physical lock kit.

For access, do the following:

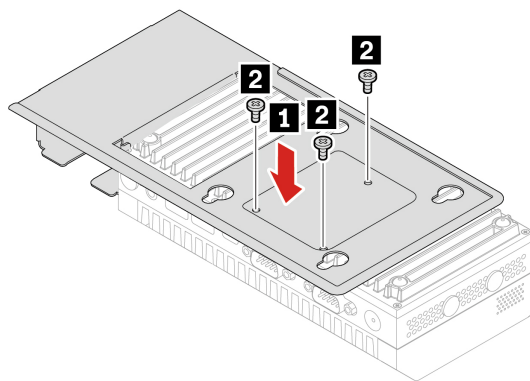
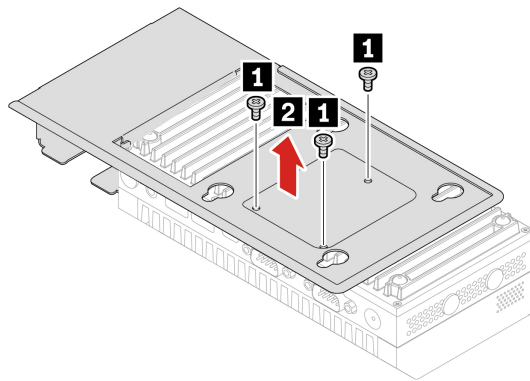
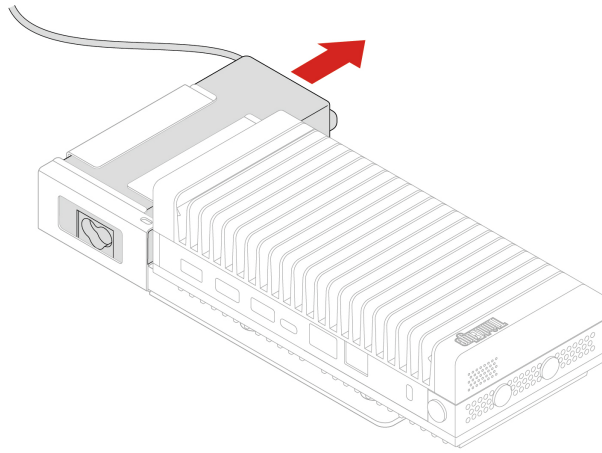
1. Remove any media from the drives and turn off all connected devices and the computer.
2. Disconnect all power cords from electrical outlets and disconnect all cables from the computer.

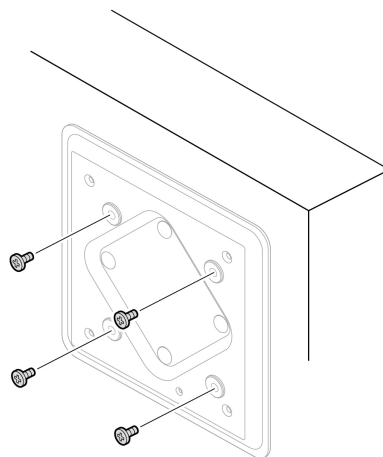
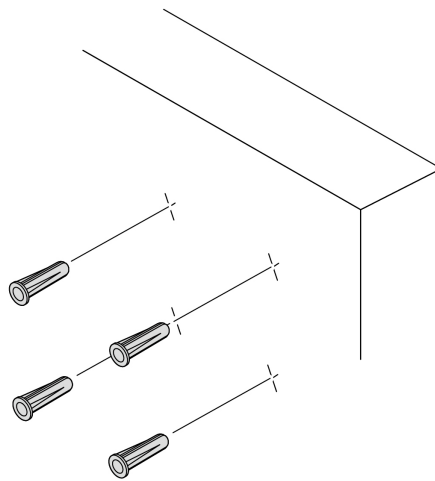
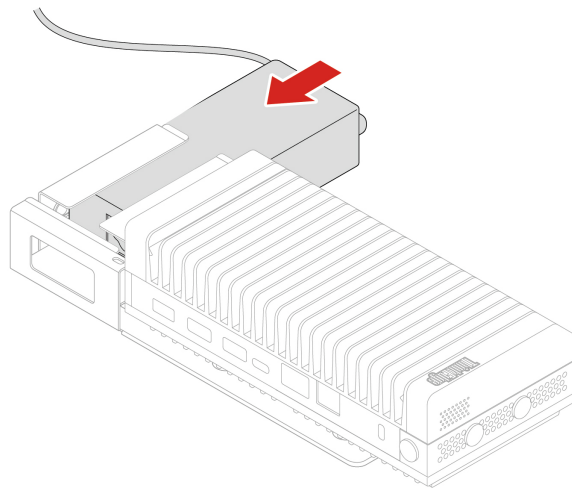
### Replacement steps

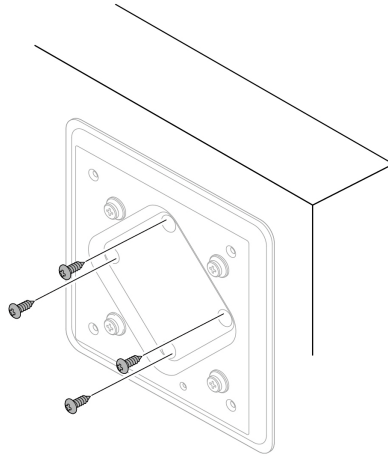




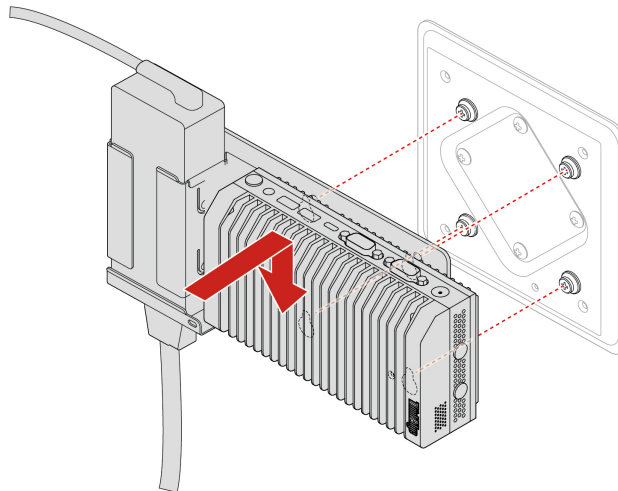
Remove the power cord from the power adapter. See “Power adapter and power cord” on page 34.

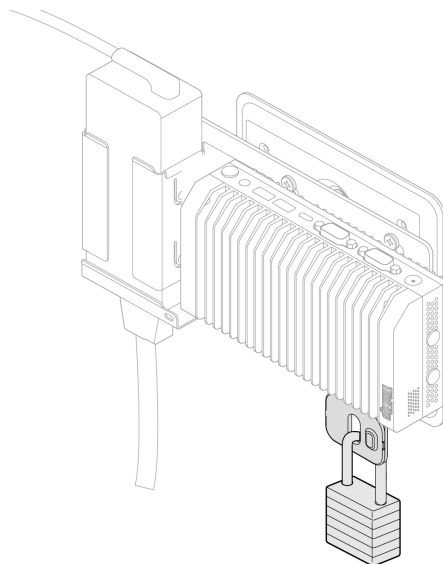
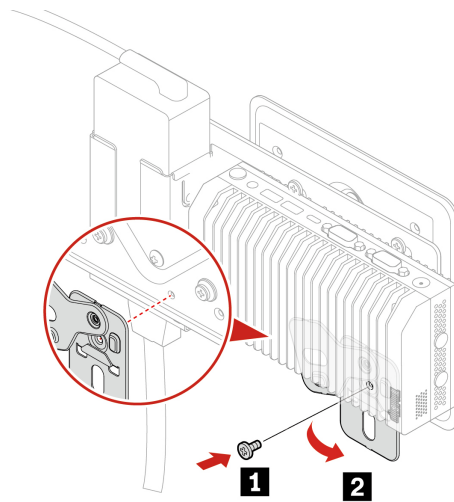
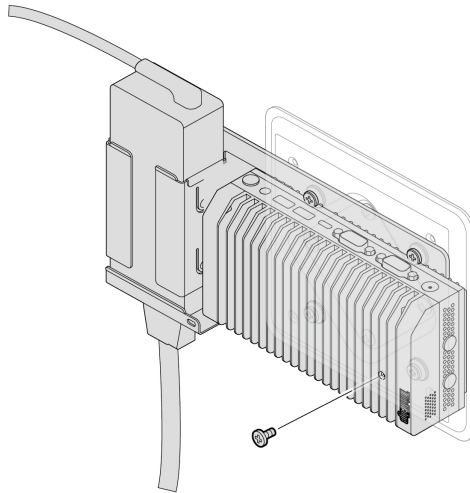






Install the power cord to the power adapter.





The replacement steps also apply to the computer with an IO expansion box installed. See “IO expansion box” on page 35.

## Z hook kit

### Attention:

- The Z hook kit can work with a partition. The applicable partition thickness is from 30 mm (1.18 inches) to 55 mm (2.17 inches).
- During operation, the computer surface might become very hot and burn the skin. Avoid keeping your hands or any other part of your body in contact with the computer.

### Prerequisite

Before you start, read *Generic Safety and Compliance Notices*, and print the following instructions.

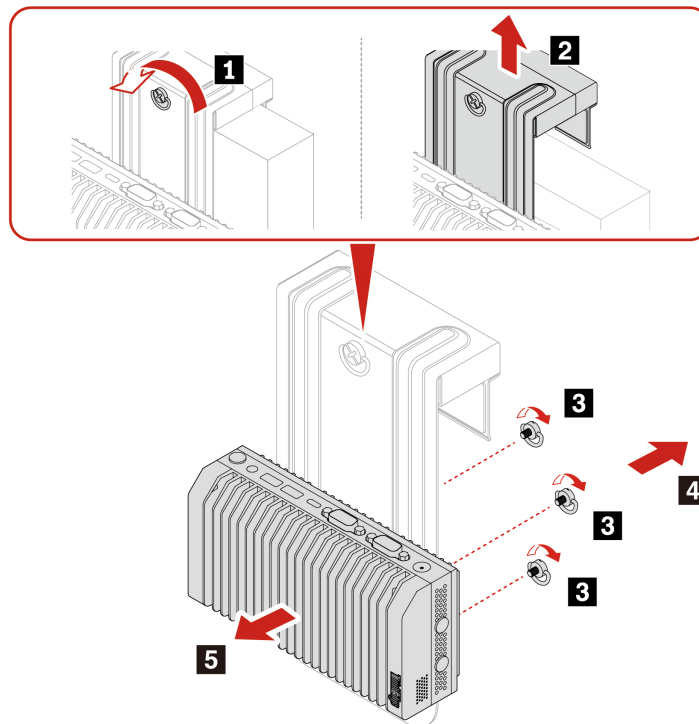


Avoid contact with the hot computer. During operation, the computer becomes hot enough to burn the skin. Before you touch the computer, turn off the computer, disconnect power, and wait approximately 30 minutes for the computer to cool.

For access, do the following:

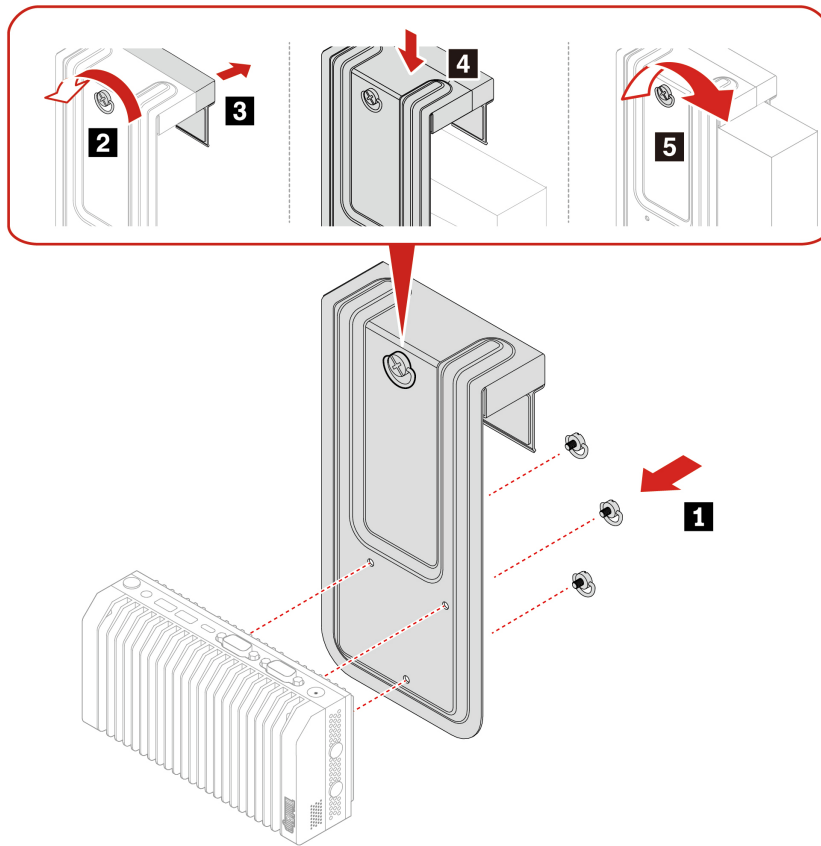
1. Remove any media from the drives and turn off all connected devices and the computer.
2. Disconnect all power cords from electrical outlets and disconnect all cables from the computer.

### Replacement steps



**Note:** When installing the Z hook kit, fasten the screws correctly to ensure that the computer is stable.





## Rear Wi-Fi antenna

### Prerequisite

Before you start, read *Generic Safety and Compliance Notices*, and print the following instructions.

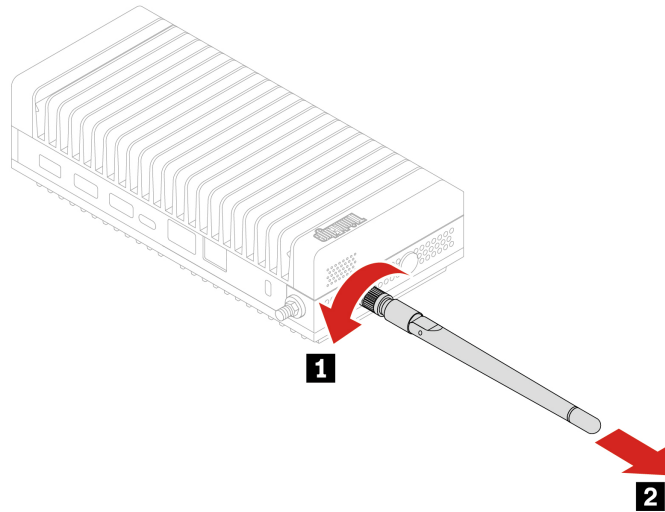


Avoid contact with the hot computer. During operation, the computer becomes hot enough to burn the skin. Before you touch the computer, turn off the computer, disconnect power, and wait approximately 30 minutes for the computer to cool.

For access, do the following:

1. Remove any media from the drives and turn off all connected devices and the computer.
2. Disconnect all power cords from electrical outlets and disconnect all cables from the computer.

## Removal steps



## Wireless WAN antenna

### Prerequisite

Before you start, read *Generic Safety and Compliance Notices*, and print the following instructions.

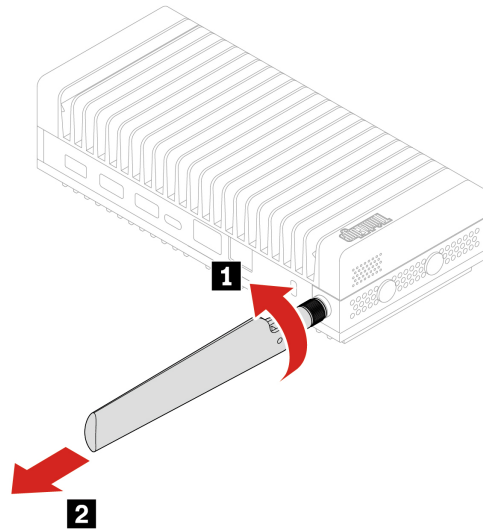


Avoid contact with the hot computer. During operation, the computer becomes hot enough to burn the skin. Before you touch the computer, turn off the computer, disconnect power, and wait approximately 30 minutes for the computer to cool.

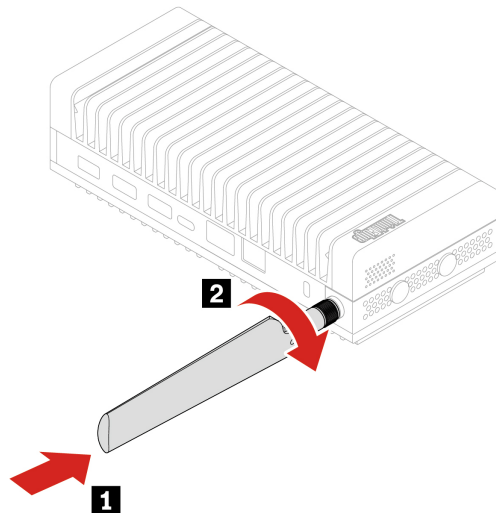
For access, do the following:

1. Remove any media from the drives and turn off all connected devices and the computer.
2. Disconnect all power cords from electrical outlets and disconnect all cables from the computer.

## Replacement steps



**Note:** Pay attention to the silk print number of each wireless WAN antenna and ensure that it matches the silk print number of the corresponding wireless WAN antenna slot. For the location of wireless WAN antenna slots, see Chapter 1 “Meet your computer” on page 1.



## Bottom cover

### Prerequisite

Before you start, read *Generic Safety and Compliance Notices*, and print the following instructions.

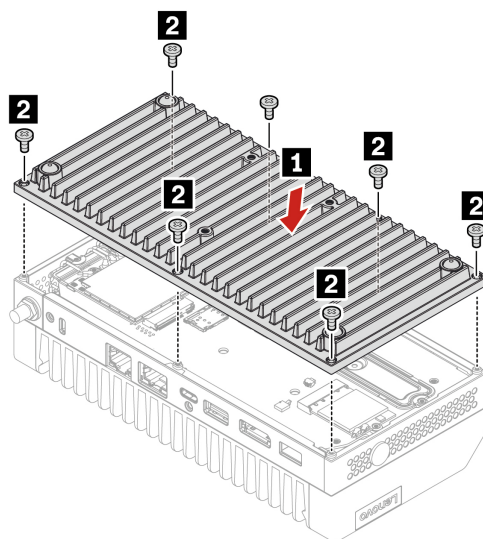
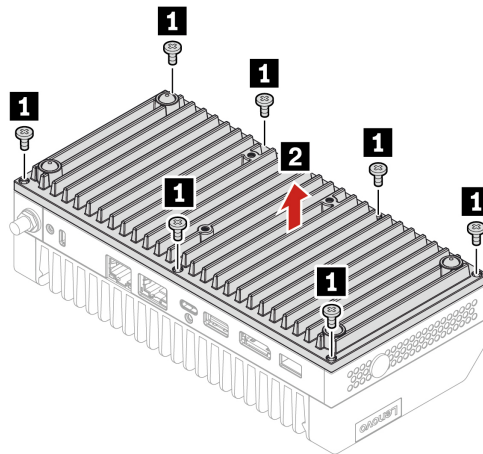


Avoid contact with the hot computer. During operation, the computer becomes hot enough to burn the skin. Before you touch the computer, turn off the computer, disconnect power, and wait approximately 30 minutes for the computer to cool.

For access, do the following:

1. Remove any media from the drives and turn off all connected devices and the computer.
2. Disconnect all power cords from electrical outlets and disconnect all cables from the computer.
3. Unlock any locking device that secures the computer cover.
4. Remove the bracket, if any. See “DIN rail bracket kit” on page 36, “Physical lock kit and VESA mount bracket kit” on page 39, and “Power adapter bracket kit” on page 43.
5. Turn over the computer so that the bottom cover is facing up.

### Replacement steps



## M.2 solid-state drives

### Prerequisite

Before you start, read *Generic Safety and Compliance Notices*, and print the following instructions.



Avoid contact with the hot computer. During operation, the computer becomes hot enough to burn the skin. Before you touch the computer, turn off the computer, disconnect power, and wait approximately 30 minutes for the computer to cool.

**Attention:** The internal storage drive is sensitive. Inappropriate handling might cause damage and permanent loss of data. When handling the internal storage drive, observe the following guidelines:

- Replace the internal storage drive only for upgrade or repair. The internal storage drive is not designed for frequent changes or replacement.
- Before replacing the internal storage drive, make a backup copy of all the data that you want to keep.
- Do not touch the contact edge of the internal storage drive. Otherwise, the internal storage drive might get damaged.
- Do not apply pressure to the internal storage drive.
- Do not make the internal storage drive subject to physical shocks or vibration. Put the internal storage drive on a soft material, such as cloth, to absorb physical shocks.

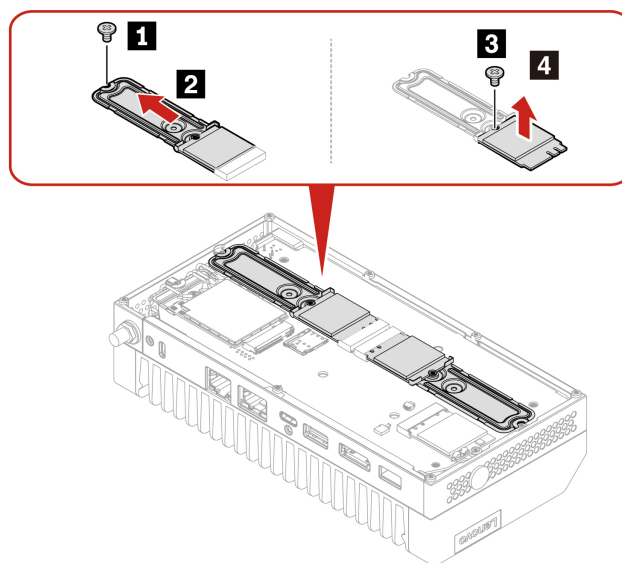
For access, do the following:

1. Remove any media from the drives and turn off all connected devices and the computer.
2. Disconnect all power cords from electrical outlets and disconnect all cables from the computer.
3. Remove the bottom cover. See “Bottom cover” on page 53.

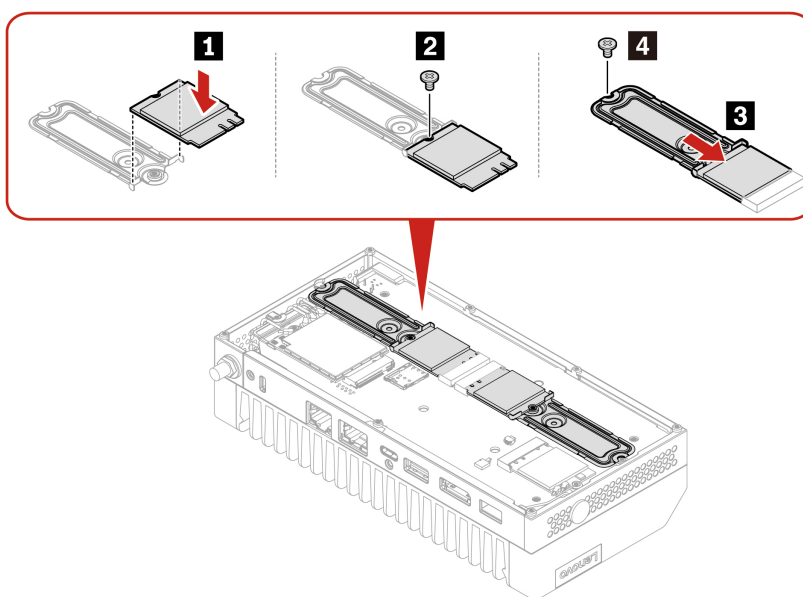
### Replacement steps

- **Type 1 2230:**

**Note:** A thermal pad might cover the M.2 solid-state drive. To access the M.2 solid-state drive, peel off the thermal pad first.

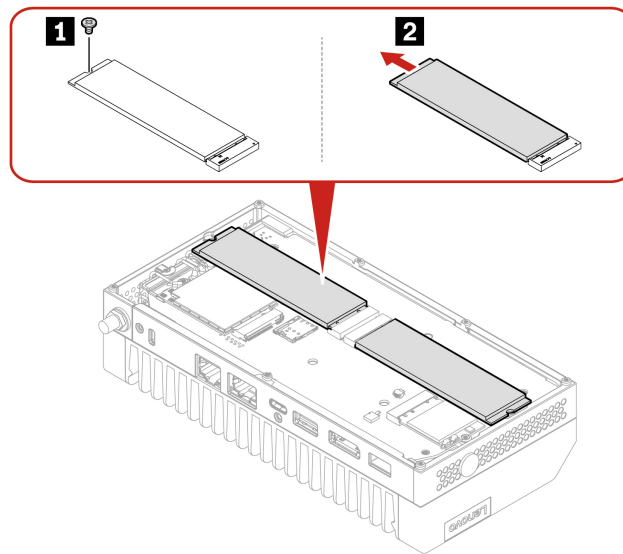


**Note:** After installing the new M.2 solid-state drive, ensure that you attach the new thermal pad to the new M.2 solid-state drive.

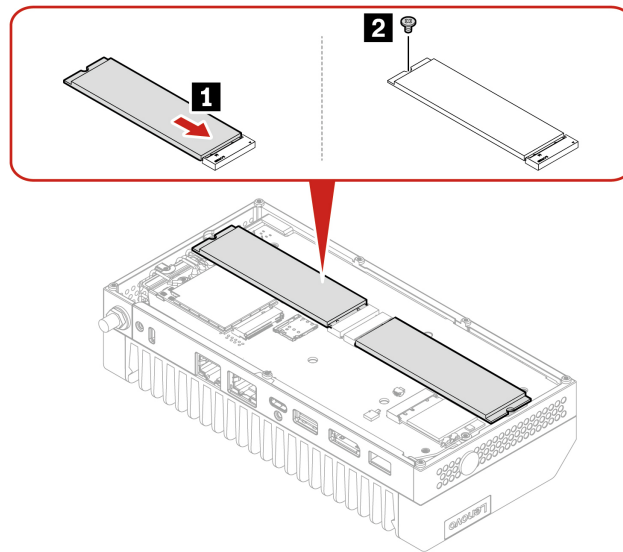


- **Type 2 2280:**

**Note:** A thermal pad might cover the M.2 solid-state drive. To access the M.2 solid-state drive, peel off the thermal pad first.



**Note:** After installing the new M.2 solid-state drive, ensure that you attach the new thermal pad to the new M.2 solid-state drive.



## Wi-Fi card

The following information is only for the computer with user-installable modules. Ensure that you use only a Lenovo-authorized wireless module specifically tested for this computer model. Otherwise, the computer will generate an error-code beep sequence when you turn on the computer.

### Prerequisite

Before you start, read *Generic Safety and Compliance Notices*, and print the following instructions.



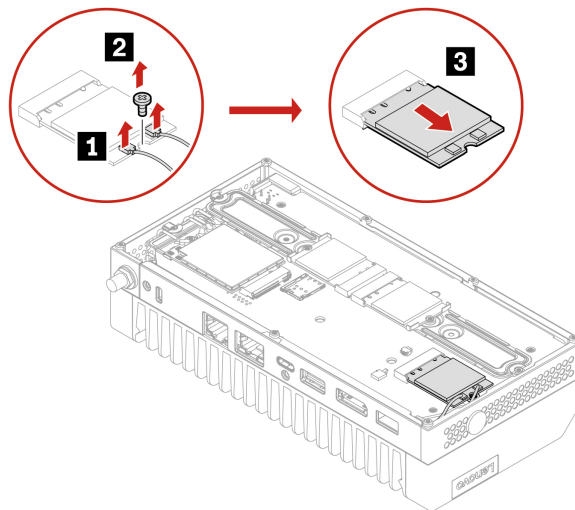
Avoid contact with the hot computer. During operation, the computer becomes hot enough to burn the skin. Before you touch the computer, turn off the computer, disconnect power, and wait approximately 30 minutes for the computer to cool.

For access, do the following:

1. Remove any media from the drives and turn off all connected devices and the computer.
2. Disconnect all power cords from electrical outlets and disconnect all cables from the computer.
3. Remove the bottom cover. See “Bottom cover” on page 53.

### Replacement steps

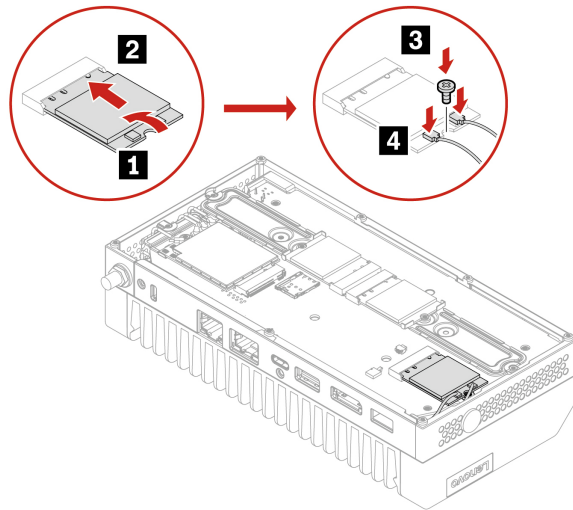
**Note:** Pay attention not to get the backup washer under the Wi-Fi card lost.



### Notes:

- A thermal pad might be adhered to the bottom of the failing Wi-Fi card. Attach a thermal pad to the bottom of the new Wi-Fi card if you have removed one.
- Ensure that you connect the gray cable to the connector labeled 1 (auxiliary) and the black cable to connector labeled 2 (main) on the card.





## Wireless WAN card

The following information is only for the computer with user-installable modules. Ensure that you use only a Lenovo-authorized wireless module specifically tested for this computer model. Otherwise, the computer will generate an error-code beep sequence when you turn on the computer.

### Prerequisite

Before you start, read *Generic Safety and Compliance Notices*, and print the following instructions.



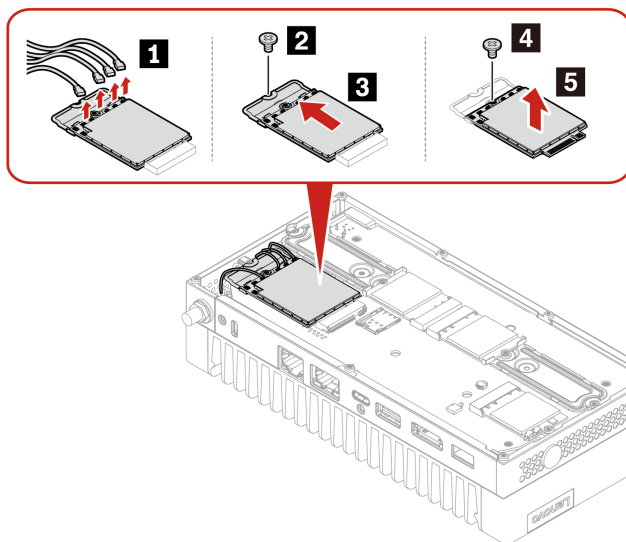
Avoid contact with the hot computer. During operation, the computer becomes hot enough to burn the skin. Before you touch the computer, turn off the computer, disconnect power, and wait approximately 30 minutes for the computer to cool.

For access, do the following:

1. Remove any media from the drives and turn off all connected devices and the computer.
2. Disconnect all power cords from electrical outlets and disconnect all cables from the computer.
3. Remove the bottom cover. See “Bottom cover” on page 53.

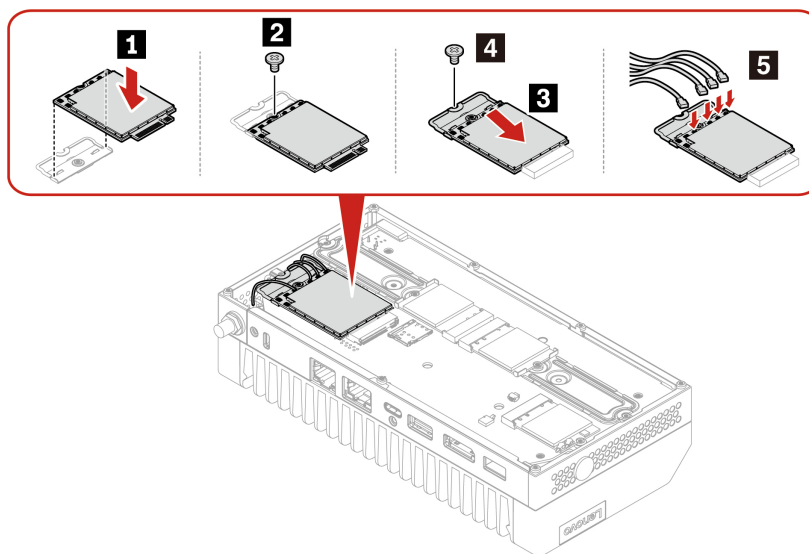
### Replacement steps

**Note:** A thermal pad might cover the wireless WAN card. To access the wireless WAN card, peel off the thermal pad first.



#### Notes:

- Ensure that you connect the orange cable to the connector labeled Orange, the blue cable to the connector labeled Blue, the light gray cable to the connector labeled White Gray, and the dark gray cable to connector labeled Black Gray on the card.
- After installing the new wireless WAN card, ensure that you attach the new thermal pad to the new wireless WAN card.



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## Chapter 7. Help and support

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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?
Product documentation: <ul style="list-style-type: none"><li>• <i>Safety and Warranty Guide</i></li><li>• <i>Setup Guide</i></li><li>• <i>This User Guide</i></li><li>• <i>Regulatory Notice</i></li></ul>	Go to <a href="https://smartsupport.lenovo.com">https://smartsupport.lenovo.com</a> . Then, follow the on-screen instructions to filter out the documentation you want.
Lenovo Support Web site with the latest support information of the following: <ul style="list-style-type: none"><li>• Drivers and software</li><li>• Diagnostic solutions</li><li>• Product and service warranty</li><li>• Product and parts details</li><li>• Knowledge base and frequently asked questions</li></ul>	<a href="https://smartsupport.lenovo.com">https://smartsupport.lenovo.com</a>
Windows help information	<ul style="list-style-type: none"><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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### Call Lenovo

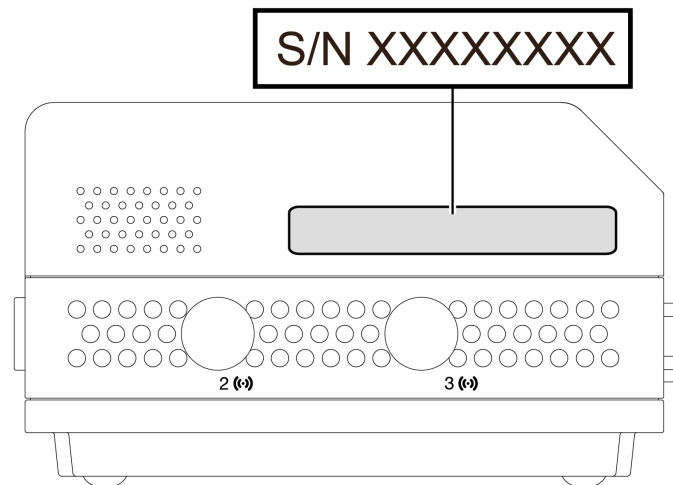
If you have tried to correct the problem yourself and still need help, you can call Lenovo Customer Support Center.

### Before you contact Lenovo

Prepare the following 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

The following illustration shows where to find the machine type and serial number of your computer.



## Lenovo Customer Support Center

During the warranty period, you can call Lenovo Customer Support Center for help.

### Telephone numbers

For a list of the Lenovo Support phone numbers for your country or region, go to:

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

**Note:** Phone numbers are subject to change without notice. If the number for your country or region is not provided, contact your Lenovo reseller or Lenovo marketing representative.

### Services available during the warranty period

- Problem determination - Trained personnel are available to assist you with determining if you have a hardware problem and deciding what action is necessary to fix the problem.
- Lenovo hardware repair - If the problem is determined to be caused by Lenovo hardware under warranty, trained service personnel are available to provide the applicable level of service.
- Engineering change management - Occasionally, there might be changes that are required after a product has been sold. Lenovo or your reseller, if authorized by Lenovo, will make selected Engineering Changes (ECs) that apply to your hardware available.

### Services not covered

- Replacement or use of parts not manufactured for or by Lenovo or nonwarranted parts
- Identification of software problem sources
- Configuration of UEFI BIOS as part of an installation or upgrade
- Changes, modifications, or upgrades to device drivers
- Installation and maintenance of network operating systems (NOS)
- Installation and maintenance of programs

For the terms and conditions of the Lenovo Limited Warranty that apply to your Lenovo hardware product, see *Safety and Warranty Guide* that comes with your computer.

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## Certification-related information

Product name	Machine types
ThinkEdge SE30	11NA, 11NB, 11NC, 11ND, 11NE, 11NF, 11NG, 11NH, and 11NK

The latest compliance information is available at:

<https://www.lenovo.com/us/en/compliance>

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## Compliance information

For more compliance information, refer to *Regulatory Notice* at <https://smartsupport.lenovo.com> and *Generic Safety and Compliance Notices* at [https://support.lenovo.com/docs/generic\\_notices](https://support.lenovo.com/docs/generic_notices).

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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>.

There are some tutorial videos that introduce how to use your computer with some accessories, such as ThinkEdge SE30 IO BOX and ThinkCentre Tiny/Nano Monitor Clamp II.



<https://support.lenovo.com/solutions/nanofeaturevideo>

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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

### Notices

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