

# M70t Gen 4 User Guide

Lenovo  
**ThinkCentre**



**Lenovo**

## **Read this first**

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

- *Safety and Warranty Guide*
- *Generic Safety and Compliance Notices*
- *Setup Guide*

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# Contents

## Discover your Lenovo computer . . . . iii

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

Front . . . . .	1
Rear . . . . .	3
Features and specifications . . . . .	5
USB specifications . . . . .	6

### Chapter 2. Get started with your computer. . . . . 7

Get started with Ubuntu Desktop . . . . .	7
Access networks . . . . .	7
Connect to the wired Ethernet . . . . .	7
Connect to Wi-Fi networks (for selected models) . . . . .	8
Connect an external display . . . . .	8
Manage cables with a smart cable clip . . . . .	8

### Chapter 3. Explore your computer . . . . 9

Set the power plan . . . . .	9
Transfer data . . . . .	9
Connect to a Bluetooth-enabled device (for selected models) . . . . .	9
Use the optical drive (for selected models) . . . . .	10
Use a media card (for selected models) . . . . .	10
Purchase accessories . . . . .	10

### Chapter 4. Secure your computer and information . . . . . 11

Lock the computer . . . . .	11
UEFI BIOS passwords . . . . .	12
Certificate-based BIOS management . . . . .	13
Use BIOS security solutions . . . . .	14
Wipe the storage drive data . . . . .	14
Cover presence switch . . . . .	14
Intel BIOS guard . . . . .	15
Smart USB Protection . . . . .	15

### Chapter 5. Advanced configurations . . . . . 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 (for selected models) . . . . .	18
Set the system date and time . . . . .	18
Change the priority boot order . . . . .	18

Enable or disable the configuration change detection feature . . . . .	19
Enable or disable the automatic power-on feature . . . . .	19
Enable or disable the smart power-on feature (for selected models) . . . . .	19
Enable or disable the ErP LPS compliance mode . . . . .	19
Change the ITS performance mode . . . . .	20
Change BIOS settings before installing a new operating system . . . . .	20
Update UEFI BIOS. . . . .	21
Customize BIOS Defaults . . . . .	21

### Chapter 6. CRU replacement . . . . . 23

CRU list . . . . .	23
Remove or replace a CRU. . . . .	24
Computer cover . . . . .	24
Optical drive . . . . .	25
Front bezel . . . . .	26
Drive bay assembly . . . . .	27
2.5-inch hard disk drive . . . . .	28
3.5-inch hard disk drive . . . . .	30
Memory module . . . . .	31
M.2 solid-state drive and heat sink . . . . .	32
M.2 solid-state drive bracket . . . . .	34
PCI-Express connector cable . . . . .	35
PCI-Express slot cover . . . . .	36
PCI-Express card . . . . .	36
Power supply assembly . . . . .	37
E-lock . . . . .	37

### Chapter 7. Help and support . . . . . 39

Self-help resources . . . . .	39
Lenovo diagnostic tools . . . . .	39
Call Lenovo . . . . .	40
Before you contact Lenovo . . . . .	40
Lenovo Customer Support Center . . . . .	40
Purchase additional services. . . . .	41

### Appendix A. Supplemental information about the Ubuntu operating system . . . . . 43

### Appendix B. Compliance information. . . . . 45

### Appendix C. Notices and trademarks. . . . . 47





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## Discover your Lenovo computer

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

Before starting your tour, please read the following information:

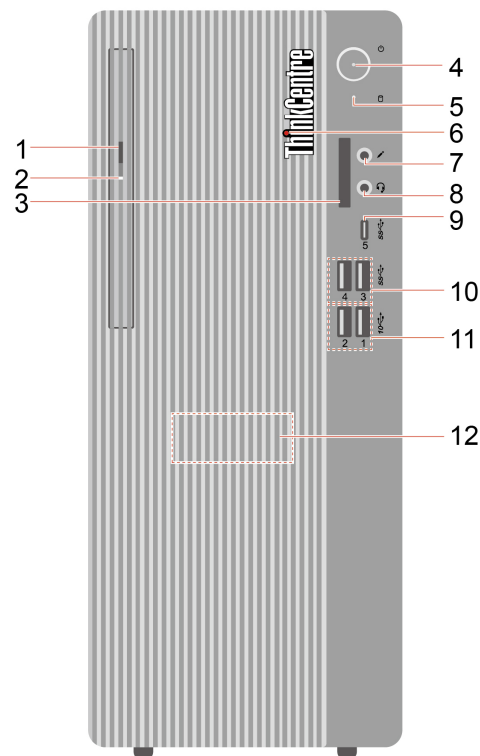
- Illustrations in this documentation might look different from your product.
- Depending on the model, some optional accessories, features, software programs, and user interface instructions might not be applicable to your computer.
- Documentation content is subject to change without notice. To get the latest documentation, go to <https://pcsupport.lenovo.com>.



# Chapter 1. Meet your computer

## Front

### M70t Gen 4



1. Optical drive eject button*	2. Optical drive activity indicator*
3. SD-card slot*	4. Power button and power indicator
5. Storage drive activity indicator	6. ThinkCentre® LED
7. Microphone connector	8. Headset connector
9. USB-C® (3.2 Gen 1) connector	10. USB 3.2 connectors Gen 1
11. USB 3.2 connectors Gen 2	12. Internal speaker

\* for selected models

### Power indicator

Show the system status of your computer.

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

## Headset connector

The headset connector is compatible with:

- Headphones or earphones with a 3.5mm (0.14 inch), TRS (3-pole) plug
- Headsets with a 3.5mm (0.14 inch), CTIA-compliant TRRS (4-pole) plug

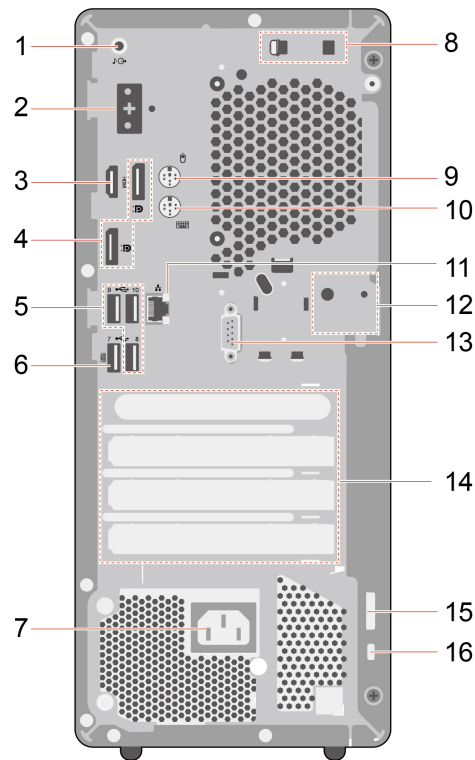
**Note:** This headset connector does not support standalone external microphones with a TRS (3-pole) plug or headsets with an OMTP-compliant TRRS (4-pole) plug.

## Related topics

- “USB specifications” on page 6.
- “Use the optical drive (for selected models)” on page 10.
- “Use a media card (for selected models)” on page 10.
- “Lenovo diagnostic tools” on page 39.

# Rear

## M70t Gen 4



1. Audio line-out connector	2. Optional connector*
3. HDMI™ out connector	4. DisplayPort™ out connectors
5. USB 2.0 connectors	6. USB 2.0 connector (with smart power-on)
7. Power cord connector	8. Smart cable clip slots
9. PS/2 mouse connector*	10. PS/2 keyboard connector*
11. Ethernet connector	12. E-lock slots
13. Serial connector*	14. PCI-Express card area
15. Padlock loop	16. Security-lock slot

\* for selected models

### Optional connector

Depending on the computer model, the connector might be a DisplayPort out connector, a USB-C (3.2 Gen 1) connector, VGA out connector, or an HDMI out connector.

### Serial connector

Connect an external modem, a serial printer, or other devices that use a serial connector.

### Related topics

- “USB specifications” on page 6.

- “Connect an external display” on page 8.
- “Lock the computer” on page 11.
- “Enable or disable the smart power-on feature (for selected models)” on page 19.

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## Features and specifications

For detailed specifications of your computer, go to <https://psref.lenovo.com>.

Specifications	Description
Dimensions	<ul style="list-style-type: none"><li>Width: 145.0 mm (5.7 inches)</li><li>Height: 346.0 mm (13.6 inches)</li><li>Depth: 296.2 mm (11.7 inches)</li></ul>
Weight (without packaging)	Maximum configuration as shipped: 5.9 kg (13 lb)
Hardware configuration	<ol style="list-style-type: none"><li>Open the system menu from the top-right corner and click <b>Settings</b>.</li><li>Click <b>About</b>.</li></ol>
Power supply	<ul style="list-style-type: none"><li>180-watt automatic voltage-sensing power supply</li><li>260-watt automatic voltage-sensing power supply</li><li>310-watt automatic voltage-sensing power supply</li><li>380-watt automatic voltage-sensing power supply</li></ul>
Electrical input	<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>
Microprocessor	To view the microprocessor information of your computer, enter <b>Settings</b> and click <b>About</b> .
Memory	<ul style="list-style-type: none"><li><b>M70t Gen 4:</b> Up to four Double data rate 4 (DDR4) unbuffered dual inline memory module (UDIMMs)</li></ul> Maximum memory capacity: 128 GB
Storage device	<ul style="list-style-type: none"><li>3.5-inch hard disk drive*</li><li>2.5-inch hard disk drive*</li><li>M.2 solid-state drive*</li></ul> <p>Type Disks in the search box and use the <b>Disks</b> application to view the storage drive capacity of your computer.</p> <p><b>Note:</b> The storage drive capacity indicated by the system is less than the nominal capacity.</p>
Video features	<ul style="list-style-type: none"><li>The integrated graphics card supports the following:<ul style="list-style-type: none"><li>DisplayPort out connector</li><li>HDMI out connector</li><li>VGA-out connector*</li><li>USB-C (3.2 Gen 1) connector* (on the rear panel)</li></ul></li><li>The optional discrete graphics card provides an enhanced video experience and extended capabilities.</li></ul>

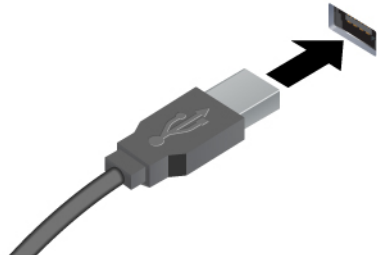



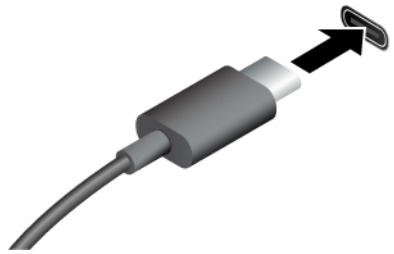




Specifications	Description
Expansion	<ul style="list-style-type: none"> <li>• Card reader*</li> <li>• Memory slots</li> <li>• M.2 solid-state drive slot</li> <li>• Optical drive*</li> <li>• Storage drive bay</li> </ul>
	<b>M70t Gen 4</b> <ul style="list-style-type: none"> <li>• PCI Express x16 card slot</li> <li>• PCI Express x1 card slots</li> </ul>
Network features	<ul style="list-style-type: none"> <li>• Bluetooth*</li> <li>• Ethernet LAN</li> <li>• Wireless LAN*</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 2.0 connector</li> <li>•  USB 3.2 connector Gen 1</li> <li>•  USB 3.2 connector Gen 2</li> </ul>	<p>Connect USB-compatible devices, such as a USB keyboard, USB mouse, USB storage device, or USB printer.</p>
 <ul style="list-style-type: none"> <li>•  USB-C (3.2 Gen 1) connector</li> <li>•  USB-C (3.2 Gen 2) connector</li> </ul>	<ul style="list-style-type: none"> <li>• Charge USB-C compatible devices with the output voltage and current of 5 V and 3 A.</li> <li>• Connect to USB-C accessories to help expand your computer functionality. To purchase USB-C accessories, go to <a href="https://www.lenovo.com/accessories">https://www.lenovo.com/accessories</a>.</li> </ul>

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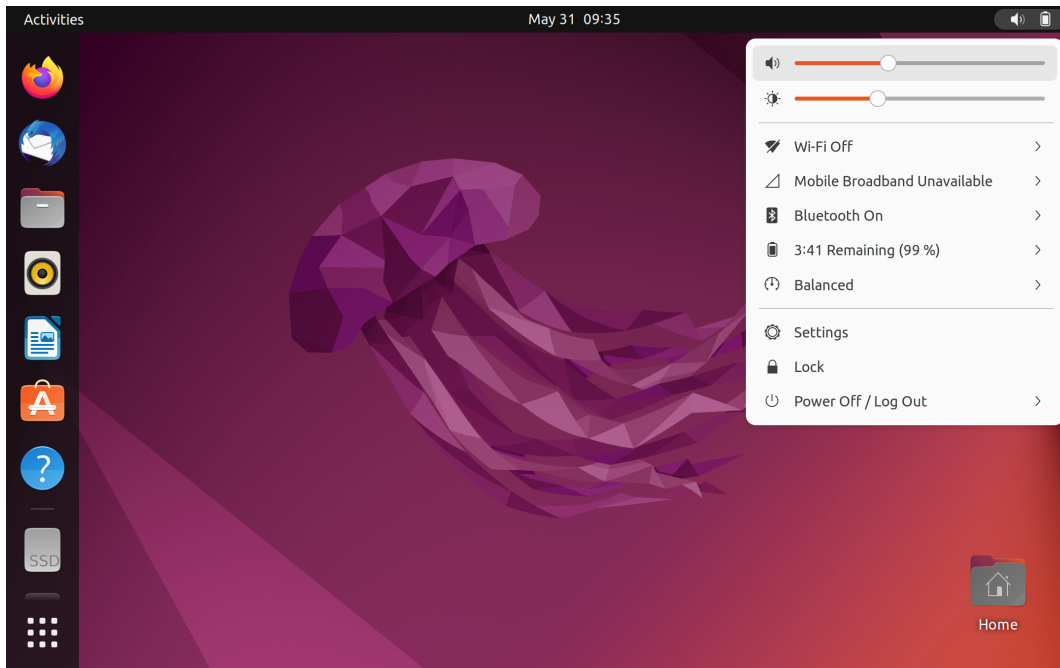
## Chapter 2. Get started with your computer

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### Get started with Ubuntu Desktop

Learn the basics of Ubuntu and start working with it right away. For more information about Ubuntu, see the Ubuntu documentation site at: <https://help.ubuntu.com/its/ubuntu-help/index.html>.

The Gnome desktop is installed by default and is designed to be simple and easy to use. Details on using Gnome are available by launching the Help application or online at <https://help.gnome.org/users/>.



#### Launch an app

- Press the Super key (with the Windows logo) or open the Activities menu on the top left and type in the name of the application you want to launch.
- Click the **Show Applications** button on the lower left, and select the application you want to launch.

#### Launch settings

Open the system menu from the top-right corner and click **Settings**.

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### Access networks

This section helps you access networks through connecting to 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.

1. Open the system menu from the top-right corner and expand the Wi-Fi section of the menu.
2. Click **Select Network**. A list of available wireless networks is displayed.
3. Select a network available for connection. Provide required information, if needed.

---

## Connect an external display

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

### Change display settings

Right-click a blank area on the desktop and select **Display settings**. Then, you can change display settings as you prefer.

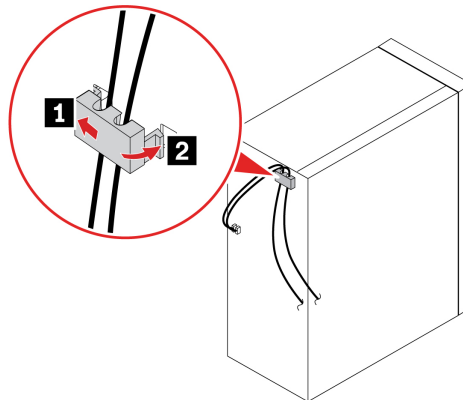
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## Manage cables with a smart cable clip

**Note:** You can purchase a smart cable clip from Lenovo.

To manage cables of devices (such as the keyboard and the mouse) with a smart cable clip:

1. Pull the cables through the dents in the clip.
2. Install the clip as shown.



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## Chapter 3. Explore your computer

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### Set the power plan

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

- Turn off the display: After 5 minutes
- Put the computer to sleep: After 20 minutes

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

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

1. Open the system menu from the top-right corner and click **Settings**.
2. Click **Power**.
3. Choose or customize a power plan of your preference.

---

### Transfer data

Quickly share your files using the built-in Bluetooth technology among devices with the same features. You also can install a disc or media card to transfer data.

### 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. Turn on Bluetooth on the computer.
  - a. Open the system menu from the top-right corner and then click **Settings** → **Bluetooth**.
  - b. In the Bluetooth section enable Bluetooth with the toggle button at the top.

2. Any discoverable devices will be shown in the **Devices** list.
3. Select a Bluetooth device, and then follow the on-screen instructions.

## Use the optical drive (for selected models)

If your computer has an optical drive, read the following information.

### Install or remove a disc

1. With the computer on, press the eject button on the optical drive. The tray slides out of the drive.
2. Insert a disc into the tray or remove a disc from the tray, and then push the tray back into the drive.

**Note:** If the tray does not slide out of the drive when you press the eject button, turn off the computer. Then, insert a straightened paper clip into the emergency-eject hole adjacent to the eject button. Use the emergency eject only in an emergency.

### Record a disc

1. Insert a recordable disc into the optical drive that supports recording.
2. In the **Blank CD/DVD-R Disc** notification that pops up at the bottom of the screen, select **Open with CD/DVD Creator**.
3. Follow the on-screen instructions.

## Use a media card (for selected models)

If your computer has an SD-card slot, read the following information.

### Install a media card

1. Locate the SD-card slot.
2. Ensure that the metal contacts on the card are facing the ones in the SD-card slot. Insert the card firmly into the SD-card slot until it is secured in place.

### Remove a media card

**Attention:** Before removing a media card, unmount the card from the operating system first. Otherwise, data on the card might get corrupted or lost.

1. Launch the **Files** application.
2. Select the unmount icon next to the card and unmount the card from the operating system.
3. Press the card and remove it from your computer. Store the card safely for future use.

---

## Purchase accessories

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

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

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## Chapter 4. Secure your computer and information

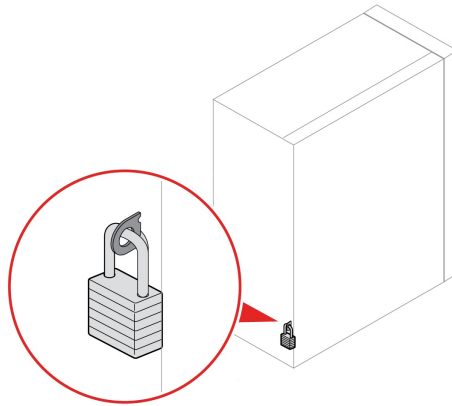
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### Lock the computer

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

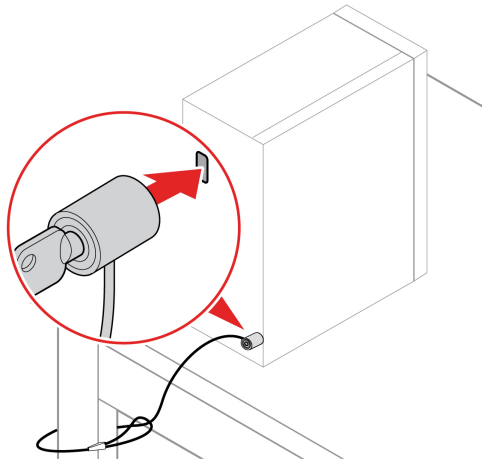
#### Padlock

Locking the computer cover through a padlock prevents unauthorized access to the inside of your computer.



#### Kensington-style cable lock

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

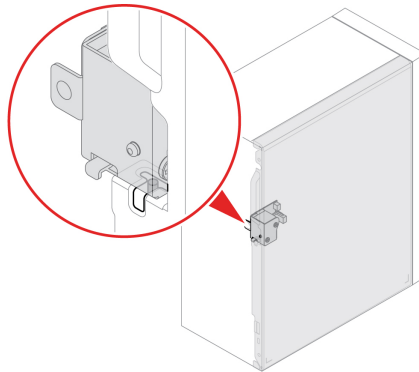


## E-lock

Your computer might have a security lock solution installed to protect the computer from unauthorized tampering of the internal components. Using the E-Lock, you can mechanically lock or unlock the computer cover.

To enable or disable the E-Lock:

1. Restart the computer. When the logo screen is displayed, press F1 or Fn+F1.
2. Select **Security** → **Electronic Lock** to enable or disable the E-lock.
3. Press F10 or Fn+F10 to save the changes and exit. Your computer will restart automatically and then changes take effect.



---

## UEFI BIOS passwords

You can set passwords in UEFI (Unified Extensible Firmware Interface) BIOS (Basic Input/Output System) to strengthen the security of your computer.

### Password types

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

- **Power-on password**

When a power-on password is set, you are prompted to enter a valid password each time the computer is turned on.

- **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.

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

---

## Certificate-based BIOS management

Certificate-based BIOS authentication (also called the password-less management mode) provides more secure UEFI BIOS management with password-free solution. It is used to replace the supervisor password / system management password for authentication if you have set one.

**Note:** Supervisor password / system management password are disabled automatically when certificate mode is enabled. But the power-on password / hard disk password still can be used normally in certificate mode if you have set one.

For certificate enrollment, see *Certificate Enrollment Guide* at: [https://support.lenovo.com/docs/certificate\\_enrollment\\_guide](https://support.lenovo.com/docs/certificate_enrollment_guide)

### Enter the BIOS menu with certificate

Once you have enrolled the certificate, you can enter the BIOS menu with the certificate.

1. Restart the computer. When the logo screen is displayed, press F1 or Fn+F1 to enter the BIOS menu.
2. The QR code is displayed. Scan the QR code to save the request data and send the request data to IT admin by e-mail or phone.

**Note:** If you choose to authenticate without the QR code, save the request data in a USB key and send the request data to IT admin by e-mail or phone.

3. Enter the unlock code provided by IT admin and click **OK**.

**Notes:**

- The unlock encode is a one-time password and is valid only during logon prompt (in one power-on cycle) for up to two hours.
- If you click **Skip**, you can enter the BIOS setup menu without BIOS management authority. But certificate reset is allowed.

**Reset certificate**

The enrolled certificate cannot be disabled. You can reset or remove it:

1. Restart the computer. When the logo screen is displayed, press F1 or Fn+F1.
2. Enter the BIOS menu with the certificate or skip the certification authentication process.
3. Select **Security → Certificate-based BIOS Authentication → Reset Certificate**.
4. Follow the on-screen instructions to enter the reset code provided by IT admin.

---

## 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.

### 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.

## 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.

## Smart USB Protection

The Smart USB Protection function is a security function that helps prevent data from being copied from the computer to USB storage devices connected to the computer. You can set the Smart USB Protection function to one of the following modes:

- **Disabled** (default setting): You can use the USB storage devices without limitation.
- **Read Only**: You cannot copy data from the computer to the USB storage devices. However, you can access data on the USB storage devices.
- **No Access**: You cannot access the USB storage devices from the computer.

To configure the Smart USB Protection function:

1. Restart the computer. When the logo screen is displayed, press F1 or Fn+F1.
2. Select **Security → Smart USB Protection** and press Enter.
3. Select the desired setting and press Enter.
4. Press F10 or Fn+F10 to save the changes and exit.



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## Chapter 5. Advanced configurations

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### 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:

Key	Function
F1 or Fn+F1	General Help
Esc or Fn+Esc	Exit the submenu
↑ ↓ or Fn+↑ ↓	Locate an item
← → or Fn+← →	Move keyboard focus
+/- or Fn++/-	Change value
Enter	Enter the submenu
F9 or Fn+F9	Setup Defaults
F10 or Fn+F10	Save and exit

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### 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.

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## Change the display mode of UEFI BIOS (for selected models)

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

The keys on the keyboard used to perform various tasks are displayed at the bottom of the screen. In addition to the keyboard, you also can use the mouse to make selections.

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 priority boot 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 priority boot 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 → Priority Boot 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 smart power-on feature (for selected models)

Ensure that the keyboard is connected to a USB connector supporting the smart power-on feature. With the smart power-on feature enabled, you can start up or wake up the computer from the hibernation mode by pressing Alt+P.

To enable or disable the smart power-on feature:

1. Restart the computer. When the logo screen is displayed, press F1 or Fn+F1.
2. Select **Power → Smart Power On** and press Enter.
3. Enable or disable the feature as desired.
4. 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 Lot 3 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 or in sleep mode.

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, select **Power → Automatic Power On** and press Enter. Check whether the Wake on LAN feature is disabled automatically. If no, disable it.
  - If you select **Disabled**, press Enter. Then, go to the next step.
4. Press F10 or Fn+F10 to save the changes and exit.

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

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

---

## Change the ITS performance mode

You can adjust the acoustic and thermal performance of your computer by changing the ITS performance mode. Three options are available:

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

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

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

To change the ITS performance mode:

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

---

## 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.

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 the Windows 10 (64-bit) and most of Linux operating system, select **Enabled** for **Secure Boot**.
  - To install an operating system that does not support secure boot, select **Disabled** for **Secure Boot**.

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

---

## 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 by one of the following methods:

- Using the built-in software update service:  
Ubuntu software update will check the LVFS site for any firmware updates and notify you when updates are available.
- 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.

---

## Customize BIOS Defaults

The feature provides a solution to backup your preferred BIOS Setup settings. It helps you to save the BIOS Setup settings as customized BIOS default settings, load them to current BIOS settings when needed, and reset the settings to Setup Defaults.

### Save the customized settings configuration

1. Restart the computer. When the logo screen is displayed, press F1 or Fn+F1 to enter the BIOS menu.
2. Select **Exit → Save Custom Defaults**.
3. Click **Yes** to save the settings configuration you customized.

### Load the customized settings configuration

1. Restart the computer. When the logo screen is displayed, press F1 or Fn+F1 to enter the BIOS menu.
2. Select **Exit → Load Custom Defaults**.
3. Click **Yes** to load the customized settings configuration you saved.

You can also press F9 and click **Custom Defaults** to load the customized settings configuration.

**Note:** **Load Custom Defaults** is unavailable if no customized BIOS default settings are saved.

### Reset the settings configuration to Setup Defaults

1. Restart the computer. When the logo screen is displayed, press F1 or Fn+F1 to enter the BIOS menu.
2. Select **Exit → Load Factory Defaults**.
3. Click **Yes** to reset the settings configuration to Setup Defaults.

You can also press F9 and click **Factory Defaults** to reset the settings configuration to Setup Defaults.



---

## 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)

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### CRU list

The following is the CRU list of your computer.

#### Self-service CRUs

- 2.5-inch hard disk drive\*
- 2.5-inch hard disk drive bracket\*
- 3.5-inch hard disk drive\*
- 3.5-inch hard disk drive bracket\*
- Chassis Rubber Foot\*
- Computer cover
- DisplayPort connector cover kit\*
- Front bezel
- HDMI connector cover\*
- Heat sink for M.2 solid-state drive\*
- Keyboard\*
- M.2 solid-state drive\*
- M.2 solid-state drive bracket\*
- Memory module
- Mouse\*
- Optical drive\*
- Optical drive latch\*
- Optical drive bracket\*
- PCI-Express card\*
- PCI-Express connector cable\*

- PCI-Express slot cover\*
- Power button assembly
- Power cord
- Smart cable clip\*
- Think dust shield\*

#### **Optional-service CRUs**

- E-lock\*
- Power supply assembly

\* for selected models

---

## **Remove or replace a CRU**

This section provides instructions on how to remove or replace a CRU.

### **Computer cover**

#### **Prerequisite**

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

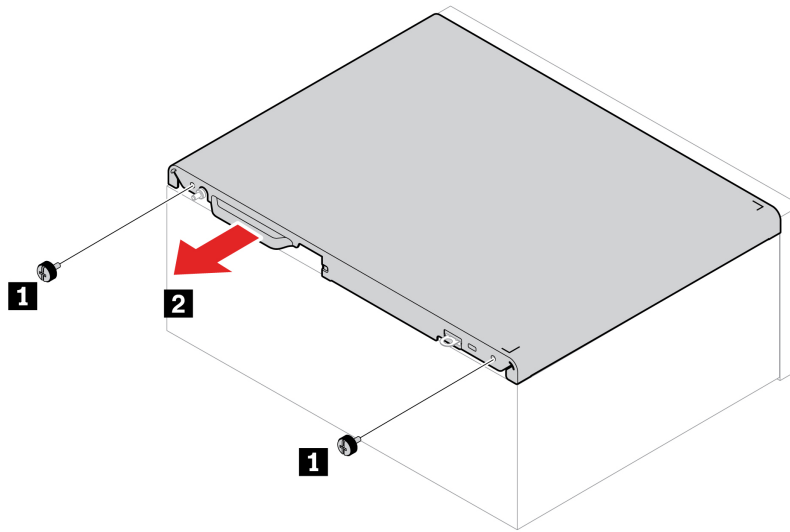


Before you open the computer cover, turn off the computer and wait several minutes until the computer is cool.

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. Lay down the computer to place the computer cover facing up.

## Removal steps



**Note:** If a locking device is available, use it to lock the computer after installing the computer cover.

## Optical drive

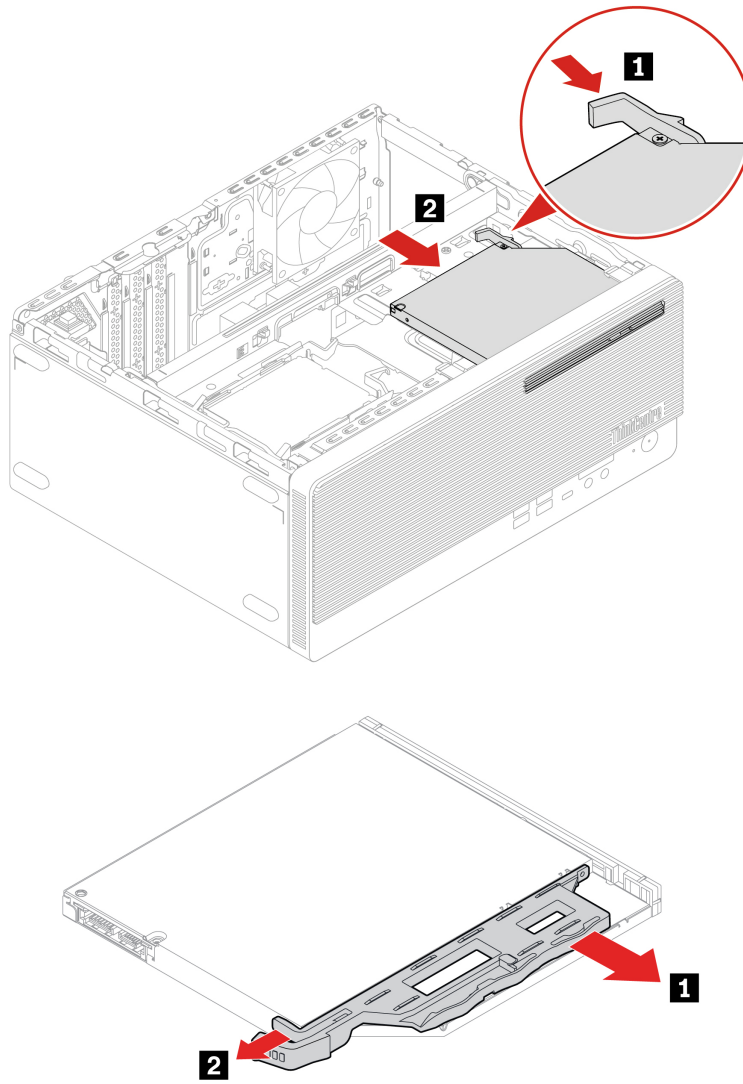
### Prerequisite

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

For access, do the following:

1. Remove the computer cover. See “Computer cover” on page 24.
2. Disconnect the signal and power cable from the optical drive.

## Removal steps



## Front bezel

### Prerequisite

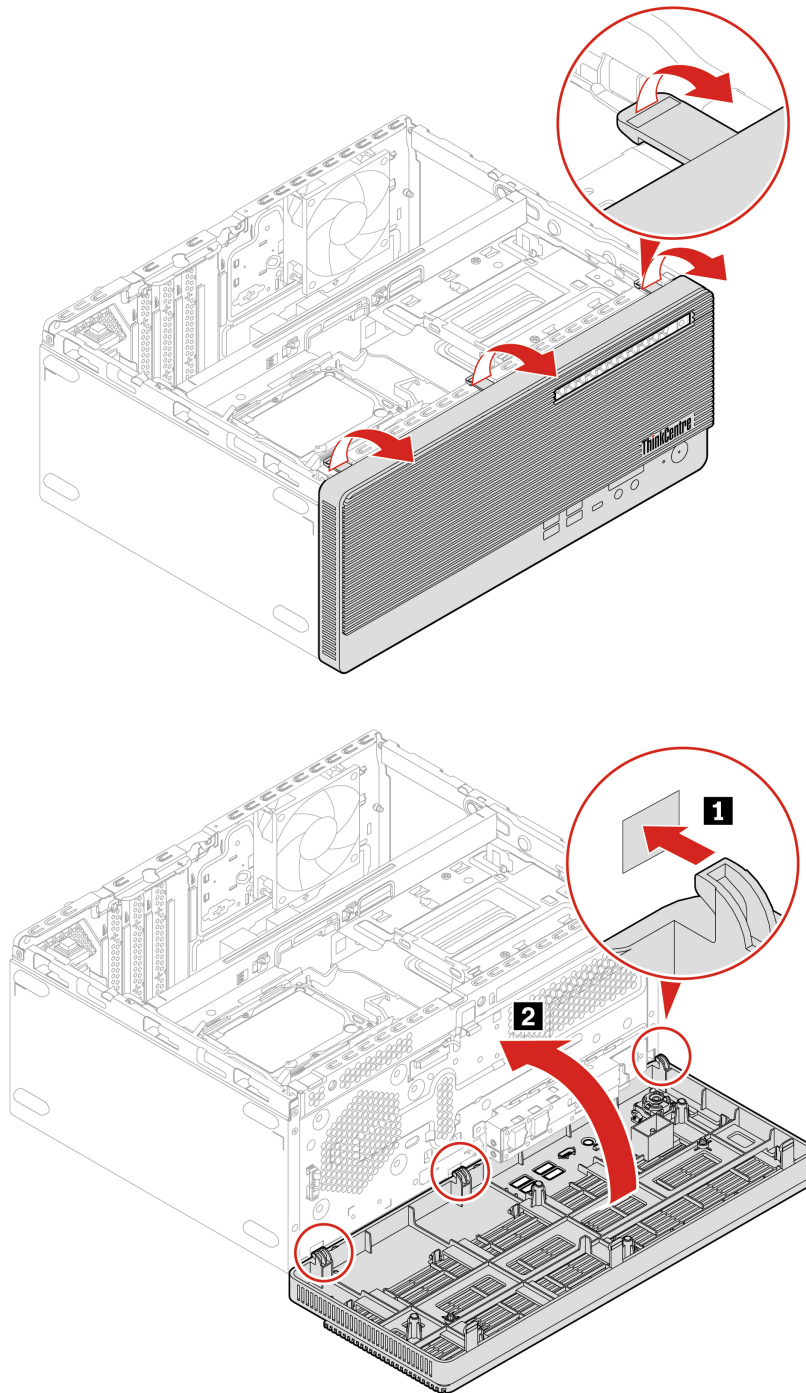
Before you start, read *Generic Safety and Compliance Notices*, and print the following instructions.

For access, remove the following parts in order, if any:

- “Computer cover” on page 24
- “Optical drive” on page 25



## Replacement procedure



## Drive bay assembly

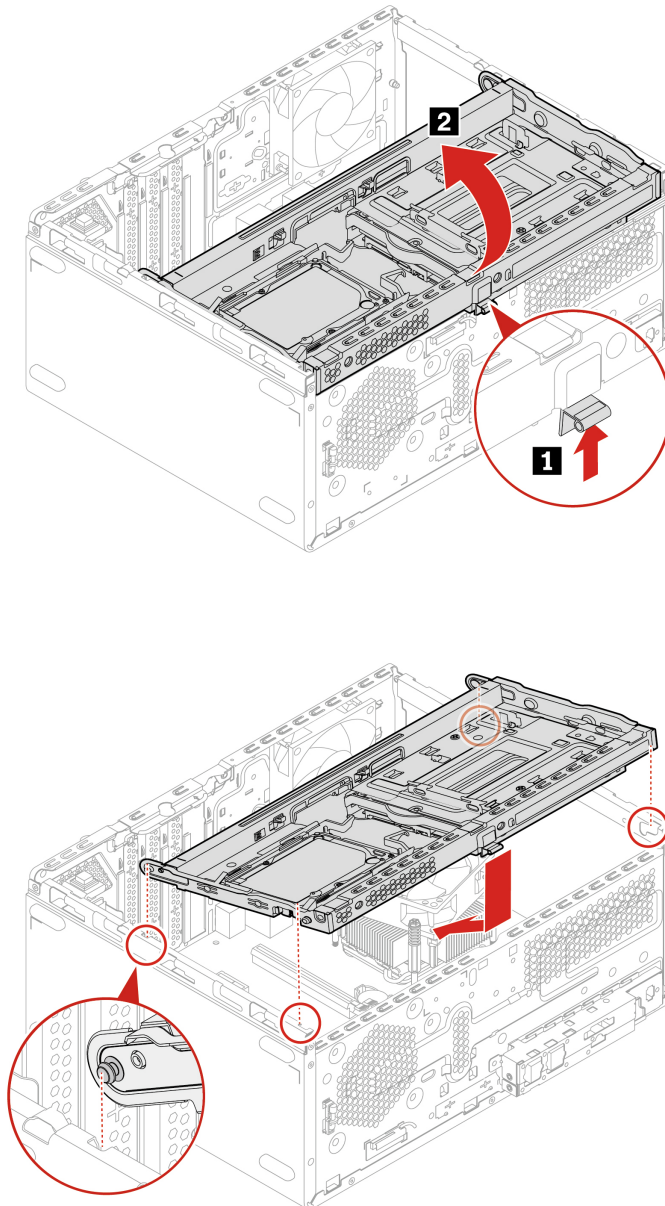
### Prerequisite

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

For access, remove these parts in order, if any:

- “Computer cover” on page 24
- “Optical drive” on page 25
- “Front bezel” on page 26

## Replacement procedure



## 2.5-inch hard disk drive

### Prerequisite

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

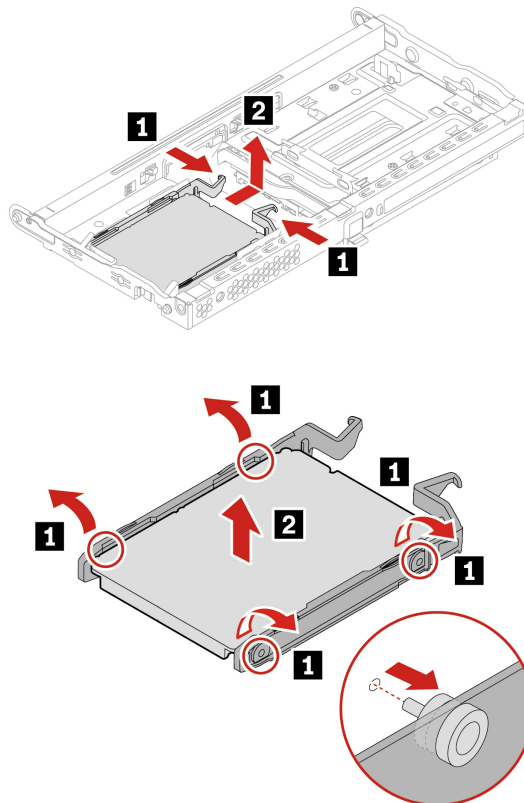
**Attention:** The internal storage drive is sensitive. Inappropriate handling might cause damage and permanent loss of data. When handling the internal storage drive, observe the following guidelines:

- 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 these parts in order, if any:
  - “Computer cover” on page 24
  - “Optical drive” on page 25
  - “Front bezel” on page 26
  - “Drive bay assembly” on page 27
2. Disconnect the signal cable and the power cable from the 2.5-inch hard disk drive.

### Removal steps



## 3.5-inch hard disk drive

### Prerequisite

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

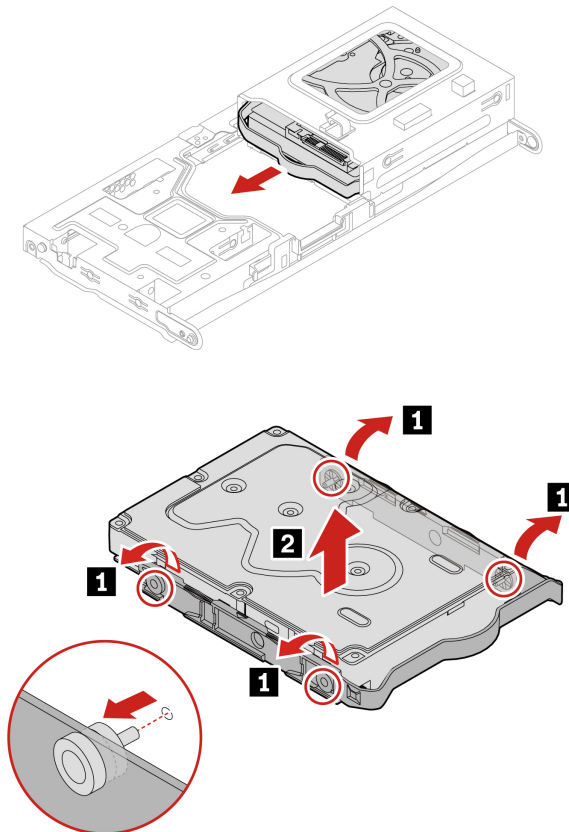
**Attention:** The internal storage drive is sensitive. Inappropriate handling might cause damage and permanent loss of data. When handling the internal storage drive, observe the following guidelines:

- 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 these parts in order, if any:
  - “Computer cover” on page 24
  - “Front bezel” on page 26
  - “Drive bay assembly” on page 27
2. Disconnect the signal cable and the power cable from the 3.5-inch hard disk drive.

### Removal steps

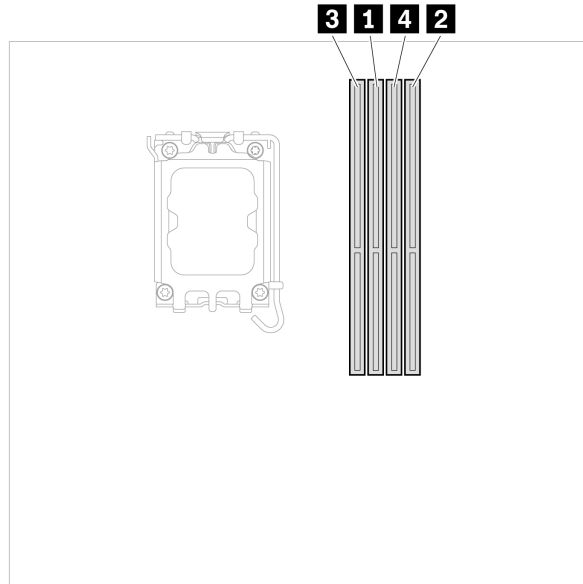


## Memory module

### Prerequisite

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

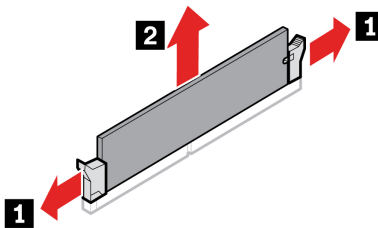
Ensure that you follow the installation order for memory modules shown in the following illustration.

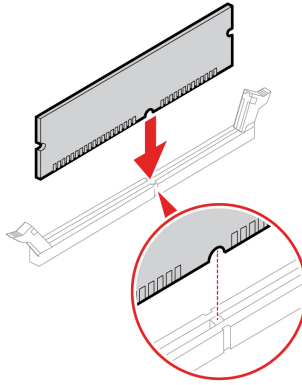


For access, remove these parts in order, if any:

- “Computer cover” on page 24
- “Front bezel” on page 26
- “Drive bay assembly” on page 27

### Replacement procedure





**Note:** During the installation, ensure that you align the memory module to the slot and press down on both ends until the latches are fully engaged with a click.

## M.2 solid-state drive and heat sink

### Prerequisite

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



The heat sink might be very hot. Before you open the computer cover, turn off the computer and wait several minutes until the computer is 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.

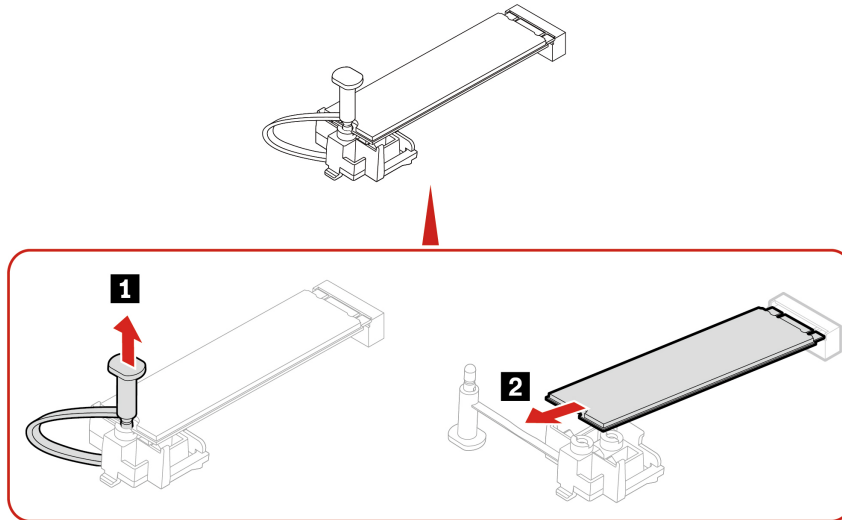
For access, remove these parts in order, if any:

- “Computer cover” on page 24
- “Front bezel” on page 26
- “Drive bay assembly” on page 27

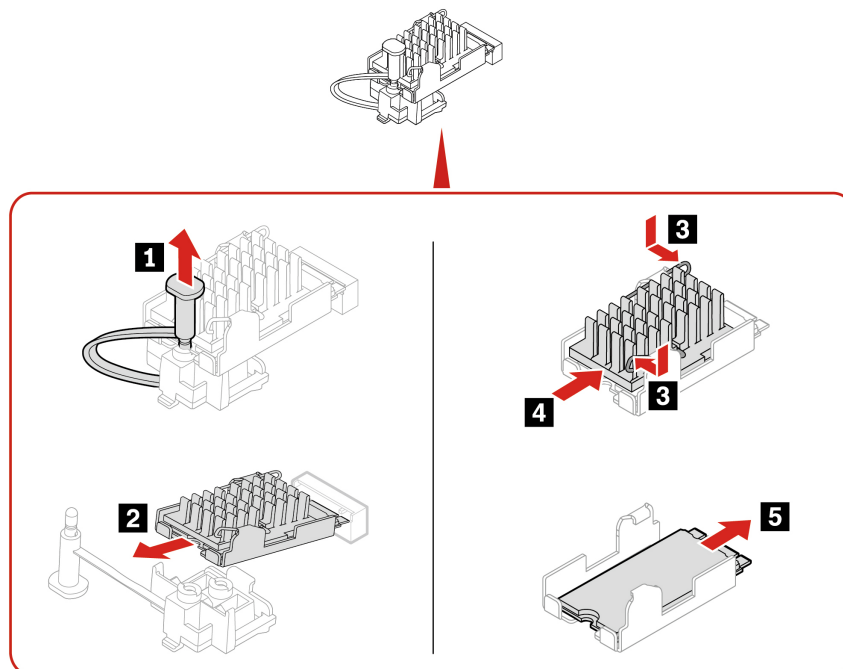
### Removal steps

Remove the M.2 solid-state drive and the heat sink (if any) depending on the computer model.

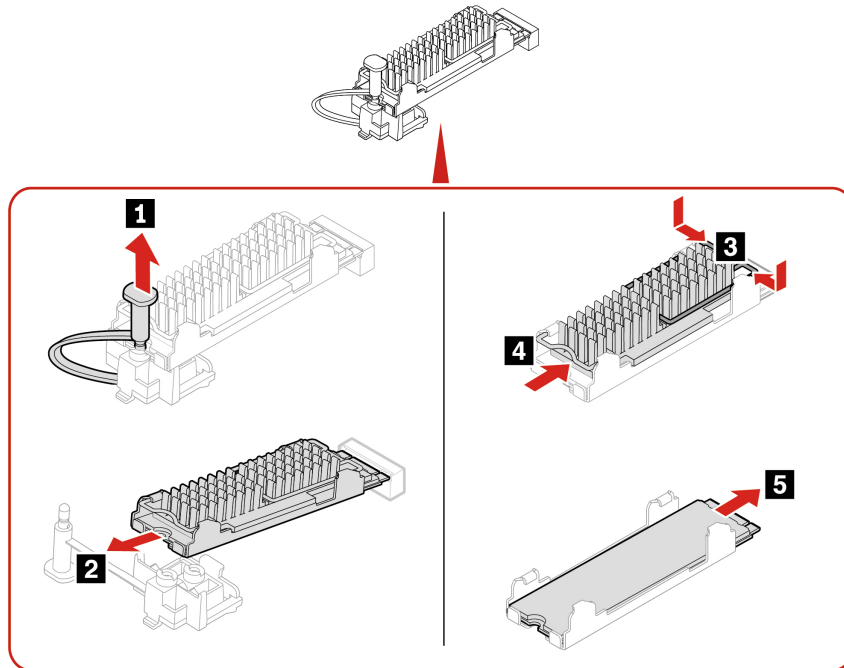
- For computers without the heat sink for the M.2 solid-state drive:



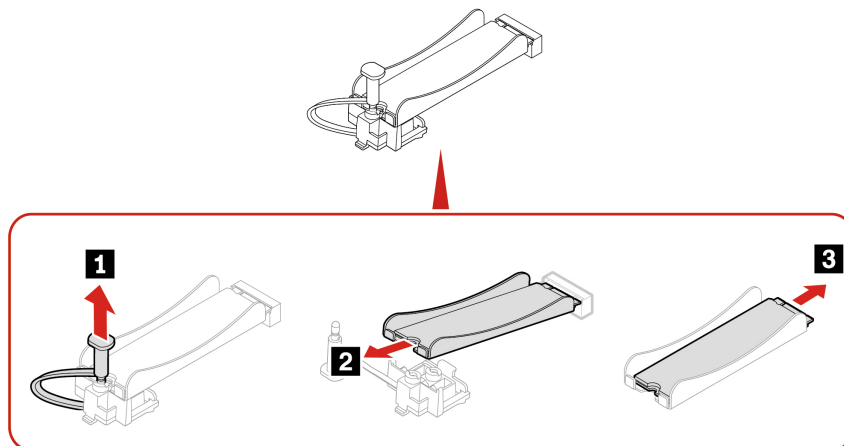
- For computers with the heat sink for the M.2 solid-state drive, do one of the following depending on the computer model:
  - Type 1



- Type 2



– Type 3



**Note:** Remove the film that covers the thermal pad (if any) when installing the M.2 solid-state drive and the heat sink.

## M.2 solid-state drive bracket

### Prerequisite

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

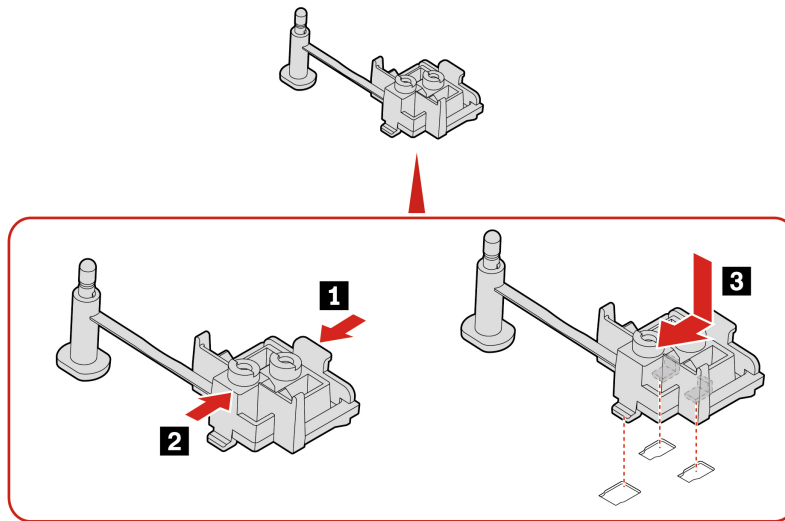
For access, remove these parts in order, if any:

- “Computer cover” on page 24
- “Front bezel” on page 26



- “Drive bay assembly” on page 27
- “M.2 solid-state drive and heat sink” on page 32

### Replacement procedure



## PCI-Express connector cable

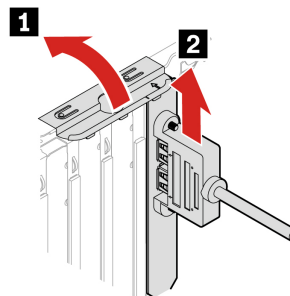
### Prerequisite

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

For access, do the following:

1. Remove these parts in order, if any:
  - “Computer cover” on page 24
  - “Front bezel” on page 26
  - “Drive bay assembly” on page 27
2. Disconnect the cable from the system board.

### Removal steps



## PCI-Express slot cover

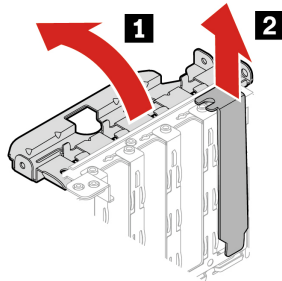
### Prerequisite

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

For access, remove these parts in order, if any:

- “Computer cover” on page 24

### Removal steps



## PCI-Express card

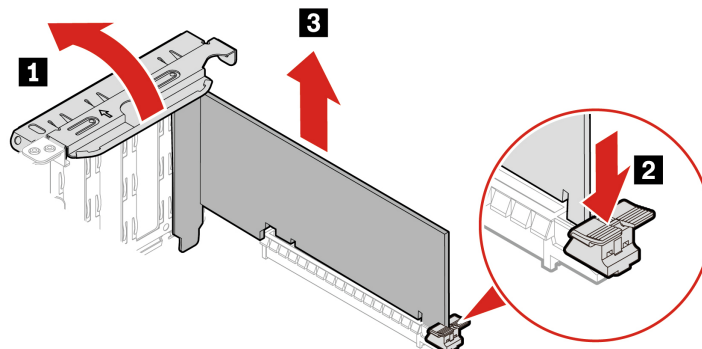
### Prerequisite

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

For access, remove these parts in order, if any:

- “Computer cover” on page 24
- “Front bezel” on page 26
- “Drive bay assembly” on page 27

### Removal steps



### Notes:

- Do not attempt to install any PCI-Express cards other than graphics card to the PCI-Express slot next to the microprocessor.

- Before installing a new PCI-Express card, remove any PCI-Express connector cables that impede the installation. See “PCI-Express connector cable” on page 35.

## Power supply assembly

### Prerequisite

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

Although there are no moving parts in the computer after the power cord has been disconnected, the following warnings are required for your safety.



Keep fingers and other parts of your body away from hazardous, moving parts. If you suffer an injury, seek medical care immediately. Never remove the cover on a power supply or any part that has the following label attached.

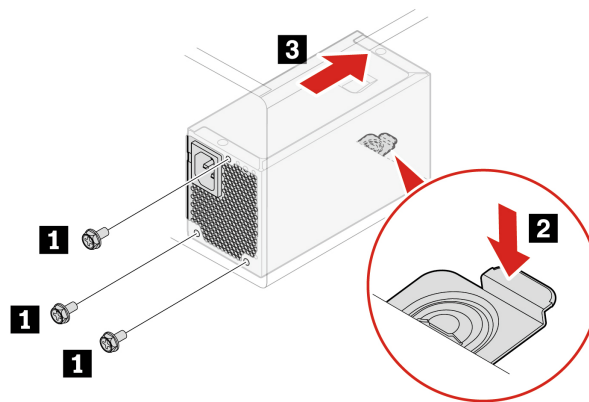


Hazardous voltage, current, and energy levels are present inside any component that has this label attached. There are no serviceable parts inside these components. If you suspect a problem with one of these parts, contact a service technician.

For access, do the following:

1. Remove the computer cover. See “Computer cover” on page 24.
2. Remove the front bezel. See “Front bezel” on page 26.
3. Remove the drive bay assembly. See “Drive bay assembly” on page 27.
4. Disconnect the power supply assembly cables from the system board.

### Removal steps



## E-lock

### Prerequisite

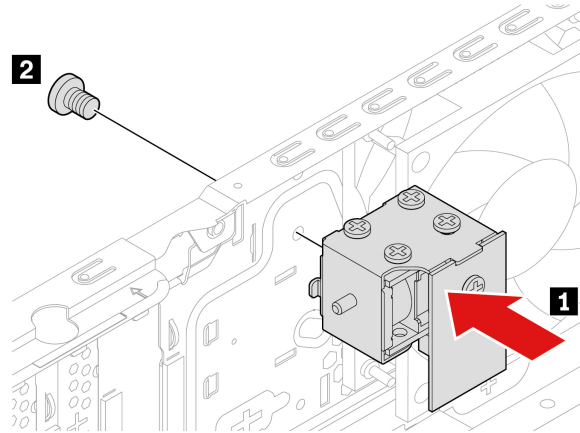
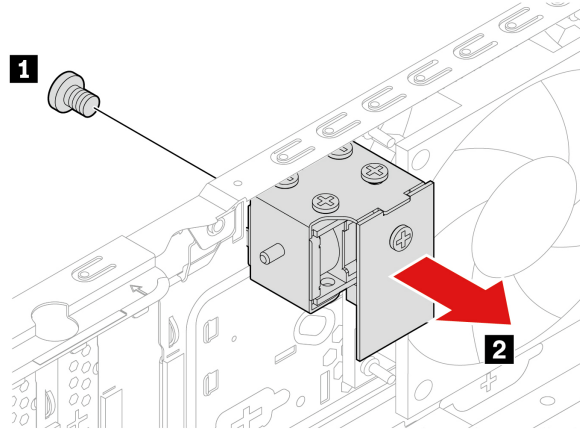
Before you start, read *Generic Safety and Compliance Notices*, and print the following instructions.

For access, do the following:

1. Remove the computer cover. See “Computer cover” on page 24.
2. Disconnect the E-lock cable from the system board.

**Note:** To remove the screws, you need a special tool (T15 star wrench).

### Replacement steps



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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>Generic Safety and Compliance Notices</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://pcsupport.lenovo.com">https://pcsupport.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://pcsupport.lenovo.com">https://pcsupport.lenovo.com</a>
Ubuntu help information	<a href="https://help.ubuntu.com/its/ubuntu-help/index.html">https://help.ubuntu.com/its/ubuntu-help/index.html</a>

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### Lenovo diagnostic tools

For information about Lenovo diagnostic tools, go to:  
<https://pcsupport.lenovo.com/lenovodiagnosicsolutions>

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## Call Lenovo

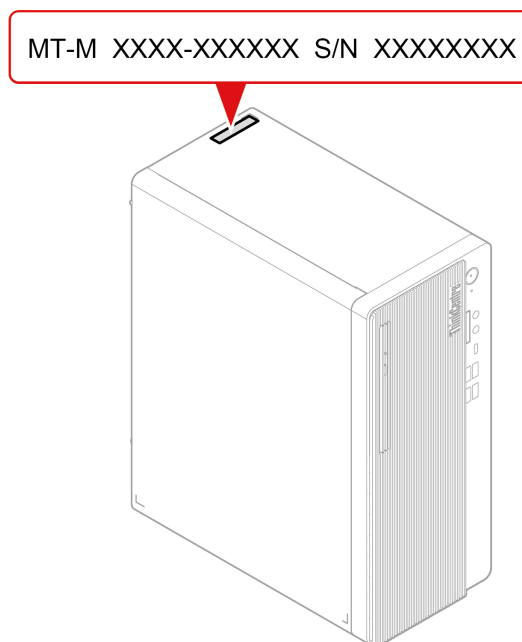
If you have tried to correct the problem yourself and still need help, you can call Lenovo Customer Support Center.

## 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/supportphonenumberlist>

**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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## **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. Supplemental information about the Ubuntu operating system

In limited countries or regions, Lenovo offers customers an option to order computers with the preinstalled Ubuntu® operating system.

If the Ubuntu operating system is available on your computer, read the following information before you use the computer. Ignore any information related to Windows-based programs, utilities, and Lenovo preinstalled applications in this documentation.

### Access the Lenovo Limited Warranty

This product is covered by the terms of the Lenovo Limited Warranty (LLW), version L505-0010-02 08/2011. You can view the LLW in a number of languages from the following Web site. Read the Lenovo Limited Warranty at:

[https://www.lenovo.com/warranty/llw\\_02](https://www.lenovo.com/warranty/llw_02)

The LLW also is preinstalled on the computer. To access the LLW, go to the following directory:

`/opt/Lenovo`

If you cannot view the LLW either from the Web site or from your computer, contact your local Lenovo office or reseller to obtain a printed version of the LLW.

### Access the Ubuntu help system

The Ubuntu help system provides information about how to use the Ubuntu operating system. To access the help system from Home Screen, move your pointer to the Launch bar, and then click the **Help** icon. If you cannot find the **Help** icon from the Launch bar, click the **Search** icon on the bottom left, and type Help to search it.

To learn more about the Ubuntu operating system, go to:

<https://www.ubuntu.com>

### Get support information

If you need help, service, technical assistance, or more information about the Ubuntu operating system or other applications, contact the provider of the Ubuntu operating system or the provider of the application. If you need the service and support for hardware components shipped with your computer, contact Lenovo. For more information about how to contact Lenovo, refer to the *User Guide* and *Safety and Warranty Guide*.

To access the latest *User Guide* and *Safety and Warranty Guide*, go to:

<https://pcsupport.lenovo.com>

### Access open-source information

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You may send your request in writing to the address below accompanied by a check or money order for \$15 to:

Lenovo Legal Department  
Attn: Open Source Team / Source Code Requests  
8001 Development Dr.  
Morrisville, NC 27560

Please include the version of the OS and the version of the Linux Kernel pre-shipped on this Device as part of your request. Be sure to provide a return address.

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To view additional information regarding licenses, acknowledgments and required copyright notices for the open source software shipped on your Device, go to `/usr/share/doc/*/copyright`.

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## Appendix B. Compliance information

**Note:** For more compliance information, refer to *Generic Safety and Compliance Notices* at <https://pcsupport.lenovo.com>.

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### Certification-related information

Product name	Machine types
ThinkCentre M70t Gen 4	12DK, 12DL, 12DQ, 12DR, 12FH, 12FK, 12KG, and 12KH

Further compliance information related to your product is available at <https://www.lenovo.com/compliance>.

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### Operating environment

#### Maximum altitude (without pressurization)

- Operating: From 0 m (0 ft) to 3048 m (10 000 ft)
- Storage: From 0 m (0 ft) to 12192 m (40 000 ft)

#### Temperature

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

#### Relative humidity

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



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## Appendix C. Notices and trademarks

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