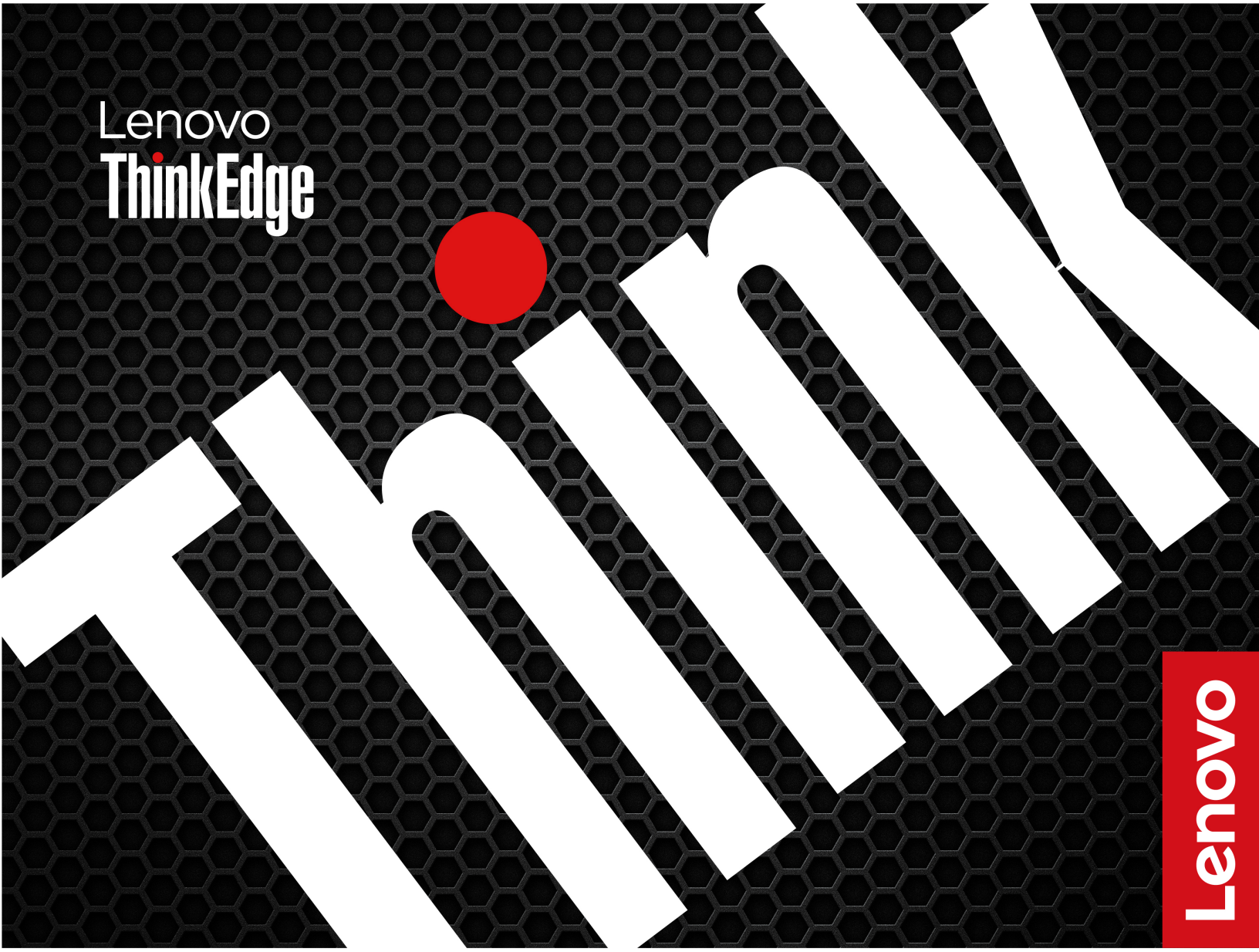
Linux User Guide



ThinkEdge SE30

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*
- 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.

Fifth Edition (May 2025)

Contents

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:

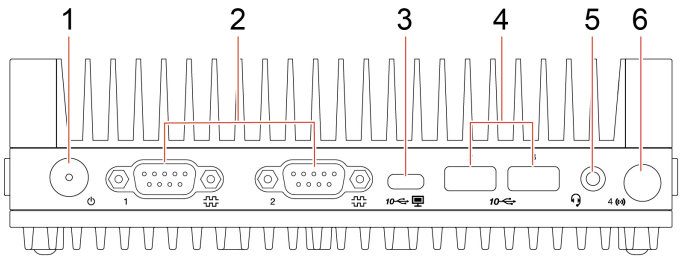
Product name	Machine types
ThinkEdge SE30	11NA, 11NB, 11NC, 11ND, 11NE, 11NF, 11NG, 11NH, and 11NK

- 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
- Canonical® makes periodic feature changes to the Ubuntu® operating system through Software Updates. As a result, some information in this documentation might become outdated. Refer to Ubuntu 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 system menu, click the power icon ⏻, and then select **Power Off**.

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.

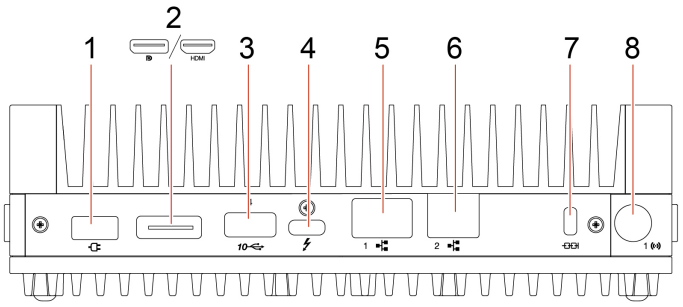
Serial connectors

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.

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.

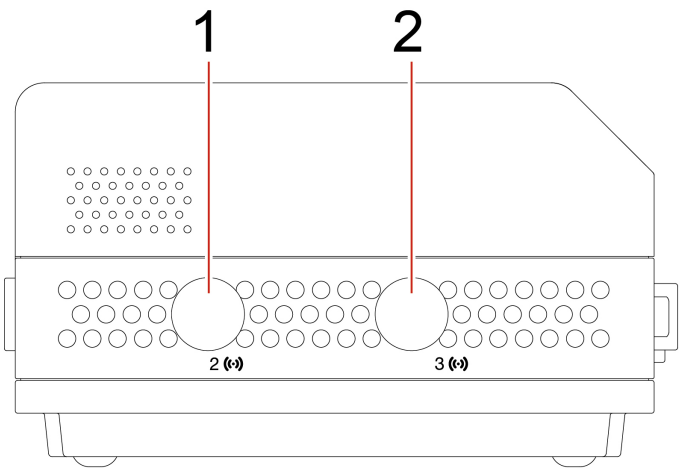
Connect to a local area network (LAN). When the yellow indicator is on, the computer is connected to a LAN. When the green/orange indicator blinks, data is being transmitted.

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

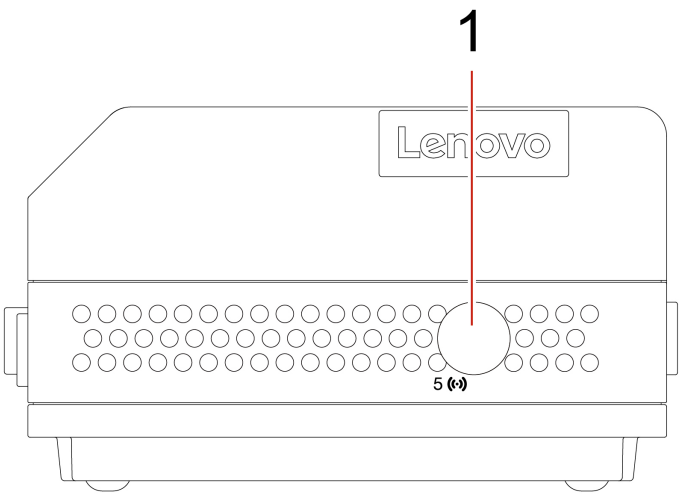
Wi-Fi® antenna slot

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



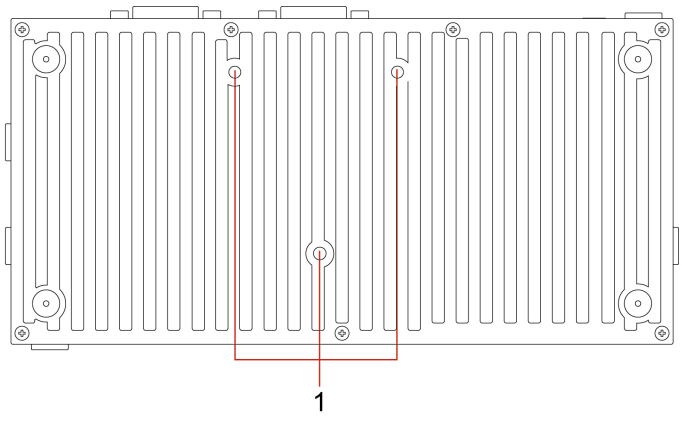
Item	Description
1	Reserved antenna slot*

* for selected models

Reserved antenna slot

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

Bottom



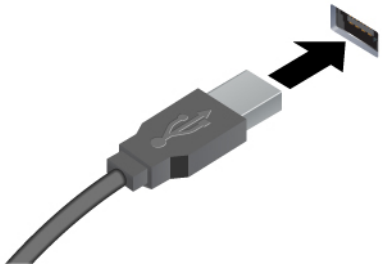
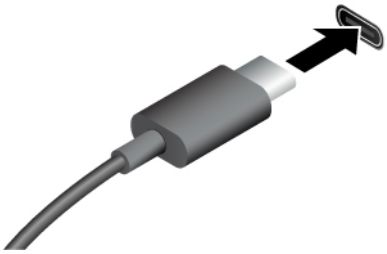
Item	Description
1	VESA® threaded holes

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.

USB specifications

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

Connector name	Description
 • USB-A 3.2 Gen 2 connector	Charge USB-A compatible devices with the output voltage and current of 5 V dc and 0.9 A. Connect USB-A compatible devices, such as a USB-A keyboard, USB-A mouse, USB-A storage device, or USB-A printer.
 • USB-C (3.2 Gen 2) connector • USB-C (Thunderbolt 4) connector •	• For USB-C (3.2 Gen 2) connector, the output voltage and current are 5 V dc and 0.9 A. • For USB-C (Thunderbolt 4) connector, the output voltage and current are 5 V dc and 3 A. • Connect to an external display: – USB-C to VGA: 1920 x 1200 pixels, 60 Hz – USB-C to DP: 3840 x 2160 pixels, 60 Hz • Connect to USB-C accessories to help expand your computer functionality. To purchase USB-C accessories, go to https://www.lenovo.com/accessories.

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

Get started with Ubuntu Server

You can access the following web site to learn more details on the Ubuntu Server OS: https://ubuntu.com/server/docs.

Ubuntu server does not come with a desktop GUI installed by default so the unit can run headless and be managed using ssh. Configuration is expected to be done from the command line.

By default the system is configured with a default account “ubuntu” with password “ubuntu”. The first time you login you will be prompted to update the password to something unique.

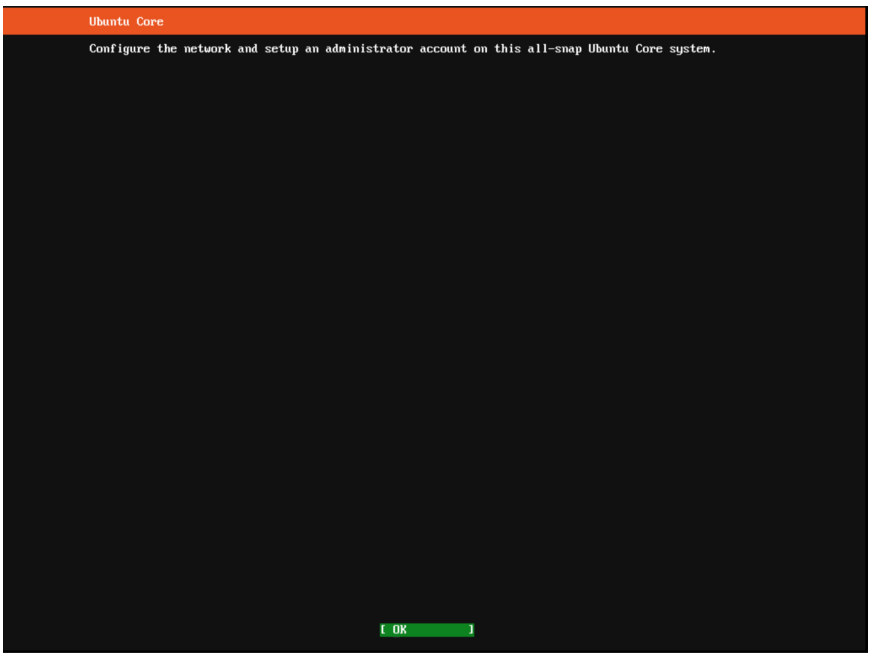
You will likely want to create your own user account using the **adduser <username>** command and follow the instructions. If you want to give that account supervisor privileges, use the **usermod -aG sudo <username>** command.

Get started with Ubuntu Core

You can access the following web site to learn more details on the Ubuntu Core OS: https://ubuntu.com/core/docs.

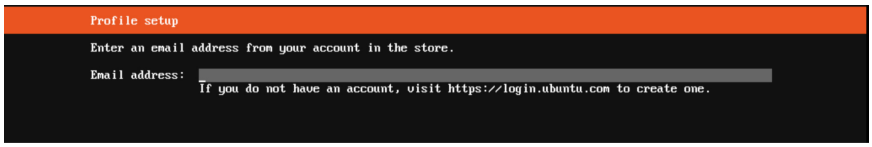
The first startup in Ubuntu Core requires setting up with an Ubuntu One account. For access, refer to https://ubuntu.com/core/docs/connect-with-ssh and do the following steps.

1. Register an Ubuntu One account.
2. Generate an SSH key pair on your second Linux computer.
3. Import SSH public key.
4. Setup Ubuntu Core OS on SE30, do the following steps.
   a. Boot Ubuntu Core OS and press **OK**.

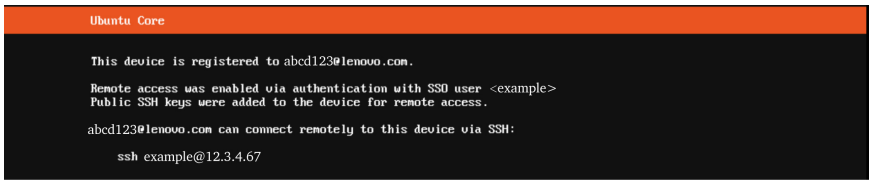


b. Set network connection and ensure that it can access Ubuntu One account.

c. Input the Ubuntu One account registered email address.



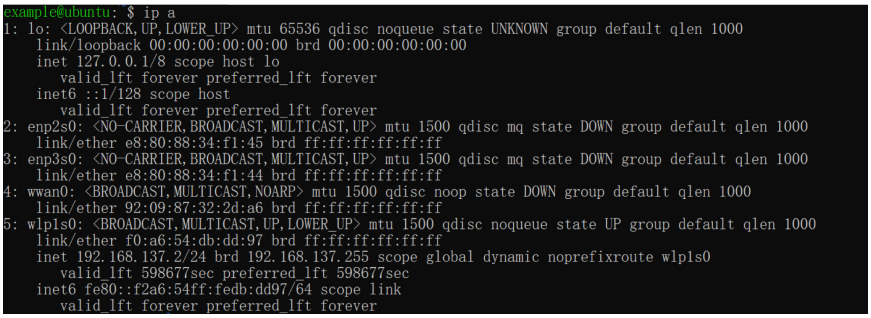
This information will be shown after the device is registered.



5. Connect to a device.
   After setting, you can login the Ubuntu Core by SSH from the second computer in the same LAN network.

Access networks

Your computer helps you connect to the world through a wired or wireless network.
To identify the interfaces available, use the **ip a** command. For example:



Connect to the wired Ethernet

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

```
ubuntu@ubuntu:~$ nmcli
enp3s0: connected to Wired connection 2
        "Intel I225-IT"
        ethernet (igc), E8:80:88:2D:19:71, hw, mtu 1500
        ip4 default
        inet4 192.168.1.6/24
        route4 192.168.1.0/24 metric 100
        route4 default via 192.168.1.1 metric 100
        inet6 fe80::72c:dc18:8ceb:35e4/64
        route6 fe80::/64 metric 1024

wlp1s0: connected to SSID 1
        "Intel 6 AX210/AX211/AX411 160MHz"
        wifi (iwlwifi), 8C:F8:C5:3E:EB:35, hw, mtu 1500
        inet4 192.168.137.21/24
        route4 192.168.137.0/24 metric 600
        route4 default via 192.168.137.1 metric 600
        inet6 fe80::f7db:ee8f:f8f2:2155/64
        route6 fe80::/64 metric 1024

p2p-dev-wlp1s0: disconnected
        "p2p-dev-wlp1s0"
        wifi-p2p, hw

enp2s0: unavailable
        "Intel I225-IT"
        ethernet (igc), E8:80:88:2D:19:72, hw, mtu 1500
```

The installer will configure the interface to use DHCP by default. If you want to configure a static IP, use the following commands.

```
$ sudo nmcli con down <connection name>
$ sudo nmcli con mod  <connection name> ipv4.addresses    <xx.xx.xx.xx>/24
$ sudo nmcli con mod  <connection name> ipv4.gateway      <xx.xx.xx.xx>
$ sudo nmcli con mod  <connection name> ipv4.dns          <xx.xx.xx.xx>
$ sudo nmcli con mod  <connection name> ipv4.method manual
$ sudo nmcli con up   <connection name>
```

```
ubuntu@ubuntu:~$ sudo nmcli con down "Wired connection 2"
[sudo] password for ubuntu:
Connection 'Wired connection 2' successfully deactivated (D-Bus active path: /org/freedesktop/NetworkManager/ActiveConnection/1)
ubuntu@ubuntu:~$ sudo nmcli con mod "Wired connection 2"  ipv4.addresses 192.168.1.109/24
ubuntu@ubuntu:~$ sudo nmcli con mod "Wired connection 2"  ipv4.gateway 192.168.1.1
[sudo] password for ubuntu:
ubuntu@ubuntu:~$ sudo nmcli con mod "Wired connection 2"  ipv4.method manual
ubuntu@ubuntu:~$ sudo nmcli con up "Wired connection 2"
Connection successfully activated (D-Bus active path: /org/freedesktop/NetworkManager/ActiveConnection/3)
ubuntu@ubuntu:~$ nmcli
enp3s0: connected to Wired connection 2
        "Intel I225-IT"
        ethernet (igc), E8:80:88:2D:19:71, hw, mtu 1500
        ip4 default
        inet4 192.168.1.109/24
        route4 192.168.1.0/24 metric 100
        route4 default via 192.168.1.1 metric 100
        inet6 fe80::72c:dc18:8ceb:35e4/64
        route6 fe80::/64 metric 1024
```

If you want to go back to a dynamic IP by DHCP, use the following commands.

```
$ sudo nmcli con down <connection name>
$ sudo nmcli con mod  <connection name> ipv4.method auto
$ sudo nmcli con up   <connection name>
```

```
ubuntu@ubuntu:~$ sudo nmcli con down "Wired connection 2"
Connection 'Wired connection 2' successfully deactivated (D-Bus active path: /org/freedesktop/NetworkManager/ActiveConnection/3)
ubuntu@ubuntu:~$ sudo nmcli con mod "Wired connection 2"  ipv4.method auto
ubuntu@ubuntu:~$ sudo nmcli con up "Wired connection 2"
Connection successfully activated (D-Bus active path: /org/freedesktop/NetworkManager/ActiveConnection/4)
ubuntu@ubuntu:~$ nmcli
enp3s0: connected to Wired connection 2
        "Intel I225-IT"
        ethernet (igc), E8:80:88:2D:19:71, hw, mtu 1500
        ip4 default
        inet4 192.168.1.6/24
        inet4 192.168.1.109/24
        route4 192.168.1.0/24 metric 100
        route4 default via 192.168.1.1 metric 100
        route4 192.168.1.0/24 metric 100
        inet6 fe80::72c:dc18:8ceb:35e4/64
        route6 fe80::/64 metric 1024
```

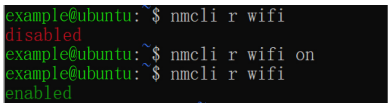
Connect to Wi-Fi networks (for selected models)

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.

The easiest way to connect to Wi-Fi is using **nmcli** command. Steps may vary depending on your wireless access point. Use the following commands to scan available SSIDs and configure the Wi-Fi port accordingly.

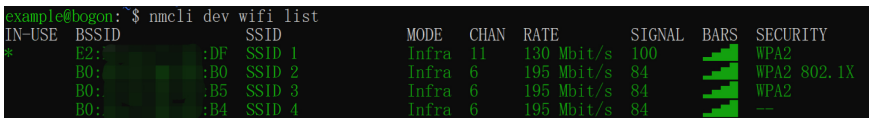
1. Check and confirm if Wi-Fi is enabled.

   ```
   $ nmcli r wifi
   $ nmcli r wifi on
   ```

2. Scan available Wi-Fi list.

   ```
   $ nmcli dev wifi list
   ```

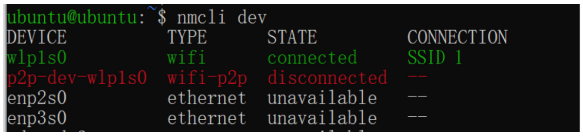
   

3. Create a connection with an available SSID. Add a password if needed.

   ```
   $ nmcli dev wifi connect <SSID name>
   $ nmcli dev wifi connect <SSID name> password <WIFI password>
   ```

4. List the devices managed by Network Manager and check the Wi-Fi status.

   ```
   $ nmcli dev
   ```

Once the Wi-Fi has been configured successfully, you can use the following commands to disconnect or connect the target SSID.

```
$ nmcli con down <SSID name>
$ nmcli con up   <SSID name>
```

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.

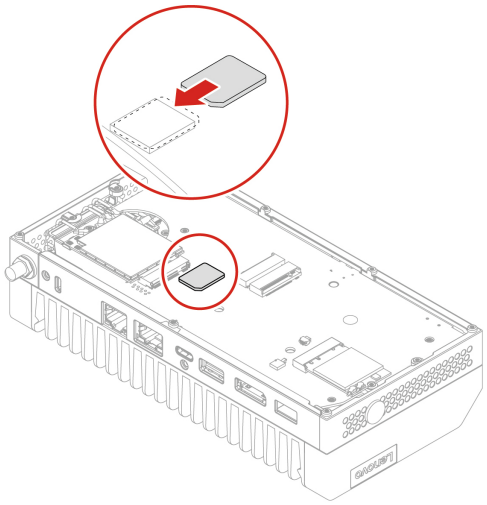
Note: The cellular service is provided by authorized mobile service carriers in some countries and regions. You must have a cellular plan from a service carrier to connect to the cellular network.

To establish a wireless WAN connection:

1. **Install a nano-SIM card:**
   a. Turn off the computer.
   b. Remove the bottom cover. See “Bottom cover” on page 43.

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 45.

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



e. Reinstall all removed parts.

f. Install the wireless WAN antennas. See “Wireless WAN antenna” on page 42. 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.

g. Reconnect the power adapter and all disconnected cables to the computer.

h. Turn on the computer.

2. **Connect to a cellular network:**

a. Use **mmcli** command to list the modem.

```
$ sudo mmcli -L
```

```
example@ubuntu: $ sudo mmcli -L
    /org/freedesktop/ModemManager1/Modem/0 [Quectel] Quectel EM05-G
```

b. Check the detected modem’s status.

```
$ sudo mmcli -m 0
```

```
General  |                 path: /org/freedesktop/ModemManager1/Modem/0
         |            device id: a185436fa2f94cea3061036819b865e7de46fecc
---------------------------------
Hardware |         manufacturer: Quectel
         |                model: Quectel EM05-G
         |     firmware revision: EM05GFAR07A07M1G
         |       carrier config: VoLTE_OPNMKT_CT
         | carrier config revision: 050113FC
         |           h/w revision: QUECTEL Mobile Broadband Modul
         |            supported: gsm-umts, lte
         |              current: gsm-umts, lte
         |           equipment id: 016389000002039
---------------------------------
System   |              device: /sys/devices/pci0000:00/0000:00:14.0/usb1/1-3
         |             drivers: option, cdc_mbim
         |              plugin: quectel
         |        primary port: cdc-wdm2
         |               ports: cdc-wdm2 (mbim), ttyUSB0 (at), wwan0 (net)
---------------------------------
Status   |                lock: sim-pin2
         |      unlock retries: sim-pin2 (3)
         |               state: registered
         |         power state: on
         |         access tech: lte
         |      signal quality: 35% (recent)
---------------------------------
Modes    |           supported: allowed: 3g; preferred: none
         |                      allowed: 4g; preferred: none
         |                      allowed: 3g, 4g; preferred: 4g
         |                      allowed: 3g, 4g; preferred: 3g
         |             current: allowed: 3g, 4g; preferred: 4g
---------------------------------
Bands    |           supported: utran-1, utran-4, utran-6, utran-5, utran-8, utran-2,
         |                      eutran-1, eutran-2, eutran-3, eutran-4, eutran-5, eutran-7, eutran-8,
         |                      eutran-12, eutran-13, eutran-14, eutran-18, eutran-19, eutran-20,
         |                      eutran-25, eutran-26, eutran-28, eutran-38, eutran-39, eutran-40,
         |                      eutran-41, eutran-66, eutran-71, utran-19
         |             current: utran-1, utran-4, utran-6, utran-5, utran-8, utran-2,
         |                      eutran-1, eutran-2, eutran-3, eutran-4, eutran-5, eutran-7, eutran-8,
         |                      eutran-12, eutran-13, eutran-14, eutran-18, eutran-19, eutran-20,
         |                      eutran-25, eutran-26, eutran-28, eutran-38, eutran-39, eutran-40,
         |                      eutran-41, eutran-66, eutran-71, utran-19
---------------------------------
IP       |           supported: ipv4, ipv6, ipv4v6
---------------------------------
3GPP     |                imei: 016389000002039
         |       enabled locks: fixed-dialing
         |         operator id: 46011
         |       operator name: 中国电信
         |        registration: home
         |  packet service state: attached
---------------------------------
3GPP EPS |    ue mode of operation: csps-2
         |     initial bearer path: /org/freedesktop/ModemManager1/Bearer/0
         |      initial bearer apn: CTNET
         | initial bearer ip type: ipv4v6
---------------------------------
SIM      |    primary sim path: /org/freedesktop/ModemManager1/SIM/0
         |      sim slot paths: slot 1: /org/freedesktop/ModemManager1/SIM/0 (active)
         |                      slot 2: none
```

c. The SIM index is required before entering the SIM PIN. Write down the SIM index, which in this case is `0` (it is the number at the end of `/org/freedesktop/ModemManager1/SIM/0`).

d. Enter SIM PIN to unlock SIM (optional).

```
$ sudo mmcli -i 0 --pin=<PIN>
```

e. Enable the modem.

```
$ sudo mmcli -m 0 --enable
```

f. Establish an IP connection by **nmcli** command.

```
$ sudo nmcli c add type gsm ifname <interface> con-name <name> apn <operator_apn>
$ sudo nmcli connection up id <name>
```

Notes:

- **<interface>** is the string listed as “primary port:” in the output from `sudo mmcli -m <N>`.

  For above snapshot, it’s `cdc-wdm2`.
- **<name>** is an arbitrary name you used to identify the connection.
- **<operator_apn>** is the APN name for your cellular data plan. You can find **apn** from `mmcli -m 0`.

```
3GPP EPS |    ue mode of operation: csps-2
         |     initial bearer path: /org/freedesktop/ModemManager1/Bearer/0
         |      initial bearer apn: CTNET
         | initial bearer ip type: ipv4v6
```

g. Enable or disable the wireless WAN service by the following commands based on your needs.

- Enable:

  ```
  $ nmcli r wwan0 on
  ```

- Disable:

  ```
  $ nmcli r wwan0 off
  ```

When you need to change the nano-SIM card, ensure that the current gsm connections in Network Manager is deleted first. Then, do the following steps.

1. Get all gsm connections of the current nano-SIM card and delete the configured connection.

   ```
   $ nmcli con
   $ sudo nmcli con delet <conn_id>
   ```

2. Follow the steps mentioned above to install a new nano-SIM card and connect to a new cellular network.

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.

Chapter 3. Secure your computer information

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.

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.

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.

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.

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) operating system or Linux systems that support 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.

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.

Chapter 5. 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

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

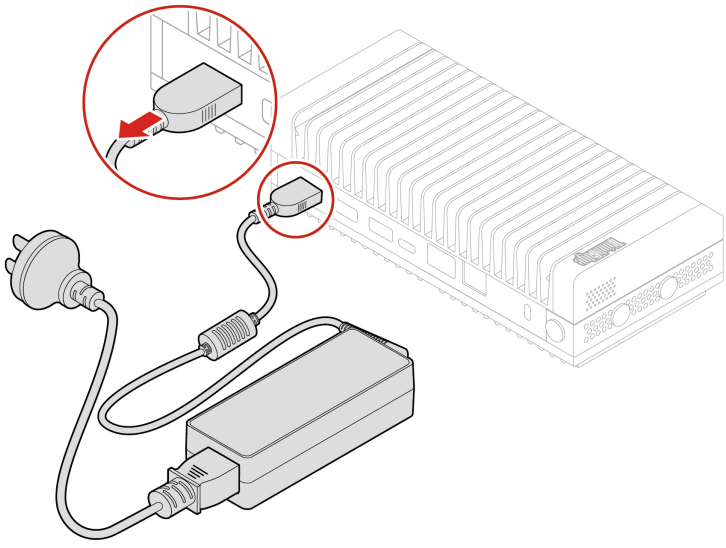
Before you start, read *Generic Safety and Compliance Notices*, and print the following instructions.

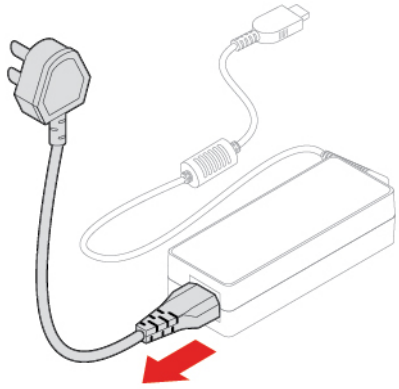
Avoid contact with the hot computer. During operation, the computer becomes hot enough to burn the skin. Before you touch the computer, turn off the computer, disconnect power, and wait approximately 30 minutes for the computer to cool.

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

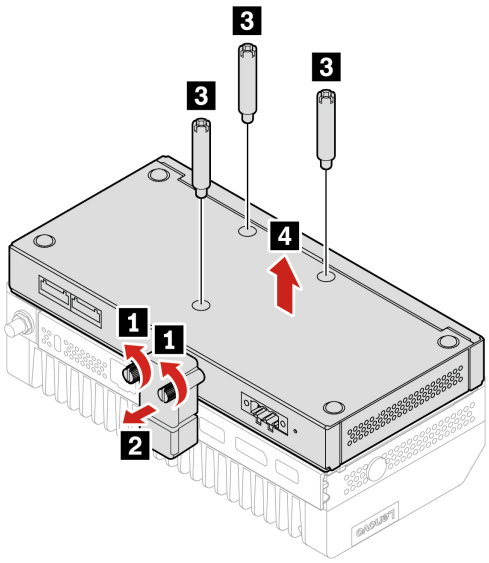
Before you start, read *Generic Safety and Compliance Notices*, and print the following instructions.

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.

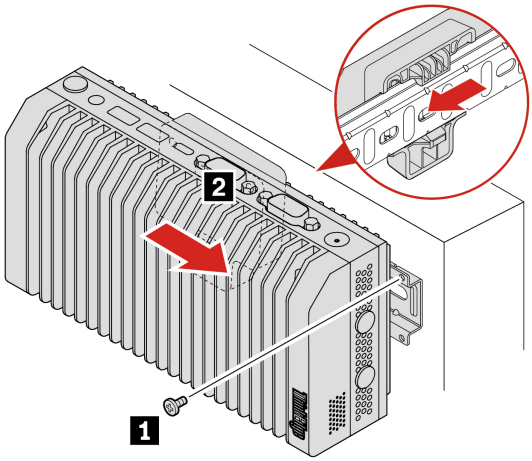
Avoid contact with the hot computer. During operation, the computer becomes hot enough to burn the skin. Before you touch the computer, turn off the computer, disconnect power, and wait approximately 30 minutes for the computer to cool.

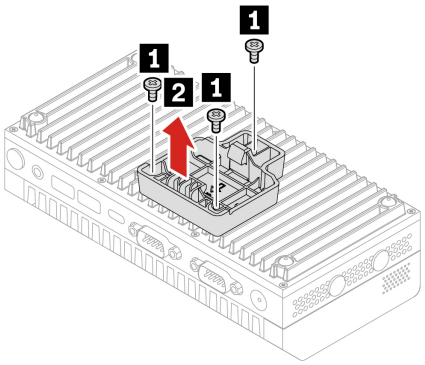
For access, do the following:

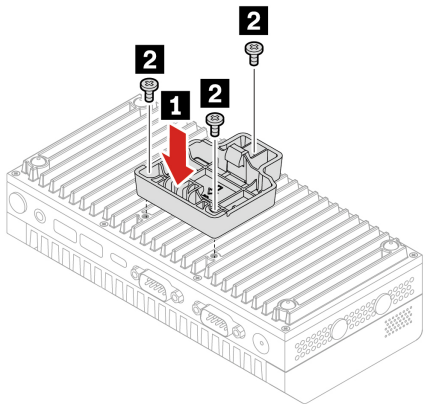
1. Remove any media from the drives and turn off all connected devices and the computer.
2. Disconnect all power cords from electrical outlets and disconnect all cables from the computer.

Replacement steps

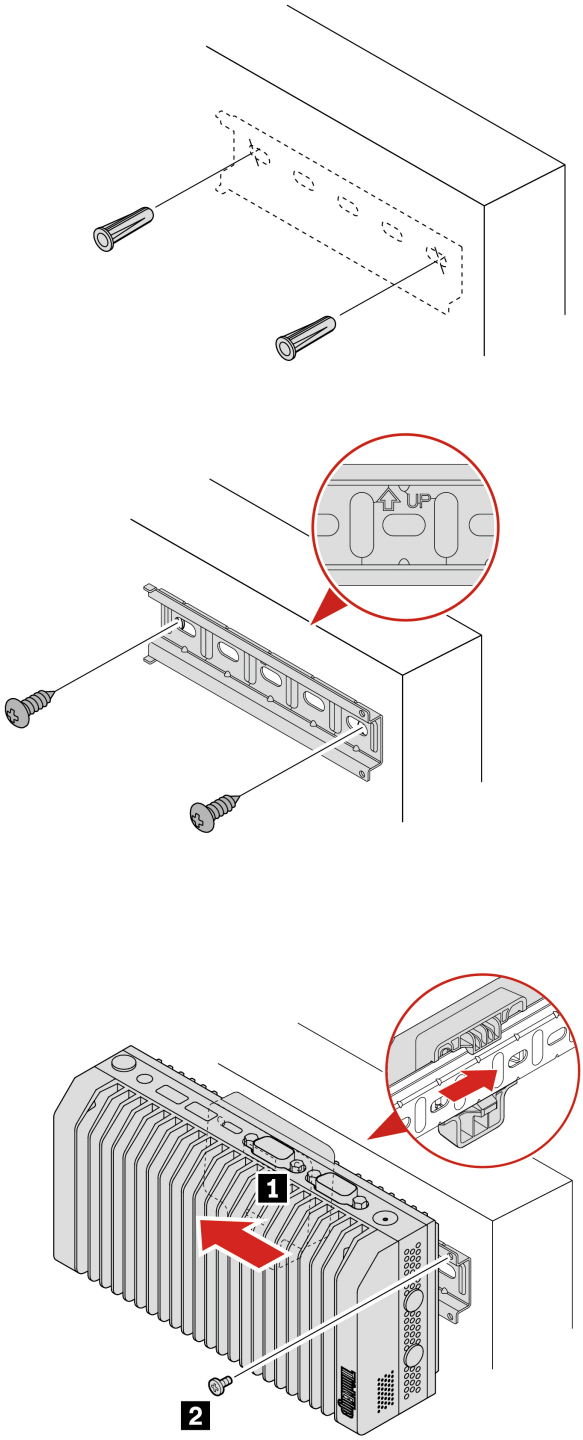
Attention: Use the screws (M3 x 4 mm x 3 pcs) provided by Lenovo to avoid any unpredictable damage to your computer.







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 25.

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.

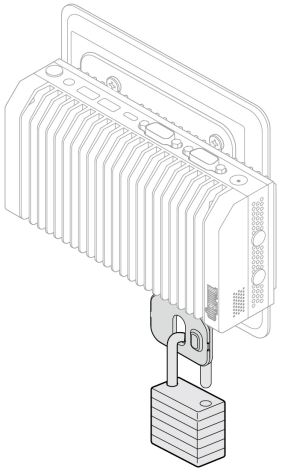
Note: The VESA mount bracket kit must work with the physical lock kit.

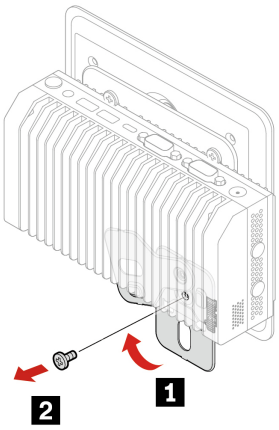
For access, do the following:

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.

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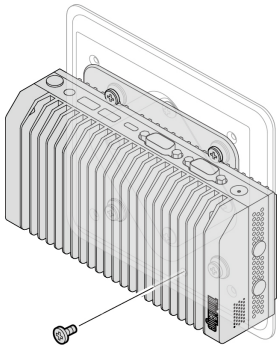

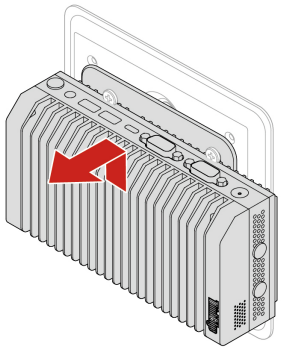

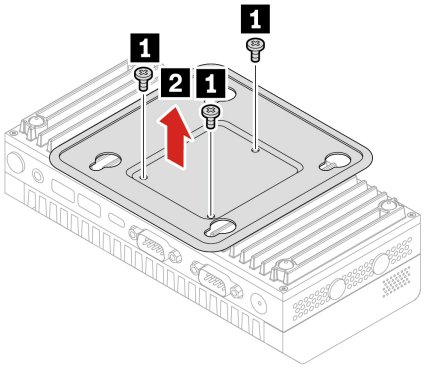
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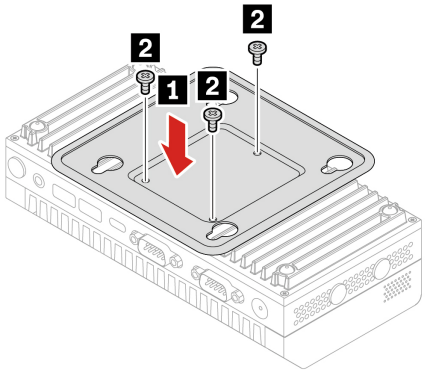
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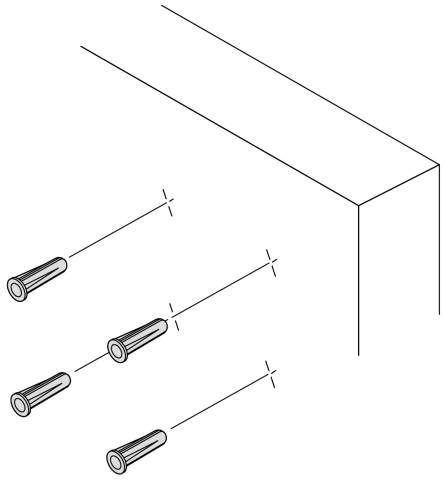
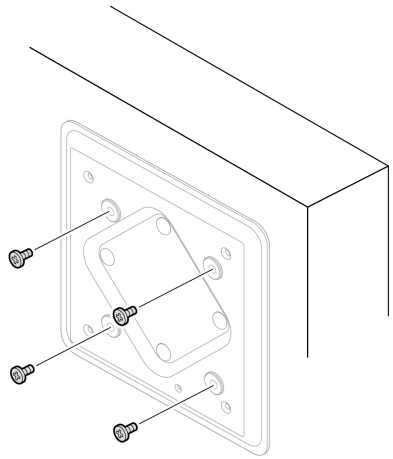
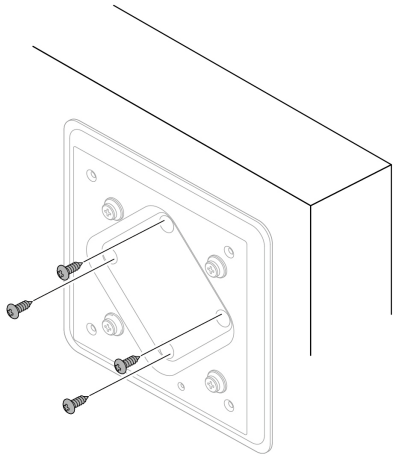
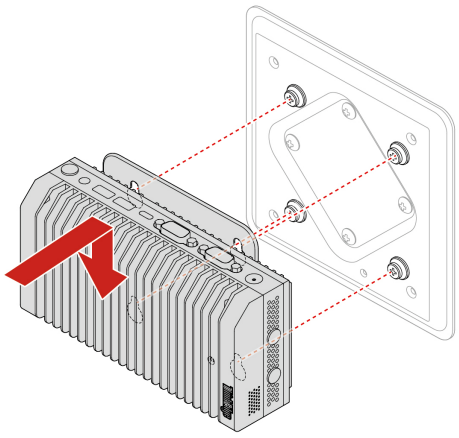
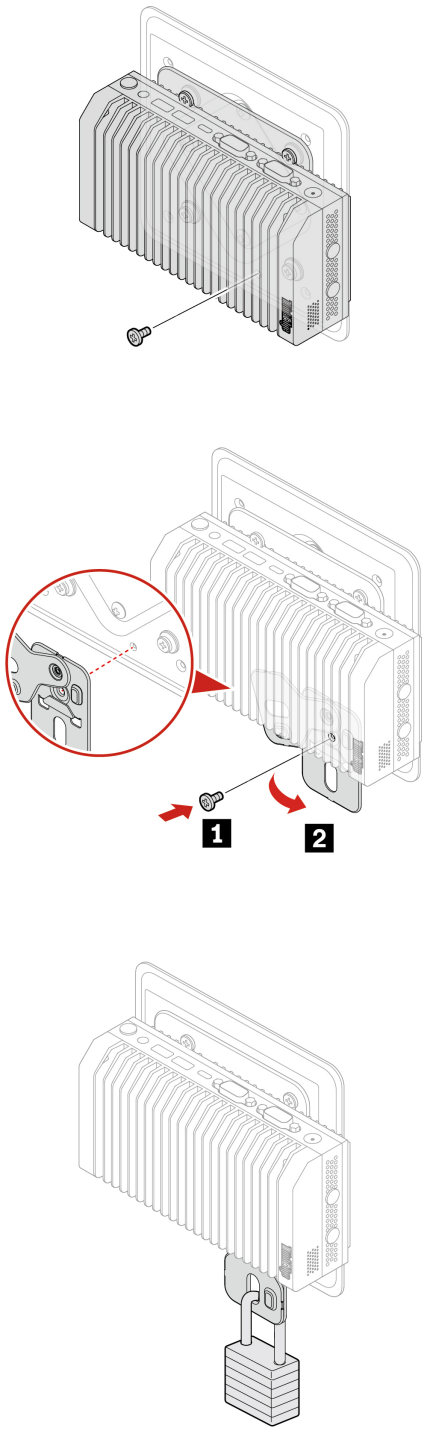










The replacement steps also apply to the computer with an IO expansion box installed. See “IO expansion box” on page 25.

Power adapter bracket kit

Prerequisite

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

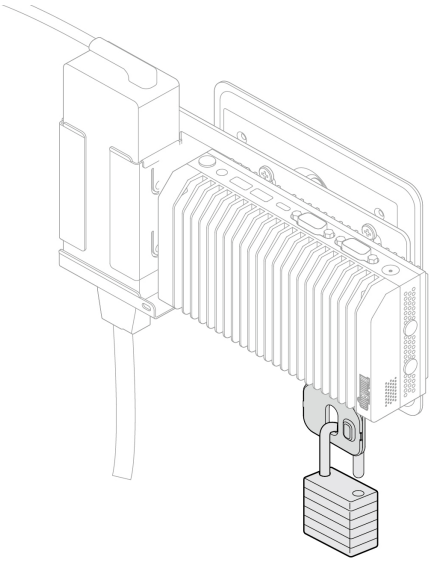
Avoid contact with the hot computer. During operation, the computer becomes hot enough to burn the skin. Before you touch the computer, turn off the computer, disconnect power, and wait approximately 30 minutes for the computer to cool.

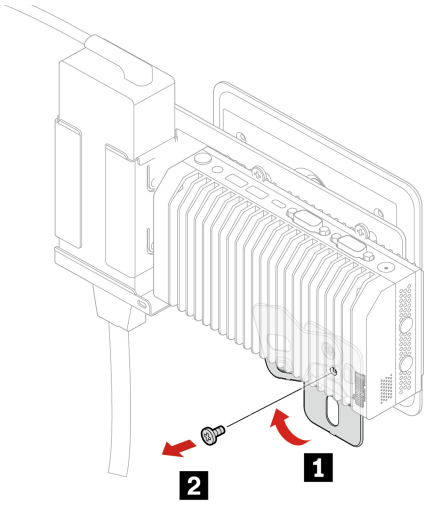
Note: The power adapter bracket kit must work with the physical lock kit.

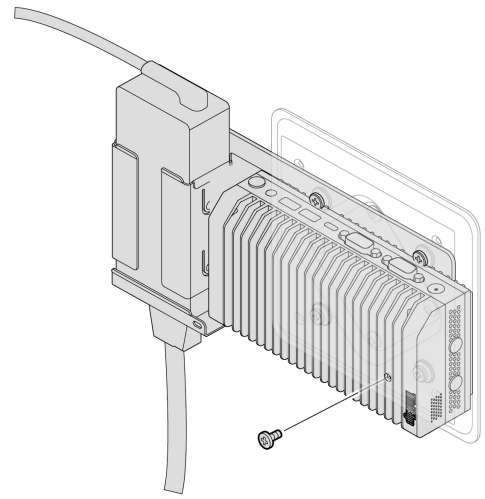
For access, do the following:

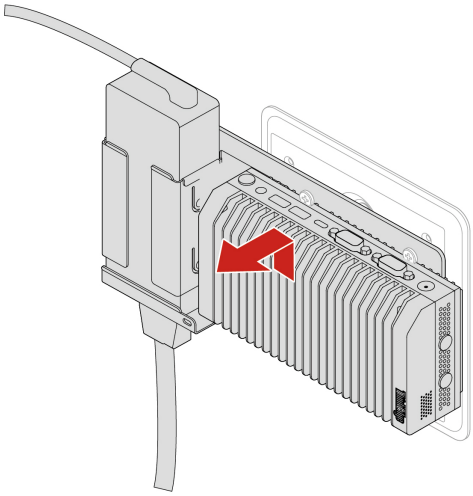
1. Remove any media from the drives and turn off all connected devices and the computer.
2. Disconnect all power cords from electrical outlets and disconnect all cables from the computer.

Replacement steps

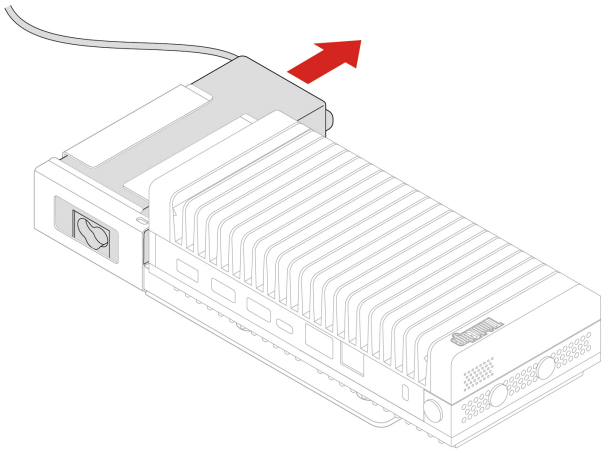


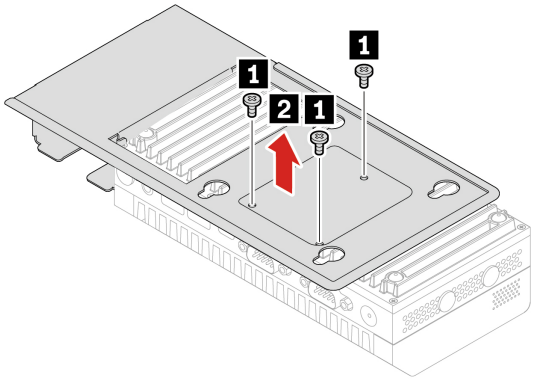






Remove the power cord from the power adapter. See “Power adapter and power cord” on page 24.

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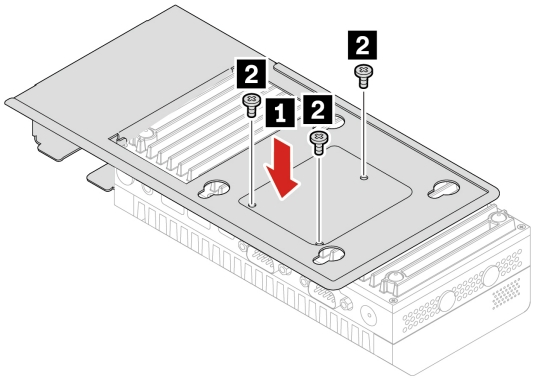
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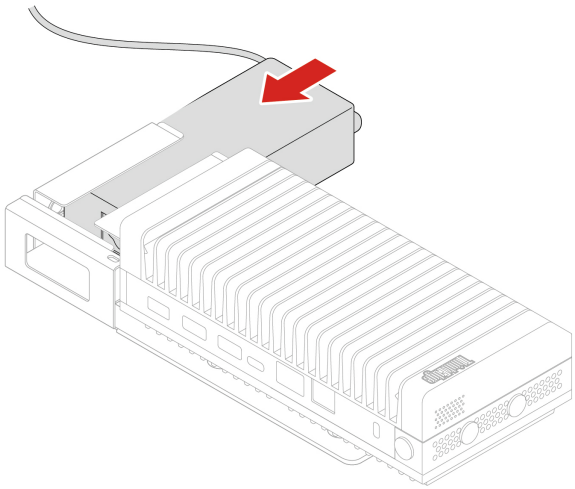
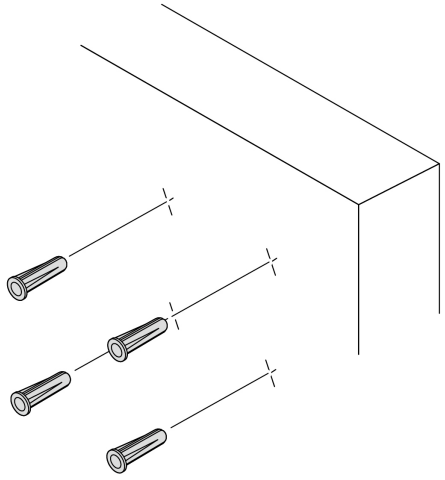
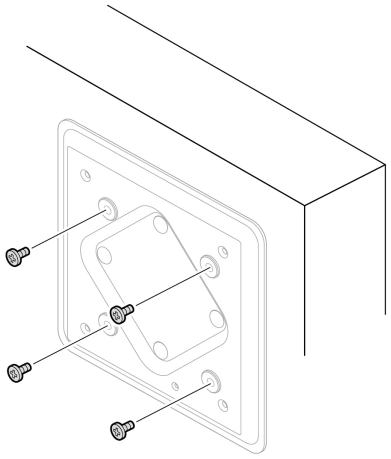
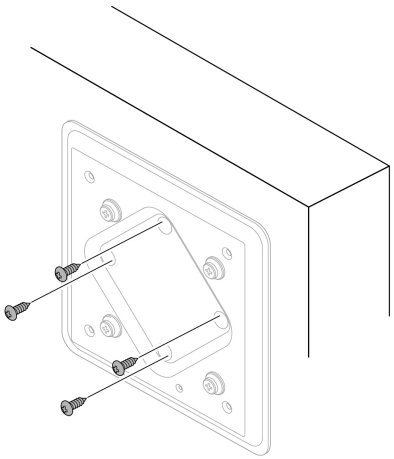
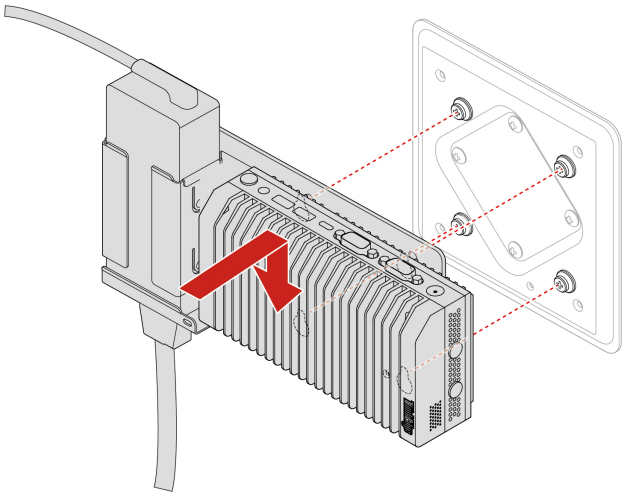


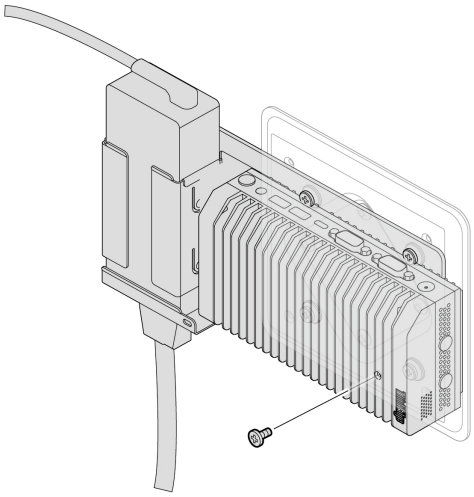


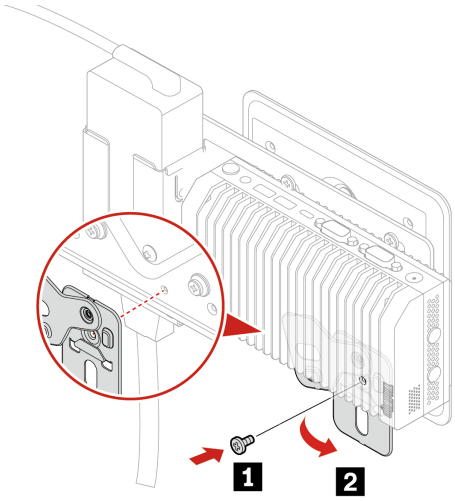


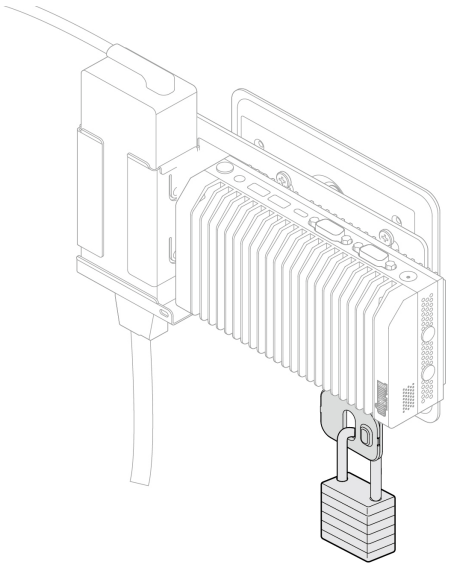


Install the power cord to the power adapter.






1
2



The replacement steps also apply to the computer with an IO expansion box installed. See “IO expansion box” on page 25.

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

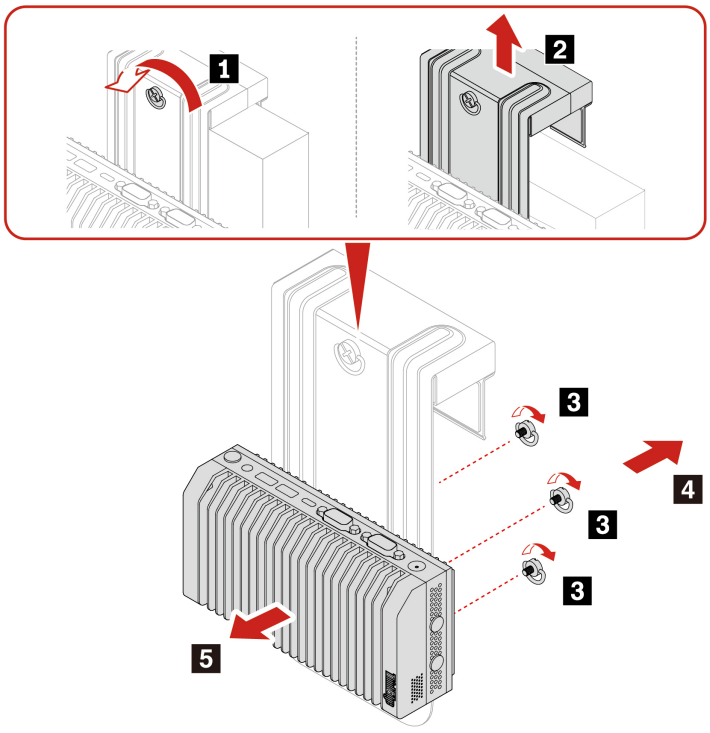
Before you start, read *Generic Safety and Compliance Notices*, and print the following instructions.

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.

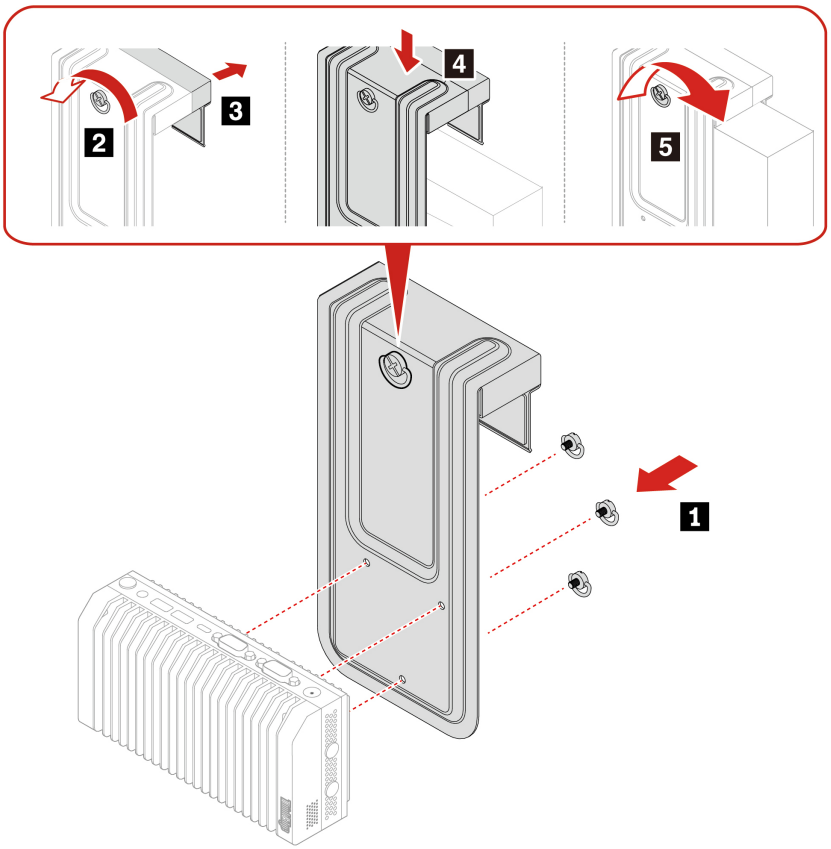
For access, do the following:

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

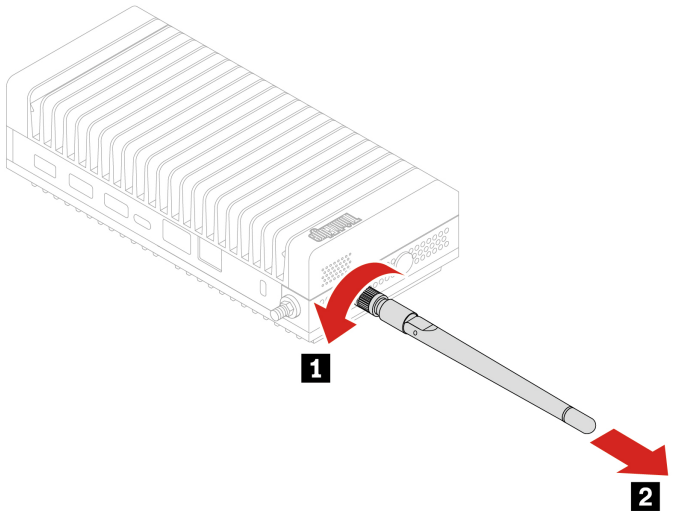
Before you start, read *Generic Safety and Compliance Notices*, and print the following instructions.

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

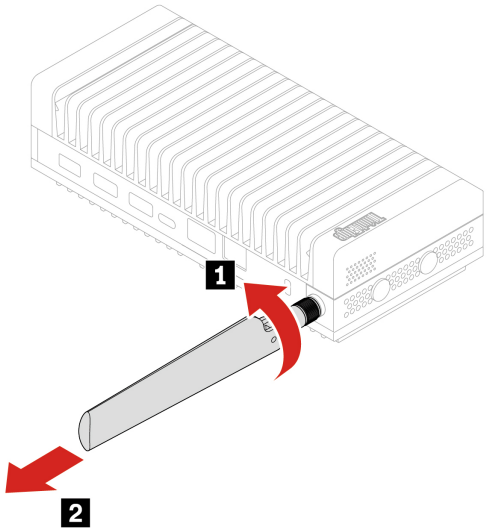
Before you start, read *Generic Safety and Compliance Notices*, and print the following instructions.

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.

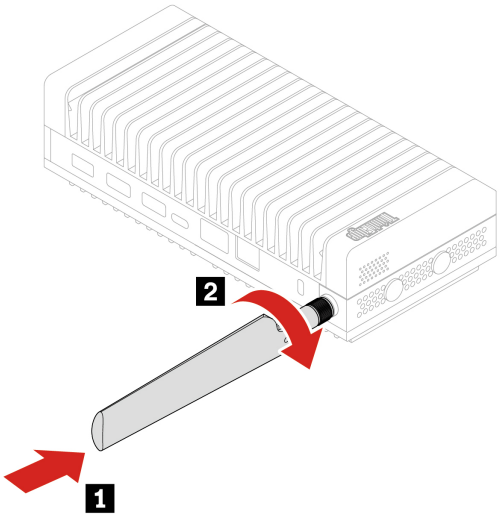
For access, do the following:

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

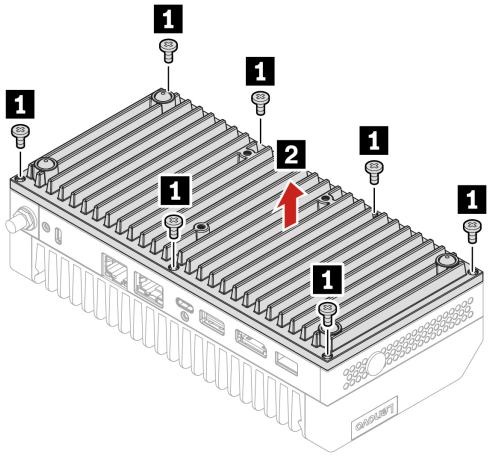
Before you start, read *Generic Safety and Compliance Notices*, and print the following instructions.

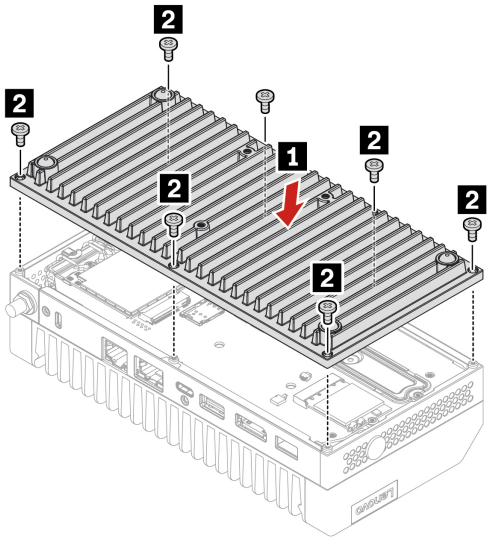
Avoid contact with the hot computer. During operation, the computer becomes hot enough to burn the skin. Before you touch the computer, turn off the computer, disconnect power, and wait approximately 30 minutes for the computer to cool.

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 26, “Physical lock kit and VESA mount bracket kit” on page 29, and “Power adapter bracket kit” on page 33.
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 Before you start, read *Generic Safety and Compliance Notices*, and print the following instructions., 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.

Note: The Percentage Used value reflects the cumulative wear level of the M.2 solid-state drive. If this value exceeds 100%, it indicates that the M.2 solid-state drive has reached its maximum rated endurance. To safeguard your data and mitigate potential loss, it is recommended that you back up all files on the M.2 solid-state drive promptly and then replace it with a new one.

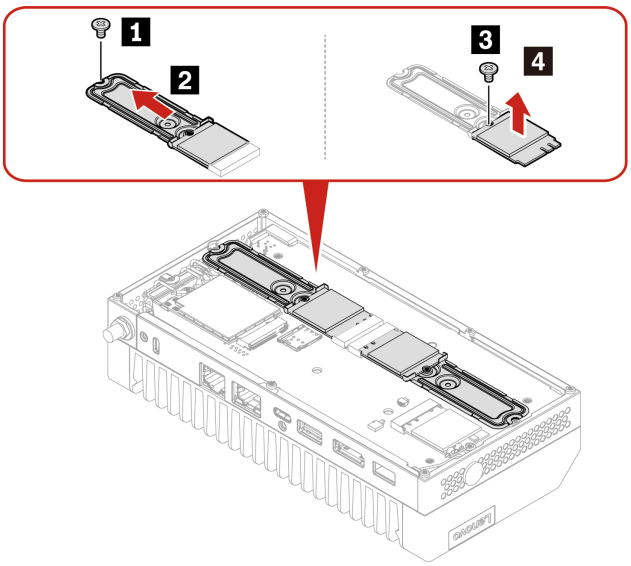
For access, do the following:

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 43.

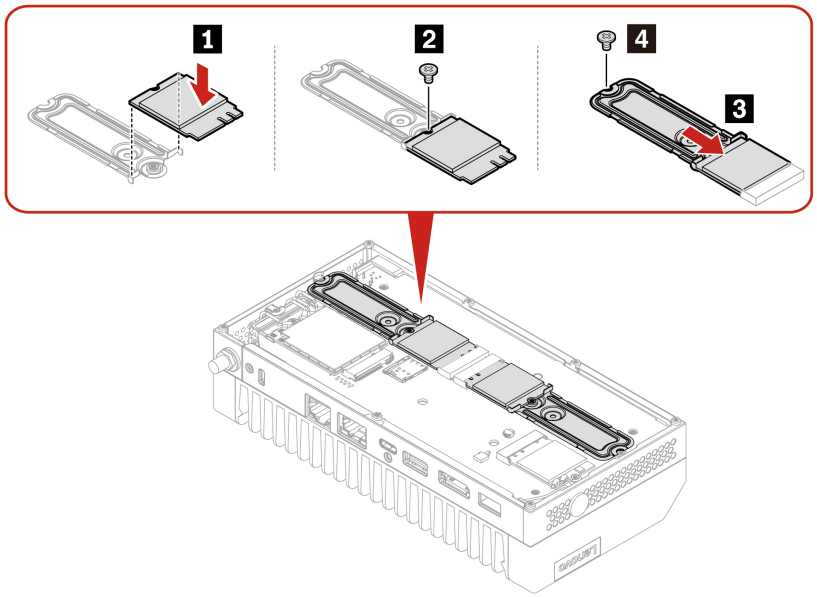
Replacement steps

- **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.

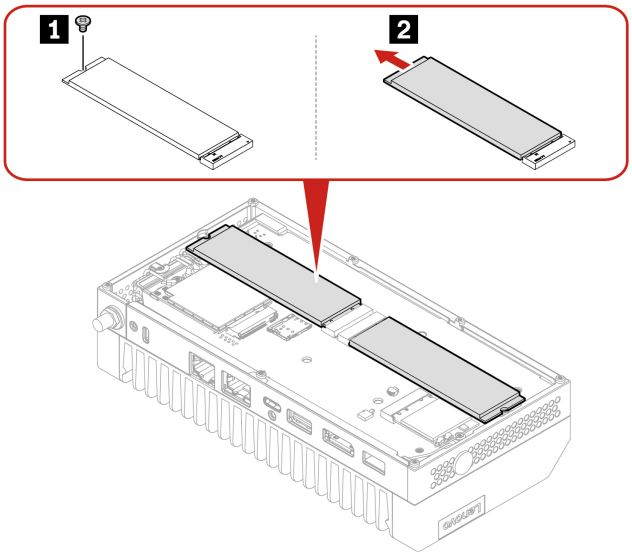


Note: After installing the new M.2 solid-state drive, ensure that you attach the new thermal pad to the new M.2 solid-state drive.

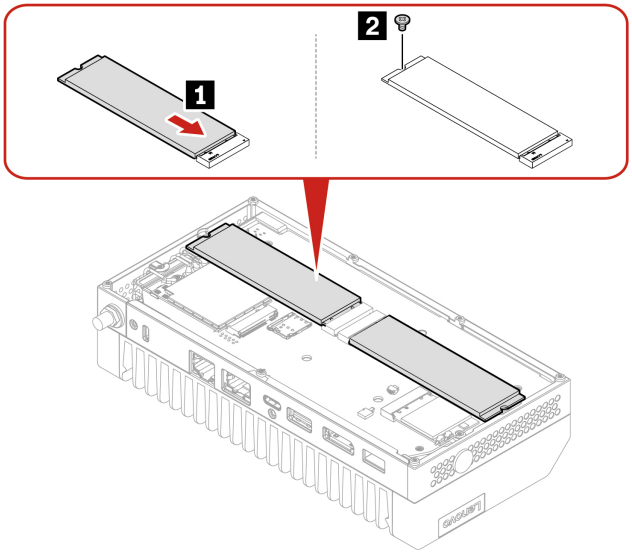


- **Type 2 2280:**

  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.

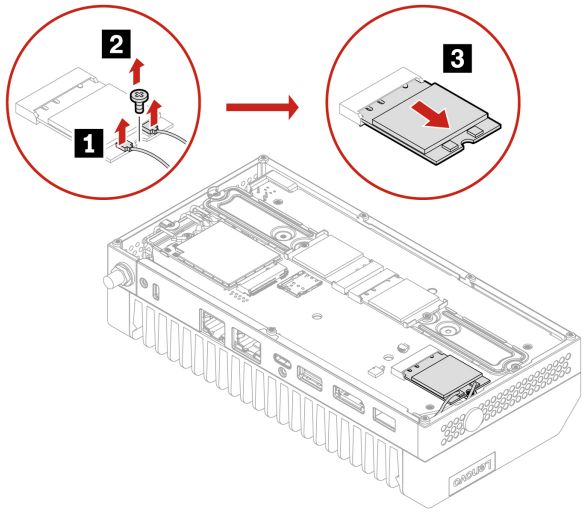
Avoid contact with the hot computer. During operation, the computer becomes hot enough to burn the skin. Before you touch the computer, turn off the computer, disconnect power, and wait approximately 30 minutes for the computer to cool.

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 43.

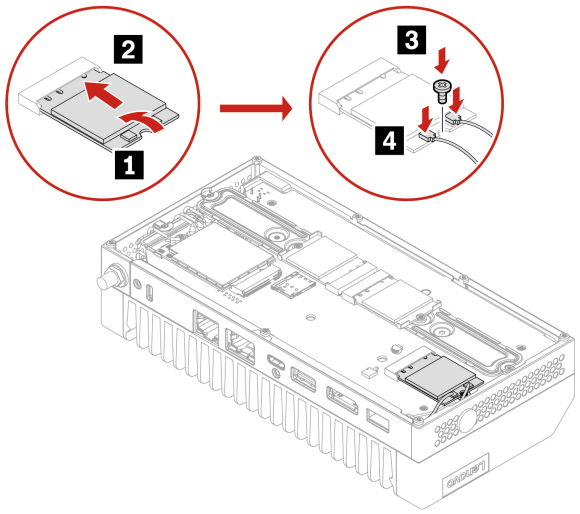
Replacement steps

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.

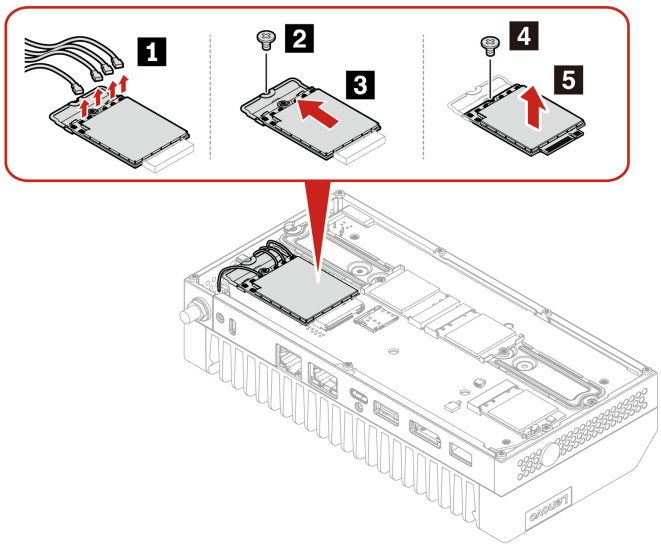
Avoid contact with the hot computer. During operation, the computer becomes hot enough to burn the skin. Before you touch the computer, turn off the computer, disconnect power, and wait approximately 30 minutes for the computer to cool.

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 43.

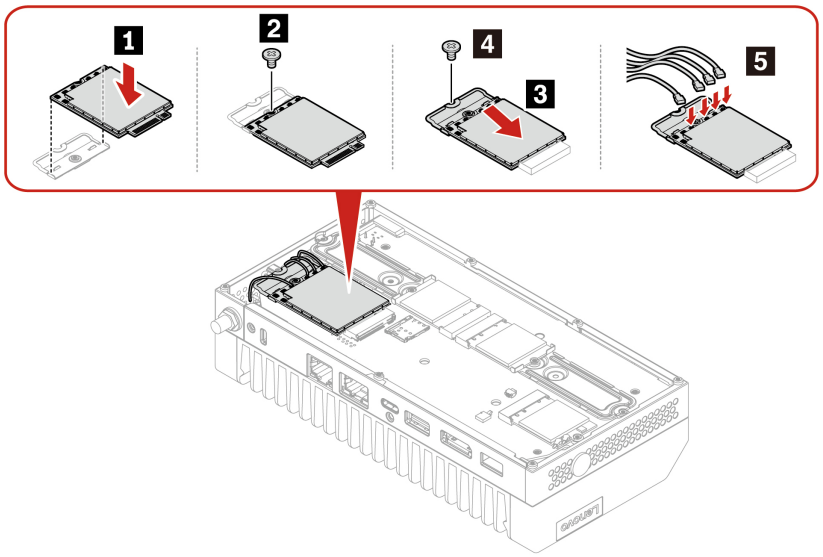
Replacement steps

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.



Chapter 6. Help and support

Self-help resources

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

Resources	How to access?
Product documentation: • *Safety and Warranty Guide* • *Setup Guide* • This *User Guide* • *Regulatory Notice*	Go to https://smartsupport.lenovo.com. 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: • Drivers and software • Diagnostic solutions • Product and service warranty • Product and parts details • Knowledge base and frequently asked questions	https://smartsupport.lenovo.com
Ubuntu help information	https://help.ubuntu.com/lts/ubuntu-help/index.html

Call Lenovo

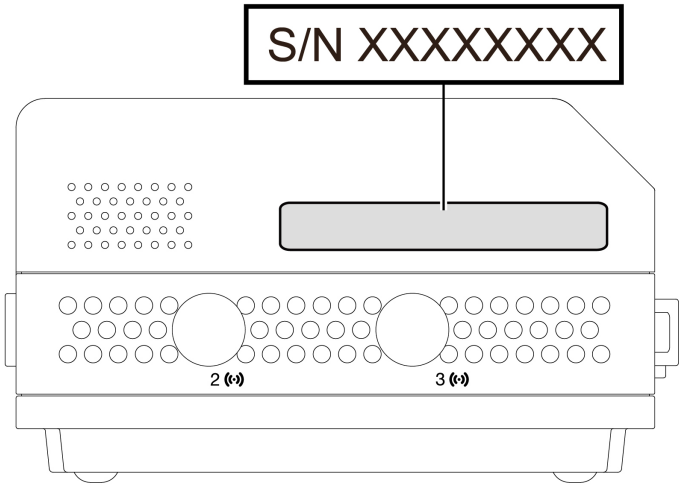
If you have tried to correct the problem yourself and still need help, you can call Lenovo Customer Support Center.

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 “Warranty information” in the *Safety and Warranty Guide* that comes with your computer.

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

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.

Purchase additional services

During and after the warranty period, you can purchase additional services from Lenovo at:
https://www.lenovo.com/services

Service availability and service name might vary by country or region.

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

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

Open source information

This “Device” includes software made publicly available by Lenovo, including software licensed under the General Public License and/or the Lesser General Public License (the “open source software”).

You may obtain a copy of the corresponding source code for any such open source software licensed under the General Public License and/or the Lesser General Public License (or any other license requiring us to make a written offer to provide corresponding source code to you) from Lenovo for a period of three years without charge except for the cost of media, shipping, and handling, upon written request to Lenovo. This offer is valid to anyone in receipt of this Device.

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`.

Appendix B. Notices and trademarks

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Morrisville, NC 27560
U.S.A.
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Any references in this publication to non-Lenovo Web sites are provided for convenience only and do not in any manner serve as an endorsement of those Web sites. The materials at those Web sites are not part of the materials for this Lenovo product, and use of those Web sites is at your own risk.

Any performance data contained herein was determined in a controlled environment. Therefore, the result obtained in other operating environments may vary significantly. Some measurements may have been made on development-level systems and there is no guarantee that these measurements will be the same on generally available systems. Furthermore, some measurements may have been estimated through extrapolation. Actual results may vary. Users of this document should verify the applicable data for their specific environment.

For the latest information or any questions or comments, contact or visit the Lenovo Web site:
https://support.lenovo.com

Trademarks


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