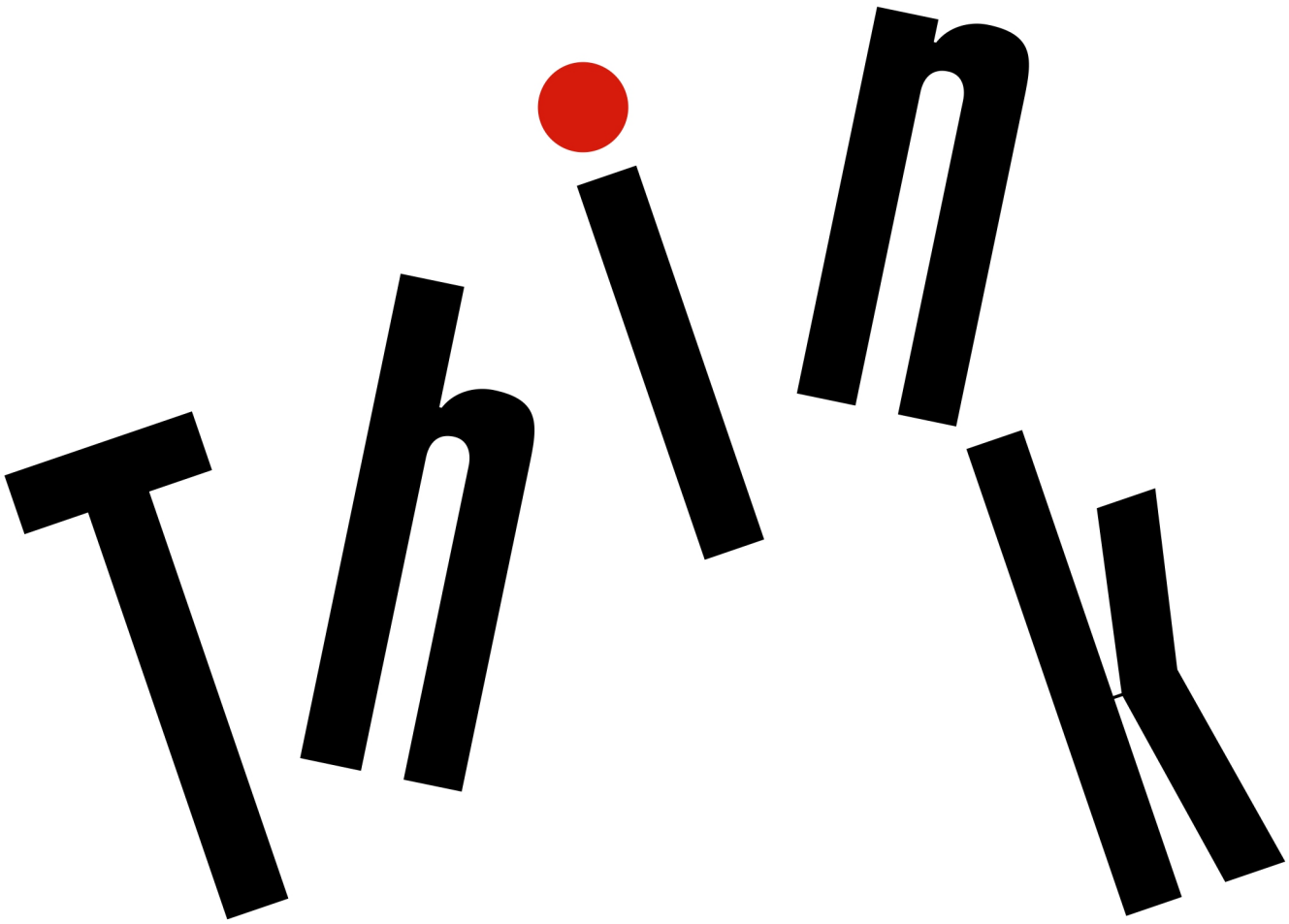
ThinkCentre®

M920z User Guide and Hardware Maintenance Manual



Lenovo

Energy Star Machine Types: 10S6, 10S7, 10Y5, and 10Y6

Note: Before using this information and the product it supports, be sure to read and understand the *Important Product Information Guide* and Appendix A “Notices” on page 61.

Third Edition (August 2019)

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Chapter 1. Overview

This chapter provides basic information to help you get familiar with your computer.

Front view

Note: Your computer model might look slightly different from the illustration.

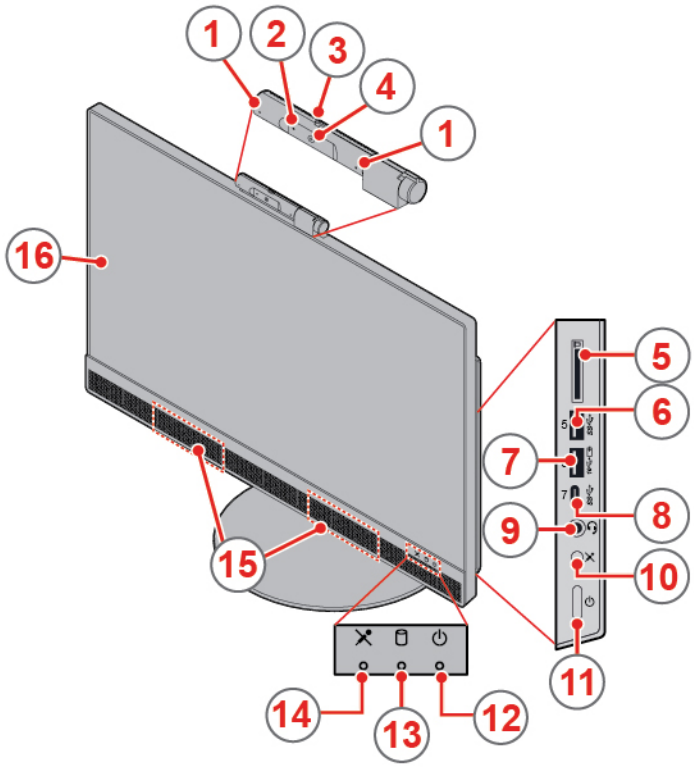

Figure 1. Front view

1 Integrated microphones (2) (optional)	2 Integrated camera activity indicator (optional)
3 Integrated camera shield control slider (optional)	4 Integrated camera (optional)
5 Card reader slot (optional)	6 USB 3.1 Gen 1 connector
7 Always On USB 3.1 Gen 2 connector (for rapid charge)	8 USB-C™ connector
9 Headset connector (also known as combo audio jack)	10 Microphone mute/unmute control (computer mode)
11 Power button	12 Power indicator
13 Storage drive activity indicator	14 Microphone mute/unmute indicator
15 Internal speakers (2)	16 Screen

1 Integrated microphones

Used to record sounds or use speech-recognition software without using a microphone.

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2 Integrated camera activity indicator

When the indicator is on, the camera is in use.

3 Integrated camera shield control slider

Used to cover the camera lens.

4 Integrated camera

Used to take pictures or hold a video conference.

5 Card reader slot

Used to read data from a supported memory card.

6 USB 3.1 Gen 1 connector

Used to connect a USB-compatible device. For optimal data transfer, connect a USB 3.1 Gen 1 device to a USB 3.1 Gen 2 or USB 3.1 Gen 1 connector instead of a USB 2.0 connector.

7 Always On USB 3.1 Gen 2 connector

Used to connect a USB-compatible device. For optimal data transfer, connect a USB 3.1 Gen 2 device to a USB 3.1 Gen 2 connector instead of a USB 3.1 Gen 1 or USB 2.0 connector. With the ac power adapter connected, you can charge the automatically detected device even when the computer is in hibernation mode or turned off.

8 USB-C connector

Use the connector to transfer data (USB 3.1 Gen 1, 5 Gbps) or charge your device (5 V / 3 A).

9 Headset connector

Used to connect a headset or headphones to your computer.

10 Microphone mute/unmute control

Used to mute or unmute the integrated microphones in the computer mode.

11 Power button

Used to turn on your computer. When you cannot shut down the computer from the operating system, press and hold the power button for four or more seconds to turn off the computer.

12 Power indicator

This indicator is on when the computer is on.

13 Storage drive activity indicator

This indicator is on when the storage drive is in use.

14 Microphone mute/unmute indicator

This indicator is on when the microphones are muted.

15 Internal speaker

Used to listen to the sounds from your computer without using a headset or headphones.

16 Screen

Depending on the computer model, your computer screen might support the multi-touch feature. This feature enables you to use up to ten fingers to interact with the computer.

Rear view

Note: Your computer model might look slightly different from the illustration.

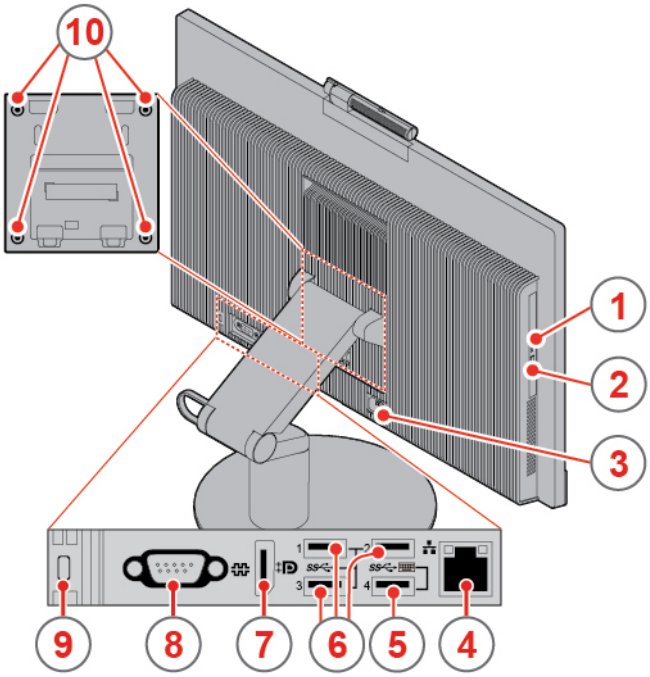


Figure 2. Rear view

1 Optical drive activity indicator (optional)	2 Optical drive eject/close button (optional)
3 Power cord connector	4 Ethernet connector
5 USB 3.1 Gen 1 connector (supporting the smart power on feature)	6 USB 3.1 Gen 1 connectors (3)
7 DisplayPort® 1.2 in/out connector	8 Serial connector (optional)
9 Security-lock slot	10 VESA threaded holes (screws: M4 x 8 mm x 4 pcs)

1 Optical drive activity indicator

This indicator is on when the optical drive is in use.

2 Optical drive eject/close button

Used to eject the tray of the optical drive. After you insert a disc into the tray, press the eject/close button to close the tray.

3 Power cord connector

Used to connect the power cord to your computer for power supply.

4 Ethernet connector

Used to connect an Ethernet cable for network access.

5 USB 3.1 Gen 1 connector

Used to connect a USB-compatible device. For optimal data transfer, connect a USB 3.1 Gen 1 device to a USB 3.1 Gen 2 or USB 3.1 Gen 1 connector instead of a USB 2.0 connector. The connector supports the smart power on feature that enables you to turn on the computer or wake it up from S4 hibernation mode by pressing Alt+P on the keyboard. You can enable or disable the smart power on feature from the Setup Utility program. For detailed information, see *Important Product Information Guide*.

6 USB 3.1 Gen 1 connector

Used to connect a USB-compatible device. For optimal data transfer, connect a USB 3.1 Gen 1 device to a USB 3.1 Gen 2 or USB 3.1 Gen 1 connector instead of a USB 2.0 connector.

7 DisplayPort 1.2 in/out connector

Used to send audio and video signals and receive video signals. When a high-performance monitor is connected to this connector, the computer remains in the computer mode. When another computer in use is connected to this connector, the computer automatically changes to the monitor mode.

8 Serial connector

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

9 Security-lock slot

Used to secure a Kensington-style cable lock.

10 VESA threaded holes

Used to connect the matched VESA mount with the matched screws when you install the computer on a wall.

System board

Note: See “Front view” and “Rear view” for additional component descriptions.

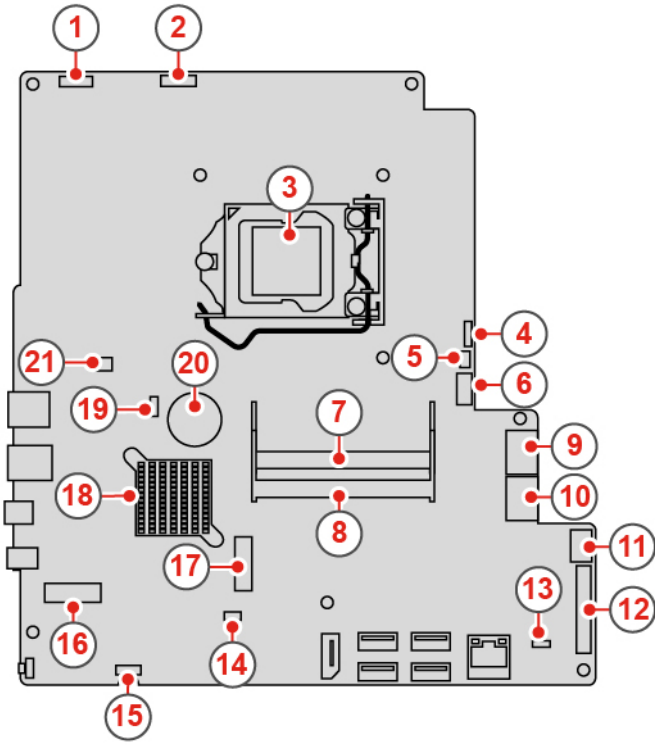


Figure 3. System board

1 LCD power connector	2 Integrated camera and microphone module connector
3 Microprocessor socket	4 System fan connector
5 Touch board connector	6 SATA power connector (connecting to the storage drive and optical drive)
7 Memory slot (DIMM1)	8 Memory slot (DIMM2)
9 SATA connector (connecting to the optical drive)	10 SATA connector (connecting to the storage drive)
11 Power supply assembly connector	12 LCD LVDS connector
13 Cover presence switch connector (intrusion switch connector)	14 Serial (COM1) connector
15 Internal speaker connector	16 M.2 Wi-Fi card slot
17 M.2 solid-state drive slot	18 PCH
19 Clear CMOS /Recovery jumper	20 Coin-cell battery
21 Card reader connector	

Machine type and model label

The machine type and model label identifies the computer. When you contact Lenovo for help, the machine type and model information helps support technicians to identify the computer and provide faster service. The machine type and model label is attached on the computer as shown.

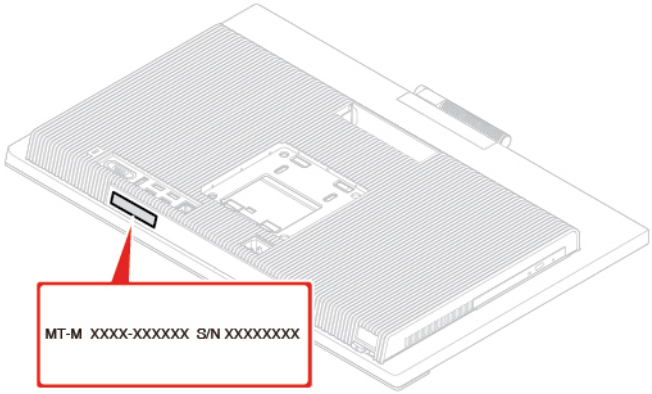
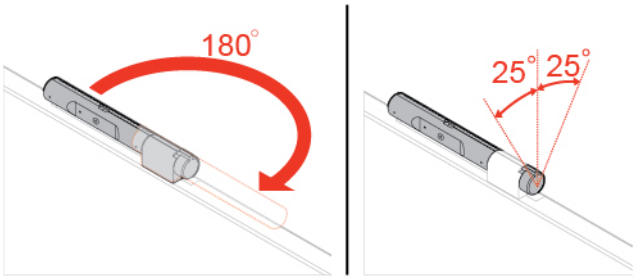


Figure 4. Machine type and model label

Adjusting the integrated camera and microphone module

Note: The integrated camera and microphone module is optional.



Adjusting the computer stand

Note: The computer stand is optional.

Full-function monitor stand

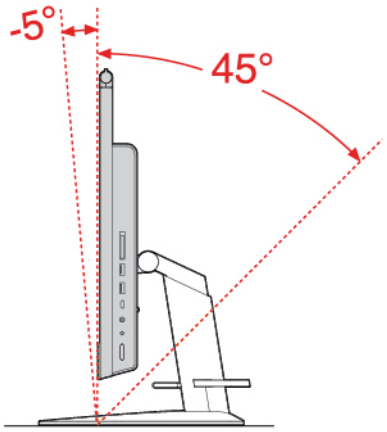


Figure 5. Tilting the screen forward and back

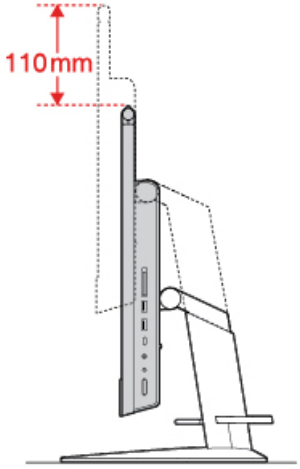


Figure 6. Adjusting the height of the screen

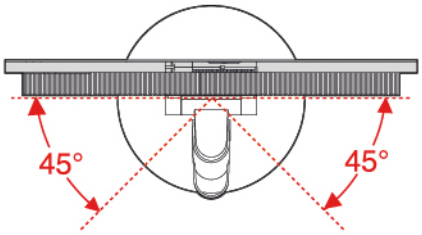


Figure 7. Turning the screen to the left and right

UltraFlex III Stand

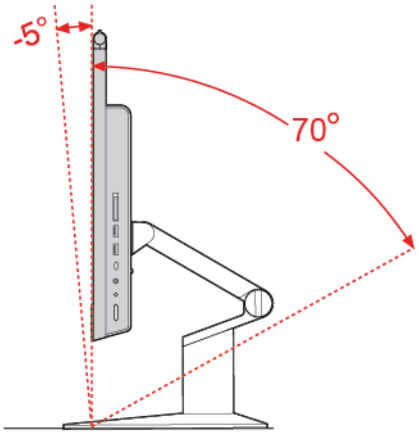


Figure 8. Tilting the screen forward and back

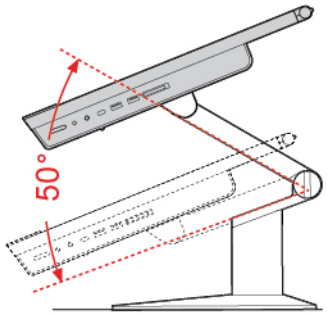


Figure 9. Adjusting the height of the screen

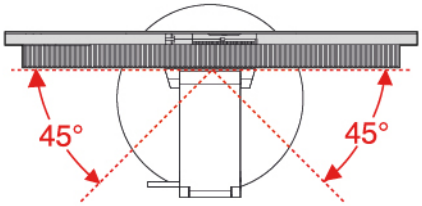


Figure 10. Turning the screen to the left and right

Chapter 2. Specifications

Power supply

150-watt automatic voltage-sensing power supply

Storage drives

- 2.5-inch storage drive (optional)
- M.2 solid-state drive (optional)

Video features

DisplayPort 1.2 in/out connector

Audio features

- Headset connector
- Integrated microphones (optional)
- Internal speakers

Input/Output (I/O) features

- Card reader slot (optional)
- DisplayPort 1.2 in/out connector
- Ethernet connector
- Headset connector
- Serial connector
- USB connectors

Expansion

- Card reader
- Memory slots
- M.2 solid-state drive slot
- Optical drive (optional)
- Storage drive bay

Network features

- Ethernet LAN
- Wireless LAN (optional)
- Bluetooth (optional)

Physical dimensions (without the computer stand)

- Width: 541.6 mm (21.3 inches)
- Height: 370.6 mm (14.6 inches)
- Depth: 46.3 mm (1.8 inches)

Weight (with the computer stand) (without the package)

Maximum configuration as shipped: 8.9 kg (19.6 lb)

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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)
3.1 Gen 1	5
3.1 Gen 2	10
3.2	20

Chapter 3. Computer locks

Attaching a Kensington-style cable lock

You can use a Kensington-style cable lock to secure your computer to a desk, table, or another nonpermanent fixture. The cable lock connects to the security-lock slot at the rear of your computer. Depending on the type selected, the cable lock can be operated with a key or combination. The cable lock also locks the buttons used to open the computer cover. This is the same type of lock used with many notebook computers. You can order such a cable lock directly from Lenovo by searching for *Kensington* at: http://www.lenovo.com/support

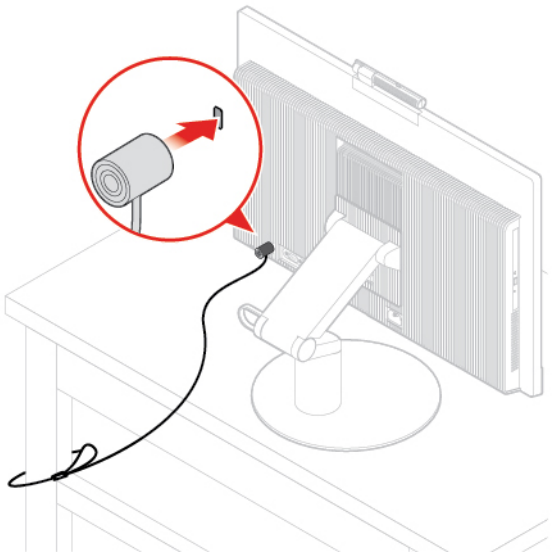

Figure 11. Attaching a Kensington-style cable lock

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Chapter 4. Replacing hardware

This chapter provides instructions on how to replace hardware for your computer.

Before replacing hardware

Attention: Do not open your computer or attempt any repairs before reading this section and the *Important Product Information Guide*.

Notes before replacing hardware

- Use computer components provided only by Lenovo.
- When installing or replacing an option, use the appropriate instructions explained in this manual along with the instructions that come with the option.
- In most areas of the world, Lenovo requires the return of defective CRUs. Information about this will come with the CRU or will come a few days after the CRU arrives.

Handling static-sensitive devices

Do not open the static-protective package containing the new part until the defective part has been removed and you are ready to install the new part. Static electricity, although harmless to you, can seriously damage computer components and options.

When you handle options and other computer components, take these precautions to avoid static-electricity damage:

- Limit your movement. Movement can cause static electricity to build up around you.
- Always handle options and other computer components carefully. Handle PCI/PCIe cards, memory modules, system boards, and microprocessors by the edges. Never touch any exposed circuitry.
- Prevent others from touching the options and other computer components.
- Touch the static-protective package containing the part to a metal expansion-slot cover or other unpainted metal surface on the computer for at least two seconds. This reduces static electricity from the package and your body before you install or replace a new part.
- When possible, remove the new part from the static-protective package, and install it directly in the computer without setting the part down. When this is not possible, place the static-protective package on a smooth, level surface and place the part on the package.
- Do not place the part on the computer cover or other metal surface.

Knowing FRUs (including CRUs)

- Field Replaceable Units (FRUs) are computer parts that a trained technician can upgrade or replace. FRUs include all CRUs. For detailed FRU information, such as the FRU part numbers and supported computer models, go to:
  http://www.lenovo.com/serviceparts-lookup
- Customer Replaceable Units (CRUs) are computer parts that a user can upgrade or replace.
  - Self-service CRUs: You can install self-service CRUs easily. These CRUs might be stand-alone, latched, or secured by up to two screws. Examples of self-service CRUs include the keyboard, mouse, and any USB device. You are responsible for replacing all self-service CRUs.
  - Optional-service CRUs: Handling optional-service CRUs requires some technical skills and simple tools (such as a screwdriver). These CRUs are isolated parts within the computer. They are usually

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concealed by an access panel that is secured by more than two screws. You must remove the screws and panel to access the specific CRU. Optional-service CRUs can be removed and installed by users or, during the warranty period, by a Lenovo service technician.

Before replacing FRUs

Before replacing any FRU, read the following:

- Only certified and trained personnel can service the computer.
- Before replacing an FRU, read the entire section about replacing the part.
- Be extremely careful during writing operations such as copying, saving, or formatting.

  The sequence of the drives in the computer that you are servicing might have been altered. If you select an incorrect drive, data or programs might be overwritten.
- Replace an FRU only with another FRU of the correct model.

  When you replace an FRU, ensure that the model of the machine and the FRU part number are correct.
- An FRU should not be replaced because of a single, unreproducible failure.

  Single failures can occur for a variety of reasons that have nothing to do with a hardware defect, such as cosmic radiation, electrostatic discharge, or software errors. Consider replacing an FRU only when a problem recurs. If you suspect that an FRU is defective, clear the error log and run the test again. If the error does not recur, do not replace the FRU.
- Only replace a defective FRU.

Locating FRUs (including CRUs)

Notes:

- Some of the following components are optional.
- To replace a component that is not in the list below, contact a Lenovo service technician. For a list of Lenovo Support phone numbers, go to:
  http://www.lenovo.com/support/phone

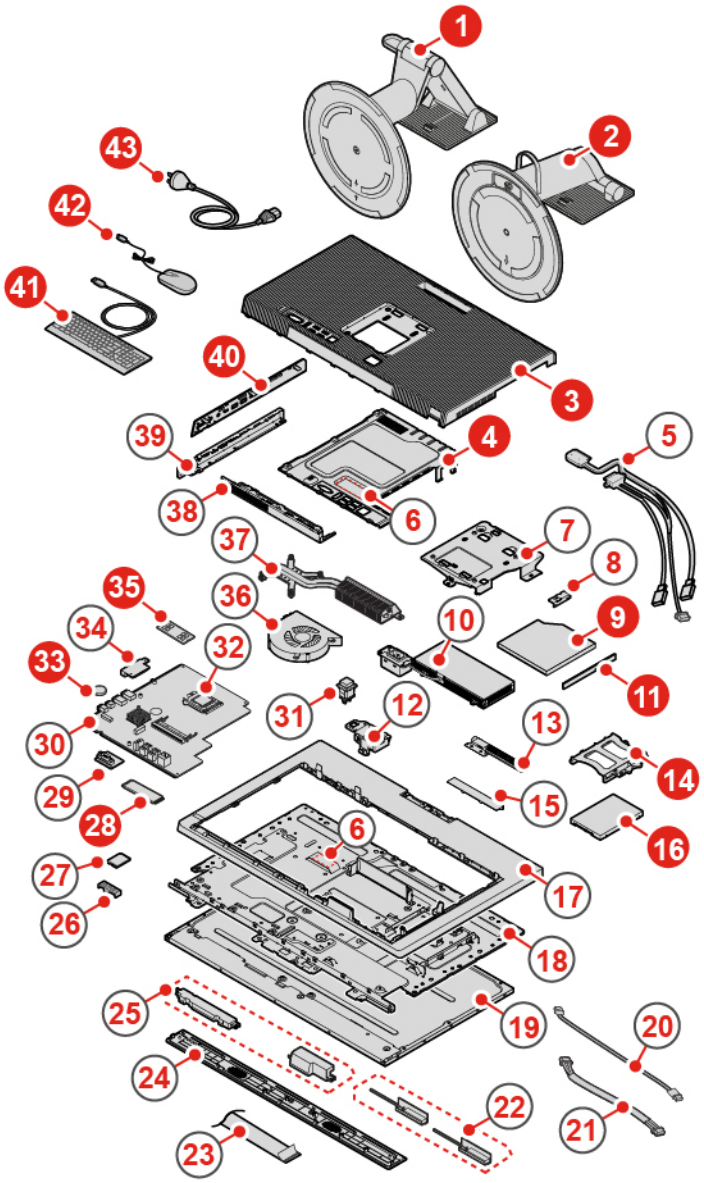


Figure 12. Locating FRUs (including CRUs)

Self-service CRUs	**Optional-service CRUs**	**Non-CRUs**
1 UltraFlex III Stand	4 System board shield	5 Optical drive and storage drive cables
2 Full-function monitor stand	9 Optical drive	6 Thermal pads (2)
3 Computer cover	11 Optical drive bezel	7 VESA mount bracket
14 Storage drive bracket	28 M.2 solid-state drive	8 Optical drive holder
16 Storage drive	33 Coin-cell battery	10 Power supply assembly
41 Keyboard	35 Memory module	12 Power cord connector bracket
42 Mouse	40 Side I/O bezel	13 Integrated camera and microphone module

Self-service CRUs	Optional-service CRUs	Non-CRUs
43 Power cord		15 Integrated camera and microphone module cover 17 Back frame 18 Chassis 19 LCD panel 20 Backlight cable 21 Touch cable 22 Wi-Fi antennas (2) 23 LVDS cable 24 Front decorative cover 25 Internal speakers (2) 26 Wi-Fi card shield 27 Wi-Fi card 29 Serial connector module 30 System board 31 Cover presence switch (intrusion switch) 32 Microprocessor 34 Card reader 36 System fan 37 Heat sink 38 System board shielding fence 39 Side I/O bracket

Replacing the computer stand

Attention: Do not open your computer or attempt any repairs before reading the *Important Product Information Guide*.

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. Place a soft, clean towel or cloth on the desk or surface. Hold the sides of your computer and gently lay it down so that the screen is against the surface and the computer cover is facing up.
4. Depending on your computer model, refer to one of the following to replace the computer stand.
   - Full-function monitor stand

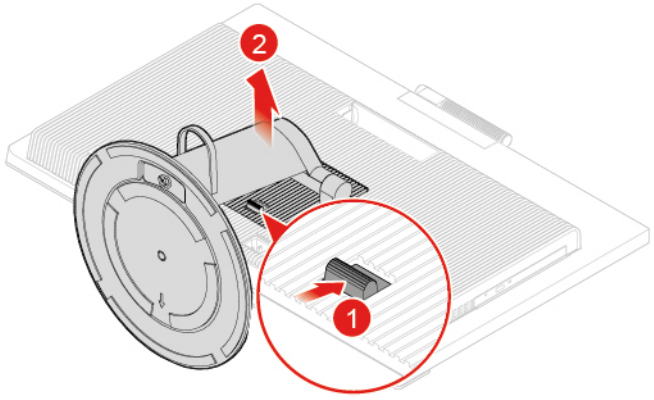


Figure 13. Removing the full-function monitor stand

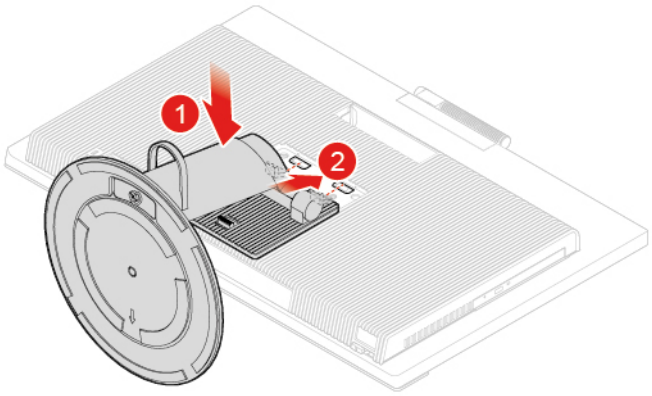


Figure 14. Installing the full-function monitor stand

- UltraFlex III Stand

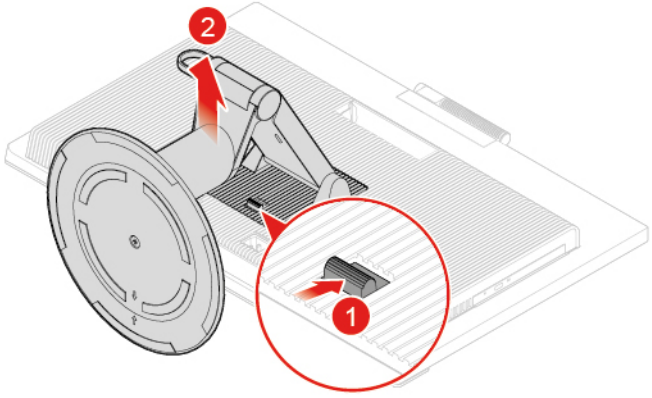


Figure 15. Removing the UltraFlex III Stand

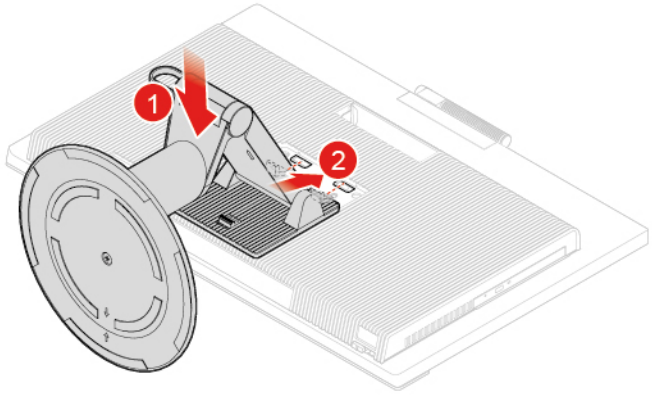


Figure 16. Installing the UltraFlex III Stand

5. Place the computer in an upright position.
6. Reconnect the external cables and power cords to the corresponding connectors on the computer.

Removing the computer cover

Attention: Do not open your computer or attempt any repairs before reading the *Important Product Information Guide*.

CAUTION:

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

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. Place a soft, clean towel or cloth on the desk or surface. Hold the sides of your computer and gently lay it down so that the screen is against the surface and the computer cover is facing up.
5. Remove the computer stand. See “Replacing the computer stand” on page 16.

6. Remove the computer cover.

CAUTION:

Do not lift the bottom of the LCD panel so that the integrated camera and microphone module will not be broken.

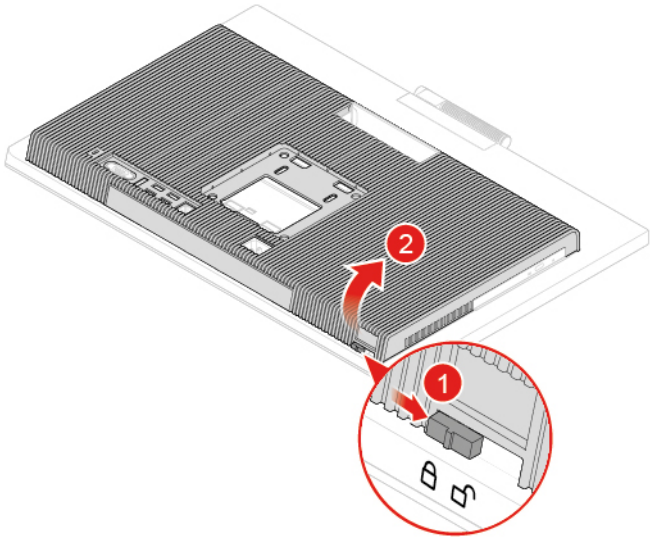


Figure 17. Removing the computer cover

7. Complete the replacement. See “Completing the parts replacement” on page 58.

Replacing the storage drive

Attention: Do not open your computer or attempt any repairs before reading the *Important Product Information Guide*.

1. Remove the computer stand. See “Replacing the computer stand” on page 16.
2. Remove the computer cover. See “Removing the computer cover” on page 18.
3. Disconnect the signal cable and the power cable from the storage drive.
4. Replace the storage drive.

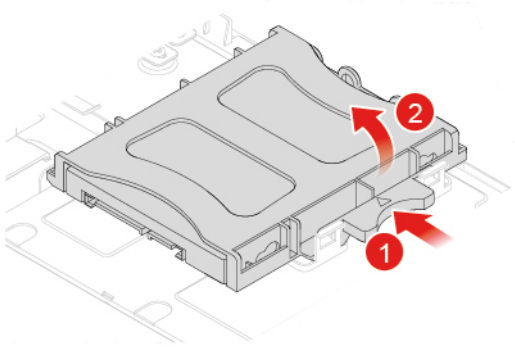


Figure 18. Removing the storage drive and the bracket

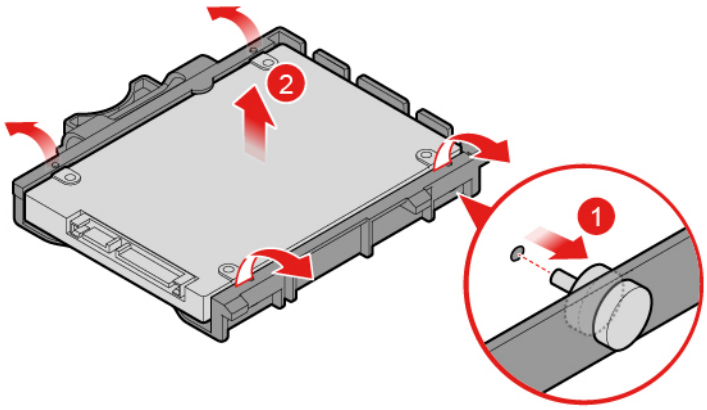


Figure 19. Removing the storage drive from the bracket

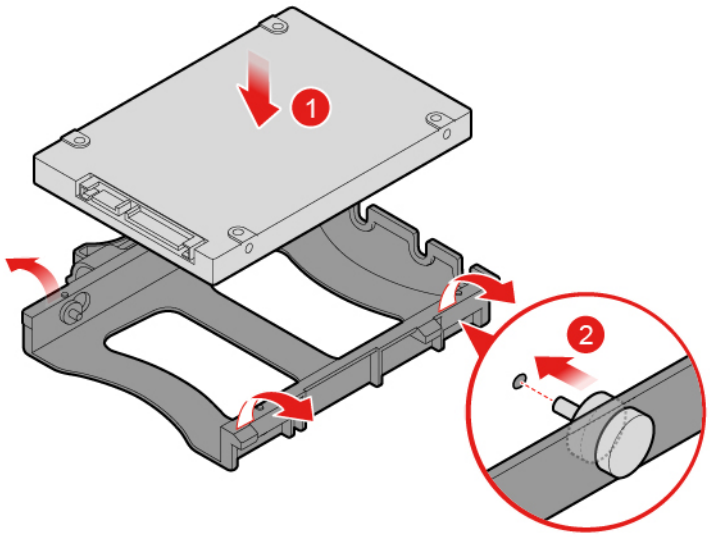


Figure 20. Installing the storage drive into the bracket

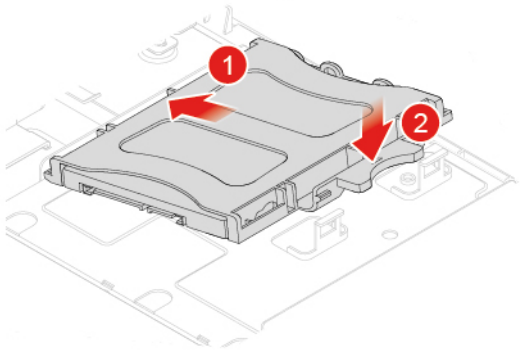


Figure 21. Installing the storage drive and the bracket

5. Connect the signal cable and the power cable to the new storage drive.
6. Reinstall the removed parts. To complete the replacement, see “Completing the parts replacement” on page 58.

Replacing the optical drive

Attention: Do not open your computer or attempt any repairs before reading the *Important Product Information Guide*.

1. Remove the computer stand. See “Replacing the computer stand” on page 16.
2. Remove the computer cover. See “Removing the computer cover” on page 18.
3. Replace the optical drive.

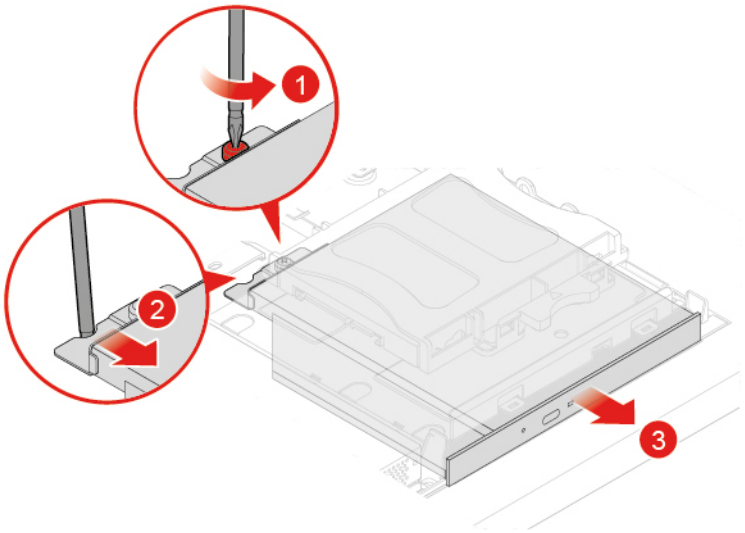


Figure 22. Removing the optical drive

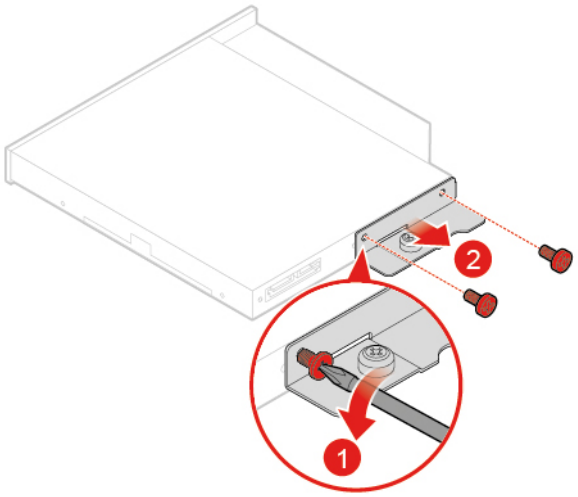


Figure 23. Removing the optical drive holder

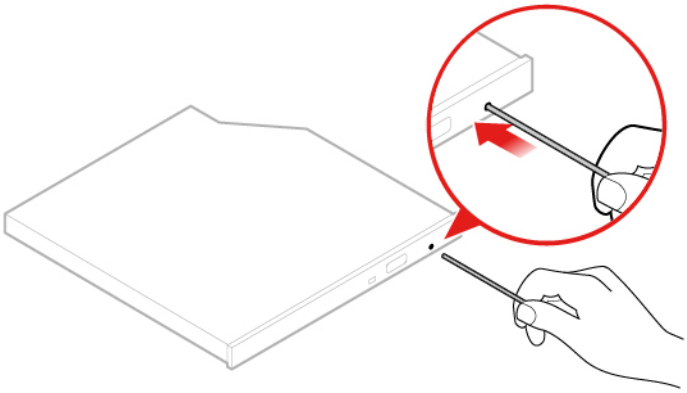


Figure 24. Inserting a straightened paper clip into the emergency-eject hole until the tray slides out

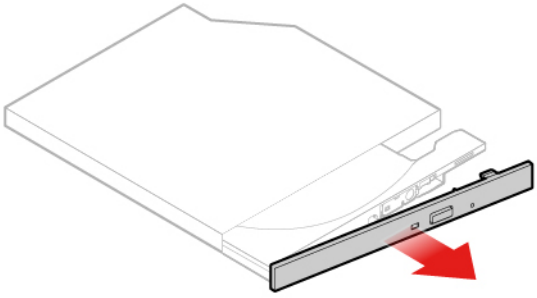


Figure 25. Removing the optical drive bezel

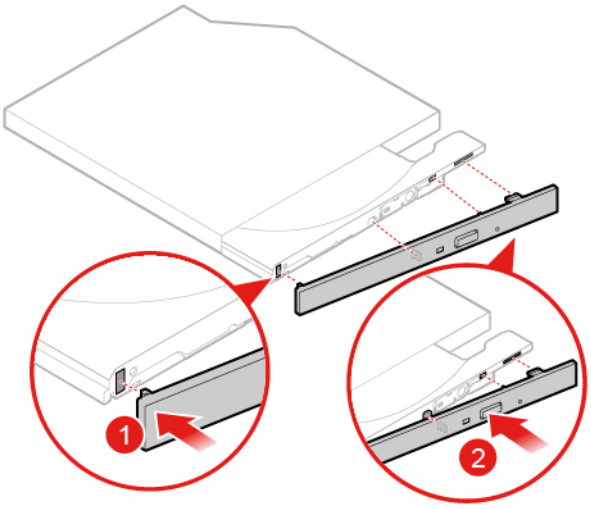


Figure 26. Installing the optical drive bezel

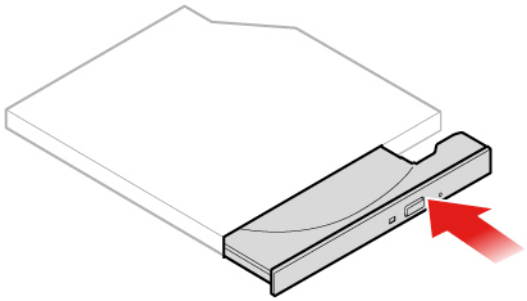


Figure 27. Closing the tray

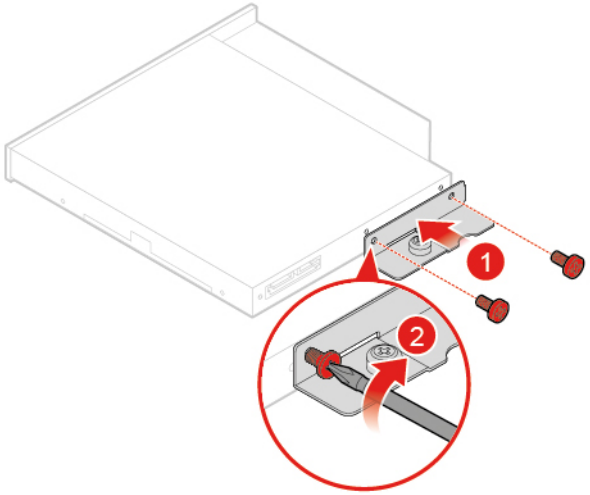


Figure 28. Installing the optical drive holder

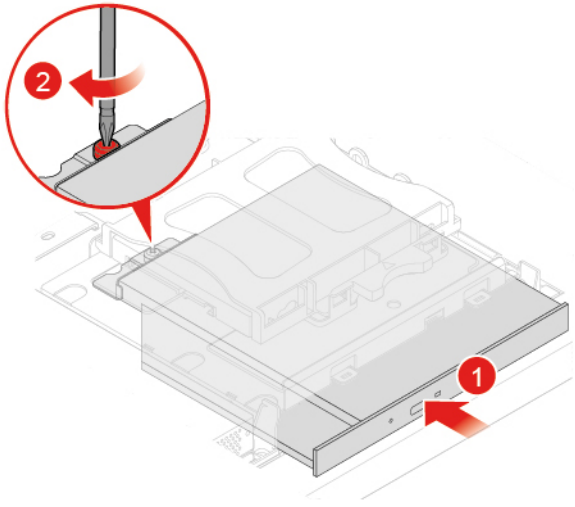


Figure 29. Installing the optical drive

4. Reinstall the removed parts. To complete the replacement, see “Completing the parts replacement” on page 58.

Replacing the optical drive and storage drive cables

Attention: Do not open your computer or attempt any repairs before reading the *Important Product Information Guide*.

1. Remove the computer stand. See “Replacing the computer stand” on page 16.
2. Remove the computer cover. See “Removing the computer cover” on page 18.
3. Remove the optical drive. See “Replacing the optical drive” on page 21.
4. Disconnect the optical drive and storage drive cables from the storage drive and the system board.
5. Replace the optical drive and storage drive cables.

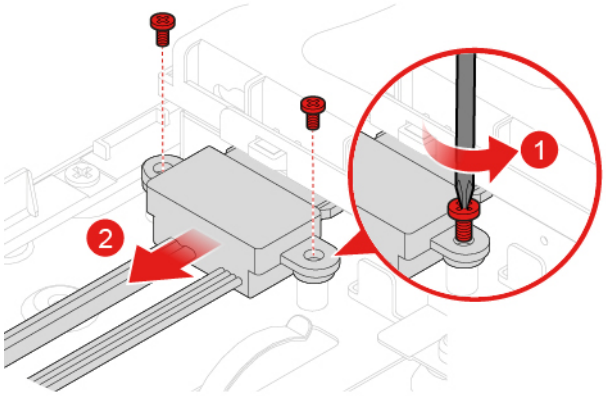


Figure 30. Removing the optical drive and storage drive cables

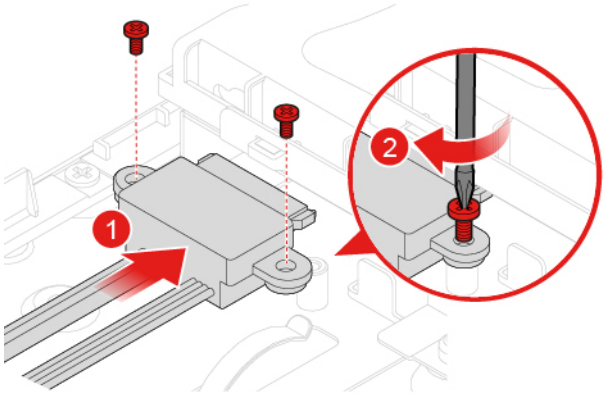


Figure 31. Installing the optical drive and storage drive cables

6. Connect the new optical drive and storage drive cables to the storage drive and the system board.
7. Reinstall the removed parts. To complete the replacement, see “Completing the parts replacement” on page 58.

Replacing the side I/O bezel

Attention: Do not open your computer or attempt any repairs before reading the *Important Product Information Guide*.

1. Remove the computer stand. See “Replacing the computer stand” on page 16.

2. Remove the computer cover. See “Removing the computer cover” on page 18.
3. Replace the side I/O bezel.

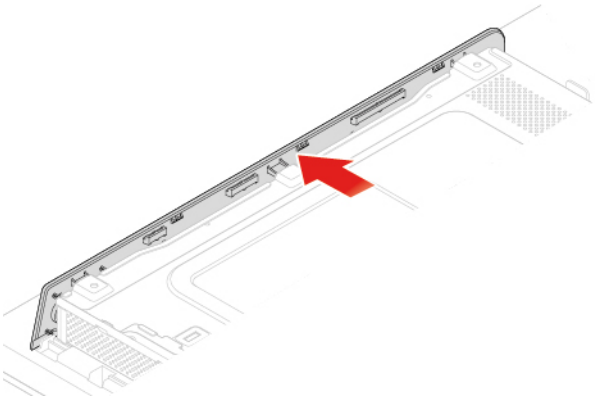


Figure 32. Removing the side I/O bezel

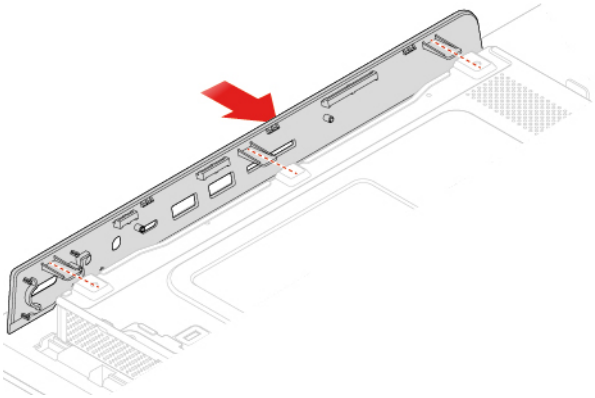


Figure 33. Installing the side I/O bezel

4. Reinstall the removed parts. To complete the replacement, see “Completing the parts replacement” on page 58.

Replacing the system board shield

Attention: Do not open your computer or attempt any repairs before reading the *Important Product Information Guide*.

1. Remove the computer stand. See “Replacing the computer stand” on page 16.
2. Remove the computer cover. See “Removing the computer cover” on page 18.
3. Remove the side I/O bezel. See “Replacing the side I/O bezel” on page 24.
4. Replace the system board shield.

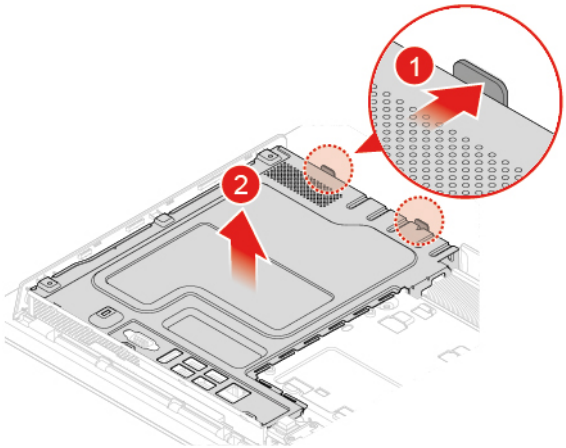


Figure 34. Removing the system board shield

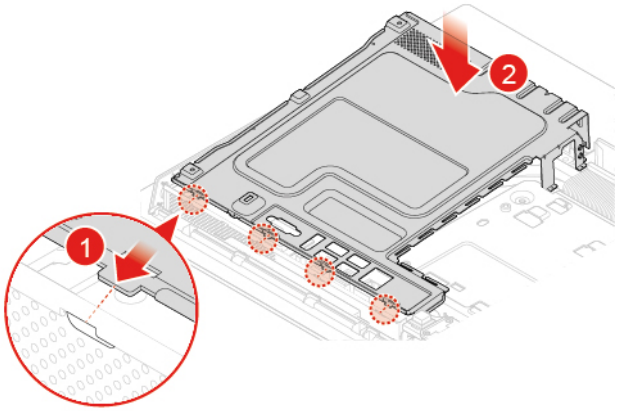


Figure 35. Installing the system board shield

5. Reinstall the removed parts. To complete the replacement, see “Completing the parts replacement” on page 58.

Replacing the VESA mount bracket

Attention: Do not open your computer or attempt any repairs before reading the *Important Product Information Guide*.

1. Remove the computer stand. See “Replacing the computer stand” on page 16.
2. Remove the computer cover. See “Removing the computer cover” on page 18.
3. Remove the side I/O bezel. See “Replacing the side I/O bezel” on page 24.
4. Remove the system board shield. See “Replacing the system board shield” on page 25.
5. Replace the VESA mount bracket.

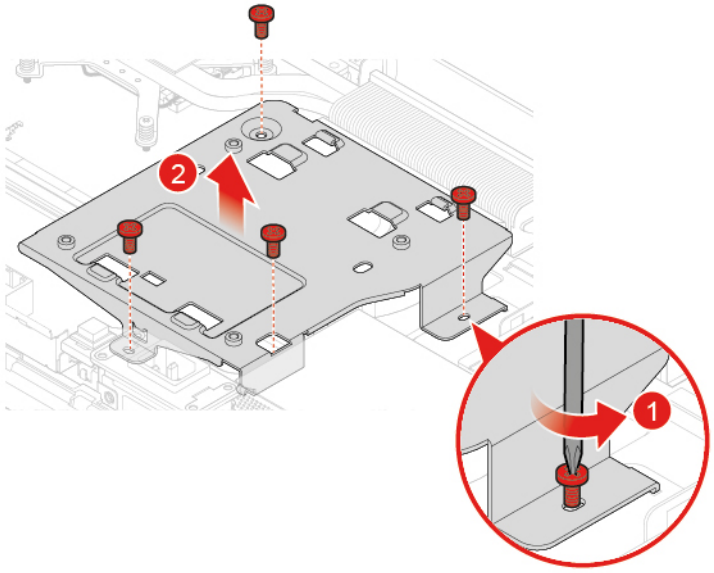


Figure 36. Removing the VESA mount bracket

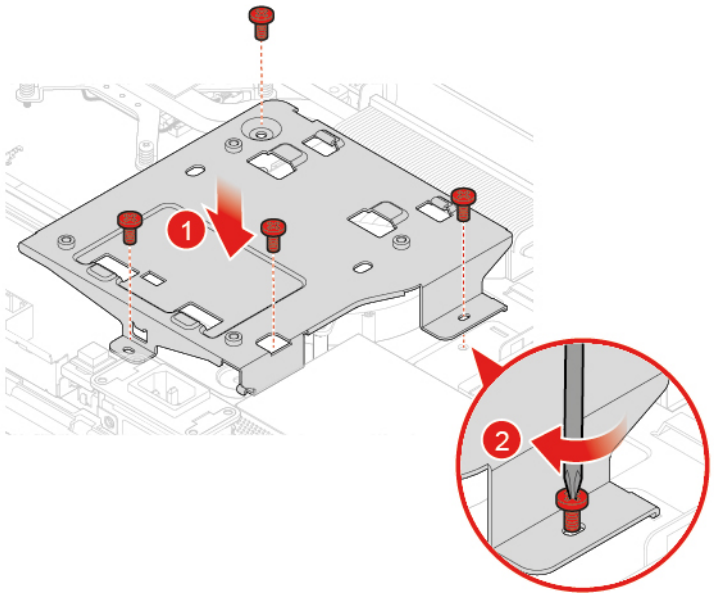


Figure 37. Installing the VESA mount bracket

6. Reinstall the removed parts. To complete the replacement, see “Completing the parts replacement” on page 58.

Replacing the power supply assembly

Attention: Do not open your computer or attempt any repairs before reading the *Important Product Information Guide*.

Although there are no moving parts in the computer after the power cord has been disconnected, the following warnings are required for your safety and proper Underwriters Laboratories (UL) certification.

CAUTION:

Hazardous moving parts. Keep fingers and other body parts away.

CAUTION:
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.

1. Remove the computer stand. See “Replacing the computer stand” on page 16.
2. Remove the computer cover. See “Removing the computer cover” on page 18.
3. Remove the side I/O bezel. See “Replacing the side I/O bezel” on page 24.
4. Remove the system board shield. See “Replacing the system board shield” on page 25.
5. Remove the VESA mount bracket. See “Replacing the VESA mount bracket” on page 26.
6. Disconnect the power supply assembly cable from the system board.
7. Replace the power supply assembly.

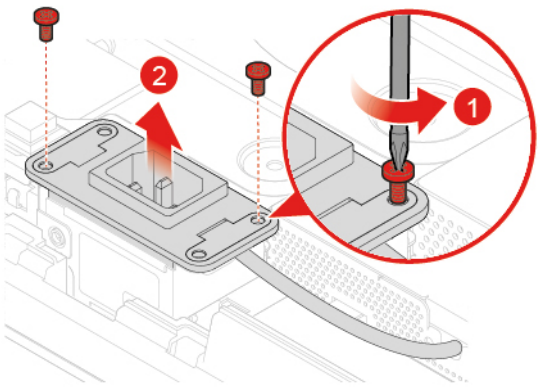


Figure 38. Removing the power cord connector

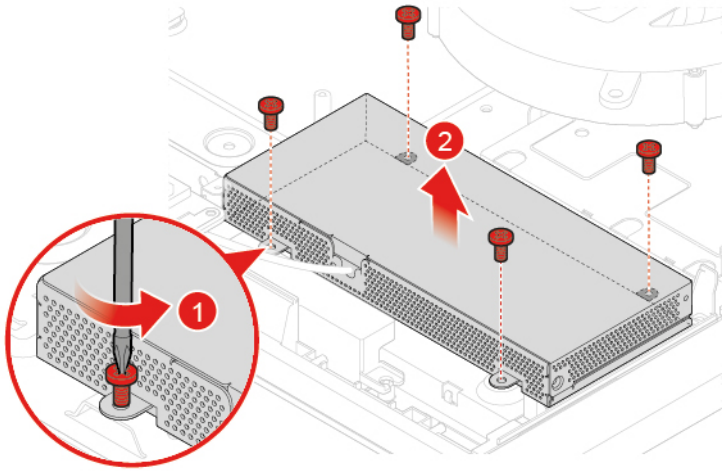


Figure 39. Removing the power supply assembly

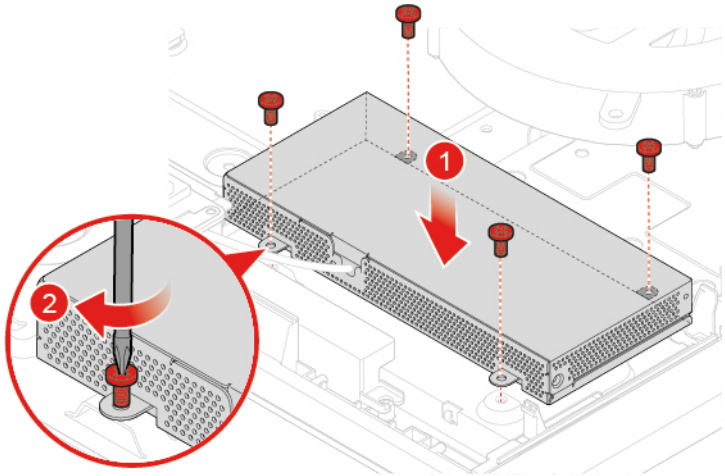


Figure 40. Installing the power supply assembly

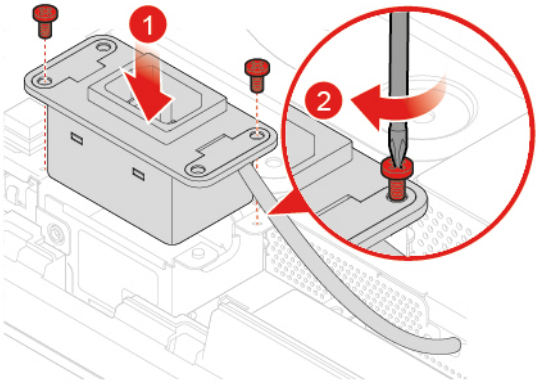


Figure 41. Installing the power cord connector

8. Connect the new power supply assembly cable to the system board.

9. Reinstall the removed parts. To complete the replacement, see “Completing the parts replacement” on page 58.

Replacing the cover presence switch

Attention: Do not open your computer or attempt any repairs before reading the *Important Product Information Guide*.

1. Remove the computer stand. See “Replacing the computer stand” on page 16.
2. Remove the computer cover. See “Removing the computer cover” on page 18.
3. Remove the side I/O bezel. See “Replacing the side I/O bezel” on page 24.
4. Remove the system board shield. See “Replacing the system board shield” on page 25.
5. Remove the VESA mount bracket. See “Replacing the VESA mount bracket” on page 26.
6. Remove the power cord connector. See “Replacing the power supply assembly” on page 27.
7. Disconnect the cover presence switch cable from the system board.
8. Replace the cover presence switch.

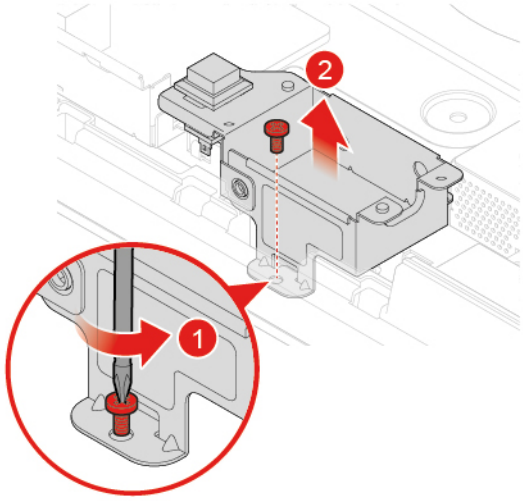


Figure 42. Removing the cover presence switch and the bracket

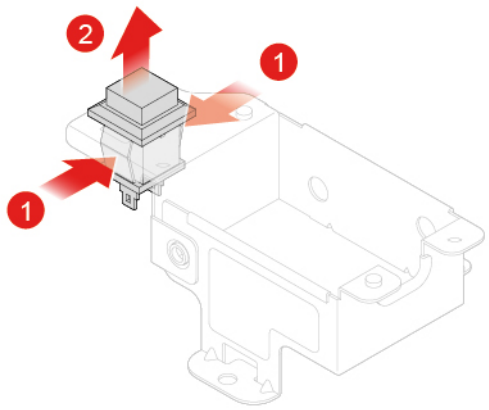


Figure 43. Removing the cover presence switch from the bracket

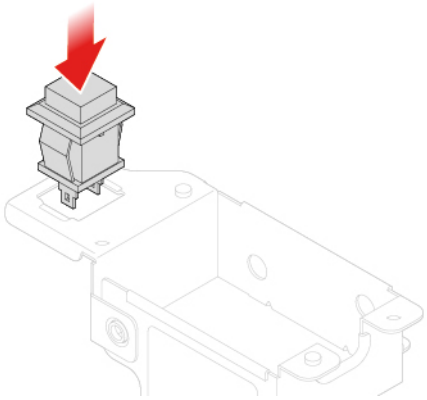


Figure 44. Installing the cover presence switch into the bracket

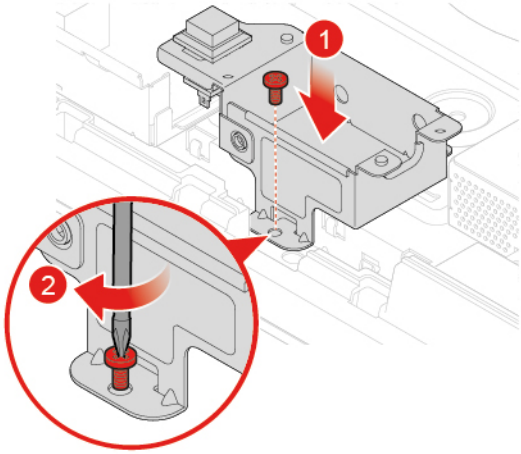


Figure 45. Installing the cover presence switch and the bracket

9. Connect the new cover presence switch cable to the system board.
10. Reinstall the removed parts. To complete the replacement, see “Completing the parts replacement” on page 58.

Replacing the system fan

Attention: Do not open your computer or attempt any repairs before reading the *Important Product Information Guide*.

1. Remove the computer stand. See “Replacing the computer stand” on page 16.
2. Remove the computer cover. See “Removing the computer cover” on page 18.
3. Remove the side I/O bezel. See “Replacing the side I/O bezel” on page 24.
4. Remove the system board shield. See “Replacing the system board shield” on page 25.
5. Remove the VESA mount bracket. See “Replacing the VESA mount bracket” on page 26.
6. Disconnect the system fan cable from the system board.
7. Replace the system fan.

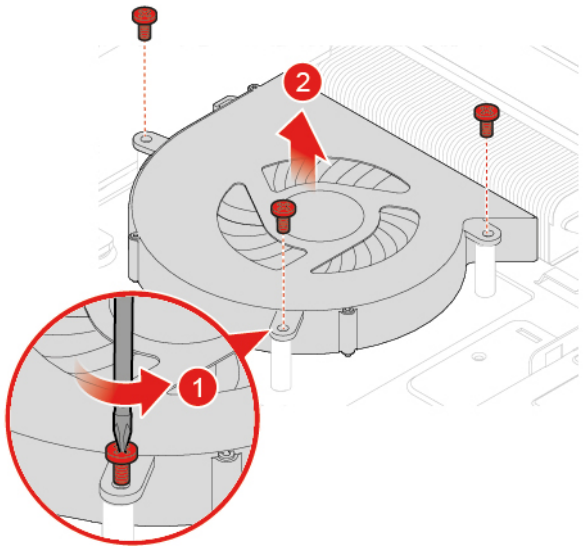


Figure 46. Removing the system fan

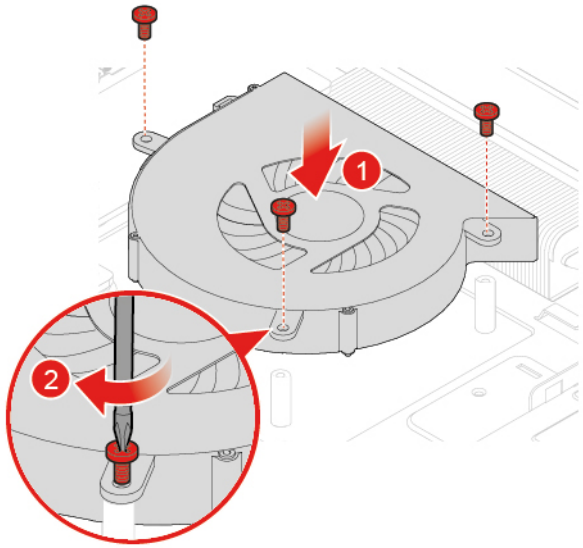


Figure 47. Installing the system fan

8. Connect the new system fan cable to the system board.
9. Reinstall the removed parts. To complete the replacement, see “Completing the parts replacement” on page 58.

Replacing the heat sink

Attention: Do not open your computer or attempt any repairs before reading the *Important Product Information Guide*.

CAUTION:

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.

1. Remove the computer stand. See “Replacing the computer stand” on page 16.
2. Remove the computer cover. See “Removing the computer cover” on page 18.
3. Remove the side I/O bezel. See “Replacing the side I/O bezel” on page 24.
4. Remove the system board shield. See “Replacing the system board shield” on page 25.
5. Replace the heat sink.

   Notes:

   - Carefully remove the screws from the system board to avoid any possible damage to the system board. The screws cannot be removed from the heat sink.
   - You might have to gently twist the heat sink to free it from the microprocessor.
   - Do not touch the thermal grease while handling the heat sink.

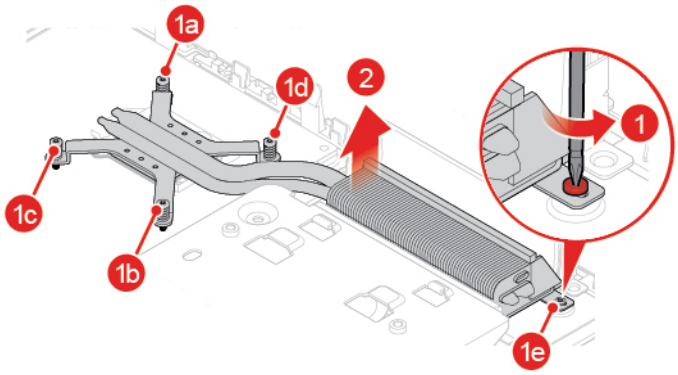


Figure 48. Removing the heat sink

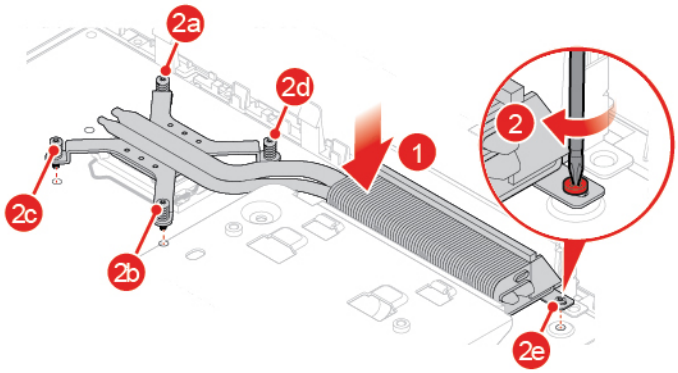


Figure 49. Installing the heat sink

6. Reinstall the removed parts. To complete the replacement, see “Completing the parts replacement” on page 58.

Replacing the microprocessor

Attention: Do not open your computer or attempt any repairs before reading the *Important Product Information Guide*.

CAUTION:

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.

1. Remove the computer stand. See “Replacing the computer stand” on page 16.
2. Remove the computer cover. See “Removing the computer cover” on page 18.
3. Remove the side I/O bezel. See “Replacing the side I/O bezel” on page 24.
4. Remove the system board shield. See “Replacing the system board shield” on page 25.
5. Remove the heat sink. See “Replacing the heat sink” on page 32.
6. Record the cable routing and cable connections, and then disconnect all cables from the system board. See “System board” on page 4.
7. Replace the microprocessor.

   Notes:

   - Your microprocessor and socket might look different from the one illustrated.
   - Touch only the edges of the microprocessor. Do not touch the gold contacts on the bottom.
   - Do not drop anything onto the microprocessor socket while it is exposed. The socket pins must be kept as clean as possible.

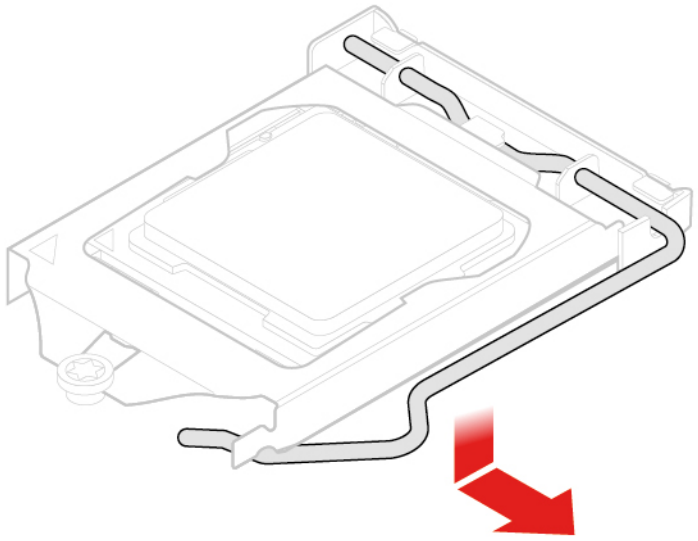


Figure 50. Releasing the handle

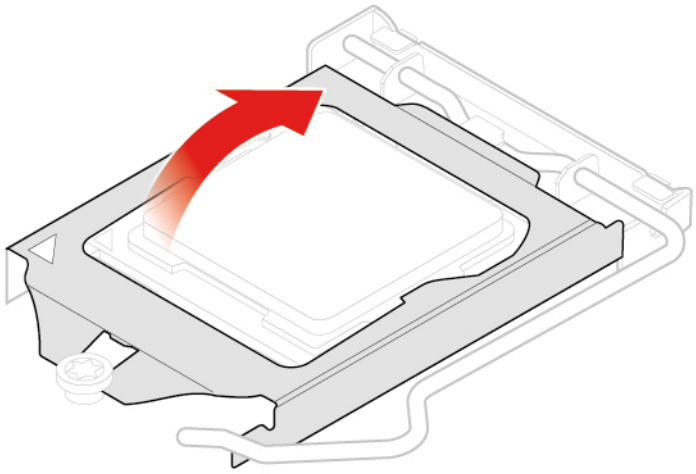


Figure 51. Opening the retainer

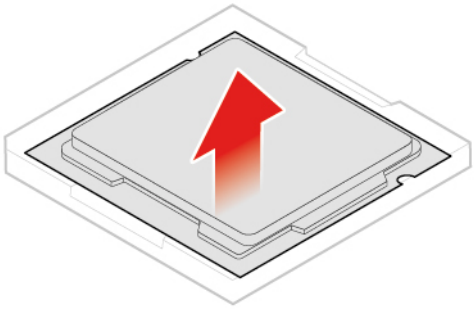


Figure 52. Removing the microprocessor

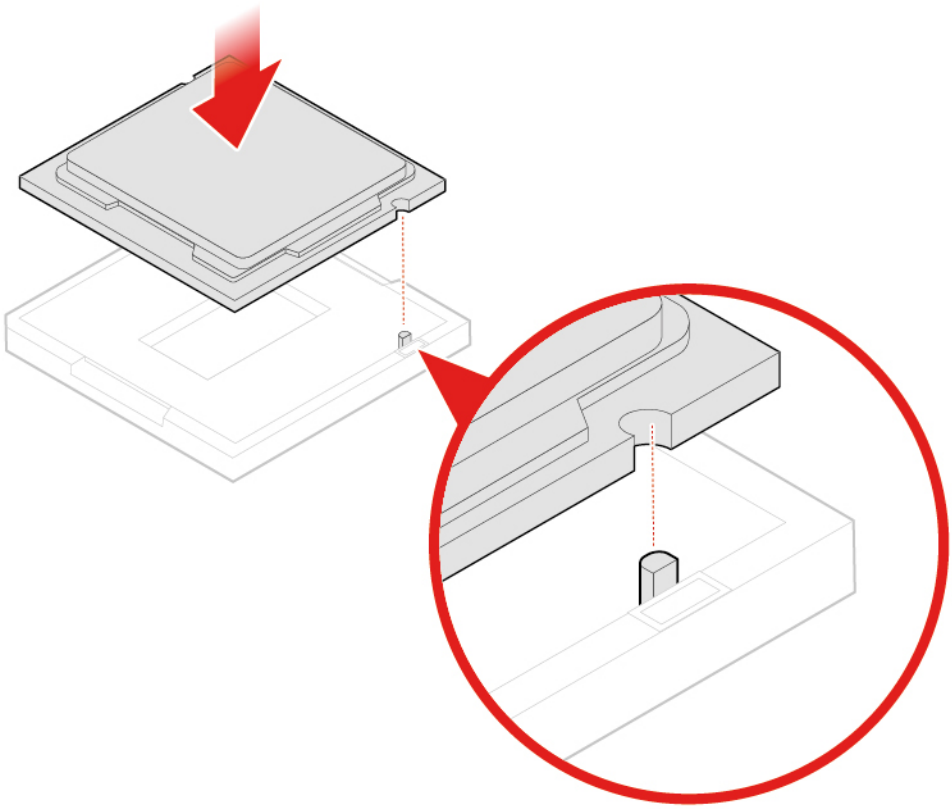


Figure 53. Installing the microprocessor

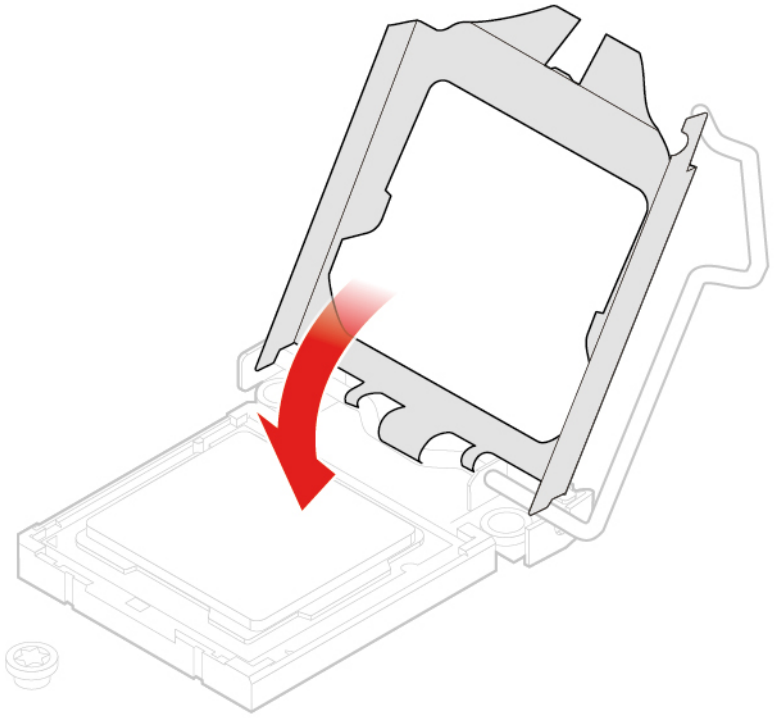


Figure 54. Closing the retainer

8.

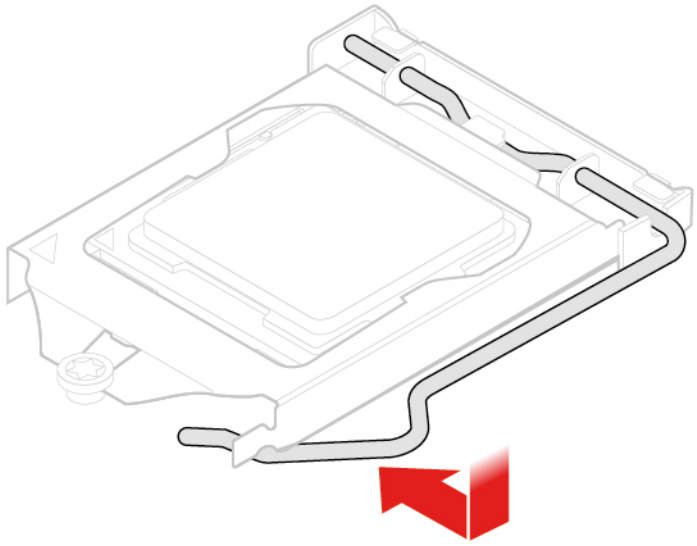


Figure 55. Securing the retainer with the handle

9. Route all the cables that you disconnected from the system board, and then reconnect the cables to the system board.
10. Reinstall the removed parts. To complete the replacement, see “Completing the parts replacement” on page 58.

Replacing the Wi-Fi card

Attention: Do not open your computer or attempt any repairs before reading the *Important Product Information Guide*.

1. Remove the computer stand. See “Replacing the computer stand” on page 16.
2. Remove the computer cover. See “Removing the computer cover” on page 18.
3. Remove the side I/O bezel. See “Replacing the side I/O bezel” on page 24.
4. Remove the system board shield. See “Replacing the system board shield” on page 25.
5. Replace the Wi-Fi card.

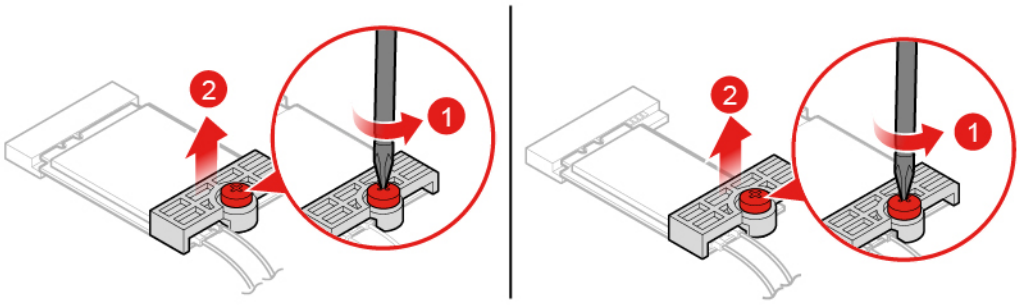


Figure 56. Removing the Wi-Fi card shield

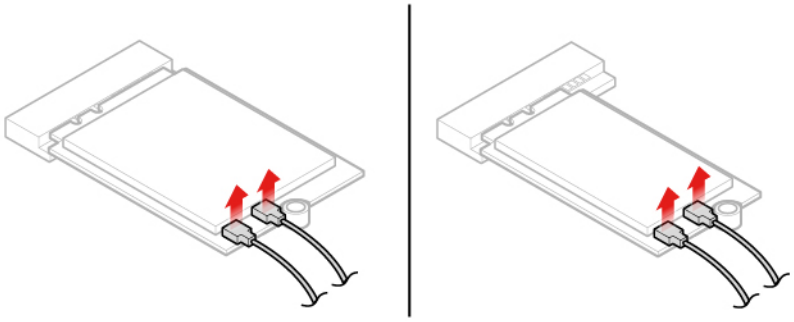


Figure 57. Disconnecting the Wi-Fi antenna cables

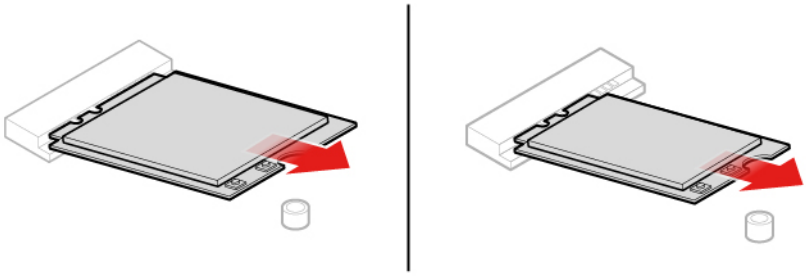


Figure 58. Removing the Wi-Fi card

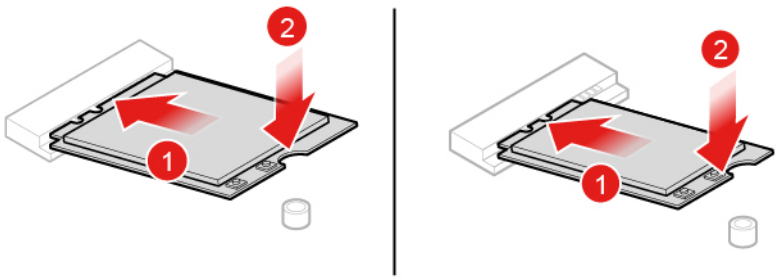


Figure 59. Installing the Wi-Fi card

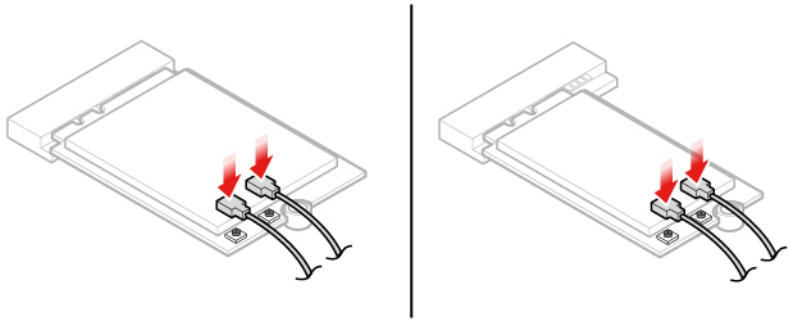


Figure 60. Connecting the Wi-Fi antenna cables

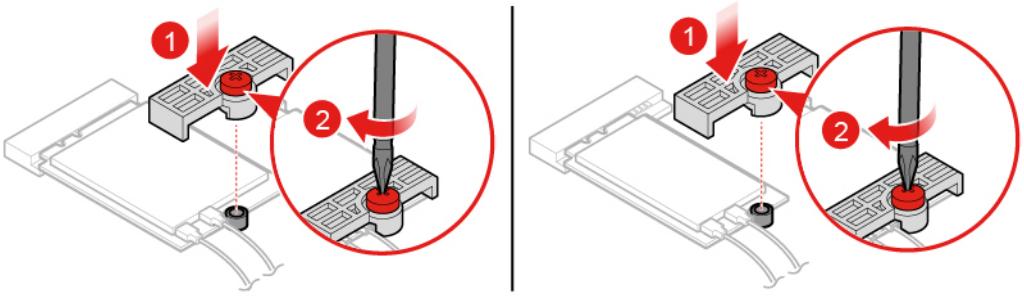


Figure 61. Installing the Wi-Fi card shield

6. Reinstall the removed parts. To complete the replacement, see “Completing the parts replacement” on page 58.

Replacing the serial connector module

Attention: Do not open your computer or attempt any repairs before reading the *Important Product Information Guide*.

1. Remove the computer stand. See “Replacing the computer stand” on page 16.
2. Remove the computer cover. See “Removing the computer cover” on page 18.
3. Remove the side I/O bezel. See “Replacing the side I/O bezel” on page 24.
4. Remove the system board shield. See “Replacing the system board shield” on page 25.
5. Replace the serial connector module.

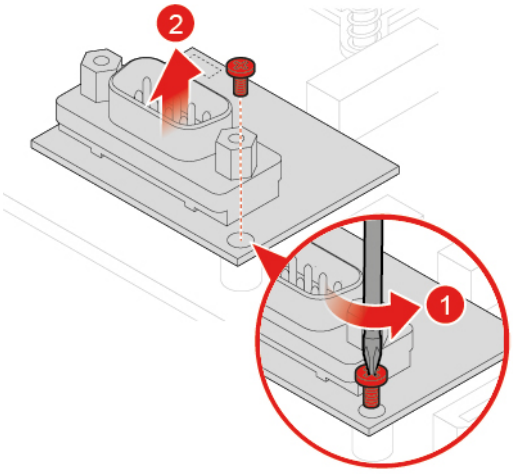


Figure 62. Removing the serial connector module

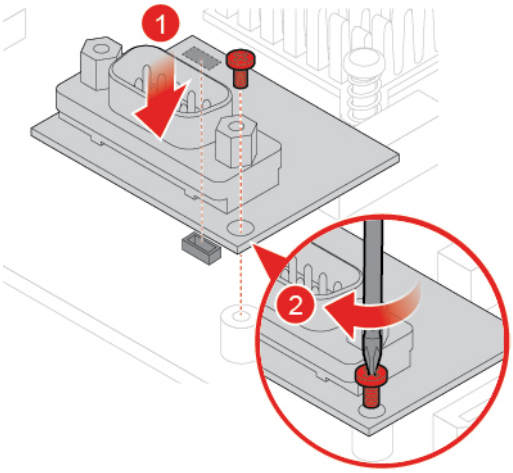


Figure 63. Installing the serial connector module

6. Reinstall the removed parts. To complete the replacement, see “Completing the parts replacement” on page 58.

Replacing the M.2 solid-state drive

Attention: Do not open your computer or attempt any repairs before reading the *Important Product Information Guide*.

1. Remove the computer stand. See “Replacing the computer stand” on page 16.
2. Remove the computer cover. See “Removing the computer cover” on page 18.
3. Remove the side I/O bezel. See “Replacing the side I/O bezel” on page 24.
4. Remove the system board shield. See “Replacing the system board shield” on page 25.
5. Depending on your computer model, refer to one of the following to replace the M.2 solid-state drive.
   - Type 1

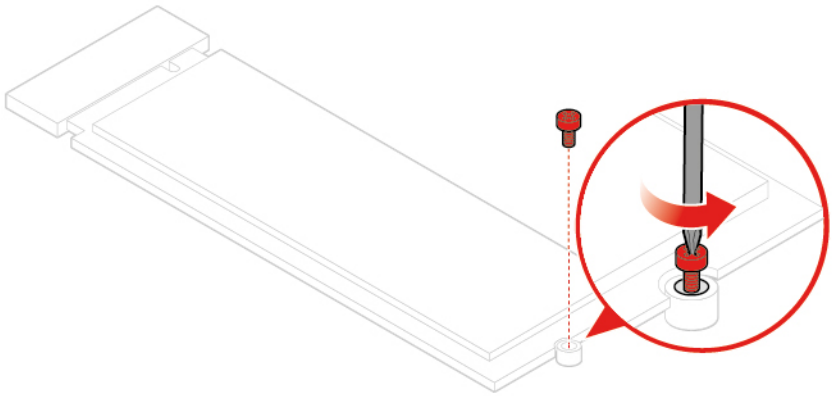


Figure 64. Removing the screw

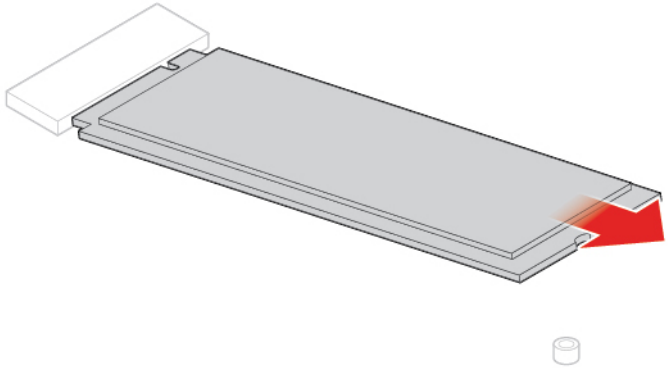


Figure 65. Removing the M.2 solid-state drive

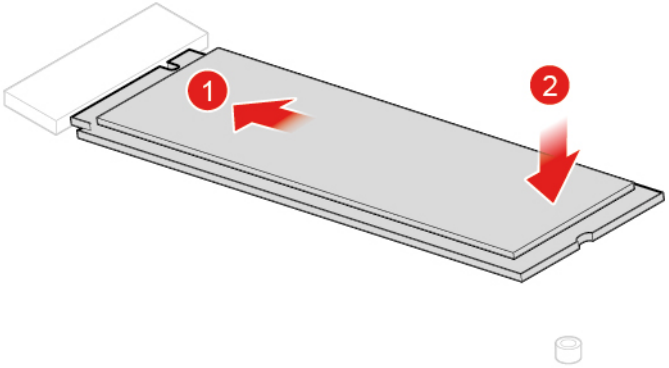


Figure 66. Installing the M.2 solid-state drive

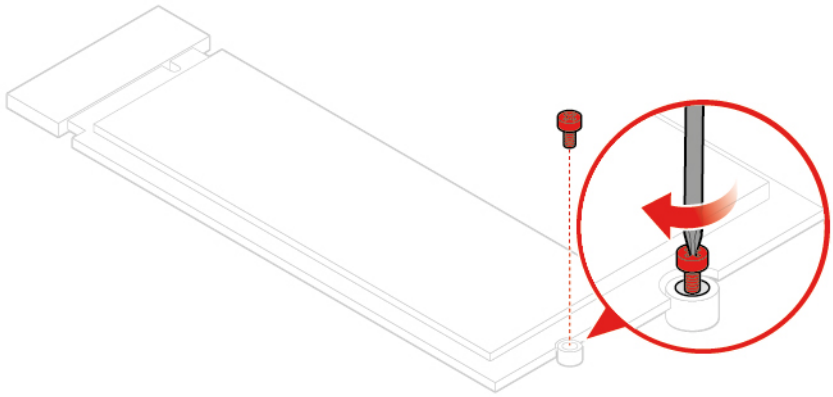


Figure 67. Installing the screw

- Type 2

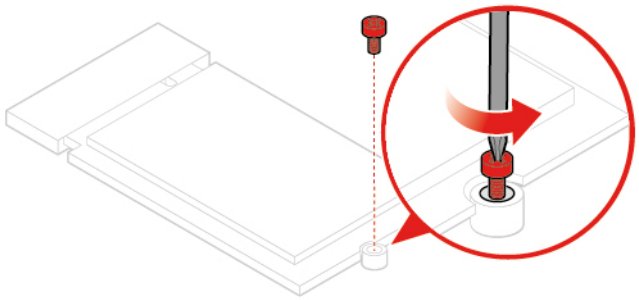


Figure 68. Removing the screw

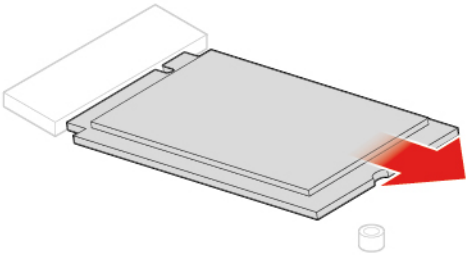


Figure 69. Removing the M.2 solid-state drive

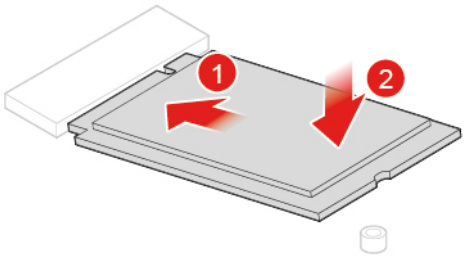


Figure 70. Installing the M.2 solid-state drive

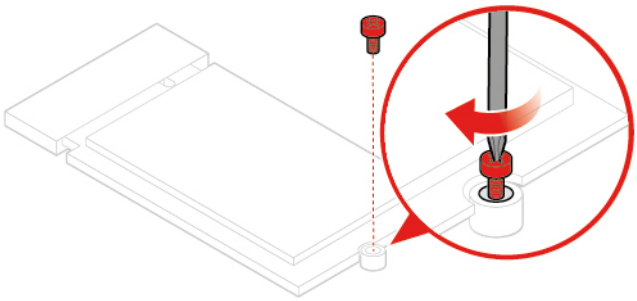


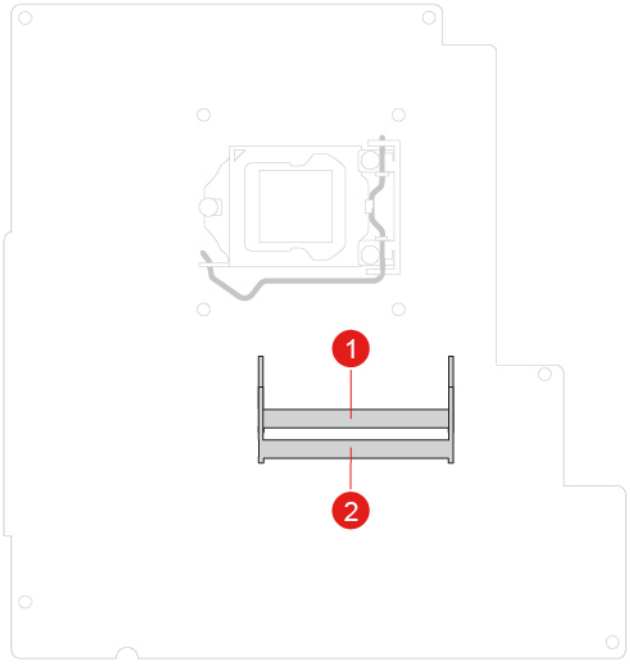
Figure 71. Installing the screw

6. Reinstall the removed parts. To complete the replacement, see “Completing the parts replacement” on page 58.

Replacing a memory module

Attention: Do not open your computer or attempt any repairs before reading the *Important Product Information Guide*.

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



1. Remove the computer stand. See “Replacing the computer stand” on page 16.
2. Remove the computer cover. See “Removing the computer cover” on page 18.
3. Remove the side I/O bezel. See “Replacing the side I/O bezel” on page 24.
4. Remove the system board shield. See “Replacing the system board shield” on page 25.
5. Replace a memory module.

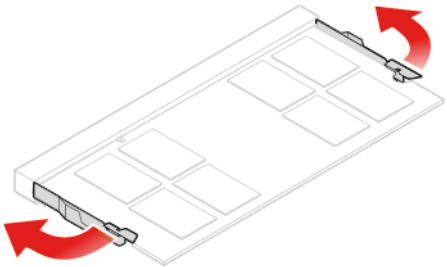


Figure 72. Disengaging the latches

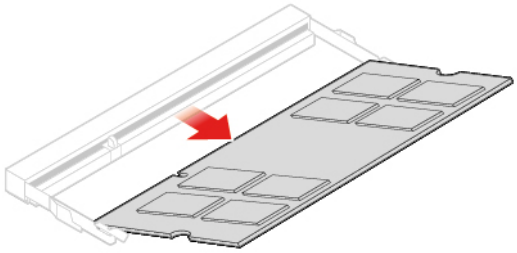


Figure 73. Removing a memory module

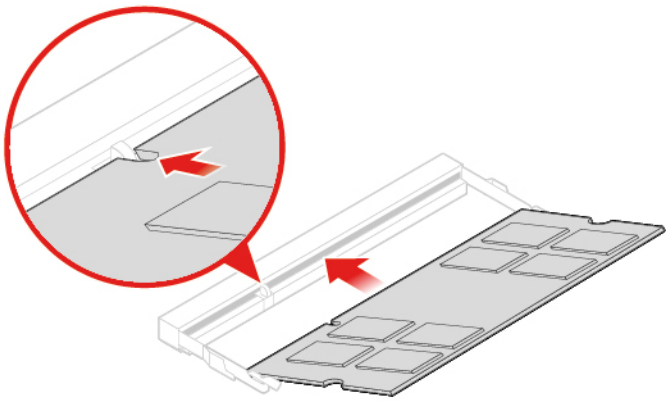


Figure 74. Installing a memory module

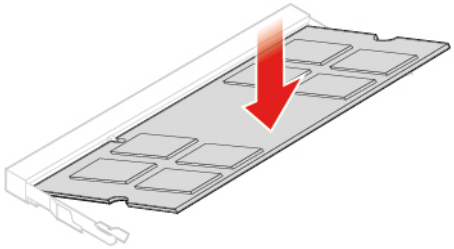


Figure 75. Securing a memory module with the latches

6. Reinstall the removed parts. To complete the replacement, see “Completing the parts replacement” on page 58.

Replacing the coin-cell battery

Attention: Do not open your computer or attempt any repairs before reading the *Important Product Information Guide*.

Note: To dispose of the coin-cell battery, refer to “Lithium coin-cell battery notice” in the *Safety and Warranty Guide*.

Your computer has a special type of memory that maintains the date, time, and settings for built-in features, such as parallel connector assignments (configurations). A coin-cell battery keeps this information active when you turn off the computer.

The coin-cell battery normally requires no charging or maintenance throughout its life; however, no coin-cell battery lasts forever. If the coin-cell battery fails, the date, time, and configuration information (including passwords) are lost. An error message is displayed when you turn on the computer.

1. Remove the computer stand. See “Replacing the computer stand” on page 16.
2. Remove the computer cover. See “Removing the computer cover” on page 18.
3. Remove the side I/O bezel. See “Replacing the side I/O bezel” on page 24.
4. Remove the system board shield. See “Replacing the system board shield” on page 25.
5. Replace the coin-cell battery.

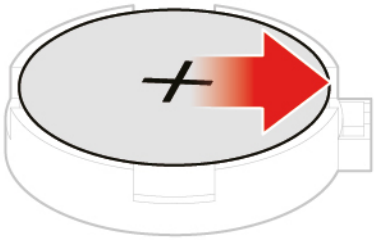


Figure 76. Disengaging the latch

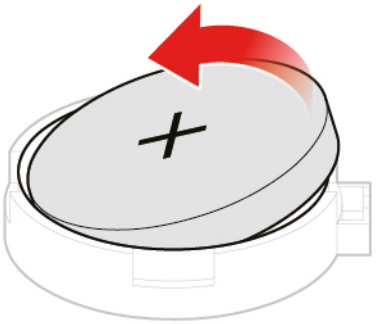


Figure 77. Removing the coin-cell battery

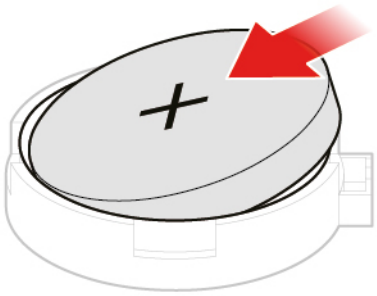


Figure 78. Installing the coin-cell battery

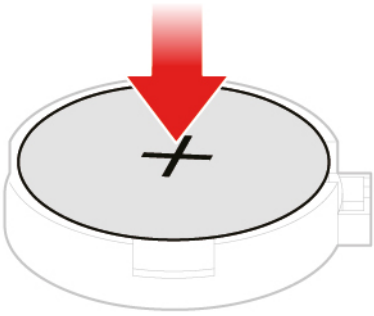


Figure 79. Securing the coin-cell battery with the latch

6. Reinstall the removed parts. To complete the replacement, see “Completing the parts replacement” on page 58.

Replacing the card reader

Attention: Do not open your computer or attempt any repairs before reading the *Important Product Information Guide*.

1. Remove the computer stand. See “Replacing the computer stand” on page 16.
2. Remove the computer cover. See “Removing the computer cover” on page 18.
3. Remove the side I/O bezel. See “Replacing the side I/O bezel” on page 24.
4. Remove the system board shield. See “Replacing the system board shield” on page 25.
5. Disconnect the card reader cable from the system board.
6. Replace the card reader.

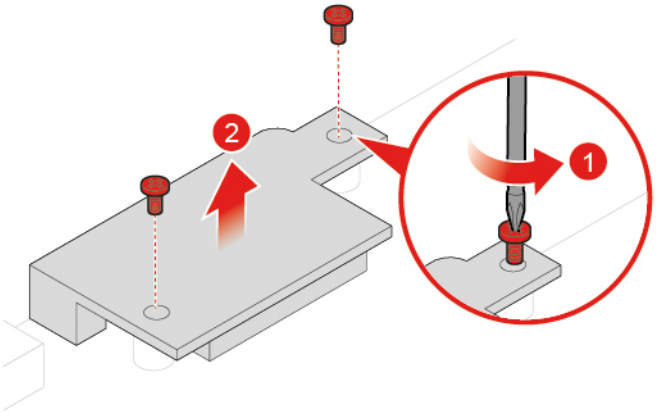


Figure 80. Removing the card reader

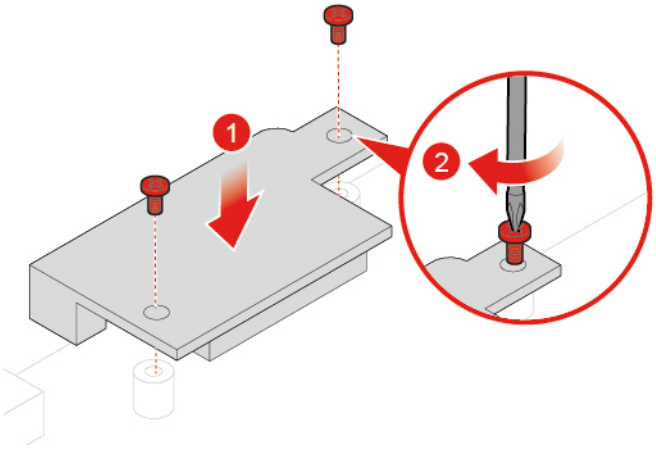


Figure 81. Installing the card reader

7. Connect the new card reader cable to the system board.
8. Reinstall the removed parts. To complete the replacement, see “Completing the parts replacement” on page 58.

Replacing the system board

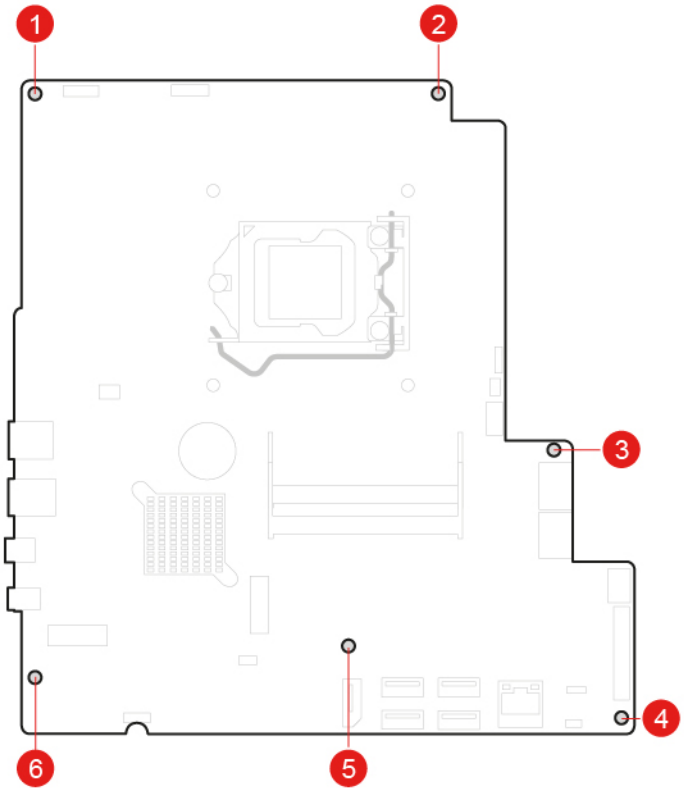
Attention: Do not open your computer or attempt any repairs before reading the *Important Product Information Guide*.

1. Remove the computer stand. See “Replacing the computer stand” on page 16.
2. Remove the computer cover. See “Removing the computer cover” on page 18.
3. Remove the side I/O bezel. See “Replacing the side I/O bezel” on page 24.
4. Remove the system board shield. See “Replacing the system board shield” on page 25.
5. Remove the VESA mount bracket. See “Replacing the VESA mount bracket” on page 26.
6. Remove the heat sink. See “Replacing the heat sink” on page 32.
7. Remove the microprocessor. See “Replacing the microprocessor” on page 33.
8. Remove the Wi-Fi card. See “Replacing the Wi-Fi card” on page 38.

9. Remove the serial connector module. See “Replacing the serial connector module” on page 39.
10. Remove the M.2 solid-state drive. See “Replacing the M.2 solid-state drive” on page 40.
11. Remove all memory modules. See “Replacing a memory module” on page 43.
12. Remove the card reader. See “Replacing the card reader” on page 47.
13. Record the cable routing and cable connections, and then disconnect all cables from the system board. See “System board” on page 4.
14. Replace the system board.

    Notes:

    - The numbers in the following figure show the locations of the screws instead of a specific order for removing and reinstalling the screws.
    - Handle the system board carefully by its edges.
    - The failing system board must be returned with a microprocessor socket cover to protect the pins during shipping and handling.



15. Route and connect all the cables to the new system board.
16. Reinstall the removed parts. To complete the replacement, see “Completing the parts replacement” on page 58.

Replacing the integrated camera and microphone module

Attention: Do not open your computer or attempt any repairs before reading the *Important Product Information Guide*.

1. Remove the computer stand. See “Replacing the computer stand” on page 16.
2. Remove the computer cover. See “Removing the computer cover” on page 18.

3. Remove the side I/O bezel. See “Replacing the side I/O bezel” on page 24.
4. Remove the system board shield. See “Replacing the system board shield” on page 25.
5. Replace the integrated camera and microphone module.

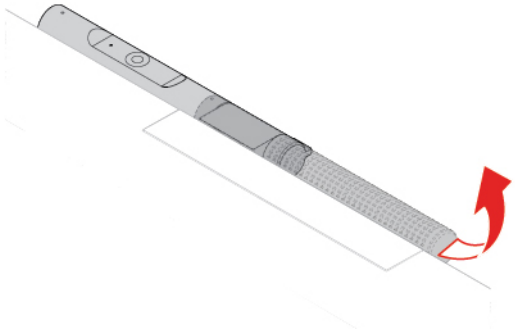


Figure 82. Turning the integrated camera and microphone module around

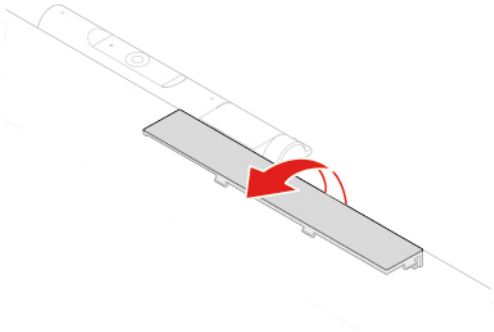


Figure 83. Removing the integrated camera and microphone module cover

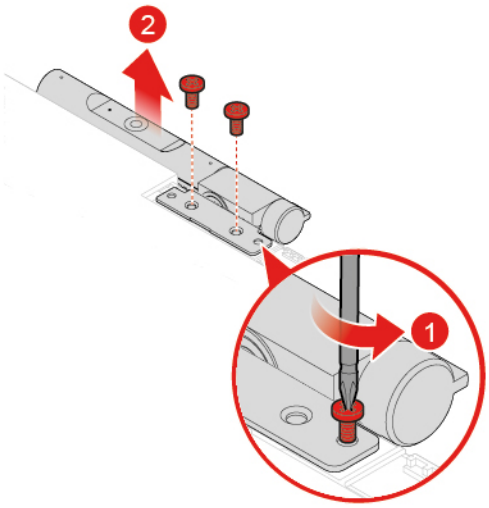


Figure 84. Removing the integrated camera and microphone module from the back frame

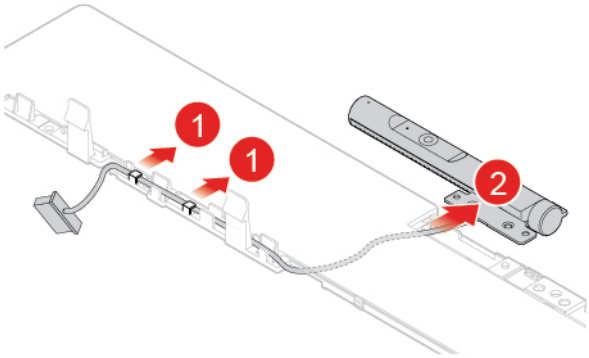


Figure 85. Disconnecting and removing the integrated camera and microphone module cable

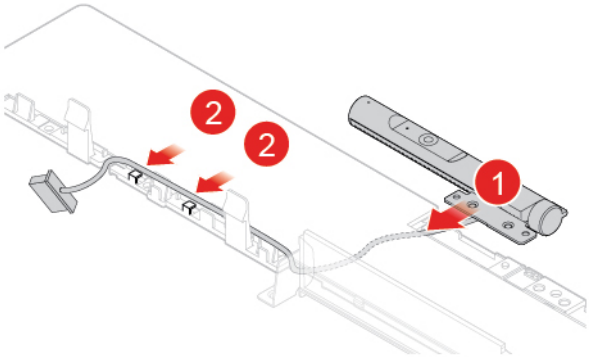


Figure 86. Installing and connecting the integrated camera and microphone module cable

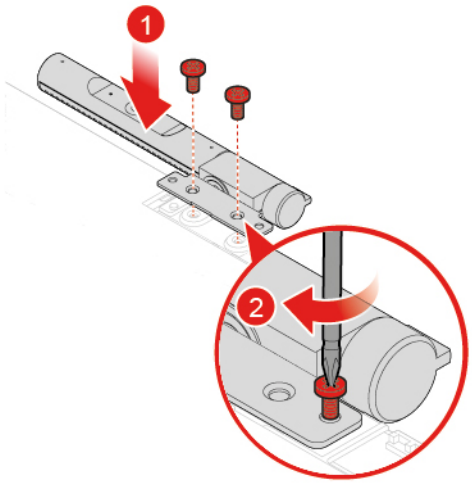


Figure 87. Installing the integrated camera and microphone module

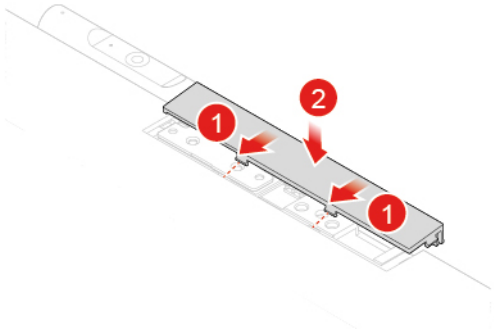


Figure 88. Installing the integrated camera and microphone module cover

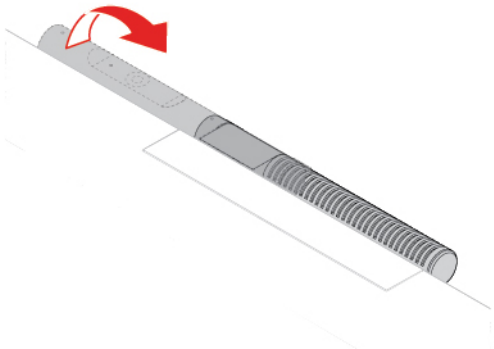


Figure 89. Turning the integrated camera and microphone module back

6. Reinstall the removed parts. To complete the replacement, see “Completing the parts replacement” on page 58.

Replacing the back frame

Attention: Do not open your computer or attempt any repairs before reading the *Important Product Information Guide*.

1. Remove the computer stand. See “Replacing the computer stand” on page 16.
2. Remove the computer cover. See “Removing the computer cover” on page 18.
3. Remove the side I/O bezel. See “Replacing the side I/O bezel” on page 24.
4. Remove the system board shield. See “Replacing the system board shield” on page 25.
5. Remove the VESA mount bracket. See “Replacing the VESA mount bracket” on page 26.
6. Remove the system board. See “Replacing the system board” on page 48.
7. Remove the integrated camera and microphone module. See “Replacing the integrated camera and microphone module” on page 49.
8. Replace the back frame.

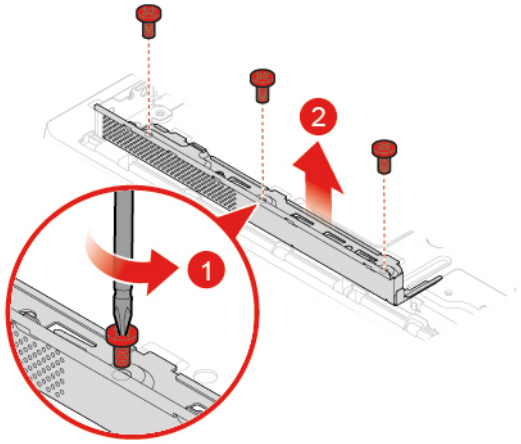


Figure 90. Removing the system board shielding fence

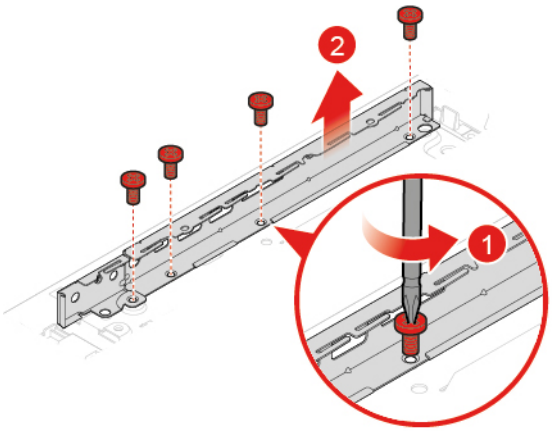


Figure 91. Removing the side I/O bracket

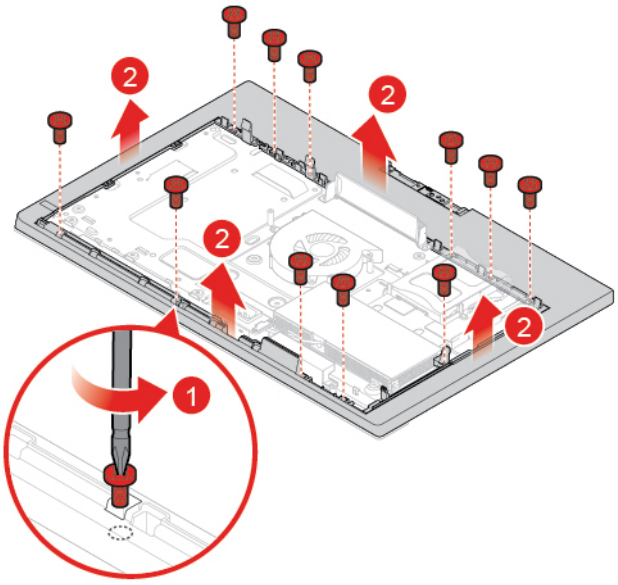


Figure 92. Removing the back frame

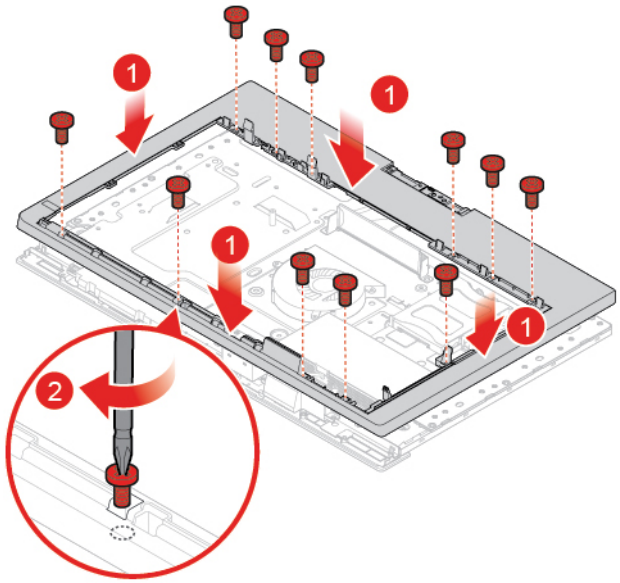


Figure 93. Installing the back frame

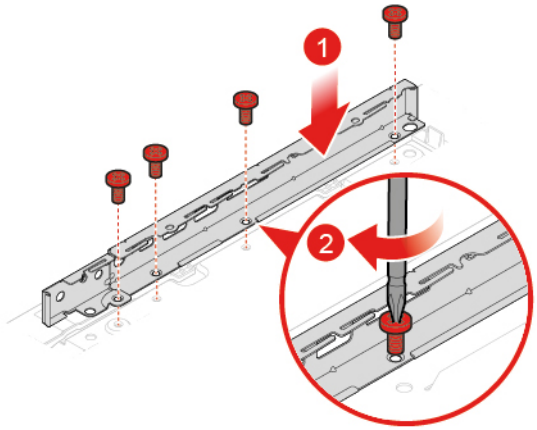


Figure 94. Installing the side I/O bracket

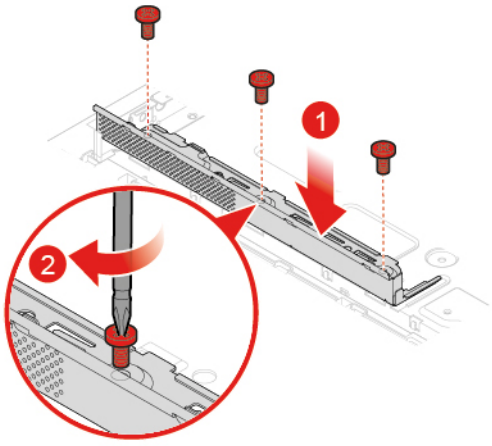


Figure 95. Installing the system board shielding fence

9. Reinstall the removed parts. To complete the replacement, see “Completing the parts replacement” on page 58.

Replacing the internal speakers

Attention: Do not open your computer or attempt any repairs before reading the *Important Product Information Guide*.

1. Remove the computer stand. See “Replacing the computer stand” on page 16.
2. Remove the computer cover. See “Removing the computer cover” on page 18.
3. Remove the side I/O bezel. See “Replacing the side I/O bezel” on page 24.
4. Remove the system board shield. See “Replacing the system board shield” on page 25.
5. Remove the VESA mount bracket. See “Replacing the VESA mount bracket” on page 26.
6. Remove the power cord connector. See “Replacing the power supply assembly” on page 27.
7. Remove the heat sink. See “Replacing the heat sink” on page 32.
8. Remove the system board. See “Replacing the system board” on page 48.
9. Remove the integrated camera and microphone module. See “Replacing the integrated camera and microphone module” on page 49.
10. Remove the back frame. See “Replacing the back frame” on page 52.
11. Replace the internal speakers.

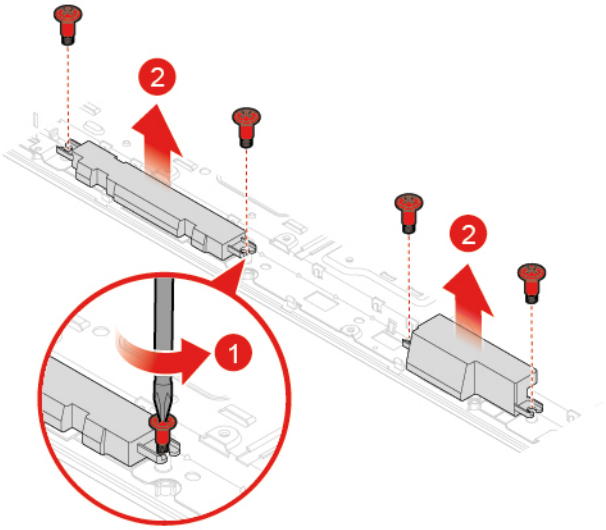


Figure 96. Removing the internal speakers

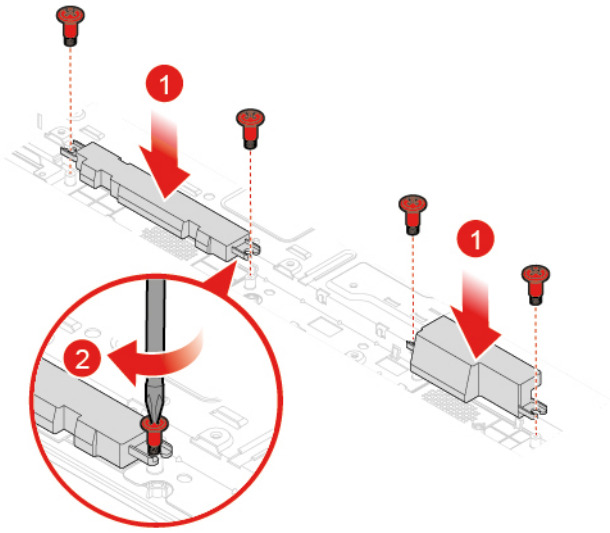


Figure 97. Installing the internal speakers

12. Reinstall the removed parts. To complete the replacement, see “Completing the parts replacement” on page 58.

Replacing the Wi-Fi antennas

Attention: Do not open your computer or attempt any repairs before reading the *Important Product Information Guide*.

1. Remove the computer stand. See “Replacing the computer stand” on page 16.
2. Remove the computer cover. See “Removing the computer cover” on page 18.
3. Remove the side I/O bezel. See “Replacing the side I/O bezel” on page 24.
4. Remove the system board shield. See “Replacing the system board shield” on page 25.
5. Remove the VESA mount bracket. See “Replacing the VESA mount bracket” on page 26.
6. Remove the power cord connector. See “Replacing the power supply assembly” on page 27.
7. Remove the heat sink. See “Replacing the heat sink” on page 32.
8. Remove the system board. See “Replacing the system board” on page 48.
9. Remove the integrated camera and microphone module. See “Replacing the integrated camera and microphone module” on page 49.
10. Remove the back frame. See “Replacing the back frame” on page 52.
11. Remove the internal speakers. See “Replacing the internal speakers” on page 55.
12. Record the routing of the Wi-Fi antenna cables, and then disconnect the cables from the Wi-Fi card. See “Replacing the Wi-Fi card” on page 38.
13. Replace the Wi-Fi antennas.

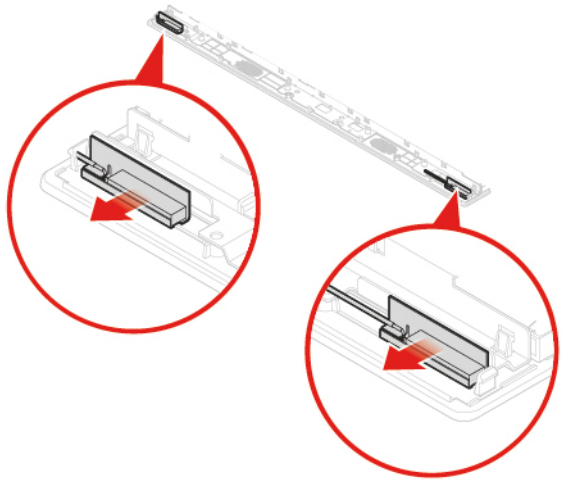


Figure 98. Removing the Wi-Fi antennas

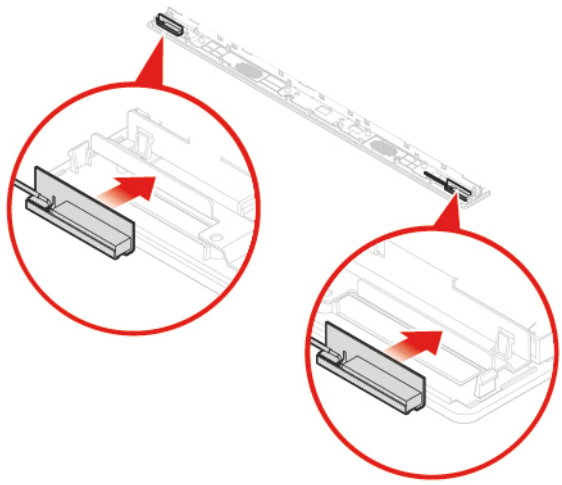


Figure 99. Installing the Wi-Fi antennas

14. Route the new Wi-Fi antenna cables, and then connect the cables to the Wi-Fi card.
15. Reinstall the removed parts. To complete the replacement, see “Completing the parts replacement” on page 58.

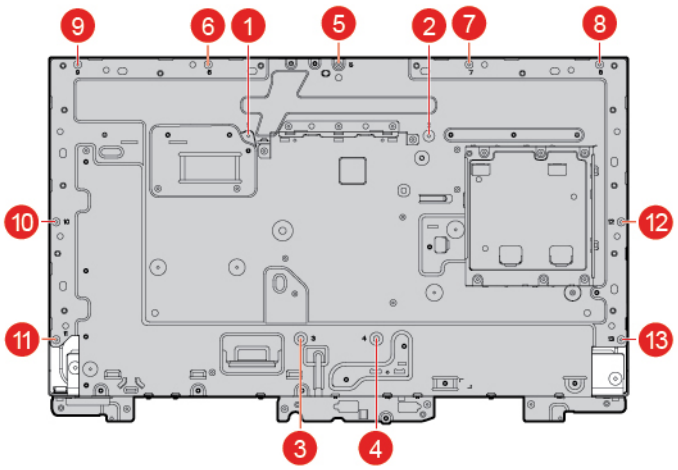
Replacing the LCD panel

Attention: Do not open your computer or attempt any repairs before reading the *Important Product Information Guide*.

1. Remove the computer stand. See “Replacing the computer stand” on page 16.
2. Remove the computer cover. See “Removing the computer cover” on page 18.
3. Remove the storage drive. See “Replacing the storage drive” on page 19.
4. Remove the optical drive. See “Replacing the optical drive” on page 21.
5. Remove the optical drive cable. See “Replacing the optical drive and storage drive cables” on page 24.
6. Remove the side I/O bezel. See “Replacing the side I/O bezel” on page 24.
7. Remove the system board shield. See “Replacing the system board shield” on page 25.

8. Remove the VESA mount bracket. See “Replacing the VESA mount bracket” on page 26.
9. Remove the power supply assembly. See “Replacing the power supply assembly” on page 27.
10. Remove the cover presence switch. See “Replacing the cover presence switch” on page 30.
11. Remove the system fan. See “Replacing the system fan” on page 31.
12. Remove the heat sink. See “Replacing the heat sink” on page 32.
13. Remove the system board. See “Replacing the system board” on page 48.
14. Remove the integrated camera and microphone module. See “Replacing the integrated camera and microphone module” on page 49.
15. Remove the back frame. See “Replacing the back frame” on page 52.
16. Remove the internal speakers. See “Replacing the internal speakers” on page 55.
17. Remove the Wi-Fi antennas. See “Replacing the Wi-Fi antennas” on page 56.
18. Replace the LCD panel.

    Note: Ensure that you remove and reinstall the screws in order of the numbers as shown.



19. Reinstall the removed parts. To complete the replacement, see “Completing the parts replacement” on page 58.

Completing the parts replacement

After completing the installation or replacement for all parts, reinstall the computer cover and reconnect the cables.

To reinstall the computer cover and reconnect the cables to your computer, do the following:

1. Ensure that all components have been reassembled correctly and that no tools or loose screws are left inside your computer.
2. Ensure that the cables are routed correctly before reinstalling the computer cover. Keep cables clear of the hinges and sides of the computer chassis to avoid interference when reinstalling the computer cover.

3. Reinstall the computer cover.

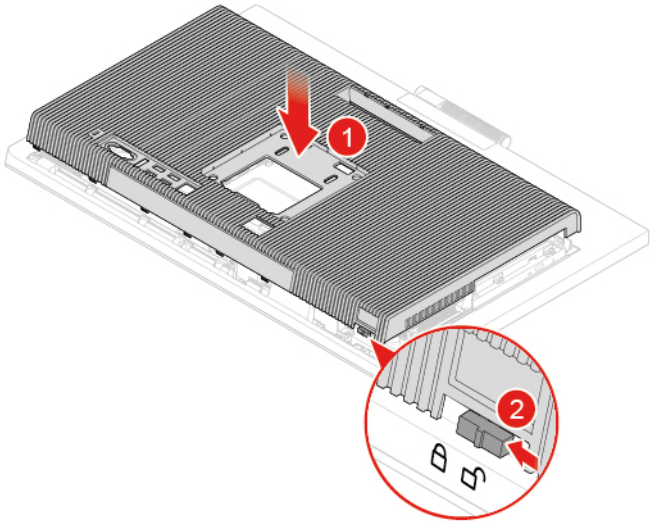


Figure 100. Reinstalling the computer cover

4. Reinstall the computer stand. See “Replacing the computer stand” on page 16.
5. Place the computer in an upright position.
6. If a locking device is available, use it to lock the computer.
7. Reconnect the external cables and power cords to the corresponding connectors on the computer.

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