

---

## Chapter 9. Replacing FRUs (Machine types: 3026, 3039, 3137, 3149, 3245, 3269, 3319, 3394, 3491, 3627, 3699, 3878, 4972, 5132, 5261, 5297, 5391, 5472, 5485, 5536, 5548, 5567, 5864, and 6213.)

### Important

Be sure to read and understand Chapter 2 “Safety information” on page 3 before you replace any FRU. These precautions and guidelines will help you work safely.

FRU replacements are to be done only by trained service technicians.

This chapter does not contain the remove or replace procedure for all FRUs. Only the major FRUs are documented.

---

### Locating connectors on the front of the computer

Front connector locations shows the locations of the connectors on the front of your computer.

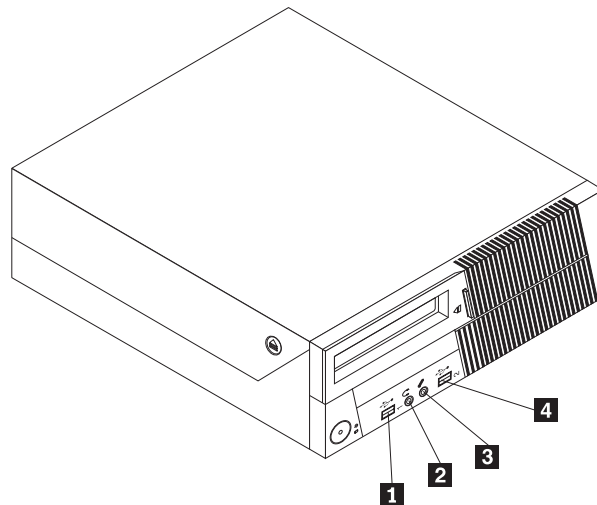


Figure 38. Front connector locations

**1** USB connector

**2** Headphone connector

**3** Microphone connector

**4** USB connector

---

### Locating connectors on the rear of the computer

Rear connector locations shows the location of connectors on the rear of the computer. Some connectors on the rear of the computer are color-coded to help you determine where to connect the cables on your computer.

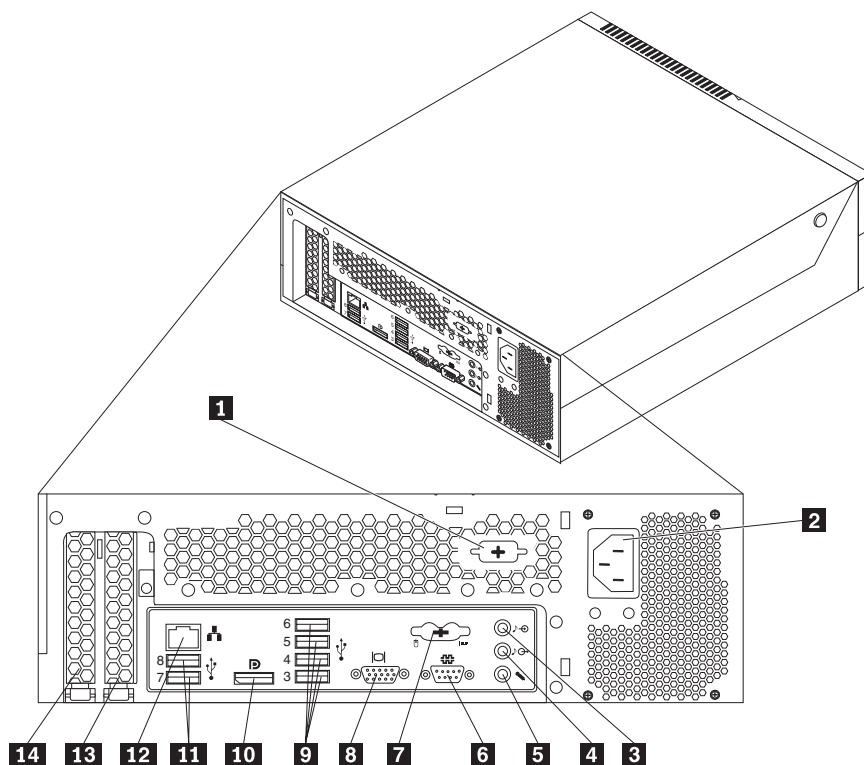


Figure 39. Rear connector locations

- |  |   |
|--|---|
| <b>1</b> Optional serial port                          | <b>8</b> VGA monitor connector (not applicable on some models)  |
| <b>2</b> Power cord connector                          | <b>9</b> USB connectors (4)                                     |
| <b>3</b> Audio line-in connector                       | <b>10</b> DisplayPort connector (not applicable on some models) |
| <b>4</b> Audio line-out connector                      | <b>11</b> USB connectors (2)                                    |
| <b>5</b> Microphone connector                          | <b>12</b> Ethernet connector                                    |
| <b>6</b> Serial port                                   | <b>13</b> PCI Express x16 graphics card slot                    |
| <b>7</b> PS/2 keyboard and mouse connectors (optional) | <b>14</b> PCI card slot   |

## Opening the computer cover

### Attention

Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre Safety and Warranty Guide* that came with your computer. To obtain a copy of the *ThinkCentre Safety and Warranty Guide*, go to: <http://www.lenovo.com/support>

This section provides instructions on how to open the computer cover.

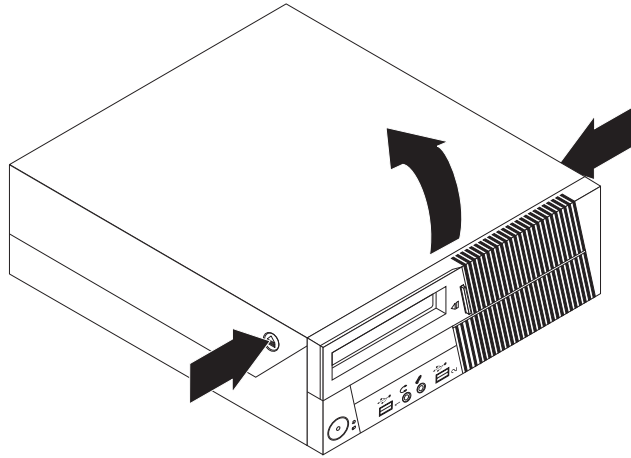
### CAUTION:



Turn off the computer and wait three to five minutes to let the computer cool before opening the computer cover.

To open the computer cover, do the following:

1. Remove any media from the drives and turn off all attached devices and the computer.
2. Disconnect all power cords from electrical outlets.
3. Disconnect the power cords, Input/Output (I/O) cables, and any other cables that are connected to the computer. See “Locating connectors on the front of the computer” on page 97 and “Locating connectors on the rear of the computer” on page 97.
4. Remove any locking device that secures the computer cover, such as an integrated cable lock.
5. Press the cover-release buttons on the sides of the computer and pivot the computer cover upward.



*Figure 40. Opening the computer cover*

---

## Locating components

Figure 41 “Component locations” on page 100 shows the locations of the various components in your computer. To open the computer cover, see “Opening the computer cover” on page 98.

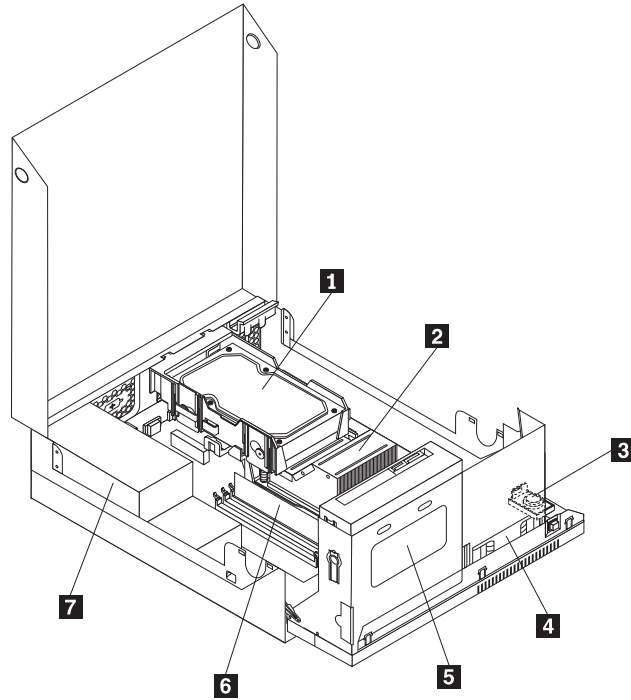


Figure 41. Component locations

- |  |                                |
|--|--------------------------------|
| <b>1</b> Hard disk drive (installed in some models)  | <b>5</b> Optical drive         |
| <b>2</b> Heat sink                                   | <b>6</b> Memory module         |
| <b>3</b> Internal speaker (installed in some models) | <b>7</b> Power supply assembly |
| <b>4</b> System fan assembly                         |                                |

---

## Locating parts on the system board

Figure 42 “System board parts locations” on page 101 shows the locations of the parts on the system board.

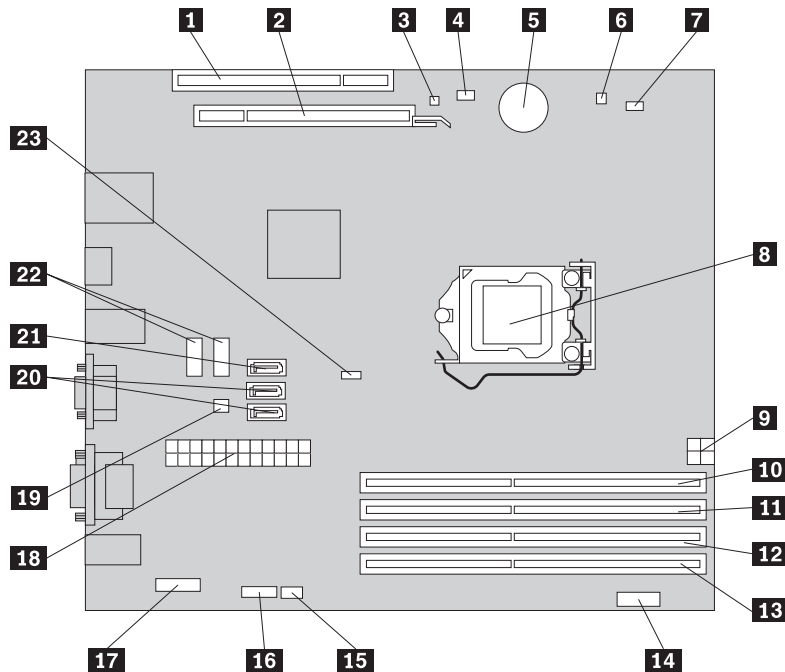


Figure 42. System board parts locations

- |   |   |
|---|---|
| <b>1</b> PCI card slot  | <b>13</b> Memory slot 3   |
| <b>2</b> PCI Express x16 graphics card slot                           | <b>14</b> Front panel connector   |
| <b>3</b> Internal speaker connector                                   | <b>15</b> PS/2 keyboard and mouse connector                                     |
| <b>4</b> Cover presence switch connector (Intrusion switch connector) | <b>16</b> Serial (COM 2) connector  |
| <b>5</b> Battery  | <b>17</b> Front audio connector   |
| <b>6</b> Thermal sensor connector                                     | <b>18</b> 24-pin power connector  |
| <b>7</b> Microprocessor fan connector                                 | <b>19</b> Power fan connector   |
| <b>8</b> Microprocessor   | <b>20</b> SATA connectors (2)   |
| <b>9</b> 4-pin power connector  | <b>21</b> eSATA connector   |
| <b>10</b> Memory slot 2   | <b>22</b> Front USB connectors (2)  |
| <b>11</b> Memory slot 1   | <b>23</b> Clear CMOS (Complementary Metal Oxide Semiconductor) /Recovery jumper |
| <b>12</b> Memory slot 4   |   |

## Replacing the battery

### Attention

Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre Safety and Warranty Guide* that came with your computer. To obtain a copy of the *ThinkCentre Safety and Warranty Guide*, go to:  
<http://www.lenovo.com/support>

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

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

Refer to the “Lithium battery notice” in the *ThinkCentre Safety and Warranty Guide* for information about replacing and disposing of the battery.

To replace the battery, do the following:

1. Turn off the computer and disconnect all power cords from electrical outlets.
2. Open the computer cover. See “Opening the computer cover” on page 98.
3. Locate the battery. See “Locating parts on the system board” on page 100.
4. Remove the old battery.

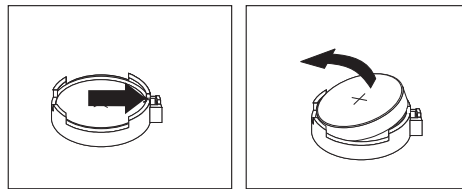


Figure 43. Removing the old battery

5. Install a new battery.

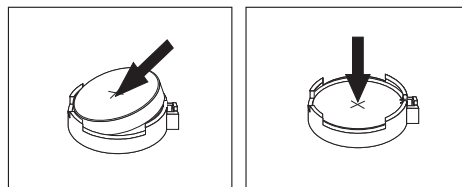


Figure 44. Installing a new battery

6. Close the computer cover and connect the cables. See “Completing the parts replacement” on page 94.

**Note:** When the computer is turned on for the first time after replacing the battery, an error message might be displayed. This is normal after replacing the battery.

7. Turn on the computer and all attached devices.
8. Use the Setup Utility program to set the date, time, and any passwords. See Chapter 6 “Using the Setup Utility program” on page 37.
9. Go to “Completing the parts replacement” on page 123.

---

## Replacing a memory module

### Attention

Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre Safety and Warranty Guide* that came with your computer. To obtain a copy of the *ThinkCentre Safety and Warranty Guide*, go to:  
<http://www.lenovo.com/support>

This section provides instructions on how to install or replace a memory module.

Your computer has four slots for installing or replacing DDR3 DIMMs that provide up to a maximum of 16 GB system memory. When installing or replacing a memory module, use the following guidelines:

- Use 1 GB, 2 GB, or 4 GB DDR3 DIMMs in any combination up to a maximum of 16 GB.
- Install memory modules in the sequence of DIMM 1, DIMM 3, DIMM 2, and DIMM 4. See “Locating parts on the system board” on page 100.

To install or replace a memory module, do the following:

1. Turn off the computer and disconnect all power cords from electrical outlets.
2. Open the computer cover. See “Opening the computer cover” on page 98.
3. Pivot the optical drive bay assembly upward to gain access to the memory slots.
4. Locate the memory slots. See “Locating parts on the system board” on page 100.
5. Remove any parts that might prevent access to the memory slots.
6. Open the retaining clips.

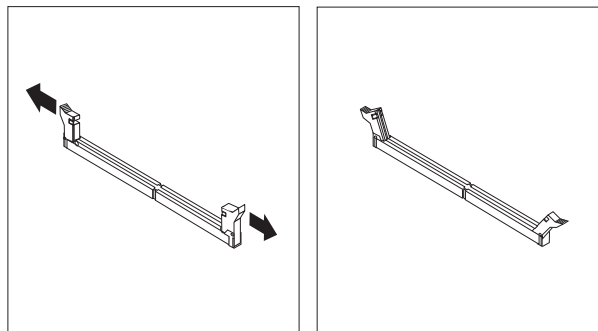


Figure 45. Opening the retaining clips

If you are replacing an old memory module, open the retaining clips and gently pull the memory module out of the memory slot.

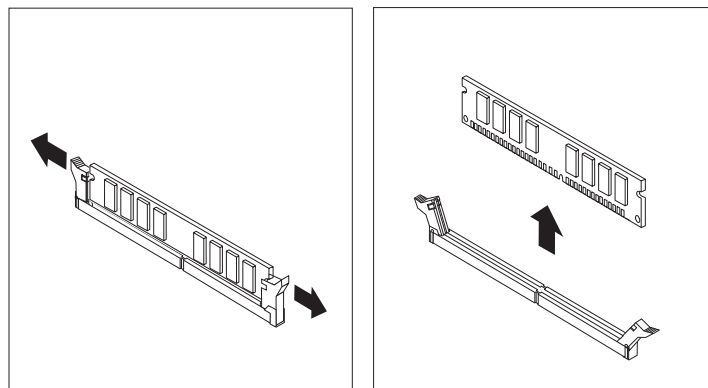


Figure 46. Removing a memory module

7. Position the new memory module over the memory slot. Make sure that the notch **1** on the memory module aligns correctly with the slot key **2** on the system board. Push the memory module straight down into the slot until the retaining clips close.

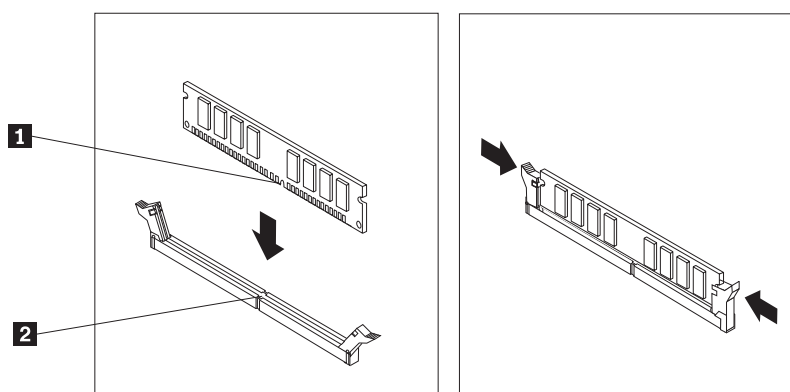


Figure 47. Installing a memory module

8. Go to “Completing the parts replacement” on page 123.

---

## Replacing a PCI card

### Attention

Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre Safety and Warranty Guide* that came with your computer. To obtain a copy of the *ThinkCentre Safety and Warranty Guide*, go to:  
<http://www.lenovo.com/support>

This section provides instructions on how to install or replace a PCI card. Your computer has one standard PCI card slot and one PCI Express x16 graphics card slot.

To install or replace a PCI card, do the following:

1. Turn off the computer and disconnect all power cords from electrical outlets.
2. Open the computer cover. See “Opening the computer cover” on page 98.



3. Rotate the PCI card retainer to the open position.
4. If you are installing a PCI card, remove the appropriate metal slot cover. If you are replacing an old PCI card, grasp the old card that is currently installed and gently pull it out of the slot.

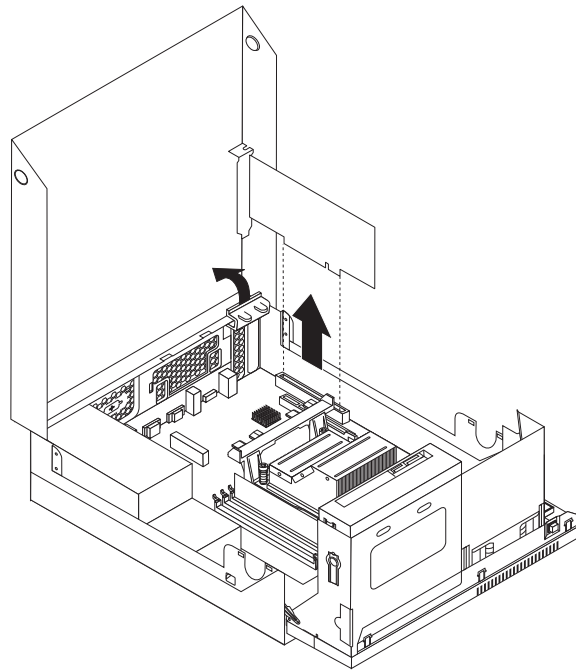
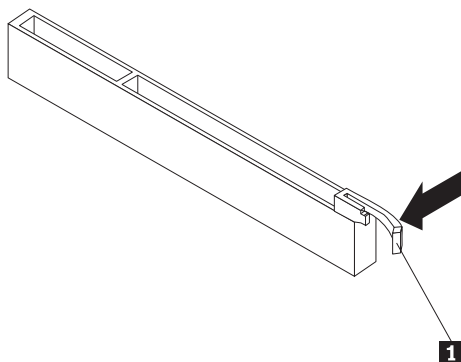


Figure 48. Removing a PCI card

**Notes:**

- a. The card fits tightly into the card slot. If necessary, alternate moving each side of the card a small amount until it is removed from the card slot.
- b. If the card is held in place by a retaining latch, press the card retaining latch **1** as shown to disengage the latch. Grasp the card and gently pull it out of the slot.



5. Remove the new PCI card from its static-protective package.
6. Install the new card into the appropriate card slot on the system board and rotate the card retainer to the closed position. See “Locating parts on the system board” on page 100.

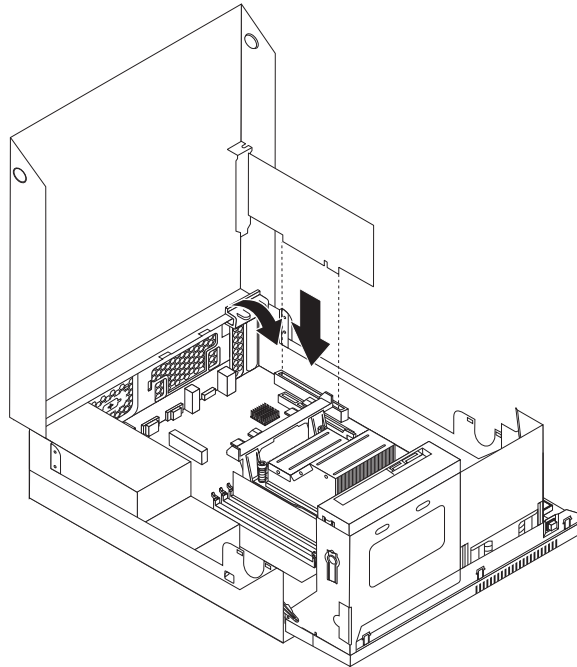


Figure 49. Installing the PCI card

7. Go to “Completing the parts replacement” on page 123.

---

## Replacing the power supply assembly

### Attention

Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre Safety and Warranty Guide* that came with your computer. To obtain a copy of the *ThinkCentre Safety and Warranty Guide*, go to:  
<http://www.lenovo.com/support>

This section provides instructions on how to replace the power supply assembly.

To replace the power supply assembly, do the following:

1. Turn off the computer and disconnect all power cords from electrical outlets.
2. Disconnect the power cords, Input/Output (I/O) cables, and any other cables that are connected to the computer.
3. Remove the four screws at the rear of the chassis that secure the power supply assembly.

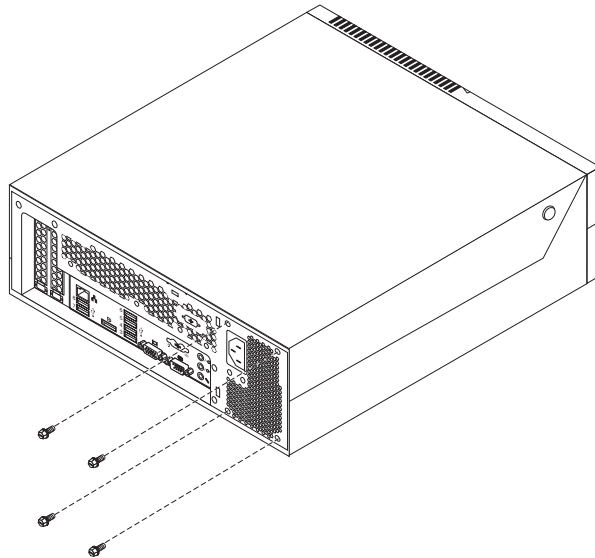


Figure 50. Removing the retaining screws for the power supply assembly

4. Open the computer cover. See “Opening the computer cover” on page 98.
5. Pivot the optical drive bay assembly upward to gain access to the power supply assembly.
6. Disconnect the power supply assembly cables from all drives and from the power connectors **1** and **2** on the system board.

**Note:** You might need to remove the hard disk drive to gain easy access to the power connector **2**. See “Replacing the hard disk drive” on page 114.

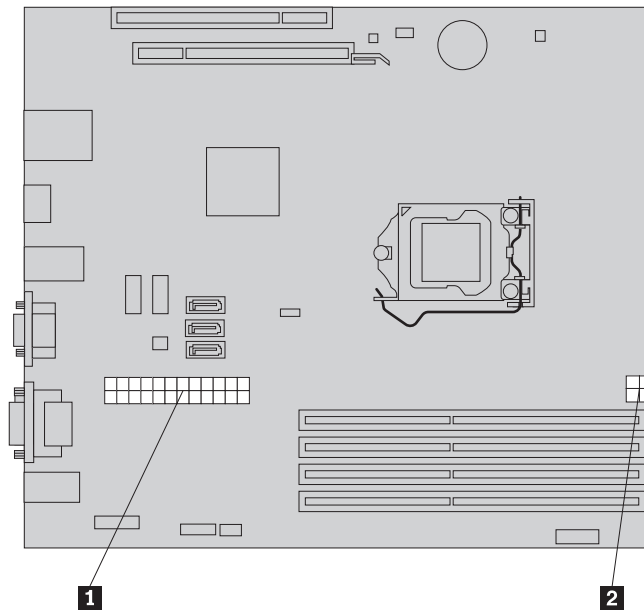


Figure 51. Power connectors on the system board

7. Release the power supply assembly cables from the cable clips and ties in the chassis.

- Slide the power supply assembly to the front of the computer and then lift it out of the chassis.

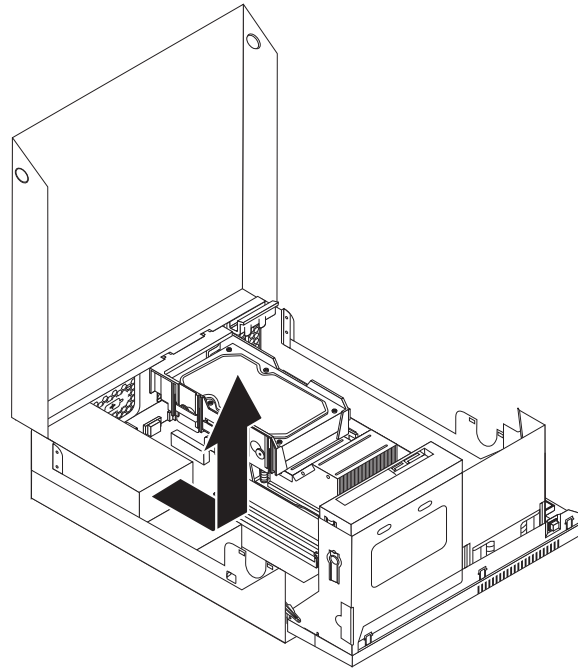


Figure 52. Removing the power supply assembly

- Install the new power supply assembly into the chassis so that the screw holes in the new power supply assembly align with those in the chassis.
- Install and tighten the four screws to secure the power supply assembly.

**Note:** Use only the screws provided by Lenovo.

- Reconnect all the power supply assembly cables to the system board and each of the drives.
- Secure the power supply assembly cables with the cable clips and ties in the chassis.
- Go to “Completing the parts replacement” on page 123.

---

## Replacing the heat sink

### Attention

Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre Safety and Warranty Guide* that came with your computer. To obtain a copy of the *ThinkCentre Safety and Warranty Guide*, go to:  
<http://www.lenovo.com/support>

This section provides instructions on how to replace the heat sink.

### CAUTION:



**The heat sink might be very hot. Turn off the computer and wait three to five minutes to let the computer cool before opening the computer cover.**

To replace the heat sink, do the following:

1. Turn off the computer and disconnect all power cords from electrical outlets.
2. Open the computer cover. See “Opening the computer cover” on page 98.
3. Pivot the optical drive bay assembly upward.
4. Remove the hard disk drive to access the heat sink. See “Replacing the hard disk drive” on page 114.
5. Carefully remove the four screws **1** that secure the heat sink to the system board.

**Note:** Carefully remove the four screws from the system board to avoid any possible damage to the system board. The four screws cannot be removed from the heat sink.

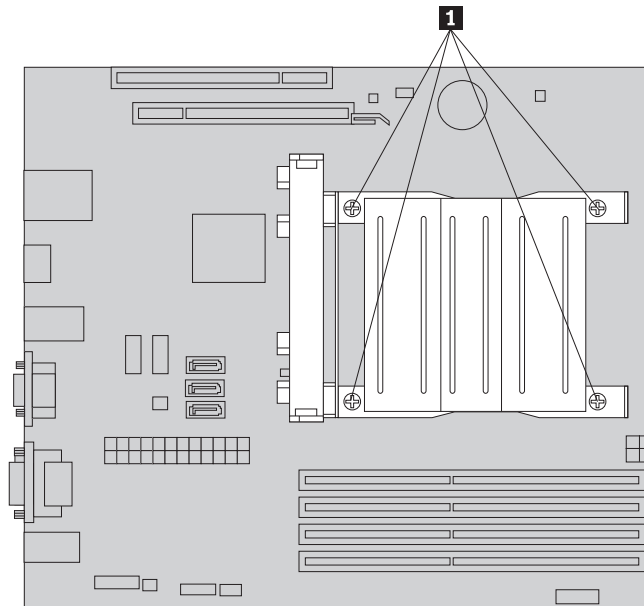


Figure 53. Removing the heat sink

6. Carefully lift the heat sink off the system board.

**Notes:**

- a. You might have to gently twist the heat sink to free it from the microprocessor.
  - b. Do not touch the thermal grease while handling the heat sink.
7. Position the new heat sink on the system board so that the four screws are aligned with the holes on the system board.
  8. Alternate tightening each screw a small and equal amount until the heat sink is secured to the system board. Do not over-tighten the screws.
  9. Go to “Completing the parts replacement” on page 123.

---

## Replacing the microprocessor

### Attention

Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre Safety and Warranty Guide* that came with your computer. To obtain a copy of the *ThinkCentre Safety and Warranty Guide*, go to:  
<http://www.lenovo.com/support>

This section provides instructions on how to replace the microprocessor.

**CAUTION:**



The heat sink and microprocessor might be very hot. Turn off the computer and wait three to five minutes to let the computer cool before opening the computer cover.

To replace the microprocessor:

1. Open the computer cover. See “Opening the computer cover” on page 98.
2. Pivot the drive bay assembly upward to gain access to the system board.
3. Locate the heat sink and fan assembly and disconnect the heat sink and fan assembly cable from the microprocessor fan connector on the system board. See “Locating parts on the system board” on page 100.
4. Remove the heat sink and fan assembly. See “Replacing the heat sink” on page 108.
5. Place the heat sink and fan assembly on its side so that the thermal grease does not come in contact with anything.
6. Remove the hard disk drive. See “Replacing the hard disk drive” on page 114.
7. Lift the small handle **3** and open the retainer **1** to access the microprocessor **2**.

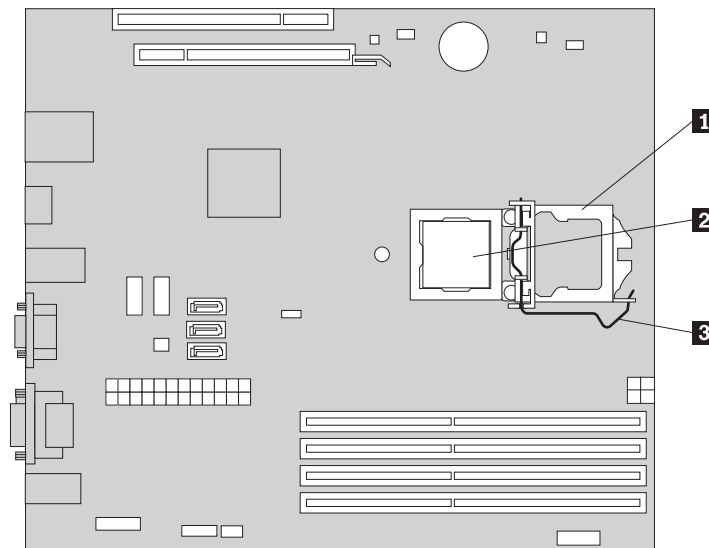
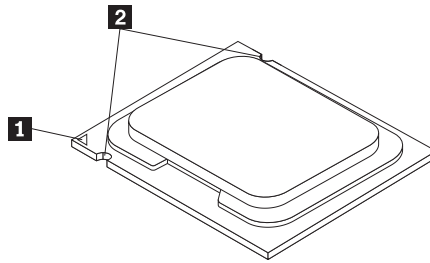


Figure 54. Accessing the microprocessor

8. Lift the microprocessor straight up and out of the socket.

**Notes:**

- a. Your microprocessor and socket might look different from the one illustrated.
- b. Note the orientation of the microprocessor in the socket. You can either look for the small triangle **1** on one corner of the microprocessor or note the orientation of the notches **2** on the microprocessor. This is important when installing the new microprocessor on the system board.



- c. Touch only the sides of the microprocessor. Do not touch the gold contacts on the bottom.
- d. Do not drop anything onto the microprocessor socket while it is exposed. The socket pins must be kept as clean as possible.

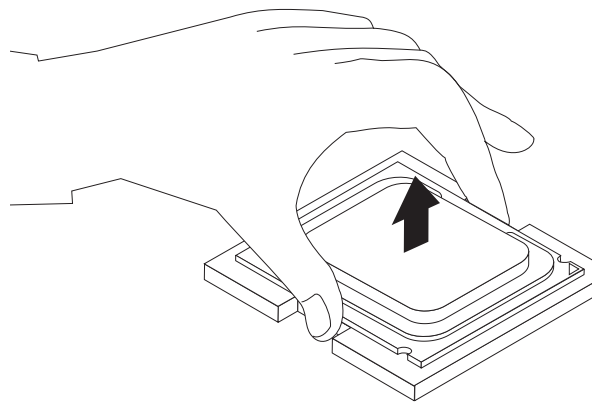
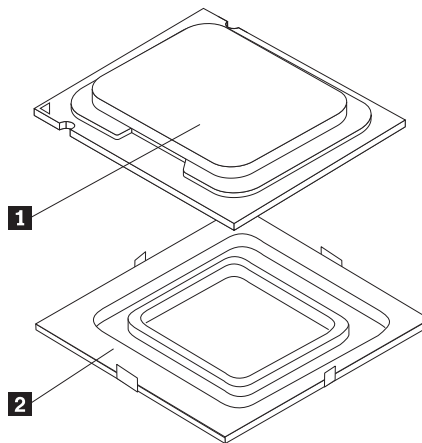


Figure 55. Removing the microprocessor

- 9. Make sure that the small handle is in the raised position and the microprocessor retainer is fully open.
- 10. Remove the protective cover **2** that protects the gold contacts on the new microprocessor **1**.



- 11. Hold the new microprocessor and align the notches on it with the tabs in the microprocessor socket, or align the small triangle on one corner with the corresponding beveled corner of the microprocessor socket.
- 12. Lower the new microprocessor straight down into the microprocessor socket on the system board.
- 13. Close the microprocessor retainer and lock it into position with the small handle to secure the new microprocessor in the socket.
- 14. Reinstall the heat sink and fan assembly. See “Replacing the heat sink” on page 108.

15. Reinstall the hard disk drive. See “Replacing the hard disk drive” on page 114.
16. Reconnect the heat sink and fan assembly cable to the microprocessor fan connector on the system board.
17. Go to “Completing the parts replacement” on page 123.

---

## Replacing the system board

### Attention

Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre Safety and Warranty Guide* that came with your computer. To obtain a copy of the *ThinkCentre Safety and Warranty Guide*, go to:  
<http://www.lenovo.com/support>

This section provides instructions on how to replace the system board.

### CAUTION:



**The heat sink and microprocessor might be very hot. Turn off the computer and wait three to five minutes to let the computer cool before opening the computer cover.**

To replace the system board:

1. Open the computer cover. See “Opening the computer cover” on page 98.
2. Pivot the drive bay assembly upward to gain access to the system board.
3. Remove the hard disk drive. See “Replacing the hard disk drive” on page 114.
4. Remove all memory modules and PCI cards that are currently installed. See “Replacing a memory module” on page 103 and “Replacing a PCI card” on page 104.
5. Carefully take note of the location of all cable connections on the system board and disconnect all the cables. See “Locating parts on the system board” on page 100.
6. Remove the heat sink and fan assembly from the failing system board. See “Replacing the heat sink” on page 108.
7. Carefully slide the system board so that it can be released from the four mounting studs that secure the system board in place.
8. Lift the system board out of the chassis.
9. Remove the microprocessor from the failing system board and install it on the new system board. See “Replacing the microprocessor” on page 109.
10. Install the new system board into the chassis by aligning the four mounting studs in the chassis with the corresponding holes on the new system board, and then carefully slide the new system board in to the chassis until it is secured in place by the four mounting studs.
11. Install all memory modules and adapter cards removed from the failing system board on the new system board.
12. Install the heat sink and fan assembly and connect the heat sink and fan assembly cable to the new system board. See “Replacing the heat sink” on page 108.
13. Reinstall the hard disk drive. See “Replacing the hard disk drive” on page 114.
14. Reconnect all remaining cables to the system board. See “Locating parts on the system board” on page 100.
15. Go to “Completing the parts replacement” on page 94.



The failing system board must be returned with a microprocessor socket cover to protect the pins during shipping and handling.

To install the microprocessor socket cover, do the following:

1. Release the lever securing the microprocessor retainer and open the retainer to access the microprocessor.
2. Grasp the microprocessor on the sides and lift it straight up and out of the socket. Do not touch the contacts on the microprocessor socket.
3. Note the orientation of the socket cover. Align the notches **1** of the microprocessor socket cover with the alignment keys **2** of the microprocessor socket.
4. Install one side of the socket cover into the microprocessor socket as shown.

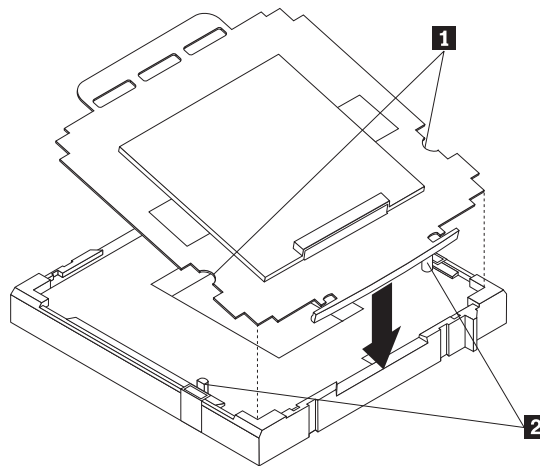


Figure 56. Installing the socket cover

**Note:** Your microprocessor socket and cover might look slightly different from the illustration.

5. Carefully press the other side of the socket cover downwards until the socket cover snaps into place.

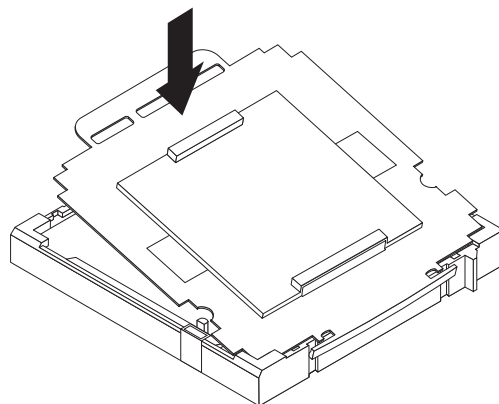


Figure 57. Securing the socket cover

6. Carefully check the four corners of the socket cover to make sure that the cover is secured in the microprocessor socket.

7. Lower the microprocessor retainer and then lower the lever to secure the retainer. Make sure the lever is locked into position.
8. Follow any additional instructions included with the replacement part you received.

**Note:** If your system board has two microprocessor sockets, be sure to install a socket cover for each microprocessor socket.

---

## Replacing the hard disk drive

### Attention

Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre Safety and Warranty Guide* that came with your computer. To obtain a copy of the *ThinkCentre Safety and Warranty Guide*, go to:

<http://www.lenovo.com/support>

This section provides instructions on how to replace the hard disk drive if your computer has one. For computer models that do not have an internal hard disk drive and use a remote hard disk drive accessed through the SMC - Storage Array, contact your network or storage administrator.

To replace the hard disk drive, do the following:

1. Turn off the computer and disconnect all power cords from electrical outlets.
2. Open the computer cover. See “Opening the computer cover” on page 98.
3. You might need to pivot the optical drive bay assembly upward to gain easier access to the hard disk drive.
4. Locate the hard disk drive. See “Locating components” on page 99.
5. Push the release button **1** of the hard disk drive bracket as shown and then lift the hard disk drive bracket up from the heat sink.

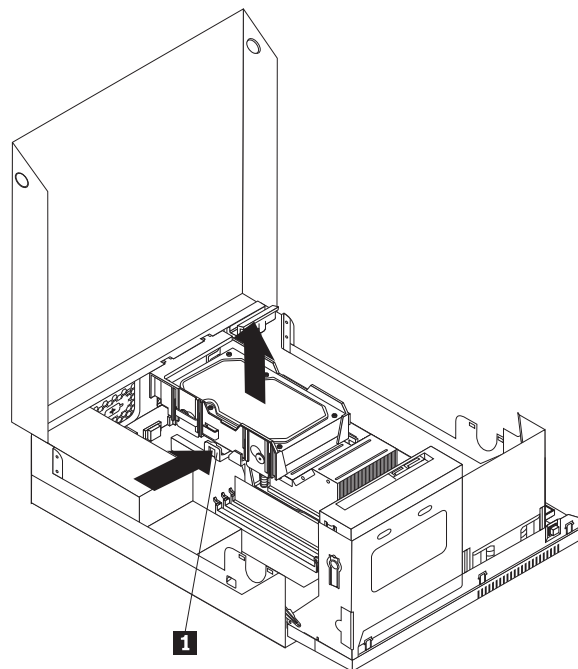


Figure 58. Removing the hard disk drive

6. Disconnect the signal cable and the power cable from the hard disk drive to completely remove the hard disk drive from the chassis.
7. Flex the sides of the bracket to remove the hard disk drive from the bracket.
8. To install a new hard disk drive into the bracket, flex the bracket and align pin **1**, pin **2**, pin **3**, and pin **4** on the bracket with the corresponding holes in the hard disk drive.

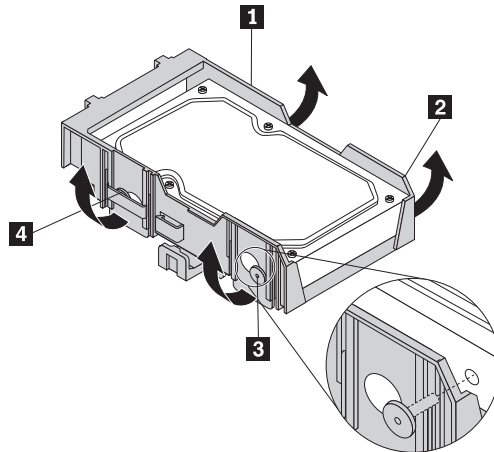


Figure 59. Installing the hard disk drive into the bracket

**Important:** Do not touch the circuit board on the bottom of the hard disk drive.

9. Connect the signal cable and the power cable to the new hard disk drive.
10. Insert the two retaining clips **1** of the hard disk drive bracket into the corresponding holes in the chassis, and then pivot the hard disk drive and bracket downwards until the hard disk drive bracket snaps into position.

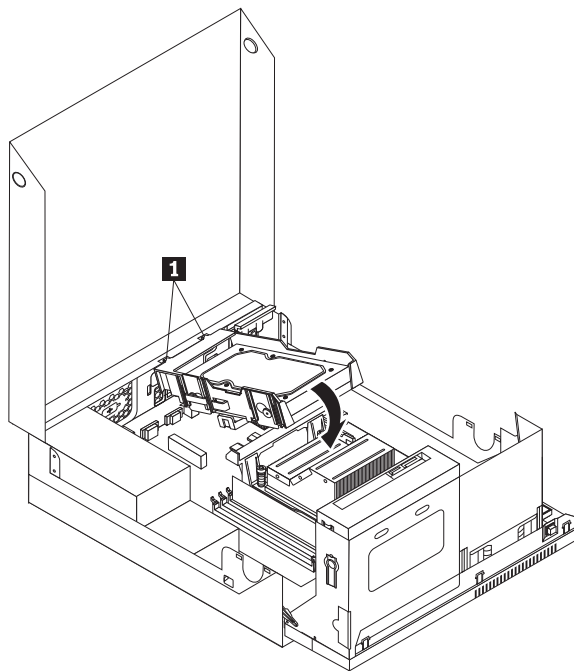


Figure 60. Installing the hard disk drive

11. Go to “Completing the parts replacement” on page 123.

---

## Replacing the optical drive

### Attention

Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre Safety and Warranty Guide* that came with your computer. To obtain a copy of the *ThinkCentre Safety and Warranty Guide*, go to:  
<http://www.lenovo.com/support>

This section provides instructions on how to replace the optical drive.

To replace the optical drive, do the following:

1. Turn off the computer and disconnect all power cords from electrical outlets.
2. Open the computer cover. See “Opening the computer cover” on page 98.
3. Pivot the optical drive bay assembly upward to gain easy access to the optical drive.
4. Disconnect the signal cable and the power cable from the rear of the optical drive.
5. Press the optical drive lock **1** and slide the optical drive out of the rear of the drive bay assembly.

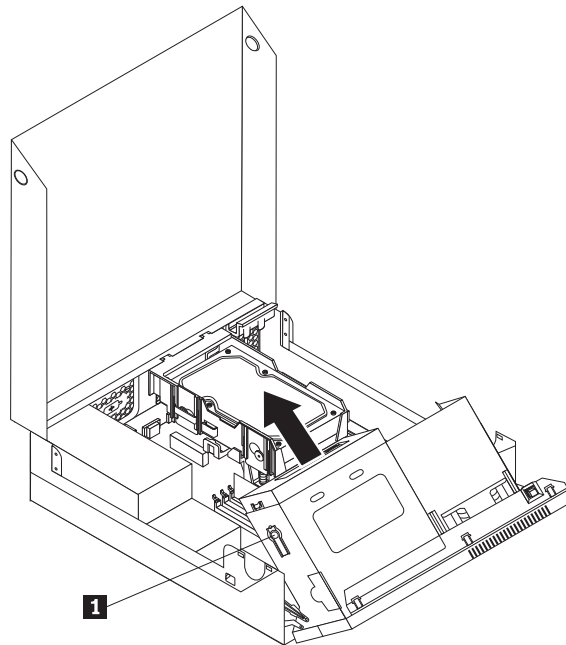


Figure 61. Removing the old optical drive

6. Install the optical drive retainer on the side of the new optical drive.

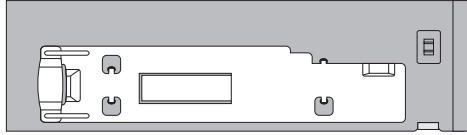


Figure 62. Installing the optical drive retainer

7. Slide the new optical drive into the drive bay until it snaps into position.

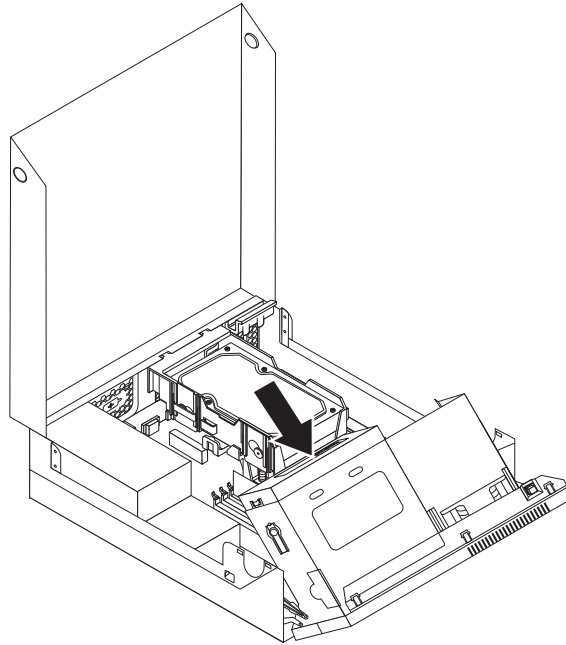


Figure 63. Installing a new optical drive

8. Connect the signal cable and the power cable to the rear of the optical drive.
9. Go to “Completing the parts replacement” on page 94.

---

## Replacing the internal speaker

### Attention

Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre Safety and Warranty Guide* that came with your computer. To obtain a copy of the *ThinkCentre Safety and Warranty Guide*, go to:  
<http://www.lenovo.com/support>

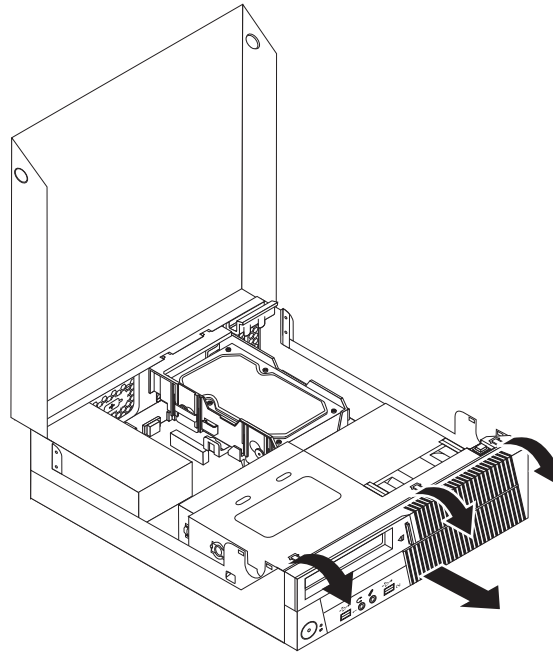
This section provides instructions on how to replace the internal speaker.

**Note:** Not all computers have the internal speaker.

To replace the internal speaker, do the following:

1. Turn off the computer and disconnect all power cords from electrical outlets.
2. Open the computer cover. See “Opening the computer cover” on page 98.

3. Remove the front bezel by releasing the three plastic tabs and pivoting the front bezel outward.



*Figure 64. Removing the front bezel*

4. Pivot the optical drive bay assembly upward to gain access to the internal speaker.
5. Locate the internal speaker. See “Locating components” on page 99.
6. Disconnect the internal speaker cable and the thermal sensor cable from the internal speaker connector and the thermal sensor connector on the system board. See “Locating parts on the system board” on page 100.
7. Push the two tabs **1** on the bottom of the internal speaker as shown to release the internal speaker, and then lift the internal speaker up to completely remove it from the chassis.

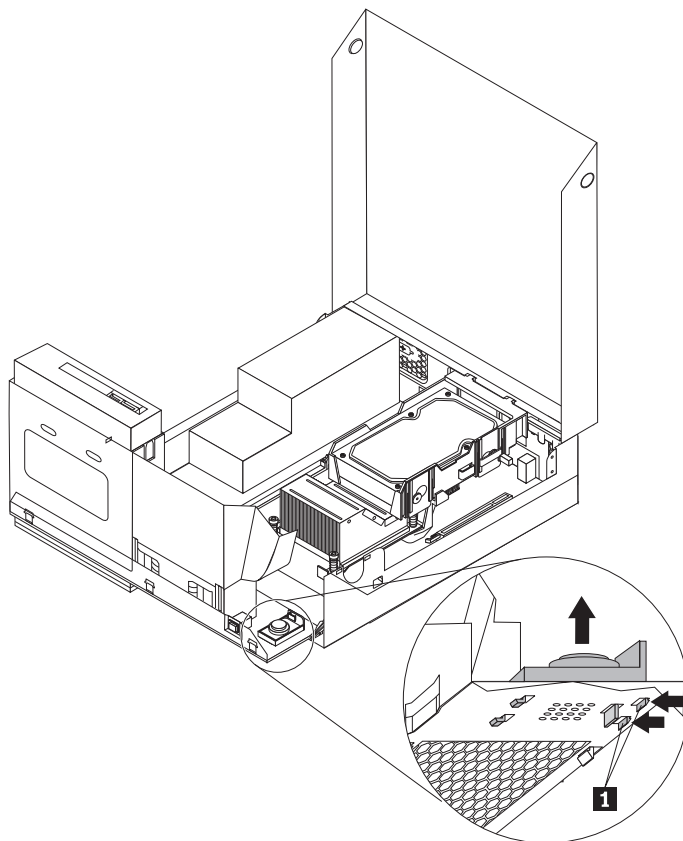


Figure 65. Removing the internal speaker

8. Remove the attached thermal sensor cable from the old internal speaker and install it on the new internal speaker.
9. Insert the two tabs **2** on the bottom of the new internal speaker into the corresponding holes in the chassis, and push the speaker straight down until the other two tabs **1** snap into position.

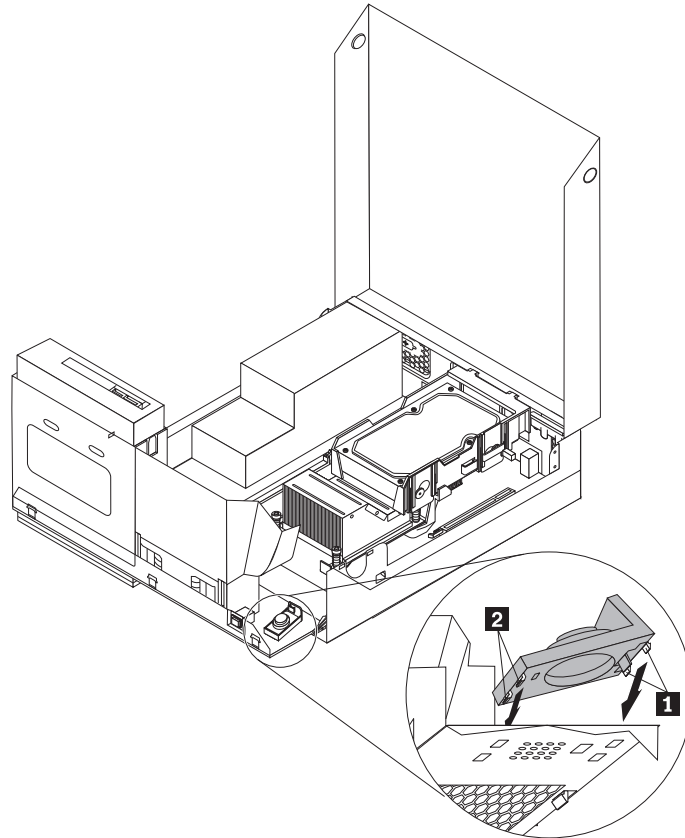


Figure 66. Installing the new internal speaker

10. Reconnect the internal speaker cable and the thermal sensor cable to the system board. See “Locating parts on the system board” on page 100.
11. To reinstall the front bezel, align the three tabs on the front bezel with the corresponding holes in the chassis and pivot the front bezel inwards until it snaps into position.
12. Go to “Completing the parts replacement” on page 123.

---

## Replacing the front audio and USB assembly

### Attention

Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre Safety and Warranty Guide* that came with your computer. To obtain a copy of the *ThinkCentre Safety and Warranty Guide*, go to:

<http://www.lenovo.com/support>

This section provides instructions on how to replace the front audio and USB assembly.

To replace the front audio and USB assembly, do the following:

1. Turn off the computer and disconnect all power cords from electrical outlets.
2. Open the computer cover. See “Opening the computer cover” on page 98.
3. Pivot the optical drive bay assembly upward to gain access to the front audio and USB assembly.
4. Locate the front audio and USB assembly.



5. Disconnect the front audio and USB assembly cables from the system board. See “Locating parts on the system board” on page 100.

**Note:** Make sure you note the locations of the cables when you disconnect the cables from the system board.

6. Remove the screw that secures the front audio and USB assembly to the chassis.

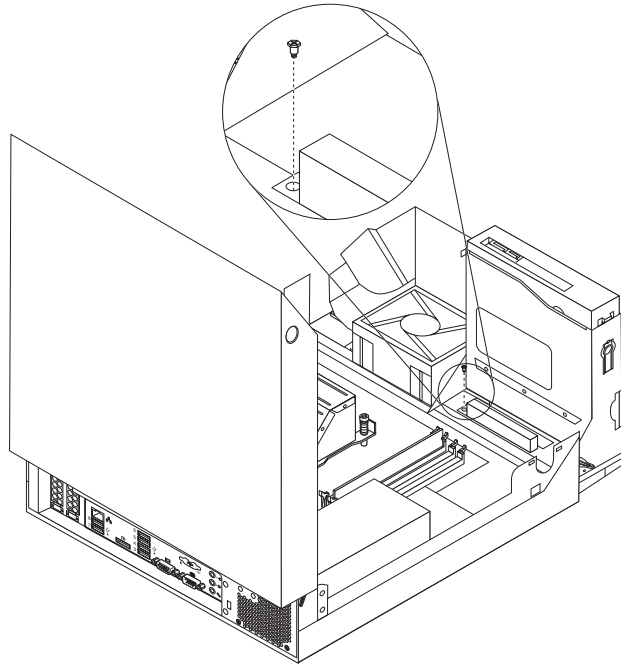


Figure 67. Removing the securing screw of the front audio and USB assembly

7. Remove the front audio and USB assembly from the chassis.
8. Install a new front audio and USB assembly into the chassis and align the screw hole in the front audio and USB assembly with the hole in the chassis.
9. Install the screw to secure the new front audio and USB assembly to the chassis.
10. Reconnect the front audio and USB assembly cables to the front audio connector and the front USB connector on the system board. See “Locating parts on the system board” on page 100.
11. Go to “Completing the parts replacement” on page 123.

---

## Replacing the system fan

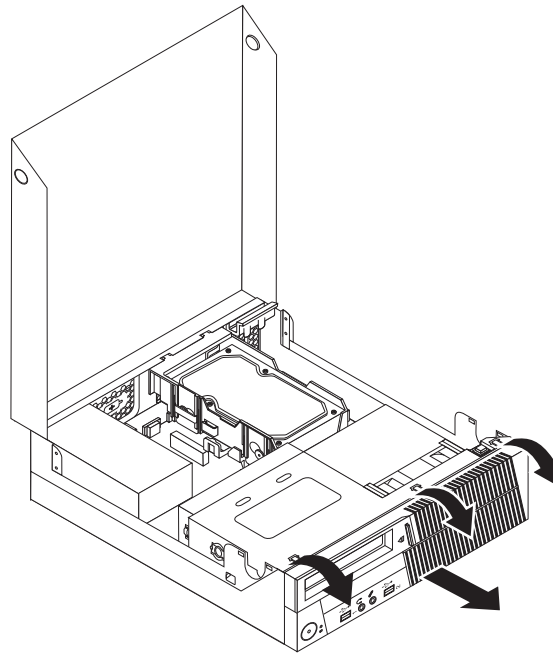
### Attention

Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre Safety and Warranty Guide* that came with your computer. To obtain a copy of the *ThinkCentre Safety and Warranty Guide*, go to:  
<http://www.lenovo.com/support>

This section provides instructions on how to replace the system fan.

To replace the system fan, do the following:

1. Turn off the computer and disconnect all power cords from electrical outlets.
2. Open the computer cover. See “Opening the computer cover” on page 98.
3. Remove the front bezel by releasing the three plastic tabs and pivoting the front bezel outward.



*Figure 68. Removing the front bezel*

4. Pivot the optical drive bay assembly upward.
5. Locate the system fan. See “Locating components” on page 99.
6. Disconnect the system fan cable from the microprocessor fan connector on the system board. See “Locating parts on the system board” on page 100.
7. Release the four tabs on the bottom of the system fan as shown, and then lift the system fan straight up to completely remove it from the chassis.

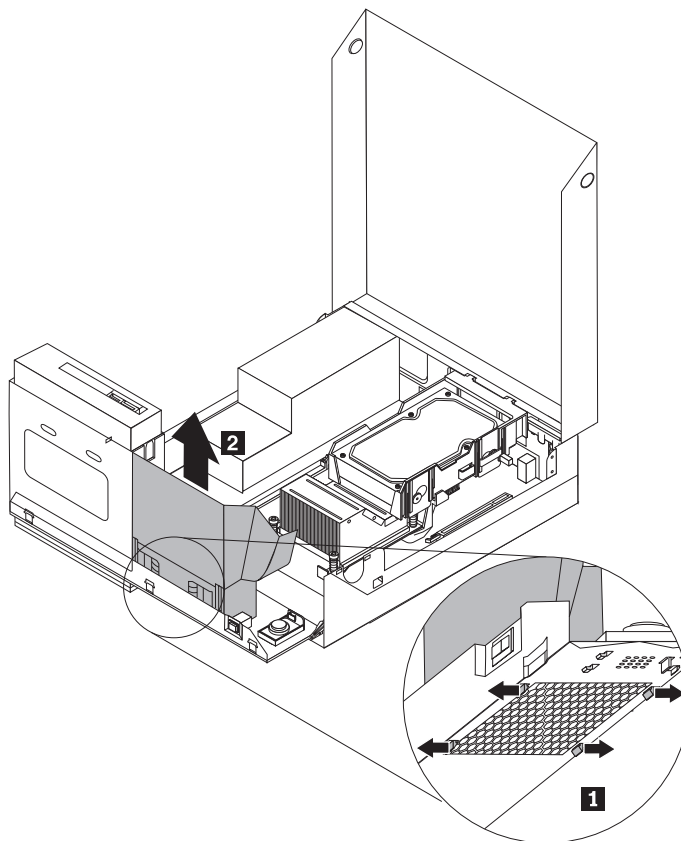


Figure 69. Removing the system fan

8. Align the four tabs on the bottom of the new system fan with the corresponding holes in the chassis, and push the new system fan straight down until it snaps into position.
9. Connect the system fan cable to the microprocessor fan connector on the system board. See “Locating parts on the system board” on page 100.
10. To reinstall the front bezel, align the three tabs on the front bezel with the corresponding holes in the chassis and pivot the front bezel inwards until it snaps into position.
11. Go to “Completing the parts replacement” on page 123.

---

## Completing the parts replacement

After completing the installation or replacement for all parts, you need to close the computer cover and reconnect cables. Depending on the parts you installed or replaced, you might need to confirm the updated information in the Setup Utility program. Refer to Chapter 6 “Using the Setup Utility program” on page 37.

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

1. Make sure that all components have been reassembled correctly and that no tools or loose screws are left inside your computer. See “Locating components” on page 99 for the locations of various components in your computer.
2. If you have removed the front bezel, reinstall it. To reinstall the front bezel, align the three tabs on the front bezel with the corresponding holes in the chassis and pivot the front bezel inwards until it snaps into position.
3. Make sure that the cables are routed correctly. Keep cables clear of the hinges and sides of the computer chassis to avoid interference with closing the computer cover.

4. Lower the optical drive bay assembly.
5. Close the computer cover.
6. Reconnect the external cables and power cords to the computer. See “Locating connectors on the rear of the computer” on page 97.