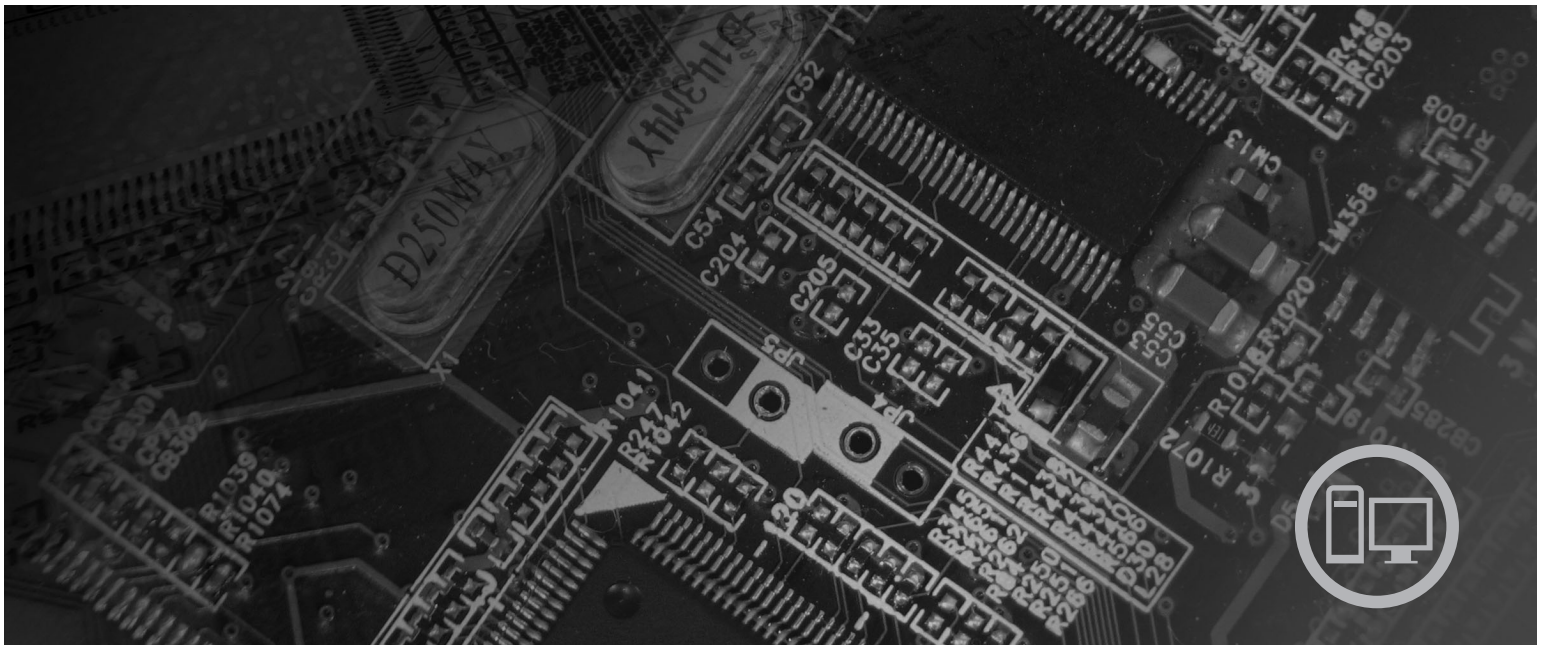




ThinkCentre Hardware Installation and Replacement Guide



Machine Types 6417, 6418, 6449, 6453

lenovo

ThinkCentre
Hardware Installation and Replacement
Guide

Note

Before using this information and the product it supports, be sure to read and understand the *Safety and Warranty Guide* for this product and "Notices," on page 31.

Second Edition (August 2007)

© Copyright Lenovo 2005, 2007.

Portions © Copyright International Business Machines Corporation 2005.

All rights reserved.

LENOVO products, data, computer software, and services have been developed exclusively at private expense and are sold to governmental entities as commercial items as defined by 48 C.F.R. 2.101 with limited and restricted rights to use, reproduction and disclosure.

LIMITED AND RESTRICTED RIGHTS NOTICE: If products, data, computer software, or services are delivered pursuant a General Services Administration "GSA" contract, use, reproduction, or disclosure is subject to restrictions set forth in Contract No. GS-35F-05925.

Contents

Figures	v	Replacing a hard disk drive	16
Chapter 1. Important safety information	1	Replacing an optical drive	17
Chapter 2. Overview	3	Replacing a memory module	19
Additional information resources	3	Replacing the AC power adapter	20
Handling static-sensitive devices.	4	Replacing the modem	21
Locations	5	Replacing the system fan assembly	23
Locating controls and connectors on the front of your computer.	5	Replacing the keyboard	25
Locating connectors on the rear of your computer	6	Replacing the mouse	25
Locating components	8	Chapter 4. Completing the parts replacement	27
Identifying parts on the system board	9	Obtaining device drivers	28
Chapter 3. Installing options and replacing hardware	11	Chapter 5. Security features	29
Installing external options	11	Integrated cable lock	29
Removing the cover	11	Password protection	29
Installing internal options	12	Erasing a lost or forgotten password (clearing CMOS).	30
Installing memory	12	Appendix. Notices	31
Replacing the battery	13	Television output notice	32
Replacing the heat sink	14	Trademarks	32

Figures

1. Controls and connectors.	5	14. Replacing the optical drive	19
2. Locating the rear connectors	6	15. Removing the memory module	20
3. Locating components.	8	16. Installing the new memory module	20
4. Locating parts on the system board	9	17. Locating the modem daughter card on the system board	22
5. Installing a memory module	13	18. Removing the system fan assembly	23
6. Removing the battery	14	19. Installing the short rubber mounts	24
7. Installing the battery	14	20. Replacing the system fan assembly.	24
8. Removing the heat sink held in place by screws	15	21. Keyboard connectors, USB	25
9. Replacing the heat sink with screws	15	22. Mouse connectors, USB	26
10. Installing the hard disk drive into the bracket	17	23. Routing the cables	27
11. Removing the front bezel	18	24. Closing the computer cover	28
12. Removing the optical drive	18	25. Installing cable lock.	29
13. Retainer bracket for optical drive	18		

Chapter 1. Important safety information

CAUTION:

Before using this manual, it is important that you read and understand all the related safety information for this product. Refer to the *Safety and Warranty Guide* that you received with this product for the latest safety information. Reading and understanding this safety information reduces the risk of personal injury and or damage to your product.

If you no longer have a copy of the *Safety and Warranty Guide*, you can obtain one online from the Lenovo Support Web site at:
<http://www.lenovo.com/support>.

Chapter 2. Overview

This guide provides information about replacing Customer Replaceable Units (CRUs).

This guide does not include procedures for all parts. It is expected that cables, switches, and certain mechanical parts be replaced by trained service personnel without the need for step-by-step procedures.

Note: Use only parts provided by Lenovo™.

This guide contains instructions for installing or replacing the following parts:

- Battery
- Heat sink
- Hard disk drive
- Optical drive
- Memory module
- System fan assembly
- AC power adapter
- Modem
- Keyboard
- Mouse

Additional information resources

If you have Internet access, the most up-to-date information for your computer is available from the World Wide Web.

You can find:

- CRU removal and installation information
- CRU removal and installation videos
- Publications
- Troubleshooting information
- Parts information
- Downloads and drivers
- Links to other useful sources of information
- Support phone list

To access this information, point your browser to:
<http://www.lenovo.com/support>

Handling static-sensitive devices

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

When you handle parts 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 parts and other computer components carefully. Handle adapters, memory modules, system boards, and microprocessors by the edges. Never touch any exposed circuitry.
- Prevent others from touching the parts and other computer components.
- Before you replace a new part, 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 in the package and your body.
- When possible, remove the new part from the static-protective packaging, and install it directly in the computer without setting the part down. When this is not possible, place the static-protective package that the part came in on a smooth, level surface and place the part on it.
- Do not place the part on the computer cover or other metal surface.

Locations

This chapter provides illustrations to help locate the various connectors, controls, and components of the computer.

Locating controls and connectors on the front of your computer

Figure 1 shows the location of the controls and connectors on the front of your computer.

Note: Not all computer models will have the following controls and connections.

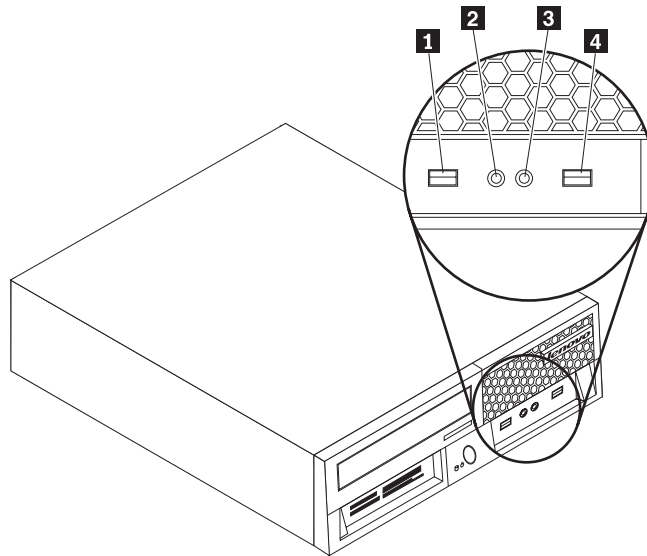


Figure 1. Controls and connectors

- | | | | |
|----------|----------------------|----------|---------------------|
| 1 | USB connector | 3 | Headphone connector |
| 2 | Microphone connector | 4 | USB connector |

Locating connectors on the rear of your computer

Figure 2 shows the location of connectors on the rear of some computer models. Some connectors on the rear of your computer are color-coded to help you determine where to connect the cables on your computer.

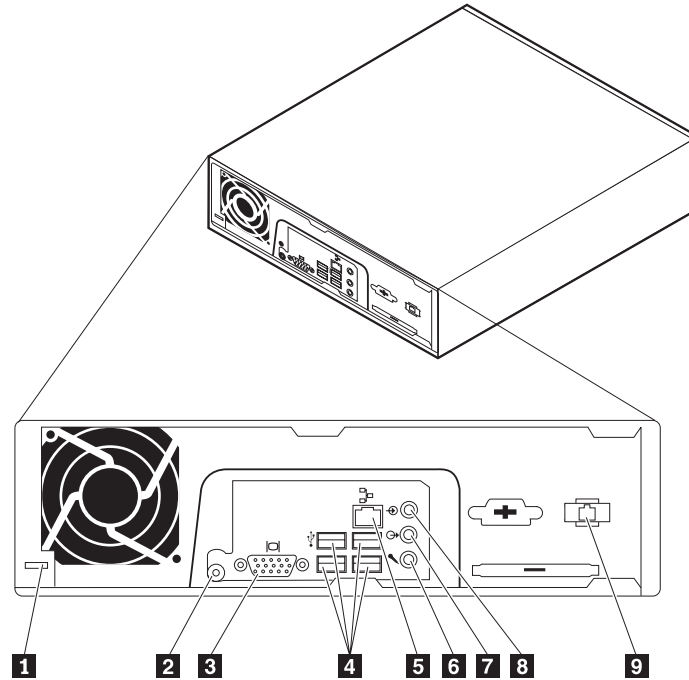


Figure 2. Locating the rear connectors

- | | | | |
|----------|-------------------------|----------|--------------------------|
| 1 | Cable lock latch | 6 | Microphone connector |
| 2 | Power adapter connector | 7 | Audio line out connector |
| 3 | Monitor connector | 8 | Audio line in connector |
| 4 | USB connectors (4) | 9 | RJ11 modem connector |
| 5 | Ethernet connector | | |

Connector	Description
USB connectors	Used to attach a device that requires a Universal Serial Bus (USB) connection, such as a USB keyboard, USB mouse, USB scanner or USB printer. If you have more than six USB devices, you can purchase a USB hub, which you can use to connect additional USB devices.
Ethernet connector	Used to attach an Ethernet cable for a local area network (LAN). Note: To operate the computer within FCC Class B limits, use a Category 5 Ethernet cable.
Audio-line-in connector	Used to receive audio signals from an external audio device, such as a stereo system. When you attach an external audio device, a cable is connected between the audio line out connector of the device and the audio line in connector of the computer.
Audio-line-out connector	Used to send audio signals from the computer to external devices, such as powered stereo speakers (speakers with built-in amplifiers), headphones, multimedia keyboards, or the audio line in connector on a stereo system or other external recording device.
Microphone connector	Used to attach a microphone to your computer when you want to record voice or other sounds on the hard disk if you use speech-recognition software.

Locating components

To remove the computer cover, see “Removing the cover” on page 11.

This section shows the location of the various components in your computer.

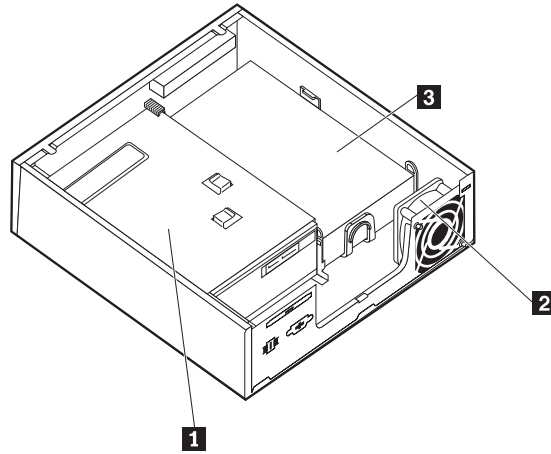


Figure 3. Locating components

- 1** Optical drive
- 2** System fan assembly
- 3** Hard disk drive

Identifying parts on the system board

The system board (sometimes called the planar or motherboard) is the main circuit board in your computer. It provides basic computer functions and supports a variety of devices.

Figure 4 shows the location of parts on the system board for some computer models.

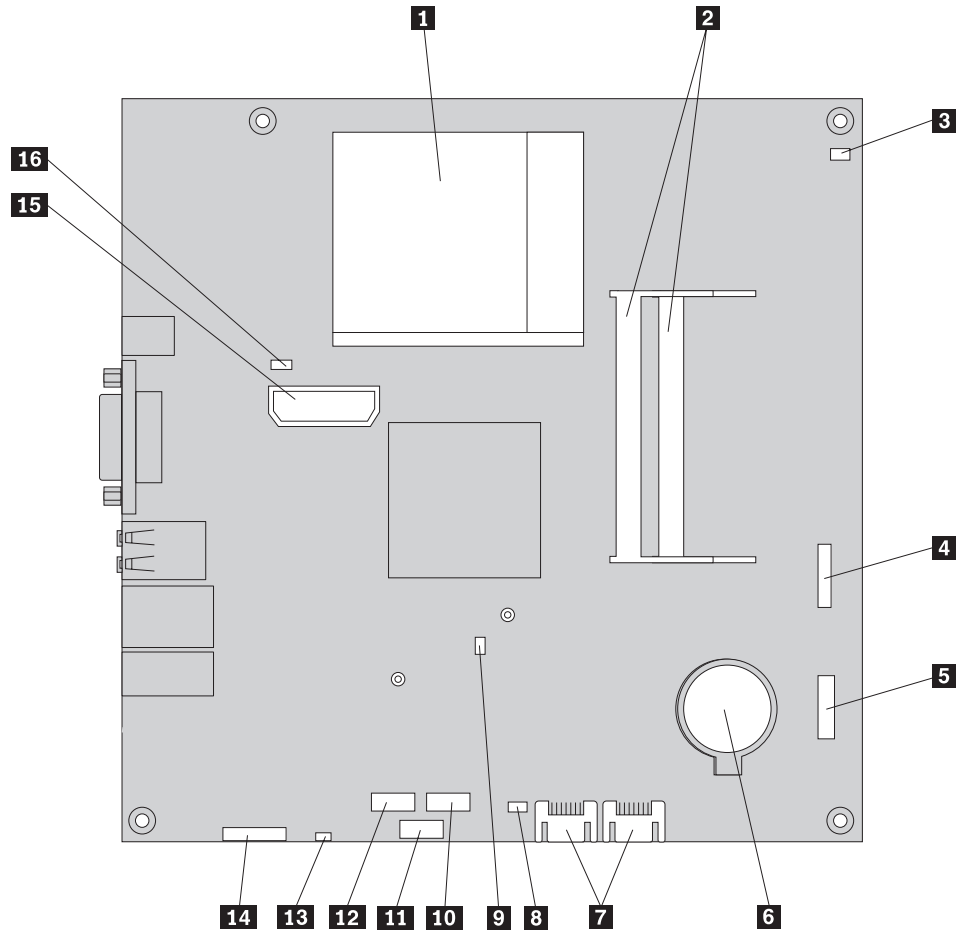


Figure 4. Locating parts on the system board

- | | | | |
|----------|-------------------------------|-----------|---------------------------------------|
| 1 | Microprocessor and heat sink | 9 | Modem daughter card (MDC) connector |
| 2 | Memory connectors (2) | 10 | Express card USB connector |
| 3 | Thermal sense cable connector | 11 | Express card PCIe connector |
| 4 | Front USB connector | 12 | Media card reader connector |
| 5 | Front panel connector | 13 | Internal speaker connector |
| 6 | Battery | 14 | Front audio connector |
| 7 | SATA IDE connectors (2) | 15 | Internal power distribution connector |
| 8 | Clear CMOS/Recovery jumper | 16 | System fan connector |

Chapter 3. Installing options and replacing hardware

This chapter provides an introduction to the features and options that are available for your computer. You can expand the capabilities of your computer by adding or replacing memory, adapters, and drives. When installing an option, use these instructions along with the instructions that come with the option.

Attention

Do not open your computer or attempt any repair before reading the "Important safety information" in the *Safety and Warranty Guide* that was included with your computer. To obtain a copy of the *Safety and Warranty Guide*, go to the Support Web site at <http://www.lenovo.com/support>.

Note: Use only parts provided by Lenovo.

Installing external options

External speakers, a printer, or a scanner can be connected to your computer. For some external options, you must install additional software in addition to making the physical connection. When adding an external option, see "Locating connectors on the rear of your computer" on page 6 and "Locating controls and connectors on the front of your computer" on page 5 to identify the required connector, and then use the instructions that are included with the option to help you make the connection and install any software or device drivers that are required for the option.

Removing the cover

Important

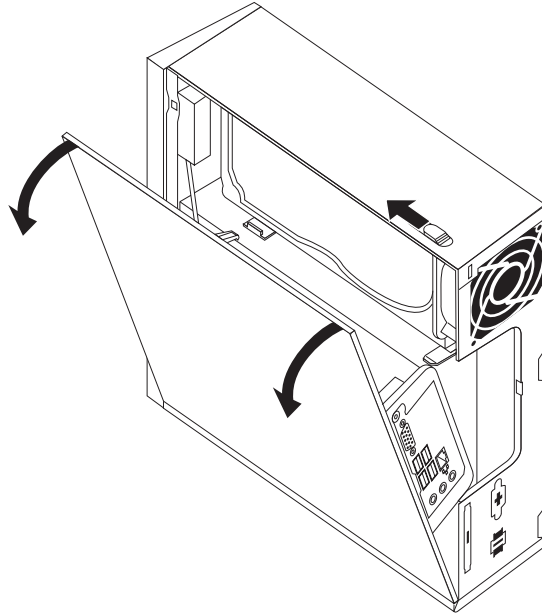


Turn off the computer and wait 3 to 5 minutes to let the computer cool before removing the computer cover.

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

1. Remove any media (diskettes, CDs, or tapes) from the drives, shut down your operating system, and turn off all attached devices and the computer.
2. Unplug all power cords from electrical outlets.
3. Disconnect the cables attached to the computer. This includes power cords, input/output (I/O) cables, and any other cables that are connected to the computer. See "Locating controls and connectors on the front of your computer" on page 5 and "Locating connectors on the rear of your computer" on page 6.
4. Remove any locking devices, such as a cable lock that secures the computer cover.

5. Press the cover-release button on the side of the cover and pivot the computer cover outward.



6. Before completely removing the computer cover, disconnect all the cables from the system board.

Installing internal options

Important

Read “Handling static-sensitive devices” on page 4 before removing the computer cover.

Installing memory

Your computer has two connectors for installing small outline dual inline memory modules (SODIMMs) that provide up to a maximum of 4.0 GB of system memory.

- Use 1.8 V, 200-pin double data rate 2 synchronous dynamic random access memory (DDR2 SDRAM).
- Use 256 MB, 512 MB, 1 GB, or 2 GB memory modules in any combination up to a maximum of 4.0 GB.

Note: If there is an available memory connector, continue with installing a memory module. To replace a memory module, go to “Replacing a memory module” on page 19.

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

1. Remove the computer cover. See “Removing the cover” on page 11.
2. Locate the memory connectors. See “Identifying parts on the system board” on page 9.

3. Insert the notched end **2** of the memory module into the socket **1**. Press the memory module firmly, and pivot the memory module until it snaps into place. Make sure that the memory module is firmly fixed in the connector and does not move easily.

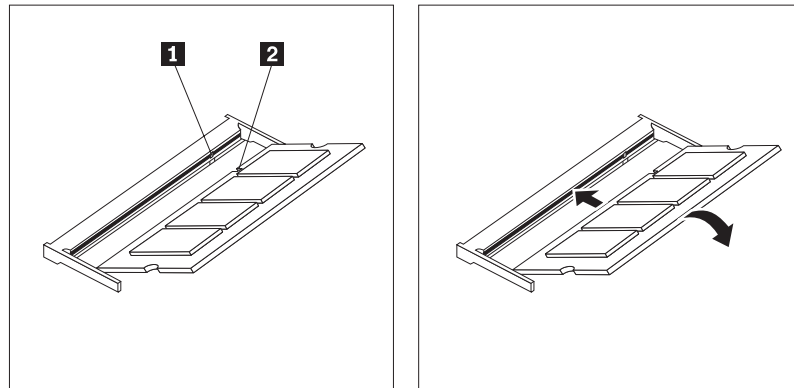


Figure 5. Installing a memory module

4. To complete the installation, go to Chapter 4, “Completing the parts replacement,” on page 27.

Replacing the battery

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 *Safety and Warranty Guide* for information about replacing and disposing of the battery.

This section provides instructions on how to replace the battery.

1. Remove the computer cover. See “Removing the cover” on page 11.
2. Locate the battery. See “Identifying parts on the system board” on page 9.

3. Remove the old battery.

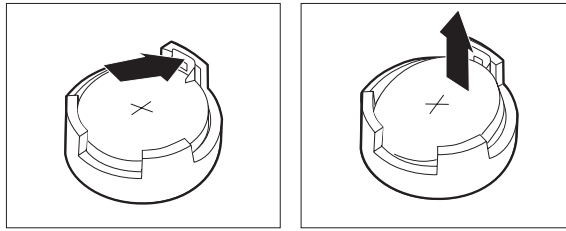


Figure 6. Removing the battery

4. Install the new battery.

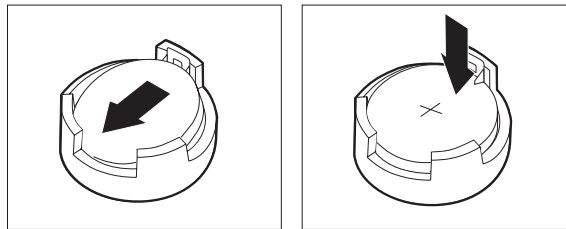


Figure 7. Installing the battery

5. Replace the computer cover, and connect all the cables. See Chapter 4, "Completing the parts replacement," on page 27.

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

6. Turn on the computer and all attached devices.
7. Use the Setup Utility program to set the date and time and any passwords. See "Using the Setup Utility" in your *User Guide*.

Replacing the heat sink

Attention

Do not open your computer or attempt any repair before reading the "Important safety information" in the *Safety and Warranty Guide* that was included with your computer. To obtain a copy of the *Safety and Warranty Guide*, go to the Support Web site at <http://www.lenovo.com/support>.

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

1. Remove the computer cover. See "Removing the cover" on page 11.
2. Locate the heat sink. See "Identifying parts on the system board" on page 9.

3. Remove the four screws securing the heat sink to the retention module on the system board.

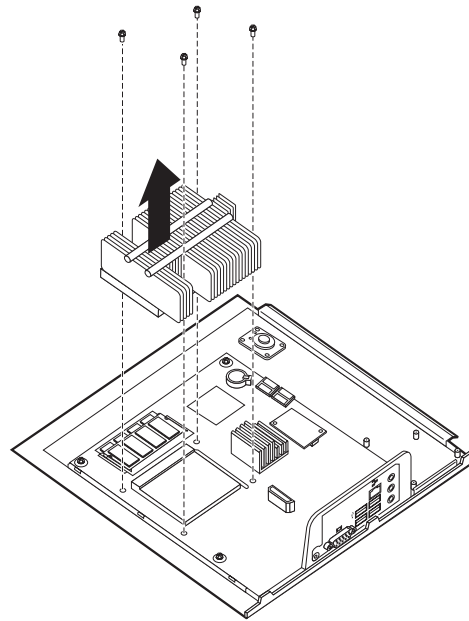


Figure 8. Removing the heat sink held in place by screws

4. Lift the failing heat sink off the system board.
5. Position the new heat sink on the retention module so that the four screws are aligned with the posts on the system board. Tighten the four screws to the heat sink to the system board.

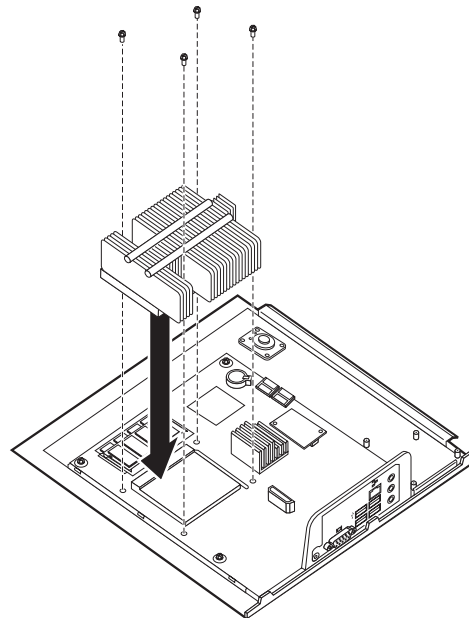


Figure 9. Replacing the heat sink with screws

6. Go to Chapter 4, "Completing the parts replacement," on page 27.

Replacing a hard disk drive

Attention

Do not open your computer or attempt any repair before reading the "Important safety information" in the *Safety and Warranty Guide* that was included with your computer. To obtain a copy of the *Safety and Warranty Guide*, go to the Support Web site at <http://www.lenovo.com/support>.

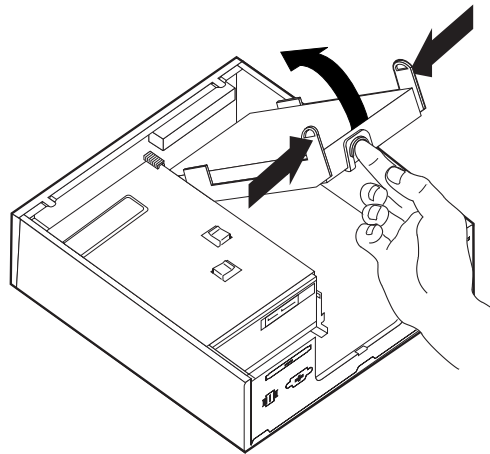
This section provides instructions on how to replace the hard disk drive.

Important

When you receive a new hard disk drive, you also receive a set of *Product Recovery discs*. The set of *Product Recovery discs* will enable you to restore the contents of the hard disk to the same state as when your computer was originally shipped from the factory. For more information on recovering factory-installed software, refer to "Recovering software" in your *User Guide*.

To replace the hard disk drive:

1. Remove the computer cover. See "Removing the cover" on page 11.
2. Disconnect the power cable from the optical drive.
3. Place your finger on the tab located on the front of the hard disk drive and push upward. Then press inward on the side tabs and pivot the hard disk drive upward to remove.



4. Remove the failing hard disk drive from the chassis.
5. Disconnect the signal and power cables from the hard disk drive.
6. Remove the hard disk drive from the plastic bracket by flexing the sides of the bracket enough to slide it free of the hard disk drive.

7. To install the new hard disk drive into the plastic bracket **1**, flex the bracket and align the pins on the bracket with the holes in the hard disk drive. See Figure 10. Do not touch the circuit board **2** on the bottom of the hard disk drive.

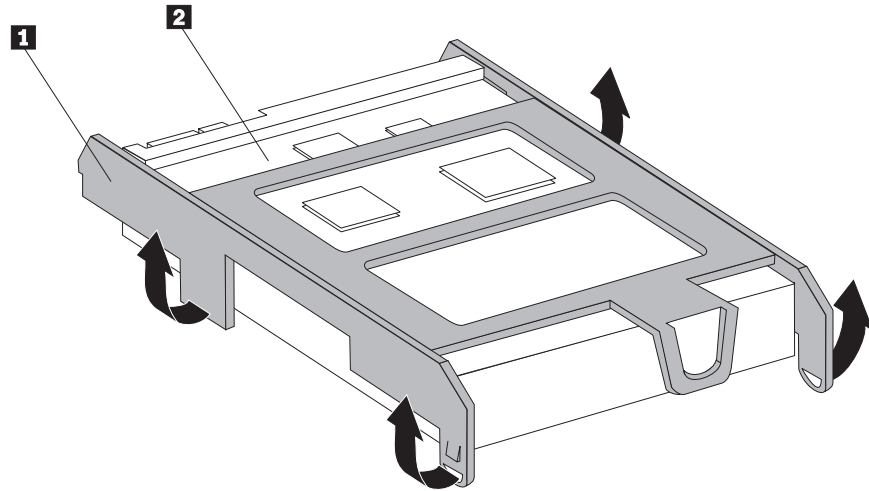


Figure 10. Installing the hard disk drive into the bracket

8. Connect the signal and power cables to the rear of the new hard disk drive.
9. Slide the new hard disk drive into the drive bay until it snaps into position.
10. Reconnect the power cable to the optical drive.
11. Go to Chapter 4, “Completing the parts replacement,” on page 27.

Replacing an optical drive

Attention

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

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

1. Remove the computer cover. See “Removing the cover” on page 11.

2. Remove the front bezel by releasing the two tabs and pivoting the bezel forward to remove completely.

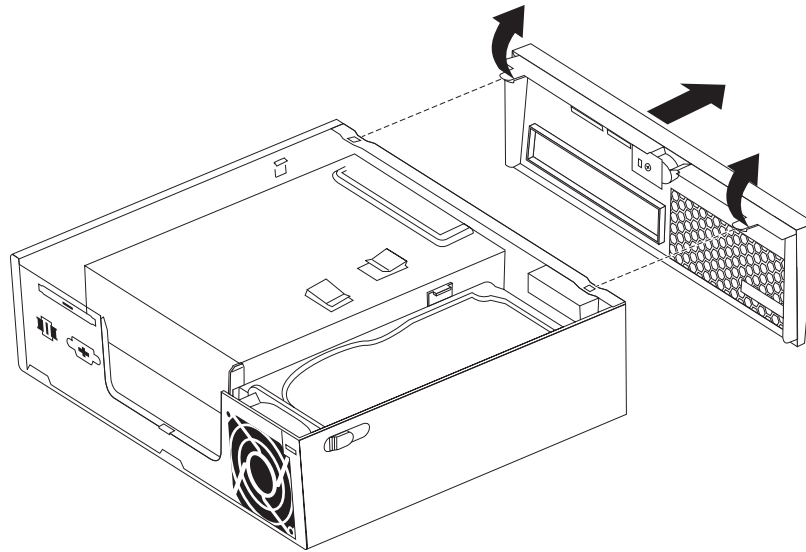


Figure 11. Removing the front bezel

3. Disconnect the signal and power cables from the rear of the optical drive.
4. Press the blue release button and remove the optical drive out the front of the computer.

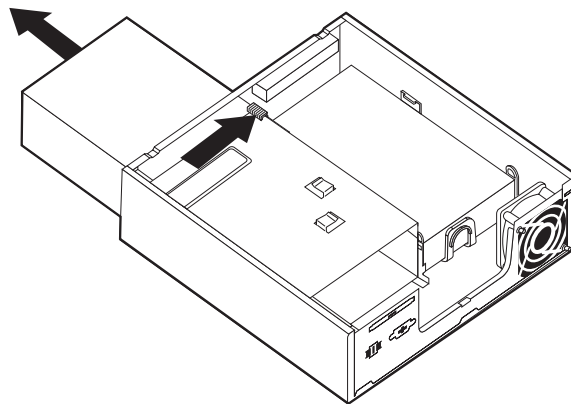


Figure 12. Removing the optical drive

5. Remove the retainer bracket from the failing drive and install it on the new optical drive.

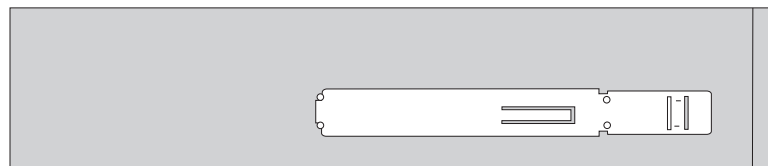


Figure 13. Retainer bracket for optical drive

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

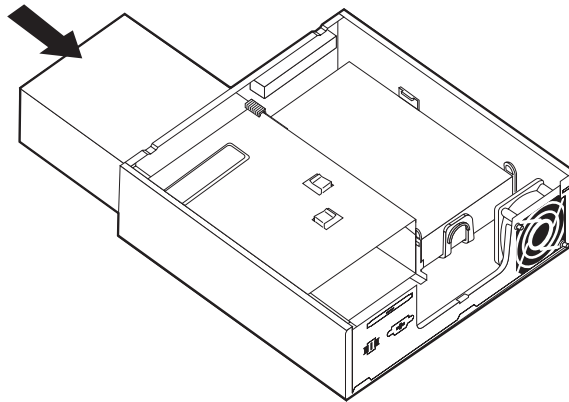


Figure 14. Replacing the optical drive

7. Connect the signal and power cables to the drive.
8. Replace the front bezel.
9. Go to Chapter 4, “Completing the parts replacement,” on page 27.

Replacing a memory module

Attention

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

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

Note: Your computer has support for two memory modules.

1. Remove the computer cover. See “Removing the cover” on page 11.
2. Locate the memory connector. See “Identifying parts on the system board” on page 9.

3. Remove the memory module being replaced by opening the retaining clips as shown.

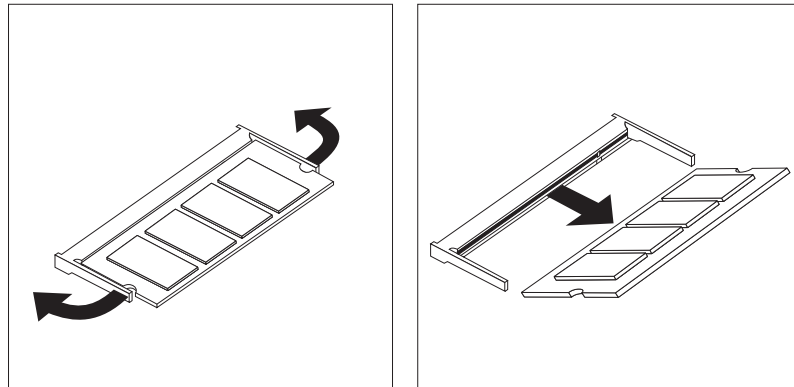


Figure 15. Removing the memory module

4. Insert the notched end **2** of the memory module into the socket **1**. Press the memory module firmly, and pivot the memory module until it snaps into place. Make sure that the memory module is firmly fixed in the connector and does not move easily.

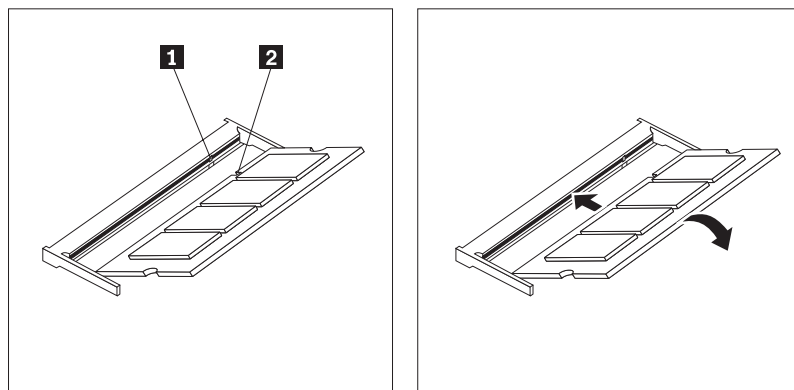


Figure 16. Installing the new memory module

5. Go to Chapter 4, “Completing the parts replacement,” on page 27.

Replacing the AC power adapter

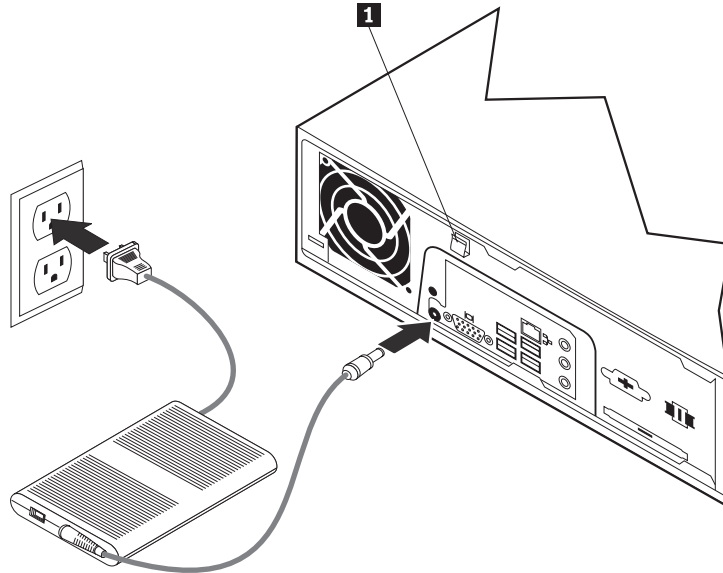
Attention

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

This section provides instructions on how to replace the AC power adapter.

1. Turn off the computer and disconnect the AC power cord from the electrical outlet.
2. Locate the power adapter connector. See “Locating connectors on the rear of your computer” on page 6.

3. Disconnect the AC power adapter cable from the power adapter connector.
4. Connect the new AC power adapter cable to the power adapter connector on the chassis. Then route the cable through the power cable clip **1** on the rear of the chassis to secure it in place.
5. Connect the power cord to the electrical outlet.



6. Go to Chapter 4, “Completing the parts replacement,” on page 27.

Replacing the modem

Attention

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

This section provides instructions on how to replace the modem.

1. Remove the computer cover. See “Removing the cover” on page 11.

2. Locate the MDC connector. See “Identifying parts on the system board” on page 9. The modem card **1** will be connected to the MDC connector.

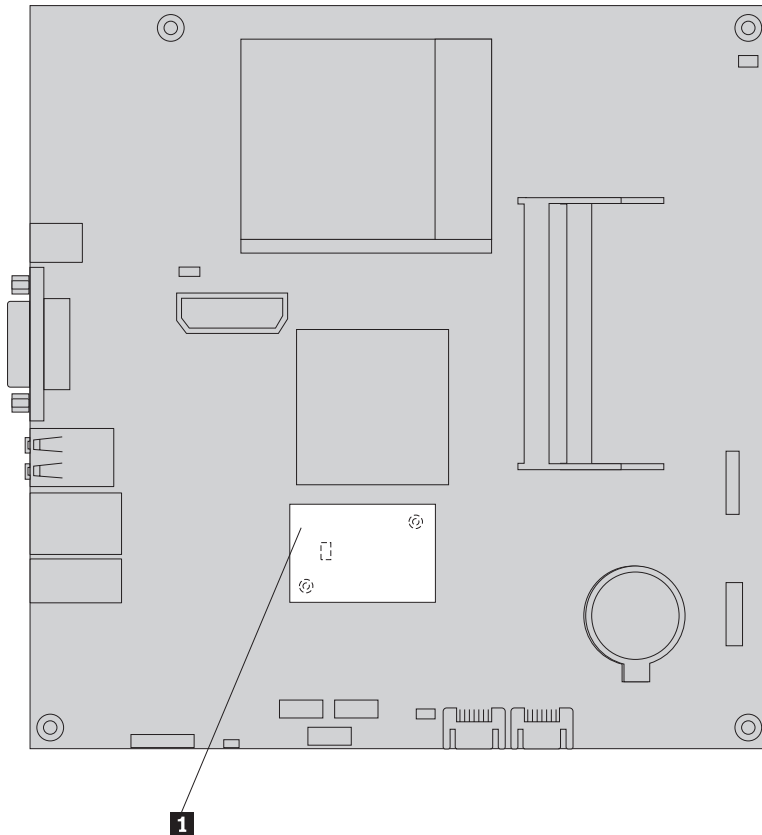
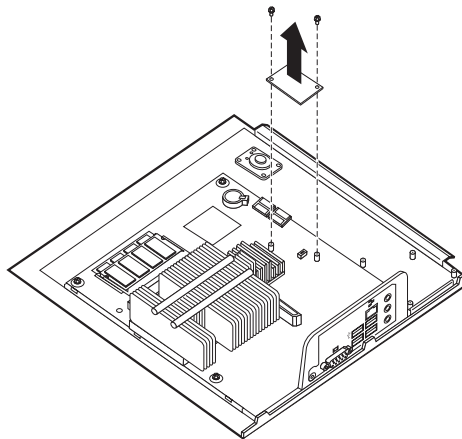


Figure 17. Locating the modem daughter card on the system board

3. Disconnect the RJ11 modem cable from the modem card.
4. Remove the two screws that secure the modem card to the system board.
5. Remove the modem card from the system board.



6. Install the new modem card to the MDC connector on the system board by aligning the holes in the modem card with the pins in the system board.
7. Install the two screws to secure the modem card to the system board.
8. Connect the RJ11 modem cable to the modem card.

9. Go to Chapter 4, "Completing the parts replacement," on page 27.

Replacing the system fan assembly

Attention

Do not open your computer or attempt any repair before reading the "Important safety information" in the *Safety and Warranty Guide* that was included with your computer. To obtain a copy of the *Safety and Warranty Guide*, go to the Support Web site at <http://www.lenovo.com/support>.

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

Note: When you receive your new system fan assembly, you will receive new rubber mounts.

1. Remove the computer cover. See "Removing the cover" on page 11.
2. Locate the system fan connector. See "Identifying parts on the system board" on page 9.
3. Disconnect the system fan assembly cable from the system board. See "Identifying parts on the system board" on page 9.
4. You might have to remove the hard disk drive to gain access to the system fan. See "Replacing a hard disk drive" on page 16.
5. Remove the two rubber mounts from the system fan assembly that connect to the chassis by breaking them or cutting them with a pair of scissors. Once this has been done, remove the rubber mounts from the rear of the chassis.
6. Pull the system fan assembly outward from the chassis. Then lift the system fan assembly out of the chassis.

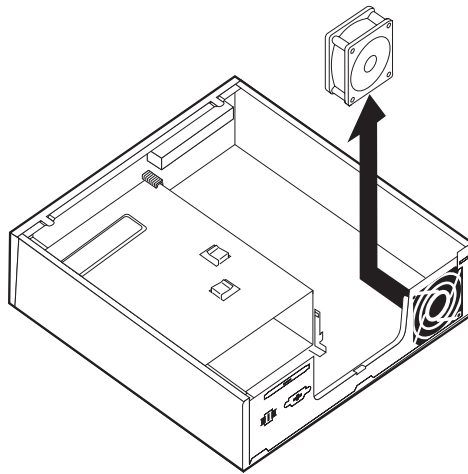


Figure 18. Removing the system fan assembly

7. When installing your new system fan assembly, use the new rubber mounts that come with the new system fan.
8. Install the two short rubber mounts in the new system fan assembly as shown in Figure 19.

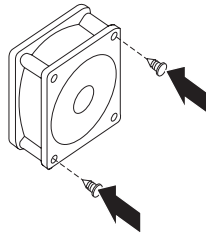


Figure 19. Installing the short rubber mounts

9. Install the two long rubber mounts into the rear of the chassis as shown in Figure 20. Push the mounts through the holes of the chassis. If necessary, pull the mounts through the holes from inside the chassis.
10. To install the new system fan assembly into the chassis, align the open holes in the system fan assembly with the long rubber mounts in the chassis. Pull the rubber mounts through the holes in the system fan assembly until the system fan is in place.

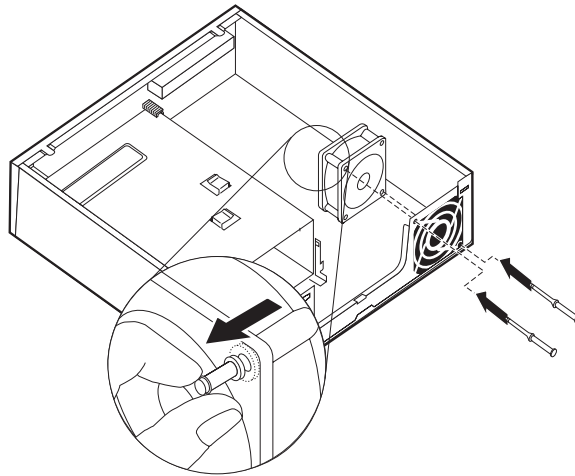


Figure 20. Replacing the system fan assembly

11. Once the system fan assembly is secure, you should remove the extra rubber from the mounts.
12. Connect the system fan assembly cable to the system fan connector on the system board.
13. Replace the hard disk drive, if it was removed.
14. Go to Chapter 4, "Completing the parts replacement," on page 27.

Replacing the keyboard

Attention

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

This section provides instructions on how to replace a keyboard.

1. Remove any media (DVDs, CDs, or tapes) from the drives, shut down your operating system, and turn off all attached devices and the computer.
2. Unplug all power cords from electrical outlets.
3. Locate the keyboard connector. See “Locating connectors on the rear of your computer” on page 6 or “Locating controls and connectors on the front of your computer” on page 5.

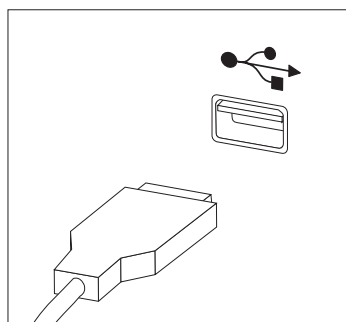


Figure 21. Keyboard connectors, USB

4. Disconnect the failing keyboard cable from the computer.
5. Connect the new keyboard to the appropriate connector on the computer.
6. Go to Chapter 4, “Completing the parts replacement,” on page 27.

Replacing the mouse

Attention

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

This section provides instructions on how to replace a mouse.

1. Remove any media (DVDs, CDs, or tapes) from the drives, shut down your operating system, and turn off all attached devices and the computer.
2. Unplug all power cords from electrical outlets.

3. Locate the mouse connector. See “Locating connectors on the rear of your computer” on page 6 or “Locating controls and connectors on the front of your computer” on page 5.

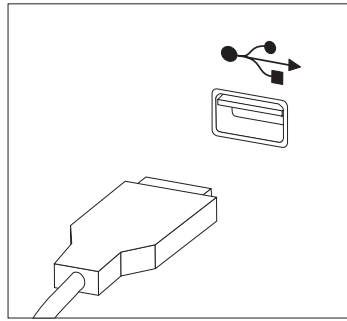


Figure 22. Mouse connectors, USB

4. Disconnect the failing mouse cable from the computer.
5. Connect the new mouse to the appropriate connector on the computer.
6. Go to Chapter 4, “Completing the parts replacement,” on page 27.

Chapter 4. Completing the parts replacement

After replacing the parts, you need to close the cover and reconnect cables, including telephone lines and power cords. Also, depending on the part that was replaced, you might need to confirm the updated information in the Setup Utility program. Refer to "Using the Setup Utility" in the *User Guide* for this product.

This section provides instructions on how to complete the parts replacement.

1. Ensure that all components have been reassembled correctly and that no tools or loose screws are left inside your computer. See "Locating components" on page 8 for the location of various components.
2. Make sure that the cables are routed correctly before closing the computer cover.

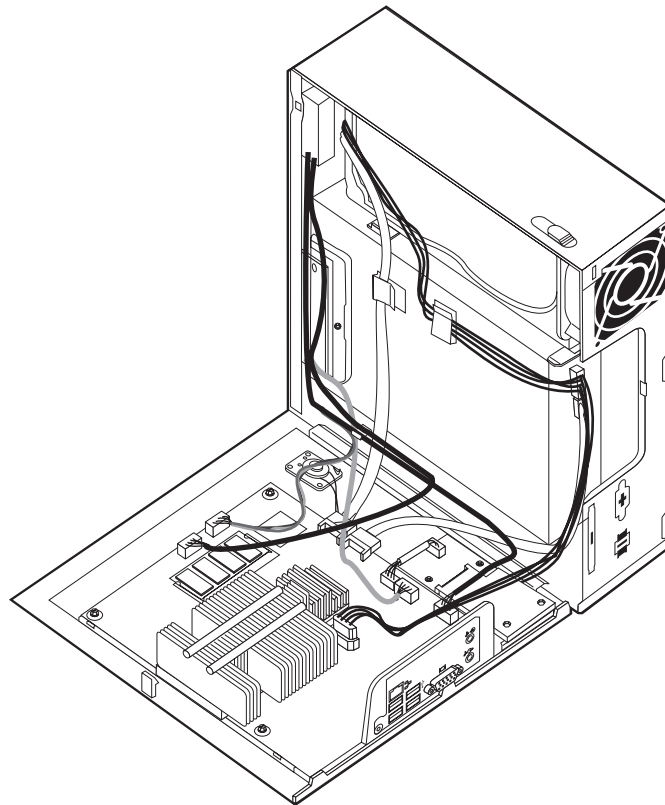


Figure 23. Routing the cables

Important

Correctly route all power supply cables to avoid interference with replacing the computer cover. Keep cables clear of the hinges and sides of the computer chassis.

3. Position the computer cover on the chassis so that the rail guide on the bottom of the computer cover engages the rail. Then, push the computer cover closed until it snaps into position.

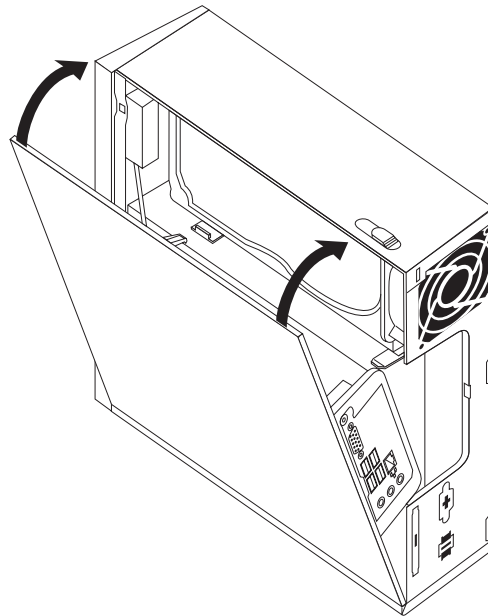


Figure 24. Closing the computer cover

4. If a cover lock is installed, lock the cover.
5. Reconnect the external cables and power cords to the computer. See "Locating connectors on the rear of your computer" on page 6.
6. To update your configuration, see "Using the Setup Utility" in your *User Guide*.

Note: In most areas of the world, Lenovo requires the return of the defective CRU. Information about this will come with the CRU or will come a few days after the CRU arrives.

Obtaining device drivers

You can obtain device drivers for operating systems that are not preinstalled at <http://www.lenovo.com/support/> on the World Wide Web. Installation instructions are provided in README files with the device-driver files.

Chapter 5. Security features

To help prevent hardware theft and unauthorized access to your computer, several security lock options are available. In addition to a physical lock, unauthorized use of your computer can be prevented by a software lock that locks the keyboard until a correct password is typed in.

Make sure that any security cables that you install do not interfere with other computer cables.

Integrated cable lock

An integrated cable lock (sometimes referred to as the Kensington lock), can be used to secure your computer to a desk, table, or other non-permanent fixture. The cable lock attaches to a security slot at the rear of your computer and is operated with a key. The cable lock also locks the buttons used to open the computer cover. This is the same type of lock used with many laptop computers. You can order a security cable directly from Lenovo. Go to <http://www.lenovo.com/support/> and search on *Kensington*.

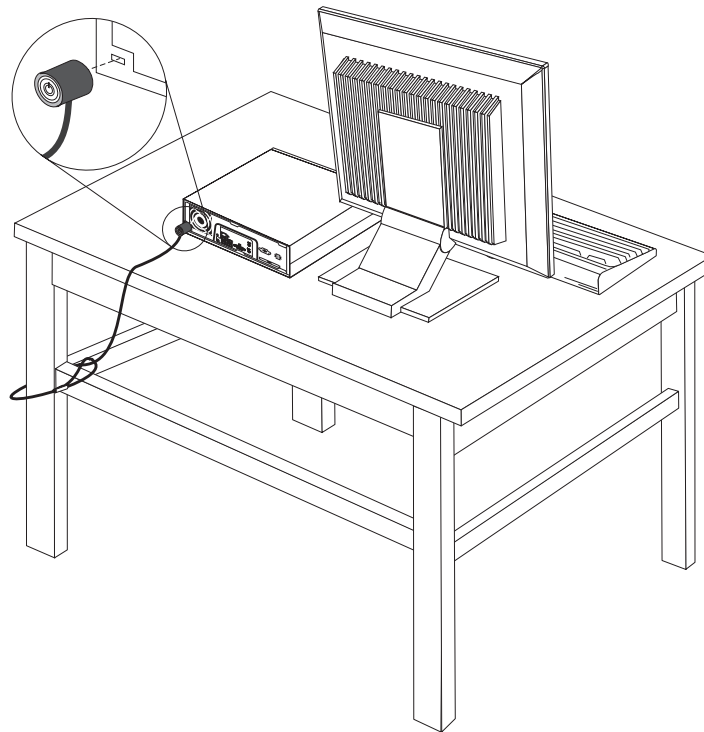


Figure 25. Installing cable lock

Password protection

To deter unauthorized use of your computer, you can use the Setup Utility program to set a password. When you turn on your computer, you are prompted to type the password to unlock the keyboard for normal use.

Erasing a lost or forgotten password (clearing CMOS)

This section applies to lost or forgotten passwords. For more information about lost or forgotten passwords, go to the ThinkVantage™ Productivity Center program.

To erase a forgotten password:

1. Remove the computer cover. See “Removing the cover” on page 11.
2. Locate the Clear CMOS/Recovery jumper on the system board. See “Identifying parts on the system board” on page 9.
3. Move the jumper from the standard position (pins 1 and 2) to the maintenance or configure position (pins 2 and 3).
4. Replace the computer cover and connect the power cord. See Chapter 4, “Completing the parts replacement,” on page 27.
5. Restart the computer, leave it on for approximately 10 seconds. Turn off the computer by holding the power switch for approximately 5 seconds. The computer will turn off.
6. Repeat steps 1 through 2 on page 30.
7. Move the Clear CMOS/Recovery jumper back to the standard position (pins 1 and 2).
8. Replace the computer cover and connect the power cord. See Chapter 4, “Completing the parts replacement,” on page 27.

Appendix. Notices

Lenovo may not offer the products, services, or features discussed in this document in all countries. Consult your local Lenovo representative for information on the products and services currently available in your area. Any reference to a Lenovo product, program, or service is not intended to state or imply that only that Lenovo product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any Lenovo intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any other product, program, or service.

Lenovo may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document does not give you any license to these patents. You can send license inquiries, in writing, to:

*Lenovo (United States), Inc.
1009 Think Place - Building One
Morrisville, NC 27560
U.S.A.
Attention: Lenovo Director of Licensing*

LENOVO PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some jurisdictions do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement may not apply to you.

This information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. Lenovo may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time without notice.

The products described in this document are not intended for use in implantation or other life support applications where malfunction may result in injury or death to persons. The information contained in this document does not affect or change Lenovo product specifications or warranties. Nothing in this document shall operate as an express or implied license or indemnity under the intellectual property rights of Lenovo or third parties. All information contained in this document was obtained in specific environments and is presented as an illustration. The result obtained in other operating environments may vary.

Lenovo may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation to you.

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

Any performance data contained herein was determined in a controlled environment. Therefore, the result obtained in other operating environments may

vary significantly. Some measurements may have been made on development-level systems and there is no guarantee that these measurements will be the same on generally available systems. Furthermore, some measurements may have been estimated through extrapolation. Actual results may vary. Users of this document should verify the applicable data for their specific environment.

Television output notice

The following notice applies to models that have the factory-installed television-output feature.

This product incorporates copyright protection technology that is protected by method claims of certain U.S. patents and other intellectual property rights owned by Macrovision Corporation and other rights owners. Use of this copyright protection technology must be authorized by Macrovision Corporation, and is intended for home and other limited viewing uses only unless otherwise authorized by Macrovision Corporation. Reverse engineering or disassembly is prohibited.

Trademarks

The following terms are trademarks of Lenovo in the United States, other countries, or both:

- Lenovo
- ThinkCentre
- ThinkVantage

IBM is a trademark of International Business Machines Corporation in the United States, other countries, or both.

Other company, product, or service names may be trademarks or service marks of others.

lenovo

Part Number: 43C6226

Printed in USA

(1P) P/N: 43C6226

