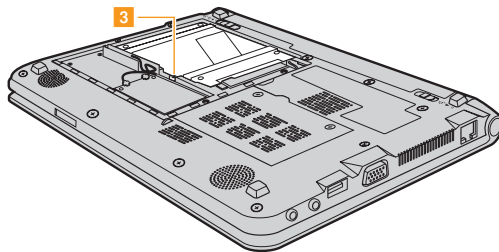
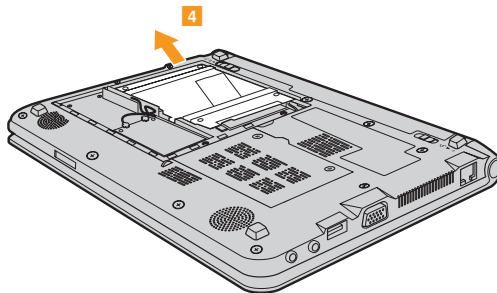


Chapter 6. Upgrading and replacing devices

- ⑥ Remove the screw ③ that secures the hard disk.

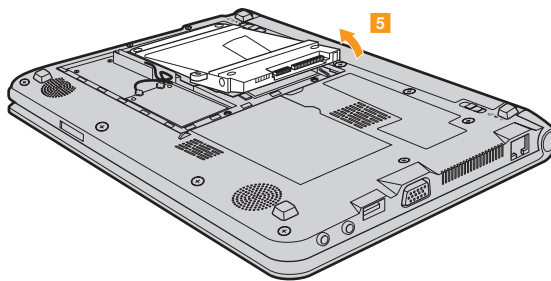


- ⑦ Pull the tab in the direction shown by arrow ④.



Chapter 6. Upgrading and replacing devices

- Take out the hard disk drive secured in a metal frame **5**.



- Remove the screws and detach the metal frame from the hard disk drive.
- Attach the metal frame to a new hard disk drive; then tighten the screws.
- Put the hard disk drive gently into the hard disk drive bay with the tab facing upwards and the connectors facing each other; then push it firmly into space.
- Reinstall the screw that secures the hard disk drive.
- Reinstall the cover of PCI Mini Express Card slot/hard disk drive (HDD) compartment.

Chapter 6. Upgrading and replacing devices

- 14 Reinstall the screws.
- 15 Reinstall the battery pack.
- 16 Turn the computer over again. Connect the AC adapter and the cables to the computer again.

Chapter 6. Upgrading and replacing devices

■ Replacing memory

You can increase the amount of memory in your computer by replacing a double data rate (DDR2) small outline dual inline memory module (SO-DIMM)-available as an option-in the memory slot of your computer. SO-DIMMs are available in various capacities.

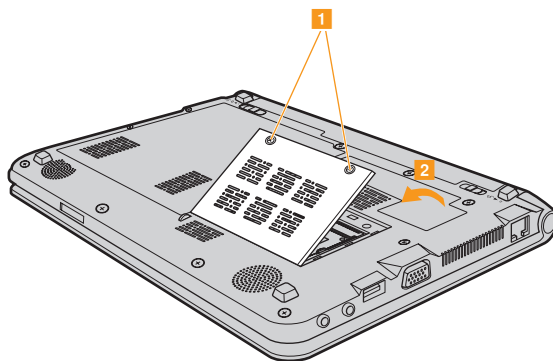
Note: Use only the memory types supported by your computer. If you incorrectly install optional memory, or install an unsupported memory type, a warning beep will sound when you try to start the computer.

To install an SO-DIMM, do the following:

- 1 Touch a metal table or a grounded metal object to reduce any static electricity in your body, which could damage the SO-DIMM. Do not touch the contact edge of the SO-DIMM.
- 2 Turn off the computer. Disconnect the AC adapter and all cables from the computer.
- 3 Close the computer display, and turn the computer over.
- 4 Remove the battery pack.

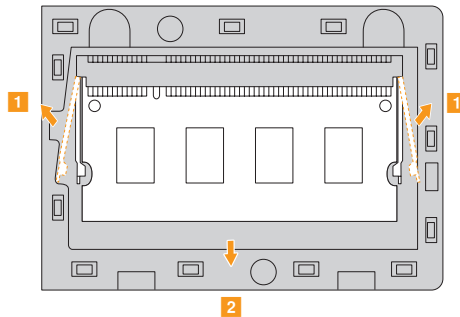
Chapter 6. Upgrading and replacing devices

- 5 Remove the Memory compartment cover.
 - a. Remove the screws that secure the compartment cover **1**.
 - b. Remove the compartment cover **2**.



Chapter 6. Upgrading and replacing devices

- 6 Press outwards on the latches on both edges of the socket at the same time, remove the SO-DIMM. Be sure to save the old SO-DIMM for future use.



- 7 Insert the notched end of the DIMM into the socket. Press the DIMM firmly, and pivot it until it snaps into place. Make sure that it is firmly fixed in the slot and does not move easily.
- 8 Reinstall the Memory compartment cover.
- 9 Reinstall the battery.
- 10 Turn the computer over, and reconnect the AC adapter and the cables to the computer.

Chapter 6. Upgrading and replacing devices

To make sure that the SO-DIMM is installed correctly, do as follows:

- 1 Turn the computer on.
- 2 Hold F2 during startup. The **BIOS setup utility** screen opens. The **System Memory** item shows the total amount of memory installed in your computer.

The following table provides a list of CRUs (Customer Replaceable Units) for your computer, and informs you of where to find replacement instructions.

	Setup Poster	User Guide
AC adapter	O	
Power cord for AC adapter	O	
Battery	O	O
Bottom access doors		O
Hard disk drive		O
Memory		O

Appendix A. Getting help and service

If you need help, service, technical assistance, or just want more information about Lenovo computers, you will find a wide variety of sources available from Lenovo to assist you. This section contains information about where to go for additional information about Lenovo computers, what to do if you experience a problem with your computer, and whom to call for service should it be necessary.

Microsoft Service Packs are the latest software source for Windows product updates. They are available by means of a Web download (connection charges may apply) or from a disc. For more specific information and links, go to the Microsoft Web site at <http://www.microsoft.com>. Lenovo offers Up and Running technical assistance with installation of, or questions related to, Service Packs for your Lenovo-preinstalled Microsoft Windows product.

Appendix A. Getting help and service

■ Getting help on the Web

The Lenovo Web site on the World Wide Web has up-to-date information about Lenovo computers and support. The address for the Lenovo home page is <http://consumersupport.lenovo.com>.

You can find support information for your Lenovo IdeaPad™ computer at <http://consumersupport.lenovo.com>. Research this Web site to learn how to solve problems, find new ways to use your computer, and learn about options that can make working with your Lenovo computer even easier.

■ Calling the customer support center

If you have tried to correct the problem yourself and still need help, during the warranty period, you can get help and information by telephone through the customer support center. The following services are available during the warranty period:

- Problem determination - Trained personnel are available to assist you with determining if you have a hardware problem and deciding what action is necessary to fix the problem.
- Lenovo hardware repair - If the problem is determined to be caused by Lenovo hardware under warranty, trained service personnel are available to provide the applicable level of service.

Appendix A. Getting help and service

- Engineering change management - Occasionally, there might be changes that are required after a product has been sold. Lenovo or your reseller, if authorized by Lenovo, will make selected Engineering Changes (ECs) available that apply to your hardware.

The following items are not covered:

- Replacement or use of parts not manufactured for or by Lenovo or non warranted parts
- Identification of software problem sources
- Configuration of BIOS as part of an installation or upgrade
- Changes, modifications, or upgrades to device drivers
- Installation and maintenance of network operating systems (NOS)
- Installation and maintenance of application programs

To determine if your Lenovo hardware product is under warranty and when the warranty expires, go to <http://consumersupport.lenovo.com>.

Refer to your Lenovo hardware warranty for a full explanation of Lenovo warranty terms. Be sure to retain your proof of purchase to obtain warranty service.

Appendix A. Getting help and service

If possible, be near your computer when you make your call in case the technical assistance representative needs to help you resolve a computer problem. Please ensure that you have downloaded the most current drivers and system updates, and recorded information before you call. When calling for technical assistance, please have the following information available:

- Machine Type and Model
- Serial number of your computer and your proof of purchase
- Description of the problem
- Hardware and software configuration information for your system

Note: For the latest list of customer support center telephone numbers and hours of operation, visit the Support Web site at <http://consumersupport.lenovo.com>. If the number for your country or region is not listed, contact your Lenovo reseller or Lenovo marketing representative.

Appendix A. Getting help and service

Getting help around the world

If you travel with your computer or relocate it to a country where your Lenovo machine type is sold, your computer might be eligible for International Warranty Service, which automatically entitles you to obtain warranty service throughout the warranty period. Service will be performed by service providers authorized to perform warranty service.

Service methods and procedures vary by country, and some services might not be available in all countries. Service centers in certain countries might not be able to service all models of a particular machine type. In some countries, fees and restrictions might apply at the time of service.

To determine whether your computer is eligible for International Warranty Service and to view a list of the countries where service is available, go to <http://consumersupport.lenovo.com>.

Lenovo warranty service telephone numbers

Warranty Service Telephone Numbers

A list of warranty service telephone numbers is available at www.lenovo.com/support/phone. For the latest warranty service number in a country or region, please contact Lenovo, or your reseller in your country or region.

Appendix B. Use, and care Information

■ ■ Caring your computer

Though your computer is designed to function reliably in normal work environments, you need to use common sense in handling it. By following these important tips, you will get the most use and enjoyment out of your computer.

■ Be careful about where and how you work.

- Do not eat or smoke over your keyboard. Particles that fall into your keyboard can cause damage.
- Store packing materials safely out of the reach of children to prevent the risk of suffocation from plastic bags.
- Keep your computer away from magnets, activated cellular phones, electrical appliances, or speakers (within 13 cm or 5 in).
- Avoid subjecting your computer to extreme temperatures (below 5°C/41°F or above 35°C/95°F).
- Some appliances, such as certain portable desktop fans or air purifiers, can produce negative ions. If a computer is close to such an appliance, and is exposed for an extended time to air containing negative ions, it may become electrostatically charged. Such a charge may be discharged through your hands when you touch the keyboard or other parts of the computer, or through connectors on I/O devices connected to it. Even though this kind of electrostatic discharge (ESD) is the opposite of a

Appendix B. Use, and care Information

discharge from your body or clothing to the computer, it poses the same risk of a computer malfunction.

Your computer is designed and manufactured to minimize any effects of electrostatic charge. An electrostatic charge above a certain limit, however, can increase the risk of ESD. Therefore, when using the computer close to an appliance that can produce negative ions, give special attention to the following:

- Avoid directly exposing your computer to the air from an appliance that can produce negative ions.
- Keep your computer and peripherals as far as possible from such an appliance.
- Wherever possible, ground your computer to facilitate safe electrostatic discharge.

■ Notice of static-electricity

When you handle options or CRUs, or perform any work inside the computer, take the following precautions to avoid static-electricity damage:

- Limit your movement. Movement can cause static electricity to build up around you.
- Always handle components carefully. Handle adapters, memory modules, and other circuit boards by the edges. Never touch exposed circuitry.
- Prevent others from touching components.

Appendix B. Use, and care Information

- When you install a static-sensitive option or CRU, 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.
- Whenever possible, remove the static-sensitive part from the static-protective packaging and install the part without setting it down. When this is not possible, place the static-protective packaging on a smooth, level surface and place the part on it.
- Do not place the part on the computer cover or other metal surface.

■ Be gentle with your computer

- Avoid placing any objects (including paper) between the display and the keyboard or under the keyboard.
- Do not drop, bump, scratch, twist, hit, vibrate, push, or place heavy objects on your computer, display, or external devices.
- Avoid turning the display beyond 130°.

■ Carry your computer properly

- Before moving your computer, be sure to remove any media, turn off attached devices, and disconnect cords and cables.
- Be sure your computer is in standby or hibernation mode, or turned off, before moving it. This will prevent damage to the hard disk drive and data loss.

Appendix B. Use, and care Information

- When picking up your open computer, hold it by the bottom. Do not pick up or hold your computer by the display.
- Use a quality carrying case that provides adequate cushion and protection. Do not pack your computer in a tightly packed suitcase or bag.

■ For outdoor use

- Backup your critical data before you take your computer outdoors.
- Ensure that the battery is full.
- Be sure to turn off the power and close the LCD well.
- When you leave the computer in your car, place it on the back seat to avoid being insulated.
- Carry the AC adapter and power cord with the computer.

■ Handle storage media and drives properly

- If your computer comes with an optical drive, do not touch the surface of a disc or the lens on the tray.
- Wait until you hear the CD or DVD click into the center pivot of an optical drive before closing the tray.
- When installing your hard disk, follow the instructions shipped with your hardware, and apply pressure only where needed on the device.

Appendix B. Use, and care Information

■ Data safety

- Do not delete unknown files or change the name of files or directories that were not created by you; otherwise, your computer software might fail to work.
- Be aware that accessing network resources can leave your computer vulnerable to computer viruses, hackers, spyware, and other malicious activities that might damage your computer, software, or data.
- It is your responsibility to ensure that you have adequate protection in the form of firewalls, antivirus software, and anti-spyware software and keep this software up to date.

■ Take care in setting passwords

- Remember your passwords. If you forget a supervisor or hard disk password, Lenovo authorized service providers will not reset it, and you might have to replace your system board or hard disk drive.

■ Other important tips

- Do not put the battery pack in trash that is disposed of in landfills. When disposing of the battery, comply with local ordinances or regulations and your company's safety standards.
- Your computer might have both an Ethernet connector and a modem connector. If so, be sure to connect your communication cable to the correct one, so your connector is not damaged.

Appendix B. Use, and care Information

- Register your Lenovo products with Lenovo (refer to the Web page: <http://consumersupport.lenovo.com>). This can help authorities return your computer to you if it is lost or stolen. Registering your computer also enables Lenovo to notify you about possible technical information and upgrades.
- Only an authorized Lenovo repair technician should disassemble and repair your computer.
- Do not modify or tape the latches to keep the display open or closed.
- Take care not to turn your computer over while the AC adapter is plugged in. This could break the adapter plug.
- Turn off your computer if you are replacing a device, or else verify that the device is warm- or hot-swappable.
- Before you install any of the following devices, touch a metal table or a grounded metal object. This action reduces any static electricity from your body. The static electricity could damage the device.
 - ExpressCard
 - Memory Card, such as SD Card, Memory Stick, MultiMediaCard, and Memory Stick Pro card.
 - Memory module
- When transferring data to or from a Flash Media Card, such as an SD card, do not put your computer in standby or hibernation mode before the data transfer is complete. To do so might cause damage to your data.

Appendix B. Use, and care Information

■ Accessibility and comfort

■ Ergonomic information

Working in the virtual office may mean adapting to frequent changes in your environment. Following some simple rules will make things easier and bring you the maximum benefits of your computer. Keeping in mind such basics as good lighting and proper seating, for example, can help you improve your performance and achieve greater comfort.

Note: This example shows someone in a conventional setting. Even if you work in a casual, less conventional setting, many of the tips in this section still apply. Develop good habits, and they will serve you well.



Appendix B. Use, and care Information

■ What if you are traveling?

It may not be possible to observe the best ergonomic practices when you are using your computer while on the move or in a casual setting. Regardless of the setting, try to observe as many of the tips as possible. Sitting properly and using adequate lighting, for example, will help you maintain desirable levels of comfort and performance.

■ Questions about vision?

Your computer's visual display screen is designed to meet the highest standards and to provide you with clear, crisp images and large, bright displays that are easy to see, yet easy on the eyes. Of course, any concentrated and sustained visual activity can be tiring. If you have questions on eye fatigue or visual discomfort, consult a vision care specialist for advice.

Appendix B. Use, and care Information

■ Maintenance

An important part of owning your computer is maintenance. With proper care, you can avoid common problems. The following sections provide information that can help you to keep your computer running smoothly.

■ General tips for maintenance

- ① Check the capacity of your hard disk drive from time to time. If the hard disk drive gets too full, Windows® will slow down and might produce errors.
- ② Empty your recycle bin on a regular basis.
- ③ Use Diskkeeper Lite or the Microsoft Disk Defragmenter on your hard disk drive on a regular basis to improve data seek and read time.
 - To free up disk space, uninstall unused application programs.
 - Clean out your Inbox, Sent, and Trash folders from your e-mail client program.
 - At least once a week, make a point to back up your data. If critical data is present, it is a good idea to perform a daily backup. Lenovo has many backup options available for your computer. CD-RW drives and CD-RW/DVD drives are available for most computers and are easily installed.
 - Use or schedule System Restore to take a system snapshot periodically.

Appendix B. Use, and care Information

Note: Always take a system snapshot before installing new drivers, updating software, or installing new software.

- Update device drivers and BIOS when needed.
- Profile your machine at <http://consumersupport.lenovo.com> to keep up to date with current drivers and revisions.
- Keep up to date on device drivers on other non-Lenovo hardware. You might want to read the device driver information release notes prior to updating for compatibility or known issues.
- Keep a log book. Entries might include major hardware or software changes, driver updates, minor issues you have experienced and how you resolved them.
- If you ever need to run a recovery operation on your computer by OneKey Rescue System, see “Chapter 4. OneKey Rescue System” on page 36.
- If required, you can find your country’s customer support center at the following Web address: <http://consumersupport.lenovo.com>. When calling the customer support center, please make sure you have your machine type, model, and serial number available and the computer is in front of you. Also, if the machine is producing error codes, it is helpful to have the error screen on or the message written down.

Appendix B. Use, and care Information

■ Cleaning the cover of your computer

Occasionally clean your computer as follows:

- 1 Prepare a mixture of a gentle kitchen-use detergent (one that does not contain abrasive powder or strong chemicals such as acid or alkaline). Use 5 parts water to 1 part detergent.
- 2 Absorb the diluted detergent into a sponge.
- 3 Squeeze excess liquid from the sponge.
- 4 Wipe the cover with the sponge, using a circular motion and taking care not to let any excess liquid drip.
- 5 Wipe the surface to remove the detergent.
- 6 Rinse the sponge with clean running water.
- 7 Wipe the cover with the clean sponge.
- 8 Wipe the surface again with a dry, soft lint-free cloth.
- 9 Wait for the surface to dry completely and remove any cloth fibers from the computer surface.

Note: Shut down the computer and then disconnect the power cord before cleaning the computer.

Appendix B. Use, and care Information

■ Cleaning your computer keyboard

- 1 Absorb some isopropyl rubbing alcohol on a soft, dust-free cloth.
- 2 Wipe each keytop surface with the cloth. Wipe the keys one by one; if you wipe several keys at a time, the cloth may hook onto an adjacent key and possibly damage it. Make sure that no liquid drips onto or between the keys.
- 3 Allow to dry.
- 4 To remove any crumbs and dust from beneath the keys, you can use a camera blower with a brush or cool air from a hair drier.

Note: Avoid spraying cleaner directly on the display or the keyboard.

Appendix B. Use, and care Information

■ Cleaning your computer display

- 1 Gently wipe the display with a dry, soft lint-free cloth. If you see a scratchlike mark on your display, it might be a stain transferred from the keyboard when the cover was pressed from the outside.
- 2 Wipe or dust the stain gently with a soft, dry cloth.
- 3 If the stain remains, moisten a soft, lint-free cloth with water or a 50-50 mixture of isopropyl alcohol and water that does not contain impurities.
- 4 Wring out as much of the liquid as you can.
- 5 Wipe the display again; do not let any liquid drip into the computer.
- 6 Be sure to dry the display before closing it.

Appendix C. Lenovo limited warranty

This Lenovo Limited Warranty applies only to Lenovo branded hardware products you purchased for your own use and not for resale.

This Lenovo Limited Warranty is available in other languages at www.lenovo.com/warranty.

■ What this warranty covers

Lenovo warrants that each hardware product that you purchase is free from defects in materials and workmanship under normal use during the warranty period. The warranty period for the product starts on the original date of purchase specified on your sales receipt or invoice unless Lenovo informs you otherwise in writing. The warranty period and type of warranty service that apply to your product are designated below under the section titled **“Warranty information.”**

THIS WARRANTY IS YOUR EXCLUSIVE WARRANTY AND REPLACES ALL OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. SOME STATES OR JURISDICTIONS DO NOT ALLOW THE EXCLUSION OF EXPRESS OR IMPLIED WARRANTIES, SO THE ABOVE EXCLUSION MAY NOT APPLY TO YOU. IN THAT EVENT, SUCH WARRANTIES APPLY ONLY TO THE EXTENT REQUIRED BY LAW AND ARE LIMITED IN DURATION TO THE WARRANTY PERIOD. NO WARRANTIES APPLY AFTER THAT PERIOD. SOME STATES OR JURISDICTIONS DO NOT ALLOW LIMITATIONS

Appendix C. Lenovo limited warranty

ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION ON DURATION MAY NOT APPLY TO YOU.

■ How to obtain warranty service

If the product does not function as warranted during the warranty period, you may obtain warranty service by contacting Lenovo or an approved service provider. Each of them is referred to as a "Service Provider." A list of Service Providers and their telephone numbers is available at www.lenovo.com/support/phone.

Warranty service may not be available in all locations and may differ from location to location. Charges may apply outside a Service Provider's normal service area. Contact a local Service Provider for location-specific information.

■ What your service provider will do to correct problems

When you contact a Service Provider, you must follow the problem determination and resolution procedures specified.

Your Service Provider will attempt to diagnose and resolve your problem over the telephone, e-mail or through remote assistance. Your Service Provider may direct you to download and install designated software updates.

Appendix C. Lenovo limited warranty

Some problems can be resolved with a replacement part that you can install yourself called a “Customer Replaceable Unit” or “CRU.” If so, your Service Provider will ship the CRU to you to install.

If your problem cannot be resolved over the telephone or remotely, through your application of software updates or the installation of a CRU by you, your Service Provider will arrange for service under the type of warranty service designated for the product under the section titled “**Warranty information.**”

If your Service Provider determines that it is unable to repair your product, your Service Provider will replace it with one that is at least functionally equivalent.

If your Service Provider determines that it is unable to either repair or replace your product, your sole remedy is to return the product to your place of purchase or to Lenovo for a refund of your purchase price.

Appendix C. Lenovo limited warranty

■ Replacement of a product or part

When the warranty service involves the replacement of a product or part, the replaced product or part becomes Lenovo's property and the replacement product or part becomes your property. Only unaltered Lenovo products and parts are eligible for replacement. The replacement product or part provided by Lenovo may not be new, but it will be in good working order and at least functionally equivalent to the original product or part. The replacement product or part shall be warranted for the balance of the period remaining on the original product.

Before your Service Provider replaces a product or part, you agree to:

- 1 remove all features, parts, options, alterations, and attachments not under warranty service;
- 2 ensure that the product or part is free of any legal obligations or restrictions that prevent its replacement; and
- 3 obtain authorization from the owner to have your Service Provider service a product or part if you do not own it.

Appendix C. Lenovo limited warranty

■ Your additional responsibilities

Where applicable, before service is provided, you agree to:

- 1 follow the service request procedures that your Service Provider specifies;
- 2 backup or secure all programs and data contained in the product;
- 3 provide your Service Provider with all system keys or passwords and sufficient, free, and safe access to your facilities to perform service; and
- 4 ensure that all information about identified or identifiable individuals (“Personal Data”) is deleted from the product or that, with respect to any Personal Data that you did not delete, you are in compliance with all applicable laws.

■ Use of personal information

If you obtain service under this warranty, Lenovo will store, use and process information about your warranty service and your contact information, including name, phone numbers, address, and e-mail address. Lenovo will use this information to perform service under this warranty and to improve our business relationship with you. We may contact you to inquire about your satisfaction regarding our warranty service or to notify you about any product recalls or safety issues. In accomplishing these purposes, we may transfer your information to any country where we do business and may provide it to entities acting on our behalf. We may also disclose it where required by law.