lenovo

Lenovo 3000 Y310

User Guide

Note

Please read **Read This First** before operation of your computer

Includes:

- **Important safety information**
- **Tips for taking care of your computer**
- **Function and features**
- **Service and troubleshooting**
- **Warranty information**

Note

Before using this information and the product it supports, be sure to read the following:

- *Safety and Warranty Guide* included in the package with this publication.
- Wireless related information in "Appendix D, Notices," on page 65.
- *Regulatory Notice* included in the package with this publication.

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Read This First

When your computer is turned on or the battery is charging, the base, the palm rest, and some other parts may become hot. Avoid keeping your hands, your lap, or any other part of your body in contact with a hot section of the computer for any extended length of time. When you use the keyboard, avoid keeping your palms on the palm rest for a prolonged period of time.

Your computer generates some heat during normal operation. The amount of heat depends on the amount of system activity and the battery charge level. Extended contact with your body, even through clothing, could cause discomfort or even a skin burn. Periodically take breaks from using the keyboard by lifting your hands from the palm rest; and be careful not to use the keyboard for any extended length of time.

When the AC adapter is connected to an electrical outlet and your computer, it generates heat. Do not place the adapter in contact with any part of your body while using it. Never use the AC adapter to warm your body. Extended contact with your body, even through clothing, may cause a skin burn.

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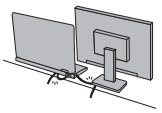
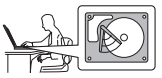


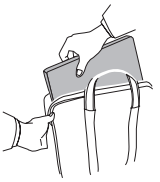
Route the cables of an AC adapter, a mouse, a keyboard, a printer, or any other electronic device, or communication lines, so that they cannot be walked on, tripped over, pinched by your computer or other objects, or in any way subjected to treatment that could disturb the operation of your computer. Applying strong force to the cables may damage or break them.



Before moving your computer, do one of the following: turn it off or press Fn + F1 to put it in sleep mode or hibernation mode.

Before moving the computer, make sure that the power on indicator is off. This will help to prevent damage to the hard disk drive, and possible loss of data.

Do not drop, bump, scratch, twist, hit, vibrate, push, or place heavy objects on your computer, display, or external devices.



Use a quality carrying case that provides adequate cushion and protection. Do not pack your computer in a tightly packed suitcase or bag.

Place liquids away from your computer to avoid spills, and keep your computer away from water to avoid the danger of electrical shock.

Chapter 1. Finding Information

This Guide and Other Publications

Setup Instructions
: helps you to unpack your computer and get started. It includes a few tips for first-time users, and introduces software preinstalled by Lenovo™.

This User Guide
: provides information about caring for your computer, function and features instruction, basic troubleshooting information, upgrading and replacing devices instruction, help and service information, and warranty information for your computer.

Safety and Warranty Guide
: includes general safety instructions and complete Lenovo Limited Warranty.

Regulatory Notice
: supplements this Guide. Read it before you use the wireless features of your computer. Your computer complies with the radio frequency and safety standards of any country or region in which it has been approved for wireless use. You are requested to install and use your computer in strict accordance with the local RF regulations.

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Finding Information

Chapter 2. Caring for 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.

Important Tips

Be Careful about Where and How You Work

- Do not leave the base of your computer, or any other part that becomes hot during operation, in contact with your lap or any part of your body for an extended period when the computer is functioning or when the battery is charging. Your computer dissipates some heat during normal operation. This heat is a function of the level of system activity and battery charge level. Extended contact with your body, even through clothing, could cause discomfort or, eventually, a skin burn.
- When the AC adapter is connected to an electrical outlet and your computer, it generates heat. Do not place the adapter in contact with any part of your body while using it. Never use the AC adapter to warm your body. Extended contact with your body, even through clothing, may cause a skin burn.
- Route the cables of an AC adapter, a mouse, a keyboard, a printer, or any other electronic devices, or communication lines, so that they cannot be walked on, tripped over, pinched by your computer or other objects, or in any way subjected to treatment that could disturb the operation of your computer. Applying strong force to the cables may damage or break them.
- Place liquids away from your computer to avoid spills, and keep your computer away from water (to avoid the danger of electrical shock).
- 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 (without 13 cm or 5 in).
- Avoid subjecting your computer to extreme temperatures (below 0°C/32°F or above 45°C/113°F).

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- 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 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.

  Note: Not all such appliances cause a significant electrostatic charge.

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.

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 sleep or hibernation mode, or turned off, before moving it. This will prevent damage to the hard disk drive and data loss.
- 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.

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.

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

- Your computer modem might use only an analog telephone network, or public-switched telephone network (PSTN). Do not connect the modem to a PBX (private branch exchange) or any other digital telephone extension line because this could damage your modem. Analog phone lines are often used in homes, while digital phone lines are often used in hotels or office buildings. If you are not sure which kind of phone line you are using, contact your telephone company.
- 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.
- Register your Lenovo products with Lenovo (refer to the Web page: http://www.Lenovo.com/register). 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, xD-Picture Card, and Memory Stick Pro card.
  - Memory module
  - PCI Express Card
- When transferring data to or from a Flash Media Card, such as an SD card, do not put your computer in sleep or hibernation mode before the data transfer is complete. To do so might cause damage to your data.

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.

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.

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.

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* External views illustrated in this manual may slightly differ from the actual products.

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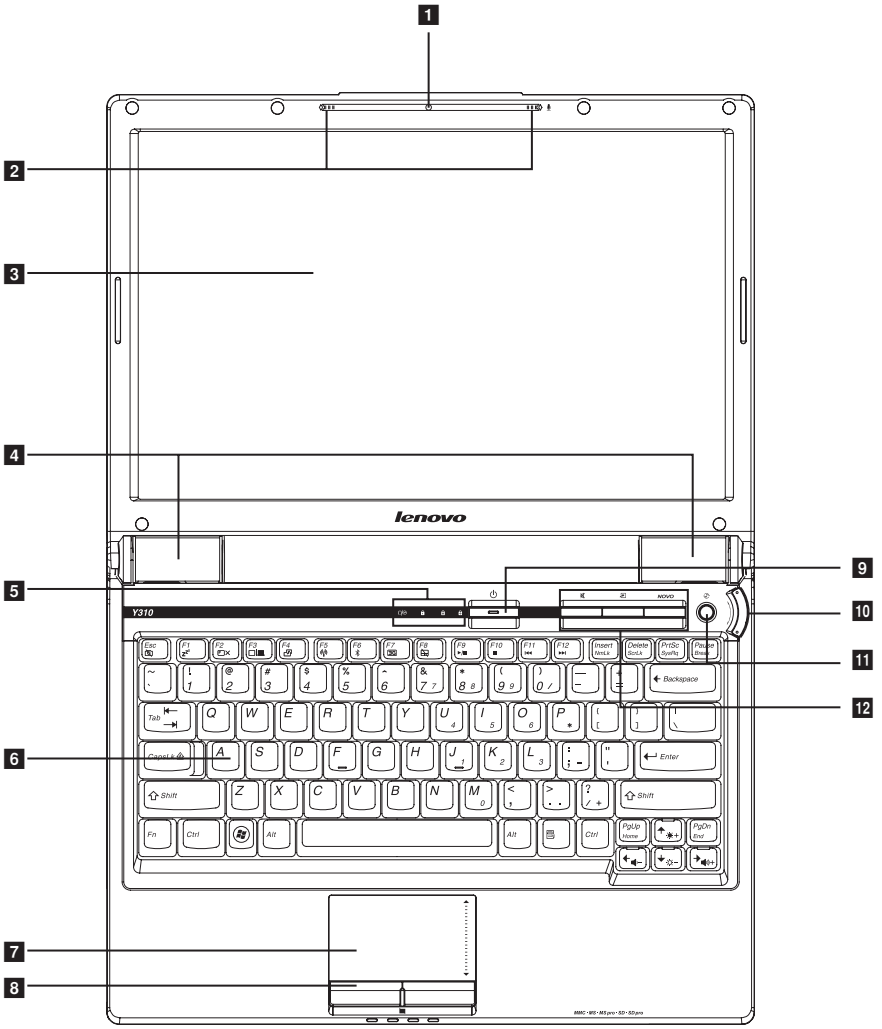
Knowing the Parts

Top View

Lenovo 3000 Y310



1 **Integrated camera**
The integrated built-in camera allows picture taking or video recording, and can be used with video conferencing and other interactive applications.
Note: The camera can only be used when it is turned on. Press Fn + Esc to turn on or off the camera.

2 **Array microphone (built-in)**
The built-in array microphone brings you a better recording quality with more accuracy and resolution. It can be used for video conferencing, voice narration, or simple audio recordings.

3 **Computer display**
The computer display functions the same as a desktop monitor. The high-resolution, thin-film transistor (TFT) display provides clear and brilliant text and graphics.

4 **Internal speaker**
The multimedia stereo speakers provide a true and powerful effect while you are watching movies or enjoying music.

5 **System-status indicators**
For details on "System-status Indicators", see page 25.

6 **Keyboard**
The keyboard provides full-sized keys with comfortable travel. For details on "Function Key Combinations", see page 23.

7 **Touch pad**
Move your fingertip across the touch pad to move the cursor. The blue indicator between the left and right buttons on the touch pad indicates whether the touch pad is activated.

8 **Touch pad button**
The two buttons of the touch pad function as the left and right buttons of the mouse.

9 **Power button** ⏻
Use the power button to turn on the computer. To turn off your computer, use the Start menu shutdown options. The power button also can be programmed to shut down the computer or put it into sleep or hibernation.
If your computer stops responding, and you cannot turn it off, press and hold the power button for 4 seconds or more. If the system is still not reset, remove the AC adapter and the battery.

10 **Volume button**
This button enables you to quickly and conveniently turn up or turn down the sound of your computer.

11 **EQ button**

There are five modes of EQ. Press this button to switch between these modes.

(1) None: Set the system output sound to the default setting.
(2) Rock: Set the system output sound to rock music mode.
(3) Pop: Set the system output sound to pop music mode.
(4) Dance: Set the system output sound to dancing mode.
(5) Class: Set the system output sound to classical mode.

12 **Instant buttons**

Mute button

Press this button to turn on or off the sound.

Custom button

With the preinstalled software, once you press the button, a dialog window appers to allow you to define the button with the applications listed, so that you can recall the application instantly by pressing this custom button.

Note: You need to install the driver of EnergyCut to realize this function. See page 29.
Once Easycapture is installed, this button is customized with Easycapture automatically.

Novo button *NOVO*

This button functions as a reset button; use with caution. Press the Novo button to enter the main interface of OneKey Recovery while the power is off. You can use OneKey Recovery to restore the primary hard disk partition (usually drive C) back to the factory default configuration, including the operating system and the software on it.

Attention: Once done, the system can no longer return to its previous state. All data on the primary hard disk partition (usually drive C) will subsequently be lost. So make sure all important files on the primary hard disk partition have been backed up onto another hard disk or USB hard disk drive before this operation.

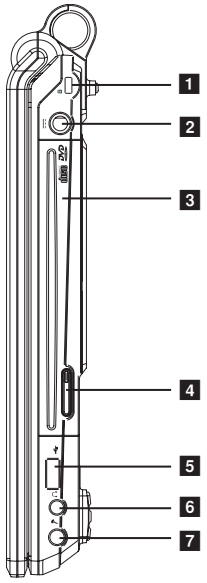
For details, see “OneKey Recovery4.65 User Guide”.

When your computer is running Windows Vista™, and if you have the EnergyCut program installed, you can shift the power schemes by pressing the Novo button.

Note: If your computer is in hibernation, you may not enter the OneKey Recovery by pressing the Novo button. Press the Power button to enter the operation system, shut down your computer first to use the Novo button.

Right-side View

Refer to the diagram below to identify the components on this side of the computer.



1 **Security keyhole**

Your computer comes with a security keyhole. You can purchase a security cable and lock to fit this keyhole.

Hint: Before purchasing any security product, verify that it is compatible with this type of security keyhole.

2 **AC power adapter jack**

Connect the power adapter here to supply power to the computer and charge the internal battery.

Note: To prevent damage to the computer and battery pack, use the supplied AC adapter only.

3 **Optical drive (types vary by model)**

Your computer comes with an optical device, such as a CD-ROM drive or a DVD/CD recordable drive drive.

For this model, there are two kinds of optical drives:

(1) Slot-in type: Provides a convenient and quick way to insert and remove discs. Keep the disk flat and gently insert the disc into the slot. The drive will begin reading data from the disc. To remove a disc, press the Eject button

(2) Tray type: Press the Eject button to open the drive tray, place the disc on the tray, then gently push the drive tray back in. The drive will begin reading the data from the disc. To remove a disc, press the Eject button to open the tray and then remove the disc from the tray.

Attention: 1) The slot-in type cannot read 8 cm discs. Never insert 8 cm discs into this kind of optical drive.
2) It is normal to hear the CD spinning in the optical drive while data is being read.

4 **Drive eject button**

(1) For slot-in type drive, press this button to eject the disc from the drive.

(2) For tray type, press this button to eject the drive tray.

5 **USB 2.0 port (right side)**

The Universal Serial Bus is compatible with USB 2.0 or USB 1.1 devices such as a keyboard, mouse, camera, hard disk drive, printer and scanner.

USB allows devices to be connected and disconnected without rebooting the computer (hot swapping), and allows specific classes of hardware to be used without requiring individual device drivers to be installed.

6 **External headphone jack**

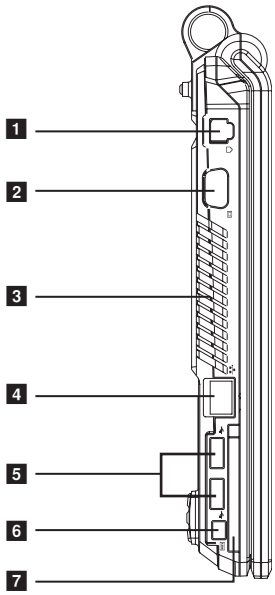
The headphone jack is used to connect headphones or a speaker. Using this jack will automatically disable the built-in speaker of the computer.

7 **External microphone jack**

The microphone jack can be used to connect an external microphone for video conferencing, voice narrations or simple audio recordings.

Left-side View

Refer to the diagram below to identify the components on this side of the computer.



1 **Modem port**

The modem port supports a standard telephone cable with an RJ-11 connector, and allows dial up access to an internet service provider (ISP).

Important: Do not connect the modem port to a digital circuit cable, or else the current in the digital circuit may damage the modem.

2 **VGA port**

Connect an external monitor or projector via this port.

3 **Fan louvers**

The fan louvers allow cool air to enter and warm air to exit the computer.

Important: Make sure that paper, books, clothing, cables or other objects do not block any of the fan louvers or else overheating of the computer may occur.

4 **LAN port**

The LAN port supports a standard RJ-45 connector, and allows you to connect the computer to a local network.

Attention: Because the voltage of a telephone connection is higher than that of a network, do not attempt to connect a telephone cable to the LAN port or else a short circuit of the computer might occur.

5 **USB 2.0 port (left side)**

The Universal Serial Bus is compatible with USB 2.0 or USB 1.1 devices such as a keyboard, mouse, camera, hard disk drive, printer and scanner.

USB allows devices to be connected and disconnected without rebooting the computer (hot swapping), and allows specific classes of hardware to be used without requiring individual device drivers to be installed.

6 **IEEE 1394 connector** 1394

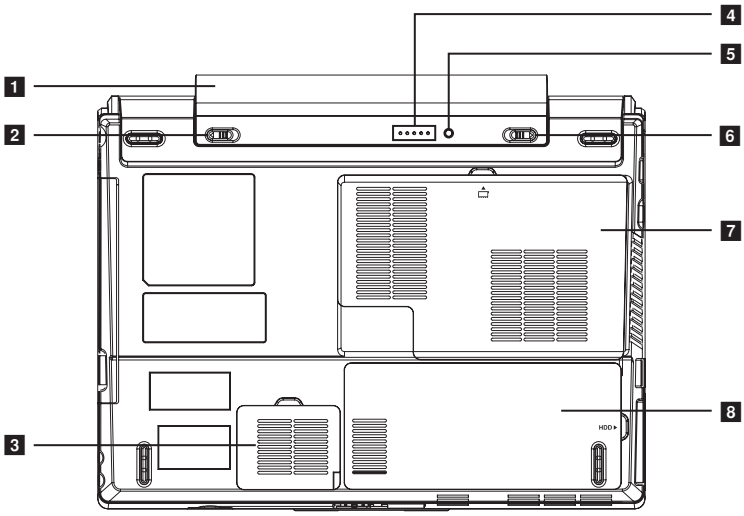
The IEEE 1394 connector is used for connecting devices that are compatible with the IEEE 1394 interface, such as digital video cameras and external hard disk drives.

7 **PCI Express card slot**

Use this slot to install a new PCI Express card.

Bottom View

Refer to the diagram below to identify the components on this side of the computer.



1 **Battery pack**
The battery pack provides power to the computer when the AC adapter is not connected and it is automatically charged when connected to an AC power source.

2 **Battery latch - manual**
The manual battery latch is used to keep the battery pack secured. Move the manual battery latch to the unlocked position to insert or remove the battery pack. Move the manual latch to the locked position after inserting the battery pack.

3 **PCI-E compartment**
A MINIPCI-E card is secured in the compartment

4 **Battery indicators**
The indicator signifies the battery status when press the indicator button. The more of the remain power is the more of the indicators is lit.
Note: The indicators turn off in 3 seconds

5 **Indicator button**
Press this button to light the Battery Indicators.

6 **Battery latch - spring loaded**

The spring-loaded battery latch keeps the battery pack secured in place. When you insert a battery pack, this latch automatically secures the battery in place. To remove the battery, hold this latch in the unlocked position.

7 **Central Processor Unit (CPU)/Memory (RAM) Compartment**

The Central Processor Unit (CPU)/Memory (RAM) Compartment provides expansion capabilities for additional memory and space for the CPU and the radiator.

Note: (1) Only purchase expansion modules from authorized retailers of this computer to ensure maximum compatibility and reliability.

(2) If you only insert one memory card in the compartment, plug it into the slot near the mainboard.

Important: Do not replace the CPU yourself! Visit an authorized service center or retailer for replacing.

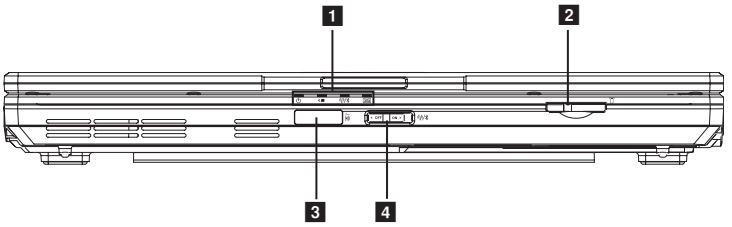
8 **Hard Disk Drive/Wireless LAN Card compartment**

The hard disk drive and wireless network card are secured in a compartment.

Important: Do not disassemble or replace the hard disk drive or Wireless LAN card yourself! If you do need to, ask a Lenovo authorized service center or dealer to disassemble or replace it.

Front View

Refer to the diagram below to identify the components on this side of the computer.



1 **Power-status indicator**
For details on "Power-status Indicator", see page 26.

2 **Multi-media reader slot**
You can insert an SD card, a Multi-media Card, a Memory Stick, a Memory Stick Pro card, an SD Pro card or an xD-Picutre Card into the Multimedia Reader.

Note: Only use the memory card listed above; for detail information about the usage, read the instructions shipped with the memory card.

3 **Infrared port**
For use with a remote control (optional). You can use the remote control to operate the playback of multimedia files. For details of the remote control operation, see the instructions supplied with it.

4 **Wireless LAN/Bluetooth* switch**
This switch turns on or off Wireless LAN and Bluetooth devices simultaneously. When you do not need to use the Wireless LAN and Bluetooth function, turn it off to extend battery power.

* Bluetooth is optional.

Accessibility and Comfort

Because your computer enables you to work in so many places, it is important that you remain attentive to good posture, good lighting, and proper seating. By keeping these considerations in mind, you can improve performance and achieve greater comfort. Lenovo is committed to providing the latest information and technology to our customers with disabilities.

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.

General Posture: Below are some general recommendations for assuming a healthy working posture. It is best to periodically make minor modifications in your working posture to deter the onset of discomfort caused by long periods of working in the same position. Frequent, short breaks from your work will also help to prevent any minor discomfort associated with your working posture.

Display: Position the display to maintain a comfortable viewing distance of 510-760 mm (20-30 in). Avoid glare or reflections on the display from overhead lighting or outside sources of light. Keep the display screen clean and set the brightness to levels that enable you to see the screen clearly. Press Fn + up/down arrow key to adjust display brightness.

Head Position: Keep your head and neck in a comfortable and neutral (vertical, or upright) position.

Chair: Use a chair that gives you good back support and seat height adjustment. Use chair adjustments to best suit your desired posture.

Arm and Hand Position: If available, utilize chair arm rests or an area on your working surface to provide weight support for your arms. Keep your forearms, wrists, and hands in a relaxed and neutral (horizontal) position. Type with a soft touch without pounding the keys.

Leg Position: Keep your thighs parallel to the floor and your feet flat on the floor or on a footrest.

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.

Basics

Your computer is powerful and is loaded with features and applications.

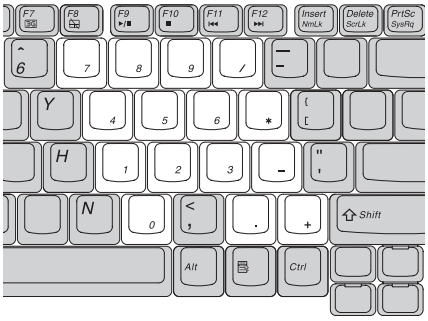
Special Keys and Buttons

Your computer has several special keys and buttons. For details, refer to the following descriptions.

Numeric Keypad

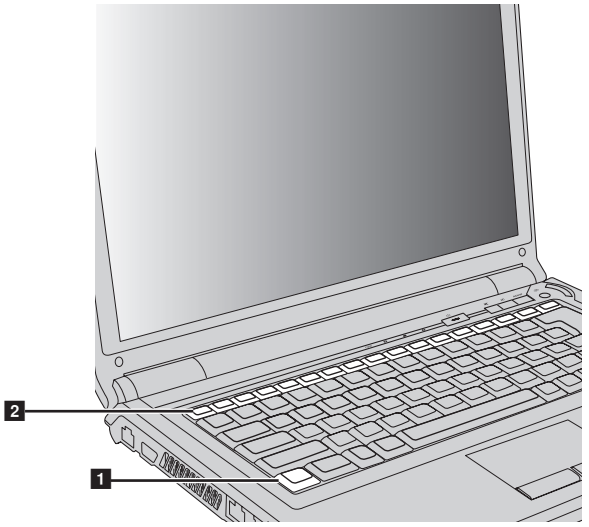
The keyboard has keys that, when enabled, work as a 10-key numeric keypad.

To enable or disable the numeric keypad, press Fn + Insert/NmLk.



Function Key Combinations

Through the use of the function keys, you can change operational features instantly. To use this function, press and hold the Fn key 1; then press one of the function keys 2.



The following describes the features of each function key.

Fn + Esc: Turn on/off the integrated camera.

Fn + F1: Put your computer in sleep mode.

Fn + F2: Turn off the LCD screen (any subsequent operation will turn the LCD screen back on).

Fn + F3: Shift to other connected display devices.

Fn + F4: Switch between wide screen and normal mode.

Fn + F5: Enable/disable the built-in wireless networking feature.

Fn + F6: Enable/disable the bluetooth features.

Fn + F8: Enable/disable the touch pad.

Fn + F9: Enable/pause Media Player playback.

Fn + F10: Stop Media Player playback.

Fn + F11: Skip to the previous track.

Fn + F12: Skip to the next track.

Fn + Insert/NmLk: Enable/disable the Numeric keypad.

Fn + Delete/ScrLk: Enable/disable Scroll Lock.

Fn + Pause/Break: Pause to view the system information during start-up.

Fn + up/down arrow key: Increase/decrease display brightness.

Fn + right/left arrow key: Increase/decrease computer volume.

Volume and Mute Buttons

You can adjust the sound level of the built-in speakers by using the following two buttons:

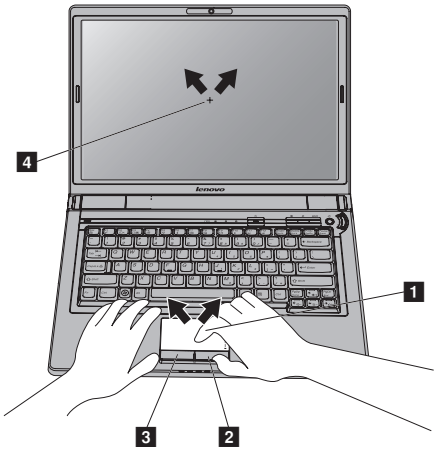
- **Mute button**
- **Volume button**

If you mute the sound and then turn off your computer, the sound will remain muted when you turn on your computer again. To turn on the sound, press the Mute button.

When you press the volume button, you can quickly and conveniently adjust the sound from your computer.

Using the Touch Pad

The touch pad consists of a pad 1 and two click buttons at the bottom of the keyboard. To move the pointer 4 on the screen, slide your fingertip over the pad in the direction in which you want the pointer to move. The functions of the left 3 and right 2 click buttons correspond to those of the left and right mouse buttons on a conventional mouse.



The blue indicator is lit when the touch pad is activated, when the touch pad is disabled with Fn + F8, the indicator will be off.

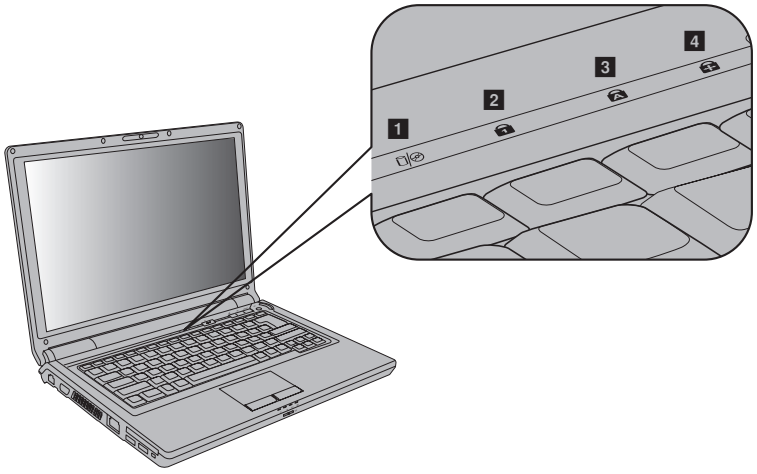
Note: To move the point, you can also attach and use a USB mouse through the USB connector.

Status Indicators

The status indicators show the current status of your computer.

System-status Indicators

Your computer has system-status indicators as follows:



1 **Drive in use**

Indicates data is being read from or written to the hard disk drive or optical disc drive when this indicator is lit.

2 **Num Lock**

Indicates that number lock function is activated when the blue indicator is lit. Number lock function allows some of the keyboard letters to act as numbers for easier numeric input.

3 **Caps Lock**

Indicate that the Capital Lock function is activated when the blue indicator is lit. The Capital Lock function allows typing in all upper case letters (such as A, B, C). When the Caps Lock light is Off, lower case letters are typed.

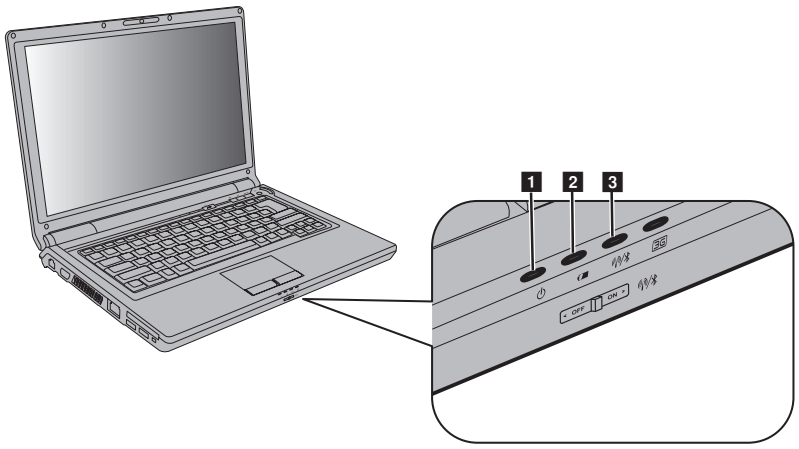
4 **Scroll Lock**

Indicate that the Scroll Lock function is activated when the blue indicator is lit. The Scroll Lock function allows some of the keyboard letters to act as direction keys to allow for easier navigation when only part of the keyboard is required.

Power-status Indicator

The computer has status indicators that show the mode (sleep/hibernation, or normal), and the status of the battery as follows:

Lenovo 3000 Y310



If your computer is shipped with a wireless feature and a *Bluetooth* feature, you can use the following four indicators:

1 **Power Indicator** ⏻	Blue: System is powered on. Blinking Blue: System is in sleep mode.
2 **Battery Status Indicator**	Blue: Power is being supplied by an AC adapter and the battery is fully charged (95% or more). Blinking Blue: Battery is charging. OFF: Power is supplying by battery or the computer is only powered by an AC adapter and without a battery pack. Amber: Power is supplying by battery and battery is low (8% or lower).

3 **Wireless/Bluetooth Indicator**	Amber: Bluetooth is enabled. Blue: Wireless LAN is enabled and connected. Flashing Blue: Wireless LAN is enabled and transfering data. Purple: Bluetooth and Wireless LAN are both enabled.

Preventing Problems

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 Preventing Problems

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.

   Note: Click **Start** -> **Computer**. Then right-click the desired drive, and a menu for the drive is displayed. To check the capacity of the drive, click **Properties**.
2. Empty your recycle bin on a regular basis.
3. Use Diskeeper Lite or the Microsoft Disk Defragmenter on your hard disk drive on a regular basis to improve data seek and read time. To start the Disk Defragmenter, click **Start -> All Programs -> Accessories -> System Tools -> Disk Defragmenter**.
4. To free up disk space, uninstall unused application programs.

   Note: You might also want to look for application program duplication or overlapping versions.
5. Clean out your Inbox, Sent, and Trash folders from your e-mail client program.
6. 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.

7. Use or schedule System Restore to take a system snapshot periodically.

   Note: Always take a system snapshot before installing new drivers, updating software, or installing new software.
8. Update device drivers and BIOS when needed.
9. Profile your machine at http://www.Lenovo.com/support to keep up to date with current drivers and revisions.
10. 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.
11. Keep a log book. Entries might include major hardware or software changes, driver updates, minor issues you have experienced and how you resolved them.
12. If you ever need to run a recovery operation on your computer to return the contents of the hard disk to the factory-installed state, the following tips might help along the way:
    - Remove all external devices such as the printer, keyboard, and so on.
    - Make sure that the battery is charged and that you have the AC power adapter connected.
    - Boot into the BIOS and load the default settings
    - Turn off the computer and start the recovery process.
    - If your computer uses discs as the recovery media, do not remove the disc from the drive until you are prompted to do so.
13. If required, you can find your country's Customer Support Center at the following Web address: http://www.lenovo.com/support/troubleshooting/. 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.

Device drivers are programs that contain instructions for the operating system about how to operate or “drive” a certain piece of hardware. Each hardware component on your computer has its own specific driver. If you add a new component, the operating system needs to be instructed on how to operate that piece of hardware. After you install the driver, the operating system can recognize the hardware component and understand how to use it.

Note: Because drivers are programs, like any other file on your computer, they are susceptible to corruption and might not perform properly if corruption occurs.

Installing Device Drivers

A compatible device driver is a requirement to ensure correct operation and performance of each component in your computer. Lenovo provide all drivers that you need in a driver CD. Follow the following steps to install drivers on your computer. (Assuming the CD-ROM is "E:" Disk and current OS is Windows Vista™)

Notes:

- Adhere to the following sequences, otherwise might compromise the system's stability and audio or video effect, even cause you to reinstall the operating system.
- Most installations require a reboot to update the driver.

Sequence of installation			Path of drivers
1	Chipset		E:\Vista\Chipset\Setup.exe
2	Graphics Card	For Integrated Graphics Card	E:\Vista\VGA\Intel VGA\Setup.exe
		For Discrete Graphics Card	E:\Vista\VGA\Nvidia VGA\Setup.exe
3	Sound Card		E:\Vista\Audio\Setup.exe
4	Modem		E:\Vista\Modem\ssetup.exe
5	LAN Card		E:\Vista\LAN\DrvInst\IA32\Setup.exe
6	Touch Pad		E:\Vista\TouchPad\Setup.exe
7	Wireless LAN Card		E:\Vista\WirelessLan\Autorun.exe
8	Card Reader		E:\Vista\CardReader\setup.exe
9	EnergyCut *2		E:\Vista\EnergyCut\Setup.exe
10	Camera		E:\Vista\Camera\Setup.exe
11	CIR		E:\Vista\CIR\Setup.exe
12	EQI *2		E:\Vista\EQI\Setup.exe
13	Bluetooth *1		E:\Vista\Bluetooth\setup.exe

*1 Enable the Bluetooth device before you install the driver. (by pressing [Fn] + [F6])

*2 Without these two drivers, you can not use the Function key combinations and the EQ button.

Learn How to Achieve All Day Computing

When you need to use your computer away from electrical outlets, you depend on battery power to keep your computer running. Different computer components consume power at different rates. The more you use the power-intensive components, the faster you consume battery power.

Your Computer Batteries

Your computer batteries enable you to do more, save more, and spend more time unplugged. Mobility has revolutionized business by enabling you to take your work where ever you go. With your computer batteries, you will be able to work longer without being tied to an electrical outlet.

Checking Battery Status

You can determine the percentage of battery power remaining by using Windows Power options.

To display the battery icon in the taskbar, do as follows:

1. Right -click the taskbar, and then click **Properties**.
2. Click the **Notification Area** tab.
3. Under System icons, select the **Power** check box.

The rate at which you use battery power determines how long you can use the battery of your computer between charges. Because each computer user has different habits and needs, it is difficult to predict how long a battery charge will last. There are two main factors:

- How much energy is stored in the battery when you begin to work.
- The way you use your computer: for example, how often you access the hard disk drive, and how bright you make the computer display.

Using the AC Adapter

The power to run your computer can come either from the lithium-ion (Li-ion) battery pack provided with it, or from AC power through the AC adapter. While you use AC power, the battery charges automatically.

The AC adapter that comes with your computer has two basic components:

1. The transformer pack that converts AC power for use with the computer.
2. The power cord that plugs into the AC outlet and into the transformer pack.

Attention: Using an improper power cord could cause severe damage to your computer.

To use the AC adapter, do the following. Be sure to take these steps in the order in which they are given here.

1. Connect the power cord to the transformer pack.
2. Plug the power cord into an electrical outlet.

3. Connect the AC adapter to the AC power adapter jack of the computer.

You can check the status of your battery at any time by looking at the battery meter at the bottom of your display.

Notes:

- When the AC adapter is not in use, disconnect it from the electrical outlet.
- Do not wrap the power cord tightly around the AC power transformer pack when it is connected to the transformer.
- You can charge the battery when the AC adapter is connected to the computer and the battery is installed. You need to charge it in any of the following conditions:
  - When you purchase a new battery
  - If the battery status indicator starts blinking
  - If the battery has not been used for a long time

Before you charge the battery, make sure that its temperature is at least 10 degrees Celsius (50 degrees Fahrenheit).

Charging the Battery

When you check the battery status and find that the percentage of power remaining is low or when the power alarm alerts you that remaining power is low, you need to charge your battery or replace it with a charged battery.

If an AC outlet is convenient, first, connect the power cord to the transformer pack; second, plug the power cord into an electrical outlet; and then connect the AC adapter to the power jack of the computer.

The charging time is affected by the physical environment. The battery status indicator lets you know that the battery is charging, and also notifies you when the battery is fully charged.

Note: To increase the life of the battery, the computer does not start recharging the battery if the remaining power is greater than 95 percent.

Handling the Battery

Danger: Do not attempt to disassemble or modify the battery pack.

Attempting to do so can cause an explosion, or liquid leakage from the battery pack.

A battery pack other than the one specified by Lenovo, or a disassembled or modified battery pack is not covered by the warranty.

Danger: If the rechargeable battery pack is incorrectly replaced, there is danger of an explosion. The battery pack contains a small amount of harmful substances. To avoid possible injury:

- Replace only with a battery of the type recommended by Lenovo.

- Keep the battery pack away from fire.
- Do not expose it to water or rain.
- Do not attempt to disassemble it.
- Do not short-circuit it.
- Keep it away from children.

Danger: 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.

Danger: There is a danger of an explosion if the backup battery is incorrectly stored. The lithium battery contains lithium and can explode if it is not properly handled, or disposed of. Replace only with a battery of the same type. To avoid possible injury or death, ***Do not:*** (1) throw or immerse into water, (2) allow it to heat to more than 100 degrees C (212 degrees F), or (3) attempt to repair or disassemble it. Dispose of it as required by local ordinances or regulations and your company's safety standards.

Integrated Camera

With the built-in camera, you can take photos or movies and use with various applications, such as EasyCapture, MSN or Yahoo! Messenger, and so on.

Note: If you use Windows Vista, you need to install a separate third party dedicated application, because Vista does not include a program for taking pictures or movies with the integrated camera.

Security

This section provides information about how to help protect your computer from theft and unauthorized use.

Attaching a Mechanical Lock

You can attach a mechanical lock to your computer to help prevent it from being removed without your permission.

Attach a mechanical lock to the keyhole of the computer; then secure the chain on the lock to a stationary object. Refer to the instructions shipped with the mechanical lock.

Refer to the Right-side view on page 13 for the location of the security keyhole.

Note: You are responsible for evaluating, selecting, and implementing the locking devices and security features. Lenovo makes no comments, judgments, or warranties about the function, quality, or performance of locking devices and security features.

Using Passwords

Using passwords helps prevent your computer from being used by others. Once you set a password and enable it, a prompt appears on the screen each time you power on the computer. Enter your password at the prompt. You cannot use the computer unless you type the correct password.

Make sure that only authorized individuals access your computer. Establishing different kinds of passwords requires that other possible users know the proper passwords in order to access your computer or your data.

As many as three passwords might be needed for your computer: the Supervisor password, the User Password, and the hard-disk drive (HDD) password. When passwords are set, only the Supervisor password entitles you full control of the computer.

Note: If you set passwords through the BIOS Setup Utility and you put your computer into sleep mode by pressing Fn + F1, the following describes the behavior of the computer when you bring it out of sleep mode:

- You are prompted to type the Windows log-on password rather than the User password to resume operation.
- If an HDD password is assigned to any hard disk drive, the hard disk drive is unlocked automatically when you resume operation.

Set the Password

You can set a password to help protecting your computer against access by unauthorized users.

To Set a Supervisor Password:

1. Power on your Notebook, press F2 when the BIOS Setup Utility screen opens.
2. Select **Security** using the cursor directional keys.
3. Select **Set supervisor Password**, and press the Enter key. The Set supervisor Password window opens.
4. Set your password, which can be from one to eight alphanumeric characters in any combination. Type it in the **Enter New Password** field.
5. Press the Enter key once to move to the **Confirm New Password** field. Retype the password you just entered to verify it.
6. Commit your password to memory, and press the Enter key.
7. To enable the password for power-on, select **Password on boot**, and press the Enter key. Select **Enabled** and press the Enter key.
8. Press F10 to exit.
9. Select **Yes** in the Setup Confirmation window.

Note: If the password has been forgotten and cannot be made available to the servicer, there is no service procedure to reset the password. The system board must be replaced for a scheduled fee.

If you set a password and enable it, the password prompt appears on the screen whenever you turn on the computer. You must enter the correct password to start the computer.

If the **Password on boot** is disabled in step 7, no password is needed to power-on your Notebook, but you still need the password to enter BIOS Setup Utility.

To Set a User Password

1. In the BIOS Setup Utility screen, select **Security** using the cursor directional keys.
2. Select **Set User Password**, and press the Enter key. The Set User Password window opens.
3. Set your password, which can be from one to eight alphanumeric characters in any combination. Type it in the **Enter New Password** field.
4. Press the Enter key once to move to the **Confirm New Password** field. Retype the password you just entered to verify it.
5. Commit your password to memory, and press the Enter key.
6. Press F10 to exit.
7. Select **Yes** in the Setup Confirmation window

Note: User password can be only set when a supervisor password is set. User password can be also used for the power-on password.
If you enter BIOS Setup Utility with the User password, only a small part of the settings can be used.

To Set a Hard Disk Password

1. In the BIOS Setup Utility screen, select **Security** using the cursor directional keys.
2. Select **Set HDD Password**, and press the Enter key. The Set HDD Password window opens.
3. Set your password, which can be from one to eight alphanumeric characters in any combination. Type it in the **Enter New Password** field.
4. Press the Enter key once to move to the **Confirm New Password** field. Retype the password you just entered to verify it.
5. Commit your password to memory, and press the Enter key.
6. Press F10 to exit.
7. Select **Yes** in the Setup Confirmation window

Note: If the password has been forgotten and cannot be made available to the servicer, there is no service procedure to reset the password. The hard disk must be replaced for a scheduled fee.
If you set a HDD password the password prompt appears on the screen whenever you turn on the computer. You must enter the correct password to start the computer.

Changing or Removing the Password

To change the password, do the following:

1. In the **Enter Current Password** field, type your current password.
2. In the **Enter New Password** field, type a new password; then retype it to verify.

To remove the password, do the following:

1. In the **Enter Current Password** field, type your current password.
2. Leave the **Enter New Password** field blank, and then press the Enter key twice.

Note: The User password will be removed if the Supervisor password is removed

Chapter 4. Solving Computer Problems

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Battery Problems 43
A Hard Disk Drive Problem 44
A Startup Problem 44
Other Problems 44

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Frequently Asked Questions

This section lists frequently asked questions and tells where you can find detailed answers. For details about each publication included in the package with your computer, see "This Guide and Other Publications" on page 1.

What safety precautions should I follow when using my computer?
See the separate *Safety and Warranty Guide* for detailed information about safety.

How can I prevent problems with my computer?
See "Read This First" on page v, and also "Chapter 2. Caring for Your Computer" on page 3 of this guide. More tips can be found in Chapter 3.

What are the main hardware features of my new computer?
More information can be found in Chapter 3.

Where can I find the detailed specifications for my computer?
See http://www.Lenovo.com/support.

I need to upgrade a device *or* I need to replace one of the following: the hard disk drive, memory, or the keyboard.
See "Appendix B. Customer Replaceable Units (CRUs)," on page 59 of this guide.

My computer is not operating properly.
Study the relevant information in Chapter 3.

Where are the recovery discs?
Your computer did not come with a recovery disc or Windows disc. For an explanation of the alternative recovery methods offered by Lenovo, see "OneKey Recovery4.65 User Guide".

How can I contact the Customer Support Center?
See "Chapter 6. Getting Help and Service," on page 51 of this Guide. For the phone numbers of the Customer Support Center nearest to you, see "Warranty Service Telephone Numbers" on page 57.

Where can I find warranty information?
See the separate *Safety and Warranty Guide* for detailed warranty information. For the warranty applicable to your computer, including the warranty period and type of warranty service, see "Appendix A. Warranty Information," on page 55.

Troubleshooting

If you do not find your problem here, see Chapter 3. The following section only describes problems that might prevent you from accessing the comprehensive information in Chapter 3.

Display Problems

Problem:	When I turn on the computer, nothing appears on the screen and the computer does not beep while starting up. **Note:** If you are not sure whether you heard any beeps, turn off the computer; then turn it on again, and listen again. If you are using an external monitor, see "Computer Screen Problems" on page 42.
Solution:	If a password is set, press any key to display the password prompt; then type the correct password and press Enter. If the password prompt does not appear, the brightness level might be set to minimum brightness. Adjust the brightness level by pressing Fn + ↑. If the screen still remains blank, make sure that: • The battery is installed correctly. • The AC adapter is connected to the computer and the power cord is plugged into a working electrical outlet. • The computer power is on. (Press the power button again for confirmation.) If these items are properly set, and the screen remains blank, have the computer serviced.
Problem:	When I turn on the computer, nothing appears on the screen, but I hear two or more beeps.
Solution:	Make sure that the memory card is installed correctly. If it is, but the screen is still blank, and you hear five beeps, have the computer serviced.
Problem:	When I turn on the computer, only a white cursor appears on a blank screen.
Solution:	Restore backed-up files to your Windows environment or the entire contents of your hard disk to the original factory contents using OneKey Recovery. If you still see only the cursor on the screen, have the computer serviced.

Problem:	My screen goes blank while the computer is on.
Solution:	Your screen saver or power management may be enabled. Do one of the following to exit from the screen saver or to resume from sleep or hibernation mode: • Touch the touch pad. • Press a key. • Press the power button.

A Password Problem

Problem:	I forgot my password.
Solution:	• If you forgot your user password, you must take your computer to a Lenovo authorized servicer or a marketing representative to have the password canceled. • If you forgot your HDD password, Lenovo authorized servicer cannot reset your password or recover data from the hard disk. You must take your computer to a Lenovo authorized servicer or a marketing representative to have the hard disk drive replaced. Proof of purchase is required, and a fee will be charged for parts and service. • If you forgot your supervisor password, Lenovo authorized servicers cannot reset your password. You must take your computer to a Lenovo authorized servicer or a marketing representative to have the system board replaced. Proof of purchase is required, and a fee will be charged for parts and service.

Keyboard Problems

Problem:	A number appears when you type a letter.
Solution:	The numeric lock function is on. To disable it, press Fn + Insert.
Problem:	All or some of the keys on the external numeric keypad do not work.
Solution:	Make sure that the external numeric keypad is correctly connected to the computer.

Sleep or Hibernation Problems

Problem:	The computer enters sleep mode unexpectedly.
Solution:	If the processor overheats, the computer automatically enters sleep mode to allow the computer to cool and to protect the processor and other internal components. Check the settings for sleep mode.
Problem:	The computer enters sleep mode (the sleep indicator turns on) immediately after Power-on self-test (POST).
Solution:	Make sure that: • The battery is charged. • The operating temperature is within the acceptable range. See "Specifications" on page 63. If the battery is charged and the temperature is within range, have the computer serviced.
Problem:	The critical low-battery error message appears, and the computer immediately turns off.
Solution:	The battery power is getting low. Connect the AC adapter to the computer, or replace the battery with a fully charged one.
Problem:	The computer does not return from sleep mode, or the sleep indicator stays on and the computer does not work.
Solution:	If the computer does not return from sleep mode, it may have entered sleep or hibernation mode automatically because the battery is depleted. Check the sleep indicator. • If the sleep indicator is on, your computer is in sleep mode. Connect the AC adapter to the computer; then press any key or the power button. • If the sleep indicator is off, your computer is in sleep/hibernation mode or power-off state. Connect the AC adapter to the computer; then press the power button to resume operation. If the system still does not return from sleep mode, your system has stopped responding, and you cannot turn off the computer; reset the computer. Reset the computer. Unsaved data may be lost. To reset the computer, press and hold the power button for 4 seconds or more. If the computer is still not reset, remove the AC adapter and the battery.

Computer Screen Problems

Problem:	The screen is blank.
Solution:	Do the following: • If you are using the AC adapter, or using the battery, and the battery status indicator is on (is green), press Fn + ↑ to make the screen brighter. • If the Power indicator is in blinking blue, press any key or the power button to resume from the sleep mode. • If you still have the problem, do the Solution in the following problem "The screen is unreadable or distorted."
Problem:	The screen is unreadable or distorted.
Solution:	Make sure that: • The display device driver is installed correctly. • The screen resolution and color quality are correctly set. • The monitor type is correct. To check these settings, do as follows: 1. Right-click on the desktop, and click **Personalize**. 2. Click **Display Settings** and check whether the screen resolution and color quality are correctly set. 3. Click **Advanced Settings**. 4. Click the **Adapter** tab. 5. Make sure that the correct device driver name is shown in the adapter information window. **Note:** The device driver name depends on the video chip that has been installed on your computer. 6. Click the **Properties** button. If you are prompted for an administrator password or confirmation, type the password or provide confirmation. Check the "Device status" box and make sure the device is working properly. If not, click the **Troubleshoot** button. 7. Click the **Monitor** tab. 8. Make sure the information is correct. 9. Click the **Properties** button. If not, click the **Troubleshoot** button.
Problem:	Incorrect characters appear on the screen.
Solution:	Did you install the operating system or application program correctly? If they are installed and configured correctly, have the computer serviced.

Problem:	Missing, discolored, or bright dots appear on the screen every time you turn on your computer.
Solution:	This is an intrinsic characteristic of the TFT technology. Your computer's display contains multiple thin-film transistors (TFTs). A small number of missing, discolored, or bright dots on the screen might exist all the time.
Problem:	A message, "Unable to create overlay window," appears when you try to start DVD playback. ***-or-*** You get poor or no playback while running video playback, DVD playback, or game applications.
Solution:	Do either of the following: • If you are using 32-bit color mode, change the color depth to 16-bit mode. • If you are using a desktop size of 1280×1024 or larger, reduce the desktop size and the color depth.

Battery Problems

Problem:	The battery cannot be fully charged by the power-off method in the standard charge time for your computer.
Solution:	For details, see "Checking Battery Status" in Chapter 3.
Problem:	Your computer shuts down before the battery status indicator shows empty, ***-or-*** Your computer operates after the battery status indicator shows empty.
Solution:	Discharge and recharge the battery.
Problem:	The operating time for a fully charged battery is short.
Solution:	For details, see "Handling the Battery" in Chapter 3.
Problem:	The computer does not operate with a fully charged battery.
Solution:	The surge protector in the battery might be active. Turn off the computer for one minute to reset the protector; then turn on the computer again.
Problem:	The battery does not charge.
Solution:	For details, see "Handling the Battery" in Chapter 3.

A Hard Disk Drive Problem

Problem:	The hard disk drive does not work.
Solution:	In the Boot menu in BIOS Setup Utility, make sure that the hard disk drive is included in the Boot Sequence correctly.

A Startup Problem

Problem:	The Microsoft Windows operating system will not start.
Solution:	Use the OneKey Recovery to help solve or identify your problem. For details about OneKey Recovery, see “OneKey Recovery4.65 User Guide”.

Other Problems

Problem:	Your computer does not respond.
Solution:	• To turn off your computer, press and hold the power button for 4 seconds or more. If the computer still does not respond, remove the AC adapter and the battery. • Your computer might lock when it enters sleep mode during a communication operation. Disable the sleep timer when you are working on the network.
Problem:	The computer does not start from a device you want.
Solution:	See the Startup menu of the BIOS Setup Utility. Make sure that the startup sequence in the BIOS Setup Utility is set so that the computer starts from the device you want. Also make sure that the device from which the computer starts is enabled. In the startup menu in the BIOS Setup Utility, make sure that the device is included in the “Boot priority order” list. If it is included in the “Excluded from boot order” list, it is disabled. Select the entry for it in the list and press the x key. This moves the entry to the “Boot priority order” list.

Chapter 5. Upgrading and Replacing Devices

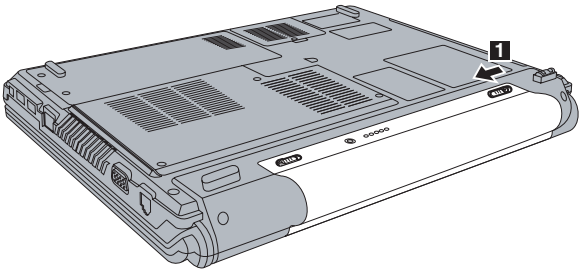
Replacing the Battery

Important

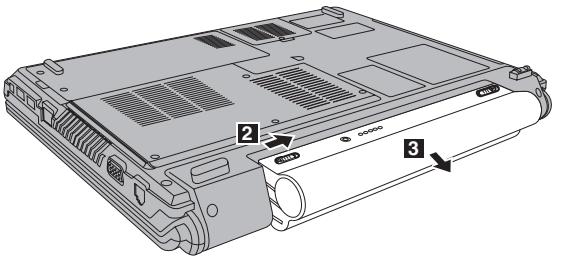
Read *Safety and Warranty Guide* before replacing the battery.

1. **Turn off the computer, or enter hibernation mode.** Then disconnect the AC adapter and all cables from the computer.

   Note: If you are using an ExpressCard, the computer might not be able to enter hibernation mode. If this happens, turn off the computer.
2. Close the computer display, and turn the computer over.
3. Unlock the battery latch 1 by sliding it to the unlocked position.



4. Unlock the battery latch 2 by sliding it to the unlocked position. While holding the latch 2 in the unlocked position, remove the battery 3.



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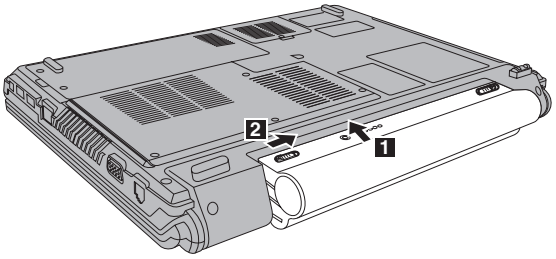
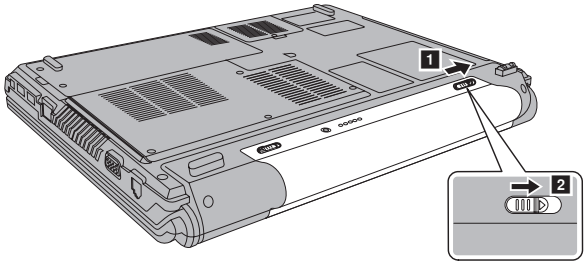
5. Slide the battery latch 2 to the unlocked position and install a fully charged battery 1.



6. Slide the battery latch 1 to the locked position 2.



7. Turn the computer over again. Connect the AC adapter and cables to the computer.

Replacing Memory

Important

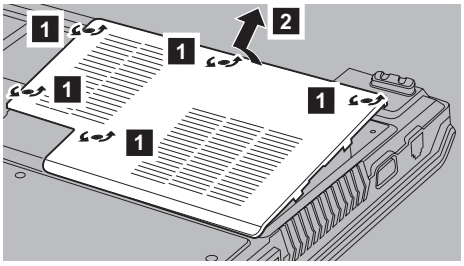
Read Safety and Warranty Guide before replacing memory.

Increasing memory capacity is an effective way to make programs run faster. You can increase the amount of memory in your computer by installing a PC2-5300 (DDR II 667) SO-DIMM, available as an option, in the memory slot of your computer. SO-DIMMs with different capacities are available.

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

To install an SO-DIMM, do the following:

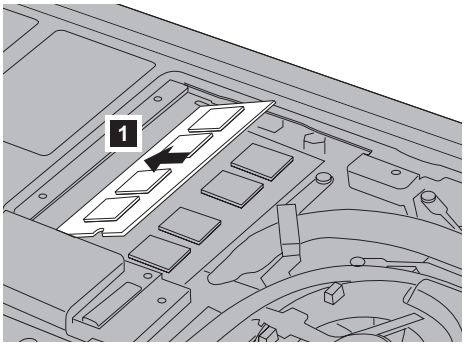
1. Touch a metal table or a grounded metal object. This action reduces any static electricity in your body, that could damage the SO-DIMM. Do not touch the contact edge of the SO-DIMM.
2. **Turn off the computer**; then disconnect the ac adapter and all cables from the computer.
3. Close the computer display, and turn the computer over.
4. Remove the battery.
5. Unfasten the five screws 1 on the cover and remove the cover 2.



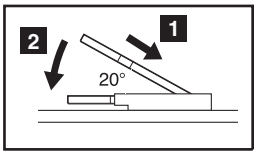
6. Find the notch on the contact edge side of the SO-DIMM.

Attention: To avoid damaging the SO-DIMM, do not touch its contact edge.

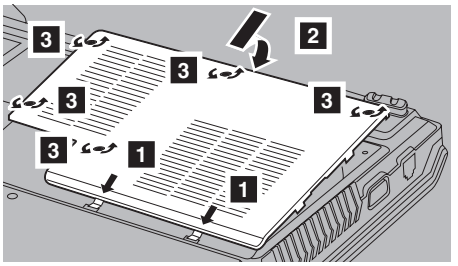
7. With the notched end of the SO-DIMM toward the contact edge side of the socket, insert the SO-DIMM into the socket at an angle of about 20 degrees, then press it in firmly 1.



8. Push the SO-DIMM down until it snaps into place.



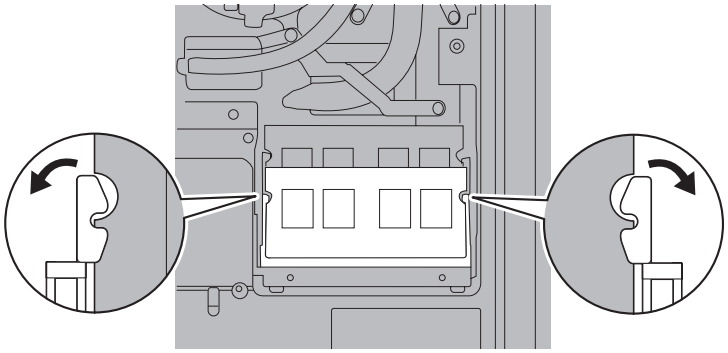
9. Make sure that the memory module is firmly fixed in the slot and does not move easily.
10. Reinstall the cover of the memory slot by inserting the tabs into the slots first 1, and closing the cover 2. Then tighten the five screws 3.



Attention: When you have added the SO-DIMM, do not use your computer until you have closed the memory slot cover. Never use the computer with the cover open.

11. Reinstall the battery.
12. Turn the computer over again, and reconnect the ac adapter and cables to the computer.

If you want to replace a new SO-DIMM, remove the origin SO-DIMM by releasing the two latches on both edges of the socket at the same time, pull out the SO-DIMM from the socket, and then install the new SO-DIMM follow the steps above.



Attention: If only one SO-DIMM is installed, plug it into the SO-DIMM socket which is closer to the mainboard.

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

1. Turn the computer on.
2. While the initial screen is displayed, press F2. The BIOS Utility screen opens. The **Total Memory** item on the **Main** menu shows the amount of memory you can utilize.

Chapter 6. Getting Help and Service

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.

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://www.Lenovo.com.

You can find support information for your Lenovo 3000 computer at http://www.Lenovo.com/support. 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.

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- 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://www.Lenovo.com/support, and click **Warranty**, then follow the instructions on the screen.

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.

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 numbers of your computer, monitor, and other components, or your proof of purchase
- Description of the problem
- Hardware and software configuration information for your system

The telephone numbers for your Customer Support Center location are located in Appendix A. Warranty Information.

Note: Telephone numbers are subject to change without notice. For the latest list of Customer Support Center telephone numbers and hours of operation, visit the Support Web site at http://www.Lenovo.com/. If the number for your country or region is not listed, contact your Lenovo reseller or Lenovo marketing representative.

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. International Warranty Service is delivered through the method of service (such as depot, carry-in, or on-site service) that is provided in the servicing country. 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://www.Lenovo.com/support, click Warranty, and follow the instructions on the screen.

Appendix A. Warranty Information

This Appendix provides information regarding the warranty period and type of warranty service applicable to your Lenovo hardware product in your country or region. For the terms and conditions of the Statement of Limited Warranty that applies to your Machine, see Chapter 3, Warranty Information in the *Safety and Warranty Guide* included with your Machine.

Warranty Information

Product or Machine Type	Country or Region of Purchase	Warranty Period	Type of Warranty Service
Notebook: 7756	India, Indonesia, Malaysia, Singapore, Thailand, Philippines, Vietnam, China (Hong Kong S.A.R.), China (Macau S.A.R.)	Parts and Labor - 1 year Battery pack - 1 year	1, 4 1, 4
	United States of America		1, 3
	South Africa		1, 3 or 4

If required, your Service Provider will provide repair or exchange service depending on the type of warranty service specified for your product and the available service. Scheduling of service will depend upon the time of your call, parts availability, and other factors.

A warranty period of 3 years on parts and 1 year on labor means that Lenovo provides warranty service without charge for:

a. parts and labor during the first year of the warranty period (or a longer period as required by law); and

b. parts only, on an exchange basis, in the second and third years of the warranty period. Your Service Provider will charge you for any labor provided in performance of the repair or replacement(s) in the second and third year of warranty period.

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Types of Warranty Service

1. Customer Replaceable Unit ("CRU") Service

Under CRU Service, your Service Provider will ship CRUs to you for you to install. Most CRUs are easy to install whereas others may require some technical skill and tools. CRU information and replacement instructions are shipped with your product and are available from Lenovo at any time upon request. You may request that a Service Provider install some CRUs under one of the other types of warranty service designated for your product. Installation of external CRUs (such as mice, keyboards, or monitors) is your responsibility. Lenovo specifies in the materials shipped with a replacement CRU whether the defective CRU must be returned. When return is required, 1) return instructions, a prepaid return shipping label, and a container are included with the replacement CRU, and 2) you may be charged for the replacement CRU if your Service Provider does not receive the defective CRU within thirty (30) days of your receipt of the replacement.

2. On-site Service

Under On-site Service, your Service Provider will either repair or exchange the product at your location. You must provide a suitable working area to allow disassembly and reassembly of the Lenovo product. For some products, certain repairs may require your Service Provider to send the product to a designated service center.

3. Courier or Depot Service

Under Courier or Depot Service, your product will be repaired or exchanged at a designated service center, with shipping arranged by your Service Provider. You are responsible for disconnecting the product. A shipping container will be provided to you for you to return your product to a designated service center. A courier will pick up your product and deliver it to the designated service center. Following its repair or exchange, the service center will arrange the return delivery of the product to you.

4. Customer Carry-In or Mail-In Service

Under Customer Carry-In or Mail-In Service, your product will be repaired or exchanged at a designated service center, with delivery or shipping arranged by you. You are responsible to deliver or mail, as your Service Provider specifies, (prepaid unless specified otherwise) the product suitably packaged to a designated location. After the product has been repaired or exchanged, it will be made available for your collection. Failure to collect the product may result in your Service Provider disposing of the product as it sees fit. For Mail-in Service, the product will be returned to you at Lenovo's expense, unless your Service Provider specifies otherwise.

Lenovo Warranty Service Telephone Numbers.

Warranty Service Telephone Numbers

The phone numbers provided below are correct as of the time of printing and are subject to change without notice. For the latest warranty service contact telephone number in a country please contact Lenovo, or your reseller in your country

- Singapore 800 6012 047
- Malaysia 1800 18 2388
- Thailand 1800 06 0087
- Indonesia 001 803 0601 2003
- Philippines 1800 111 00724
- Vietnam 1800 1528
- India Toll free 1800 113324
  - Alternate No. 011-26388288
  - SMS 9900173324
- Hong Kong (852) 2825-6580
- Macau (853) 2871-5399
- United States 1-877-453-6686

Additionally, you can find support information, and updates, including service phone numbers for unlisted countries on the Lenovo Web site located at: http://www.lenovo.com.

Appendix B. Customer Replaceable Units (CRUs)

Customer Replaceable Units (CRUs) are computer parts that can be upgraded or replaced by the customer. There are two types of CRUs: *internal* and *external*. External CRUs are easy to install, whereas internal CRUs require some technical skills and in some cases might require tools such as a screwdriver. However, both internal and external CRUs are safe for removal by the customer.

Customers are responsible for replacing all external CRUs. Internal CRUs can be removed and installed by customers or by a Lenovo service technician during the warranty period.

Your computer contains the following types of external CRUs:

- **External CRUs (pluggable):** These CRUs unplug from the computer. Examples of these types of CRUs include the AC adapter and power cord.
- **External CRUs with latches:** These CRUs include a latch to help you remove and replace the part. Examples of these types of CRUs include the notebook main battery, an optical drive, a hard-disk drive, and an extended battery.

Your computer contains the following types of internal CRUs:

- **Internal CRUs (located behind an access panel):** These CRUs are isolated parts within the computer that are concealed by an access panel that is typically secured by either one or two screws. Once the access panel is removed, only the specific CRU is visible. Examples of these types of CRUs include memory modules and hard disk drives.
- **Internal CRUs (located within the product):** These CRUs are accessible only by opening the computer's outer case. Examples of these CRUs include PCI Express Mini Cards and the integrated keyboard.

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Appendix C. Features and Specifications

Features

Processor

- See the system properties of you computer. You can do this as follows: Click **Start**, right-click **Computer**, then from the pull down menu select **Properties**.

Memory

- Double data rate (DDR) synchronous dynamic random access memory (DRAM) II

Storage device

- 2.5-inch hard disk drive

Display

The color display uses TFT technology:

- Size: 13.3 inch
- Resolution:
  - LCD: 1280-by-800
- Brightness control
- Integrated camera (on some models)

Keyboard

- 84-key
- Touch pad
- Fn key function
- Volume control buttons
- Instant on button

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Interface

- External-monitor connector
- Stereo headphone jack
- Microphone jack
- 3 Universal Serial Bus (USB) connectors
- RJ11 telephone connector
- RJ45 Ethernet connector
- IEEE 1394 connector

ExpressCard slot

- ExpressCard

Optical drive

- CD-ROM, DVD-ROM, CD-RW/DVD ROM or CD-RW/DVD Recordable depending on the model.

Wireless features

- Integrated wireless LAN
- *Bluetooth* (on some models)
- Wireless radio switch

Digital media reader

- 6-in-1 (SD card, Multi-media Card, Memory Stick, Memory Stick Pro card, SD Pro card, xD-Picutre Card) digital media slot

Specifications

Size

- Width: 317.2 mm
- Depth: 239.3 mm
- Height: 33.1 to 36.2 mm

Environment

- Maximum altitude without pressurization: 3048 m (10000 ft)
- Temperature
  - At altitudes up to 2438 m (8000 ft)
  - Operating with no optical disc in the drive: 5° to 35°C (41° to 95°F)
  - Operating with an optical disc in the drive: 10° to 35°C (50° to 95°F)
  - Non-operating: 5° to 43°C (41° to 109°F)
  - At altitudes above 2438 m (8000 ft)
  - Maximum operating temperature, 31.3°C (88° F)

  Note: When you charge the battery pack, its temperature must be at least 10°C (50°F).
- Relative humidity:
  - Operating with no optical disc in the drive: 8% to 95%
  - Operating with an optical disc in the drive: 8% to 80%

Heat output

- 65 W (with integrated graphics card) maximum/90 W (with discrete graphics card) maximum

Power source (AC adapter)

- Sine-wave input at 50 to 60 Hz
- Input rating of the AC adapter: 100-240 V AC, 50 to 60 Hz

Battery pack

- Lithium-ion (Li-Ion) battery pack
  - Nominal voltage: 10.8 V DC
  - Capacity: 5.2 AH

Battery life

- For percentage of battery power remaining, see Power Meter on the task tray.

Appendix D. Notices

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.

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Morrisville, NC 27560
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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 U.S. patents and other intellectual property rights. Use of this copyright protection technology must be authorized by Macrovision, and is intended for home and other limited viewing uses only unless otherwise authorized by Macrovision. Reverse engineering or disassembly is prohibited.

Wireless Related Information

Wireless Interoperability

Wireless LAN PCI Express Mini Card is designed to be interoperable with any wireless LAN product that is based on Direct Sequence Spread Spectrum (DSSS), Complementary Code Keying (CCK), and/or Orthogonal Frequency Division Multiplexing (OFDM) radio technology, and is compliant to:

- The IEEE 802.11a/b/g Standard on Wireless LANs, as defined and approved by the Institute of Electrical and Electronics Engineers.
- The Wireless Fidelity (WiFi) certification as defined by the Wi-Fi Alliance.

Bluetooth Daughter Card is designed to be interoperable with any *Bluetooth* product that is compliant to *Bluetooth* Specification 2.0 + EDR as defined by the *Bluetooth* SIG. Following profiles are supported by *Bluetooth* Daughter Card:

- Generic Access
- Service Discovery
- Serial Port
- Dial-up Networking
- FAX
- LAN Access using PPP
- Personal Area Network
- Generic Object Exchange
- Generic Object Push
- File Transfer
- Synchronization
- Audio Gateway
- Headset
- Printer
- Human Interface Devices (Keyboard/Mouse)
- Basic Image
- Handsfree
- AV

Usage Environment and Your Health

Wireless LAN PCI Express Mini Card and *Bluetooth* Daughter Card emit radio frequency electromagnetic energy like other radio devices. However, the level of energy emitted is far much less than the electromagnetic energy emitted by wireless devices like for example mobile phones.

Because Wireless LAN PCI Express Mini Card and *Bluetooth* Daughter Card operate within the guidelines found in radio frequency safety standards and recommendations, Lenovo believes the integrated wireless cards are safe for use by consumers. These standards and recommendations reflect the consensus of the scientific community and result from deliberations of panels and committees of scientists who continually review and interpret the extensive research literature.

In some situation or environment, the use of Wireless LAN PCI Express Mini Card or *Bluetooth* Daughter Card may be restricted by the proprietor of the building or responsible representatives of the organization. These situations may for example include:

- Using the integrated wireless cards on board of airplanes, or in hospitals
- In any other environment where the risk of interference to other devices or services is perceived or identified as harmful.

If you are uncertain of the policy that applies on the use of wireless devices in a specific organization (e.g. airport or hospital), you are encouraged to ask for authorization to use Wireless LAN PCI Express Mini Card or *Bluetooth* Daughter Card prior to turning on the computer.

Electronic Emissions Notices

The following information refers to Lenovo 3000 Y310, machine type 7756.

Federal Communications Commission (FCC) Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, used, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee the interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult an authorized dealer or service representative for help.

Properly shielded and grounded cables and connectors must be used in order to meet FCC emission limits. Proper cables and connectors are available from Lenovo authorized dealers. Lenovo is not responsible for any radio or television interference caused by using other than recommended cables or connectors or by unauthorized changes or modifications to this equipment. Unauthorized changes or modifications could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Responsible party:
Lenovo (United States) Incorporated
1009 Think Place - Building One
Morrisville, NC 27650
U.S.A.
Telephone: (919) 294-5900

Industry Canada Class B Emission Compliance Statement

This Class B digital apparatus complies with Canadian ICES-003.

Avis de conformité à la réglementation d'Industrie Canada

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

European Union EMC Directive Conformance Statement

This product is in conformity with the protection requirements of EU Council Directive 2004/108/EC on the approximation of the laws of the Member States relating to electromagnetic compatibility. Lenovo cannot accept responsibility for any failure to satisfy the protection requirements resulting from a nonrecommended modification of the product, including the fitting of non-Lenovo option cards.

This product has been tested and found to comply with the limits for Class B Information Technology Equipment according to CISPR 22/European Standard EN 55022. The limits for Class B equipment were derived for typical residential environments to provide reasonable protection against interference with licensed communication devices.

Properly shielded and grounded cables and connectors must be used in order to reduce the potential for causing interference to radio and TV communications and to other electrical or electronic equipment. Such cables and connectors are available from Lenovo authorized dealers. Lenovo cannot accept responsibility for any interference caused by using other than recommended cables and connectors.

Japanese VCCI Class B Statement

この装置は、情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）の基準に基づくクラスＢ情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。

取扱説明書に従って、正しい取り扱いをして下さい。

Japanese compliance for products less than or equal to 20A per phase.

高調波電流規格JIS C 61000-3-2適合品

Lenovo product service information for Taiwan

台 灣 Lenovo 產 品 服 務 資 訊 如 下 ：
荷蘭商思惟個人電腦產品股份有限公司台灣分公司
台北市信義區信義路五段七號十九樓之一
服務電話：0800-000-700

WEEE and Recycling Statements

General Recycling Statement

Lenovo encourages owners of information technology (IT) equipment to responsibly recycle their equipment when it is no longer needed. Lenovo offers a variety of programs and services to assist equipment owners in recycling their IT products. Information on product recycling offerings can be found on Lenovo's Internet site at
http://www.pc.ibm.com/ww/Lenovo/about/environment

EU WEEE Statements

The Waste Electrical and Electronic Equipment (WEEE) mark applies only to countries within the European Union (EU) and Norway. Appliances are labeled in accordance with European Directive 2002/96/EC concerning waste electrical and electronic equipment (WEEE). The Directive determines the framework for the return and recycling of used appliances as applicable throughout the European Union. This label is applied to various products to indicate that the product is not to be thrown away, but rather reclaimed upon end of life per this Directive.

Users of electrical and electronic equipment (EEE) with the WEEE marking per Annex IV of the WEEE Directive must not dispose of end of life EEE as unsorted municipal waste, but use the collection framework available to them for the return, recycle, recovery of WEEE and minimize any potential effects of EEE on the environment and human health due to the presence of hazardous substances. For additional WEEE information go to:
http://www.Lenovo.com/Lenovo/environment.

Japan Recycling Statements

Collecting and Recycling a Disused Lenovo Computer or Monitor

If you are a company employee and need to dispose of a Lenovo computer or monitor that is the property of the company, you must do so in accordance with the Law for Promotion of Effective Utilization of Resources. Computers and monitors are categorized as industrial waste and should be properly disposed of by an industrial waste disposal contractor certified by a local government. In accordance with the Law for Promotion of Effective Utilization of Resources, Lenovo Japan provides, through its PC Collecting and Recycling Services, for the collecting, reuse, and recycling of disused computers and monitors. For details, visit the Lenovo Web site at www.ibm.com/jp/pc/service/recycle/pcrecycle
http://www.ibm.com/jp/pc/service/recycle/pcrecycle

Pursuant to the Law for Promotion of Effective Utilization of Resources, the collecting and recycling of home-used computers and monitors by the manufacturer was begun on October 1, 2003. This service is provided free of charge for home-used computers sold after October 1, 2003. For details, visit the Lenovo Web site at www.ibm.com/jp/pc/service/recycle/personal
http://www.ibm.com/jp/pc/service/recycle/personal

Disposing of a Lenovo Computer Components

Some Lenovo computer products sold in Japan may have components that contain heavy metals or other environmental sensitive substances. To properly dispose of disused components, such as a printed circuit board or drive, use the methods described above for collecting and recycling a disused computer or monitor.

Disposing a Disused Battery Pack from Lenovo Notebook Computers

Your Lenovo notebook computer has a lithium ion battery pack or a nickel metal hydride battery pack. If you are a company employee who uses a Lenovo notebook computer and need to dispose of a battery pack, contact the proper person in Lenovo sales, service, or marketing, and follow that person's instructions. You also can refer to the instructions at www.ibm.com/jp/pc/environment/recycle/battery
http://www.ibm.com/jp/pc/environment/recycle/battery

If you use a Lenovo notebook computer at home and need to dispose of a battery pack, you must comply with local ordinances and regulations. You also can refer to the instructions at www.ibm.com/jp/pc/environment/recycle/battery
http://www.ibm.com/jp/pc/environment/recycle/battery

Notice for Users in the U.S.A.

California Perchlorate Information:

Products containing CR (manganese dioxide) lithium coin cell batteries may contain perchlorate.

Perchlorate Material — special handling may apply.

See http://www.dtsc.ca.gov/hazardouswaste/perchlorate.

Notice on Deleting Data from Your Hard Disk

As computers spread into every corner of life, they process more and more information. The data on your computer, some of it sensitive, is stored on a storage device called the hard disk. Before you dispose of, sell, or hand over your computer, you need to delete that data.

Handing your computer over to someone else without deleting the loaded software, such as operating systems and application software, may even violate License Agreements. You are advised to check the terms and conditions of those Agreements.

Deleting the data from the hard disk is not easy.

There are methods that seem to delete the data:

- Move the data to the recycle bin, and then choose the Empty recycle bin command.
- Use the Delete command.
- Format your hard disk, using the software for initializing it.
- Using the preinstalled recovery program, bring the hard disk back to factory-ship state.

These operations, however, only change the file allocation of the data; they do not delete the data itself. In other words, the data retrieval processing is disabled under an operating system such as Windows. The data is still there, even though it seems to be lost. Thus, it is sometimes possible to read the data by use of special software for data recovery. There is a risk that people of bad faith may read and misuse the critical data on hard disks for unexpected purposes.

To prevent the leakage of data, it becomes very important that you take responsibility for deleting all the data from the hard disk when you dispose of, sell, or hand over your computer. You can destroy the data physically by smashing the hard disk with a hammer, or magnetically by means of strong magnetic power, thus making the data unreadable. But we recommend that you make use of the software (payware) or service (pay service) specifically developed for the purpose.

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