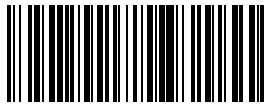


Machine type: FOBA [S50-30]

Lenovo S50 Series User Guide

Version 2.0 2015.02



SP40G46622



lenovo

Important Safety Information

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

The interface and functions shown in this User Guide are provided for reference only and may differ from actual product appearance. Product design and specifications may be changed without notice.



Danger: Be aware of extremely hazardous or potentially lethal situations.



Attention: Be aware of possible damage to programs, devices, or data.



Note: Pay attention to this important information.

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Using the Computer Hardware

This chapter contains the following topics:

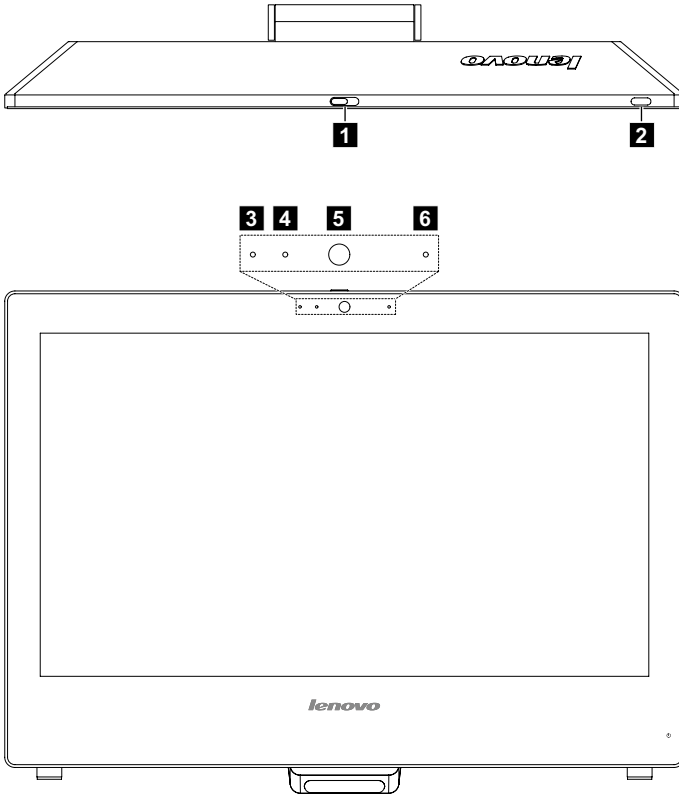
- Introduction to the computer hardware
- Information on computer connections

 **Note:** The descriptions in this chapter might be different from what you see on your computer, depending on the computer model and configuration.

Front view of the computer



Attention: Be careful not to block any air vents on the computer. Blocked air vents can cause overheating.



- | | |
|---------------------------------------|--|
| 1 Camera shield control slider | 2 Display on/off button |
| 3 Built-in microphone | 4 Camera LED indicator |
| 5 Built-in camera | 6 Built-in microphone
(selected models only) |

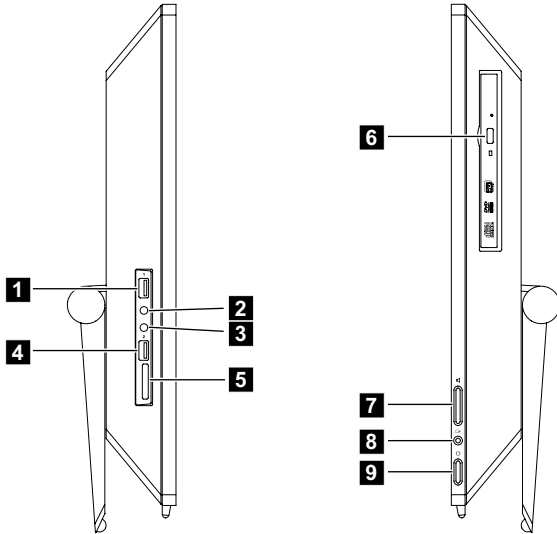


Attention: If your computer is equipped with an infrared (IR) remote control, do not put the USB IR receiver on the same plane as the screen.

Left and right views of the computer



Attention: Be sure not to block any air vents on the computer. Blocked air vents may cause thermal problems.



1 USB 3.0 connector

3 Microphone connector

5 Memory card reader

7 Volume control button

9 Power button

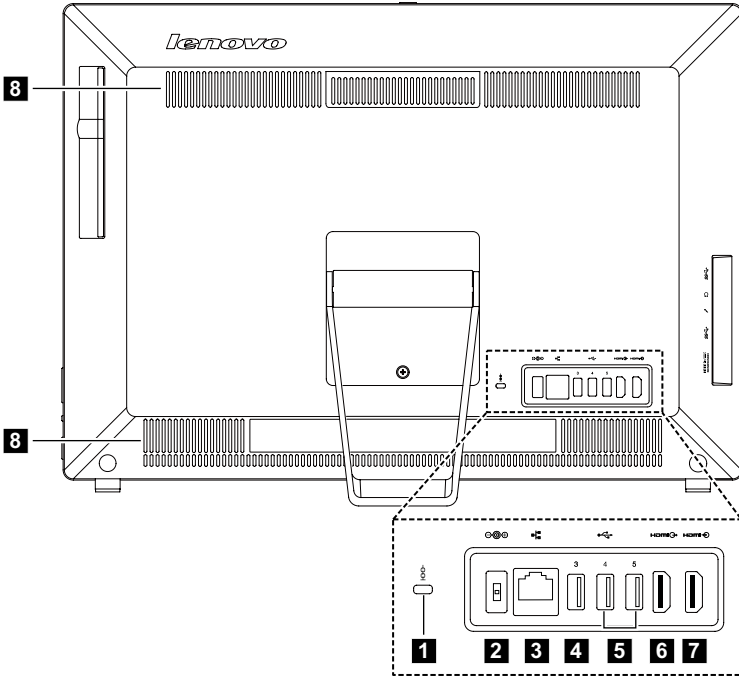
2 Headphone connector

4 Always On USB 3.0 connector

6 Optical drive eject button

8 PC mode/HDMI-in switch

Rear view of the computer

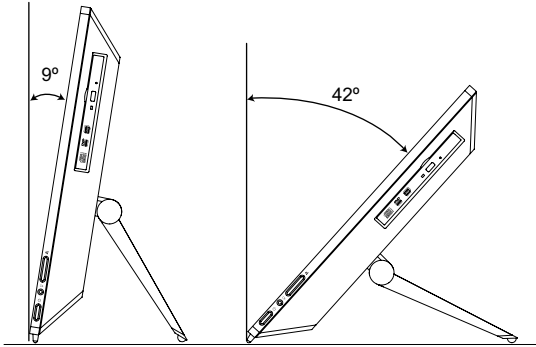


- 1** Security cable slot
- 2** Power connector
- 3** Ethernet connector
- 4** USB 2.0 connector / USB keyboard power on connector*
- 5** USB 2.0 connectors (2)
- 6** HDMI-out connector
- 7** HDMI-in connector
- 8** Air vents

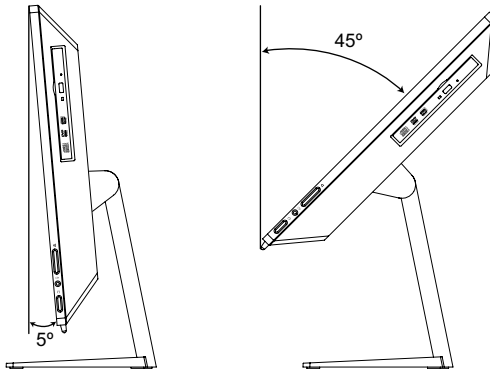
* **USB keyboard power on:** Press **Alt + P** to power on if the USB keyboard is connected to this USB port.

Computer stand


Frame Stand




Monitor Stand



Basic connector instructions

 **Note:** Your computer may not have all of the connectors described in this section.

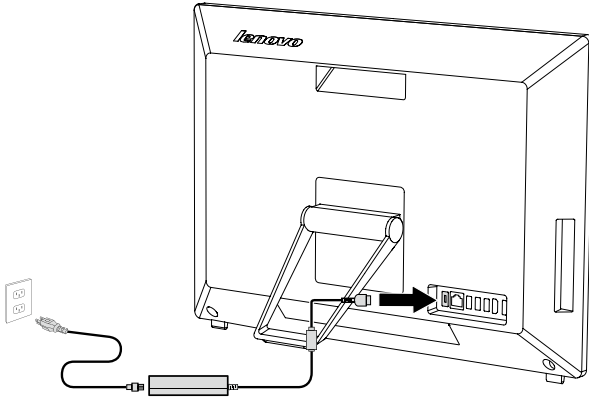
Connector	Description
Microphone	Use this connector to attach a microphone to your computer when you want to record sound or if you use speech-recognition software.
Headphone	Use this connector to attach headphones to your computer when you want to listen to music or other sounds without disturbing anyone.
USB connector	Use this connector to attach a device that requires a USB connection.
Ethernet connector	Use this connector to attach the computer to an Ethernet-type local area network.
HDMI-out connector (optional)	Connects to the HDMI connector on your display or TV.
HDMI-in connector (optional)	Use this computer as a display monitor by connecting other devices to its HDMI-in port.

 **Note:** If your computer is equipped with a wireless keyboard or mouse, follow the installation instructions for those devices.

Connecting your computer

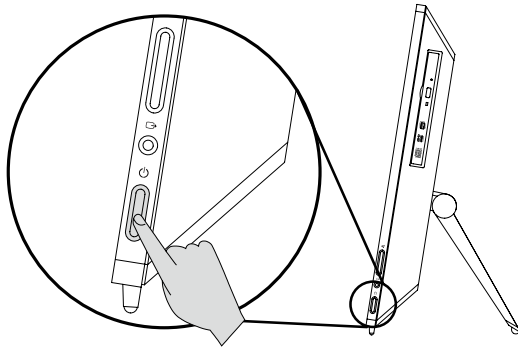
Connecting the power cord

Connect the power cord to an electrical outlet. We recommend using a grounded connection or a surge protector.

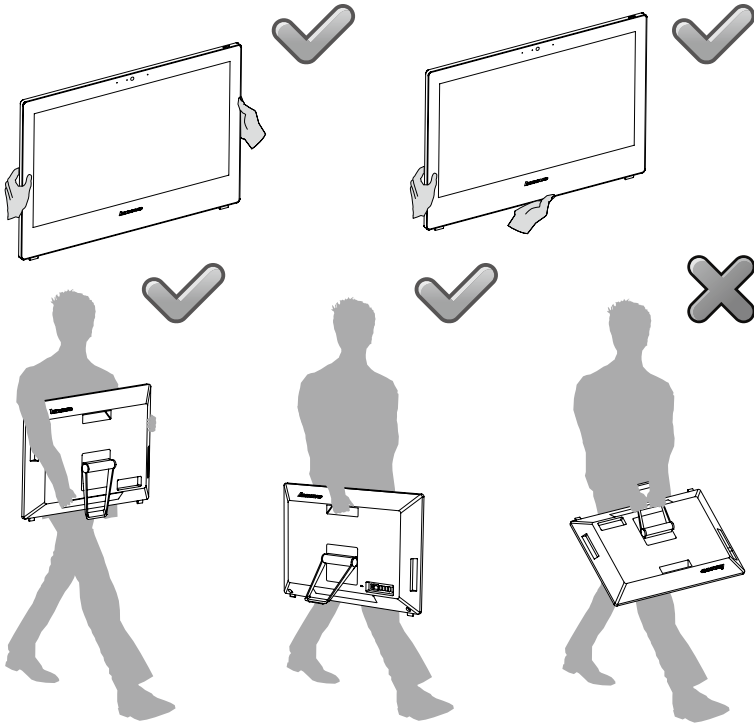


Important information about using the computer

Press the power button on the side of the computer to turn on the computer.



Hold the computer tightly when you carry it.



Connecting to the Internet

To connect to the Internet, you'll need a contract with an Internet Service Provider (ISP) and some hardware.

IPSS and ISP offerings vary by country. Contact your ISP for offerings available in your country.

Your computer is designed to support a wireless (selected models only) or wired network that connects your computer to other devices.

Wired network connection


For wired networks, connect one end of an Ethernet cable (purchased separately) to the Ethernet connector on your computer, and then connect the other end to the network router or broadband modem. Consult your ISP for detailed setup instructions.

! **Note:** Broadband modem and router installation procedures vary depending on the manufacturer. Follow the manufacturer's instructions.

Wireless network connection

For wireless networks, you can use the built-in wireless LAN antenna to access your wireless home network.

To connect your computer to the wireless network:

1. Move the cursor to the top right or bottom right corner of the screen, then click **Settings**. (If your computer is equipped with touch screen, swipe in from the right edge of the screen, then tap **Settings**.)
2. Click or tap the network icon , then select the name of your router. Click or tap **Connect**, then follow the steps on the screen.

Test the wireless network by opening your Web browser and accessing any Web site.

Wired keyboard (selected models only)

- F2** — Your computer has the Lenovo Rescue System installed. To learn more about this program, repeatedly press and release the F2 key once turning on the computer until the Lenovo Rescue System open.

Using Windows 8.1

This chapter contains the following topics:

- Switching between the main Windows 8.1 interfaces
- The Charms Bar
- Shutting down the computer
- Switching between apps
- Closing an app
- Opening other system programs
- Windows Help and Support



Attention: The Windows 8.1 operating system is provided by Microsoft Corporation. Please use it in accordance with the END USER LICENSE AGREEMENT (EULA) between you and Microsoft. For any question related to the operating system, please contact Microsoft directly.

Switching between the main Windows 8.1 interfaces

Windows 8.1 comes with two main user interfaces: the Start Screen and the Windows desktop.

To switch from the Start Screen to the Windows desktop, do one of the following:

- Select the Windows desktop tile on the Start Screen.
- Press the Windows key  + D.


To switch from the desktop to the Start Screen, do one of the following:

- Select **Start** from the Charms Bar.
- Move the cursor to the bottom left corner, then select the Start Screen thumbnail when it is displayed.
- Press the Windows key .

The Charms Bar

Charms provide new and faster ways to perform many basic tasks.

To display the charms, do one of the following:

- Move the cursor to the top right or bottom right corner of the screen.
- If your computer is equipped with touch screen, swipe in from the right edge of the screen.
- Press the Windows key  + C.

Shutting down the computer

To shut down the computer:

1. Move the cursor to the top right or bottom right corner of the screen, then click **Settings**. (If your computer is equipped with touch screen, swipe in from the right edge of the screen, then tap **Settings**.)
2. Select **Power** → **Shutdown**.

Switching between apps

Sometimes you want to get back to an app you were just using, or quickly switch through your recent apps.

To switch between apps:

Move the cursor to the top left corner, then click to bring in the next app. (If your computer is equipped with touch screen, swipe in from the left edge of the screen to bring in the next app.)

Closing an app


To close an app, do one of the following:

- Move the cursor to the top left corner of the screen. When the thumbnail appears, drag it to the bottom of the screen.
- Move the cursor to the top edge of the screen. When the cursor becomes a hand, drag the app page to the bottom of the screen.
- If your computer is equipped with touch screen, swipe in from the top edge of the screen. When the app page becomes smaller, drag it to the bottom of the screen.

Opening other system programs


There is a fast way to open other system programs.

To open the menu, do one of the following:

- Move the cursor to the bottom left corner of the screen. When the thumbnail appears, right-click with the mouse to open the menu.
- Press the Windows key  + X.

Windows Help and Support

If you have a problem with the operating system, see the Windows Help and Support file. To open the Windows Help and Support file, do one of the following:

- Select the **Settings** charm, then select **Help**.
- Press the Windows key  + F1.

You can read the Windows Help and Support file on your computer. You can also get online help and support by clicking on one of the two links listed under **More to explore**.

Using the Rescue System

This chapter contains the following topics:

- OneKey Recovery
- Driver and Application Installation




Attention: Using OneKey Recovery will result in loss of data.

- You can restore the C: drive of the computer to factory default settings or to the last system backup status using **OneKey Recovery**. If you do this, all of the existing data on drive C: will be lost, but the content and format of the other partitions of the hard disk drive will remain unchanged.
- If you want to install an operating system and back it up with **OneKey Recovery**, you must format the C: partition in **NTFS** format and install the operating system on the C: partition. Otherwise, the **OneKey Recovery** system cannot run.

Note about the service partition:

The files and relevant data used by the rescue system are saved in the service partition. Deleting this partition will make the rescue system unusable. For more detailed information, see the following instructions:

From the **Search** charm, select **Apps** → **Control Panel** → **Administrative Tools** → **Computer Management** → **Disk Management**, you can see the service partition, which must not be deleted.


 **Note:** The recovery files and relevant data used by the rescue system are saved in the service partition. If the service partition is deleted or damaged by someone other than authorized Lenovo service personnel, Lenovo will not be liable for any losses arising therefrom in any way.

OneKey Recovery

OneKey Recovery is an easy-to-use application. You can use it to restore your computer to the system default or to a previously backed up state.

Detailed Operation Procedure

1. Repeatedly press and release the **F2** key once turning on the computer until the **Lenovo Rescue System** opens, then select **OneKey Recovery**.

 **Note:** System Recovery will overwrite all of the data on the C: drive. To prevent loss of data, be sure to back up relevant data before performing system recovery.

2. Follow the on-screen instructions to select the backup task you want to restore from and the disk where you want to install the operating system, then press **Next** to start the restore.
3. Please wait during the process of system recovery. Do not interrupt the operation during the recovery process.
4. After the system is recovered successfully, the software will prompt you to restart the computer. Restart the computer and start the operating system.

Driver and Application Installation

The **Driver and Application Installation** function in the rescue system provides a way for the user to conveniently reinstall all of the Lenovo applications and drivers that were shipped with your Lenovo hardware.

Method 1: Automatic Installation

Repeatedly press and release the **F2** key once turning on the computer until the **Lenovo Rescue System** opens, then select **Driver and Application Installation**.

Follow the on-screen prompts to install the Lenovo drivers and applications. Click **OK** to start installing the **Lenovo Driver and Application Installation** software.

The system will restart. After the system has restarted, the drivers and application installation process will continue until it has completed.

Method 2: Manual Installation

In the Windows system, Select **Driver and Application Installation** from the **Search** charm.

After starting the procedure, install the drivers and software manually by following the prompts.



Notes:

1. Do not install software which is already installed on the computer.
2. Make sure that the Driver and Application Installation software has been automatically installed before starting the operating system. The manual installation function can only be used after the software has been installed.

Troubleshooting and Confirming Setup

A graphic of a spiral-bound notebook with a white cover and a silver spiral binding on the left side. The notebook is open to a page with a white background and a thin black border. The text is printed on this page.

This chapter contains the following topic:

- Troubleshooting and Problem Resolution

Solving Problems

Follow these tips when troubleshooting your computer:

- If you added or removed a part before the problem started, review the installation procedures to ensure that the part is correctly installed.
- If a peripheral device does not work, ensure that the device is properly connected.
- If an error message appears on the screen, write down the exact message. This message may help support personnel diagnose and fix the problem(s).
- If an error message occurs in a program, see the Help document of this program.

Troubleshooting Display Problems

Problem: Blank screen or no image is displayed on the monitor.

Troubleshooting and problem resolution:

1. Make sure the power cord is plugged into your computer and a functioning power outlet.
2. Unplug the power cord and plug the power cord back in securely and restart the computer.

If still cannot solve the problem, contact Lenovo Customer Service.

Problem: You need to change the display property settings.

Setting display background and icon properties:

1. Right-click the desktop anywhere except over an icon, then select Personalize from the pop-up menu.
2. From here, select the appropriate options to:
 - Change the desktop background
 - Select a screen saver
 - Select Windows color options for borders and taskbar
 - Select a themes
3. Right-click the desktop anywhere except over an icon, then select **Screen resolution** from the pop-up menu to change the appearance.

Problem: Ripple on screen.

Troubleshooting and problem resolution:

1. Check to see if any of the following devices are located less than one meter from the computer: refrigerators, electric fans, electric dryers, UPS systems, regulators, fluorescent lamps or other computers that may be generating magnetic interference.
2. Move any interfering devices away from the computer.
3. If the problem persists, contact Lenovo Service.

Troubleshooting Audio Problems

Problem: No sound from the integrated speakers.

Troubleshooting and problem resolution:

- Adjust the Windows volume control — select the speaker icon from the **Settings** Charm or click the arrow on taskbar to show the hidden icons in Windows desktop mode, then click the speaker icon. Ensure that the volume is turned up and the sound is not muted. Adjust the volume, bass, or treble controls to eliminate distortion.
- Reinstall the audio driver.
- Disconnect any headphones from the headphone connector — sound from the speakers is automatically disabled when headphones are connected to the computer's side-panel headphone connector.

Problem: No sound from headphones.

Troubleshooting and problem resolution:

- Check the headphone cable connection — ensure that the headphone cable is securely inserted into the headphone connector.
- Adjust the Windows volume control — select the speaker icon from the **Settings** Charm or click the arrow on taskbar to show the hidden icons in Windows desktop mode, then click the speaker icon. Ensure that the volume is turned up and the sound is not muted.

Troubleshooting Software Problems

Problem: You are unable to exit a running program normally.

Troubleshooting and problem resolution:

1. Press the **Ctrl**, **Alt** and **Delete** keys at the same time, then select the **Task Manager** option from the pop-up dialog box.
2. Select the problem program, then click the **End Task** button.

Problem: You need to install or uninstall a program.

Problem resolution:

During installation never abort the install process by powering the system off or through other drastic means. This can cause system program problems or even failure during system initialization.

During the uninstall process, never directly delete the files or folders. This is harmful to the operating system, and might cause a system-wide malfunction. Use the following procedure to properly uninstall programs:

1. Back up all documents and system settings related to the program before removing it.
2. If the program has its own uninstaller, run it directly to uninstall the program.
3. If the program does not have its own uninstaller, then select **Apps** → **Control Panel** from the **Search** charm.
4. From the **Control Panel**, choose **Programs** → **Programs and Features**.
5. Find the applicable program from the **Programs and Features** dialog box and then select **Uninstall/Change**.
6. Perform the instructions displayed to uninstall the software.

Troubleshooting Problems with Optical Drives and Hard Disks

Problem: The Optical drive is unable to read a CD/DVD.

Troubleshooting and problem resolution:

1. Check to determine if there is an optical drive icon in the resource manager of the operating system. If not, restart your computer. If there is still no icon, contact Lenovo Service. Otherwise, continue with the next step of this procedure.

2. Confirm that the CD/DVD has been properly placed in the drive. If not, reload the CD or DVD. Otherwise, continue with the next step of this procedure.
3. Check the specifications that came with your computer to confirm that this optical drive is capable of reading this type of CD or DVD.
4. If the CD/DVD cannot be read, replace it with a known good CD/DVD such as one that was shipped with the computer.
5. If the known good CD cannot be read, visually check the operating side of the CD/DVD for defects.

Problem: The capacity of the hard disk, as indicated by the system, is less than the nominal capacity.

Troubleshooting and problem resolution: For computers equipped with the OneKey Recovery feature, the system recovery feature needs to occupy some hard disk space. This may account for the apparent hard disk capacity deficit.

Further Technical Explanation: The nominal capacity of the hard disk is expressed in the decimal system as 1000 bytes. But the actual hard disk capacity is expressed in the binary system as 1024 bytes (For example, the nominal capacity 1G is 1000M, while the actual capacity 1G is 1024M).

The capacity of the hard disk shown in Windows can be calculated according to the calculations in the following example:

The nominal capacity of the hard disk is 40G, while its actual capacity should be: $40 \times 1000 \times 1000 \times 1000 / (1024 \times 1024 \times 1024) = 37\text{G}$.

If the Service partition of 3G - $3 \times 1000 \times 1000 \times 1000 / (1024 \times 1024 \times 1024) = 2.79\text{G}$ is subtracted, the capacity of the hard disk shown in the system can be obtained.

The capacity of the hard disk as calculated using this method may be slightly different from the actual capacity due to the rounding of totals.


Special considerations for troubleshooting Windows

Record the following information as it may be useful later when troubleshooting system problems:

The drivers for this computer model only support the Windows 8.1 system.

Windows Help and Support

If you have a problem with the operating system, see the Windows Help and Support file. To open the Windows Help and Support file, do one of the following:

- Select the **Settings** charm, then select **Help**.
- Press Windows key  + F1.

You can read the Windows Help and Support file on your computer. You can also get online help and support by clicking on one of the two links listed under **More to explore**.

BIOS setup utility

What is the BIOS setup utility?

The BIOS setup utility is ROM-based software. It communicates basic computer information and provides options for setting boot devices, security, hardware mode, and other preferences.

How can I start the BIOS setup utility?

To start the BIOS setup utility:

1. Shut down the computer.
2. Repeatedly press and release the F1 key once turning on the computer to start the Setup Utility program.

How can I change the boot mode?

There are two boot modes: UEFI and Legacy. To change the boot mode, start the BIOS setup utility and select **Startup** → **Boot Priority**, then set boot mode to UEFI or Legacy support on the boot menu.

When do I need to change the boot mode?

The default boot mode for your computer is the UEFI mode. If you need to install a legacy Windows operating system (any operating system before Windows 8.1) on your computer, you must change the boot mode to Legacy support. The legacy Windows operating system cannot be installed if you don't change the boot mode.

Performing Daily Maintenance Tasks

Cleaning the computer components

Because many of the computer components consist of sophisticated integrated circuit boards, it is very important to periodically clean the computer to prevent dust buildup. The cleaning supplies you need to clean the components include: a vacuum cleaner, a soft cotton cloth, pure water (preferably purified or distilled water) and cotton swabs.



Attention: Before you clean your computer, disconnect the computer from the electrical outlet. Clean your computer with a soft cloth dampened with water. Do not use liquid or aerosol cleaners, which may contain flammable substances.



Note: To avoid damaging the computer or display, do not spray cleaning solution directly onto the display. Only use products specifically designed for cleaning displays, and follow the instructions included with the product.

The following are general methods for cleaning the components:

- You can use a soft cloth to remove dust on the surface of the computer, the monitor, the printer, the speakers and the mouse.
- You can use a vacuum cleaner to clean in otherwise inaccessible corners.
- To clean the keyboard thoroughly, shut down the computer and scrub it gently with a wet cloth. Do not use the keyboard until it is dry.

Do not do any of the following:

- Allow water to enter the computer.
- Use a heavily dampened cloth.
- Spray water directly onto the surface of the monitor or inside the computer.

LCD monitor should be cleaned daily. Use a dry cloth to brush dust from the monitor and keyboard every day. Keep all surfaces clean and free of grease stains.

Hardware Replacement Guide


A graphic of a spiral-bound notebook with a white cover and a grey spiral binding on the left side. The notebook is open to a page with a white background and a thin black border. The text is printed on this page.

This chapter contains the following topics:


- Removing and reattaching the frame stand
- Removing and reattaching the monitor stand
- Removing the computer cover
- Replacing the hard disk drive
- Replacing the optical drive

Overview

This guide is intended to be used by customers who are replacing Customer Replaceable Units (CRUs) as well as trained service personnel who are replacing Field Replaceable Units (FRUs). In this guide, CRUs and FRUs will often be referred to as parts.

 **Note:** Trained service personnel should refer to the *Hardware Maintenance Manual* (HMM) for parts ordering information.

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

 **Note:** Use only parts provided by Lenovo®.

The description of the TV-Tuner card in this manual applies only to those computer models that have a TV-Tuner card installed.

This guide contains procedures for replacing the following parts:

- Frame stand
- Monitor stand
- Hard disk drive
- Optical drive

Safety information for replacing CRUs

Do not open your computer or attempt any repairs before reading the “Important safety information” in the *Safety and Warranty Guide* that was included with your computer. If you no longer have this copy of the *Safety and Warranty Guide*, you can obtain one online from the Support Web site at <http://support.lenovo.com>.

Additional information resources

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

You can find the following information:

- CRU removal and installation information
- Publications
- Troubleshooting information
- Parts information
- Links to other useful sources of information

To access this information, go to: <http://support.lenovo.com>

Tools required

To disassemble the computer, you need the following tools:

- Wrist grounding strap and conductive mat for preventing electrostatic discharge
- Flat head screwdriver
- Phillips head screwdriver
- Hex screwdriver
- Plastic flat head screwdriver
- Plastic tweezers



Note: The screws for the different components vary in size. During the disassembly procedure, group the screws with their corresponding components to avoid a mismatch when replacing the components.

Handling static-sensitive devices

Static electricity, although harmless to you, can seriously damage computer components.

When you are replacing a part, do not open the anti-static package containing the new part until the defective part has been removed from the computer and you are ready to install the new part.

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

- Limit your movements, as this can cause static electricity to build up.
- Always handle parts and other computer components carefully. Handle adapters, memory modules, system boards, and microprocessors by the edges. Never touch any exposed circuitry.
- Prevent others from touching the parts and other computer components.
- Before you replace a new part, touch the anti-static package containing the part to a metal expansion slot cover or other unpainted metal surface on the computer for at least two seconds. This reduces static electricity in the package and your body.
- When possible, remove the new part from the anti-static packaging and install it directly in the computer without setting the part down. When this is not possible, place the anti-static package that the part came in on a smooth, level surface and place the part on it.
- Do not place the part on the computer cover or other metal surface.

Replacing hardware



Attention: Do not remove the computer cover or attempt any repairs before reading the “Important safety information” in the *Safety and Warranty Guide* that was included with your computer or in the *Hardware Maintenance Manual* (HMM) for the computer. To obtain copies of the *Safety and Warranty Guide* or *HMM*, go to the Support Web site at: <http://support.lenovo.com>



Note: Use only parts provided by Lenovo.

General information

Pre-disassembly instructions

Before proceeding with the disassembly procedure, make sure that you do the following:

1. Turn off the power to the system and all peripherals.
2. Unplug all power and signal cables from the computer.
3. Place the system on a flat, stable surface.

Removing and reattaching the frame stand



Attention: Do not remove the computer cover or attempt any repairs before reading the “Important safety information” in the *Safety and Warranty Guide* that was included with your computer or in the *Hardware Maintenance Manual (HMM)* for the computer. To obtain copies of the *Safety and Warranty Guide* or *HMM*, go to the Support Web site at: <http://support.lenovo.com>

This section provides instructions on how to remove and reattach the frame stand.



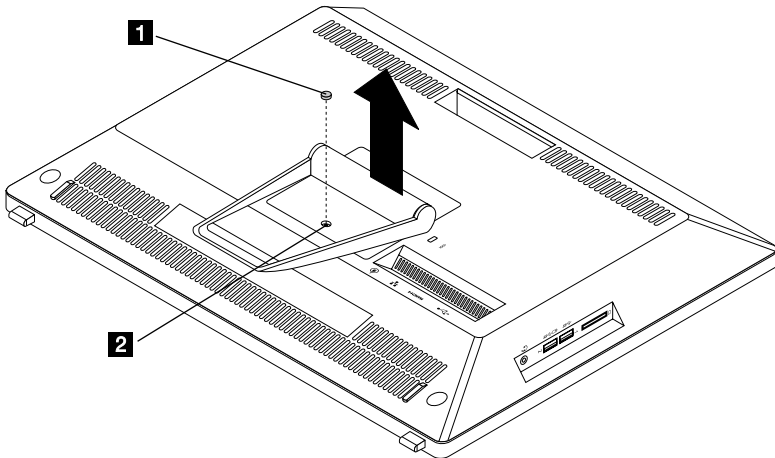
Note: The frame stand is available only for some models.

To remove and reattach the frame stand, do the following.

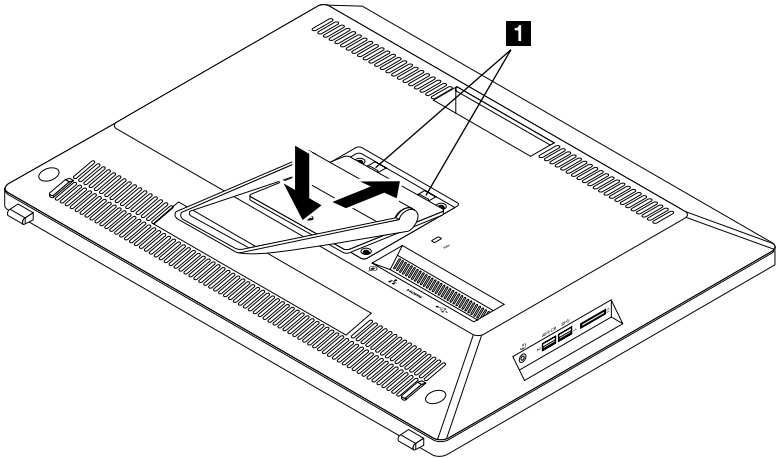
1. Remove all media from the drives and turn off all attached devices.
2. Turn off the computer and disconnect all power cords from electrical outlets.
3. Disconnect all cables attached to the computer.
4. Place a soft, clean towel or cloth on the desk or flat surface. Hold the sides of your computer and gently lay it down so that the screen is resting on the towel or cloth and the cover is facing up.
5. Remove the rubber block **1** that protects the screw **2**. Carefully loosen the screw **2** that secures the frame stand. Then, lift the frame stand up to remove it from the computer.



Note: The screw cannot be removed from the frame stand.



- To reattach the frame stand, insert the two tabs **1** on the frame stand into the corresponding slots in the chassis and slide the frame stand in and down as shown.



- Tighten the screw to secure the frame stand to the computer. Then, put the rubber block back into the hole to protect the screw.

Removing and reattaching the monitor stand



Attention: Do not remove the computer cover or attempt any repairs before reading the “Important safety information” in the *Safety and Warranty Guide* that was included with your computer or in the *Hardware Maintenance Manual (HMM)* for the computer. To obtain copies of the *Safety and Warranty Guide* or *HMM*, go to the Support Web site at: <http://support.lenovo.com>

This section provides instructions on how to remove and reattach the monitor stand.

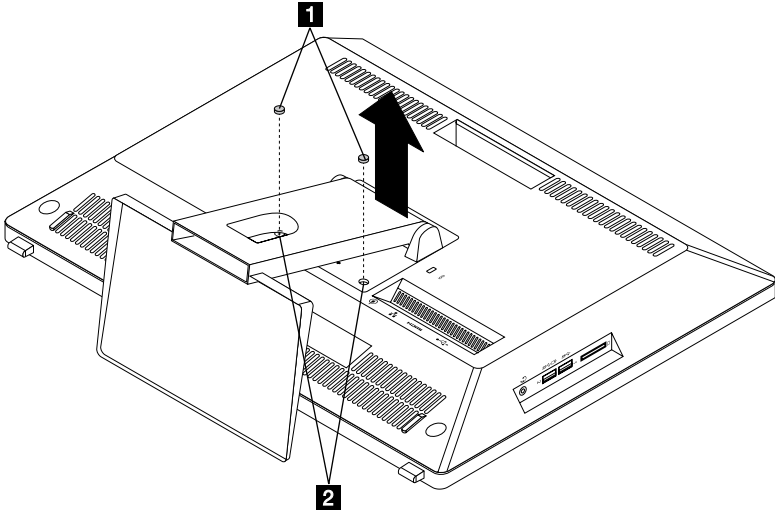


Note: The monitor stand is available only for some models.

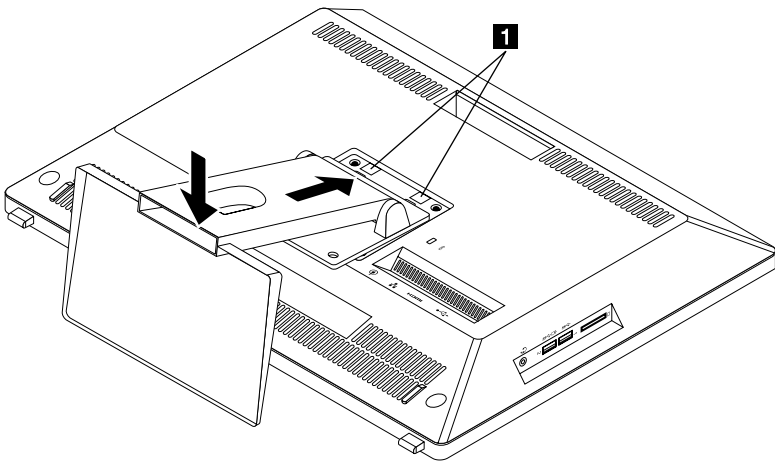
To remove and reattach the monitor stand, do the following.

- Remove all media from the drives and turn off all attached devices.
- Turn off the computer and disconnect all power cords from electrical outlets.
- Disconnect all cables attached to the computer.

- Place a soft, clean towel or cloth on the desk or flat surface. Hold the sides of your computer and gently lay it down so that the screen is resting on the towel or cloth and the cover is facing up.
- Remove the two rubber blocks **1** that protect the screws **2**. Carefully loosen the two screws **2** that secure the monitor stand. Then, lift the monitor stand up to remove it from the computer.



- To reattach the monitor stand, insert the two tabs **1** on the monitor stand into the corresponding slots in the chassis and slide the monitor stand in and down as shown.



7. Tighten the two screws to secure the monitor stand to the computer. Then, put the rubber blocks into the holes to protect the screws.

Removing the computer cover



Attention: Do not remove the computer cover or attempt any repairs before reading the “Important safety information” in the *Safety and Warranty Guide* that was included with your computer or in the *Hardware Maintenance Manual (HMM)* for the computer. To obtain copies of the *Safety and Warranty Guide* or *HMM*, go to the Support Web site at: <http://support.lenovo.com>



CAUTION:

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

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

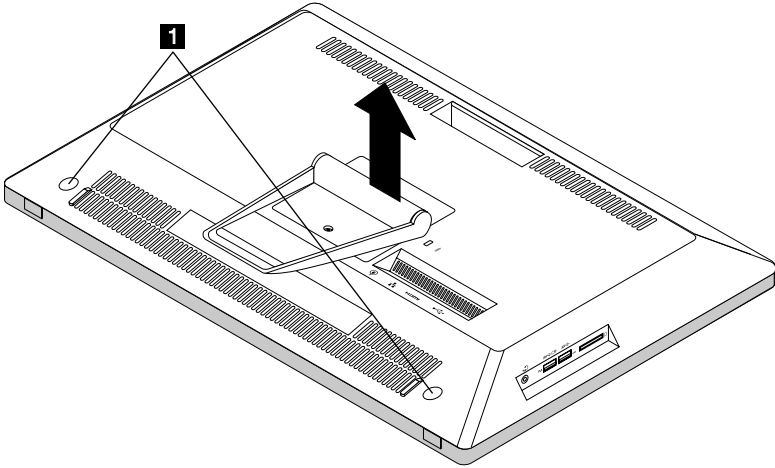
To remove the computer cover, do the following.

1. Remove all media from the drives and turn off all attached devices and the computer. Then, disconnect all power cords from electrical outlets and disconnect all cables that are connected to the computer.
2. Place a soft, clean towel or cloth on the desk or other flat surface. Hold the sides of your computer and gently lay it down so that the screen is resting on the towel or cloth and the cover is facing up.
3. Remove any locking device that secures the computer cover.
4. Remove the computer stand. See “Removing and reattaching the frame stand”, “Removing and reattaching the monitor stand”, or “Removing and reattaching the transformer stand”.

5. Loosen the two screws **1** at the bottom of the computer, and then carefully lift the computer cover up to remove it from the computer.

! Notes:

- The two screws cannot be removed from the computer cover.
- If necessary, use a flat-head screwdriver to help you remove the computer cover.



6. Reattach the computer cover:
- 1) Line up the pins on the computer cover with the mounting holes on the chassis, then put the computer cover back in place.
 - 2) Secure the computer cover to the chassis with the two screws.
7. Reattach the computer stand to the chassis.

Replacing the hard disk drive

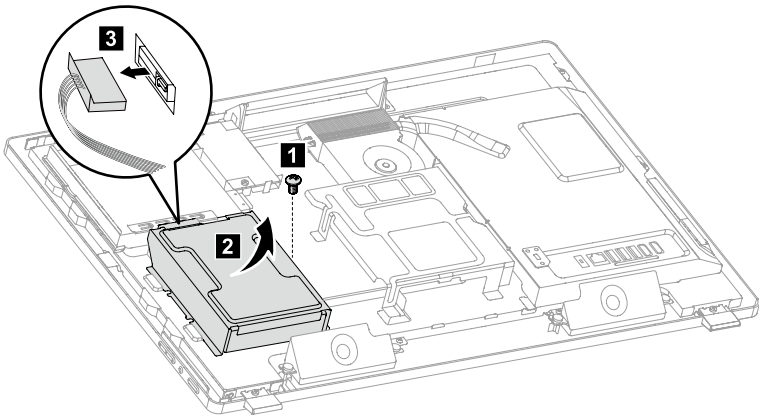


Attention: Do not remove the computer cover or attempt any repairs before reading the “Important safety information” in the *Safety and Warranty Guide* that was included with your computer or in the *Hardware Maintenance Manual (HMM)* for the computer. To obtain copies of the *Safety and Warranty Guide* or *HMM*, go to the Support Web site at: <http://support.lenovo.com>

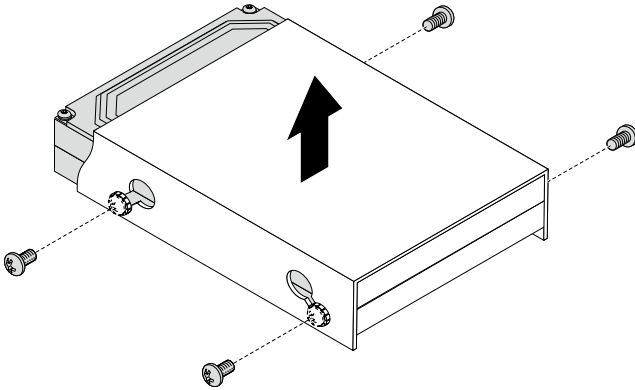
This section provides instructions on how to replace the hard disk drive.

To replace the hard disk drive, do the following.

1. Remove all media from the drives and turn off all attached devices and the computer. Then, disconnect all power cords from electrical outlets and disconnect all cables that are connected to the computer.
2. Place a soft, clean towel or cloth on the desk or other flat surface. Hold the sides of your computer and gently lay it down so that the screen is resting on the towel or cloth and the cover is facing up.
3. Remove the computer stand. See “Removing and reattaching the frame stand”, “Removing and reattaching the monitor stand”, or “Removing and reattaching the transformer stand”.
4. Remove the computer cover. See “Removing the computer cover”.
5. Remove the hard disk drive assembly as shown. **1 2**
6. Disconnect the cables from the hard disk drive. **3**



7. Remove the 4 screws that secure the hard disk drive to the disk bay and slide the defective hard disk drive out of the bay.



8. Slide the new hard disk drive into the drive bay, then screw the 4 screws back onto the drive bay.
9. Connect the cables to the new hard disk drive.
10. Line up the locating pins on the hard disk drive assembly with the mounting holes on the chassis, then attach the hard disk drive assembly to the chassis.
11. Reattach the computer cover and the computer stand.
12. Secure the hard disk drive bay to the chassis with the remaining screw.

Replacing the optical drive

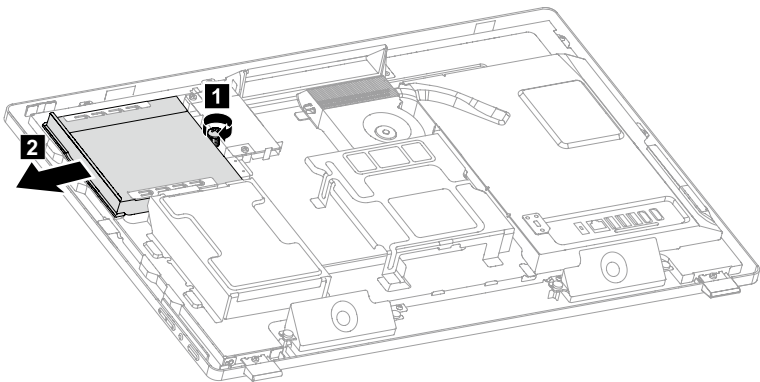


Attention: Do not remove the computer cover or attempt any repairs before reading the “Important safety information” in the *Safety and Warranty Guide* that was included with your computer or in the *Hardware Maintenance Manual (HMM)* for the computer. To obtain copies of the *Safety and Warranty Guide* or *HMM*, go to the Support Web site at: <http://support.lenovo.com>

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

To replace the optical drive, do the following.

1. Remove all media from the drives and turn off all attached devices and the computer. Then, disconnect all power cords from electrical outlets and disconnect all cables that are connected to the computer.
2. Place a soft, clean towel or cloth on the desk or other flat surface. Hold the sides of your computer and gently lay it down so that the screen is resting on the towel or cloth and the cover is facing up.
3. Remove the computer stand. See “Removing and reattaching the frame stand”, “Removing and reattaching the monitor stand”, or “Removing and reattaching the transformer stand”.
4. Remove the computer cover. See “Removing the computer cover”.
5. Remove the screw **1** that secures the optical drive. Then slide the optical drive outward as shown to disconnect it from the cable and slide it out of the optical drive bay. **2**



6. Slide the new optical drive into the optical drive bay until the new optical drive is connected to the cable and secured in place. Secure the new optical drive to the chassis with the screw.
7. Reattach the computer cover and the computer stand.

Appendix.

Declaration

Thank you for using Lenovo products.

Carefully read all documents shipped with your computer before you install and use the product for the first time. Lenovo is not responsible for any loss except when caused by installation and operations performed by Lenovo professional service personnel. You are responsible if you fail to operate the product according to instructions and requirements in the manuals included with your computer, or operate the product inappropriately.

This manual could include technical inaccuracies or typographical errors. Changes are made periodically to the information herein; these changes will be incorporated in new editions of the publication. To provide better service, Lenovo reserves the right to improve and/or modify the products and software programs described in the manuals included with your computer, and the content of the manual, at any time without additional notice.

The manuals included with your computer are provided to help you use Lenovo's products appropriately. For the configuration of the product, refer to the related contract (if any) or product packing list, or consult the distributor for the product sales.

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The software interface and function and hardware configuration described in the manuals included with your computer might not match exactly the actual configuration of the computer that you purchase. You are welcome to contact us about the manuals included with your computer. For the latest information or any questions or comments, contact or visit the Lenovo Web site:

Service Web site: <http://support.lenovo.com>

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Energy Star Statement



ENERGY STAR® is a joint program of the U.S. Environmental Protection Agency and the U.S. Department of Energy aimed at saving money and protecting the environment through energy efficient products and practices.

Lenovo is proud to offer our customers products with an ENERGY STAR compliant designation. The following machine types have been designed and tested to conform to the ENERGY STAR program requirement for computers at the time of manufacture. For more information about ENERGY STAR ratings for Lenovo computers, go to <http://www.lenovo.com>.

- FOBA

By using ENERGY STAR compliant products and taking advantage of the power-management features of your computer, you reduce the consumption of electricity. Reduced electrical consumption contributes to potential financial savings, a cleaner environment, and the reduction of greenhouse gas emissions.

For more information about ENERGY STAR, go to: <http://www.energystar.gov>.

Lenovo encourages you to make efficient use of energy an integral part of your day-to-day operations. To help in this endeavor, Lenovo has preset the following power-management features to take effect when your computer has been inactive for a specified duration:

ENERGY STAR power-management features, by operating system.

Microsoft Windows Vista, Windows 7, Windows 8 and Windows 8.1

Power plan: Balanced

- Turn off the display: After 10 minutes
- Put the computer to sleep: After 25 minutes
- Advanced power settings:
 - Turn off hard disk drives: After 20 minutes
 - Hibernate: Never


To awaken your computer from a Sleep or System Standby mode, press any key on your keyboard. For more information about these settings, refer to your Windows Help and Support information system.

Enabling ErP compliance mode

You can enable the energy-related products directive (ErP) compliance mode through the **Power** menu in the Setup Utility program. This mode reduces electricity consumption when your computer is in standby mode or turned off.

To enable ErP compliance mode in the Setup Utility program, do the following:

1. Repeatedly press and release the F1 key when turning on the computer to start the Setup Utility program.
2. From the Setup Utility program main menu, select **Power** → **ErP** and press Enter.
3. Select **Enabled** and press Enter.
4. Press F10 to save changes and exit the Setup Utility program. Press Enter when prompted to confirm.

 **Note:** When ErP compliance mode is enabled, you only can wake up your computer by pressing the power switch.

In Windows 8 or Windows 8.1 operating system, you also need to disable Fast Startup function to meet the off mode requirement of ErP compliance.

To disable the Fast Startup function, do the following:

1. Select **Apps** → **Control Panel** from the **Search** charm.
2. From the **Control Panel**, choose **All Control Panel Items** → **Power Options**.
3. Select **Choose what the power buttons do** from the pop-up dialog box.
4. Choose **Change settings that are currently unavailable** option, and uncheck the **Turn on fast startup** option from the **Shutdown Settings** list.

Additional information as required by EU Regulation 617/2013 implementing Directive 2009/125/EC with regard to ecodesign requirements for computers and computer servers can be found here: www.lenovo.com/ecodeclaration.

Electronic emissions notices

The following information refers to Lenovo machine type:

- FOBA

Federal Communications Commission (FCC) Declaration of Conformity

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, uses, 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.

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 27560
U.S.A.
Telephone: (919) 294-5900



Mexico regulatory notice

Advertencia: En Mexico la operación de este equipo está sujeta a las siguientes dos condiciones: (1) es posible que este equipo o dispositivo no cause interferencia perjudicial y (2) este equipo o dispositivo debe aceptar cualquier interferencia, incluyendo la que pueda causar su operación no deseada.

