HP Notebook PC
Getting Started

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Product notice

This user guide describes features that are common to most models. Some features may not be available on your computer.

Table of contents

1 First-time setup

Identifying hardware for setup 1
Setting up the computer 2
Step 1: Insert the battery 3
Step 2: Connect the computer to external power 4
Step 3: Open the computer 5
Step 4: Turn on the computer 6
Step 5: Set up the software 6
Step 6: Create recovery discs (recommended) 7

2 Quick tour

Identifying the hardware 9
Top components 9
Lights 9
Buttons, switches, and pointing devices 10
Display components 11
Keys 12
Front components 13
Rear components 14
Right-side components 15
Left-side components 16
Bottom components 17
Wireless antennae 18

3 Finding information

Finding Help and Support 19
Finding the user guides 19
Identifying installed software and hardware 20

4 Next steps

Protecting the computer 21
Protecting the computer from viruses 21
Protecting your system files 21
Protecting your privacy 21
Protecting the computer from power surges 22
Using the computer safely 22
Connecting to a computer network 24
Installing additional hardware and software 25
Installing hardware 25
Locating and installing software 25
Updating the software installed on the computer 26
Turning off the computer 26

5 Troubleshooting

Troubleshooting resources 27

Quick troubleshooting 28
The computer is unable to start up 28
The computer screen is blank 29
Software is functioning abnormally 29
The computer is turned on but not responding 30
The computer is unusually warm 31
An external device is not working 31
The wireless network connection is not working 32
Contacting technical support 33

Appendix A Backup and recovery
Creating recovery discs 35
Backing up your information 36
When to back up 36
Backup suggestions 37
Backing up specific files or folders 38
Backing up the entire hard drive 38
Creating recovery points 39
Scheduling backups 39
Performing a recovery 40
Performing a recovery from the recovery discs 40
Performing a recovery from the hard drive 40
Initiating a recovery in Windows 40
Initiating a recovery from the hard drive recovery partition 41

Appendix B Operating environment and input power
Operating environment 43
Input power 44

Appendix C Routine care
Cleaning the display 45
Cleaning the keyboard 45
Traveling and shipping 45

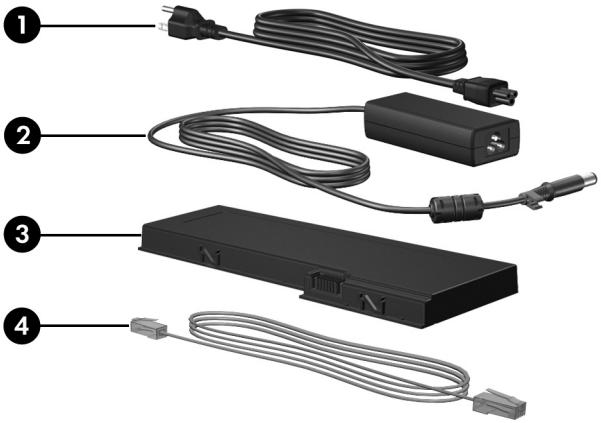
Index 47

1 First-time setup

Identifying hardware for setup

To set up the computer for the first time, you will need the computer, the AC adapter, the power cord, and the primary battery.

NOTE: Components included with the computer may vary by region or country and by model.



Component		Component	
(1)	Power cord	**(3)**	Primary battery
(2)	AC adapter	**(4)**	Modem cable (select models only)

NOTE: Use only the AC adapter provided with the computer or one approved for this computer.

NOTE: A modem cable is required only for *dial-up* networking.

Setting up the computer

△ **CAUTION:** Reduce the risk of file corruption by observing the following practices during the hardware and software setup procedures:

Do not unplug the computer from external power.

Do not shut down the computer or initiate Sleep or Hibernation.

Computer setup involves the following tasks:

1. Inserting the battery into the computer
2. Connecting the computer to external power

   NOTE: The battery begins to charge.

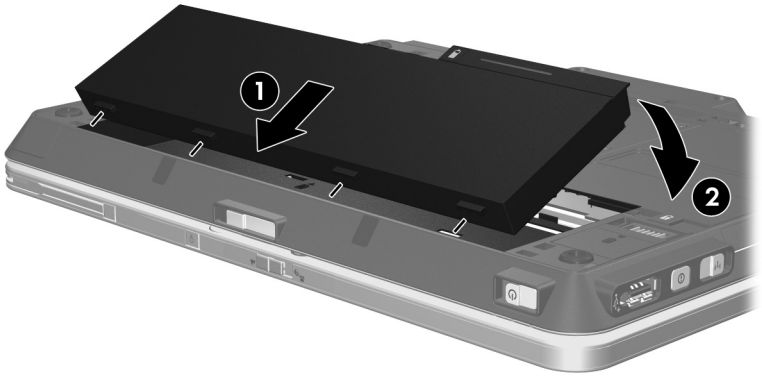
3. Turning on the computer
4. Setting up the software
5. Creating recovery discs (recommended)

   NOTE: Refer to Appendix A, "Backup and recovery," for instructions.

Step 1: Insert the battery

To insert the battery:

1. Turn the computer upside down on a flat surface.
2. Align the tabs **(1)** on the battery with the notches on the battery bay.
3. Press the battery **(2)** into the battery bay until the battery clicks into place.

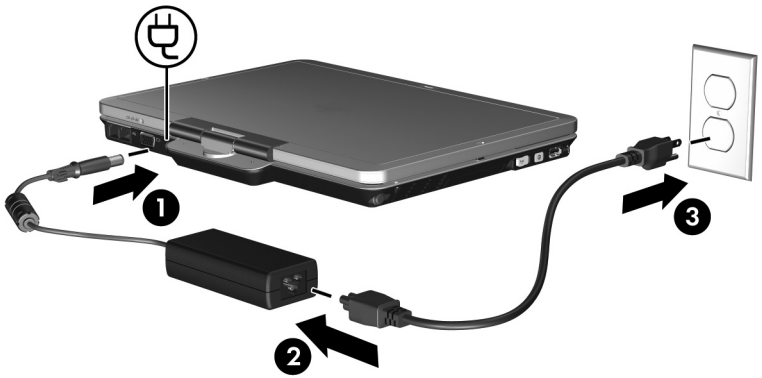


Step 2: Connect the computer to external power

NOTE: Power cords and AC outlets vary in appearance by region and country.

To connect the computer to external power:

1. Plug the AC adapter into the power connector **(1)** on the computer.
2. Plug the power cord into the AC adapter **(2)**.
3. Plug the other end of the power cord into an AC outlet **(3)**.



When the computer receives AC power, the battery begins to charge and the battery light (on the front of the computer) turns on. When the battery is fully charged, the battery light turns off.

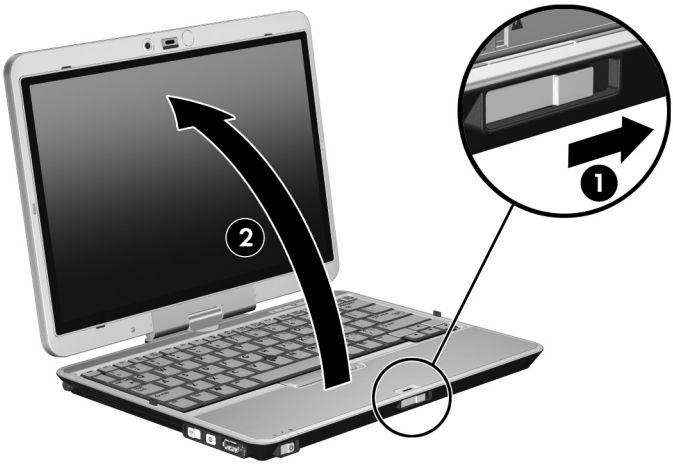
Leave the computer connected to external power until the battery is fully charged and the battery light turns off.

NOTE: A partially charged new battery can run the computer after software setup is complete, but the battery charge display will not be accurate until the new battery has been fully charged.

Step 3: Open the computer

To open the computer:

1. Slide the display release latch **(1)** to the right to release the display.
2. Raise the display **(2)**.

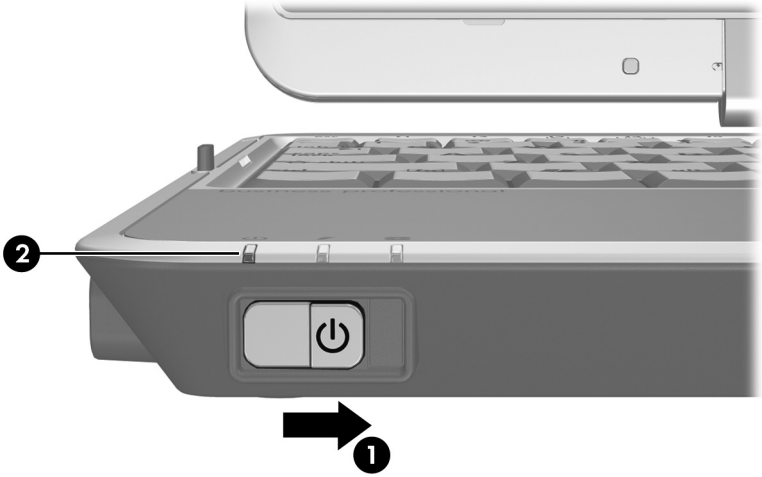


Step 4: Turn on the computer

To turn on the computer:

▲ Slide the power switch to the right **(1)**.

The power light **(2)** turns on.



Step 5: Set up the software

After the computer is turned on, it will go through software setup. Follow the on-screen instructions to set up the software. Note the following points:

- After you respond to the setup prompt, you must complete the entire setup process without interruption. Setup time varies.
- During software setup, the computer may pause periodically for several minutes. These normal pauses are indicated by an hourglass icon.

△ **CAUTION:** If you are prompted to select an operating system language, choose carefully. On some models, the languages that you do not choose are deleted from the system and cannot be restored during software setup.

NOTE: To register the operating system and the computer during software setup, the computer must be connected by an RJ-45 (network) cable to an existing network that has access to the Internet. If you do not register during software setup, you can do so at any time after software setup is complete.

Step 6: Create recovery discs (recommended)

You can use HP Backup & Recovery Manager to create a set of recovery discs containing your full factory image. You can use the recovery discs to start up (boot) the computer and restore the operating system and software programs to factory settings in case of system failure or instability.

Refer to Appendix A, “Backup and Recovery,” for detailed instructions.

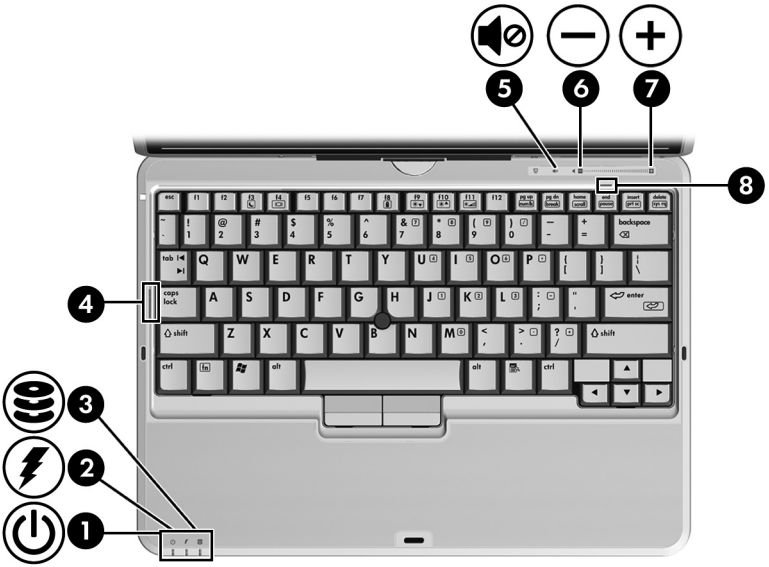
2 Quick tour

Identifying the hardware

Components included with the computer may vary by region and model. The illustrations in this chapter identify the standard features included on most computer models.

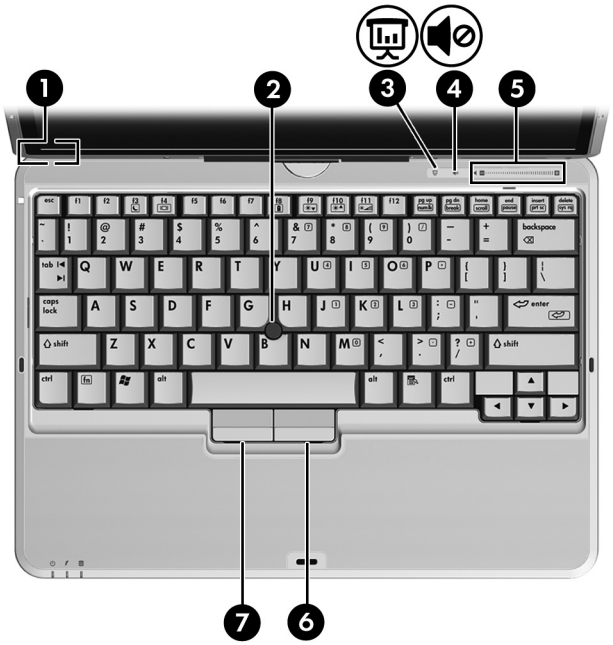
Top components

Lights



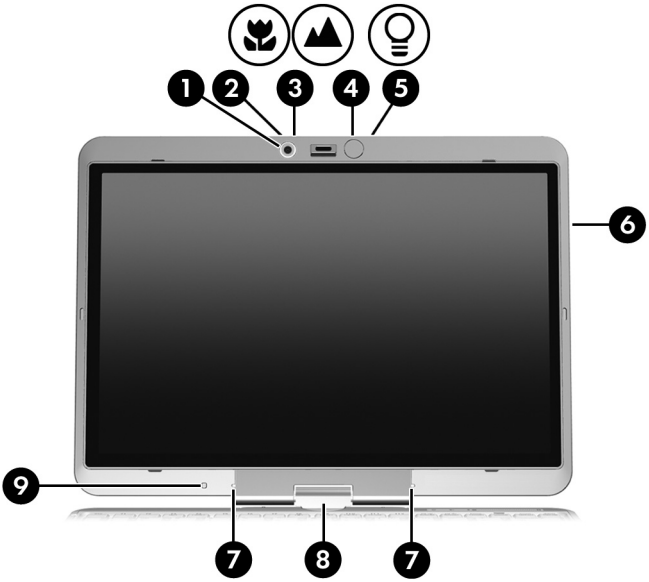
Component		Component	
(1)	Power light	**(5)**	Volume mute light
(2)	Battery light	**(6)**	Volume down light
(3)	Drive light	**(7)**	Volume up light
(4)	Caps lock light	**(8)**	Num lock light

Buttons, switches, and pointing devices



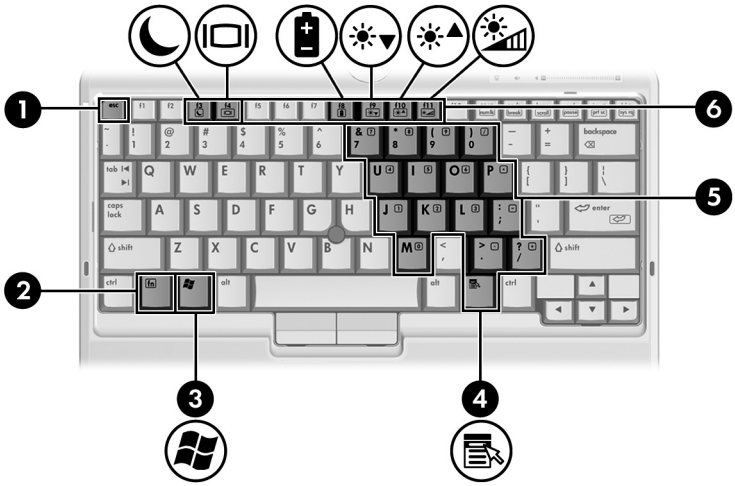
Component		Component	
(1)	Internal display switch	**(5)**	Volume scroll zone
(2)	Pointing stick	**(6)**	Right pointing stick button
(3)	Presentation button	**(7)**	Left pointing stick button
(4)	Volume mute button		

Display components



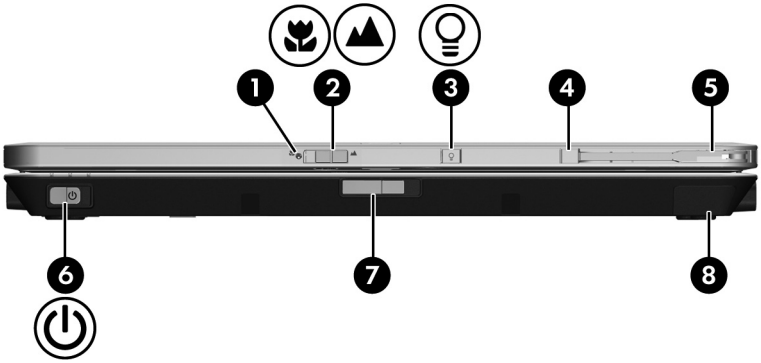
Component		Component	
(1)	Integrated camera (select models only)	**(6)**	HP Fingerprint Sensor (fingerprint reader)
(2)	Camera light (select models only)	**(7)**	Internal microphones (2)
(3)	Camera mode switch (select models only)	**(8)**	Convertible hinge
(4)	Keyboard light	**(9)**	Ambient light sensor
(5)	Keyboard light button		

Keys



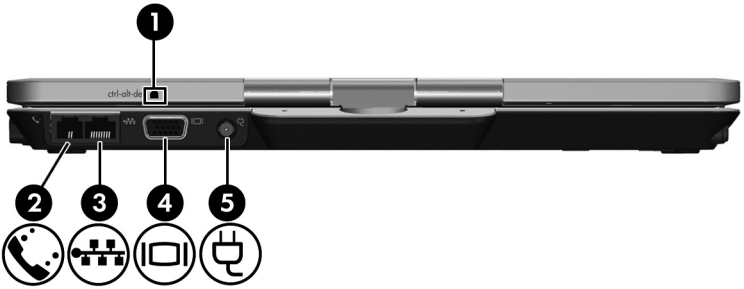
Component		Component	
(1)	esc key	**(4)**	Windows applications key
(2)	fn key	**(5)**	Embedded numeric keypad keys
(3)	Windows® logo key	**(6)**	Function keys

Front components



Component		Component	
(1)	Camera light (select models only)	**(5)**	External WWAN antenna
(2)	Camera mode switch	**(6)**	Power switch
(3)	Keyboard light button	**(7)**	Display release latch
(4)	External WWAN antenna button	**(8)**	Bluetooth® compartment

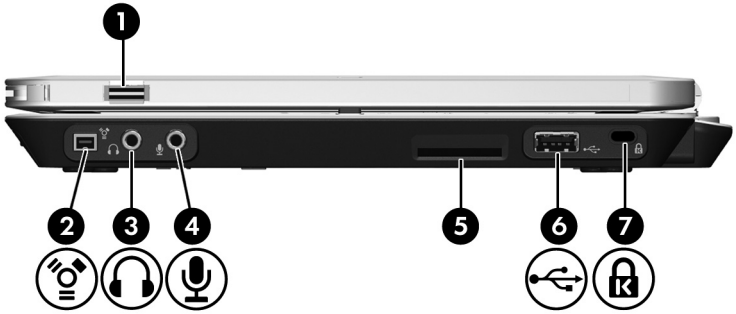
Rear components



Component		Component	
(1)	Windows security button*	**(4)**	External monitor port
(2)	RJ-11 (modem) jack	**(5)**	Power connector
(3)	RJ-45 (network) jack		

*This button is used to enter the ctrl+alt+delete command. To protect your work and the system, the ctrl +alt+delete command cannot be entered using the ctrl, alt, and del keys on the on-screen keyboard.

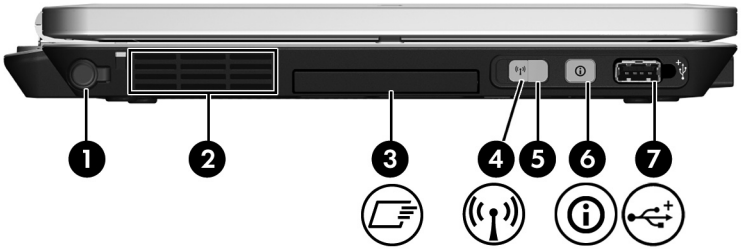
Right-side components



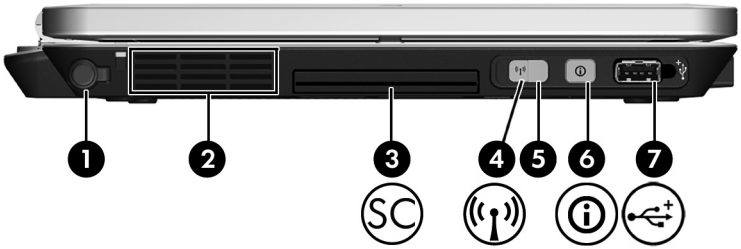
Component		Component	
(1)	Fingerprint reader	**(5)**	Media Card Reader
(2)	1394 port	**(6)**	USB port
(3)	Audio-out (headphone) jack	**(7)**	Security cable slot
(4)	Audio-in (microphone) jack		

Left-side components

NOTE: Refer to the illustration that most closely matches your computer.

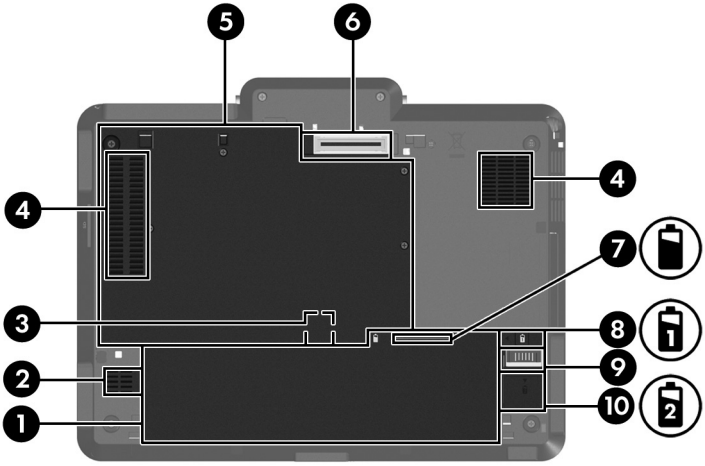


Component		Component	
(1)	Pen slot	**(5)**	Wireless switch
(2)	Vent	**(6)**	Info button
(3)	ExpressCard slot (select models only)	**(7)**	Powered USB port
(4)	Wireless light		



Component		Component	
(1)	Pen slot	**(5)**	Wireless switch
(2)	Vent	**(6)**	Info button
(3)	Smart card reader (select models only)	**(7)**	Powered USB port
(4)	Wireless light		

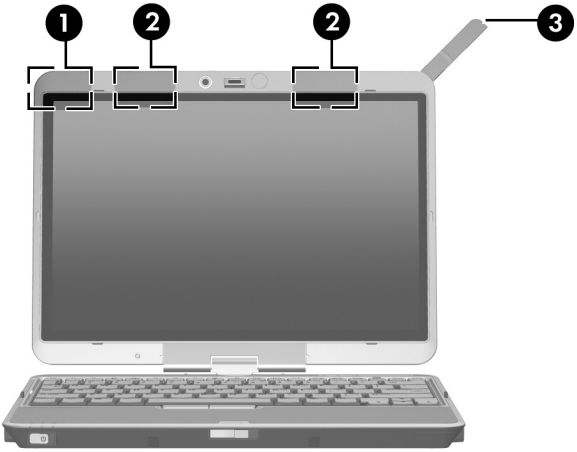
Bottom components



Component		Component	
(1)	Battery bay	**(6)**	Docking connector
(2)	Speaker	**(7)**	Charge level indicator
(3)	SIM slot	**(8)**	Battery release latch
(4)	Vents (2)	**(9)**	Accessory battery connector
(5)	Hard drive compartment	**(10)**	Accessory battery connector door

Wireless antennae

On select computer models, wireless antennae send and receive signals from one or more wireless devices.



Component		Component	
(1)	WWAN antenna*	**(3)**	External WWAN antenna
(2)	WLAN antennae (2)*		

*Antennae **(1)** and **(2)** are not visible from the outside of the computer.

NOTE: For optimal transmission, keep the areas immediately around the antennae free from obstructions.

To see wireless regulatory notices, refer to the section of the *Regulatory, Safety and Environmental Notices* that applies to your country or region. These notices are located in Help and Support.

3 Finding information

Finding Help and Support

NOTE: Help and Support is preinstalled on the computer. Access to Help and Support does not require an Internet connection.

You can access Help and Support by selecting **Start > Help and Support**. In addition to providing information about the Windows® operating system, Help and Support includes these topics:

- Information about the computer, such as model and serial number, installed software, hardware components, and specifications
- How to help safeguard the computer
- How to get the best performance from the battery
- How to set up a wireless network
- Links to community forums of IT experts

Finding the user guides

User guides and regulatory and safety information are provided on the computer and are available through Help and Support.

▲ To access the user guides in Help and Support, select **Start > Help and Support > User Guides**.

NOTE: User guides for select models may also be provided on a *User Guides* disc.

Identifying installed software and hardware

To see a list of the software that is preinstalled on the computer, follow these steps:

▲ Select **Start > All Programs**.

NOTE: Double-click the name of a program if you want to open it.

NOTE: For details about using software included with the computer, refer to the software manufacturer's instructions, which may be provided with the software, on disc, or on the manufacturer's Web site.

To see a list of hardware installed in the computer, follow these steps:

1. Select **Start > Computer > System properties**.
2. In the left pane, click **Device Manager**.

You can also use Device Manager to add hardware or modify device configurations.

NOTE: Windows® includes the User Account Control feature to improve the security of the computer. You may be prompted for your permission or password for tasks such as installing software, running utilities, or changing Windows settings. Refer to Windows Help for more information.

4 Next steps

Protecting the computer

The information in this section explains how to protect the computer from damage caused by a virus, a security breach, a power surge, or system failure.

Protecting the computer from viruses

When you use the computer for e-mail or Internet access, you expose it to computer viruses that can disable the operating system, programs, or utilities or cause them to function abnormally.

Antivirus software can detect most viruses, destroy them, and in most cases, repair damage they have caused. To provide ongoing protection against newly discovered viruses, antivirus software must be kept up to date.

Norton Internet Security is preinstalled on the computer:

- Your version of Norton Internet Security includes 60 days of free updates. It is strongly recommended that you protect the computer against new viruses beyond 60 days by purchasing extended update service.
- To access Norton Internet Security or get more information about it, select **Start > All Programs > Norton Internet Security**.

Protecting your system files

The operating system and the backup and recovery software provide several ways to back up the system and to recover optimal system functionality. For additional information, refer to Appendix A, "Backup and recovery."

Protecting your privacy

When you use the computer for e-mail, network, or Internet access, it is possible for unauthorized persons to obtain information about you or the computer.

To optimize the computer's privacy protection features, follow these guidelines:

- Keep the operating system and software updated. Many software updates contain security enhancements.
- Use a firewall. Firewall software monitors incoming traffic on the computer to block messages that do not meet specific security criteria. Some firewalls also monitor outgoing traffic.

Protecting the computer from power surges

To protect the computer from the power surges that may be caused by an uncertain power supply or an electrical storm, observe these practices:

- Plug the computer power cord into an optional, high-quality surge protector. Surge protectors are available from most computer or electronics retailers.
- During an electrical storm, either run the computer on battery power or shut down the computer and unplug the power cord.
- If applicable to your location, provide surge protection on the modem cable that connects the modem to a telephone line. Telephone line surge protectors are commonly available from computer or electronics retailers in many regions.

Using the computer safely

⚠ **WARNING!** To reduce the risk of electric shock or damage to your equipment, observe these practices:

Plug the power cord into an AC outlet that is easily accessible at all times.

Disconnect power from the computer by unplugging the power cord from the AC outlet (not by unplugging the power cord from the computer).

If provided with a 3-pin attachment plug on your power cord, plug the cord into a grounded (earthed) 3-pin outlet. Do not disable the power cord grounding pin, for example, by attaching a 2-pin adapter. The grounding pin is an important safety feature.

WARNING! To reduce the risk of serious injury, read the *Safety & Comfort Guide*. It describes proper workstation setup and proper posture, health, and work habits for computer users. The *Safety & Comfort Guide* also provides important electrical and mechanical safety information. To access this document, select **Start > Help and Support > User Guides**, or refer to the *User Guides* disc included with some models. The *Safety & Comfort Guide* is also available on the Web at http://www.hp.com/ergo.

WARNING! To reduce the possibility of heat-related injuries or of overheating the computer, do not place the computer directly on your lap or obstruct the computer air vents. Use the computer only on a hard, flat surface. Do not allow another hard surface, such as an adjoining optional printer, or a soft surface, such as pillows or rugs or clothing, to block airflow. Also, do not allow the AC adapter to contact the skin or a soft surface, such as pillows or rugs or clothing, during operation. The computer and the AC adapter comply with the user-accessible surface temperature limits defined by the International Standard for Safety of Information Technology Equipment (IEC 60950).

WARNING! To reduce potential safety issues, use only the AC adapter or battery provided with the computer, a replacement AC adapter or battery provided by HP, or a compatible AC adapter or battery purchased as an accessory from HP.

For more safety and regulatory information, and for battery disposal information, refer to the *Regulatory, Safety and Environmental Notices*. To access the notices, select **Start > Help and Support > User Guides**, or refer to the *User Guides* disc included with some models.

Connecting to a computer network

The computer has the following networking capabilities:

- Local area network (LAN)
- Wireless local area network (WLAN)
- Wireless wide area network (WWAN)
- Bluetooth®

If you plan to connect the computer to a home office LAN or WLAN, refer to Help and Support for information on networking. If you need assistance to connect to a company LAN or WLAN, contact your network administrator.

NOTE: The computer display must be open before you can connect to a wireless network.

For information on activating broadband wireless service, refer to the mobile network operator information included with the computer.

You can create a personal area network (PAN) to connect to other Bluetooth-enabled devices, such as computers, telephones, printers, headsets, speakers, and cameras. For information on using a Bluetooth device, refer to the Bluetooth software Help.

Installing additional hardware and software

Installing hardware

To install additional hardware, such as an optional printer, follow the instructions provided by the hardware manufacturer to install the device and any required drivers.

Locating and installing software

Software on the computer is provided in the following forms:

- **Preinstalled software.** To see a list of ready-to-use programs or to start a program, follow these steps:
  1. Select **Start > All Programs**.

     A list of programs is displayed.
  2. Click the name of a program to start the program.
- **Preloaded software.** This software cannot be used until it is installed. To locate and install a preloaded program or driver, follow these steps:
  1. Select **Start > All Programs > HP Software Setup**.

     A list of programs and drivers is displayed.
  2. Click the program or driver you want to install, and then follow the on-screen instructions.
- **Software on disc.** To install software from a disc, follow these steps:
  1. Insert the disc into your optical drive.
  2. When the installation wizard opens, follow the on-screen instructions.

     NOTE: Restart the computer if you are prompted to do so.

NOTE: For details about using the software provided with the computer, refer to the software manufacturer's instructions, which may be provided on disc, in the software Help, or on the manufacturer's Web site.

Updating the software installed on the computer

Most software, including the operating system, is updated frequently by the manufacturer or provider. Important updates to the software included with the computer may have been released since the computer left the factory.

Some updates may affect the way the computer responds to optional software or external devices. Many updates provide security enhancements.

Update the operating system and other software installed on the computer as soon as the computer is connected to the Internet. To access links for updating installed software, refer to Help and Support.

Turning off the computer

Whenever possible, turn off the computer by using the standard shutdown procedure:

1. Save your work and close all open programs.
2. Shut down the computer through the operating system by clicking **Start**, clicking the arrow next to the Lock button, and then clicking **Shut Down**.

If you are unable to turn off the computer with these steps, try the following emergency shutdown procedures, in the sequence provided, until shutdown occurs:

△ **CAUTION:** Emergency shutdown procedures result in the loss of unsaved information.

- Press ctrl+alt+delete. Then, in the lower-right corner of the screen, click the **Power** button.
- Press and hold the power button for at least 5 seconds.
- Disconnect the computer from external power and remove the battery.

5 Troubleshooting

Troubleshooting resources

If you experience computer problems, perform these troubleshooting steps in the order provided until the problem is resolved:

- Refer to "Quick troubleshooting," the next section in this chapter.
- Access Web site links and additional information about the computer through Help and Support. Select **Start > Help and Support**.

NOTE: Although many checkup and repair tools require an Internet connection, other tools, like Help and Support, can help you fix a problem when the computer is offline.

- For further assistance, connect to the Internet and contact technical support by selecting **Start > Help and Support > Contact support**.

Quick troubleshooting

The computer is unable to start up

When the computer is turned on, the power light turns on. If the computer and the power light are not turned on when you slide the power switch, adequate power may not be available to the computer.

The following suggestions may help you determine why the computer will not start up:

- If the computer is plugged into an AC outlet, be sure that the AC outlet is providing adequate power by plugging another electrical device into the outlet.
- If the power light on the front of the computer is blinking rapidly, replace the AC adapter with one having a higher power rating.

NOTE: Use only the AC adapter provided with this computer or one approved for this computer.

- If the computer is running on battery power or is plugged into an external power source other than an AC outlet, plug the computer into an AC outlet using the AC adapter. Be sure that the power cord and AC adapter connections are secure.
- If the computer is running on battery power, try the following procedures in the sequence provided, until startup occurs:
    - If the battery light on the front of the computer is blinking, the battery has reached a low battery level, which may not allow the computer to start up. Plug the computer into an AC outlet using the AC adapter, start the computer, and allow the battery to charge.
    - Remove the primary battery and optional accessory battery (if applicable) and plug the computer into an AC outlet using the AC adapter. If you can turn the computer on, one of the batteries may need to be replaced.

The computer screen is blank

If the screen is blank but you have not turned off the computer, one or more of these settings may be the cause:

- The computer may be in the Sleep state or in Hibernation.

  To exit Sleep or Hibernation, briefly slide the power switch to the right.

  Sleep and Hibernation are energy-saving features that turn off the display. Sleep and Hibernation can be initiated by the system while the computer is on but is not in use, or when the computer has reached a low battery level. To change these and other power settings, select **Start > Control Panel > System and Maintenance > Power Options**.

- The computer may not be set to display the image on the computer screen.

  To transfer the image to the computer screen, press fn+f4.

  On most models, when an optional external display, such as a monitor, is connected to the computer, the image can be displayed on the computer screen or the external display, or on both devices simultaneously. When you press fn+f4 repeatedly, the image alternates among the computer display, one or more external displays, and simultaneous display on all devices.

Software is functioning abnormally

If the software is unresponsive or responds abnormally, follow these suggestions:

- Restart the computer by clicking **Start**, clicking the arrow next to the Lock button, and then clicking **Restart**.

  If you cannot restart the computer using this procedure, refer to the next section, "The computer is turned on but not responding."

- Run a virus scan. For information about using the antivirus resources on the computer, refer to "Protecting the computer from viruses" in Chapter 4.

The computer is turned on but not responding

If the computer is turned on but not responding to software or keyboard commands, turn off the computer by using the standard shutdown procedure:

1. Save your work and close all open programs.
2. Shut down the computer through the operating system by clicking **Start**, clicking the arrow next to the Lock button, and then clicking **Shut Down**.

If you are unable to turn off the computer with these steps, try the following emergency shutdown procedures, in the sequence provided, until shutdown occurs:

△ **CAUTION:** Emergency shutdown procedures result in the loss of unsaved information.

- Press ctrl+alt+delete. Then, in the lower-right corner of the screen, click the **Power** button.
- Press and hold the power button for at least 5 seconds.
- Disconnect the computer from external power and remove the battery.

The computer is unusually warm

It is normal for the computer to feel warm to the touch while it is in use. But if the computer feels *unusually* warm, it may be overheating because a vent is blocked.

If you suspect that the computer is overheating, allow the computer to cool to room temperature. Then be sure to keep all vents free from obstructions while you are using the computer.

⚠ **WARNING!** To reduce the possibility of heat-related injuries or of overheating the computer, do not place the computer directly on your lap or obstruct the computer air vents. Use the computer only on a hard, flat surface. Do not allow another hard surface, such as an adjoining optional printer, or a soft surface, such as pillows or rugs or clothing, to block airflow. Also, do not allow the AC adapter to contact the skin or a soft surface, such as pillows or rugs or clothing, during operation. The computer and the AC adapter comply with the user-accessible surface temperature limits defined by the International Standard for Safety of Information Technology Equipment (IEC 60950).

NOTE: The fan in the computer starts up automatically to cool internal components and prevent overheating. It is normal for the internal fan to cycle on and off during operation.

An external device is not working

If an external device does not function as expected, confirm these settings:

- The device is turned on as instructed in the device user guide. Some devices may not be powered by the computer, and must be turned on before the computer is turned on.
- All device connections are secure.
- The device is receiving electrical power.
- The device, especially if it is an older one, is compatible with the operating system. For compatibility information, refer to the device manufacturer's Web site.
- The correct drivers are installed and updated. Drivers may be available on a disc included with the device or on the device manufacturer's Web site. For more information about updating drivers, refer to Help and Support.

The wireless network connection is not working

If a wireless network connection is not working as expected, follow these suggestions:

NOTE: If you are connecting to a corporate network, contact the IT administrator.

- Be sure that the wireless device is turned on and the wireless light on the computer is blue. If the light is amber, press the wireless switch to turn on the wireless device.
- Be sure that the computer wireless antennae are free from obstructions.
- Be sure that the cable or DSL modem and its power cord are properly connected and that the lights are on.
- Be sure that the wireless router or access point is properly connected to its power adapter and the cable or DSL modem, and that the lights are on.
- Disconnect and then reconnect all cables, and turn the power off and then back on.

NOTE: For more information on wireless technology, refer to the information and the Web site links in Help and Support.

Contacting technical support

If the computer is connected to the Internet, select **Start > Help and Support > Contact support** to start a chat session with a support specialist or to access the technical support telephone numbers.

For the fastest possible resolution of your problem, have the computer and the following information available when you call or e-mail:

- Product name located on the display or keyboard.
- Serial number (s/n) listed on the service tag.
  - The service tag label is on the bottom of the computer.
  - To display the service tag information on the computer screen, select **Start > Help and Support > System Information**.
- Date the computer was purchased.
- Conditions under which the problem occurred.
- Error messages that have been displayed.
- The manufacturer and model of the printer or other accessories connected to the computer.
- Operating system version number and registration number.

  To display the operating system version number and registration number, select **Start > Help and Support > System Information**. (On some models, the registration number may be identified in the Operating System table as the Product Id).

A Backup and recovery

Creating recovery discs

After setting up the computer for the first time, be sure to create a set of recovery discs of the full factory image. The recovery discs are used to start up (boot) the computer and recover the operating system and software to factory settings in case of system instability or failure.

Note the following guidelines before creating recovery discs:

- You will need high-quality CD-R, DVD-R, or DVD+R discs (purchased separately).

NOTE: Read-write discs, such as CD-RW, DVD+RW, and DVD-RW discs, are not compatible with HP Backup & Recovery Manager.

- The computer must be connected to AC power during the process.
- Only one set of the recovery discs can be created per computer.
- Number each disc before inserting it into the optical drive of the computer.
- If necessary, you can cancel the disc creation before you have finished creating the recovery discs. The next time you select **Create factory software recovery CDs or DVDs to recover the system (Highly recommended)**, you will be prompted to continue the disc creation.

To create a set of recovery discs:

1. Select **Start > All Programs > HP Backup & Recovery > Backup & Recovery Manager**.
2. Click **Next**.
3. Click **Create a set of recovery discs (Recommended)**, and then click **Next**.
4. Follow the on-screen instructions.

Backing up your information

NOTE: You can only recover files that you have previously backed up. HP recommends that you use HP Backup & Recovery Manager to create an entire drive backup as soon as you set up your computer.

With HP Backup & Recovery Manager, you can perform the following tasks:

- Backing up your information regularly to protect your important system files
- Creating system recovery points that allow you to reverse undesirable changes to your computer by restoring the computer to an earlier state
- Scheduling backups at specific intervals or events

When to back up

- On a regularly scheduled basis

  NOTE: Set reminders to back up your information periodically.

- Before the computer is repaired or restored
- Before you add or modify hardware or software

Backup suggestions

- Create a set of recovery discs using HP Backup & Recovery Manager.
- Create system recovery points using HP Backup & Recovery Manager, and periodically copy them to disc.
- Store personal files in the Documents folder and back up these folders periodically.
- Back up templates stored in their associated programs.
- Save customized settings in a window, toolbar, or menu bar by taking a screen shot of your settings.

  The screen shot can be a time saver if you have to reset your preferences.

  To copy the screen and paste it into a word-processing document:

  a. Display the screen.

  b. Copy the screen.

  To copy only the active window, press alt+fn+prt sc.

  To copy the entire screen, press fn+prt sc.

  c. Open a word-processing document, and then select **Edit > Paste**.

NOTE: Before you can perform backup and recovery procedures, the computer must be connected to external power.

NOTE: Drivers, utilities, and programs installed by HP can be copied to a CD or to a DVD using HP Backup & Recovery Manager.

Backing up specific files or folders

You can back up specific files or folders to the recovery partition on the hard drive, to an optional external hard drive, or to optical discs (CDs or DVDs).

NOTE: This process will take several minutes, depending on the file size and the speed of the computer.

To back up specific files or folders:

1. Select **Start > All Programs > HP Backup & Recovery > Backup & Recovery Manager**.
2. Click **Next**.
3. Click **Create or manage backups**, and then click **Next**.
4. Click **Back up user created files and folders**, and then click **Next**.
5. Follow the on-screen instructions.

Backing up the entire hard drive

When you perform a complete backup of the hard drive, you are saving the full factory image, including the Windows® operating system, software applications, and all personal files and folders.

NOTE: A copy of the entire hard drive image can be stored on another hard drive, on a network drive, or on recovery discs that you create.

NOTE: This process may take over an hour, depending on your computer speed and the amount of data being stored.

To back up your entire hard drive:

1. Select **Start > All Programs > HP Backup & Recovery > Backup & Recovery Manager**.
2. Click **Next**.
3. Click **Create or manage backups**, and then click **Next**.
4. Click **Create or manage Entire Drive Backups**, and then click **Next**.
5. Follow the on-screen instructions.

Creating recovery points

When you back up modifications since your last backup, you are creating system recovery points. This allows you to save a snapshot of your hard drive at a specific point in time. You can then recover back to that point if you want to reverse subsequent changes made to your system.

NOTE: The first system recovery point, a snapshot of the entire image, is automatically created the first time you perform a backup. Subsequent recovery points make copies of changes made after that time.

HP recommends that you create recovery points at the following times:

- Before you add or extensively modify software or hardware
- Periodically, whenever the system is performing optimally

NOTE: Recovering to an earlier recovery point does not affect data files or e-mails created since that recovery point.

To create a system recovery point:

1. Select **Start > All Programs > HP Backup & Recovery > HP Backup & Recovery Manager**.
2. Click **Next**.
3. Click **Create or manage backups**, and then click **Next**.
4. Click **Create or manage Recovery Points**, and then click **Next**.
5. Follow the on-screen instructions.

Scheduling backups

Use HP Backup Scheduler to schedule backups for the entire system, for recovery points, or for specific files and folders. With this tool, you can schedule backups at specific intervals (daily, weekly, or monthly) or at specific events, such as at system restart or when you dock to an optional docking station (select models only).

To schedule backups:

1. Select **Start > All Programs > HP Backup & Recovery > HP Backup Scheduler**.
2. Follow the on-screen instructions.

Performing a recovery

NOTE: You can only recover files that you have previously backed up. HP recommends that you use HP Backup & Recovery Manager to create an entire drive backup as soon as you set up your computer.

HP Backup & Recovery Manager helps you with the following tasks for safeguarding your information and restoring it in case of a system failure:

- Recovering important files—This feature helps you reinstall important files without performing a full system recovery.
- Performing a full system recovery—With HP Backup & Recovery Manager, you can recover your full factory image if you experience system failure or instability. HP Backup & Recovery Manager works from a dedicated recovery partition on the hard drive or from recovery discs you create.

Performing a recovery from the recovery discs

To perform a recovery from the recovery discs, follow these steps:

1. Back up all personal files.
2. Insert the first recovery disc into the optical drive and restart the computer.
3. Follow the on-screen instructions.

Performing a recovery from the hard drive

There are 2 ways to initiate a recovery from the hard drive:

- From within Windows
- From the recovery partition

Initiating a recovery in Windows

To initiate a recovery in Windows, follow these steps:

1. Back up all personal files.
2. Select **Start > All Programs > HP Backup & Recovery > Backup & Recovery Manager**.
3. Click **Next**.
4. Click **Perform a recovery**, and then click **Next**.
5. Follow the on-screen instructions.

Initiating a recovery from the hard drive recovery partition

To initiate a recovery from the hard drive recovery partition, follow these steps:

1. Back up all personal files.
2. Restart the computer, and then press f11 before the Windows operating system loads.
3. Click a recovery option, and then click **Next**.
4. Follow the on-screen instructions.

B Operating environment and input power

Operating environment

The operating environment information in the following table may be helpful if you plan to use or transport the computer in extreme environments.

Factor	Metric	U.S.
Temperature		
Operating (not writing to optical disc)	0°C to 35°C	32°F to 95°F
Operating (writing to optical disc)	5°C to 35°C	41°F to 95°F
Nonoperating	-20°C to 60°C	-4°F to 140°F
Relative humidity (noncondensing)		
Operating	10% to 90%	10% to 90%
Nonoperating	5% to 95%	5% to 95%
Maximum altitude (unpressurized)		
Operating (14.7 to 10.1 psia*)	-15 m to 3,048 m	-50 ft to 10,000 ft
Nonoperating (14.7 to 4.4 psia*)	-15 m to 12,192 m	-50 ft to 40,000 ft

*Pounds per square inch absolute (psia) is a unit of measurement for altitude.

Input power

The power information in this section may be helpful if you plan to travel internationally with the computer.

The computer operates on DC power, which can be supplied by an AC or a DC power source. Although the computer can be powered from a standalone DC power source, it should be powered only with an AC adapter or a DC power source supplied and approved by HP for use with this computer.

The computer is capable of accepting DC power within the following specifications.

Input power	Rating
Operating voltage	19 V dc @ 4.7 A - 90 W
Operating current	4.74 A

C Routine care

Cleaning the display

△ **CAUTION:** To prevent permanent damage to the computer, never spray water, cleaning fluids, or chemicals on the display.

To remove smudges and lint, frequently clean the display with a soft, damp, lint-free cloth. If the screen requires additional cleaning, use premoistened antistatic wipes or an antistatic screen cleaner.

Cleaning the keyboard

⚠ **WARNING!** To reduce the risk of electric shock or damage to internal components, do not use a vacuum cleaner attachment to clean the keyboard. A vacuum cleaner can deposit household debris on the keyboard surface.

Clean the keyboard regularly to prevent keys from sticking and to remove dust, lint, and particles that can become trapped beneath the keys. A can of compressed air with a straw extension can be used to blow air around and under the keys to loosen and remove debris.

Traveling and shipping

The computer is built to go with you for work and play. For best results, follow the traveling and shipping tips described here.

- To prepare the computer for traveling and shipping, follow these steps:
  1. Back up your information.
  2. Remove all optical discs and all external media cards, such as digital cards and ExpressCards.

     △ **CAUTION:** To reduce the risk of damage to the computer, damage to a drive, or loss of information, remove discs from a drive before removing the drive from a drive bay, and before shipping, storing, or traveling with a drive.
  3. Turn off and then disconnect all external devices.
  4. Shut down the computer.
- Take along a backup of your information. Keep the backup separate from the computer.
- When traveling by air, carry the computer as hand luggage, and do not check it in with the rest of your bags.

△ **CAUTION:** Avoid exposing a drive to magnetic fields. Security devices with magnetic fields include airport walk-through devices and security wands. The airport security devices that check carry-on luggage, such as conveyor belts, use x-rays instead of magnetism and will not damage a drive.

- If you plan to use the computer during a flight, check with the airline in advance. In-flight computer use is at the discretion of the airline.
- If the computer will be unused and disconnected from external power for more than 2 weeks, remove the battery and store it separately.
- If you are shipping the computer or a drive, place it in a bubble-pack mailer or other suitable protective packaging and label the package "FRAGILE."
- If the computer has a wireless device or a cell phone device installed, such as an 802.11b/g, a Global System for Mobile Communications (GSM), or a General Packet Radio Service (GPRS) device, note that the use of these devices may be restricted in some environments. Such restrictions may apply onboard aircraft, in hospitals, near explosives, in hazardous locations, and so on. If you are uncertain of the policy that applies to the use of a particular device, ask for authorization to use it before you turn it on.
- If you are traveling internationally, follow these suggestions:
  - Check the computer-related customs regulations for each country or region on your itinerary.
  - Contact technical support to discuss power cord and adapter requirements for each location in which you plan to use the computer. Voltage, frequency, and plug configurations vary.

    ⚠ **WARNING!** To reduce the risk of electric shock, fire, or damage to the equipment, do not attempt to power the computer with a voltage converter kit sold for appliances.

Index

Symbols/Numerics

1394 port, identifying 15

A

AC adapter
- connecting 4
- identifying 1

accessory battery connector, identifying 17
altitude specifications 43
ambient light sensor, identifying 11
antennae
- external WWAN 13, 18
- WLAN 18
- WWAN 18

antivirus software 21
applications key, Windows 12
audio-in (microphone) jack, identifying 15
audio-out (headphone) jack, identifying 15

B

backup
- files and folders 38
- hard drive 38
- modifications made to system 39
- scheduling 39

battery
- charging 4
- identifying 1
- inserting 3

battery bay, identifying 17
battery light
- behavior 4
- identifying 9

battery release latch, identifying 17
bay, battery 17
blank screen, troubleshooting 29
Bluetooth 24
Bluetooth compartment, identifying 13
buttons
- external WWAN antenna 13
- info 16
- keyboard light 11, 13
- pointing stick 10
- presentation 10
- volume mute 10
- Windows security 14

C

cables and cords
- modem 1
- power 1, 4, 46

camera light, identifying 11, 13
camera mode switch, identifying 11, 13
camera, identifying 11
caps lock light, identifying 9
charge level indicator, identifying 17
cleaning the display 45
cleaning the keyboard 45
compartments
- hard drive 17
- memory module 17
- wireless devices 17

components
- bottom 17
- display 11
- front 13
- left-side 16
- rear 14
- right-side 15
- top 9
- wireless antennae 18

computer
- turning off 26
- turning on 6, 28

computer viruses 21
connecting the computer to external power 4
connecting to a computer network 24
connectors
- accessory battery 17
- docking 17
- power 4, 14

convertible hinge, identifying 11
cord, power 46
creating recovery points 39
customer support
- Help and Support 19
- user guides 19

D

devices, external, troubleshooting 31
display
- cleaning 45
- switching image 29

display release latch, identifying 13

display switch, identifying 10
docking connector, identifying 17
documentation 19
drive light, identifying 9

E
electric shock 22
emergency shutdown procedures 26, 30
entire hard drive backup 38
environmental specifications 43
esc key, identifying 12
ExpressCard slot, identifying 16
external devices, troubleshooting 31
external monitor port, identifying 14
external WWAN antenna button, identifying 13
external WWAN antenna, identifying 13, 18

F
fingerprint reader, identifying 11, 15
firewalls 22
fn key, identifying 12
function keys, identifying 12

H
hard drive backup 38
hard drive compartment, identifying 17
hard drive recovery 40
hardware
  identifying 20
  installing 25
  needed for setup 1
headphone (audio-out) jack 15
Help and Support 19
Hibernation 29
hinge, convertible, identifying 11
humidity specifications 43

I
IEC 60950 compliance 23, 31
IEEE 1394 port, identifying 15
image, switching, among display devices 29
info button, identifying 16
input power specifications 44
inserting the battery 3
internal display switch, identifying 10
internal microphones, identifying 11

J
jacks
  audio-in (microphone) 15
  audio-out (headphone) 15
  RJ-11 (modem) 14
  RJ-45 (network 14

K
keyboard light button, identifying 11, 13
keyboard light, identifying 11
keyboard, cleaning 45
keypad keys, identifying 12
keys
  esc 12
  fn 12
  function 12
  keypad 12
  Windows applications 12
  Windows logo 12

L
labels, service tag 33
LAN (local area network) 24
latch, battery release 17
latch, display release, identifying 13
lights
  battery 4, 9
  camera 11, 13
  caps lock 9
  drive 9
  keyboard 11
  mute 9
  num lock 9
  power 6, 9
  volume down 9
  volume mute 9
  volume up 9
  wireless 16

M
Media Card Reader, identifying 15
memory module compartment 17
microphone (audio-in) jack 15
microphones, internal, identifying 11
modem cable 1
modem, surge protection 22
monitor port, external 14
monitor, external 29
mute button, identifying 10

mute light, identifying 9

N
network, connecting computer to 24
Norton Internet Security 21
num lock light, identifying 9

O
operating environment specifications 43
operating system version number 33
overheating, computer 31

P
pen slot, identifying 16
pointing stick buttons, identifying 10
pointing stick, identifying 10
ports
  1394 15
  external monitor 14
  USB 15, 16
posture 23
power connector
  identifying 14
  using 4
power cord
  connecting 4
  identifying 1
power light
  behavior 6
  identifying 9
power options 29
power specifications 44
power surges 22
power switch
  identifying 13
  using 6
presentation button, identifying 10
privacy, protecting 21
Product Id 33

R
reader, fingerprint, identifying 11, 15
recovery discs
  creating 7, 35
  using 40
recovery partition 41
recovery points 39
registration number, operating system 33
regulatory information notices 23
release latch, battery 17
RJ-11 (modem) jack, identifying 14
RJ-45 (network) jack, identifying 14

S
safe computing practices 22
Safety & Comfort Guide 23
scheduling backups 39
security cable slot, identifying 15
serial number 33
service tag 33
setup, computer 1
shipping the computer 45
shutdown procedures 26
SIM slot, identifying 17
Sleep 29
slots
  ExpressCard 16
  Media Card Reader 15
  pen 16
  security cable 15
  SIM 17
Smart card reader, identifying 16
software
  antivirus 21
  identifying 20
  installing 25
  setup 6
  troubleshooting 29
  updating 26
speaker, identifying 17
specifications
  altitude 43
  input power 44
  operating environment 43
startup problems, troubleshooting 28
surge protection 22
switches
  camera mode 11, 13
  power 6, 13
  wireless 16
system backup 38
system recovery points 39

T
technical support 33
temperature
  safety considerations 23, 31
  specifications 43
  troubleshooting 31

traveling with the computer 43, 45
troubleshooting
blank screen 29
display problems 29
external device problems 31
overheating problems 31
resources 27
software problems 29
startup problems 28
unresponsive computer 30
wireless network problems 32
turning off the computer 26
turning on the computer 6, 28

U

unresponsive computer, troubleshooting 30
USB ports, identifying 15, 16
user guides 19

V

vents
identifying 16, 17
overheating 31
precautions 23, 31
viruses 21
volume down light, identifying 9
volume mute button, identifying 10
volume mute light, identifying 9
volume scroll zone, identifying 10
volume up light, identifying 9

W

Windows applications key, identifying 12
Windows logo key, identifying 12
Windows security button, identifying 14
wireless device compartment 17
wireless light, identifying 16
wireless network problems, troubleshooting 32
wireless switch, identifying 16
WLAN (wireless local area network) 24
WLAN antenna, identifying 18
work habits 23
workstation setup 23
WWAN (wireless wide area network) 24
WWAN antenna, identifying 18