

Practicing Good Computer Hygiene

The best repair is the one you don't have to make. If you can keep your computer up to date and in tune, you and your PC will live happier, more productive lives.

The best defense against aging or sudden death is keeping your computer cool, calm, and collected. By that, I mean ensuring that it doesn't overheat; that it's protected from electrical surges; that the logical parts are efficiently organized; and that the programs aren't scrambled, garbled, or improperly altered.

In this chapter, I talk about preventive and diagnostic measures that help you keep your computer in good health and spot problems before they become serious. Think of this chapter as providing vitamin pills, medical scans, and a safe deposit box for your PC.

Chapter **5**

Get ready to . . .

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Run the System Configuration Utility

1. Follow the appropriate step for your version of Windows:

- **Windows XP:** Choose Start→Run to open the Run dialog box, type **msconfig** in the Open text box, and press Enter.
- **Vista and Windows 7:** Click the Start button, type **msconfig** in the Search Programs and Files field at the bottom of the screen, and press Enter; then click Msconfig in the resulting list.

Whichever method you use, the System Configuration dialog box opens (see Figure 5-1).

Click a tab to view related settings.

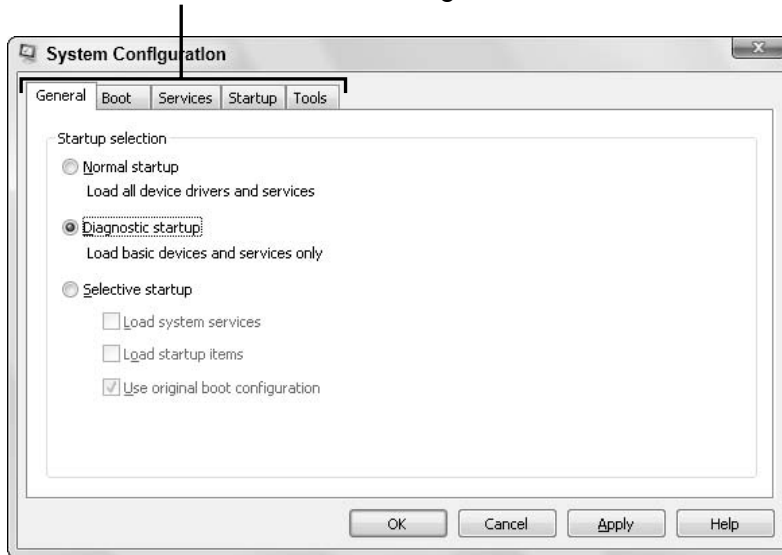


Figure 5-1

2. Select Diagnostic Startup on the General tab and then click OK. The System Configuration utility takes a few moments to disable all but the most necessary applications that run at startup; then it displays a Restart dialog box.

- 3.** Click Restart to restart your computer in diagnostic mode. In Windows XP, you see a message reminding you that diagnostic mode is active. In Vista and Windows 7, note the change in the Start button; the text-only button indicates diagnostic mode.
- 4.** Click OK to close the message and launch System Configuration. In Vista and Windows 7 you have to relaunch this utility as described above.
- 5.** Leave the utility running, and test your system.



Some things, such as custom Internet Explorer toolbars, may not run during testing because the System Configuration utility disables them.

- 6.** Click the Services tab, and scroll through the list of software services that run each time your computer starts, looking for suspect applications: those from unknown manufacturers or those with names that don't seem to fit anything you're using.



Most of the services in this list will show the manufacturer as Microsoft, and most of them will be disabled. You can probably ignore those services.

- 7.** Make only one change at a time.
- 8.** On the General tab of the System Configuration dialog box, select Normal Startup, and click OK. When your computer restarts, see whether you've corrected the problem.
- 9.** If the problem persists, repeat Steps 1–8, adding new applications one at a time. If the problem returns after you add an application, you've found the software that is causing it. Contact the manufacturer, or download an update from the Internet.
- 10.** Click the Startup tab (see Figure 5-2), and conduct a similar inspection and test.

Study this list, and reenable applications one at a time.

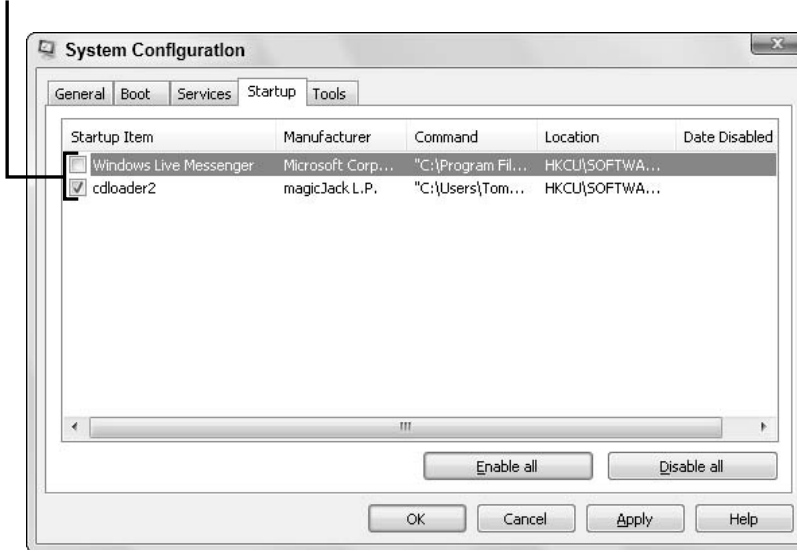


Figure 5-2

- 11.** Review the list of additional utilities available on the Tools tab. To use one of these programs, select it and then click the Launch button at the bottom of the dialog box.



System Configuration is a useful tool that may help you uncover problems and certainly will give you information about your system. Use it cautiously, however. I recommend that you stay away from the .INI tab in Windows XP and the Boot and Services tabs in Vista and Windows; you could change something on these tabs that would make your computer unusable.

Run Microsoft Office Diagnostics

- 1.** Close all running applications, including Microsoft Office applications. You shouldn't try to use your computer while the diagnostics utility is running.

2. Choose Start⇨Programs⇨All Programs⇨Microsoft Office.
3. Select Office Tools and then click Microsoft Office Diagnostics to display the opening dialog box shown in Figure 5-3.



Click Continue to launch a series of health-check utilities.

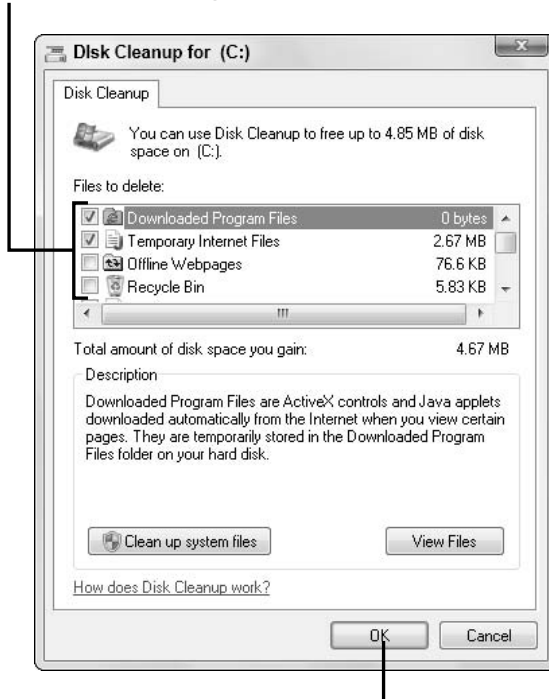
Figure 5-3

4. Click the Continue button to start the diagnostics routines, which test items including the following:
 - Microsoft Office setup and configuration
 - Hard drive health and function
 - System memory (RAM)
 - Program compatibility
 - Known solutions
5. Follow any onscreen instructions.

Clean Up Your Hard Drive

1. Choose Start⇨All Programs⇨Accessories.
2. Select System Tools, and click Disk Cleanup to open the Disk Cleanup dialog box (see Figure 5-4).

Choose the files you want to remove.



Click OK to start the cleanup process.

Figure 5-4

3. In the Files to Delete list, check the boxes next to the names of the files you want to remove, and clear the boxes next to any files you want to keep.
4. Click the Clean Up System Files button to expand the list of files you can remove safely, such as error reports and log files.

5. Click the More Options tab (which appears after you click Clean Up System Files in Step 4) to clean up programs you don't use or to remove System Restore files.



You should remove System Restore files (see Chapter 16) and shadow copies only if you're desperate for hard drive space. These files can help you get your system back to normal if the current installation files become damaged or your configuration gets out of whack.

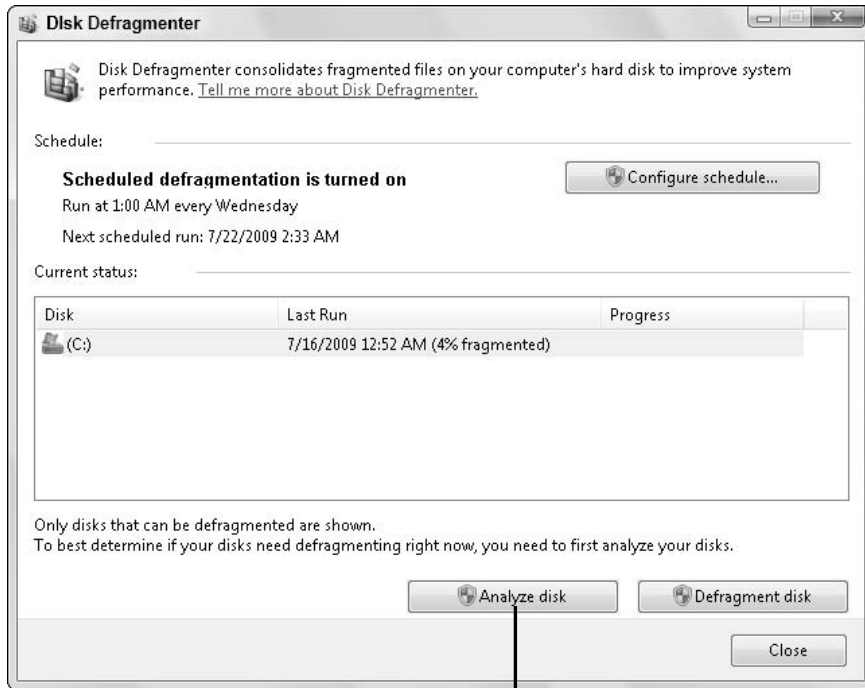
6. Click OK to start the cleanup process.
7. When Windows asks you whether you're sure that you want to delete these files, click Yes.



You should run Disk Cleanup before you run the Disk Defragmenter utility (see the next section) so the regained disk space will be defragmented too.

Defragment Your Hard Drive

1. Choose Start⇨All Programs⇨Accessories.
2. Select System Tools, and click Disk Defragmenter to open the Disk Defragmenter dialog box (see Figure 5-5).
 - **Vista and Windows 7:** This dialog box automatically shows you the percentage of fragmentation on the selected hard drive; proceed to Step 3.
 - **Windows XP:** Click the Analyze Disk button to display a complete report on your hard drive, including the percentage of fragmentation; then proceed to Step 3.



Click Analyze Disk to produce a report on the selected drive.

Figure 5-5

3. Check the fragmentation report to decide whether you need to defragment the selected drive. A drive with 10 percent or more fragmentation should be defragmented. (If you've been using your computer for a while, the drive may show 50 percent fragmentation or more.)
4. To defragment the selected drive, quit any other running programs and then click the Defragment Disk button. This process can be lengthy, and you really shouldn't be running any other software while Defragmenter works, because you could be creating and saving files while the utility is trying to consolidate them.



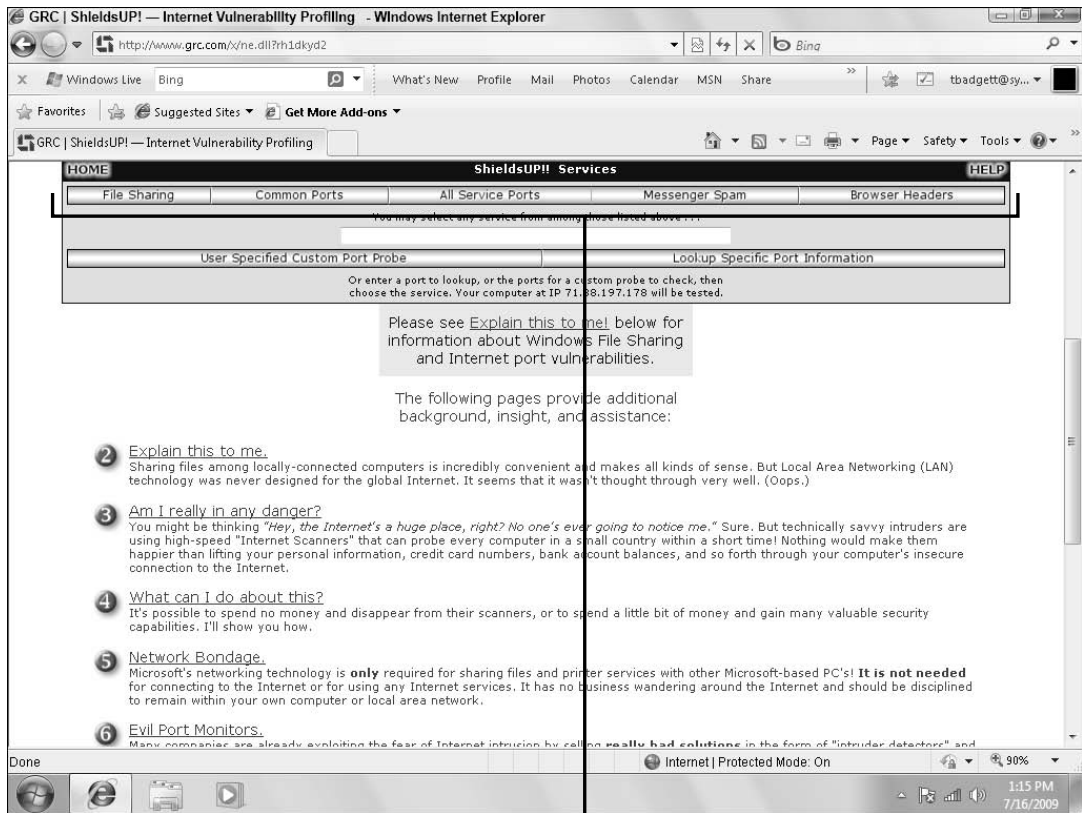
In Windows XP, you have to remember to run the Defragmenter utility periodically. In Vista and Windows 7, by default, the utility runs automatically on all connected hard drives once a week. To set your own defragmentation schedule, click the Configure Schedule button in the Disk Defragmenter dialog box.

Test for Chinks in the Security Armor



You can find lots of free security tools online. I recommend ShieldsUP!, which sends a series of probes to see which ports (think of them as doors; see Chapter 2) are open on your computer and what details you're telling the world about yourself or your personal and business secrets. This tool won't fix the problems that it finds, but it will give you some indication of whether the security program you have installed is doing an adequate job or needs adjustment.

- 1.** Point your Web browser to the Gibson Research Web site at www.grc.com.
- 2.** Click the ShieldsUP! logo.
- 3.** In the resulting page, scroll down to and click the ShieldsUP! link.
- 4.** Review the opening screen, which shows you the information about your Internet connection that's presented when you visit a Web site.
- 5.** Click the Proceed button to display a list of services (see **Figure 5-6**). To get more information on any service, click the Explain This to Me link.



Click a service button to begin a test.

Figure 5-6

6. Click a service name to start a scan of your computer. Figure 5-7 shows the beginning of a Service Ports probe, which tests the first 1,056 ports. (I've obscured the details about my computer shown at the top of the scan. You understand why, don't you?)
7. Study the finished-test display. All boxes green is a perfect score, meaning that all your PC's ports are secure.



You should read the support information in this screen, which provides valuable information about your computer's security.

Hover your mouse pointer over a port square for more information.

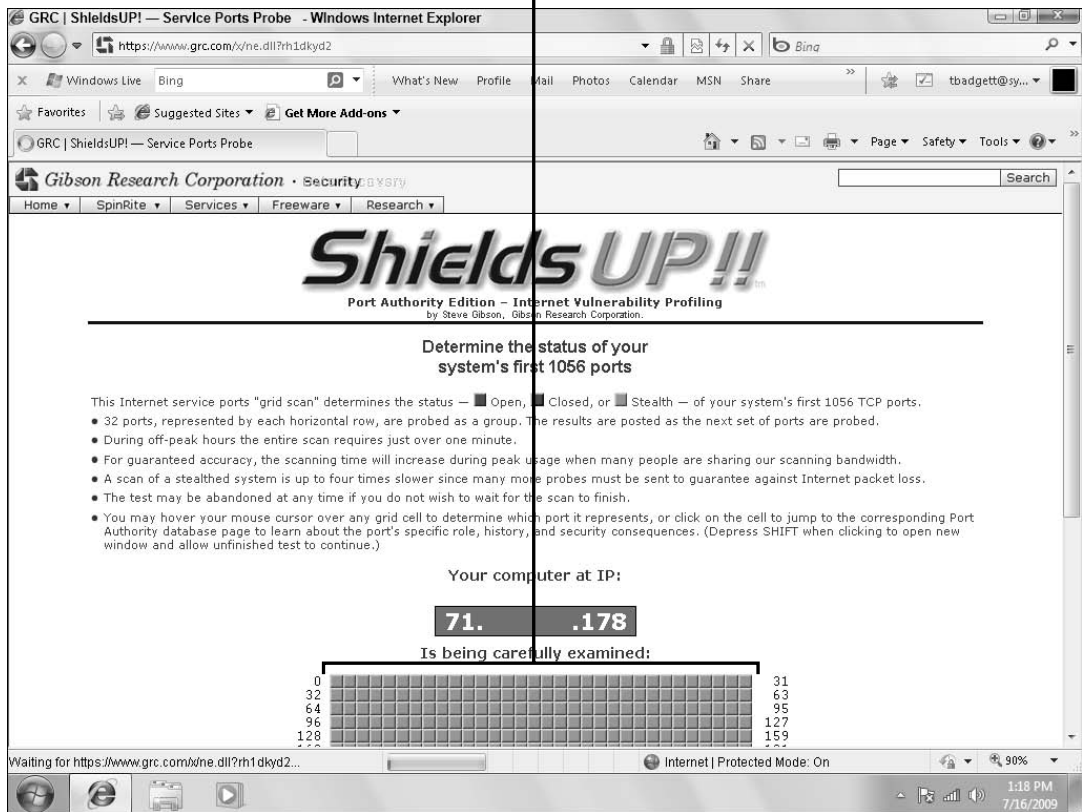


Figure 5-7

Keep Things Cool

- ➡ **Check the vents.** Make certain that the intake and exhaust vents on your computer aren't blocked. Most vents are on the back of the computer; if you have a PC with that design, don't place the back of it flush against a wall or curtains.
- ➡ **Clean the vents.** Every few months, use a handheld vacuum to remove dust buildup on the intake and exhaust vents.

- ➡ **Check airflow.** Once a week (more often if your computer starts to crash or otherwise becomes unreliable), check the flow of air coming out of your computer by placing your hand near the vent. The air should feel warm but not painfully hot. If you don't feel air coming out of the exhaust vent, follow these steps:
- 1.** Visually inspect the fan housing on the back of your computer (see Chapter 2). If the fan isn't turning, the motor may be bad, or a power connector may be unplugged. If the fan is turning, but little or no air is coming out, something may be clogging the air path.
 - 2.** Shut down the computer.
 - 3.** Unplug the power cord and any other cables that could block your access inside the computer.
 - 4.** Place the computer on a sturdy, well-lighted work surface, and open the case (see Chapter 2). See this book's information about grounding yourself.
 - 5.** If the fan wasn't turning in Step 1, make sure that its power connector is attached securely. If it isn't, fix the connection. If the connection's already secure, you probably need a new fan. Contact a computer repair facility.
 - 6.** Carefully feel for hot spots, and look for blockages in the thermal tunnel that runs (in most modern cases) from the front to the rear of the unit (see **Figure 5-8**).
 - 7.** Use a vacuum cleaner or a small, *clean* paintbrush to remove dust inside the case. Pay particular attention to the louvers around the outside of the case where air is supposed to enter the enclosure.

Check both ends of this tunnel for dust, which could restrict airflow.

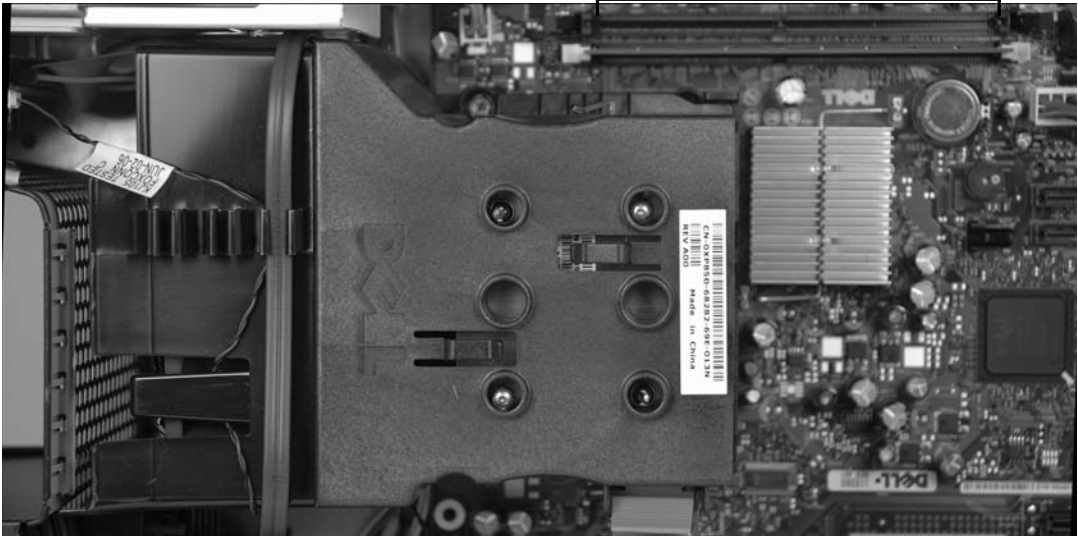


Figure 5-8



You should keep the inside and outside of your computer case clean, but the components are delicate. Use caution with a vacuum cleaner or brush! You don't want to disconnect any wires or damage anything.

- 8.** Look for additional fans. Many computers have multiple cooling fans, and they all need to work to provide proper cooling.
- 9.** Close the case, and hook everything back up.
- 10.** Turn on the computer, and recheck airflow.
 - ➡ **Check the fans.** Look and listen to determine whether the power-supply fan and any auxiliary fans are running. If small auxiliary fans have stopped working, you should replace them; if the power-supply fan isn't working, you should replace the entire power-supply unit. See Chapter 9 for details on both procedures.

Mind Your Monitor

- ➡ **Use a surge protector.** Never plug your display directly into wall current. Instead, be sure to use a good-quality surge protector (see Chapter 1). Damage caused by an electrical spike ordinarily isn't covered by manufacturer warranties.
- ➡ **Keep the air vents open.** Never cover the air vents on the top or sides of a monitor. Doing so could result in a dangerous buildup of heat that could damage components or shorten their lives. Periodically, use a new paintbrush or the brush attachment of a vacuum cleaner to remove accumulated dust on the monitor's ventilation holes.
- ➡ **Leave it on.** The most dangerous moment in an electronic component's life is when power is first applied, and the component goes from cold and uncharged to warm and full of electricity. Avoid turning your monitor on and off more than necessary. You can reduce power consumption by following these steps:
 - 1.** Right-click your desktop, and choose Properties (Windows XP) or Personalize (Vista and Windows 7) from the shortcut menu.
 - 2.** Follow the appropriate step for your version of Windows:
 - **Windows XP:** Click the Screen Saver tab of the Properties dialog box.
 - **Vista and Windows 7:** Click the Screen Saver tab of the Personalize dialog box; then click Change Power Settings.

Whichever method you use, you see the dialog box shown in **Figure 5-9**.

Click to set the time delay.

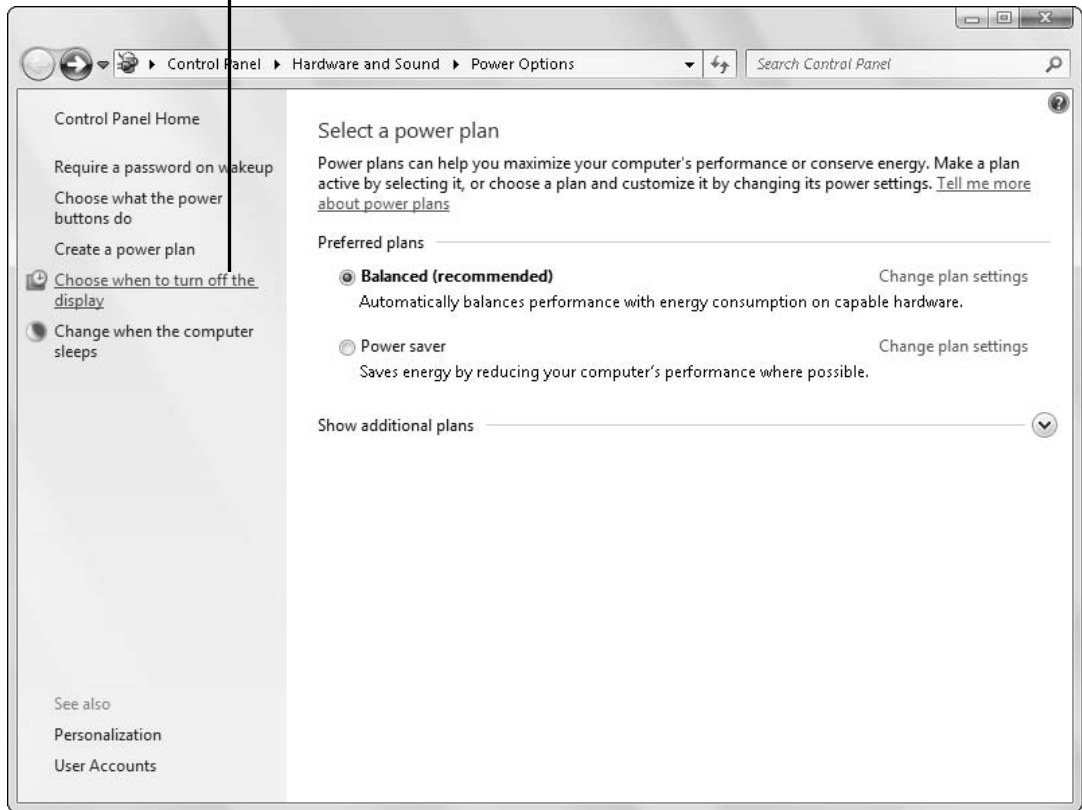


Figure 5-9

3. Click **Choose When to Turn Off the Display** to set the time delay before Windows turns off your monitor. You also can set system sleep delay and some other options in this dialog box.



Vista and Windows 7 have preprogrammed power-saving settings. You can accept one of these settings or customize the times.

- ➡ **Check the connections.** Make sure that the cable between the monitor and the video card is firmly attached at each end and not crimped or pinched. If you need to make adjustments, follow these steps:

1. If your monitor has a removable cable, unplug it and then replug it into the receptacle on the monitor (see Figure 5-10). This step could reset a loose connection and remove corrosion on any of the connectors.

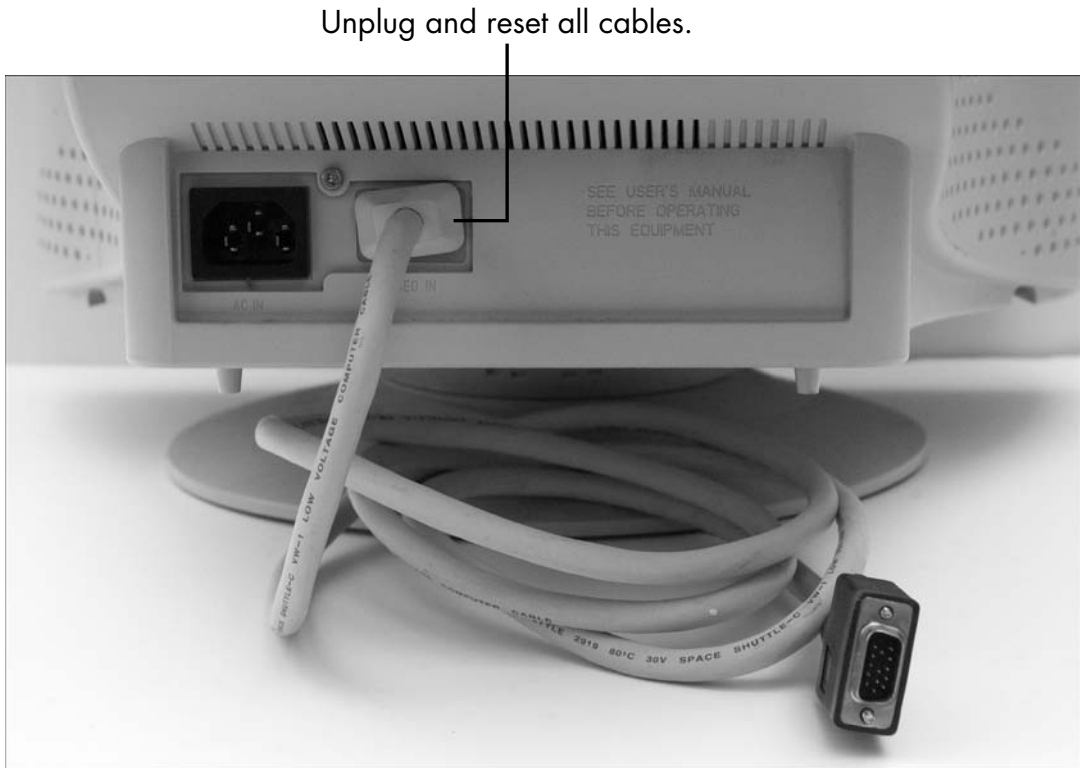


Figure 5-10

2. Unplug and reconnect the monitor cable at the computer end. You may have to use a screwdriver or thumbscrew to unlock the connection before you can unplug it. Use these locking screws when you replug the cable.
- ➡ **Klutzproof it.** Be sure that the monitor is safely installed on a sturdy desk, with its cable properly out of tripping range of passersby. I don't have to warn you about placing cups of coffee or soda anywhere in the vicinity, right?

Pamper Your Printer

- ➡ **Keep it squeaky-clean.** Read the instructions that come with your printer, and follow the recommended cleaning cycles.
- **Inkjet printers:** For an inkjet, cleaning usually involves keeping the nozzles clear through regular use or by running a built-in cleaning program.



If you don't expect to use an inkjet printer for several months, you may want to remove the ink cartridge (or each ink cartridge, in the case of color printers) and store it in a closed case so that it won't dry out. **Figure 5-11** shows a typical inkjet printer with instructions for changing cartridges under the lid.



Open your printer case, and follow the directions for replacing cartridges.

Figure 5-11

- **Laser printers:** Follow the manufacturer's cleaning instructions, which may include careful vacuuming of the interior of the machine, and keep the internal drum away from direct sunlight and extreme temperatures.

➡ **Control the humidity.** Many printers are prone to paper jams and quality problems in times of high humidity.



One solution for the summertime blues: Keep your paper in a sealed plastic box, and load it into the printer tray only when it's needed.