

Troubleshooting Notebook PC Problems

Many of the problems with notebook PCs are general problems that could occur on any computer, not just a notebook. The following sections outline some problems that are specific to notebooks.

DISPLAY PROBLEMS

Although a number of typical notebook display problems are not fixable, it is useful to understand why they are happening.

Thick Black Ring around Picture

The ring results from running an older LCD screen in a lower resolution than its maximum. Some of these old-style LCD monitors will fill the screen only in their top resolution. When you use lower resolutions, rather than expanding the desktop to fill the available space (as with a conventional monitor), they create the lower resolution display in the center of the physical screen with a big black ring around the outside. There is nothing you can do about this other than switch to a higher resolution.

Dead Pixels

Many LCD screens have one or two pixels that do not work. These are known as dead pixels, and there is nothing you can do about them. A brand-new PC should not have any; if the PC is still under warranty, advise your client to exchange it.

Fuzzy Text

In resolutions lower than an LCD monitor's maximum, text may appear fuzzy. (Pictures will usually look fine in any resolution.) This is an issue with older or lower priced LCD screens, and there is not much you can do about it.

Windows XP comes with a font-smoothing feature called ClearType that you can turn on to help minimize text fuzziness on an LCD monitor. To try it out (Windows XP only):

1. Right-click the desktop and choose Properties.
2. Click the Appearance tab, and then the Effects button.
3. Mark the Use the following method to smooth edges of screen fonts check box.
4. Open the drop-down list and choose *ClearType* (see Figure 20.34).
5. Click OK twice to close the dialog boxes.

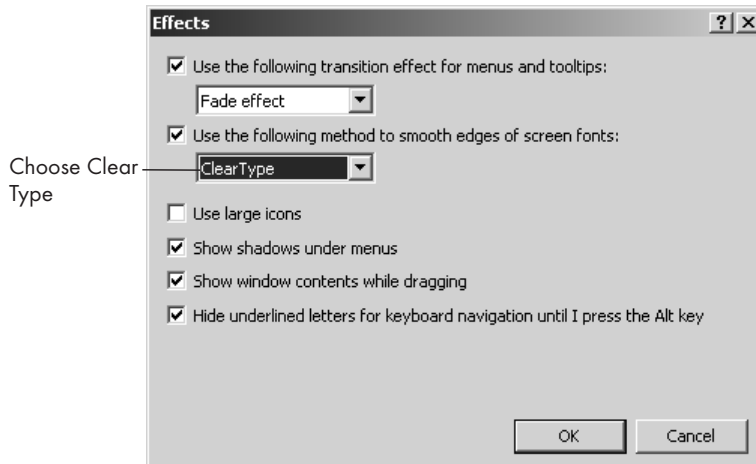


FIGURE 20.34
Turn on ClearType font smoothing for an LCD monitor with fuzzy text display

POWER PROBLEMS

The vast majority of problems with notebook computers involve power management settings. Either the notebook will not enter a low-power mode or it will not resume properly from one. The following sections provide some help.

Will Not Go into Standby or Hibernation

If the computer will not go into standby or hibernation after the time period specified in the Power Options Properties dialog box, perhaps it is because an OpenGL-type screen saver is in use. Such screen savers make the computer think that it is in use, so the inactivity never times out. Try using a different screen saver, or turning off the screen saver feature altogether.



IN REAL LIFE

Some Windows versions indicate which screen savers are OpenGL (a programming API) in the list of screen savers in the Display Properties dialog box; other Windows versions indicate which are OpenGL by preceding them with "3D."

Another possible reason for not being able to use these features is the video driver. The standard VGA video driver that comes with Windows does not support power management; the video driver you have installed must be compatible with power management features.

If Windows will not enter Standby and you see an error message about a driver or program not permitting it, try closing all running programs. If it persists, perhaps you have an outdated device driver that is not ACPI compliant.

If you have trouble determining which program is causing the situation, try the Windows Power Management Troubleshooter, available for free download from Microsoft. See “For More Information” for this chapter on the Internet Resource Center for the Web site address. It is written specifically for Windows 98, but may be of some use in other versions as well. Also look for a file called Nohiber.txt in the *Windows* folder; if present, it will give you clues about what device is preventing Hibernate or Standby.

You can also try looking for the errant device on your own. For example, some models of Epson USB printers have been known to prevent a PC from entering Standby, as have several models of multifunction devices, particularly those that listen for incoming faxes. Try disconnecting all USB devices and removing all PC cards as part of your troubleshooting process. If that does not work, try disabling all USB devices in Device Manager if they do not automatically disappear from Device Manager when disconnected.

Also investigate whether you have any built-in device disabled; this can sometimes cause Standby problems. For example, there are known issues with Intel network cards interfering with Standby when they have been disabled in Device Manager.

A few devices have no workaround, and cannot coexist with Standby or Hibernate. Some versions of the Tseng Labs ET-4000 video adapter under Windows 2000 are like that. On such computers you cannot use Windows-based Standby or Hibernate; you might try the OS-independent BIOS power management if available.

Although it is seldom an issue on laptops, the use of Internet Connection Sharing (ICS) in Windows 98/Me can also prevent a computer from going into Standby or Hibernate. This behavior is deliberate, to prevent the computer that is serving the Internet connection from disconnecting others in the workgroup who might be using the connection. The Turn Off Monitor and Turn Off Hard Disks power management options also do not work on the host Internet sharing computer, for the same reason.

Will Not Wake Up from Standby or Hibernation

When a PC will not wake up, it can be alarming for the user because it seems as if the PC is completely dead. It is not, of course. It is just stuck in Standby or Hibernate mode. In the short term, here are some ways to regain control of the PC:

- Be patient. Some PCs take up to 30 seconds to wake up.
- Look for a Suspend or Hibernate key. Some laptops have special keys or buttons for one or both, but the user might not have noticed them if he or she normally uses some other wakeup method.

- Try pressing and holding the PC's Power button for 5 seconds or more. On a PC that is configured to suspend or hibernate with a press of the Power button, holding down the button will usually reset and reboot.
- Look in the PC's documentation for a key combination that might wake it up. Most laptops have an Fn key that you can press in conjunction with other keys to control laptop-specific features.
- As a last resort, remove all batteries, wait a few minutes, and then replace the batteries.

After you successfully restart the PC, you need to look for the underlying problem, which is generally a disagreement either between the power management features of the BIOS and those of your Windows version or between power management and the video card.

To begin troubleshooting, first make sure you have the most recent version of the video driver installed. Download the latest from the manufacturer's Web site and install it. Outdated video drivers have been known to cause power management problems in some systems.

Next, look on the hard disk for a Nohiber.txt file. If such a file exists, it may contain information about why Windows will not hibernate.

A conflict between the BIOS power management and Windows power management is the most common cause of wakeup failure. Experiment with different settings in the BIOS to see if any can solve the problem. For example, one scenario under which a PC might not wake up is if APM is enabled in the Power Options Properties dialog box in the Control Panel and the BIOS is configured to suspend the computer with a time-out value less than the value configured in Windows. To correct this, you would set the BIOS time-out higher than the Windows time-out.

W A R N I N G

Microsoft recommends that all BIOS-based power management be disabled on PCs running Windows NT 4.0.

If tweaking the BIOS and Windows power settings does not help, try visiting the PC manufacturer's Web site to see whether a BIOS update might be available. The failure of some PCs to resume from Standby can often be corrected by updating the BIOS. A BIOS upgrade can add ACPI support to the computer, and can potentially clear up compatibility problems between APM and the hardware or OS. If you cannot upgrade from APM to ACPI in the BIOS, and you continue having wakeup problems, try disabling APM entirely in the BIOS.



IN REAL LIFE

There is an APM diagnosis tool, `apmstat.exe`, on the Windows 2000 CD-ROM in the *Support/Tools* folder. Use the `-v` switch for Verbose to get more data.

If you cannot solve the problem from the BIOS, try it from the Windows side. Experiment with Windows power management settings to see whether any of them make a difference.

Remember also that you do not necessarily have to use the Windows interface for Standby or Hibernate if the BIOS has direct support for it. It is possible that the client will have to forego the Windows power management and use the Hibernate feature built into the BIOS.

The generic VGA video driver that comes with the OS with a PCI or AGP video card does not support hibernation. You might also see this error with other video drivers, especially on inexpensive laptops that use off-brand video drivers not supporting APM or ACPI. With some Windows versions it is also an issue with older video drivers not written specifically for that version. For example, using a Windows NT version of a video driver in Windows 2000 could cause a black screen on wakeup or no wakeup at all.

If possible, switch to a newer video driver or one designed specifically for the video card. If not, you will not be able to use Hibernate on this PC; go into Power Options in the Control Panel and turn off hibernation support.

Standby Is Not on the Shutdown Menu

If Standby locks up the computer two times in a row, a message appears asking whether you want to disable the feature. If you answer Yes to that message, Standby will no longer be a choice at shutdown. Standby will also be missing if the PC is not APM or ACPI compatible.

If Standby is off but you think the PC is actually capable of using it, you can turn it back on. To do so, remove APM or ACPI support from Device Manager (in the System category) and then restart the PC and let it redetect it. It might restart several times before it redetects all devices.

If that does not work, try removing the floppy disk controller from Device Manager and letting Windows redetect it upon restart. When it redetects it, it will reset the `SuspendFlag` entry in the Registry.