
CHAPTER 13

Mobile Devices

The first “laptop” computer couldn’t actually be used on your lap. It was big, it was bulky, and it needed to be wrestled into place. One might not believe it now, but the portly, 22-pound Osborne 1 was once considered a “portable” computer. There were, of course, many that came after, each losing weight and gaining functionality. Twenty-five years later, portable computers are truly sleek, streamlined, light, and can do everything their deskbound brothers can do. Now, as if laptops weren’t portable enough, there are now powerful Tablet PCs and palmtop computers that are on the leading edge of portability.

Because they are so prevalent and important, Microsoft has developed a number of tools for managing portable computing devices into Windows Vista. In this chapter we’ll look at some of the functionality that Vista brings to the portability party. We’ll talk about power management, synchronization, and the Vista utilities that are geared specifically to Tablet PC users.

POWER MANAGEMENT

The big selling point of laptops and Tablet PCs is their portability. You can use them—disconnected from a primary power source—on an airplane, in a coffee shop, on a park bench...wherever. Of course, that most important feature is only possible if you have a charged-up battery.

To help your laptop or Tablet PC use its power efficiently, Vista employs *power plans*. These are schemes that you can use to automatically tell Vista how to manage power on your computer. If you have managed power on your laptops and Tablet PCs before, this may sound like nothing new. Frankly, it isn’t new. Earlier versions of Windows employed power schemes as well. What is new, however, is that in Vista, the power plans are a lot easier to work with, thanks to a new and improved interface.

Let’s take a look at Vista’s power plans.

Power Plans

Vista includes three default power plans, half of what was offered in Windows XP, and they are simpler to use. The power plans are presented as a tradeoff between power and performance. That is, the power plans can either offer you a higher-performing computer but with less battery life or a longer battery life but with the central processing unit (CPU) running at a reduced rate.

To view the power plans:

1. Click the Start button.
2. Click Control Panel.
3. Click System And Maintenance.
4. Click Power Options. The power options are shown in Figure 13-1.

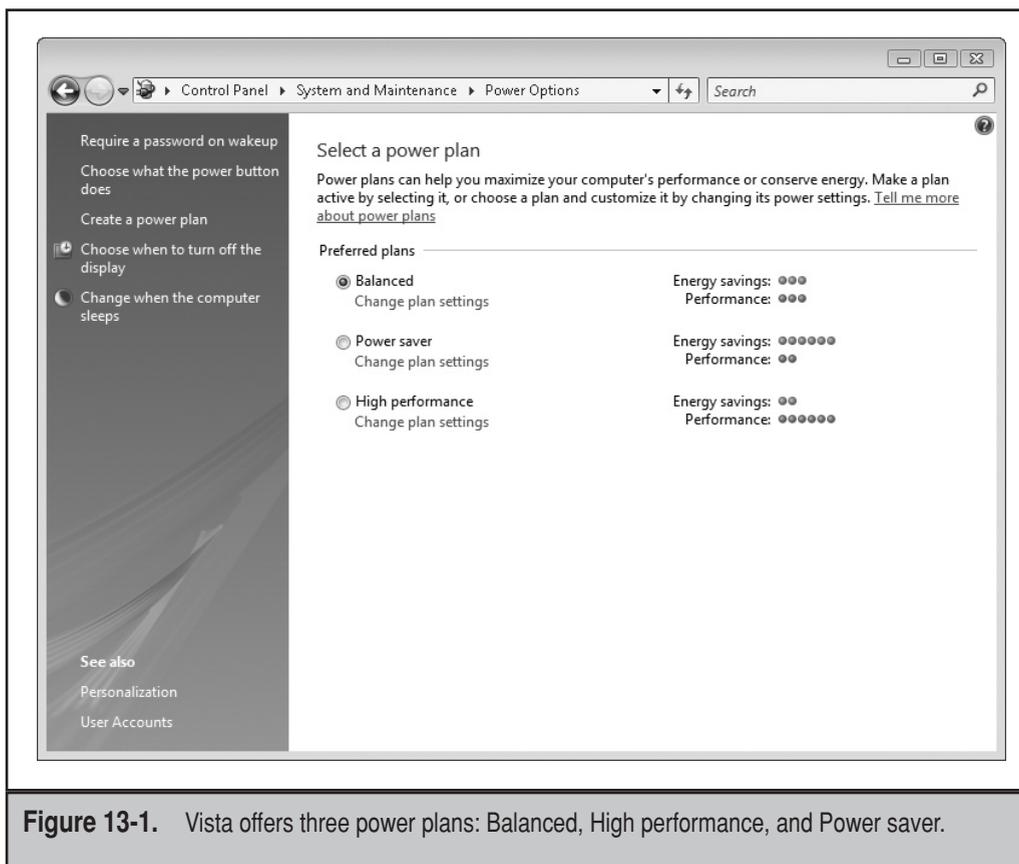


Figure 13-1. Vista offers three power plans: Balanced, High performance, and Power saver.

The Plans

The power plans are:

- ▼ **Balanced** The default plan strikes a balance (as the name suggests) between power consumption and computer performance. The processor accelerates when more resources are used and slows down as fewer are needed.
- **Power saver** This plan utilizes low power for maximum battery life. In order to reduce power consumption, processor usage is decreased.
- ▲ **High performance** This plan allows high power usage so that graphics-intensive programs can easily be run. It also consumes the most power.

Laptops and Tablet PCs also contain a notification area on the taskbar with a Power icon. If you aim the mouse pointer at this icon, the battery state and the power plan you're using are displayed. You can right-click the Power icon to display a shortcut menu to go to the Power Options utility or the Windows Mobility Center.

Power Plan	Screen Power Down	System Power Down
Balanced	After 20 minutes of inactivity	After one hour of inactivity
Power saver	After 20 minutes of inactivity	After one hour of inactivity
High performance	After 20 minutes of inactivity	Never

Table 13-1. Vista Power Plan Specifics

NOTE We'll talk about the Windows Mobility Center later in this chapter.

Controls

The power plans are also used to govern when a computer turns off its display and powers down. Table 13-1 shows the default screen and system power-down settings for the various power plans.

When laptops and Tablet PCs are running on battery power, they continue to consume battery power, but at a much lower rate. If the battery runs too low while in a sleep state, the working environment will be saved to the hard disk, and the computer will be completely shut down.

NOTE Remember that Standby and Hibernation modes are not power-saving options. As we noted in Chapter 1, powering down and shutting down mean new things in Vista. Most times, when you turn off the computer, Vista will enter a sleep state. The computer will only completely shut down when you turn the power off completely.

These are good, functional, easy-to-use plans. But what if you need to fine-tune them to meet your specific needs? Like so many other parts of Vista, you get the broad strokes of a task right up front, and if you want to get into some detail, you just have to click the right button or link.

Configuring a Plan

Let's say you conceptually like what the Balanced power plan has to offer, but you want to tweak it just a little bit. These plans aren't carved in stone, and you can manage them as you desire. To change the options of a power plan:

1. Open the Power Options utility.
2. Click Change Plan Settings for the plan you want to modify. This displays a screen like the one shown in Figure 13-2.

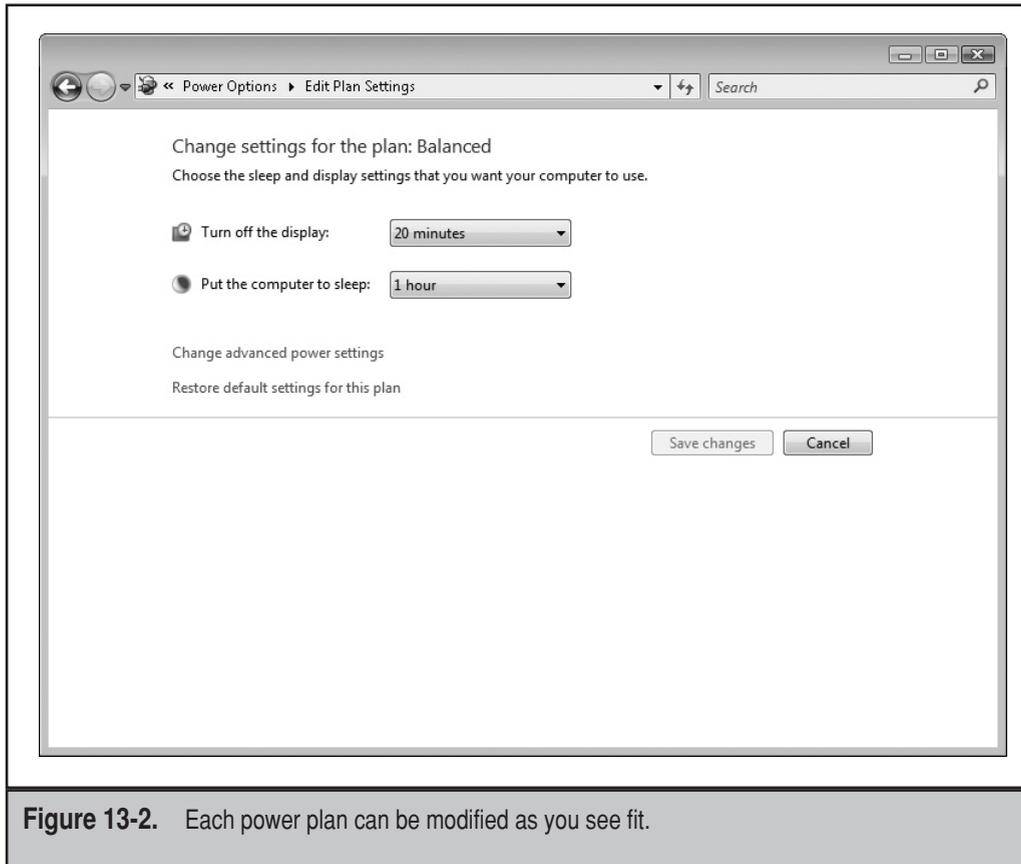


Figure 13-2. Each power plan can be modified as you see fit.

3. Use the Turn Off Display list to indicate if and when the computer's display turns off.
4. Use the Put Computer To Sleep list to indicate if and when the computer enters Sleep mode.

Advanced Settings

But that isn't the last level of configuration. If you want to get even more granular, you can control the advanced settings for a power plan. From the dialog box shown in Figure 13-2, you can click the Change Advanced Power Settings link.

This link displays the Advanced Settings tab, shown in Figure 13-3, and you can use it to manage all sorts of power management settings, including:

- ▼ Requiring a password when the computer wakes up
- Setting the maximum and minimum processor states
- Defining power button and lid actions

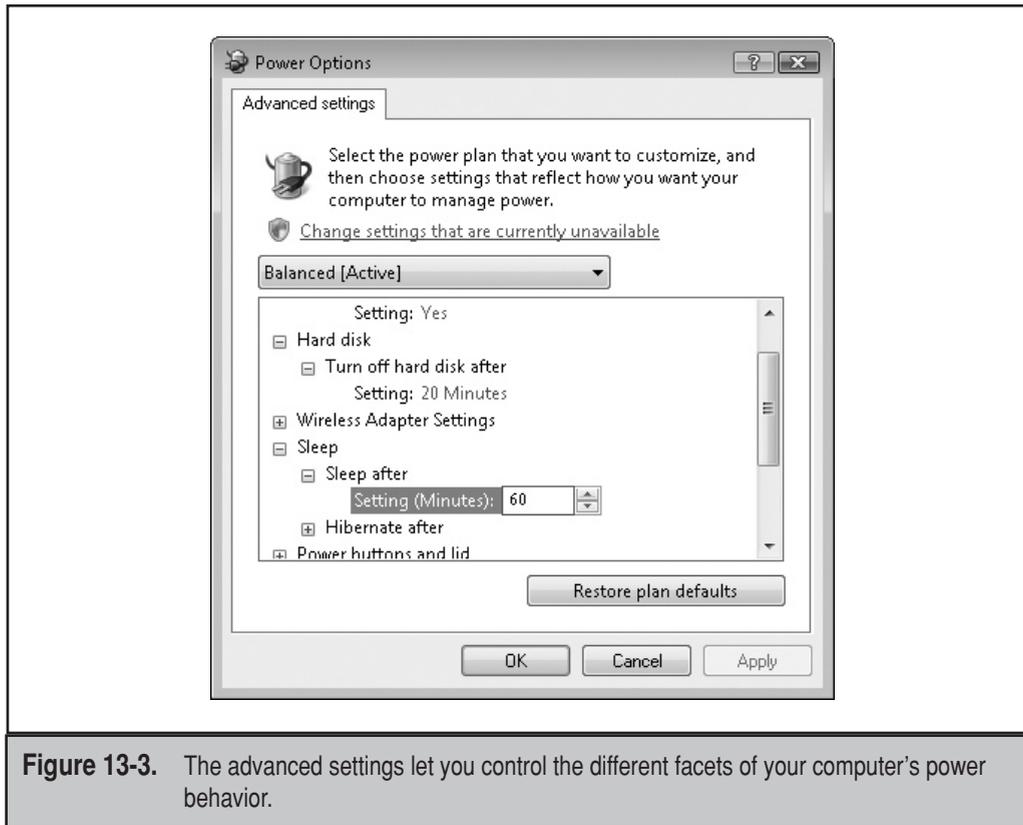


Figure 13-3. The advanced settings let you control the different facets of your computer's power behavior.

- Establishing power modes for wireless adapters and PCI Express links
- ▲ Configuring sleep and hibernation options

Wakeup Behavior

Even though Vista's power plans are seemingly point and click—and to a degree they are—you can still assign global options for the power button and password protection on wakeup across all of your power plans.

To manage these features:

1. Open the Power Options tool.
2. In the left pane, click Choose What The Power Button Does.
3. In the When I Press The Power Button list, indicate whether the computer should shut down, sleep, or hibernate when the power button is pressed. This is shown in Figure 13-4.
4. Select the relevant Password Protection On Wakeup option to indicate whether the computer requires a password on wakeup.

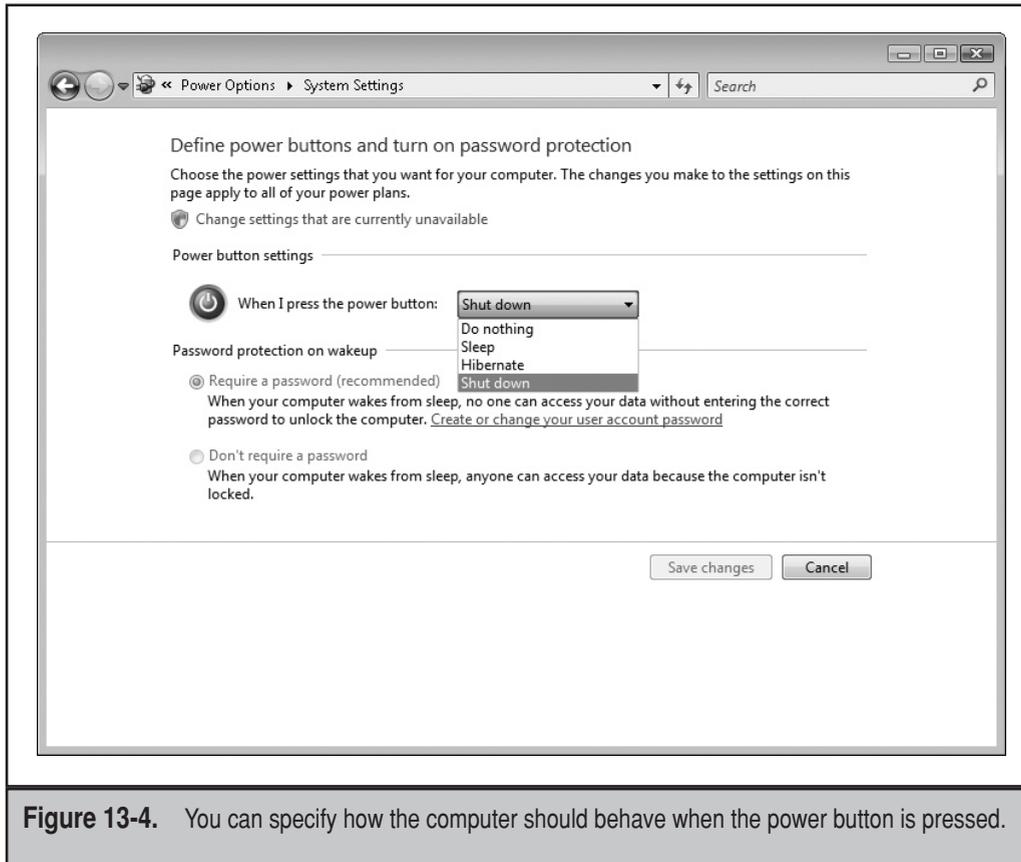


Figure 13-4. You can specify how the computer should behave when the power button is pressed.

WINDOWS MOBILITY CENTER

Like the Windows Security Center we talked about in Chapter 10, Vista provides a way to manage all your mobile settings in one centralized location, so you don't have to remember to point here and click there for these different attributes.

Getting Started

The Windows Mobility Center is a set of tiles that give quick access to the most commonly used mobile PC settings. You can access the Center by right-clicking the Power icon in the taskbar's notification area, and then selecting Mobility Center.

Each tile on the tool allows you to manage a different setting. These tiles will differ, based on whether you're using a Tablet PC or a laptop, as well as on the PC's manufacturer. Normally, laptops contain seven tiles, while Tablet PCs have eight.

Using the Windows Mobility Center

The tiles in the Windows Mobility Center allow you to quickly manage settings using sliders and toggle buttons. Control tiles include:

- ▼ **Brightness** Indicates the current brightness settings and allows you to manage the setting with a slider
- **Volume** Indicates the current volume setting for audio and allows you to manage the setting with a slider
- **Battery Status** Indicates the status of the computer's battery. The selection list can be used to quickly change between power plans
- **Wireless Network** Indicates the status of your wireless network connection. You can quickly toggle the connection on or off
- **External Display** Indicates options for connecting a secondary display. You can quickly toggle the external display on or off
- **Sync Center** Indicates the status of file syncing. You can start a new sync by clicking Start Sync
- **Presentation Settings** Indicates whether your computer is in Presentation mode. While in Presentation mode, the PC's display and hard drive do not go into Sleep mode because of inactivity. You can start Presentation mode by clicking Turn On
- ▲ **Primary Landscape** Indicates the current display orientation for Tablet PCs. You can change the screen's orientation (portrait or landscape) by clicking Change Orientation

These are just a few of the tiles available with Windows Mobility Center. Different tiles are provided by different PC makers.

TABLET PCS

Laptop PCs have evolved to suit the needs of their users. But it isn't just more random access memory (RAM), bigger hard drives, and wireless capabilities that have improved the laptops—it's also their physical function. Tablet PCs are operable without a keyboard (actually, the keyboard tends to be tucked away behind the screen), and user input is accomplished through a touch screen.

Windows Vista builds on the Tablet PC functionality first introduced to the Windows world with Windows XP. It offers a number of ways—and a number of applications—that will help the Tablet PC user get the most out of his or her device.

The Pen

The chief way to enter data into a Tablet PC is via the pen. Vista is not only capable of performing handwriting recognition, but it will also interpret pen taps and pen motions as specific commands.

Taps

Pen taps are the Tablet PC equivalent of using your desktop PC's mouse. If you double-tap somewhere on the screen, that's like double-clicking your mouse. Holding down the pen is the same as right-clicking with a regular mouse.

To manage pen tap settings:

1. Click Start and then click Control Panel.
2. Click Hardware And Sound, and then click Pen And Input Devices.
3. As shown in Figure 13-5, the Pen And Input Devices dialog box appears. Make sure the Pen Options tab is selected.
4. To configure double-tapping, double-click Double-Tap in the Pen Actions section. Next, adjust how quickly you must tap the screen and the distance the pointer is allowed to move between taps.
5. Click OK.

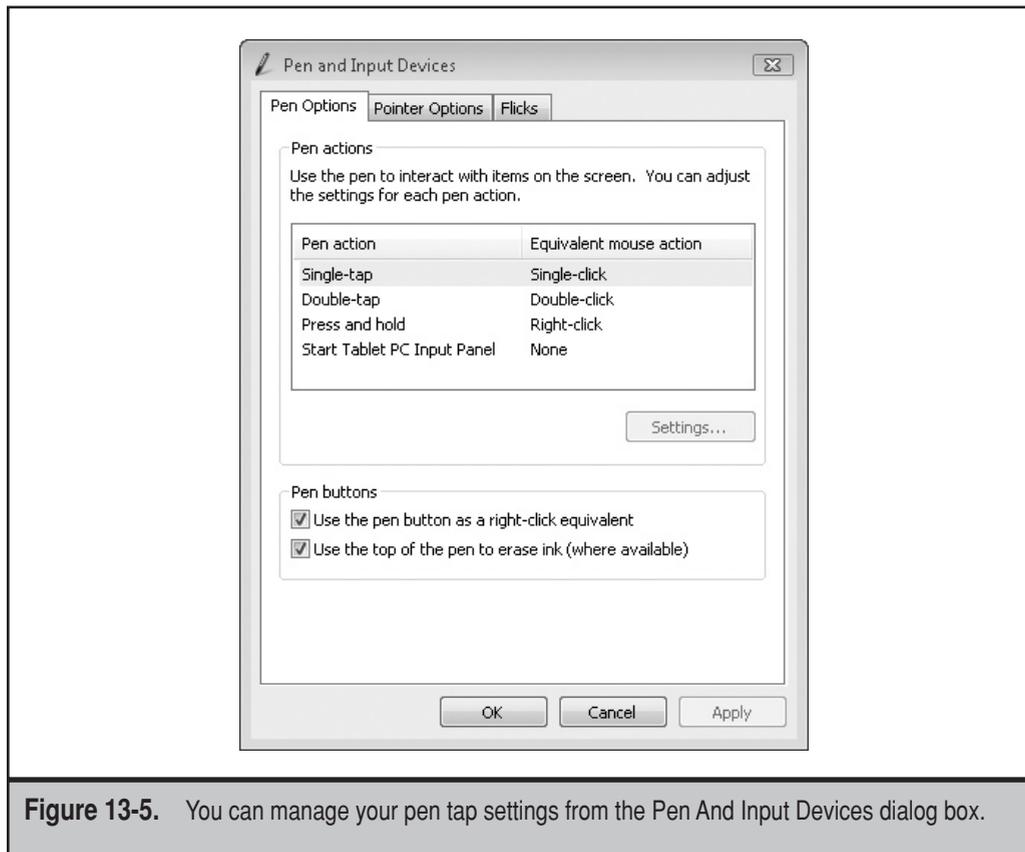


Figure 13-5. You can manage your pen tap settings from the Pen And Input Devices dialog box.

6. To configure pressing and holding, double-click Press And Hold in the Pen Actions section. Adjust the amount of time you must press and hold down the pen to the screen to perform a right-click and the amount of time to perform the right-click action.
7. Click OK to save the settings.

You can also change visual feedback options by following these steps:

1. Click Start and then click Control Panel.
2. Click Hardware And Sound, and then click Pen And Input Devices.
3. In the Pen And Input Devices dialog box, click the Pointer Options tab. This is shown in Figure 13-6.
4. Each pen action elicits a different type of visual feedback. If you'd rather not see any visual feedback, clear the checkbox.
5. You can elect to use mouse cursors or pen cursors. Select or clear the Show Pen Cursors Instead Of Mouse Cursors When I Use My Pen check box, as needed.
6. Click OK to save the settings.

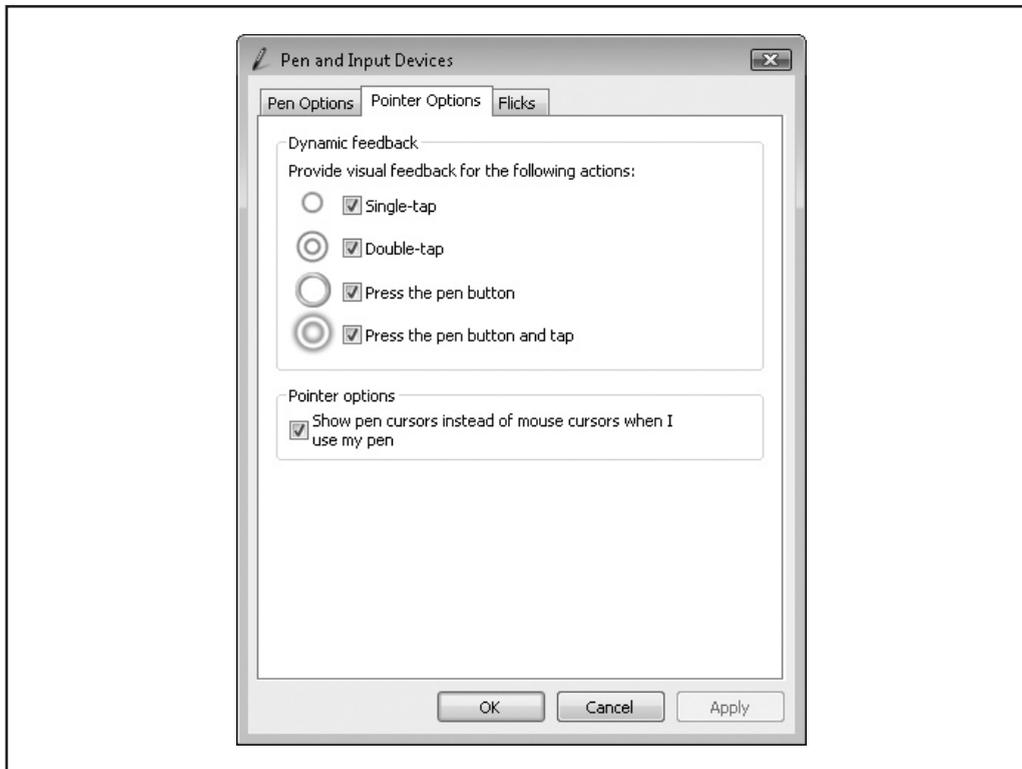


Figure 13-6. You can manage the visual feedback options in the Pen And Input Devices dialog box once you select the Pointer Options tab.

Flicks

Since the pen is the Tablet PC's mouse, you use a series of flicks to move the cursor around the screen. You can perform both navigation and editing functions using pen flicks. Those settings are configured separately, but, by default, navigational pen flicks are enabled.

Table 13-2 explains the behavior of the various pen flicks.

To manage pen-flick options:

1. Click Start and then click Control Panel.
2. Click Hardware And Sound, and then click Pen And Input Devices.
3. In the Pen And Input Devices dialog box, select the Flicks tab. This is shown in Figure 13-7.
4. Check the Use Flicks To Perform Common Actions Quickly and Easily check box to configure the types of flicks you wish to enable.
5. To configure pen flicks for both navigation and editing, select the Navigational Flicks And Editing Flicks option.
6. The Sensitivity slider is use to adjust how easily pen flicks are recognized. If you find that you're experiencing a lot of accidental pen flicks, set the sensitivity a bit lower.
7. Click OK to save the settings.

Pen Flick Direction	Action	Equivalent Action
Left	Go back	Same as clicking the Back button in Internet Explorer
Right	Go forward	Same as clicking the Forward button in Internet Explorer
Up	Scrolls up	Same as using a scroll bar in an extended window
Down	Scrolls down	Same as using a scroll bar in an extended window
Up and left	Copy	Same as copying an element or text using a menu
Up and right	Paste	Same as pasting an element or text using a menu
Down and left	Undo	Same as undoing an action using a menu
Down and right	Delete	Same as deleting an element or text using a menu

Table 13-2. Explanations of Default Pen-Flick Behavior

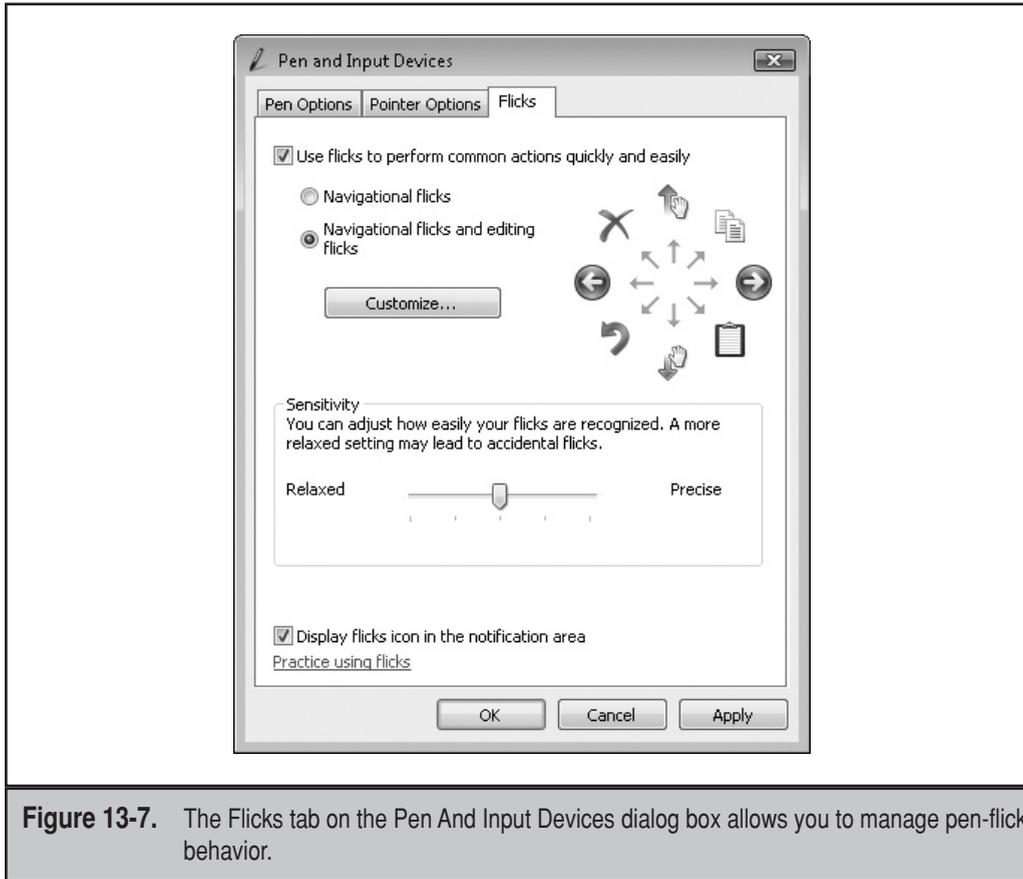


Figure 13-7. The Flicks tab on the Pen And Input Devices dialog box allows you to manage pen-flick behavior.

Tablet PC Applications

Windows Vista includes several applications that are meant to improve your Tablet PC experience. Among those applications are:

- ▼ Input panel
- Snipping tool
- Sticky notes
- ▲ Windows Journal

This section examines those applications and explains how you can use them.

Input Panel

The Input Panel is used to enter text into your Tablet PC rather than using the keyboard. It converts your handwriting into typed text. In Vista, Input Panel includes such features as AutoComplete, Back-Of-Pen Erase feature, and scratch-out actions.

Using Input Panel Some applications that accept handwriting input from a pen (like Word or Windows Mail) display the Input Panel icon next to text-entry areas. Tap the icon, and Input Panel is displayed, allowing you to enter your handwritten text, which will then be converted to typed text when you tap the Insert button.

NOTE The Insert button is located below and to the right of your converted text.

To display the Input Panel:

1. Click Start and point to All Programs.
2. Click Accessories.
3. Click Tablet PC.
4. Select Tablet PC Input Panel.

When Input Panel runs, it is shown as a tab on the left side of the screen. To open it, move the cursor over the tab and tap. Input Panel then slides out from the edge of the screen. The Input Panel is shown in Figure 13-8.

The Input Panel can be moved by dragging it to your preferred location or by docking it at the top or bottom of the screen. If you hide Input Panel, it will reappear at that location the next time you open it.

The Input Panel offers three input modes:

- ▼ **Writing pad** Gives you a space for entering handwritten text, as if you were writing on a sheet of lined paper. As you write a word, it is converted into text and displayed. Clicking the word allows you to correct the letter case, change punctuation surrounding the word, or modify letters. The writing pad is the default mode and is shown in Figure 13-8.
- **Character pad** Gives you a space for entering single letters or characters. When you write a character, it's converted into text. By clicking below a character, an Options menu is displayed, with a list of related characters that look similar to the one you just entered. You can select one of the other characters from the menu. The character pad is shown in Figure 13-9.

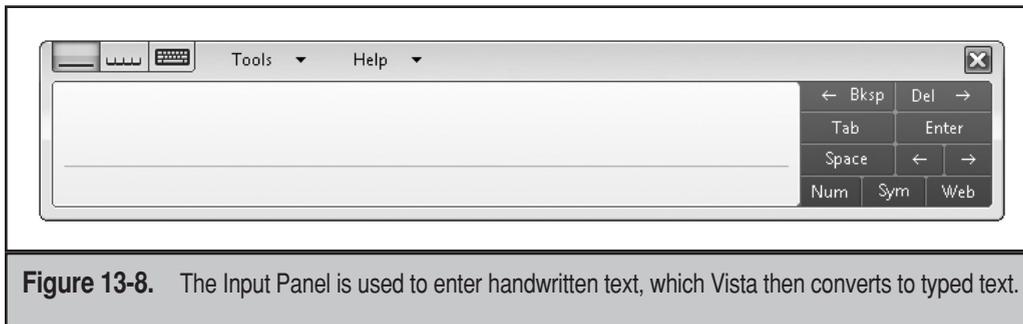


Figure 13-8. The Input Panel is used to enter handwritten text, which Vista then converts to typed text.

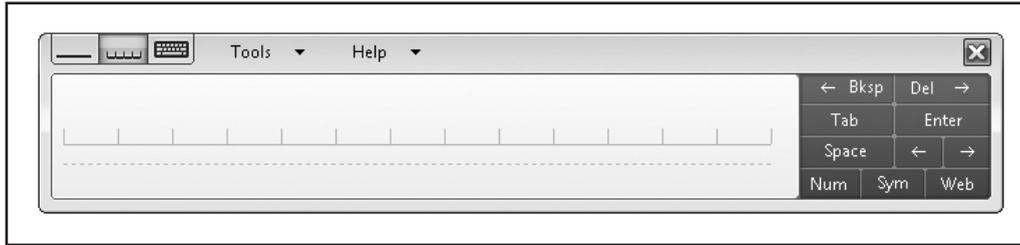


Figure 13-9. The character pad allows you to handwrite individual characters, letters, or symbols.

- ▲ **On-screen keyboard** Gives you a keyboard on the screen that you can use to tap characters for data entry. The on-screen keyboard is shown in Figure 13-10.

The character pad also contains three buttons you can tap to provide more features:

- ▼ Clicking Num displays the number pad, containing digits 0 through 9 and arithmetic symbols.
- Clicking Sym displays the symbols pad. This contains options for commonly used characters.
- ▲ Clicking Web displays the Web pad. This contains character shortcuts for entering URL information.

AutoComplete A new feature for Tablet PC users in Windows Vista is the AutoComplete feature. In a Tablet PC, AutoComplete works much like it does in other applications. As you enter text, a list of possible matches is generated, so you don't have to write out the whole entry. If an item in the list matches text you want to enter, just tap the word, and it'll be used.

NOTE If the constant popping up of AutoComplete suggestions annoys you, or if you just don't want to use it, it can be disabled in the Options dialog box. In the Input Panel, click Tools and then click Options. On the Settings tab, clear the Suggest Matches In Input Panel When Possible check box.



Figure 13-10. The on-screen keyboard allows you to use the pen to tap desired characters.

Back-of-Pen Erase Some Tablet PC pens have “erasers.” The Back-Of-Pen Erase feature allows you to use this functionality. This can be used to delete entries from Input Panel. This feature is available depending on your hardware vendor.

Scratch-Out Gestures Scratch-out gestures are another way to delete entries. In essence, you write over your entries. Based on the symbol you draw, a different action is taken. Table 13-3 explains the different scratch-out gestures and how to perform them.

If these are just too many ways to delete something and you just want to stick with the standard Z-shaped scratch-out, you can disable the others by following these steps:

1. In the Input Panel, click Tools.
2. Click Options.
3. On the Gestures tab, select the Only The Z-Shaped Scratch-Out Gesture option.
4. Click OK.

Snipping Tool

The Snipping tool is used to capture and edit snippets of documents. It includes a pen selection, highlighter, and eraser functions. The Snipping tool isn’t just used for text, however. You can use it to snip out any screen element, including text and images.

To display the Snipping tool:

1. Click Start and point to All Programs.
2. Click Accessories.
3. Click Snipping Tool.

The Snipping tool operates in two modes: New Snip mode and Edit mode.

Scratch-Out Gesture	How to Do It
Z-shape	Draw a Z over an entry or series of entries
Strike-through	Draw a horizontal line across an entry or series of entries (The line can be drawn left to right or right to left)
Angled	Draw an angled line across an entry or series of entries (The line can be drawn left to right or right to left)
Vertical	Draw an M or a W over an entry or series of entries. The M or W should be larger than the entries you want to delete
Circular	Draw a circle over an entry or series of entries. The circle should be drawn around or within the entries

Table 13-3. Scratch-Outs and How to Perform Them

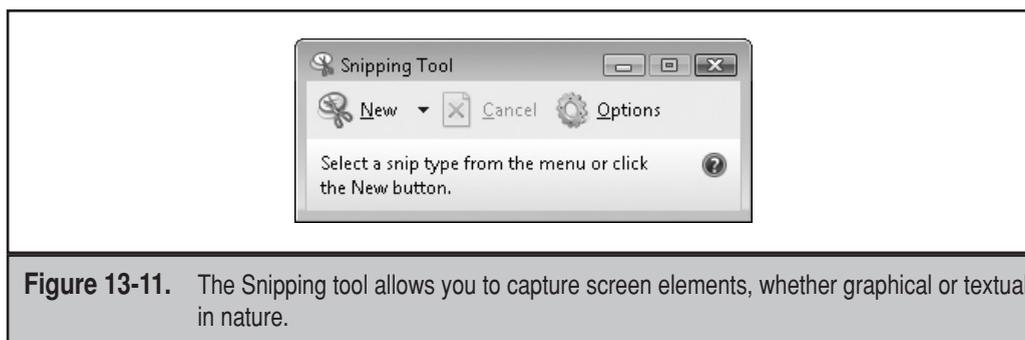


Figure 13-11. The Snipping tool allows you to capture screen elements, whether graphical or textual in nature.

New Snip Mode When the Snipping tool starts, it starts in New Snip mode. This mode is used for capturing—as the name implies—a new snip.

A capture is started by clicking the New Snip button on the toolbar. This will display the snipping window in the foreground, while rest of the screen is brightened to make it easier to determine which elements you are capturing.

Figure 13-11 shows the Snipping tool in New Snip mode. The buttons on the toolbar are, from left to right:

- ▼ **New** Starts a new capture
- **Options** Sets capture options
- ▲ **Cancel** Cancels the current capture

There are four snip modes that the Snipping tool utilizes. Table 13-4 explains these modes and how to perform the capture.

Snip Mode	Explanation	How It's Done
Freeform Snip	Captures an area you indicate by drawing around it	Tap and then drag around the area you want to capture
Window Snip	Captures an entire window	Move the pointer over the window you want to capture, and then tap the pen
Rectangular Snip	Captures an area you indicate by drawing a rectangle around it	Tap and then drag around the area you want to capture
Full-Screen Snip	Captures the full-screen display	The full screen is automatically captured when this mode is selected

Table 13-4. Snipping Tool Snip Modes

By default, the snip mode is set to rectangular. You can change the snip mode by tapping the Capture Mode button and selecting the mode you prefer.

Edit Mode Once a snip has been captured, the Snipping tool automatically changes to Edit mode. This is shown in Figure 13-12.

As with the New Snip mode, different buttons are displayed. From left to right, the buttons used in Edit mode are:

- ▼ **New Snip** Switches to New Snip mode. Tapping this button will erase the current snip
- **Save As** Snips can be saved as an HTML, JPG, PNG, or GIF file
- **Copy** Copies the snip to the Clipboard

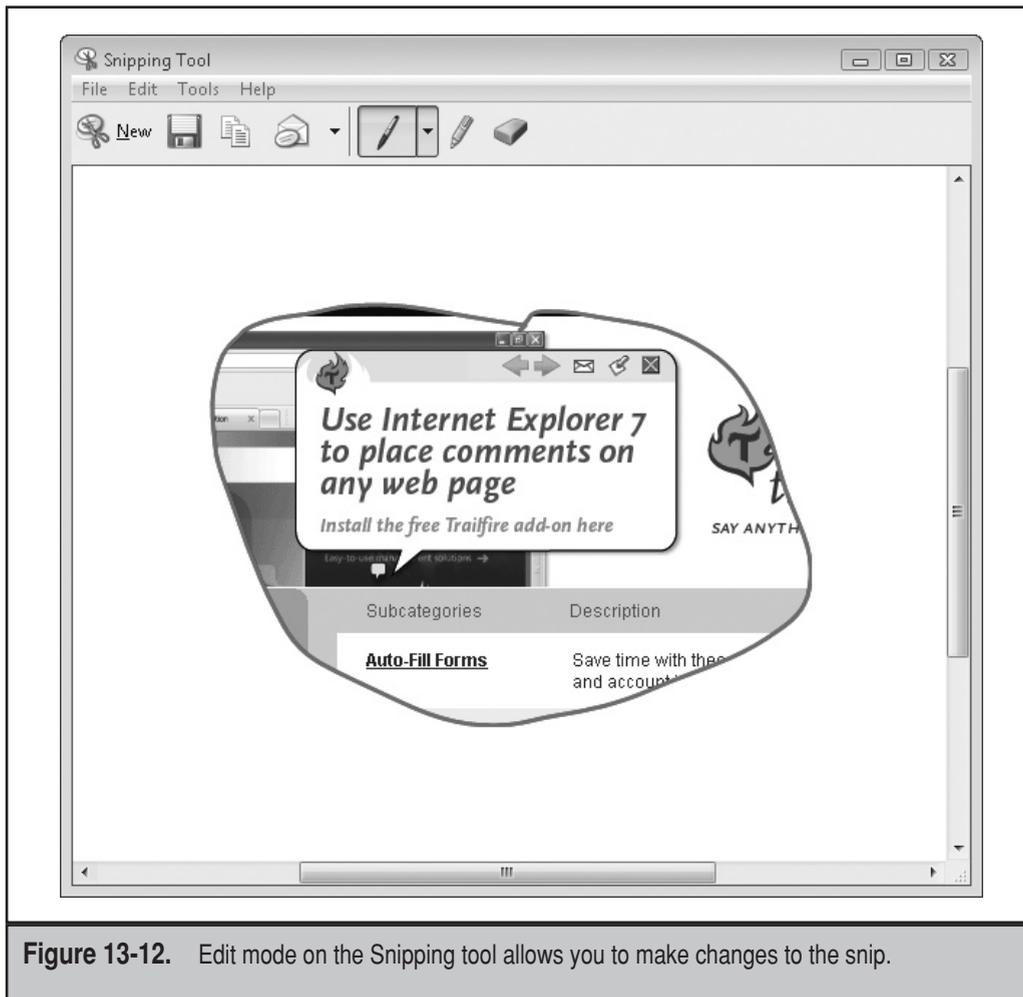


Figure 13-12. Edit mode on the Snipping tool allows you to make changes to the snip.

- **Send Snip** Sends the snip to someone as an e-mail attachment. Additional send options can be configured by clicking the Options button
- **Pen** Used to change the pen color and ink thickness
- **Highlighter** Used to highlight areas of the snip
- ▲ **Eraser** Used to erase pen ink and highlights

Sticky Notes

If you want to quickly jot a note, the Sticky Notes application gives you a pad of virtual sticky notes. You can use the Sticky Notes application for both written and voice memos.

NOTE While Sticky Notes are meant for the Tablet PC users out there, there's nothing that says you can't use it on your desktop and laptop PCs as well. It's a handy way to jot down notes.

To open the Sticky Notes feature:

1. Click Start and point to All Programs.
2. Click Accessories.
3. Click Tablet PC.
4. Select Sticky Notes.

The application is shown in Figure 13-13.

Writing a sticky note is easy—just start writing or click the Record button to record a voice memo. A new note can be created by clicking the New Note button. New notes will be added to your stack of sticky notes.

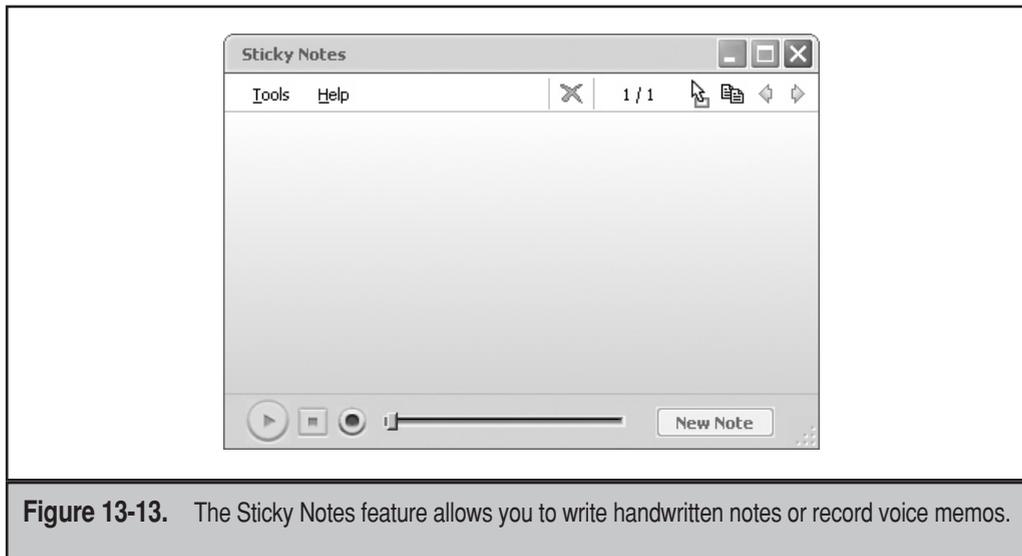


Figure 13-13. The Sticky Notes feature allows you to write handwritten notes or record voice memos.

You can navigate through your stack of sticky notes by using the Previous Note and Next Note buttons on the toolbar. To delete a sticky note, tap the red X on the toolbar, and then confirm its deletion.

Remember the scratch-out gestures from the earlier section? You can erase notes by writing a Z over them. As you lift the pen, the notes will be removed.

The idea of sticky notes is to have a quick tool that you can use to jot down notes. It's a bit cumbersome to have to navigate through the Start and All Programs menus to start it, however. If it is something you or your users intend to use regularly, it's a good idea to configure Sticky Notes for automatic startup. To do that, follow these steps:

1. Click Tools on the Sticky Note toolbar.
2. Click Options.
3. Select Open At Startup.

Windows Journal

Sticky Notes is a nice tool for jotting down a quick note. But if you need to write down more information, use the Windows Journal. Sticky Notes are like, well, a pad of sticky notes on your desk (we can't legally call them Post-it® Notes, but you know that's what we're talking about), while Windows Journal is like a notebook.

To start Windows Journal:

1. Click Start and point to All Programs.
2. Click Accessories.
3. Click Tablet PC.
4. Select Windows Journal. This is shown in Figure 13-14.

When Windows Journal starts, it looks like a notepad with lined paper. Beneath the scrollbar are three buttons:

- ▼ **Previous** Moves to the previous page.
- **Next** Moves to the next page.
- ▲ **New Page** Creates a new page. This is normally used at the end of a journal to add a new page.

Selecting Stationery The default setting for the stationery style in Windows Journal is lined notebook paper. This can be changed to narrow-ruled, wide-ruled, standard-ruled, or some other type of stationery. To change the stationery style:

1. In Windows Journal, on the Tools menu, click Options.
2. Click the Note Format tab.
3. In the Stationery section, click Default Page Setup.
4. Click the Style tab.

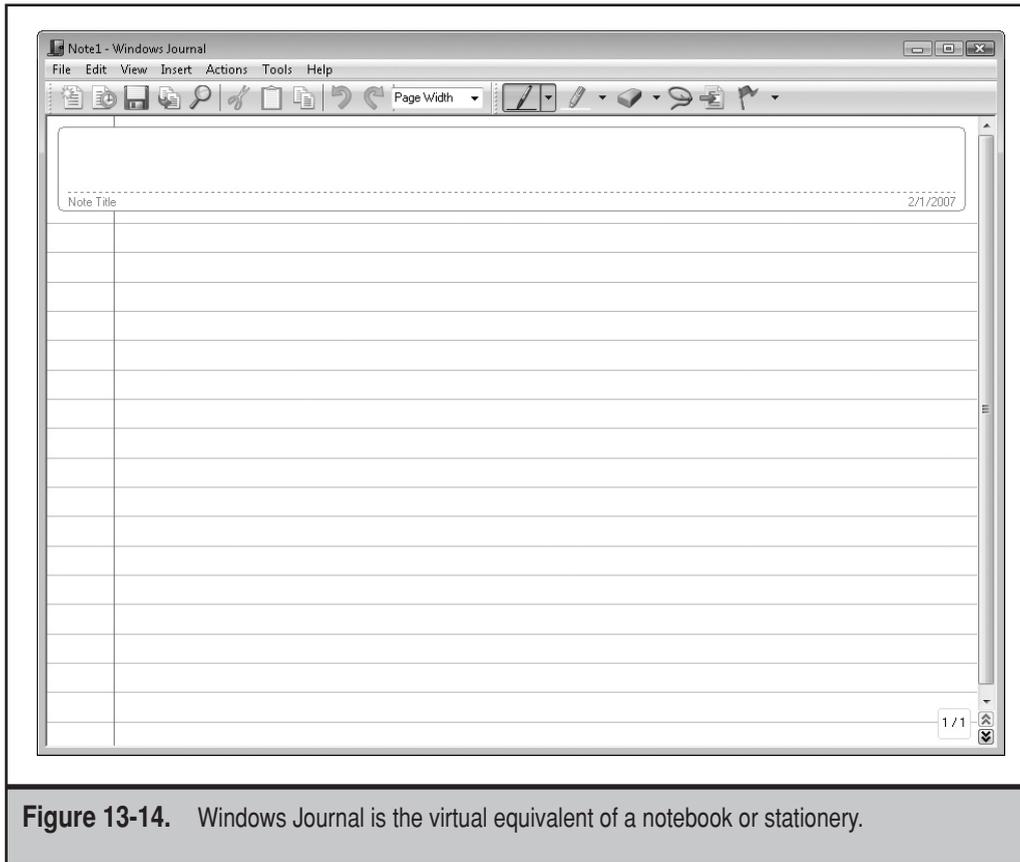


Figure 13-14. Windows Journal is the virtual equivalent of a notebook or stationery.

5. From the Line Style drop-down list, choose the style you want. Styles include:
 - Standard Ruled
 - Narrow Ruled
 - Wide Ruled
 - Large Grid
 - Small Grid
 - Blank
6. Click OK twice.

Handwriting Conversion If you've entered text into your Windows Journal that you want to copy and use in other Windows applications, it can be done by following these steps:

1. Press and hold the pen to the screen.
2. Drag the pen around the handwriting you want to convert and copy.

3. When you release the pen, a shortcut menu is displayed. Select Copy As Text. The Copy As Text dialog box appears. Windows Journal automatically converts the handwriting to text.
4. If there are words or characters that didn't convert correctly, tap the word or character that you want to correct.
5. Choose a replacement from the Alternative list.
6. Click Copy, and the text will be saved to the Clipboard.

SYNC CENTER

Mobile users face troubles other than whether their laptops and Tablet PCs will run out of juice. A big headache comes when a file is maintained on the office network, but is modified by the user when he or she is out in the field. Okay, that's sort of a minor headache, but what if the user has dozens of files that have been modified, but others that haven't? That's where Vista's Sync Center helps out.

Microsoft's first jab at trying to resolve file synchronization issues was with Windows 95. Windows 95 introduced us to a tool called Briefcase. What you'd do is drag files to the Briefcase icon, and then drag the icon to a floppy disc (remember those?). When you brought the floppy disc back, you'd double-click the desktop's Briefcase icon, and the synchronization process would begin.

Synchronization has continued to develop through further editions of Windows, as well as with occasional standalone updates. The evolution continues with Vista, which introduces Sync Center.

To open the Sync Center:

1. Click Start.
2. Click All Programs.
3. Click Sync Center.

When Sync Center starts, you see an interface like the one in Figure 13-15.

Getting Started

Before you can start using Sync Center, there are a couple of prerequisites. First, both computers must be running Vista. You cannot mix and match Windows operating systems. So if you have a desktop running Windows XP in the office and a laptop running Vista, unfortunately, the two won't be able to use Sync Center. Next, both computers must be connected to the network, and you must be able to log on to both of them.

NOTE For the sake of clarity, Sync Center isn't just used between a desktop computer and a laptop. It can keep files up to date on mobile devices (music players, digital cameras, mobile phones), folders on your network's server, and programs that explicitly support Sync Center.

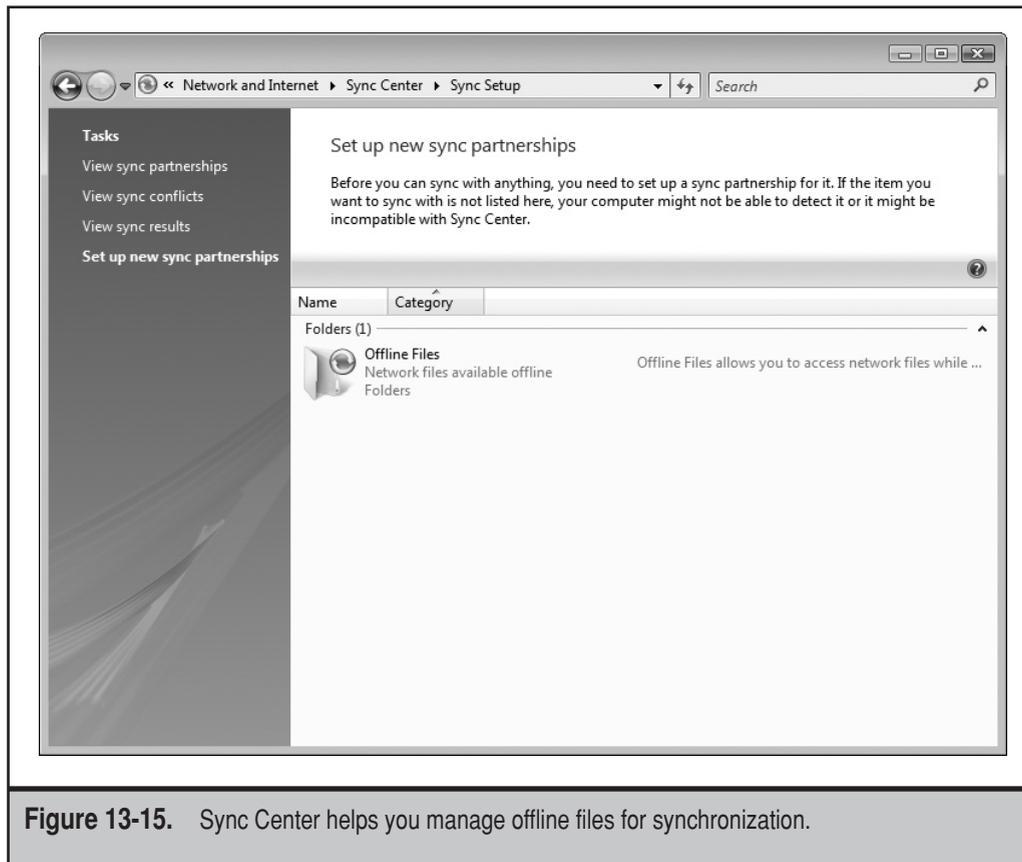


Figure 13-15. Sync Center helps you manage offline files for synchronization.

You probably don't need to sync every file on your computers, so take some time to look at the data you've got stored on the desktop, and decide which files need to go to the laptop and be synched and which ones should just remain on the desktop.

Sync Modes

Sync Center uses two types of synchronization:

- ▼ **One-way sync** In this scenario, files are copied from a primary location to a secondary location, but no files are ever copied back to the primary computer. For example, if you are transferring files to a music player, it's usually not necessary to transfer files back from the music player, so only new files would be copied to the player.
- ▲ **Two-way sync** In this scenario, files are compared on both computers, and changed copies are transferred both ways. You might use this on a network folder and your computer. In this case, Sync Center will transfer new copies of files between the network and your PC.

If you use two-way sync, that scenario poses another good reason to keep your synched files in as centralized a location as possible. There's going to be a lot going on back and forth, and with multiple folders, it's going to be a lot of work.

Synchronization

To synchronize your files, there are a couple of steps you must complete first. You must set up your files and folders as being "offline files." Next, you have to establish the partnerships between your computers, folders, and devices.

Offline Folders

In order to use Sync Center, you must indicate which files and folders you want to synchronize by marking them as *offline files*. This is accomplished by right-clicking the file or folder and selecting Always Available Offline from the Context menu.

Marking files as offline accomplishes a couple of things. First, it's necessary to use as part of Sync Center. Second, if you are working on a document and you cannot access the network, those offline files will be used instead. Then, once you are able to reconnect to the network, Sync Center can help you synchronize the files.

NOTE The Offline Files feature must be enabled. It is enabled by default, but if you are having problems, that's a good place to check. You can check to see whether you have the feature enabled or disabled by opening Control Panel and then clicking Network And Internet. Next, click Offline Files. On the General tab, make sure that Offline Files is enabled.

Establishing a Partnership

The next step is establishing what you will be synchronizing. This is called setting up a sync partnership. This is done between your computer and a mobile device, a folder on your network, or some other program that is compatible with Sync Center.

To establish a partnership:

1. Open Sync Center.
2. In the left pane of Sync Center, click Set Up New Sync Partnerships.
3. Click the name of the file or folder from the list of available sync partnerships.
4. On the toolbar, click Set Up.
5. Manage any settings and scheduling options you wish to make.
6. If you want to sync immediately, click View Sync Partnerships. Click your file or folder in the list of sync partnerships, and then click Sync.

You can also establish a sync schedule, which is helpful, because it allows Sync Center to automatically perform synchronization. This isn't necessarily helpful if you are synching a laptop or mobile device that isn't connected regularly. However, if you are synching files between a wired computer and the network, this is a handy feature.

Syncing

If you want to manually sync files—for instance, between your laptop and desktop PCs—you can either sync one partnership or all partnerships.

To sync an individual partnership:

1. Open Sync Center.
2. Click the sync partnership you want to sync with, and on the toolbar click Sync.

To sync all your partnerships:

1. Open Sync Center.
2. On the toolbar, click Sync All.

Conflicts

What happens if a file has been changed on both the laptop and the PC? Which version of the file will Sync Center keep? If both files have been changed, then you will be presented with a *sync conflict*. In such a case, synchronization stops, and you'll see a window asking you which file is the master file. That file will be kept, and the other file will be updated.

If conflicts have arisen during scheduled syncs, you can review those issues at a later time by following these steps:

1. Open Sync Center.
2. In the left pane, click View Sync Conflicts to see any sync conflicts.

You can also see if you have sync conflicts via an icon on the taskbar. When a sync conflict is present, the Sync Center icon will have a little yellow warning sign on it. If you see this icon, you can right-click it to open Sync Center and proceed from there.

If a conflict arises, you will see a Resolve button that will take you through the process of fixing the conflict. When you click Resolve, a new Resolve Conflict dialog box appears that gives you options to fix the problem, like deleting both copies of the file or selecting which copy should be the master version.

Syncing Devices

Sync Center can also synchronize files with your personal digital assistant (PDA), MP3 player, cellular phone, and any other James Bondesque gadget you may have. To use Sync Center with these and other gadgets:

1. Turn on the device, and plug it into your computer. You can also connect wirelessly, but ensure that a wireless connection is established between your device and computer.
2. Open Sync Center.
3. In the left pane of Sync Center, click Set Up New Sync Partnerships.

4. Click the name of the device from the list of available sync partnerships.
5. On the toolbar, click Set Up.
6. Manage any settings and scheduling options you wish to make.
7. If you want to sync immediately, click View Sync Partnerships. Click your device in the list of sync partnerships, and then click Sync.

MANAGING MOBILE USERS

Laptop and Tablet PCs are no different from other computers. If they need to be on your network, they need to be able to follow your rules. In this final section, we'll examine how you can manage your mobile users with as little fuss as possible.

Chances are, your mobile users will take their laptops and Tablet PCs on the road and then hook them up to another network, whether a network at a branch office or a client's network. In order for the computer to work properly on all these different networks, it's necessary to configure different options for computer management. But different environments require different addressing schemes. For example, if they are connecting to another corporate network, chances are they need to get their IP address from a DHCP server. However, if they are taking their PCs home or to a small branch office, maybe static IP addressing is necessary. We'll show you how to configure those properties on your mobile computers.

Finally, we'll revisit power management and show you how, using Group Policy, you can manage your road warriors' power plans.

DHCP

Dynamic Host Configuration Protocol (DHCP) can help you manage the IP addresses of thousands of computers. Rather than having a notebook with everybody's IP address jotted down, a DHCP server can just automatically dole out an IP address as needed. Once you enter some basic information, your mobile computer will grab its own IP address automatically.

To configure dynamic IP addressing with your mobile computer:

1. Click Start.
2. Click Control Panel.
3. Under the Network And Internet heading, click View Network Status And Tasks.
4. In the left pane in Network And Sharing Center, click Manage Network Connections.
5. A list of all network connections configured for your computer is displayed. Right-click the connection you want to configure, and then select Properties from the Context menu.
6. Double-click Internet Protocol Version 4 (TCP/IPv4). The Internet Protocol Version 4 (TCP/IPv4) Properties dialog box appears, as shown in Figure 13-16.

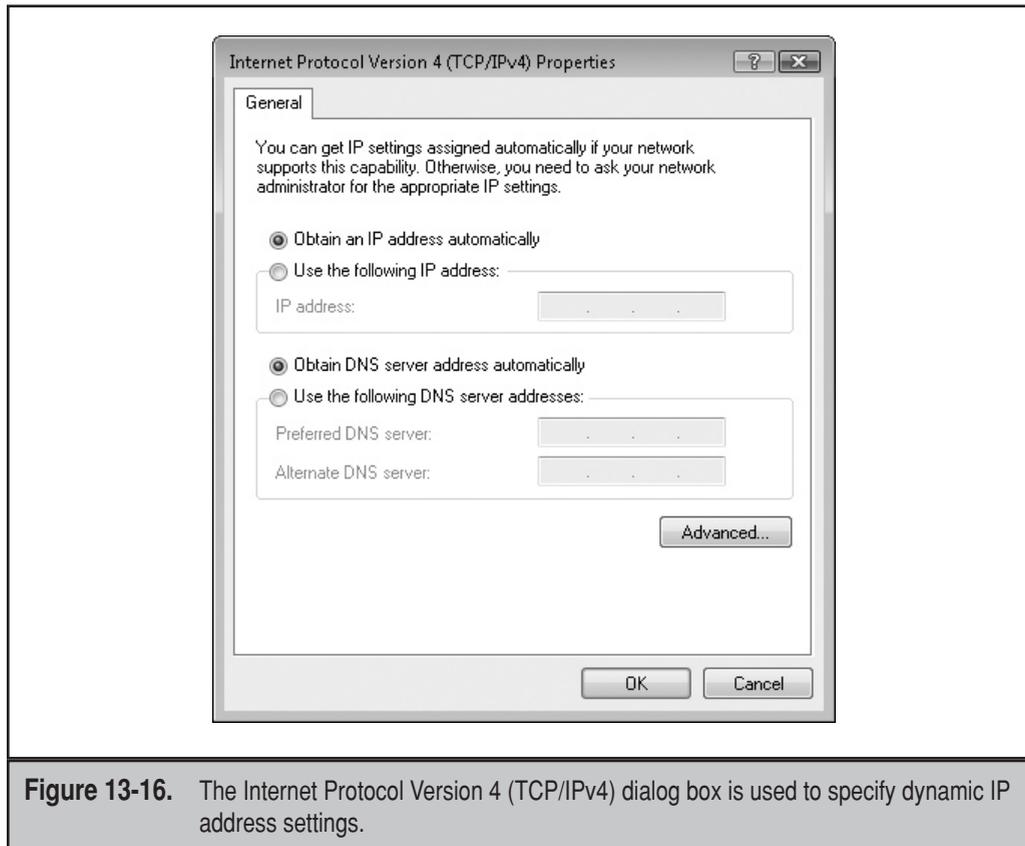


Figure 13-16. The Internet Protocol Version 4 (TCP/IPv4) dialog box is used to specify dynamic IP address settings.

7. Select Obtain An IP Address Automatically. If you need to use a static address for a DNS server, select Use The Following DNS Server Addresses, and then type the preferred and alternate DNS server addresses.
8. Click OK.

If your organization uses Internet Protocol version 6 (IPv6), follow these steps:

1. Double-click Internet Protocol Version 6 (TCP/IPv6) to open its Properties dialog box.
2. Select Obtain An IP Address Automatically. If you need to use a static address for a DNS server, select Use The Following DNS Server Addresses, and then type the preferred and alternate DNS server addresses.
3. If needed, configure alternate private IP addressing and Windows Internet Naming Service (WINS).

Alternate Private IP Addresses

If your mobile computer is trying to connect to a network but cannot find a DHCP server, it can still connect using an automatic private IP address (APIPA).

NOTE APIPA is only used with IPv4, not IPv6.

APIPA addresses are in the range from 169.254.0.1 to 169.254.255.254, with a subnet mask of 255.255.0.0. Since the computer using APIPA isn't finding a default gateway, DNS, or WINS servers, the computer is on its own private network.

If you know that your mobile computer will be venturing into a network without a DHCP server—like a home network—you can configure a static IP address when no DHCP server is available.

NOTE It's time to turn the tables on your users. Before you configure this setting, you need to know what their home networking settings are, including IP address, gateway, and Internet service provider (ISP) Domain Name System (DNS) server addresses.

To configure an alternate private IP address:

1. Click Start.
2. Click Control Panel.
3. Under the Network And Internet heading, click View Network Status And Tasks.
4. In the left pane of Network Center, click Manage Network Connections.
5. A list of all network connections configured for your computer is displayed. Right-click the connection you want to configure, and then select Properties from the Context menu.
6. Double-click Internet Protocol Version 4 (TCP/IPv4). The Internet Protocol Version 4 (TCP/IPv4) Properties dialog box appears.
7. Click the Alternate Configuration tab.
8. On the Alternate Configuration tab, select the User Configured option.
9. In the IP Address field, enter the IP address you want to use.

NOTE A friendly reminder: The IP address you use should be a private IP address and not used anywhere else in the network.

10. Vista should insert a default value into the Subnet Mask field. If the network doesn't use subnets, the default value may work fine. On the other hand, if it does use subnets, you'll need to enter the correct subnet mask.

11. Enter the address for a network's default gateway. You might not need this entry if the computer does not need to access the Internet.
12. Enter a preferred and alternate DNS server address in the fields provided.
13. You may or may not need to enter a WINS address. This is used for backward compatibility with earlier versions of Windows. If WINS is needed, go ahead and enter a preferred and alternate WINS server.
14. Click OK twice.
15. Click Close.

Managing Power Plans with Group Policy

You don't need to leave it to your users to be custodians of their own power plans, and power plans don't just have to apply to mobile users. You can make power management a part of your regular Group Policy settings and establish them across your entire organization.

While it may sound a little iron-fisted to control your organization's power plans, there is some good, solid, fiscal responsibility behind power governance. If you want to save some money, power plans is one way to do that. Think about this: The average desktop PC with a flat-screen monitor consumes between \$100 and \$150 in electricity each year. If your organization has hundreds of PCs, you could save thousands of dollars each year by implementing a power plan that will turn off the display and put the computers into Sleep mode when they're not being used.

A word of warning, however: The stricter you are with your power plans, the greater the performance impact will be felt by your users. For instance, if you set the power plan to put the computers to sleep after 15 minutes of inactivity, users will wind up being less productive, because now they have to wait for their computers to wake up. There's a balance that needs to be struck.

Like so many other areas of Group Policy, there are scores of minute settings that you can tinker with for power management. You can do such things as define a power plan to be distributed across your network. You can name a power plan. You can reset power plans to default settings. You can customize power plans before you conduct a system-wide Vista installation. There's so much you can do with Vista's power plans with Group Policy, we'll let you poke around Group Policy for yourself and see what you can do that might be advantageous for your organization. But to get the ball rolling, let's look at how to perform a basic power plan rollout using Group Policy.

The power management policies in Group Policy are located in the Group Policy Object Editor. To find the policies, navigate to Computer Configuration | Administrative Templates | System | Power Management.

NOTE There are no power management policies under User Configuration.

Establishing a Power Plan

The quickest and easiest way to establish power management settings is to use one of the three default power plans included with Vista. Once you establish this policy, users cannot change their power plans. To distribute a system-wide power plan:

1. In the Group Policy Object Editor, choose Properties for the Select An Active Power Plan policy. The Select An Active Power Plan Properties dialog box is shown in Figure 13-17.
2. Enable the Active Power Plan drop-down list by clicking Enabled.
3. Select one of the default power plans in Windows Vista:
 - Automatic
 - High Performance
 - Power Saver
4. Click OK to save the policy setting value.
5. Use Group Policy Management to deploy the edited Group Policy object (GPO) to one or more systems.

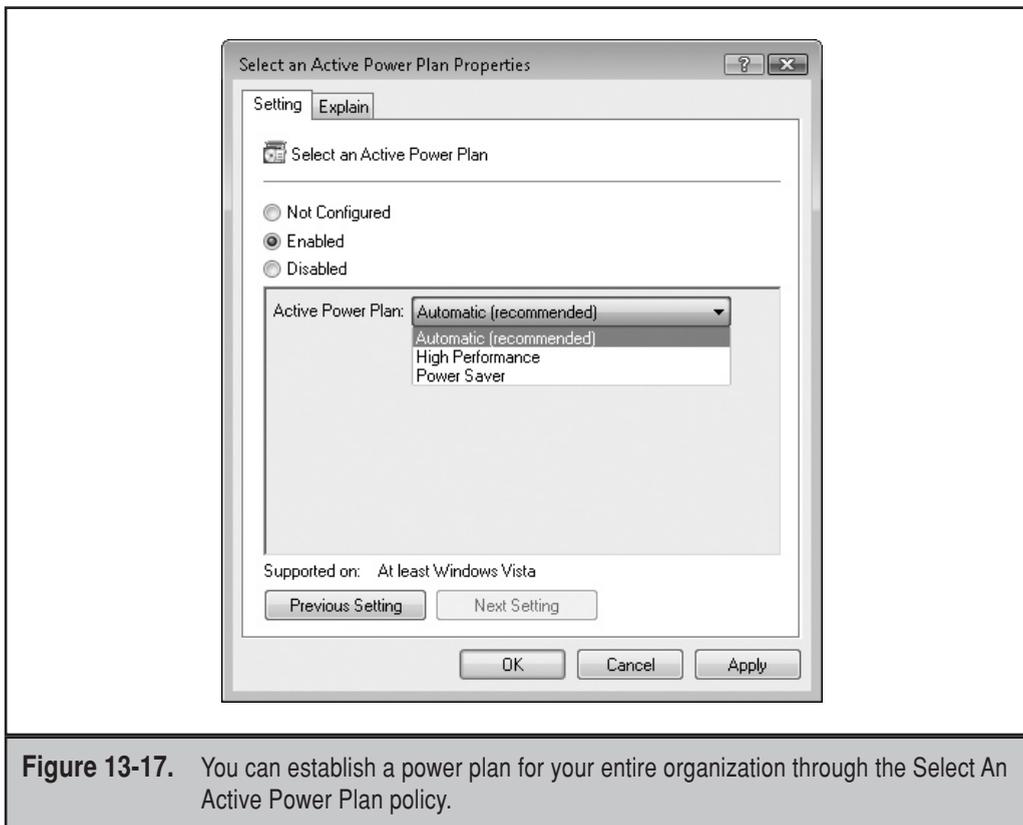


Figure 13-17. You can establish a power plan for your entire organization through the Select An Active Power Plan policy.

This is a quick and easy way to distribute a power plan to computers in your organization. But it's not the only way. If you have customized settings you want to use, Group Policy can help with that, too.

Turning Off the Display

Once you've opened Group Policy and navigated to the power management section, let's talk about turning off the display after a period of inactivity. Follow these steps:

1. Choose Properties for the Turn Off The Display (Plugged In) policy. Windows Vista displays a dialog box like the one in Figure 13-18.

NOTE In this example, we're showing how to turn off a monitor that is plugged into alternating current (AC) power. While this chapter is specifically aimed at mobile devices, we wanted to show that power management and Group Policy can be used not only for laptops, but also for desktop PCs.

2. Click Enabled and enter a display idle timeout value in the Turn Off The Display (Seconds) box. This value is represented in seconds. If you enter 0, then the display will never turn off. In this example, 600 seconds means 10 minutes.

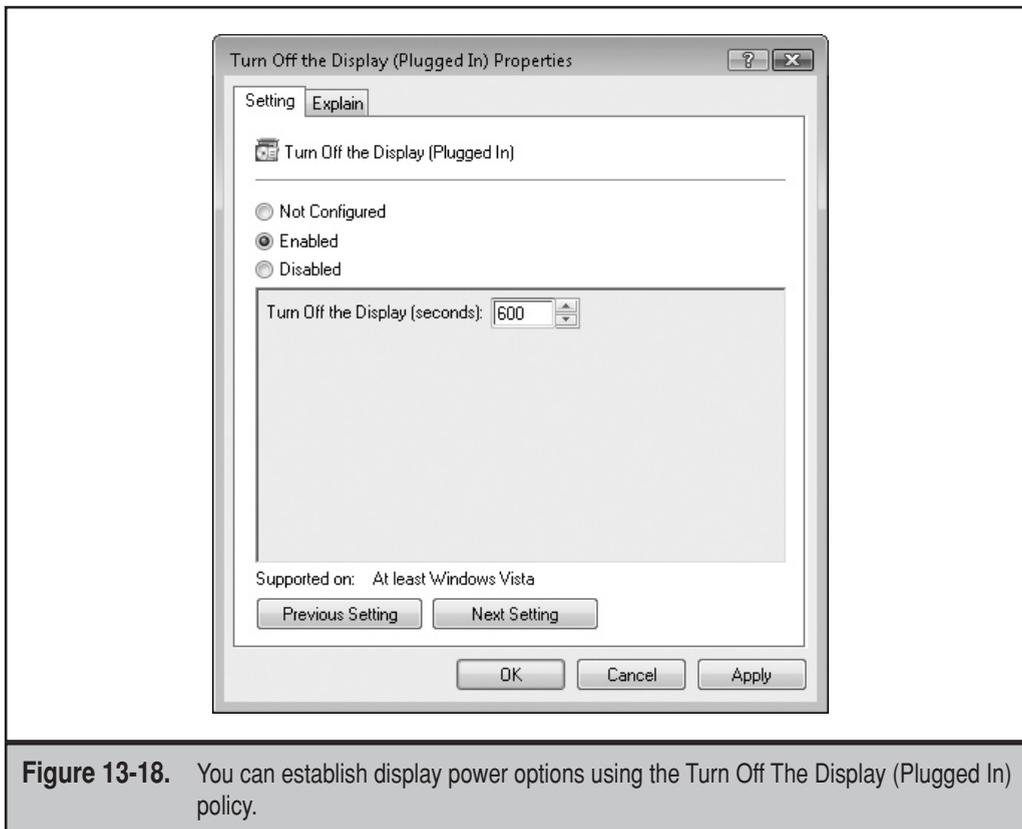


Figure 13-18. You can establish display power options using the Turn Off The Display (Plugged In) policy.

3. Click OK to save the policy setting value.
4. Use Group Policy Management to deploy the edited GPO to one or more systems.

You can check to ensure that this policy has been sent to client computers by viewing the setting in the Power Options Control Panel item. Figure 13-19 shows that the display will turn off after 10 minutes. The drop-down box is dimmed, so the user cannot change this setting.

Again, this might seem a little harsh that the user can't manage this setting, but Microsoft has included a message indicating that some settings are managed by the administrator and cannot be changed.

Setting the Sleep Mode

The next step is to determine at what point your organization's PCs will just go into Sleep mode after a period of inactivity. To establish that policy:

1. Choose Properties for the Specify The System Sleep Timeout (Plugged In) policy. The resulting dialog box is shown in Figure 13-20.

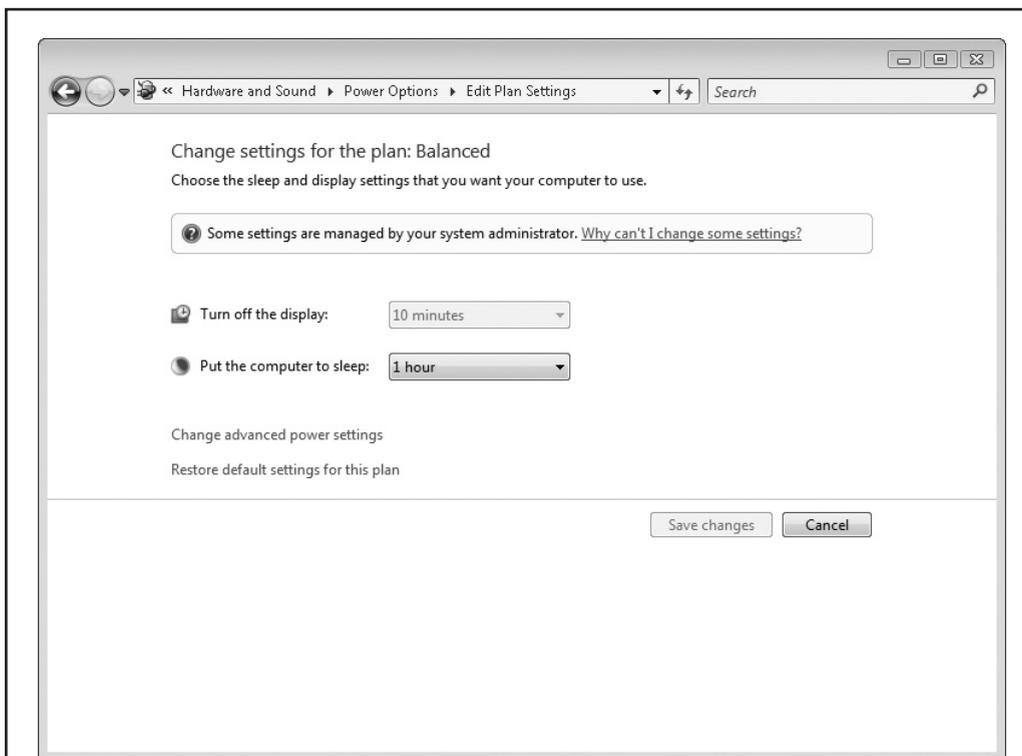


Figure 13-19. The display on this computer will turn off after 10 minutes of inactivity. It is a mandatory policy, so the user cannot change the setting.

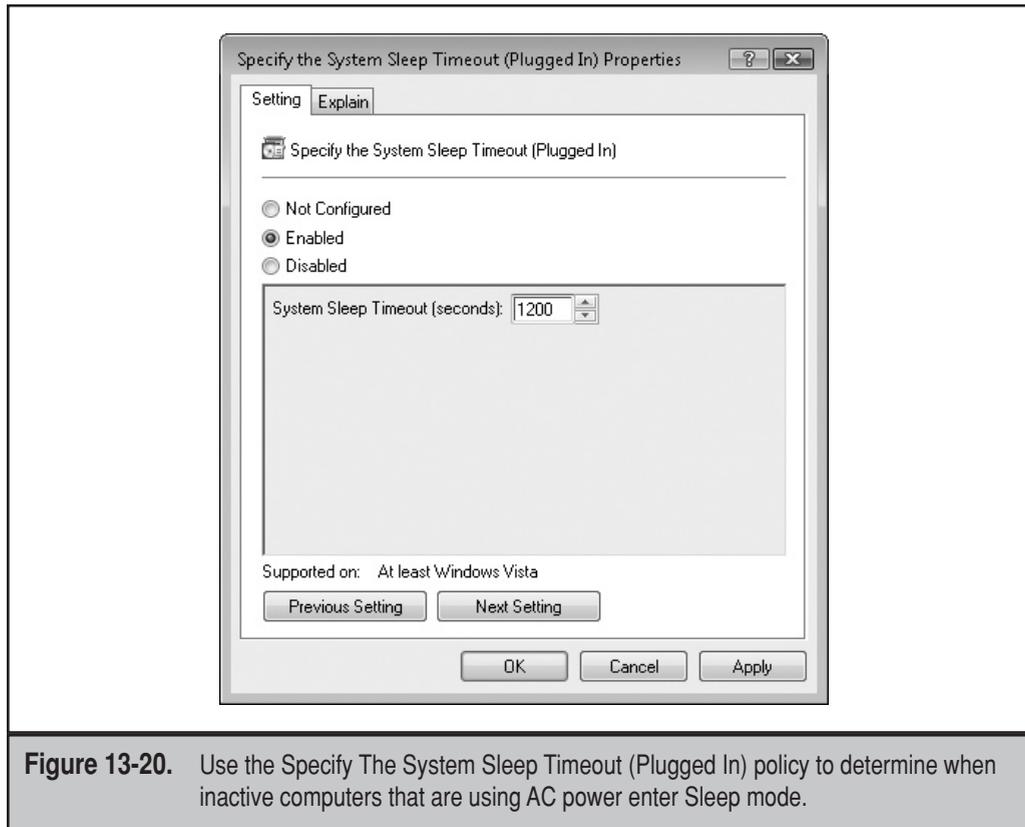


Figure 13-20. Use the Specify The System Sleep Timeout (Plugged In) policy to determine when inactive computers that are using AC power enter Sleep mode.

2. Click Enabled and enter the sleep idle timeout value in the System Sleep Timeout (Seconds) box. This value is represented in seconds. If you enter 0, then the display will never turn off. In this example, 1200 seconds means 20 minutes.
3. Click OK to save the policy setting value.
4. Use Group Policy Management to deploy the edited GPO to one or more systems.

Mobile computers are the workhorses of road warriors, as well as of workers who need some mobility around the office. Vista has included a number of useful tools to meet this need, in addition to improving the way mobile devices were used in the past.