

# Using Windows Operating Systems

It's important for any PC technician to be able to navigate through the Windows operating systems and access the different tools. You should have a clear understanding of how to use tools like the Task Manager, applets within the Control Panel, and the tools within the Administrative Tools group. You'll learn about all of these tools in this chapter, including some basics about navigating Windows.

## Exam 220-802 objectives in this chapter:

- 1.4 Given a scenario, use appropriate operating system features and tools.
  - Administrative
    - Computer management
    - Performance monitor
    - Services
    - Task scheduler
    - Component services
    - Data sources
  - Task Manager
    - Applications
    - Processes
    - Performance
    - Networking
    - Users
  - Run line utilities
    - MMC

- 1.5 Given a scenario, use Control Panel utilities (the items are organized by “classic view/large icons” in Windows).
  - Common to all Microsoft Operating Systems
    - Internet options
      - Connections
      - Security
      - General
      - Privacy
      - Programs
      - Advanced
  - Folder options
    - Sharing
    - View hidden files
    - Hide extensions
    - Layout
  - Unique to Windows XP
    - Add/remove programs
    - Network connections
    - Printers and faxes
    - Automatic updates
    - Network setup wizard
  - Unique to Vista
    - Tablet PC settings
    - Pen and input devices
    - Offline files
    - Problem reports and solutions
    - Printers
  - Unique to Windows 7
    - HomeGroup
    - Action center
    - Remote applications and desktop applications
    - Troubleshooting

### **REAL WORLD FIRST ENDING UNRESPONSIVE APPLICATIONS**

A common problem you're likely to run across as a PC technician is an unresponsive application. It can slow down the entire system and sometimes lock it up completely. However, if you know how, you can quickly identify the misbehaving app and terminate it instead of it rebooting the system.

For example, I recently helped a user whose system apparently locked up. I was able to press three keys (Ctrl+Shift+Esc) and start Task Manager. I then used the Task Manager to identify the problem application and terminate it. The user's system quickly became operational again, and I was also able to let the user know what application was causing the problem so that they could investigate the issue further.

That's it. I pressed three keys, clicked the mouse a couple of times, and the system was back. The user thought I was a hero, but anyone can do the same thing—including you. By the end of this chapter, you'll know how.

## **Windows Basics**

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Most people understand how to use and get around within an operating system but don't always understand the terminology. As a PC technician, you should be familiar with common terms and actions.

### **Mouse Actions**

Some common actions used with a mouse include the following:

- **Single click.** This indicates a single click with the left button on the mouse. It selects an item.
- **Double-click.** This is done with two quick clicks of the left button. It normally opens an item.
- **Right-click.** Many items include a mini-menu of items that you can view by right-clicking an item. This is also known as a context menu.

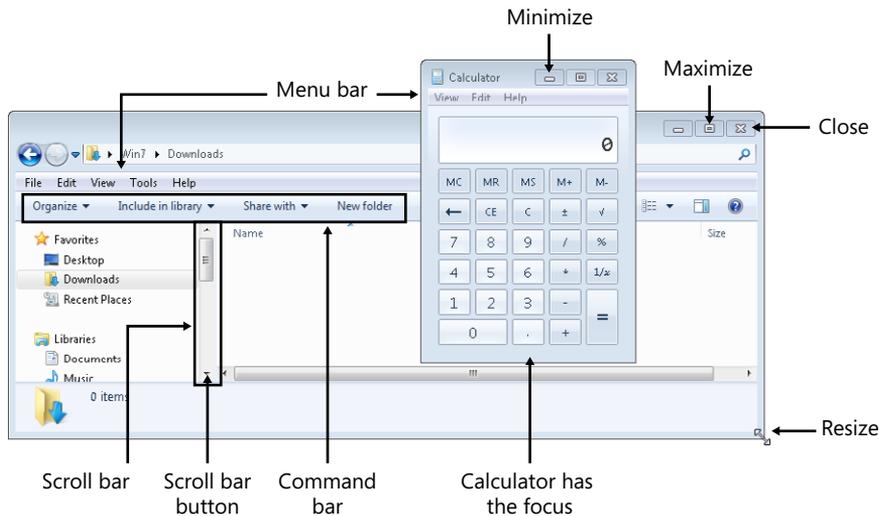
#### **NOTE RIGHT-CLICK AND ALT-CLICK**

Left-handed people often reconfigure their mouse so that the buttons are reversed. In this case, a right-click is actually accomplished by clicking the left button. You might see right-click referred to as alt-click so that it applies in both situations. The mouse button can be changed by using the Mouse applet within the Control Panel.

- **Dragging.** Use this to move items. Press and hold the button to select the item, and then move the mouse. When you've reached the new location, release the mouse button.
- **Hover.** If you move your mouse over an item but do not click, it is called hovering. Many applications include tooltips that appear when you hover over an item.

## Windows Actions

Windows applications are displayed in a window, and you can manipulate these windows with common methods. Figure 13-1 shows the Windows Calculator open on top of Windows Explorer, with several common elements labeled.



**FIGURE 13-1** Windows Explorer and Windows Calculator.

- **Minimize.** Click this button and the window is minimized to the taskbar. If you select it on the taskbar, it returns to the previous size.
- **Maximize.** This button resizes the window to full screen.
- **Close.** Clicking the X closes the application. If you have unsaved work, many applications will prompt you to save it before it closes.
- **Menu bar.** Most windows include drop-down menus. Select any menu item, and you'll see a list of choices.
- **Command bar.** Some applications include a dynamic command bar. When you select an item, you'll see common commands associated with that item that you can select.
- **Scroll bar.** When there are additional items for a screen, a scroll bar appears. You can drag the scroll bar, or you can click within the empty space of the scroll bar to move it.

- **Scroll bar button.** You can click the small arrow to move the scroll bar down just a little.
- **Resize window.** Many windows allow you to resize them by hovering over an edge or corner. When the arrows appear, click and hold the mouse button, and then move the mouse to resize the window. Release the mouse to set the change.
- **Focus.** You can open multiple windows at the same time. The top window has the focus and responds to commands, but the bottom window is still open and running. You can select the bottom window to change the focus to that window. In Figure 13-1, the calculator is the top window and has the focus.

## Libraries

Windows 7 includes libraries, which provide a method of organizing files and folders stored in different locations. The default libraries are Documents, Music, Pictures, and Videos. Libraries don't hold any data but instead are pointers to the actual location.

For example, you might have MP3 files stored in C:\Rock and C:\Pop folders on your system. You could add these folders to the Music library so that you can access them. A library can include pointers to multiple folders on a local hard drive, an external hard drive, and folders on a network drive. When the user clicks on a library folder, it shows all the folders, no matter where they are located.



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### **EXAM TIP**

Libraries are included in Windows 7 but not in Windows XP or Windows Vista.

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## Task Manager



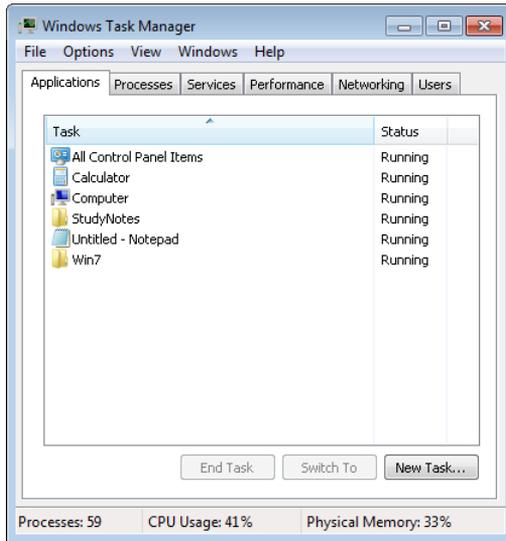
A common tool that you should master early as a PC technician is the *Task Manager*. You can use it to easily view activity on the computer and close misbehaving programs.

## Starting Task Manager

You can start Task Manager using one of the following methods:

- Press Ctrl+Shift+Esc.
- Press Ctrl+Alt+Delete and select Start Task Manager.
- Right-click on the Windows taskbar (at the bottom of the screen), and select Task Manager in Windows XP and Windows Vista, or select Start Task Manager in Windows 7.

After starting it, you'll see a display similar to Figure 13-2. Notice that it has multiple tabs that you can select to get different views. In the figure, it's open to the Applications tab.



**FIGURE 13-2** Task Manager with the Applications tab selected.

## Applications

The Applications tab shows all the applications that are running, along with their current status. Occasionally, you might run across an application that is not responding to any key presses or mouse clicks. If you look here, the status might be “Not Responding.”

A simple way to kill the application is to select it and click End Task. If the application doesn’t respond normally, Task Manager will display a dialog box and ask if you want to proceed.

You don’t need it very often, but you can click the New Task button and enter a command to start another application. This is similar to entering a command from the command prompt. For example, if you want to start the System Configuration tool, you can click New Task, type in **msconfig**, and click OK. Try it.



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### **EXAM TIP**

If an application locks up, use Task Manager to terminate it. If the application is interfering with the operating system, start Task Manager by pressing Ctrl+Shift+Esc.

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## Processes

The Processes tab identifies all of the running processes within a system and shows the resources currently being used. The most common use of this tab is to determine what process is consuming the most CPU processing time, or the most memory.

## NOTE PROCESSES

A process can be either an application or a service. Both are software, but there are differences. Applications are started by users, and services are started by the operating system. You'll see applications visible on the desktop, but services are not normally visible.

Figure 13-3 shows the Task Manager open with the Processes tab selected. Normally, you can see only processes associated with your account, but if you select Show Processes From All Users, it shows all the processes on the system.

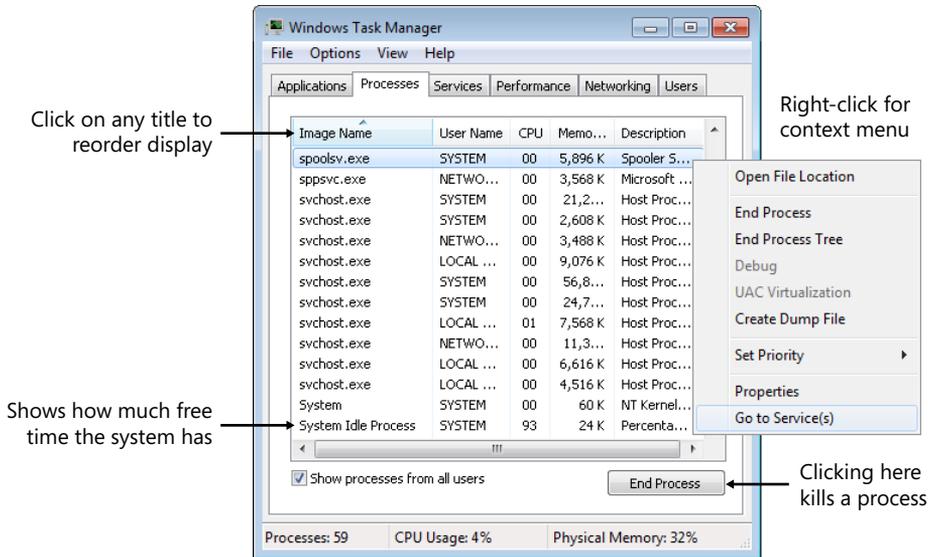


FIGURE 13-3 Task Manager with the Processes tab selected.

You can change the display order by clicking the title of any of the columns. Currently, it's showing the processes in ascending order based on their name. If you want to see which one is using the most CPU time, click the CPU column title.

The System Idle Process gives you an indication of how much time the CPU is not doing anything other than waiting for a command. In Figure 13-3, it's currently idle 93 percent of the time. In contrast, if a process has stopped responding, it might be consuming all of the CPU's time. You can select it and then click End Process.

## IMPORTANT BE CAREFUL WHEN KILLING PROCESSES

If a process is needed by the system, killing it can reduce the system's stability. It could fail or reboot without warning.

If you right-click over any process, you'll see the context menu. A useful tool here is to select Go To Service(s). Occasionally, a process is running and you're not sure what it is. Sometimes looking at the related service helps you identify it.

You can also change the priority of a service from this menu. For example, if you have a process running in the background and you want to minimize the impact it can have on work you're doing, you can change the priority to Below Normal or Low.

### **REAL WORLD YOU CANNOT END THE SYSTEM IDLE PROCESS**

You can't kill the System Idle Process, but that doesn't mean that people won't try. I remember helping a user who was convinced that the System Idle Process was causing problems. The user said that the system was slow and that the System Idle Process was consuming over 90 percent of the CPU's time. The user told me, "If only I could end this process, my system will be faster, but it won't let me."

I explained that this process is simply recording how much time the CPU is idle, or not doing anything. When it's high, it indicates that the CPU isn't being tasked.

This brings up an important point. Often, your job as a PC technician won't require you to fix anything. Instead, you can simply share your knowledge.

## Services

The Services tab shows a list of all the services in the system, a description, and the current state such as Stopped or Running. Figure 13-4 shows the Services tab with the print spooler selected and the right-click menu showing. The Services tab is not available in Windows XP, but it is available in Windows Vista and Windows 7.

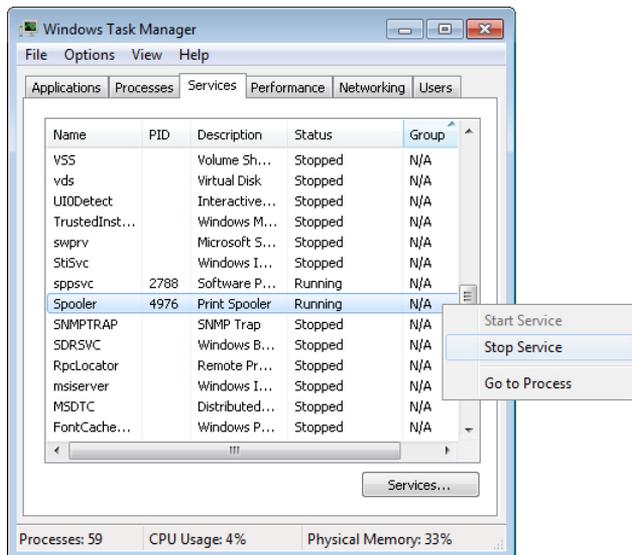


FIGURE 13-4 Task Manager with the Services tab selected.



## EXAM TIP

Chapter 7, “Exploring Printers,” covers printers and the spooler service. If the print queue backs up, it might be because the spooler service has failed. You can stop and restart any service by using Task Manager, or you can use the Services applet to manipulate the services.

## Performance

The Performance tab gives you a quick visual indication of the computer’s performance. Figure 13-5 shows the display on a Windows 7 system, and this tab includes the following listed items.

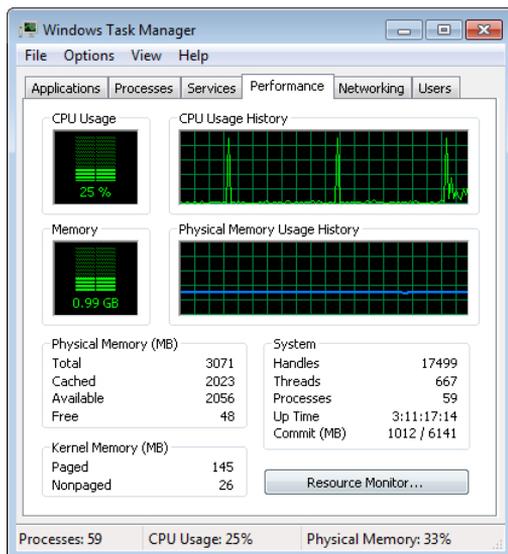


FIGURE 13-5 Task Manager with the Performance tab selected.

- **CPU Usage and CPU Usage History.** This shows the current usage as a percentage and the usage over the last 60 seconds.
- **Physical Memory and Physical Memory History.** This identifies how much memory is being used now and recently.
- **Physical Memory.** This shows the total RAM (3,071 MB), and the available RAM (2,056 MB). When the Available memory is close to zero, it indicates that the system needs more RAM.
- **Kernel Memory.** This shows how much RAM the operating system is using.

- **System.** A key piece of information here is the uptime reported in days, hours, minutes, and seconds.
- **Resource Monitor.** If you click this button, it starts another tool that you can use to get more information. The Resource Monitor is not available in Windows XP.

## Networking

If your computer is connected to a network, you can use the Networking tab to show how much bandwidth your network interface card (NIC) is using. It includes a graph to show how much data is being transferred and indicates the Network Utilization as a percentage.

## Users

The last tab on the Task Manager is the Users tab. This identifies all the users who are logged on to the system. Normally, you'll see only your account listed on this tab, but there are two ways that other users show up:

- **Fast User Switching.** This feature allows more than one user to be logged on to the system. If another user is logged on, the user shows up on the Users tab.
- **Remote Desktop Connections.** Remote desktop services allow users to connect into a system remotely. Users connected via remote desktop services show up on the Users tab.

### **MORE INFO** CHAPTER 20, "UNDERSTANDING PROTOCOLS"

Remote Desktop Connections and the Remote Desktop Protocol (RDP) are covered in more detail in Chapter 20.

If additional users show up, you can use this tab to send the user a message by right-clicking the user and selecting Send Message. You can also select the user and click the Disconnect or Logoff buttons to disconnect or log off the user.



### **Quick Check**

1. What tool can you use to end an application that won't respond?
2. What would you use to identify what is consuming a processor's time?

### **Quick Check Answers**

1. Task Manager.
2. Task Manager, Processes tab.

# Microsoft Management Console



The *Microsoft Management Console (MMC)* is a blank console used by many configuration tools. Some tools come preconfigured within an MMC, but you can also add snap-ins to an MMC to create your own tool.

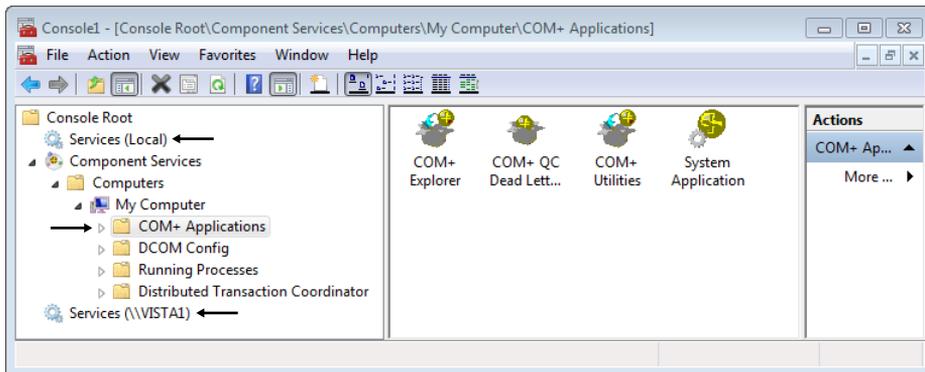
For example, you can use the following steps on a Windows 7 computer to create an MMC for your own use:

1. Click Start, and type **MMC** in the Search Programs And Files text box.
2. Select MMC. If prompted by User Account Control, click Yes to continue. You'll have a blank MMC open at this point.
3. Click the File menu, and select Add/Remove Snap-In.
4. Select Services and click Add. Your Local Computer will be selected. You can also add Services from other computers in your network by selecting another Computer and entering its name. Click Finish.

## **NOTE ADMINISTRATIVE PRIVILEGES**

You can add the snap-in for other computers, but you will not be able to use it if you do not have administrative privileges on the remote computer.

5. Select Component Services and click Add. Click OK. If you expand the Component Services and select COM+ Applications, your display will look similar to the following graphic.



The first Services snap-in is labeled Local, indicating that it is the local computer. The second Services snap-in is labeled Vista1, indicating that it is a remote computer named Vista1. The center pane shows some component services that are running on this system.

6. Click File, Save As. Select Desktop.
7. Type in **MyConsole** as the name, and click Save. You can now start this console from the desktop without reconfiguring it.



#### **EXAM TIP**

You can use multiple methods to access any of these tools. For example, many are accessible via the Control Panel in the Administrative Tools category.

Many snap-ins can be started directly without having to be added as snap-ins in an MMC. On Windows XP, you can click Start, Run, and type in the command. On Windows Vista and Windows 7, you can click Start and type the command into the text box. Table 13-1 shows the command for some common snap-ins. With few exceptions, you need to include the .msc extension when using these commands.

**TABLE 13-1** Commands to Start Common Snap-Ins

Command	Snap-in name	Description
taskschd.msc	Task Scheduler	Use to schedule tasks. This command does not work on Windows XP.
eventvwr.msc	Event Viewer	Use to view logs.
perfmon.msc	Performance	Use to monitor system performance.
services.msc	Services	View, start, stop, and manipulate services.
secpol.msc	Local Security Policy	View and manipulate security settings for local system.
gpedit.msc	Group Policy Editor	View and manipulate local Group Policy settings.
wf.msc	Advanced Windows Firewall	Use to manipulate advanced settings for firewall.

## Control Panel

The *Control Panel* is a central location for many common tools that you'll use to view and manipulate computer settings. Tools within the Control Panel are mini-programs and are commonly called applets.



#### **EXAM TIP**

As you go through this chapter, I strongly encourage you to start these applets and look at them. If there are steps, go through them more than once. You can follow the steps explicitly and then use them as a guide to explore the applets on your own. Anytime you want to get more information, press F1 while an applet is open and the Help page will open.

## Views

You can start the Control Panel in any of the Windows Systems by clicking Start and selecting Control Panel. By default, Control Panel applets are displayed in a Category view. That is, the applets are grouped together in categories instead of listed individually. You can modify the view so that the applets are listed individually.

On Windows XP and Windows Vista, choose the Classic View to list the applets individually. On Windows 7, choose Large Icons or Small Icons to list them individually.

Figure 13-6 shows the Control Panel in Windows XP on the left and in Windows 7 on the right. On Windows XP, the view is set to Classic View. You can click Switch To Category View to switch back. On Windows 7, the view is set to Large Icons.



**FIGURE 13-6** Selecting a View in Control Panel.

Windows Vista and Windows 7 Control Panels include a useful Search feature (in the upper-right corner in Figure 13-6). If you're looking for an applet, type its name or partial name in this box, and items that don't match the search disappear from the view.

For example, if you type only **admin** in the text box, everything disappears except for items that have "admin" in the title or description. If you type **administrative tools** in the text box, everything disappears except for the Administrative Tools group.



### **EXAM TIP**

On the job, you'll probably use the Search feature to quickly find applets. When preparing for the CompTIA A+ exam, use the Large Icons view in Windows 7, and use the Classic View in Windows XP and Windows Vista.

## Applets

The Control Panel has some differences between versions. For example, Windows XP has 29 applets, Windows Vista has 49 applets, and Windows 7 has 45 applets. Some of the applets have the same function between versions, some are modified, and others are new.

You don't need to know the functions of all the applets when preparing for the exam, but you should know the ones that are specifically mentioned in the objectives. The following sections introduce them and describe their purpose.

# Common Applets

Several of the applets are common to each version of Windows, and some of these applets are described in this section.

## Folder Options

A primary tool you'll use when working with files in Windows is Windows Explorer. Chapter 11, "Introducing Windows Operating Systems," showed steps you can use in different operating systems to open it. It's also important to know how to manipulate the *Folder Options* applet to control the views.

### UNDERSTANDING EXTENSIONS

Files within Windows have two parts: the name and the extension. The name is something you give it so that it's meaningful to you, such as "A+ Study Notes," but the extension is needed by the computer. When you double-click a file to open it, Windows opens the correct application to view the file based on the extension.

For example, if you have a file named "A+ Study Notes.docx" and you double-click it, Windows recognizes the .docx extension as a Microsoft Word document. It will open Word and then open the document within Word. If the file was named "A+ Study Notes.xlsx," Windows would open Microsoft Excel when you double-clicked it.

### SHOWING HIDDEN FILES AND FOLDERS AND EXTENSIONS

Many files and folders are hidden by default in different operating systems. Most users don't need to access these files. Hiding them avoids confusing users with files they don't need to access and prevents them from accidentally manipulating the files.

Similarly, the extensions often confuse the users, so extensions are hidden by default. Instead of a user seeing "A+ Study Notes.docx," only "A+ Study Notes" appears.

As a technician, you'll often need to see all the files and the extensions. You can use the steps listed in the following sections, on different operating systems, to make the changes.

### SHOWING HIDDEN FILES AND EXTENSIONS ON WINDOWS VISTA AND WINDOWS 7

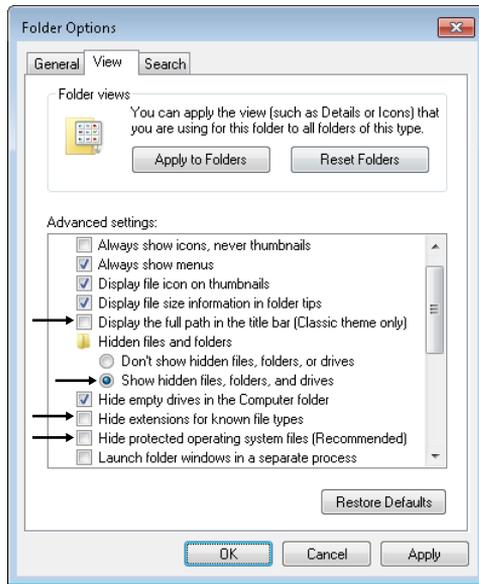
1. Select Start, Control Panel. If necessary, modify the view to Large Icons or Classic View.
2. Double-click Folder Options.
3. Select Display The Full Path In The Title Bar (Classic Theme Only).

#### **NOTE FULL PATH IN TITLE BAR**

Without this selected, the title bar shows a limited view of the path. As a technician, you might need to see the full path.

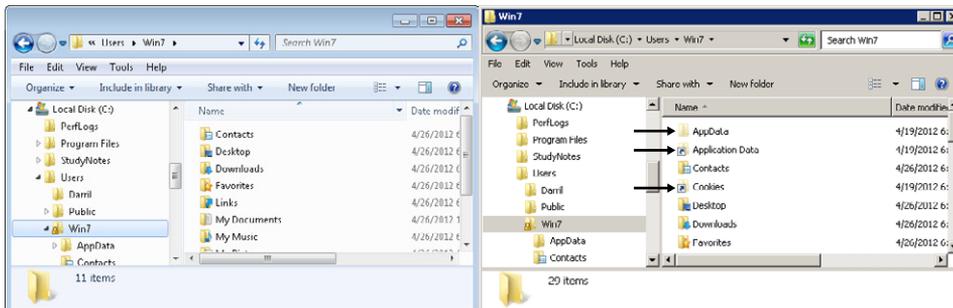
4. Select Show Hidden Files, Folders, And Drives.

5. Deselect Hide Extensions For Known File Types.
6. Deselect Hide Protected Operating System Files (Recommended). Review the warning, and click Yes to display the files. Your display will look similar to the following graphic.



7. You can select either OK or Apply to make the change. OK will make the change and close the dialog box, but Apply keeps it open so that you can view or manipulate other settings.

Figure 13-7 shows two views of Windows Explorer opened to a user's profile on Windows 7. The one on the left is a normal view. The one on the right shows some of the hidden folders that appear after making the change. The full path shows in the title bar only with the Classic theme, so I changed the theme to show it.

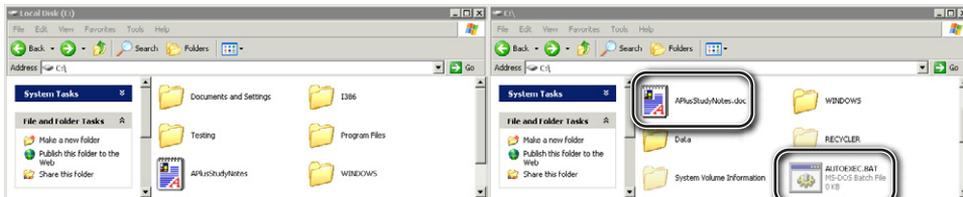


**FIGURE 13-7** Windows Explorer with two views in Windows 7.

## SHOWING HIDDEN FILES AND EXTENSIONS ON WINDOWS XP

1. Select Start, Control Panel. If necessary, modify the view to Classic View.
2. Select Folder Options. Click the View tab.
3. Select Display The Full Path In The Address Bar.
4. Select Show Hidden Files And Folders.
5. Deselect Hide Extensions For Known File Types.
6. Deselect Hide Protected Operating System Files (Recommended). Review the warning, and click Yes to approve the change. Your display will look similar to the graphic shown in the Windows 7 and Vista steps.
7. Click OK.

Figure 13-8 shows two views of Windows Explorer on Windows XP. The one on the left is a normal view. The one on the right shows some of the hidden files and folders and the extensions of the files that appear after making the change.



**FIGURE 13-8** Windows Explorer with two views in Windows XP.



### Quick Check

1. You need to manipulate a hidden file, but you can't find it. What should you do?
2. What would you change to show file extensions in Windows Explorer?

### Quick Check Answers

1. Change the view to show hidden files.
2. Change the view in Folder Options.

## Internet Options



The Internet Options applet is used to manipulate the settings for Internet Explorer (IE). Even though you'll have different versions of IE on different operating systems, each version has Internet Options.

Figure 13-9 shows the Internet Options applet in Windows 7. As you can see, there are seven tabs, and the General tab is selected.

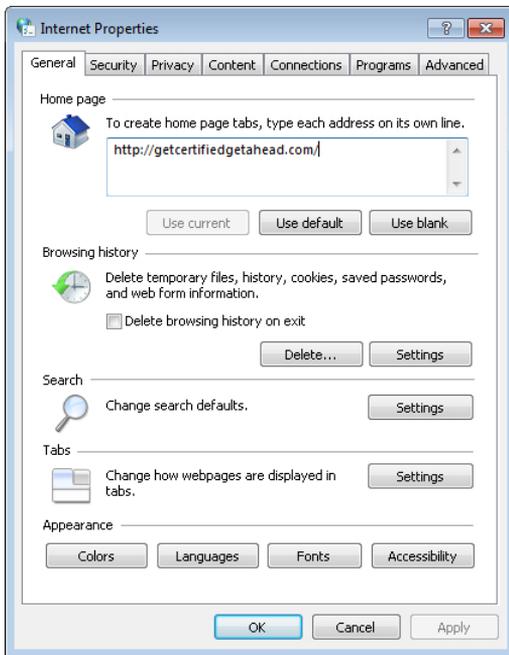


FIGURE 13-9 Internet Options in Windows 7.

## GENERAL TAB

This page includes the following settings that you can manipulate:

- **Home page.** IE opens the URL listed here when it's started. You can use this section to change the home page or even add multiple home pages, which open in separate tabs.
- **Browsing History.** IE keeps a record of sites visited and keeps a temporary copy of files. You can delete the data or use the settings page to modify how much data is retained.
- **Search.** Use this to modify the default search engine used with the browser.
- **Tabs.** This provides some options to modify how tabs and pop-up windows are used.
- **Appearance.** You can change some elements on webpages by using the options available here.

## SECURITY TAB

Unfortunately, many websites include malicious software (malware). For example, a drive-by download occurs when you visit a website and it runs active content that downloads and installs malware such as a virus on your system. To reduce risks, IE uses security zones with varying levels of security.

### **IMPORTANT KEEP YOUR ANTIVIRUS SOFTWARE CURRENT**

Security zones provide a layer of protection, but it's important to always have up-to-date antivirus software running on your system. Criminals use a wide variety of methods to infect systems, take them over remotely, and steal personal information. Chapter 26, "Recognizing Malware and Other Threats," provides more information about malware and ways to protect systems.

The four security zones are as follows:

- **Restricted Sites.** This zone has the most restrictive settings. You can still visit a website in this zone, but the settings prevent the site from running active content that might damage your computer or steal your data.
- **Trusted Sites.** This zone has relaxed security settings so that a website can run more programs. You can add sites to this zone that you trust not to damage your computer or information. For example, if your employer has a website that has content that is blocked normally, you can add it to the Trusted Sites zone so that it runs.
- **Local intranet.** Sites that you access in an internal network using non-HTTP addresses, or HTTP addresses without periods (like `http://success`) are recognized as intranet sites. The security settings for this zone are relaxed to allow more content to run.
- **Internet.** Any site that is not in one of the other zones is considered an Internet site. This zone strikes a balance between security and usability. It allows some active content to run but also restricts some active content.

There aren't any sites in any of the zones by default. Administrators can use tools to automatically add sites to the zones, and you can manually add sites to the zones. To add a site to any zone, select the zone, click the Sites button, and enter the address.

### **PRIVACY TAB**

The Privacy tab allows you to configure how cookies are used. Cookies are small text files that a website can store on your system when you visit them. When you return to the site, it reads the cookie to identify you or your behaviors. Websites commonly use information in cookies to enhance the user's experience on the website or to change the advertising based on the user's activities.

If you want to block cookies, you can use several settings on the Privacy tab, including the following:

- **Location.** You can prevent or allow a website from learning your location. Location is determined by your IP address.
- **Pop-up Blocker.** You can turn the pop-up blocker on or off. When turned on, you can configure the blocking level so that some pop-up windows are allowed or so that they are all blocked.

- **InPrivate.** InPrivate browsing is a feature in IE that prevents any data from a session from being stored. By default, this setting disables toolbars and add-ons, but you can use this setting to enable them.

## CONTENT TAB

The Content tab includes the following settings that you can use to control what content is displayed and what data is saved after a session:

- **Parental Controls.** Parents can use this setting to set limits on Internet usage for specific accounts.
- **Content Advisor.** This section has ratings that can be used to restrict content based on different categories. When enabled, the administrator can enter a password to bypass the restriction and view the content.
- **Certificates.** Websites commonly use certificates to encrypt some sessions, such as when you use a credit card to buy something. Administrators use this section to view and manipulate the certificates.
- **AutoComplete.** AutoComplete remembers information you've typed in previously and can retrieve it to automatically fill in different forms or addresses for you. This can make browsing easier, but there might be times when you want to delete it. Figure 13-10 shows the different actions you can take. If you click Settings, you can disable AutoComplete for any of the options. If you want to delete data that has already been saved, click Delete AutoComplete History, select the items you want to delete, and click Delete.
- **Feeds and Web Slices.** You can use this to control the schedule for Really Simple Syndication (RSS) feeds or sites using Web Slices. Not all sites use these features.

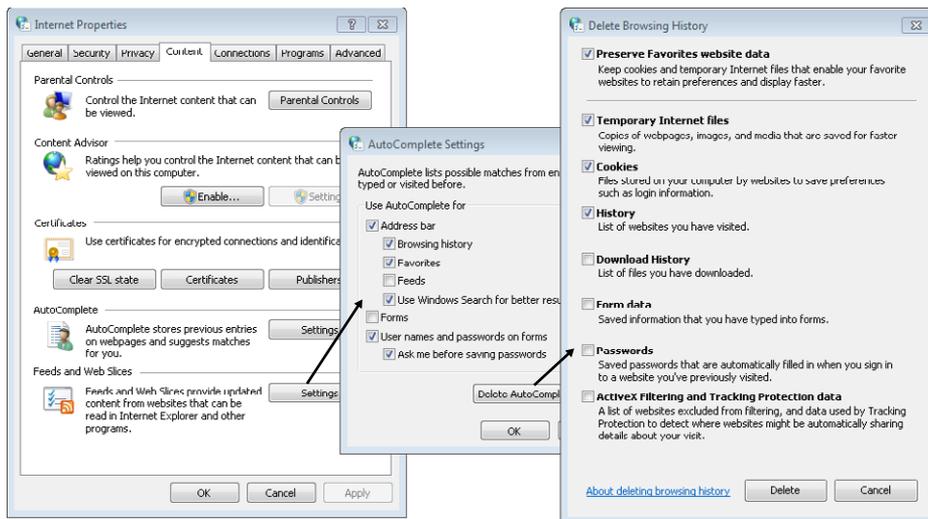


FIGURE 13-10 AutoComplete and deleting browsing history.



### EXAM TIP

You should know how to manipulate all of the AutoComplete settings. They are valuable to know as a PC technician and as a regular user. Check the settings on your computer.

### CONNECTIONS TAB

The Connections tab shows Dial-up and Virtual Private Network (VPN) Settings that exist on your computer, and you can configure when to use these connections. You can use the Local Area Network (LAN) settings to configure how IE connects to the Internet through your network.

#### **MORE INFO** CHAPTER 24, "CONNECTING AND TROUBLESHOOTING A NETWORK"

Chapter 24 includes steps to establish networking connections, including dial-up and VPN connections. Chapter 22, "Network Security Devices," covers how to configure the LAN settings to use a proxy server.

### PROGRAMS TAB

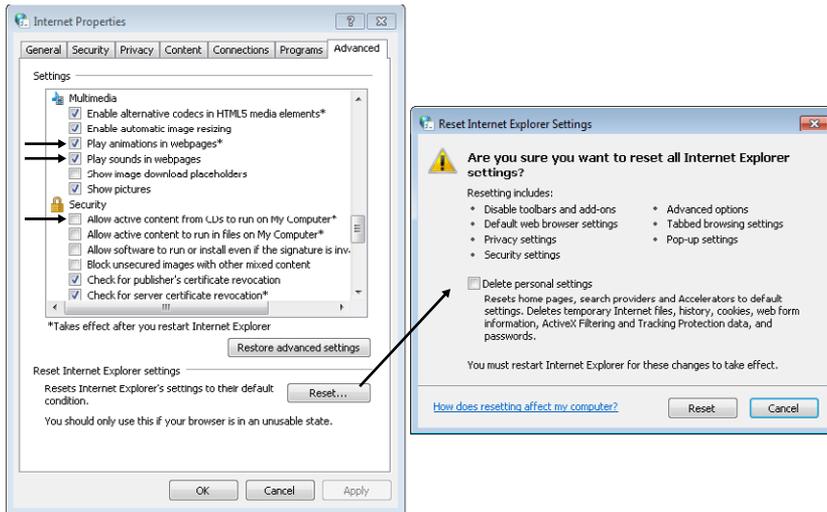
The Programs tab includes the following sections:

- **Default web browser.** By default, IE checks to see whether it is the default browser when it starts. If not, it prompts you to set it as the default browser. You can change this behavior here. If you have installed another web browser but want to set IE as the default, you can set it here.
- **Manage add-ons.** An add-on is additional software that can work with IE. It includes toolbars, search providers, and other tools. Add-ons can sometimes slow IE down, and you can use this area to enable or disable them.
- **HTML editing.** You can set the default tool used to edit Hypertext Markup Language (HTML) files from this page if desired. This setting is used by webpage developers.
- **Internet programs.** This link brings you to Default Programs, which you can use to link applications to specific files. Default Programs is discussed in the next section.

### ADVANCED TAB

The Advanced tab includes several low-level settings that you can manipulate for specific purposes. For example, if you want to stop animations or sound from playing within webpages when you visit, you can select the settings in the Multimedia section. This page also includes several security settings.

Figure 13-11 shows this page opened to the Multimedia and Security sections. An item you might need to adjust is the setting that allows active content to run from a CD. Many training CDs have active content that is blocked, but by clearing this check box, you can get it to run. You should do this only if you are confident the CD does not contain malicious software.



**FIGURE 13-11** Resetting Internet Explorer settings.

If a user has made changes to the Advanced settings and you want to return to the original settings, you can click the Restore Advanced Settings button. If IE is having serious problems, you can use the Reset button. This restores all of the IE settings to their original settings. It also removes or disables any toolbars or add-ons. Notice that you can choose to save or delete your personal settings before resetting IE.

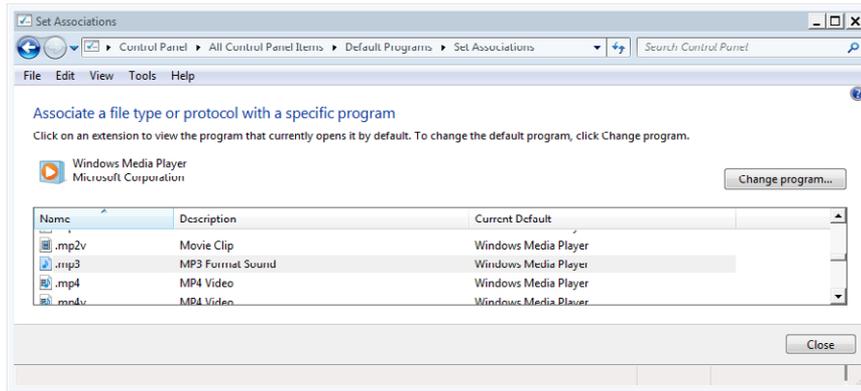
## Default Programs

Extensions were mentioned earlier in this chapter, including what they're used for and how to hide them. You might want to look at what extensions are registered with your system, and you can do so from the Default Programs applet within the Control Panel. This is the same applet that starts from the Set Programs button in IE.

For example, the .docx extension starts Microsoft Word. If this is changed, you can use the Default Programs applet to restore the correct setting.

On Windows 7, you can access Default Programs with the following steps:

1. Click Start, and select Control Panel.
2. Select Default Programs from the Large Icons list.
3. Select Associate A File Type Or Protocol With A Program. It might take a moment for the list of extensions to display.
4. Select any extension in the list. You'll see a description and the current default program associated with the extension, as shown in the following graphic. In the graphic, .mp3 is selected and the Windows Media Player is the default program.



You can change the default program from this applet if desired. However, applications do this automatically, so you normally don't need to modify them. The exception is when software modifies the extensions without your knowledge or permission.

### ✓ Quick Check

1. What view should you select to view all the Control Panel applets in Windows 7?
2. What would you manipulate to show file extensions?

### Quick Check Answers

1. Large Icons (or Small Icons).
2. Folder Options.

## Applets Unique to Windows XP

You'll find the following applets only in Windows XP:

- **Add/Remove Programs.** Users can use this to add and remove programs or components on their computer. It is replaced with Programs And Features in Windows Vista and Windows 7. Many programs are installed with Microsoft Installer (.msi) files, so this isn't needed to install an application.
- **Automatic Updates.** You can enable, configure, or disable Automatic Updates. It is replaced with Windows Update in Windows Vista and Windows 7. Chapter 15, "Configuring Windows Operating Systems," covers updates.
- **Network Connections.** This applet is used to manipulate network interface cards or to set up new network connections. Windows Vista and Windows 7 include the Network And Sharing Center, which provides many tools to configure networking. Networking topics are covered in Chapters 18–24.

- **Network Setup Wizard.** This wizard is available from the Network Connections applet. If you click Set Up A Home Or Small Office Network, it starts the wizard. A similar wizard is available through the Network And Sharing Center in Windows Vista and Windows 7.
- **Printers And Faxes.** This applet is used to manually add printers or manipulate printers and their drivers. It is replaced with the Printers applet in Windows Vista and with the Devices And Printers applet in Windows 7.

## Applets Unique to Windows Vista

The following applets are available only in Windows Vista:

- **Tablet PC Settings.** Use this to configure settings when Vista is running on a tablet. It can also be used to configure handwriting recognition. You can access a Tablet PC menu on Windows 7 by clicking Start, All Programs, Accessories, and selecting Tablet PC.
- **Pen And Input Devices.** This applet allows you to configure how different pen actions (such as a single tap or double-tap) are interpreted and whether the system provides visual feedback. It's used only on mobile devices, such as tablets.
- **Offline Files.** When enabled on a server hosting files and the user's computer, the user can keep a copy of shared files stored on the server locally. Users can access offline files even when they are disconnected from the network. The Offline Files feature is accessible via the Folder Options tool in Windows XP and via the Sync Center in Windows 7 (by clicking Start, All Programs, Accessories, Sync Center). Chapter 16, "Understanding Disks and File Systems," provides more information about offline files.
- **Problem Reports And Solutions.** When a system problem is detected, this feature checks with a Microsoft site to see whether the problem is known and whether a solution is available. Clicking on the solution provides steps that a user can take to resolve a problem. A similar feature is available in the Windows 7 Action Center.
- **Printers.** This is similar to the Printers and Faxes applet in Windows XP and the Devices and Printers applet in Windows 7.

## Applets Unique to Windows 7

The following applets are available only in Windows 7:

- **HomeGroup.** Use this applet to create and join a homegroup. Homegroups are covered in Chapter 24.
- **Action Center.** The Action Center replaces the Security Center (mentioned in the next section) used in Windows XP and Windows Vista. It includes the same features but also includes additional alerts and notifications for other issues. When the Action Center has an alert, it adds a flag in the notification area of Windows (at the bottom right).

- **Remote Applications And Desktop Applications.** This feature provides users with a quick link to any remote programs or desktops if they are configured on their computer. These must first be published by a network administrator.
- **Troubleshooting.** This applet provides a central location for several other applets that you can use to troubleshoot problems. For example, it includes links for Program Compatibility, troubleshooting audio problems, and improving power usage.

## Other Applets

If you've clicked through the Control Panel applets, you probably recognize they weren't all covered in this chapter. Many additional applets are covered in other chapters, including the following:

- **Device Manager.** Use this applet to manage devices and device drivers. It's available via the Control Panel in Windows Vista and Windows 7. It's available in Windows XP as part of Computer Management but not via the Control Panel. Device Manager is covered in Chapter 15.
- **Display.** You can use this applet to manipulate settings for the display, such as the resolution. Chapter 6, "Exploring Video and Display Devices," shows how to configure the resolution with this applet.
- **User Accounts.** You can add user accounts and manipulate their properties with this applet. It's available in each operating system via the Control Panel but works a little differently in each one. Chapter 25, "Understanding IT Security," covers User Accounts.
- **Security Center.** The Security Center monitors key security settings on a computer and provides notifications to users if a setting is making their computer less secure. For example, if a system doesn't have a firewall enabled, the user will be periodically reminded of the risks. It's available in Windows XP and Windows Vista. Windows 7 has the same features but includes them within the Action Center. Chapter 22 covers the Security Center.
- **Windows Firewall.** The Windows Firewall helps protect a system by filtering traffic going in or out of the system. It was introduced in Windows XP, and each of the operating systems includes it in the Control Panel. Chapter 22 covers the Windows Firewall in more depth.
- **Power Options.** This tool allows you to control power settings, such as the behavior of the power button or when a computer will sleep or hibernate. It's very valuable for laptops when they are on battery power but can be used for desktops too. Chapter 8, "Working with Laptops," covers the Power Options applet, which is in each of the operating systems.

**EXAM TIP**

This section has not covered all the applets in Windows 7, but I strongly recommend you simply go through each one and open it. If you're asked a question about one of these obscure applets, you'll at least know where it is. For example, if you've opened them all and someone asks you where they can find a list of fonts, you'll probably remember opening the Fonts applet in the Control Panel.

**Quick Check**

1. What operating system(s) includes the HomeGroup applet?
2. What operating system(s) includes the Security Center?

**Quick Check Answers**

1. Windows 7.
2. Windows XP and Windows Vista. Windows 7 uses the Action Center.

## Administrative Tools



*Administrative Tools* is a group of tools within Control Panel used by advanced users and administrators. The available tools are slightly different in different versions of Windows. For example, in Windows Vista, Component Services is not available in Administrative Tools but is still available on the computer. The following sections describe many of the common Administrative Tools.

To access Administrative Tools in any system, click Start, Control Panel, change the display to list applets individually, and select Administrative Tools.

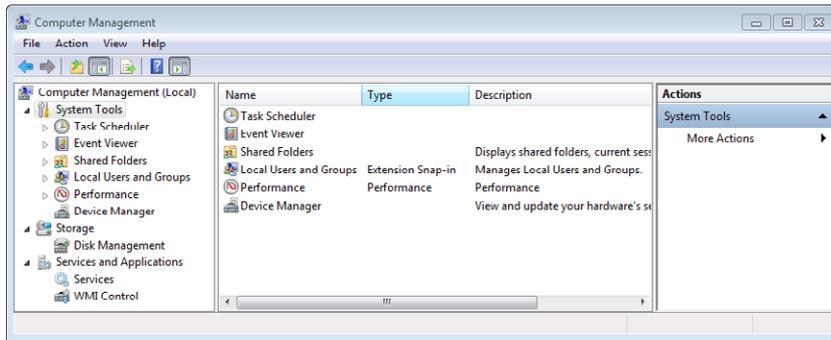
**EXAM TIP**

Many of these tools require you to have administrative privileges on the system. On Windows Vista and Windows 7, you might be challenged by User Account Control for different applets, and if you don't have administrative privileges, you won't be able to use the tool.

## Computer Management



The *Computer Management* tool is a valuable tool within the Administrative Tools folder that includes multiple snap-ins. Figure 13-12 shows Computer Management on a Windows 7-based computer.



**FIGURE 13-12** Computer Management.

In Figure 13-12, you can see that the tools are organized in three sections: System Tools, Storage, and Services And Applications. The following sections describe some of the tools. Other tools are covered individually in other chapters.

**MORE INFO WHERE TO FIND INFORMATION ABOUT OTHER ADMINISTRATIVE TOOLS**

Shares and share permissions are covered in Chapters 16 and 25. Local Users and Groups is covered in Chapter 25. Device Manager is covered in Chapter 15. Disk Management is covered in Chapter 16.

## Task Scheduler



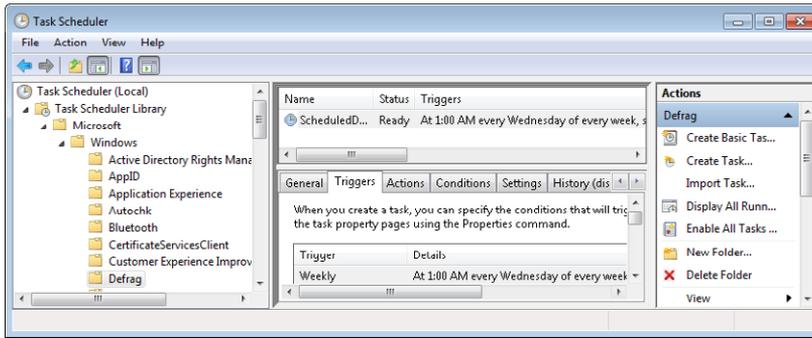
You can use the *Task Scheduler* tool to schedule tasks to automatically run. Windows includes many preconfigured tasks.



**EXAM TIP**

Windows XP included Scheduled Tasks within the Control Panel, but not the Task Scheduler as part of Administrative Tools. Task Scheduler is available in both Windows Vista and Windows 7 from within Administrative Tools.

If you open Task Scheduler, you can view existing tasks or create your own. Figure 13-13 shows the Task Scheduler opened to the Defrag task, which is preconfigured to run at 1:00 AM every Wednesday.



**FIGURE 13-13** Task Scheduler.

Tasks have several configurable properties, including the following:

- **Triggers.** This identifies when the task runs and is normally based on a day and time.
- **Actions.** This identifies the task that will run.
- **Conditions.** You can set conditions, such as running only when the computer is using AC power (not on battery power).
- **Settings.** These settings allow you to fine-tune the behavior of the task. For example, you can select it to run as soon as possible if a schedule start is missed.
- **History.** This shows details about when the task has run.

## Performance

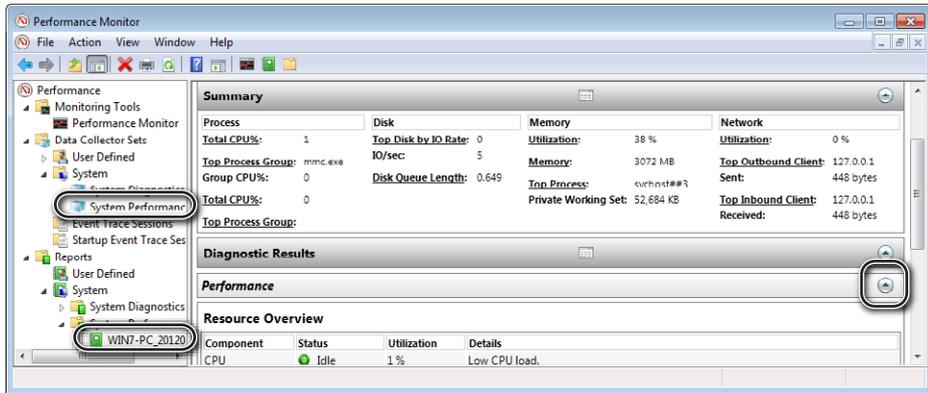


Performance (also called *Performance Monitor*) is an extension of the Task Manager. The Task Manager gives you a snapshot of the performance of your system, but Performance provides many more details. Performance monitors four primary resources: processor, memory, disk, and network.

This tool was enhanced in Windows Vista and Windows 7 by adding Data Collector sets. You can quickly run a check on your system and view a comprehensive report by using the following steps on Windows 7.

1. Click Start and select Control Panel. If necessary, change the view to Large Icons.
2. Select Administrative Tools. Double-click Performance Monitor.
3. If necessary, double-click Data Collector Sets to expand it.
4. Double-click System.
5. Right-click System and select Start. It will run for one minute and then stop.
6. When it stops, expand Reports, System, and System Performance.

7. Select the report you just ran. Your display will resemble the following graphic.



The left pane of the graphic highlights the System Performance Data Collector set and the System Performance report. The center pane shows a small portion of the report. You can scroll up and down to view more of the report, and you can click the arrows in the headers to expand or collapse different sections.

Key items to look for that can indicate problems are high CPU utilization and high memory utilization. If any items are high, you can expand the report to get more details.

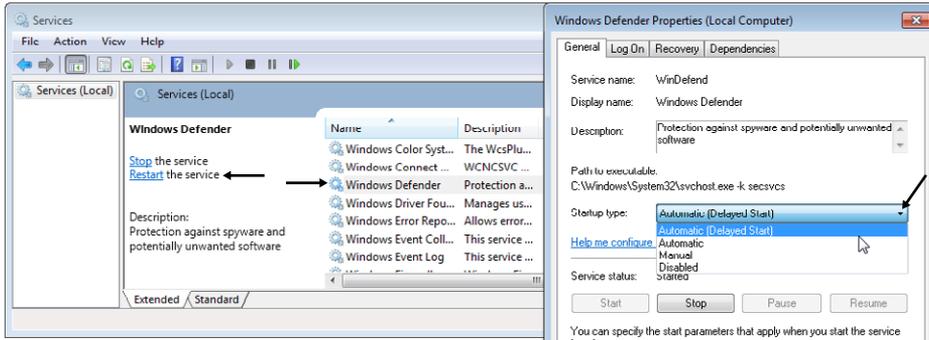
## Services



The *Services* applet is an important tool that you can use to stop, start, and configure services. As a reminder, a service starts without user intervention, and many services will start automatically when the system starts.

Chapter 7 covers printers and introduces a common reason why you might need to go into the Services applet. If the print spooler stops sending print jobs to your printer, print jobs will back up. A common solution is to restart the Print Spooler service.

Figure 13-14 shows the Services applet with the Windows Defender service selected and its property page opened. When you select any service, options appear on the left to stop, start, or restart the service, depending on its current state. Additionally, a short description appears. You can also right-click the service to manipulate it or to select Properties.



**FIGURE 13-14** Services applet.

The Properties page allows you to configure how the service will start by using the following four options:

- **Automatic.** The service starts when Windows starts.
- **Automatic (Delayed Start).** The service starts a short time after Windows has started. The delay allows Windows to start more quickly. This option is available only in Windows Vista and Windows 7.
- **Manual.** The service starts when an application sends it a start signal or when a user manually starts it.
- **Disabled.** The service cannot start.

Some services will run only if another service is running. This is referred to as a *dependency*. If a service fails to start, it could be due to a problem with a dependent service. You can click the Dependencies tab to view a list of dependent services.



**EXAM TIP**

If you're seeing messages in Event Viewer logs indicating that a service cannot start, go into the Services applet and examine it. Verify that it is enabled and that the services it depends on are also enabled.

## Component Services

Many developers use the Component Object Model (COM) as a standard for reusable code. That is, they code something once and reuse the code in other applications. For example, a developer could create code to determine the square root of a number. When it is created as a COM object, it can be used by multiple applications.

It isn't common, but in some cases components need to be manually added or configured. This is most common when an application is created by in-house developers. If required, developers will provide specific directions about how to add or configure the component.

#### **NOTE WINDOWS VISTA COMPONENT SERVICES**

Component Services is available in Administrative Tools in Windows XP and Windows 7. It is not available in Windows Vista. You can add it as a snap-in in an MMC, or you can start it with the `comexp.msc` command. Type the command in the text box after clicking Start.

## Data Sources

Many applications use databases to provide dynamic data to users. The application typically allows users to choose what data they want, add additional data, and modify existing data. For the application to use the data, it must connect to the database.

Most applications using a database will automatically connect to it, but occasionally you might be required to manually add the connection. You would use the Data Sources (ODBC) applet and follow the directions provided by the application developer.

## Other Administrative Tools

The following Administrative Tools are covered in other chapters:

- **Local Security Policy.** This provides several settings administrators commonly use to lock down security for a computer. Chapter 25 discusses the Local Security Policy.
- **Print Management.** Windows Vista, Windows 7, and Windows Server products include this tool, and it's used to manage multiple shared printers. Chapter 7 covers this tool.
- **System Configuration.** The System Configuration tool (commonly referred to as `msconfig`) is a valuable tool that you can use to help identify problems that can prevent Windows from starting correctly. Chapters 15 and 17, "Troubleshooting Windows Operating Systems," cover it.
- **Windows Firewall with Advanced Security.** The Windows Firewall helps protect a system from malicious traffic, and this tool provides additional capabilities to the Firewall. It's available in Windows Vista and Windows 7 but not Windows XP. Chapter 22 covers this tool in more depth.
- **Windows Memory Diagnostic.** If you suspect memory problems, you can use the Windows Memory Diagnostic to test it. Chapter 3, "Understanding RAM and CPUs," and Chapter 17 cover this tool, including steps to start it and how to view the results in the Event Viewer.



### Quick Check

1. What are the three groups of tools in Computer Management on Windows 7?
2. What tool would you use to restart the print spooler?

### Quick Check Answers

1. System Tools, Storage, Services And Applications.
2. Services, by restarting the Print Spooler service.

## Chapter Summary

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- The Task Manager includes several tabs. You can use the Applications tab to kill applications that are not responding. The Processes tab shows which processes are consuming the CPU's time, and the Services tab shows the status of all services. Use the Performance tab to see a snapshot of the system's performance displayed in graphs.
- A Microsoft Management Console (MMC) is an empty console, and you can add snap-ins based on your needs. Many tools are available with snap-ins already added to the MMC.
- The Control Panel includes several mini-programs called applets. Windows XP and Windows Vista list the applets individually, using the Classic View. Windows 7 lists the applets individually using Large Icons or Small Icons.
- Applets common to Windows XP, Windows Vista, and Windows 7 include Folder Options, Internet Options, Display, User Accounts, System, Windows Firewall, and Power Options.
- Folder Options is an applet used to control views in Windows Explorer. You can use it to show or hide hidden files and folders and to show or hide file extensions.
- Internet Options is an applet used to control many options in IE. It includes seven tabs: General, Security, Privacy, Content, Connections, Programs, and Advanced.
- Some applets are included only in Windows XP, such as Add/Remove Programs, Network Connections, Printers And Faxes, Automatic Updates, and the Network Setup Wizard.
- Some applets are unique to Windows Vista, such as Tablet PC Settings, Pen And Input Devices, Offline Files, Problem Reports And Solutions, and Printers.
- Windows 7 includes some unique applets, such as HomeGroup, Action Center, Remote Applications And Desktop Applications, and Troubleshooting.
- The Administrative Tools group is accessible from the Control Panel. It includes several tools, including Computer Management, Task Scheduler, Performance, and Services. You need administrative privileges to use these tools.

## Chapter Review

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Use the following questions to test your knowledge of the information in this chapter. The answers to these questions, and the explanations of why each answer choice is correct or incorrect, are located in the “Answers” section at the end of this chapter.

1. What would you use to end a program that is not responding?
  - A. Application tab of Task Manager.
  - B. Performance tab of Task Manager.
  - C. Users tab of Task Manager.
  - D. Services tab of Task Manager.
2. What can you use to identify what is consuming most of the CPU’s processing power?
  - A. The Services applet.
  - B. The System applet.
  - C. The Performance tab of the Task Manager.
  - D. The Processes tab of the Task Manager.
3. A printer is no longer printing print jobs, and you suspect a problem with the print spooler. How can you restart it?
  - A. Use the Applications tab of Task Manager.
  - B. Use the Task Scheduler.
  - C. Use the Services applet.
  - D. Use the Programs tab of Internet Options.
4. You’re working on a Windows 7–based system, and you need to access a folder in Windows Explorer. You can’t find the folder, and you suspect it’s hidden. What should you do?
  - A. Use the Default Programs applet to modify the view.
  - B. Change the View to Large Icons.
  - C. Use Folder Options to show hidden files and folders.
  - D. Use Folder Options to show extensions.

5. A user regularly accesses websites by using Internet Explorer. The user entered passwords in website forms and wants to remove them from the computer. How can this be accomplished?
- A. Use the Programs tab of Internet Options.
  - B. Use the Content tab of Internet Options.
  - C. Use the Security tab of Internet Options.
  - D. Use the Privacy tab of Internet Options.
6. Which of the following tools is in the Administrative Tools group on Windows 7? (Choose all that apply.)
- A. Action Center.
  - B. Computer Management.
  - C. Event Viewer.
  - D. HomeGroup.

# Answers

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1. **Correct Answer:** A
  - A. **Correct:** You can select an application in this tab and click End Task.
  - B. **Incorrect:** The Performance tab provides a graph to show current performance.
  - C. **Incorrect:** The Users tab shows what users are logged on to a system but cannot be used to stop an application.
  - D. **Incorrect:** The Services tab shows the status of services.
  
2. **Correct Answer:** D
  - A. **Incorrect:** The Services applet is used to stop, start, and manipulate services.
  - B. **Incorrect:** The System applet shows information about the system, such as its name and the hardware.
  - C. **Incorrect:** The Performance tab of the Task Manager provides graphs to show the computer performance.
  - D. **Correct:** The Processes tab includes a CPU column that shows the percentage of CPU time each process is taking.
  
3. **Correct Answer:** C
  - A. **Incorrect:** The Print Spooler is not an application, so you can't manipulate it from the Applications tab.
  - B. **Incorrect:** Task Scheduler is used to schedule tasks, not to end or restart services.
  - C. **Correct:** You can restart the Print Spooler service from the Services applet.
  - D. **Incorrect:** Internet Options is used to manipulate settings for Internet Explorer.
  
4. **Correct Answer:** C
  - A. **Incorrect:** The Default Programs applet associates applications with file types.
  - B. **Incorrect:** The Large Icons view is in Control Panel.
  - C. **Correct:** The Folder Options applet includes settings to show hidden files and folders.
  - D. **Incorrect:** Showing extensions will not show hidden files.

**5. Correct Answer: B**

- A. Incorrect:** The Programs tab is used to configure default programs for web applications.
- B. Correct:** Browsing history, including stored passwords, can be deleted from the AutoComplete Settings on the Content tab of Internet Options. This can also be done from the Browsing History settings on the General tab.
- C. Incorrect:** The Security tab is used to configure security zones.
- D. Incorrect:** The Privacy tab is primarily used to configure how cookies can be used.

**6. Correct Answer: B, C**

- A. Incorrect:** The Action Center is in the Control Panel on Windows 7 but not in the Administrative Tools group.
- B. Correct:** Computer Management is in this group.
- C. Correct:** Event Viewer is in this group.
- D. Incorrect:** HomeGroup is in the Control Panel on Windows 7 but not in the Administrative Tools group.

