Part I

Windows XP Overview, Installation, and Startup

CHAPTER 1

What's New in Windows XP?

Windows XP suffers somewhat from a dual personality. In some ways it is a significant release, but in others it is more a maintenance release of Windows 2000. For that reason, Windows 2000 users will not see major changes other than the interface, although there are numerous changes under the hood that improve Windows' performance and functionality.

For Windows 9*x*, Me, and NT users, Windows XP is a significant change. Not only is the interface considerably different, but the underlying core operating system is completely changed, with several core features either new or improved. The biggest transition is for users migrating from Windows 9*x* and Me to Windows XP—the additional security features, file system options, and management features in XP make it a distinct shift.

This chapter explores the new and changed features in Windows XP. In addition to an exhaustive feature list, I've included sections that will help users of specific Windows platforms get up to speed quickly on Windows XP's features and function.

Major Differences between Home Edition and Professional

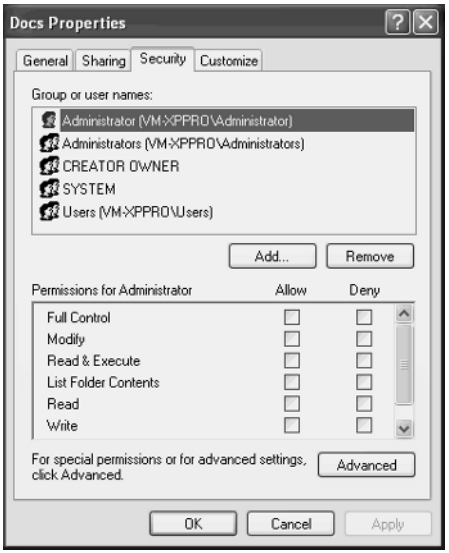
Windows XP is available in two versions: Home Edition and Professional. Many of the features are the same from one to the other, and both have the same look and feel. Because it is targeted at business users, Professional includes features not really necessary for home users, such as added security, centralized administration, and remote access. The following sections provide a brief overview of the features included in the Professional version that are not available in Home Edition.

Access Control

When sharing a folder under all Windows operating systems, including Windows XP, you can specify *share permissions* that control the level of access that users have to the folder across the network. For example, you might grant users the ability to read the contents of a folder but not to write to it. Both Professional and Home Edition offer the ability to share folders and set share permissions to control access.

Windows XP Professional adds the ability to apply *access control lists*, or ACLs, to a folder. An ACL is a set of specific access permissions for a folder granted to specific users or groups. For example, you might grant one group of users the ability to read the contents of a folder and grant another group full control over the contents, including the ability to modify and delete items. Figure 1.1 shows the Security tab of a folder's properties, which you use to configure permissions on the folder.

FIGURE 1.1:
Use the Security tab to specify permissions for a folder.



TIP You can apply permissions on a folder or file only on NTFS volumes. FAT volumes support sharing permissions but do not allow you to assign permissions for folders or files.

Permissions you set through ACLs apply for both local and network access. For example, if you don't have permission to read a folder, you will be unable to read the folder even if you log on locally to that computer.

SEE ALSO For more information on setting sharing security, see Chapter 25.

Centralized Administration

Windows XP Professional systems can function as stand-alone computers, as members of a workgroup, or in a domain served by Windows NT Server, 2000 Server, or .NET Server

domain controllers. Windows XP Home Edition computers can function as stand-alone computers or as members of a workgroup but do not support domain membership. Domains provide several centralized administrative features, with *centralized security* being one of the most important of those features. Centralized security refers to the ability to control access to resources on multiple systems across the network with a single set of user credentials (account and password.)

Domains also provide other important capabilities, including the abilities to remotely manage systems and to enforce restrictions and other system properties through group policy.

SEE ALSO For more information on group policies, see Chapter 42.

Encrypting File System

Encrypting File System (EFS) is a core component of Windows XP Professional that is not available in Home Edition. EFS allows users to encrypt folders and files to prevent others from being able to read those files. EFS can be an important tool for protecting data on systems that are susceptible to compromise, such as notebook computers that could be lost or stolen. EFS is also useful for protecting data on removable media.

SEE ALSO For a detailed discussion of EFS, see Chapter 49.

It's easy to encrypt a folder or file in Windows XP: You simply select a check box in the folder's or file's properties as shown in Figure 1.2. Windows XP takes care of the encryption and decryption process automatically. However, you should implement an EFS recovery policy, as explained in detail in Chapter 51, to ensure your ability to recover encrypted files if the encryption certificate becomes corrupted or is lost.

FIGURE 1.2:
You can easily encrypt a folder or file through a single check box in its properties.

Group and Local Policies

Group policy is another feature supported by Windows XP Professional that is not supported by Windows XP Home Edition. Group and local policies allow a broad range of properties and restrictions to be applied to Windows XP for a specific computer or user. For example, an administrator can use group policy to redirect a user's `My Documents` folder to a network server, so that the folder is always available regardless of the user's logon location and can be easily backed up.

Group policy has much broader implications than just managing a user's data, however. It provides a means for *change control*, which is the ability to regulate the changes that users can make to their systems and Windows environment. Group policy is also the mechanism through which technologies such as Remote Installation Services (RIS) and IntelliMirror allow administrators to automatically deploy operating systems and applications to computers across the enterprise.

NOTE Group policies rely on Windows 2000 or .NET domain controllers and domain membership. You can apply local policies to Windows XP Professional computers in a domain, workgroup, or stand-alone configuration.

SEE ALSO For a complete discussion of group and local policies and their implications, see Chapter 42.

Multilingual User Interface Add-On

Windows XP is currently available in 24 localized versions in addition to English. Localization provides menus, dialog boxes, and other elements in a specific language. The Multilingual User Interface Pack is an add-on for Windows XP Professional that allows administrators to switch the user interface elements such as menus, dialog boxes, and Help files into a different language. For more information on this add-on, see `www.microsoft.com/WINDOWSXP/pro/techinfo/planning/multilingual/default.asp`

Offline Files

Windows XP Professional includes a feature called Offline Files, which allows users to continue to work with network resources even when those resources are unavailable or they are disconnected from the network. For example, assume a server in your network provides access to a set of common documents that you need to use on a regular basis. Most of the time you're in the office and connected to the network, which means the documents are available from the server. Occasionally, however, you need to use your notebook while out of the office and still work with those documents. With offline folders, Windows XP creates a local copy of the offline resource on your computer and allows you to work with the resource there rather than from its network location. XP makes the transition between online and offline use transparent

to the user and provides the mechanism to automatically synchronize changes when the network resource again becomes available.

TIP You can't use offline files on a system that has Fast User Switching enabled. Configure Fast User Switching through the option "Change the way users log on or off" in the User Accounts object in the Control Panel.

You enable Offline Files for a particular folder through the Offline Files tab of the folder's properties (see Figure 1.3).

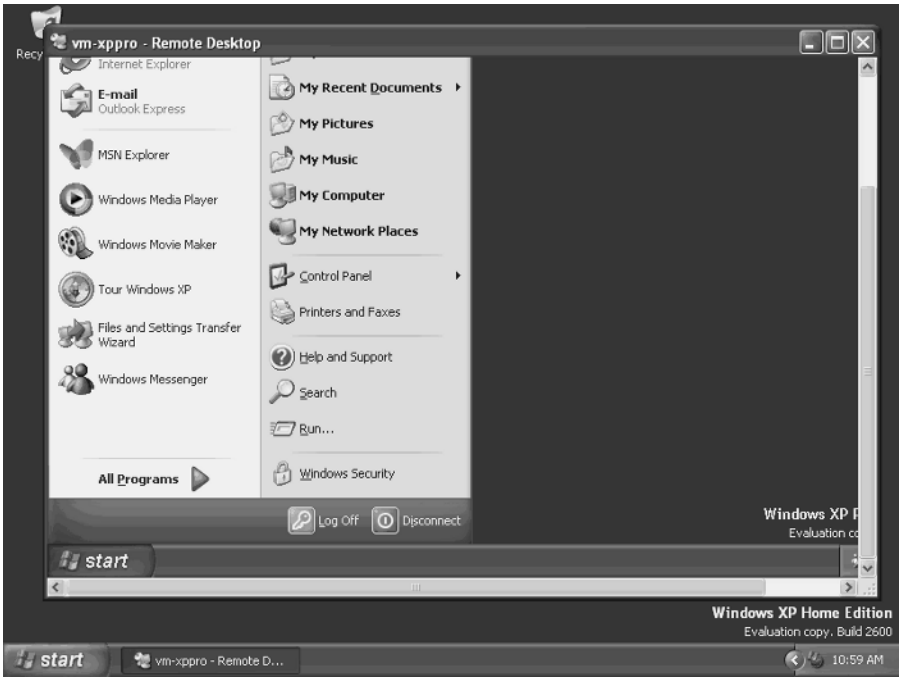
FIGURE 1.3: Enable Offline Files through the Folder Options dialog box.

Remote Desktop

Remote Desktop allows you to work with a Windows XP Professional computer from a remote location. For example, you might use Remote Desktop to connect from your home computer to your office computer, in order to access files, printers, or other resources, working with your office PC as if you were physically in the office. You can also use the client portion of Remote Desktop to connect to a Windows 2000 or .NET Terminal Server.

Windows XP Home Edition includes the client portion of Remote Desktop, enabling you to connect to a Windows XP Professional computer that is configured to allow access to Remote Desktop users (Figure 1.4), or to a Terminal Server. You can't connect to a Windows XP Home Edition computer through Remote Desktop—Home Edition doesn't include the server-side components of Remote Desktop.

FIGURE 1.4:
Use Remote Desktop to connect to and use a system remotely.



TIP A handful of third-party applications, such as pcAnywhere and Unicenter Remote Control, provide capabilities similar to Remote Desktop for remote access and control. These third-party apps typically provide expanded functionality, such as the ability to allow the local user to continue working while the remote session is active.

SEE ALSO For more information on Remote Desktop and its alternatives, see Chapter 31.

Remote Installation Services

Windows XP Professional includes support for Remote Installation Services (RIS), which allows Windows 2000 and XP to be installed on a computer remotely. In a typical RIS deployment, the computer boots from a PXE-compliant network adapter, which allows it to submit a request to a RIS server for service. (PXE stands for Preboot Execution Environment, an open industry standard that allows the system to boot directly from a PXE-compliant network card to initiate an operating system installation or repair.) The RIS server provides the client computer with OS installation options based on the computer's membership in Active Directory. After the user selects the OS options to install, RIS installs the operating system across the

network. A system that does not include a PXE-compliant network adapter can use a special boot disk created by RIS to allow it to communicate with available RIS servers at boot.

TIP RIS relies on the Active Directory and therefore requires domain membership. Windows XP Home Edition systems do not support RIS.

RIS is primarily a server-side feature requiring either Windows 2000 Server or .NET Server, and must be configured and managed by a system administrator. For that reason, RIS is not covered except in passing in this book.

SEE ALSO For a detailed discussion of RIS, see *Mastering Windows 2000 Server* by Mark Minasi (Sybex, 2002).

Roaming User Profiles

A *user profile* is a collection of folders and data that make up the majority of a user's working environment. A user's profile includes the `My Documents` folder, Start menu, Desktop, and other folders. On stand-alone computers and in many network installations, the user profile resides on the local computer. The disadvantage to this is that when you log on from another computer, you don't receive the same desktop settings, documents, or other environment settings as when you log on from your primary workstation. A *roaming* profile overcomes that disadvantage by storing your profile on a network server and copying it to the current logon location. This means that you have the same Desktop, documents, and settings regardless of where you log on—in other words, your working environment follows you around the network.

Folder Redirection Complements Roaming Profiles

As explained in Chapter 44, you can redirect folders from the default profile location to a network server. For example, you might redirect `My Documents` to a folder on the server. When the user logs on and opens the `My Documents` folder, he sees the files stored in his folder on the network server, rather than the `My Documents` folder that would otherwise be stored on his local computer. Redirecting folders in this way helps ensure that the user's documents are always available regardless of logon location. In some ways this might seem to be exactly what roaming profiles achieve. However, folder redirection and roaming profiles are different.

If a user had a roaming profile without folder redirection, the folder would be copied from the server where the profile is stored to the user's local computer at logon. With folder redirection, the folder remains on the server, and the user's computer is redirected to the server when she opens the folder. Folder redirection therefore complements roaming profiles and reduces the amount of data that must be copied across the network during logon.

Scalable Processor Support

Windows XP Home Edition supports a single processor. Windows XP Professional supports up to two processors to provide better performance.

Software Installation and Maintenance

Windows 2000 introduced a featured called IntelliMirror, which is an umbrella term for a selection of technologies. Windows XP Professional also includes support for IntelliMirror. One of the major purposes for IntelliMirror is to allow applications to be installed, updated, and managed automatically. When a user logs on, group policy and Active Directory membership determine which applications should be installed on the user's computer and which should be made available as an option. Applications that are *assigned* through IntelliMirror appear as if they are already installed on the user's computer. Attempting to start the application causes it to be installed automatically across the network. Applications that are *published* through IntelliMirror are available for installation but not installed automatically. Instead, the user can add these applications through the Add Or Remove Programs object in Control Panel.

Most aspects of IntelliMirror are primarily server-side features and are configured and managed at the server level. For that reason, software installation and maintenance are covered only in passing in this book.

SEE ALSO For more information on IntelliMirror and automated application deployment, see *Windows 2000 Group Policy, Profiles, and IntelliMirror* by Jeremy Moskowitz and *Windows 2000 Automated Deployment and Remote Administration* by Christa Anderson (both Sybex, 2001).

Major Differences for Windows 9*x* and Me Users

Everyone who switches to Windows XP from another Windows platform will see the obvious differences in the interface. Users who switch from Windows 9*x* and Windows Me will see certain core differences in Windows XP.

Security

The primary difference is in security. Windows XP builds on the Windows NT security model, which requires an existing user account in order to log on to the system. You can log on with a local account or, in the case of Windows XP Professional, a domain account. Windows 9*x* and Me systems, by contrast, allow you to bypass logon and access the system by simply pressing Esc when prompted to log on. Or, you can enter a new account name and password at logon to create a new user profile. Both pose a potential security risk, as anyone can gain local access to a Windows 9*x* or Me computer.

During a new installation, Windows XP creates an Administrator account (which appears on Home Edition systems as Owner) that gives you full control over the computer, including the ability to add other local accounts as needed. During an upgrade from Windows 9*x* or Me, Windows XP converts any existing user profiles on the computer to local accounts, in addition to creating the Administrator account. (Windows XP does not assign passwords by default to accounts, which means anyone can log on to a computer by simply selecting the desired account from the logon dialog. You can configure Windows to require passwords, if desired.)

SEE ALSO For more information on managing user accounts, see Chapter 41.

Requiring an account to log on is an important step in protecting a system but by no means offers high security. For example, you might share your computer with another user. It's possible for that user to log on to your computer and view your documents and other data unless you protect those resources. The NTFS file system and access control lists (ACLs) are the mechanism by which you provide that protection. Windows 9*x* and Me systems provide support for FAT file systems but not NTFS. Unlike FAT (including variations such as FAT16 and FAT32), NTFS gives you the ability to set permissions on a per-folder and per-file basis to specify the level of access that a particular group or user has to a specific item.

SEE ALSO For a detailed discussion of NTFS, see Chapter 25.

Multiuser Support and Remote Desktop Connection

Another important difference between Windows XP and 9*x*/Me is in XP's multiuser support. On 9*x*/Me systems, only one user can log on at a time. Both Windows XP Professional and Home Edition include a new feature called Fast User Switching, which allows a user's session to be disconnected without shutting down applications or closing documents. This allows another user to work on the computer without requiring that the first user close all applications and documents and log off. In addition, Windows XP Professional allows others to connect to the computer remotely using Remote Desktop. A Remote Desktop connection is treated like a fast user switch: the current local user, if any, is disconnected to allow the remote user to connect. Windows XP prompts the local user whether to allow or deny the connection.

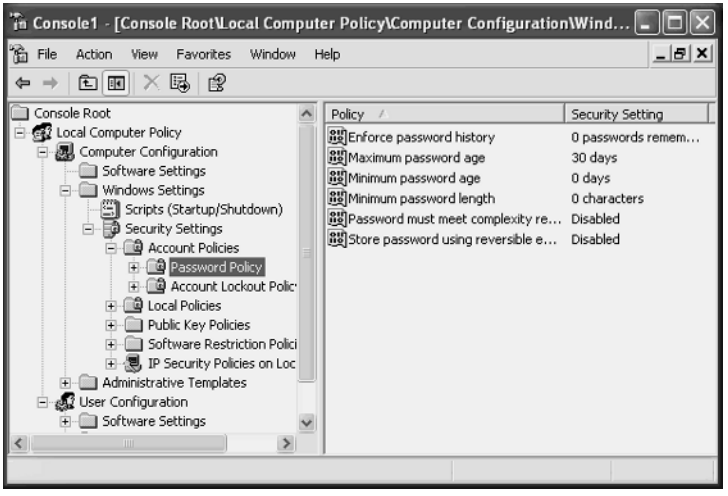
NOTE Terminal Services, available in Windows server platforms such as Windows 2000 Server and Windows .NET Server, allows multiple concurrent connections. Multiple users can have sessions open at one time on a Terminal Services server.

SEE ALSO For information on fast user switching, see Chapter 41. For detailed information on configuring and using Remote Desktop, see Chapter 31.

Support for Group Policies

The other primary difference from 9*x*/Me systems in Windows XP Professional is support for group policies, which were introduced in Windows 2000. Group policies allow change control and other configuration to be applied to a system automatically based on computer and/or user membership in Active Directory domains, providing a means for administrators to centrally manage systems and users. As a Windows XP Professional user, you won't deal directly with group policies in most cases but will simply see their effects in such things as automatic application installation and restrictions on the changes you can make to your computer. However, you can configure many properties through local policies (Figure 1.5).

FIGURE 1.5:
You can configure many policies locally as well as at the site, domain, or OU level.



SEE ALSO For a detailed discussion of group and local policies, see Chapter 42.

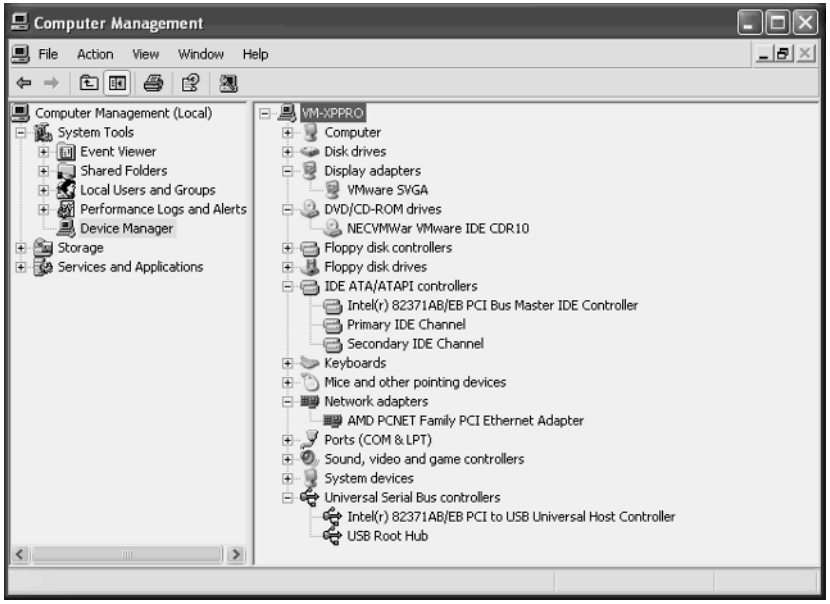
There are numerous other differences between 9*x*/Me systems and Windows XP, including changes in accessory applications such as Internet Explorer, Paint, and Fax. However, the features I've discussed are the primary core differences that will have the most impact on how you work in Windows.

Major Differences for Windows NT and 2000 Users

Most Windows NT and Windows 2000 users are familiar with user accounts and with security features such as NTFS permissions. If you are migrating from either of these platforms to Windows XP, you'll find that the user interface and wealth of new accessory applications and capabilities are the most striking differences. Remote Desktop, discussed earlier in this chapter, is a good example of a Windows XP feature not available in Windows NT or 2000. Under the hood, however, Windows XP is very similar to both platforms because they all share a common code base.

The primary core difference that Windows NT users will see is a vast improvement in hardware support. For example, Windows XP supports USB and other technologies not supported by Windows NT (Figure 1.6). This feature alone can make it worthwhile to upgrade from Windows NT.

FIGURE 1.6:
Windows XP provides Plug and Play support and expanded support for new technologies.



Another major change for Windows NT users is NTFS 5, which was introduced in Windows 2000 and carries over to Windows XP. One of main changes in NTFS 5 is the introduction of *junction points*. You can think of a junction point as a sort of flag in the file system that directs Windows XP to pass off processing to a file system driver other than the NTFS driver. An example of a feature made possible by junction points is the Encrypting File System (EFS). As the NTFS driver is reading a file and comes to a junction point indicating the

file is encrypted, it passes the process to the EFS subsystem to process. Volume mount points are another example. This feature allows you to mount a volume into an empty NTFS folder on another volume. To the local system and to users across the network, the mounted volume appears as a folder under the host volume.

TIP When you install Windows XP on a Windows NT system, Setup converts existing NTFS volumes to NTFS 5.

Just as they are for 9*x*/Me users, group policies and the features they make possible (explained in the previous section) are another core difference for Windows NT users. System policies in Windows NT offer some of the functionality of group policies, but with considerably less flexibility and power.

Where to Go for More Details

The features discussed throughout this chapter are some of the core features in Windows XP that are either new or improved over previous Windows platforms. These are by no means the only changes and improvements, however. There are significant interface changes, a wealth of new features for remote access and management, improved recoverability, additional system installation and update options, firewalls and other security features, and much more. Rather than cover all these changes in this one chapter, I've opted to describe them throughout the remainder of the book to put them in context. However, there are several good references available to help you get an overview of the new features in Windows XP. The following list offers several sources:

- *Mastering Windows XP Home Edition* by Guy Hart-Davis (Sybex, 2001)
- *Mastering Windows XP Professional* by Mark Minasi (Sybex, 2001)
- Windows XP Home Edition evaluation web page:
  `www.microsoft.com/windowsxp/home/evaluation/features.asp`
- Windows XP Professional evaluation web page:
  `www.microsoft.com/windowsxp/pro/evaluation/features.asp`