

Microsoft Vista: An Overview

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Introduction

The long-anticipated successor to Windows XP is just now making its debut to the world. Windows Vista has spent the last five years in development and has undergone many feature additions, deletions, and changes. Vista features a heavily altered core, and to many users, it will look and feel entirely different. The fact is that Vista is still built on the now mature and robust Windows NT kernel. Vista is intended to improve reliability, security, and manageability. It also was designed to provide an improved user experience.

The reliability factor has long been an issue to most Windows users, and as sys admins we all have stories of failed systems and frequent BSODs. As sys admins we also understand that a truly effective operating system (OS) doesn't need to be rebooted, or rebuilt on a regular basis; an effective OS provides a great user experience and wide application support, as well as a stable base on which to run those applications. The Windows NT kernel and its iterations, Windows 2000, Windows XP, and Windows 2003, have focused on improving the reliability of the OS with each release and with each service pack. Windows Vista again takes a much-needed step forward in reliability. Microsoft has built the code for Vista on top of Windows Server 2003 Service Pack (SP) 1. This design not only helps with reliability but also brings with it all the security improvements brought about by the Windows 2003 Server line of operating systems.

The recent focus of most electronic systems vendors has been security, security, security, and there is good reason for this push toward effective security controls for everything from electronic voting machines to home computers. The hacker is not a new enemy to computer systems, but the fact that electronic systems are now in use throughout our society makes available a host of new, poorly protected systems. The availability of high-speed Internet access is also a contributing factor. Previously, when people were connected to the Internet only via a slow dial-up connection for a couple hours each night, hackers had a very small window of opportunity to attack home systems. Now with ubiquitous always-on broadband connections, hackers have ample opportunity to attack home systems that rarely have strong security controls in place.

Windows Vista continues the efforts of the developers of Windows XP SP 2 and Windows Server 2003 SP 1. Vista includes an updated host-based firewall, User Account Control (UAC), Internet Explorer 7, and Windows Defender. Vista code also underwent an intensive code security audit process by Microsoft, and independent hackers in the security community were invited by Microsoft to attack Vista and make recommendations on how security could be improved. From these third-party suggestions came features such as, Address Space Layout Randomization

(ASLR), which helps protect systems from buffer overflow attacks by randomizing the memory location where system files are loaded. This isn't a new feature to operating systems in general; it has been used in Linux and BSD for some time now, but it is new to the Windows line of operating systems.

Manageability is another important subject related to administering Windows machines. Applying application and system patches is one of the main areas of concern when it comes to managing any OS. In previous versions of Windows, most application or system updates required a reboot of the entire system. With Vista, however, Microsoft has added the Restart Manager, which is called by the installer to look at a particular application or portion of the system and determine whether the update can be applied without rebooting the entire OS. The Restart Manager also helps in the event of a required reboot by taking a snapshot of the system and applications open on the machine. After the reboot the applications and any file resources that were in use by the system are reopened and presented to the user as if the machine were never shutdown. By separating user-mode and kernel-mode code and improving the isolation between the two, the developers of Vista have also changed the responsibility of third-party vendors.

Much concern has been expressed by the community as a whole about the requirements to run Vista. If you are wondering whether your system meets the requirements, Table 1.1 lists the Microsoft's recommendations. You can also go to www.microsoft.com/windowsvista/getready/upgradeadvisor/default.aspx and the upgrade advisor will analyze your current system specs. Any new software will have a few bugs, and we did experience bugs when upgrading a current system from XP to Vista, but our fresh installation with Vista went very smoothly. We have installed Vista on several different systems and only experienced a few problems during the process. The only issue that we found was on an AMD system with an NVIDIA 7300 graphics card installed. Vista was unable to properly allocate system resources for the graphics card, resulting in a 4-bit default display. A quick search revealed that others were experiencing the same issue with Vista and this particular graphics processor. Unfortunately, no fix was currently available. Minimum supported requirements for running Vista include an 800MHz 32-bit (x86) or 64-bit (x64) processor; 512 MB of system memory; an SVGA (800 x 600) GPU; a 20 GB HDD with 15 GB of free space; and a CD-ROM optical drive. Table 1.1 lists the requirements that Microsoft recommends for new Vista installations and upgrades.

Table 1.1 Microsoft-Recommended Requirements for Running Vista

	Windows Vista-Capable PC	Windows Vista Premium Ready
Processor	At least 800 MHz	1GHz 32-bit (x86) or 64-bit (x64)
System memory	512 MB	1 GB
GPU	DirectX 9-capable	DirectX 9-capable
Graphics memory		128 MB
HDD		40 GB
HDD free space		> 15 GB
Optical drive		DVD-ROM

For more information, visit the Vista Tech Center site at <http://technet.microsoft.com/en-us/windowsvista/aa905075.aspx>.

NOTE

We were able to successfully run the 32-bit version of Vista on a machine with 10 GB of disk space and 512 MB of memory. The performance wasn't ideal, but it was still usable, and we experienced no issues with installation or operation.

Microsoft offers six different versions of Vista for consumers and business users (see Table 1.2). The Home versions will fit into the same niche that Windows XP Home edition fit into; unfortunately, they both lack some of the higher end features that power users desire. For example, the Home Basic version is intended for people who just want to surf the Web, have e-mail access, and create documents, whereas the Home Premium version includes features for users who are interested in using the system for video, music, and mobile computing. The Vista Business edition is more centered on typical business use. It lacks the media center features of the Home premium edition. Windows Ultimate edition is for power users who require all the features. The unfortunate reality of this highly diverse field of editions is that most users will end up either missing out on features they desire or simply shelling out more money for the Ultimate edition. For example, Home premium doesn't include Remote Desktop, the lowest cost edition to support remote desktop is the Business edition, which doesn't include the media center features. To have both features users will need to get the Ultimate edition. Another example is the lack of

BitLocker drive encryption in the Business edition, a feature that you would expect to see in the purported “business” edition of a product.

Vista also comes in an Enterprise edition, which is available to large enterprise customers through the volume licensing program. The Enterprise edition includes support for things such as BitLocker drive encryption, OS deployment features, and advanced application compatibility. It also includes the right to run four virtual operating system sessions without the need to purchase more licenses from Microsoft. Table 1.3 lists the retail and upgrade prices of the different versions of Vista.

Table 1.2 Vista Features

Features	Vista Home Basic	Vista Home Premium	Vista Business	Vista Ultimate
Windows Defender and Windows Firewall	x	x	x	x
Instant Search and Windows Internet Explorer 7	x	x	x	x
Elegant Windows Aero desktop experience with Windows Flip 3D navigation		x	x	x
Windows Mobility Center and Tablet PC support		x	x	x
Windows Meeting Space		x	x	x
Windows Media Center		x		x
Windows Media Center output on TVs, Xbox 360, and other devices		x		x
Advanced business backup features			x	x
Business networking and Remote Desktop			x	x
Windows BitLocker Drive Encryption				x


TIP

Choosing an edition for your personal needs will be somewhat difficult, but using the information in Table 1.2 and in the comparison chart located at www.microsoft.com/windows/products/windowsvista/editions/choose.aspx will help you in the process. If you are a home user who needs only basic Web, e-mail capability, then the Home basic edition is probably right for you. On the other hand, if you are an amateur film guru you will probably want the Home Premium or Ultimate editions.

Table 1.3 Vista Pricing

Vista Edition	x64 Version	Licensing Available	Retail Price	Upgrade Price
Vista Starter	No	Select countries only, with new PC purchase	N/A	N/A
Vista Home Basic	Yes	Retail	\$199	\$99.95
Vista Home Premium	Yes	Retail	\$239	\$159
Vista Business	Yes	Retail	\$299	\$199
Vista Enterprise	Yes	Volume license only	N/A	N/A
Vista Ultimate	Yes	Retail	\$399	\$259

Whether to upgrade is a big question that everyone will be asking this year. To answer that question, first you need to make sure your computer has the recommended hardware to run Vista; if it doesn't, you will need to upgrade or purchase a new computer. If your computer runs fine on its current OS, you could find it difficult to justify switching to Vista. It may be a good idea to wait and see how Vista fares in the community before considering an upgrade.

Microsoft is shipping 32- and 64-bit versions of Vista, and consequently, there are a few things to remember. In the long term, the 64-bit version of Vista will help

move companies and vendors to the next generation of computer hardware. But if you move to a 64-bit version now, you need to be sure all the applications and hardware you need to run have 64-bit support. There also is no support in the 64-bit version for 16-bit DOS and Windows applications.

The User Interface

The new user interface, Vista Aero, is much different from the current XP interface. The new interface implements the functionality of currently available 3D graphics accelerators, thereby enabling Vista to provide the following features:

- Translucent window frames
- Live previews of documents
- Live previews of windows
- Scalable icons

Figure 1.1 displays the main logon window that appears when Vista starts. Users of current Linux distributions will find this interface familiar. From this screen you can enter your password and press **Enter** or click the right-facing **Arrow** button to log on. This screen also enables you to *shut down*, *restart*, or put the computer to *sleep* by using the red button at the bottom of the screen.

Figure 1.1 Main Logon Screen



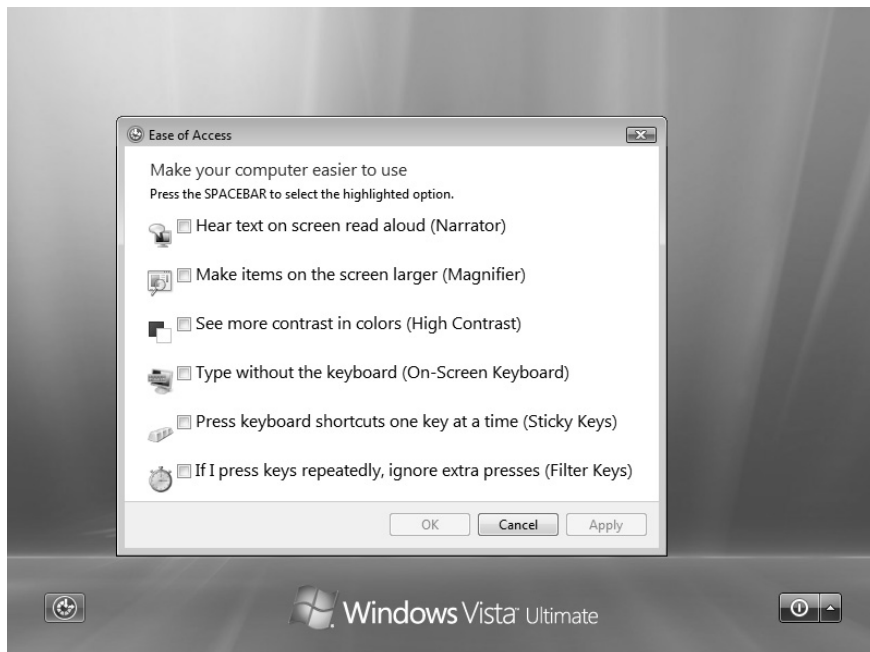
One of the main issues with Vista is the new logon process. Many users and sys admins are not happy with having to relearn or reeducate users on how to log in. Another problem with the logon screen, when the system is a member of a domain, is the extra button presses required to login as a different user. In previous versions of Windows logging in as a different user was as simple as typing in that user name, entering the password, and pressing enter. Now the user must click the **Switch User** button and choose **Other User**, at which point the user will be allowed to enter a new username (Figure 1.2).

The next area of concern is related to the new log-on process. To log in to the local machine instead of the domain, users have to enter their usernames in the machine\username format. Many sys admins have expressed concern over having to remember and correctly type the machine name of each computer under their control.

**TIP**

Yes a shortcut does exist for the aforementioned problem. To log in as a user on the local machine, simply type `.\` and the **username**. The dot is simply a shortcut specifying the local machine. See Figure 1.2 for an example of this step.

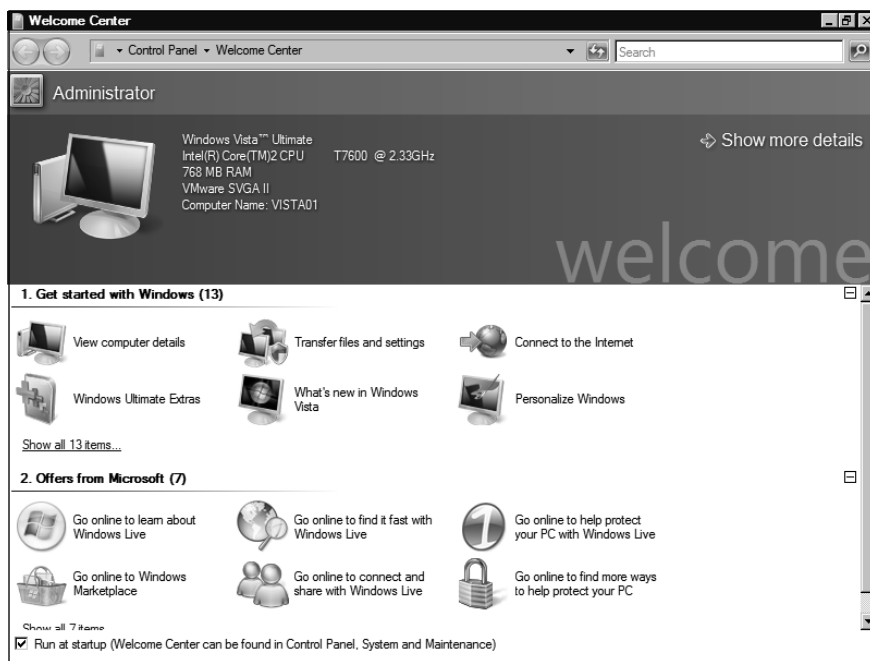
The button at the bottom left of the screen takes you to the Ease of Access Center, where you can select various options to make your computer easier to use (see Figure 1.3). These options include the familiar, sticky keys, filter keys, and high-contrast settings. Another option is the Narrator, which will read screen text, user input, and system messages allowed.

Figure 1.2 Log On under Different User by Using the Dot-Slash Trick**Figure 1.3** Ease of Access Center

The Welcome Center

After you have successfully logged in, you are taken to the Welcome Center, shown in Figure 1.4. The Welcome Center is new with Vista, and it provides a quick view of the computer's hardware, as well as quick access to many of the initial functions most users will want to perform after installing a new system. At the bottom of the Welcome Screen, you can deselect the option to have the Welcome Center start at startup.

Figure 1.4 The Welcome Center

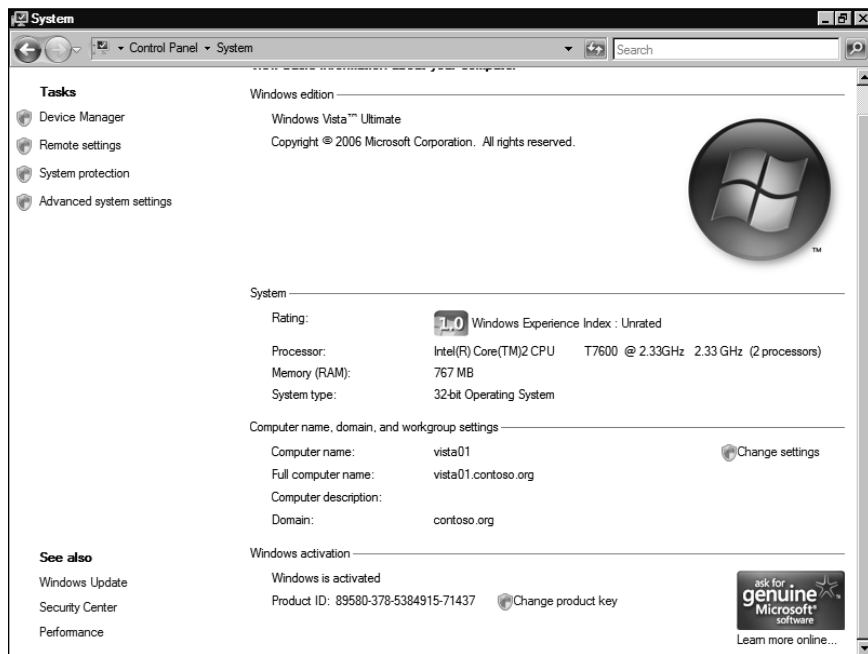


With this new interface, Microsoft has been able to put useful information into places where users can find it quickly and easily. Everyone knows that sometimes it can be frustrating trying to find the information you are looking for in Windows XP. But it appears that Microsoft listened to its customers when deciding how to build Vista. This also aids in the migration to Vista, since a lot of the standard functions users are used to performing a certain way have changed significantly with Vista. For example, setting up a network connection is wildly different from any previous version of Windows, and Microsoft hopes to make it easier to perform using the Welcome Center. A useful function is the Files and Settings transfer wizard.

Other new functions are available for changing display settings and viewing the hardware installed on the system.

Figure 1.5 shows the basic information concerning our computer. We were able to access this information quickly and easily by clicking on the **Show more details** arrow in the top right of the Welcome Center. The information in Figure 1.5 represents what most users need to know concerning their hardware and software. This information is the same data that one would access in Windows XP by going to **System** in the Control Panel or by right clicking on **My Computer | Properties**. From the System Information window we can change our workgroup\domain membership, computer name, and even our product key. We can also access the remote desktop settings, device manager, system restore, and other advanced system settings.

Figure 1.5 System Information



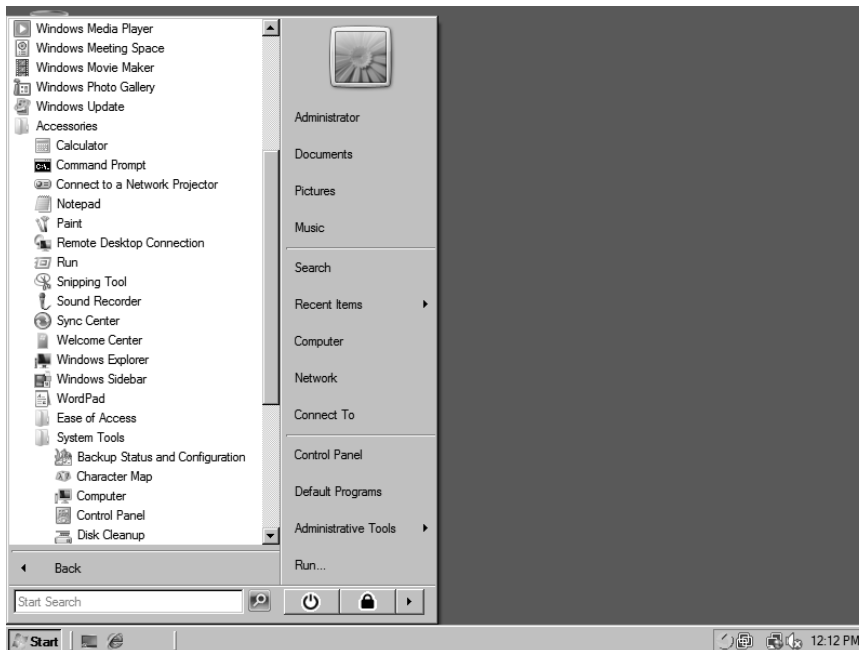
The Start Menu

The Start Menu has undergone another redesign in an effort to provide a better user experience, and we personally think Microsoft hit the target with this change. The menu still utilizes a familiar architecture, but instead of the dropdown menu that

would often span the entire width of a user's screen, Vista utilizes a folder-based sub-menu structure.

Clicking **Start | All Programs** shows you the familiar list of programs available in the current start menu but without drawing extra dropdown menus across the user's screen (see Figure 1.6). From this list you can select an available program to run or you can click on a subfolder such as **Accessories**, which brings up the list of programs available under the Accessories folder. Moving the start menu away from submenus and toward a simple and familiar folder-based layout makes it much easier for new users to grasp, but this new feature might cause a bit of confusion for existing users who will need to relearn the structure once again.

Figure 1.6 The Start Menu



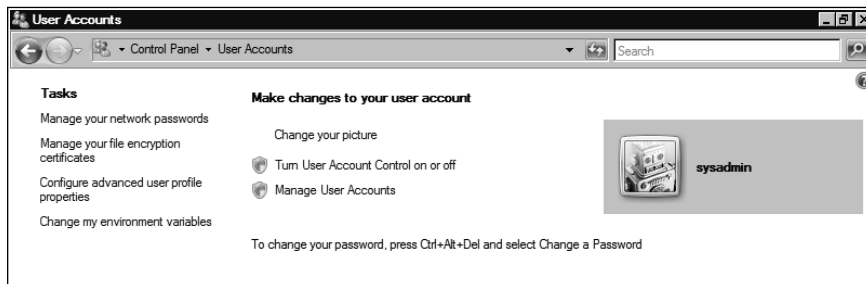
TIP

Remember that after you click on a folder within the Start menu, you can just click the **Back** button at the bottom of the screen to move back one level.

User Accounts

Selecting the user icon at the top right of the Start menu (refer to Figure 1.6) will take you to the User Accounts screen (see Figure 1.7). This screen provides the user with quick access to account management in Vista without having to go into the Control Panel. From this screen the user can add or delete users, change passwords, change user pictures, and manage account permissions. UAC can also be enabled or disabled from this screen.

Figure 1.7 User Accounts Screen



This screen will differ depending on whether your system is a member of a domain or in a simple workgroup. Figure 1.7 shows the User Account screen when the system is a joined to a domain. To change a password the user will need to press **Ctrl+Alt+Del** and select **Change a Password**. To change advanced user settings, click **Manage User Accounts**, which will launch the User Accounts property page (Figure 1.8). From this page we can add and remove local users, change group membership, reset passwords, turn the “press ctrl+atl+del to logon” feature on or off, and launch the Local User Management Console.

The Local User Management Console is the familiar user management interface that most sys admins will want to use to control local accounts (Figure 1.9). From this interface you can quickly alter user settings, create new users, reset passwords, change group membership, and create new groups. This console is a Microsoft Management Console (MMC) 3.0 snap-in. MMC 3.0 is available for download for Windows XP or Windows Server 2003. It also is included in Windows Server 2003 R2, Windows Vista, and Windows Server Longhorn by default.

Figure 1.8 User Accounts Property Page

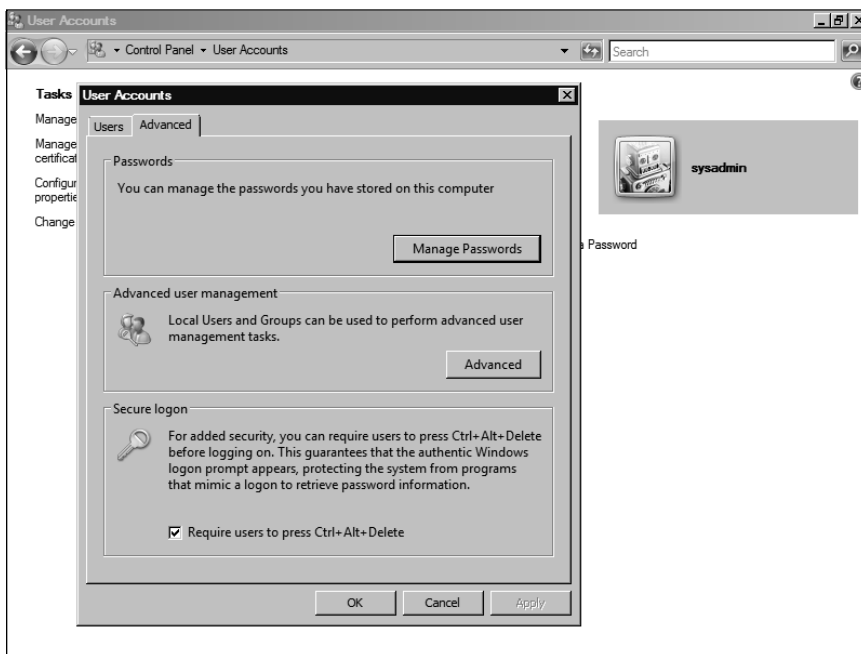
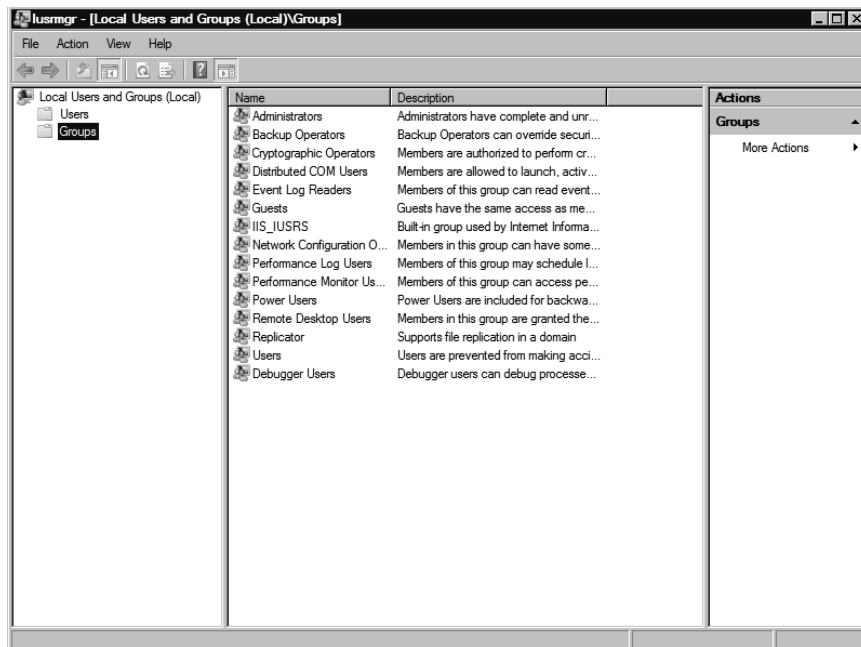


Figure 1.9 Local User Management Console



Internet Explorer 7

Microsoft recently released another long-awaited software package, Internet Explorer (IE) 7. IE 7 is available through Windows Update for Windows XP, and Windows Server 2003 and Windows Vista will ship with the new version of Internet Explorer. Microsoft has improved Internet Explorer with new features and options in this latest version.

Internet Explorer 6 was plagued by security issues, and sys admins have been just as focused on the security of IE 7 as they have been on Vista's security. Some of the security features included in IE 7 are an improved pop-up blocker and the anti-phishing filter. There have also been changes in the way IE asks users for input when a suspect digital certificate is encountered or an ActiveX control needs to be installed. These changes all aim to increase the overall security of IE 7 as well as the systems running the browser.

Internet Explorer 7 Features

Internet Explorer 7 also aims to improve the user's experience. Microsoft has been pushing for a change in its basic user interface by eliminating the standard menu system present at the top of program windows. The familiar menus (File, Edit, View, etc.) have been cast aside for context- and task-oriented systems. The first program to make these changes was Windows Media Player 10, but IE 7 and Office 2007 have quickly followed suit. The change is quite a departure from the way users are used to navigating and interacting with programs in Windows, and it will be interesting to see if the community can adapt.

Internet Explorer 7 also introduces tabbed browsing, a feature that will be familiar to users of Firefox and Opera. Tabbed browsing consolidates newly opened pages into a single main window.



TIP

To turn the menu bar on for quick access to the File, Edit, View, Favorites, Tools, and Help menu, simply press the **Alt** key. Press the **Alt** key again to hide the bar. If you wish to turn the menu bar on by default simply click **Tools** and select **Menu Bar**. See Figure 1.10.

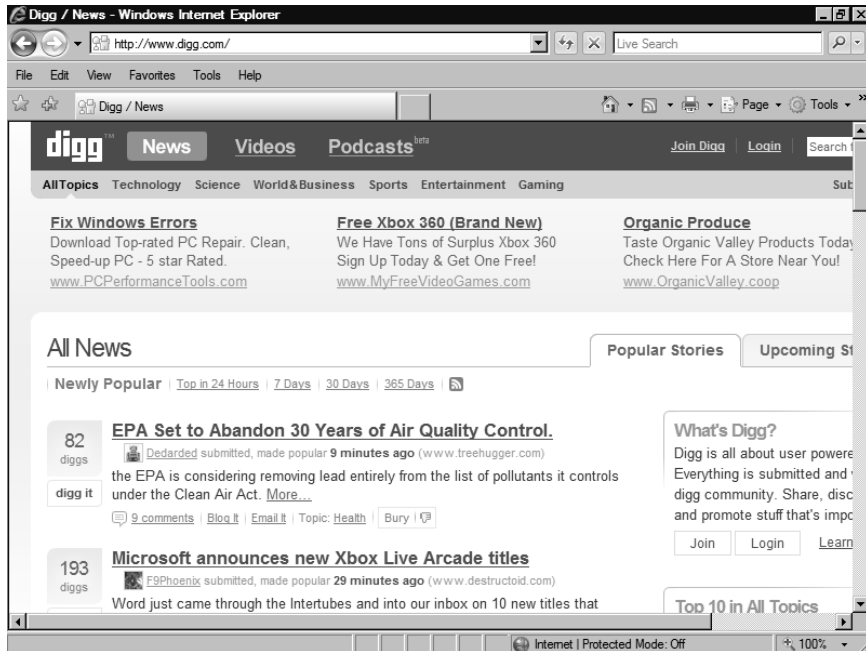
Figure 1.10 Internet Explorer 7



RSS Feeds

RSS feeds allow Web sites and users to subscribe to content on the Web that is of interest to them. Many news sites and blogs offer this feature so that users can receive updated stories and content as soon as it is posted to the feed. This technology is also employed by many news aggregators that offer quick views of the top stories from many different news sites. Internet Explorer 7 provides new features to support RSS feeds from your favorite sites. The RSS Feed feature in IE 7 is simply just an addition to the Favorites bookmark feature in IE. Feeds are separated from your standard bookmarks, and as the content in the feed is updated, the link to that feed is also updated. In Figure 1.11 we have navigated to www.digg.com, a popular news site that aggregates news stories from many different sources on its main page. As you can see the RSS Feed icon, the icon sandwiched between the Home Page and Printer icons, is no longer grayed out as in Figure 1.10. This means there is an RSS feed, or multiple RSS feeds, available on this page.

Figure 1.11 RSS Feed Icon



Clicking the **RSS Feed** icon will take you directly to the RSS feed Web page (Figure 1.12). If you aren't subscribed to this feed, you can select **Subscribe to this Feed**, which will bring up the *Subscribe to this Feed* dialog box (Figure 1.13).

From the *Subscribe to this Feed* dialog box, you can assign a descriptive name to the feed and choose where to file the feed under the Feeds section of your Favorites Center. To subscribe to this feed click **Subscribe**, and the feed will be added to your Favorites Center. After you subscribe to feeds, IE 7 will monitor these feeds for changes and provide notification of updated content by showing the feed in bold text in the Favorites Center (Figure 1.14).

Figure 1.12 RSS Feed from a Web Page

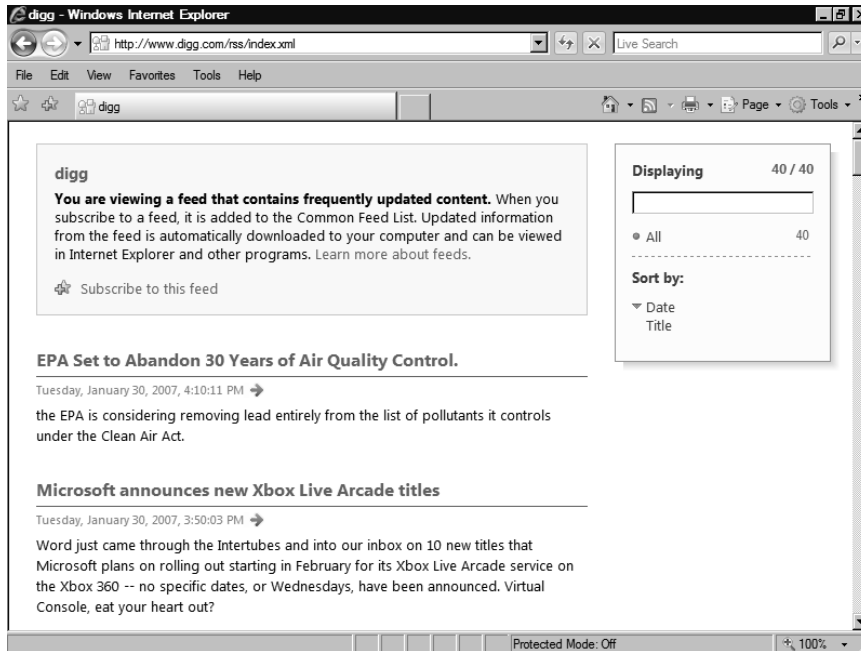
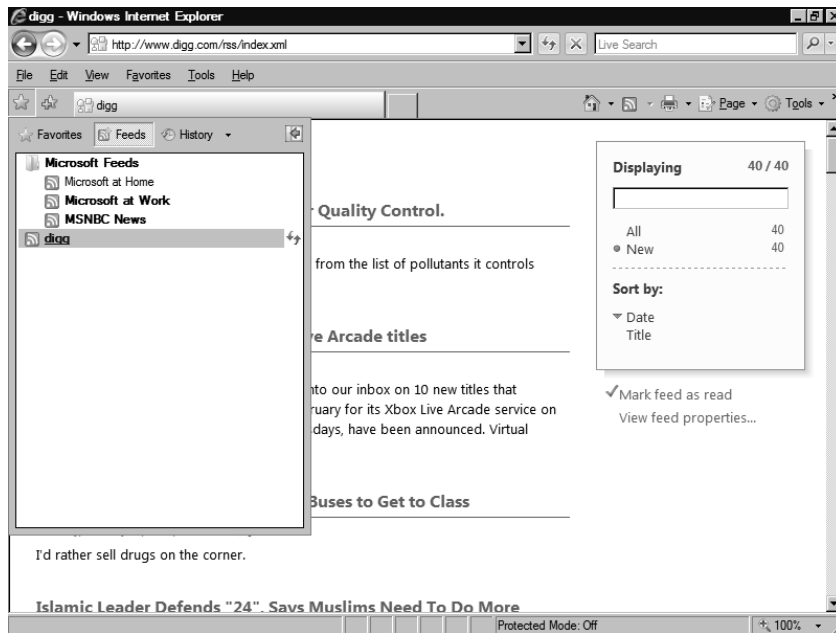


Figure 1.13 Adding an RSS Feed



Figure 1.14 Viewing RSS Feeds



If you right-click on the **RSS feed** in your Favorites and select **Properties**, you will see the box shown in Figure 1.15, which lists the RSS feed properties for that Web page. From this page, you can select when and how many times the RSS feed should be updated throughout the day. This feature will help those RSS feed junkies who have hundreds of feeds. You can also select how many items from each feed you want to remain archived on your system.

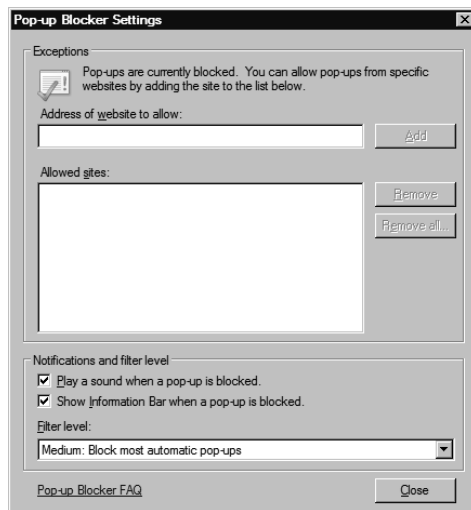
Figure 1.15 RSS Feed Properties



Pop-up Blocker

A Pop-up Blocker comes with Internet Explorer 7 to help you with all of those nasty pop-ups you're prone to getting when you surf the Web. Within Internet Explorer 7, you can control the Pop-up Blocker by going to the **Tools** setting on the far right of Internet Explorer 7 and selecting **Pop-up Blocker Settings**. From here, you can change how the Pop-up Blocker works on certain sites (see Figure 1.16).

Figure 1.16 Pop-up Blocker Settings



Phishing Filter

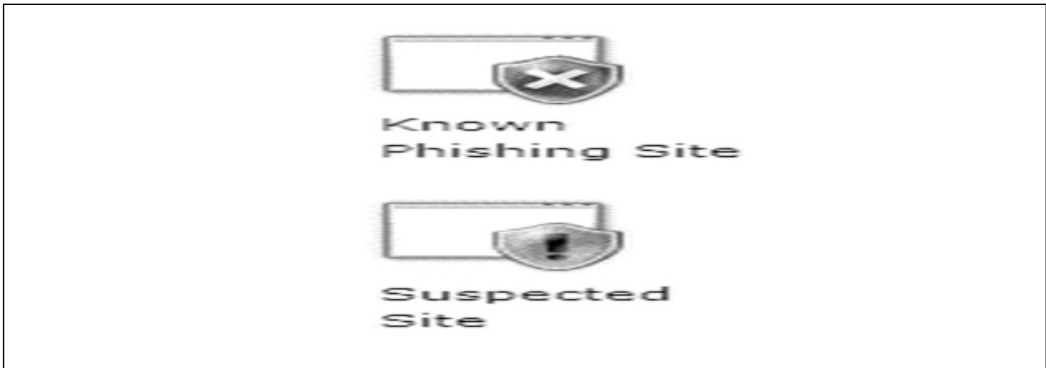
Also new with Internet Explorer 7 is a Phishing Filter that helps you understand which Web sites are safe to visit and which are trying to steal information from you. Phishing is an attempt by hackers to obtain sensitive user information such as passwords and credit card information while masquerading as a trustworthy person or business.

The Phishing Filter in Internet Explorer 7 is turned on by default, but you can turn it off from the Tools setting on the far right of the Internet Explorer screen. Figure 1.17 shows the icon you will see at the top of Internet Explorer 7 if there is a problem with a Web site you're visiting. Figure 1.18 shows different icons that you might see while surfing with the Phishing Filter turned on.

Figure 1.17 The Phishing Filter Indicating that There Is a Problem with This Web Site



Figure 1.18 Phishing Filter Icons



Summary

Windows Vista represents Microsoft's view of the future of computing. With Vista Microsoft wants to improve the user's experience, as well as change the minds of the public about the insecurity and reliability of Windows operating systems. Microsoft has taken a hard stance on security through an improved code review process and the employment of third-party individuals to scrutinize its software. The implementation of innovative security controls such as ASLR and a layered approach to total system security has also helped Microsoft produce a much more secure OS.

Microsoft is also seeing the benefit of having a code base that is now maturing and becoming more robust with each release and service pack. Vista also includes several mature add-on products such as Internet Explorer 7 and Windows Media Player 11. IE 7 offers users improved security and a much more efficient user interface with features such as tabbed browsing and the phishing filter. Are these new features enough to warrant an upgrade in the home or office, though? This is the battle that Microsoft must now fight. Wide adoption of Vista will be slow at first, and the main source of new Vista machines will not be users upgrading their current systems. Most new Vista machines will be from OEMs such as Dell and Gateway. Another factor will be the fact that DirectX (DX) 10 will not be available for Windows XP. Gamers will need to upgrade their systems with new graphics cards as well as Vista to support DX 10 and the new games coming out that will take advantage of DX 10.

The next year will be interesting for Microsoft and the IT world in general. Most sys admins will choose to wait before fully adopting Vista as their platform of choice. What happens in the first year, how many security flaws and bugs are found, and how Microsoft responds to those issues will greatly affect the choices of many IT departments.

Solutions Fast Track

The User Interface

- ☑ The new Aero user interface in Windows Vista is nice to work with and provides useful system information at your fingertips.
- ☑ The new tree-like menu in the Start menu works well and eliminates the old problem of clicking on the wrong program or file.

- ☑ The Ease of Access Center is where you can select various options to make your computer easier to use.

Internet Explorer 7

- ☑ Microsoft has updated Internet Explorer with a Phishing Filter and a Pop-up Blocker to help users secure their surfing on the Internet.
- ☑ Tabbed browsing allows you to surf the Web with multiple tabs open, but within one Internet Explorer application.
- ☑ The new RSS Feeder is a great feature for people who are on the go and like to get their news automatically downloaded to their computers.

Frequently Asked Questions

The following Frequently Asked Questions, answered by the authors of this book, are designed to both measure your understanding of the concepts presented in this chapter and to assist you with real-life implementation of these concepts. To have your questions about this chapter answered by the author, browse to www.syngress.com/solutions and click on the “Ask the Author” form.

Q: How can I determine whether upgrading to Windows Vista is right for me?

A: First, you need to make sure your computer has the recommended hardware to run Vista; if it doesn't, you will need to upgrade your computer or purchase a new computer. If your computer runs fine on its current OS, you could find it difficult to justify switching to Vista. It may be a good idea to wait until some of the bugs are worked out of Vista before considering an upgrade.

Q: Do I need to upgrade my computer to the specifications that Microsoft has published, or will Vista crash on me?

A: You should always go by the hardware requirements put forward by the vendor. This will ensure that the software will operate correctly when installed on the computer.

Q: I really don't like Internet Explorer 7. Will Firefox run on Vista?

A: Yes, it will, and we have been using it on our test box with no problems so far.

Q: Is it better for me to go with a 64-bit or a 32-bit version of Vista?

A: We recommend the 32-bit version for now because there are still many programs and hardware devices that are not supported on 64-bit Windows. If you have researched what programs and hardware devices are supported and feel comfortable going with the 64-bit version, then the 64-bit version may be right for you.

Q: Can I expect any glitches when upgrading from XP to Vista?

A: We experienced only a few when we upgraded to Vista in our lab. When we did a fresh install, we had no problems.

Q: I was told that Vista is a memory hog and that it would crash computers with less than 1 GB of RAM. Is this true?

A: We ran Vista on a machine with only 600 MB of RAM and it ran okay, but remember, when you add more programs, you need more RAM.