



Part I

Getting Started, Getting Secure

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What's New in Windows 8

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In some ways, Windows 8 is a radical departure from Windows 7, as well as the other versions of Windows that preceded it. In other ways, Windows 8 isn't much different from Windows 7. Both possibilities are good ones, both from a technology standpoint and for the user. The differences mean an expanded set of features, richer experience, broader platform support, performance improvements, and much more. The similarities mean that if you are familiar with previous versions of Windows, you can put Windows 8 to work right away without a steep learning curve.

In this chapter, we focus not on those familiar features, but rather on many of the new and changed features in Windows 8. You'll find an overview here of those features, with deeper explanation in other chapters. We can't cover every new feature here, but we hope to give you a good overview of the key features and conceptual changes introduced in Windows 8.

So, whip out that new Windows 8 tablet or PC, start reading, and start taking advantage of the great new features that Windows 8 has to offer.

New Platforms

One of the most significant additions to Windows 8 is its support for platforms other than the traditional PC. Windows 8 moves beyond the Intel and AMD x86 processor family to support System on a Chip (SoC) devices from both the x86 and ARM architectures. ARM, which stands for Advanced RISC Machine, was developed by the company now known as ARM Holdings. Although you might never have heard of them, ARM processors are found extensively in consumer electronics devices, including tablets, cell phones, MP3 players, gaming consoles, computer peripherals, and much more.

While the traditional PC portable form factor continues to shrink with ultra-light tablets and notebooks, SoC support for Windows 8 generally means the capability to provide a Windows experience on small form-factor tablets, cell phones, and smaller handheld devices, in addition to the generally larger (albeit typically more powerful) traditional PC platforms. For ARM devices, the result is a new opportunity for device manufacturers to provide a new selection of handheld devices running a Windows operating system (dubbed Windows on ARM, or WOA) with support for applications like those in the Microsoft Office suite.

For users, it means a consistency of user experience across a broad range of devices. For example, your experience could be largely the same between your notebook, your tablet, and your cell phone. Support for ARM also opens up some interesting possibilities for embedding Windows in a vast array of consumer electronic devices. It's quite likely that someday soon your TV will be running Windows and give you, for example, the same, consistent experience streaming movies on your TV as on your PC.

An important distinction to understand about the ARM platform, however, is that applications written for your desktop PC or notebook won't necessarily run on an ARM device. For example, none of the applications in existence today, built for the x86 Windows 7 and earlier operating systems, will work on ARM-based devices. However, that roadblock doesn't exist for Windows 8-specific applications.

Microsoft's Visual Studio development environment makes it relatively easy to compile an ARM version of an application at the same time you compile one for the x86 platform. This means that developers can create one code set for their application and publish it for both platforms. When you download an application from the Windows Store, that app will run on the Windows 8 "traditional" devices as well as ARM-based Windows 8 devices. You can install the app on up to five devices in any mix of x86- and ARM-based devices. The app will provide the same experience on all of them.

What about Office applications, you ask? Excellent question! Microsoft includes four Office applications with WOA devices, including Word, Excel, PowerPoint, and OneNote. These versions of the Office applications do not provide the same level of features as the regular version, but provide a means for users to work with their data across multiple types of devices. For example, if you sync your OneNote notebooks to SkyDrive, you can view them in OneNote on your WOA device. Or, when someone e-mails you a spreadsheet as an attachment, you can view it in Excel on the WOA device.

The Windows 8 Interface

As with many previous versions of Windows, Windows 8 introduces a new user interface. Unlike previous versions, however, Windows 8's new interface is radically different from what we've come to know as the "traditional" Windows user interface. Clearly designed with the tablet and handheld market in mind — at least in large part — Windows 8 gives you a simplified, clean user experience with tiles providing access to applications.

NOTE

The Windows 8 UI look isn't just about tablets and small form-factor devices. To Microsoft, the new UI is really as much an aesthetic concept as it is a user interface. It's about uncluttering the desktop, websites, and PowerPoint decks almost as much as it's about uncluttering the Windows user interface.

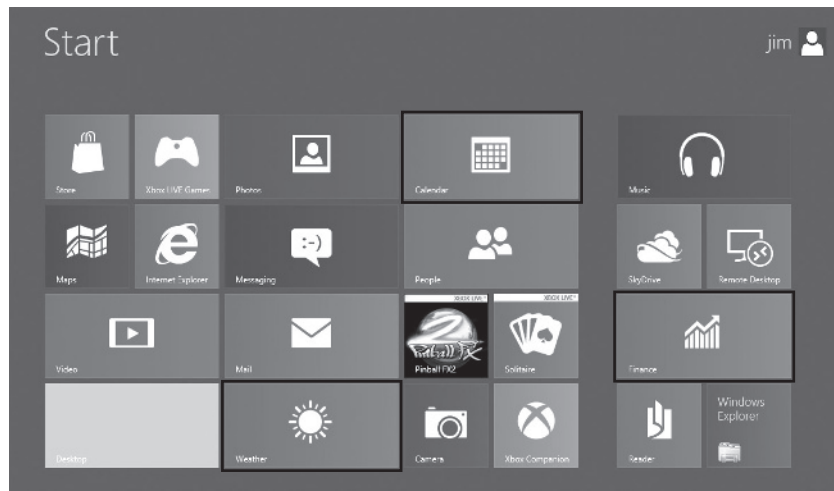
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The Start screen

Figure 1.1 shows the Windows 8 Start screen, a key component of the new Windows 8 interface. You'll learn how to navigate the new Windows 8 interface in Chapter 2. For now, understand that the tiles on the Start page, like icons on the traditional Windows desktop, give you quick access to your programs and documents. Tap the Internet Explorer tile, for example, and Internet Explorer opens. Likewise, click or tap the Photos tile, and the Photos app opens, enabling you to view the photos stored on your computer, or in SkyDrive, Facebook, Flickr, and other locations.

FIGURE 1.1

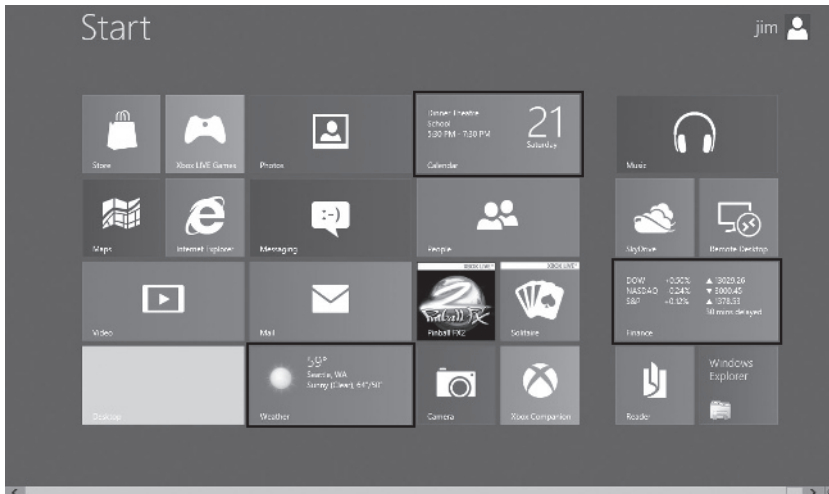
The Windows 8 Start screen



A key difference between Windows 8 tiles and desktop icons, however, is that tiles can be live, showing data that changes dynamically. The Mail tile, for example, shows a preview of new messages in your Inbox (see Figure 1.2). The Calendar tile shows a preview of meetings and events in your Calendar, the Finance tab shows stock prices, and so on. The advantage is that the tiles can give you information at a glance that you would otherwise have to open a program to view.

FIGURE 1.2

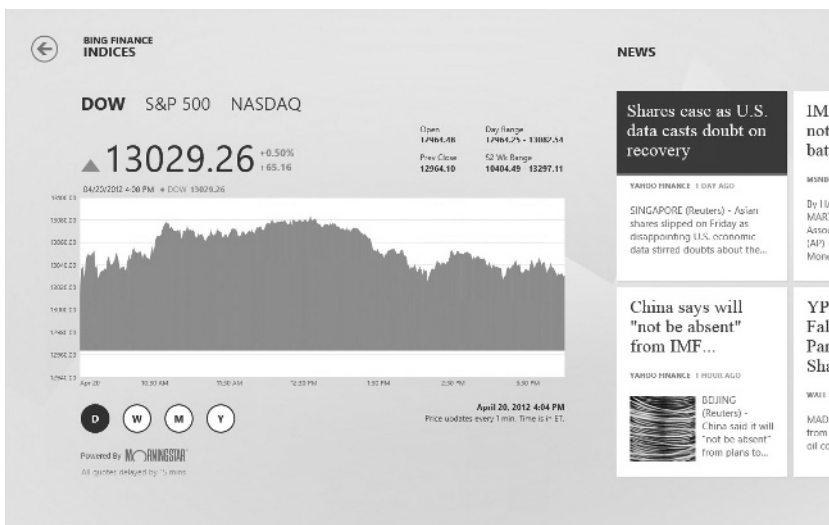
Live tiles show dynamic data.



The Windows 8 UI isn't just about the Start page or its tiles, however. Windows 8 apps generally follow the same clean, streamlined look as the Windows 8 interface itself. For example, Figure 1.3 shows the Finance application. There is no window border, no controls in the title bar, and no visible menu. While a Windows 8 app can include any number of interface features specific to the application, in general the interface will be simple and streamlined like the Finance app, if not more so.

FIGURE 1.3

A Windows 8 app typically has a clean, simplified interface.



Although the Windows 8 interface is a departure from the traditional Windows desktop, the combination of live tiles, clean look, and capability to put your most frequently used apps and documents in one area for quick access makes Windows 8 a winner, particularly for tablets and handheld devices.

The Lock Screen

The Windows 8 Lock Screen appears when the computer is locked (see Figure 1.4). The Lock Screen shows the current day and time, battery status, and network status, all on a photo background. The Lock Screen can also display notifications from applications. To display the logon screen, slide the Lock Screen up.

FIGURE 1.4

The Lock Screen



The Charms Bar

The Charms Bar appears at the right edge of the display (see Figure 1.5) when you move the mouse to the bottom-right or upper-right corner of the display. You can also display the Charms Bar by swiping in from the right edge of the display.

FIGURE 1.5

The Charms Bar



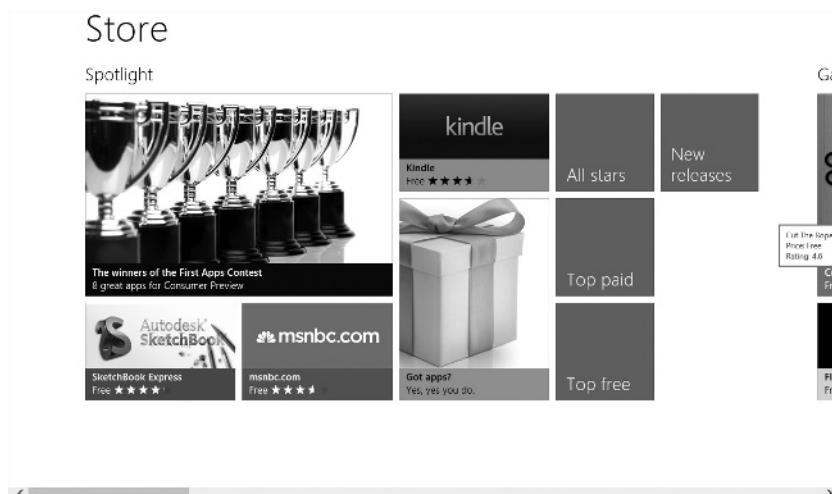
The Charms Bar gives you quick access to Search, Settings, and other options and features.

The Windows Store

If you're familiar with the iPad, iPod, or Android devices (not to mention a handful of other types), you're familiar with the concept of an app (application) store. As you might expect, given Windows 8's expansion in the tablet and handheld market, Windows 8 adds its own app store, called the Windows Store, shown in Figure 1.6.

FIGURE 1.6

The Windows Store



The great thing about the Windows Store, like its counterparts for other devices and platforms, is quick access to a vast collection of applications from games to productivity tools to multimedia apps. As long as your device is connected to the Internet, you can open the Windows Store, browse for and quickly locate the app you need, and typically, in less than a minute, have the app installed and running on your device. Many apps are free; others have some cost. Many give you the capability to try the app for free before you buy it.

Cloud Synchronization

With the likelihood that many people will have multiple Windows 8 devices, it's no surprise that Windows 8 introduces some great cloud-synchronization features. For example, Windows 8 can integrate with your Windows account (formerly called Windows Live accounts) and SkyDrive to give you access to documents and photos from multiple devices. You can save, open, and view files from SkyDrive from a variety of devices, including a Mac or iPad, your Windows Phone, or your iPhone.

Many Windows 8 applications integrate with SkyDrive directly. For example, the Photos app not only lists the photos you have on your computer, but also those in SkyDrive (as well as Facebook and Flickr). If you have a domain account, you can associate your domain account with your Windows account and enjoy that same cloud experience.

Other applications also support SkyDrive. For example, you can get a free OneNote app for your Windows Phone, iPhone, or Android device that enables you to view OneNote notebooks that are synced to SkyDrive. So, if you create a note on your PC, it can automatically sync to SkyDrive, and from there it can be viewed from your mobile phone. This is a great feature for taking your work notes, shopping list, or other notes with you wherever you go.

Tip

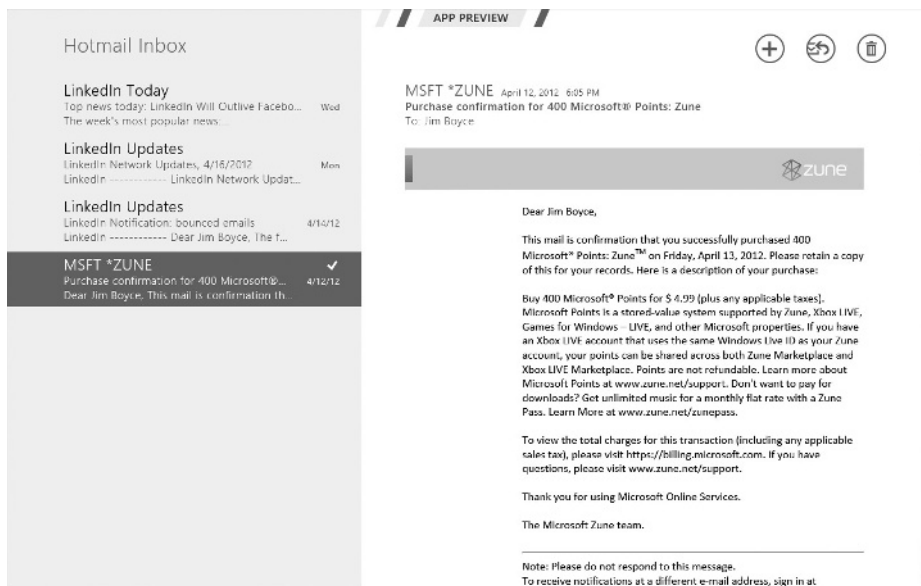
Office Web Apps, introduced with SharePoint Server 2010, are included with SkyDrive, enabling you to view and edit Word, Excel, OneNote, and PowerPoint documents from a web browser without having Office installed on a device.

Integrated Messaging

A lot of great new apps are included with Windows 8, but one deserves particular mention here. The new Mail app included with Windows 8 combines a sleek interface with the capability to integrate e-mail accounts into a unified mailbox (see Figure 1.7). Bringing all of your mail into one app can be a great timesaver and can eliminate the need for multiple mail applications or the need to open multiple web browsers to check your mailboxes.

FIGURE 1.7

The Mail app



NOTE

By default, Mail lets you connect to Hotmail, Google, and Exchange accounts.

Social Networking Integration

Although there is some speculation that social networking sites are a fad that could go away in several years, they are certainly here today. Windows 8 provides social network integration in a handful of ways to make it easier for you to work with your friends and contacts across those services.

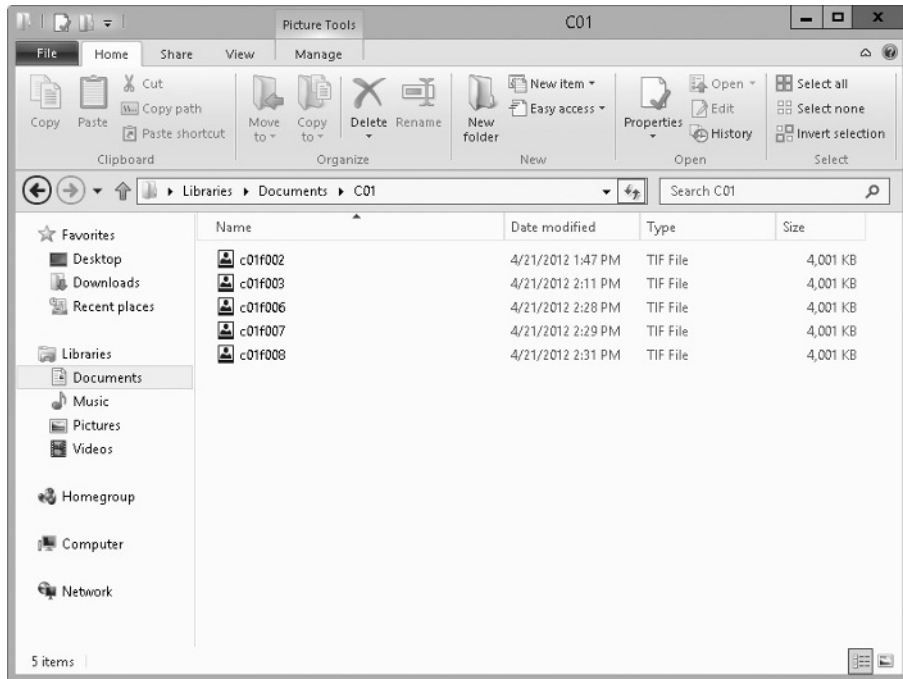
For example, the People app lets you integrate contact information from Hotmail (Windows Live), LinkedIn, Twitter, Exchange, and Google. So, all of your contacts from all of those services can appear in the People app. The People app also provides social updates about your friends within the People app, so you can, for example, see what status updates your friends have posted on Facebook.

File Explorer

The ribbon interface made its appearance in Office 2007 and, since then, has expanded in Office 2010 and SharePoint 2010. Now, you'll find the ribbon interface in File Explorer. Figure 1.8 shows an example of an Explorer window's ribbon.

FIGURE 1.8

The ribbon interface in Explorer



As you might expect, the ribbon in Explorer groups commands for working with and sharing files and folders, changing how items display in the window, and in the case of media files, gives you commands you can use to play the files.

Tip

You can click the up arrow near the top right of the ribbon to minimize it. The arrow changes to a down arrow which, when clicked, expands the ribbon.

Another great addition in File Explorer is the capability to easily mount CD images and virtual hard drive images right in Explorer. Once you mount an ISO image, for example,

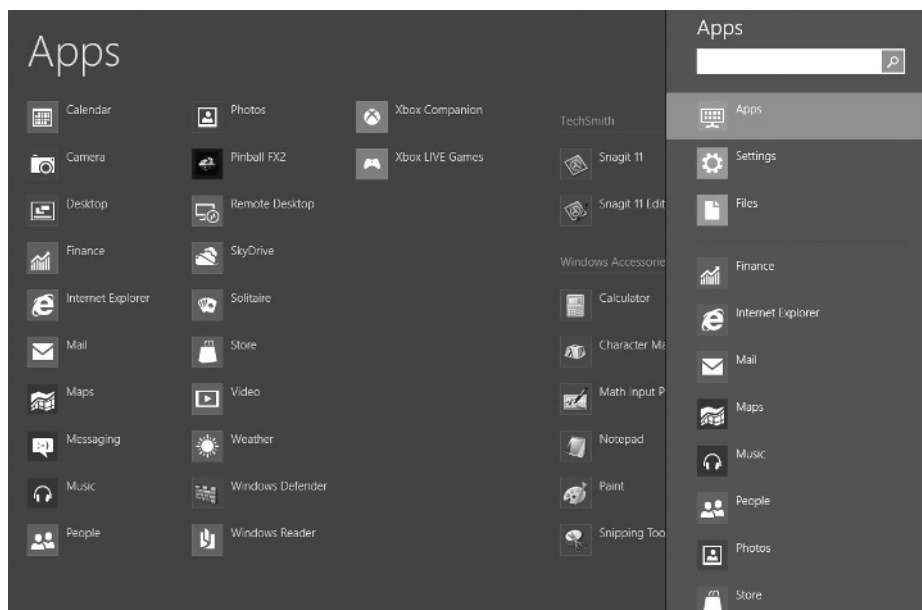
the image appears in File Explorer as CD, just as if you had a physical CD inserted in your CD drive. Although you could mount these images in Windows 7, File Explorer makes it much easier.

Search

Windows 7 integrated search within the operating system to enable you to quickly locate files, e-mail messages, and other items on your computer. Windows 8 enhances that dynamic search capability and adds a great new interface for search that categorizes results. Figure 1.9 shows an example of a search in Windows 8 Search.

FIGURE 1.9

The new Windows 8 Search screen showing results for Apps



Search categorizes your search results so you can quickly find the item you're looking for. The categories are listed on the right, and clicking on a category displays the results for that category at the left. By default, the App category is selected, so Search automatically shows all apps on your computer. To find a specific app, document, e-mail, or other item, just type an appropriate search word or term in the text box. Then, click a category to view the items in that category that meet your search criteria.

You can use natural language query syntax, such as “Find all files where the filename starts with Goober and the size is greater than 10MB.” You can also use the Advanced Query Syntax (AQS) available in Windows 7 to search, such as `filename:Goober size:>10MB`.

Spell Check and AutoCorrect

Windows 8 extends spell check across the operating system to any application that uses standard text controls. This means, for example, that you can use spell check in Lync or other applications that don't have their own spell check feature. In addition, Microsoft is adding spell check to Internet Explore 10 across all platforms, which means spell check will be available on IE 10 running on Windows 7.

Enterprise Features

Windows 8 includes a selection of features that will only be available to enterprise users via the Windows 8 Enterprise edition. This section explores the major features that are exclusive to Windows 8 Enterprise.

Windows to Go

Windows to Go enables you to boot and run Windows 8 from a USB flash drive. This means you can take your operating system, applications, and documents with you from one device to another. This capability also offers administrators a means of restricting access for specific types of users, such as contingent workers, consultants, or visitors.

DirectAccess

DirectAccess allows remote users to access the corporate network without the need for a Virtual Private Network (VPN) connection. Unlike a VPN connection, which the user must establish manually, DirectAccess establishes a bi-directional connection automatically for the user. The result is that users can gain access quickly and simply to internal network resources such as messaging services, file servers, printers, collaboration tools like SharePoint, and more. Think of DirectAccess as an automatic VPN that just happens for the user; users don't need to do anything to initiate the secure connection to the corporate network. DirectAccess authenticates the computer, which means the computer can connect to the network before the user logs on. DirectAccess can also authenticate the user and supports two-factor authentication using smart cards. The end result is a very seamless VPN experience for users, with simplified deployment and management for the IT team.

BranchCache

BranchCache in Windows Server 2012 and in Windows 8 caches web, file, and other application content, enabling users to access that cached content locally from the LAN rather than retrieve it from the WAN. BranchCache, therefore, can potentially eliminate a large amount of external network traffic, which can be particularly important for organizations with relatively low-bandwidth WAN links. For security, BranchCache encrypts the content both on the caching server(s) and client computers.

AppLocker

AppLocker enables administrators to control which applications and processes users can run on their computers, including executable files, Windows Installer files, DLLs, scripts, packaged applications, and packaged application installers. Controlling applications in this way can improve security and adherence to processes by blocking unapproved applications and ensuring licensing compliance, and also helping to ensure process compliance. Administrators can define rules based on attributes such as application publisher, product name, filename, version, and others. Rules can be assigned to individuals as well as security groups, providing flexibility and the ability to implement exceptions.

VDI enhancements

Virtual Desktop Infrastructure (VDI) provides the capability to deliver a desktop computing experience to users from virtual clients running in a datacenter. The VDI features in Windows 8 support a rich client desktop experience, including host-side rendering to support for graphics-intensive applications; GPU Virtualization, which enables multiple clients to share a Graphics Processing Unit (GPU) on the Hyper-V server; intelligent screen capture and compression to improve user graphics experience and reduce network bandwidth requirements; and USB device redirection. All of these features combine to enable a rich desktop user experience to a broad range of devices, including lower-cost devices.

Windows 8 app deployment

The Enterprise edition of Windows 8 includes the capability for PCs and tablets that are domain joined to side-load internal apps. This feature gives administrators an easy means for deploying these apps across the enterprise.

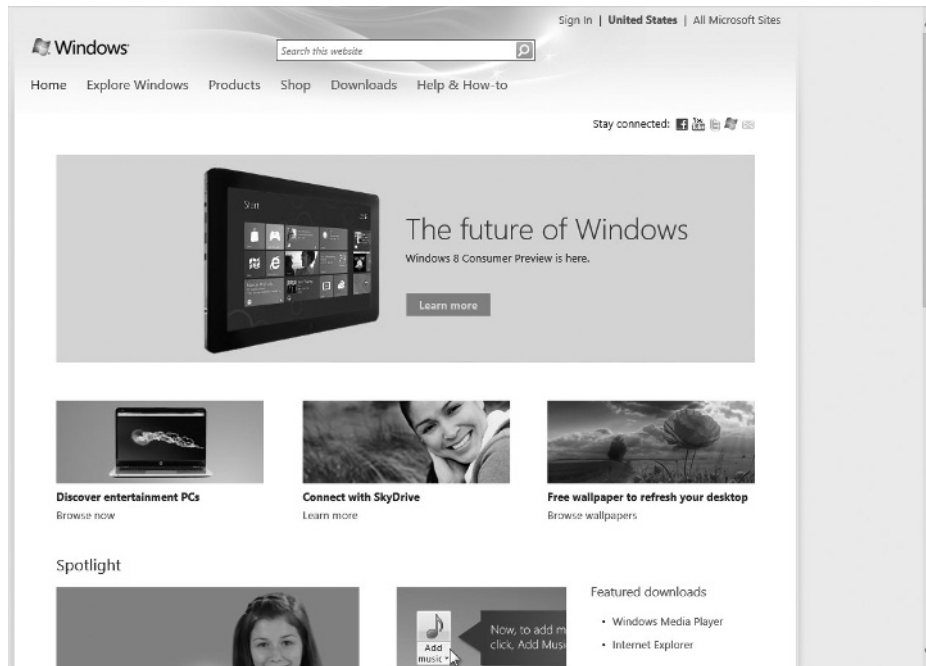
Internet Explorer 10

Windows 8 ships with Internet Explorer (IE) 10, the latest release in the IE family of web browsers. As you might expect, IE 10 comes in a Windows 8 UI flavor, as shown in Figure 1.10. The Windows 8 version sports the clean, minimalist look of other Windows 8 applications. It's also built for touch, enabling you to zoom in and out, browse forward

and back, and manage the display in other ways with simple gestures, making it a great browser for tablets.

FIGURE 1.10

Internet Explorer 10's Windows 8 look



In addition to the streamlined look, IE 10 offers a broad range of other new features and enhancements. For example, IE 10 expands its support for HTML5, adds new CSS3 properties and JavaScript features for developers (along with other development additions), and provides great performance.

One thing you won't find in the Windows 8 version of IE 10 is support for add-ons. Microsoft is moving away from the add-on model and the performance and reliability challenges that add-ons can pose. Instead, Windows 8 IE relies on site developers to leverage HTML5 to build rich browsing experiences without the need for add-ons, and to use feature detection on their sites to determine what browser the user has and to deliver content accordingly.

If you do need a browser that supports ActiveX controls, Silverlight, Flash, and other add-ons, the desktop version of IE 10 included with Windows 8 gives you that capability. The desktop version is a click away in the Windows 8 version, making it easy to switch to the desktop with that site automatically loaded.

Client Hyper-V

Although not enabled by default, Windows 8 includes the Hyper-V client, enabling you to run virtual machines (VMs) within the Hyper-V platform. For example, you might run a VM of Windows XP to support an application that isn't compatible with later versions of Windows. Or, maybe you need to run Linux but don't want to dual-boot between them. Hyper-V on Windows 8 is a great solution.

Client Hyper-V on Windows 8 offers more capabilities and power than its predecessor, Virtual PC. Client Hyper-V supports both 32- and 64-bit client operating systems, although Client Hyper-V only runs on 64-bit PCs running the 64-bit version of Windows 8. It requires a minimum of 4GB of RAM on the host PC and processors that support Second Level Address Translation (SLAT), although most of today's PCs provide that support.

TIP

To enable Hyper-V on your computer, open the Programs And Features object in the Control Panel and click Turn Windows Features On or Off.

BitLocker

BitLocker has been around for a while, but Windows 8 improves performance and adds some new features for disk encryption. For example, when you turn on BitLocker to encrypt a drive, you have the option to only encrypt sectors on the drive that have data stored on them, rather than encrypting the entire drive. As space gets used on the drive, BitLocker encrypts that data. Windows 8 BitLocker also adds the capability to deploy Windows 8 to an encrypted state, rather than encrypting the drive after installation.

Additional Windows 8 BitLocker features include the capability for users to change the BitLocker PIN or password, with support for password and PIN complexity through group policy; a Network Unlock feature that enables automatic unlocking of operating system volumes at system reboot when those systems are connected to the corporate network; and support for Encrypted Hard Drives, which offload the encryption process to the storage controller on the hard drive.

Smart Cards

Windows 8 introduces a handful of features for smart card users and simplifies smart card deployment and management for administrators. For example, Windows 8 supports virtual smart cards (VSC) on systems that support the Trusted Platform Module (TPM). Virtual smart cards can be deployed to users' systems with no cost for physical cards.

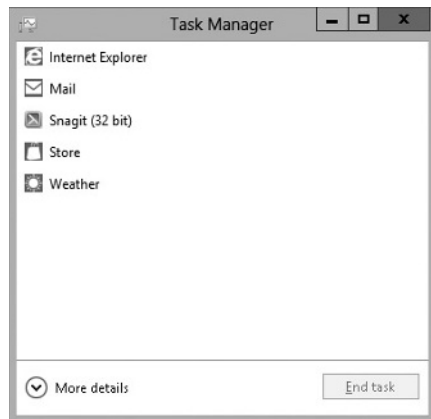
Other smart card changes in Windows 8 include improvements in the smart card sign-on process, making it easy for users to choose a different authentication option after they insert their smart card, and system-level changes for the way the Smart Card Service starts and stops, enabling the service to run only when it is needed, improving overall system performance.

Task Management

The Task Manager, which lets you view and managing running applications and processes, gets a facelift in Windows 8. The new Task Manager simplifies the default display to show only a list of running applications (see Figure 1.11). You can click an application in the list and click End Task to end it.

FIGURE 1.11

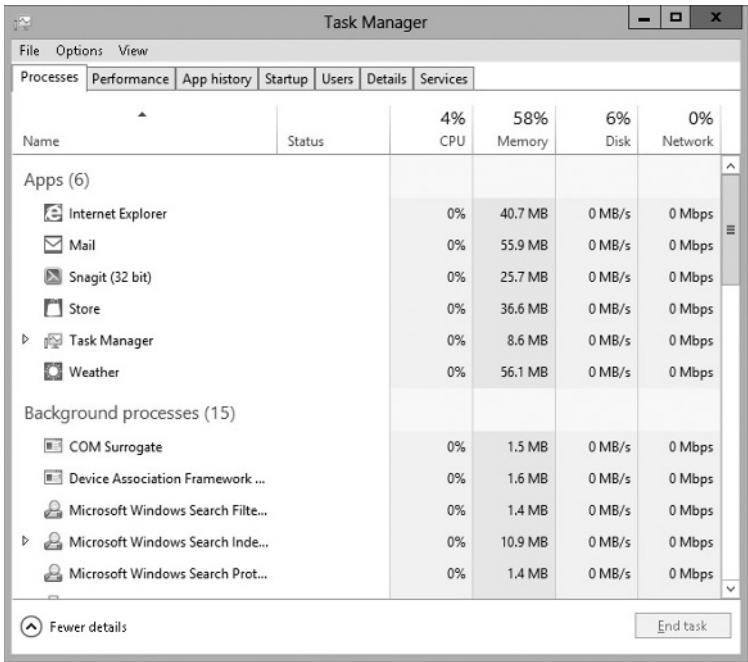
The Windows 8 Task Manager



If you want to see additional information about running applications and processes, click More Details to expand the Task Manager, as shown in Figure 1.12. This more-familiar interface provides multiple tabs to view performance data, application history, and other details.

FIGURE 1.12

Task Manager's expanded view



Proximity and Wi-Fi Direct

Wi-Fi Direct is a peer-to-peer connectivity technology that allows Wi-Fi devices to interact directly with one another without going through a wireless access point/router. Wi-Fi Direct is a bit like Bluetooth, but with a stronger signal and further range.

One of the advantages to the capability for devices to detect one another (Proximity) through Wi-Fi Direct is that you can easily make connections to printers, headsets, and other devices that support Wi-Fi Direct. In addition, Windows 8 applications that support Wi-Fi Direct can discover and communicate with each other across devices easily. This capability opens up a broad range of new features and interesting scenarios for social networking, gaming, and data sharing.

Refresh/Reset

Windows 8 offers two features to help you restore your Windows 8 device to a known, good state. The first of these is Refresh Your PC, which reinstalls Windows 8 without losing your data, Windows 8 apps, and settings. Refresh Your PC also maintains your

network and mobile broadband configurations, BitLocker settings, drive assignments, and so on. Refresh Your PC doesn't keep all of your applications, however. Although Windows 8 apps are retained, traditional Win32 applications are not. Refresh Your PC creates an HTML list on your desktop to let you know what applications were removed. The second feature is Reset Your PC, which reinstalls Windows 8, removing your data, apps, and settings (essentially, a complete reset to "factory condition").

Wrap-Up

There are literally thousands of changes in Windows 8 from previous versions of Windows, so this chapter naturally doesn't cover them all. Many of the bundled applications have been updated, new applications are added, the interface is changed (and not just for Windows 8 apps), and so on. You'll find explanations of many of these changes in the following chapters.

Because the interface potentially has the most impact on the way you use Windows and your Windows apps, that's the best place to start getting familiar with the changes in Windows 8. So, move on to Chapter 2 to learn how to navigate through and use the new Windows 8 interface.

