THE EXPERT'S VOICE® IN WINDOWS 8

Beginning Windows 8

A COMPREHENSIVE, STEP-BY-STEP GUIDE TO UNLOCKING THE POWER BENEATH THE SURFACE OF WINDOWS 8

Mike Halsey
Microsoft MVP for Windows

Apress®

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About the Author

Mike Halsey is the author of several books on Microsoft's operating system, including *Troubleshoot and Optimize Windows 8 Inside Out* (Microsoft Press, 2012) *and Windows 8: Out of the Box* (O'Reilly Media, 2012).

An English and math teacher by trade, he puts his experience with explaining often complex subjects in non-intimidating language, and sincerely hopes you find this book an example of this.

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Since I first self-published my first Windows guides, there have been so many people offering help, support, and encouragement that it would be impossible to name them all here. Thanking them is simpler however. Thank you.

Two people do stand out though as having seen the full potential of those original books in 2006 and 2009. Those people are my parents. I consider myself very fortunate to have parents as grounded and provident as they, and I wish to thank them for the encouragement that has brought me such good fortune. . .

. . .but this doesn't mean they can have all the money!

—Mike Halsey

Introduction

Windows 8 is something new for Microsoft. Since the very first version of Windows was released in 1985, the main "desktop" user interface is taking a back seat to something new and, dare I say, radical.

This can present challenges for some users and there is certainly a learning curve. This book is here to help with that.

Why would you want to stop there though? All that was in Windows 7 still exists along with a lot more new features. This book will help guide you from computer novice to the stage where you can feel comfortable maintaining, safeguarding, and even customizing your own copy of Windows 8, giving clear instructions and easy-to-follow step-by-step guides.

Beginning Windows 8 will show you how to be productive, protect your family, and how to unlock the hidden features and power that exist within this operating system—helping you to become comfortable, feel confident, and take your first steps toward becoming a Windows power user.

Who This Book Is For

This book is for people—be they a computer novice or an enthusiastic amateur—who have already mastered the basics of using their computer for web browsing and e-mail, but who are either new to Windows 8 or want to delve deeper into the OS to do more with it and to get more benefit from having it.

How This Book Is Structured

This book is arranged in a chapter structure that will help you build your confidence and skills as you read.

- **Chapter 1** introduces the new interface in Windows 8 and shows you how to get the most from it.
- **Chapter 2** shows you how to get around Windows 8, including the desktop and certain software and utilities.
- **Chapter 3** helps you connect your computer to the Internet, to other computers in your home or work network, and to other hardware devices.
- **Chapter 4** shows you how to share your life, files, pictures, and more with friends, colleagues, and family via the Internet and on home and work networks.
- **Chapter 5** helps you make sense of the myriad collections of folders, files, and documents that can accumulate on your computer with clever searching, sorting, and filtering techniques.
- **Chapter 6** answers all your printing questions, from attaching a Wi-Fi printer to setting different printers for work and home.
- **Chapter 7** shows you all the ways the operating system can help you to have fun with your Windows 8 computer.

- **Chapter 8** covers Windows 8 features that can help you use your computer productively and efficiently for work.
- **Chapter 9** helps you make your copy of Windows 8 your own, from personalizing the interface to changing settings in order to make better use of your computer.
- **Chapter 10** introduces you to the vast array of accessibility features the operating system has to offer everyone, including those with vision or motor impairments.
- **Chapter 11** shows you how to make sure your computer and files are safe and secure.
- **Chapter 12** shows you how to keep your copy of Windows and your files safe, updated, and backed up.
- **Chapter 13** is a master class in the myriad ways that Windows 8 can be customized, from simple changes through more advanced customization using the registry.
- **Chapter 14** is your introduction to the sometimes complex world of virtualization, showing you how to get the best out of Windows 8 Pro's new virtualization tools.
- **Chapter 15** guides you through installing Windows 8 on an existing computer.

Contacting the Author

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CHAPTER 1

Introducing Windows 8

When Microsoft first began talking about "the next version of Windows" in January 2011, they used words like "bold" and "risky" to describe both it and the venture that the company was undertaking. Microsoft was already some years behind the competition in the ever-expanding consumer tablet market, and they needed desperately to catch up.

At the Windows BUILD developers' conference that September, it was actually no surprise to discover Microsoft's entirely new tablet-centric interface based on their highly praised Windows Phone user interface. What did come as a surprise, however, was the beginning of a move toward a new user interface paradigm for Windows, the relegation of the desktop to an app.

The truth isn't actually anywhere near simplistic. Windows 8 is a far more detailed and complete operating system than it was before. The new interface doesn't replace the desktop, but it does offer new ways for both power and casual users get the very best out of the OS. Moreover, many of the administrative resources are now easier to access than ever before.

In this chapter, I'll talk you through this version's most significant changes to Windows, and help you decide where this operating system fits within your digital world. We'll cover

- How Windows 8 differs from its predecessors
- The differences between the various SKUs (editions) and processor versions
- The new features in Windows 8
- How to use, customize, and configure the new Windows 8 lock screen

What Is Windows 8?

Windows 8 is the 2012 release of Microsoft's popular Windows operating system. It is based around a small kernel called MinWin, which provides all the core operating system functions. MinWin is also the basis for the Windows Server operating system and possibly others in the future, including Windows Phone.

Having a single kernel powering Microsoft's operating systems helps maintain compatibility across devices and platforms, reduces development time, and helps increase security. It is also what Apple does; its OS X desktop operating system and the iOS operating system on the iPhone and iPad are based on the same kernel.

Windows 8, like Vista and Windows 7 before it, is a *modular operating system*. This means that features can be switched on or off, and some features can be removed completely without affecting the resiliency of the whole system. It is what happens with the desktop and server versions of Windows: the features and modules differ while the kernel remains the same.

This modular approach helps Windows 8 maintain compatibility with older "legacy" software and hardware, while still being as customizable as previous versions of the operating system.

How Windows 8 Differs from Windows 7 and Windows Vista

When you first start Windows 8, the changes from Windows 7 are significant and very obvious. The biggest change is the use of the new UI (see Figure 1-1) as the default method for interacting with software programs and apps. The desktop has effectively been downgraded to an app itself, but it retains all the power and functionality of Windows 7.

Figure 1-1. *The Start screen*

Windows 8 is also the very first version of Windows to feature a built-in antivirus as standard. The new Windows Defender software is not like the version in Windows XP, Vista, and Windows 7, where it was a basic malware protection tool. In Windows 8, it is a fully rebadged copy of Microsoft's free Security Essentials software.

The final major change is the addition of Microsoft's Ribbon interface throughout the desktop, File Explorer, and other aspects of the OS. Other than some new features (as you would expect with any new version of an operating system), the underlying base for Windows 8 is exactly the same as its predecessor. Microsoft hasn't changed or tinkered with anything other than the Task Manager, which has had a major overhaul. What they have done is add a whole raft of new features over the top. This means that if you are familiar with using Windows 7, you won't get lost because almost everything is where you would expect to find it—certainly when you drill down into the advanced features on the desktop. Some of the new features may come as a pleasant surprise, however, as they expand the core power and flexibility of Windows in new and exciting ways.

How Window 8 Differs from Windows XP

If you're moving from the "comfortable old shoe" of Windows XP to Windows 8, then you're probably in for a very pleasant surprise. That may surprise you, given the move away from the desktop as the default UI and the fact that software and hardware compatibility is no better in Windows 8 than in Windows 7.

This compatibility issue, however, is one that I will come back to several times in this book. It's very common for us to have older software and possibly hardware that we're either very comfortable using, or that we have to use for work or to perform another specific task. I have an aging graphics package from Microsoft that was released over ten years ago, and consequently, not all the features work properly now in Windows 8. That said, the virtualization technologies built into Windows 8 Pro and Windows 8 Enterprise, as well as the application compatibility wizard, address some of the issues. Overall, the way Windows has advanced to this version makes upgrading extremely worthwhile.

The simple fact remains that all support for Windows XP is ending in April 2014. After that, there will be no further security and stability patches for the operating system, so it will become a big target for malware writers and criminals. Windows XP Mode in Windows 7, while good, is based on older Virtual PC technology and it, too, will no longer be supported after April 2014 (although Windows 7 itself will be supported until 2020). Conversely, the Hyper-V virtualization technology built into Windows 8 will continue to be supported for many years.

Windows 8 is the most secure operating system that Microsoft has ever produced, especially with its first-ever built-in antivirus protection. Security was difficult to maintain in Windows XP, but doesn't really need to be considered in Windows 8—so long as you are aware that criminals and malware writers will try to trick you into bypassing the operating system's built-in security. I cover this later in the book.

I will talk more about security and virtualization in Chapters 11 and 14, respectively.

32-bit (x86) and 64-bit (x64) Explained

Windows 8 is reportedly the last version of the desktop operating system to come in both 32- and 64-bit variants. The reason for this is to maintain compatibility with older hardware that may still be in use in some environments.

What do the terms "32-bit" and "64-bit" mean? Well, a *bit* is a binary digit. Binary is the mathematical number base that uses only the digits 0 and 1. The number zero is represented as 0, and the number one is represented as 1; but as there is no digit 2 in binary, representing the number two requires an additional digit, just as the number ten does in decimal. In binary, the number two is represented as 10, three as 11, four as 100, and so on.

A 32-bit number is represented by 32 digits, and thus cannot be larger than 65,535. There are ways of getting around this limit using software, which involves using two or more 32-bit numbers together to achieve greater numbers, but this adds significant overhead and can slow down performance. With a 64-bit system, the largest number that can be processed is 18,446,744,073,709,551,616. This is significantly higher than any maximum value that can be processed by a 32-bit system. As a result, computers running 64-bit operating systems can directly address vastly more memory (the limit with a 32-bit operating system is 4GB, including any graphics memory in the machine) and processing larger numbers means the computer can do more things simultaneously.

The main benefits of a 64-bit system being able to process larger numbers come not just in being able to address more memory, but also in being able to perform operations in a single step. For example, if you were working with very large numbers in a 32-bit operating system, let's say the number 100 billion, performing a calculation on this would require multiple memory registers to be used simultaneously. With a 64-bit operating system, memory is used more effectively because fewer memory registers are required to perform calculations on numbers. All new computing hardware from the last few years is able to run 64-bit operating systems, but the Windows 8 installer will tell you if there is a problem. Conversely, not all older hardware has 64-bit driver support; and if you have older hardware in or attached to your computer, you should check for 64-bit driver availability before changing to 64-bit.

If 64-bit compatible drivers for all the hardware in and attached to your computer exist, and you either already have or plan to upgrade to more than 4GB of memory, including the memory on your graphics card, you should use the 64-bit version of Windows 8.

What's New in Windows 8

As I have already mentioned, Windows 8 presents the biggest change to the user interface since Windows 95 was launched. Underneath this new interface, however, are hundreds of additions and changes, small and large, which I will talk about in Chapter 2.

The Start Screen

First of all, what is this new user interface? Why does it exist and how do you use it? The Start screen came about in Windows 8 because of Microsoft's need to get into the tablet computing market. It is based on a design created for the company's Windows Phone operating system and can be traced back in various forms to the Zune media player and even Windows Media Center before that.

The Start screen is based around a series of "live tiles," each of which gives you real-time information from a particular app. For example, they may display the number of e-mails you have waiting, or the sender and subject of those e-mails. They may show you calendar appointments, currency exchange rates, stock market values, or the latest photographs in your collection.

I will talk a lot more about how to use and navigate Windows 8 in Chapter 2; for now, suffice it to say, the system is much more powerful, useful, and flexible than it might appear at first sight.

Refresh and Reset

Windows Vista first introduced "system image" backup, where you could create an image of your entire Windows installation—including all your settings and installed software—and restore from this backup in the event of a catastrophe. With Windows 7, this feature was included in every edition of the OS.

Windows 8 still contains this feature, but it also adds two more. Refresh is a system that allows you to reinstall Windows if you encounter a problem—while maintaining all your settings, data, and apps (see Figure 1-2).

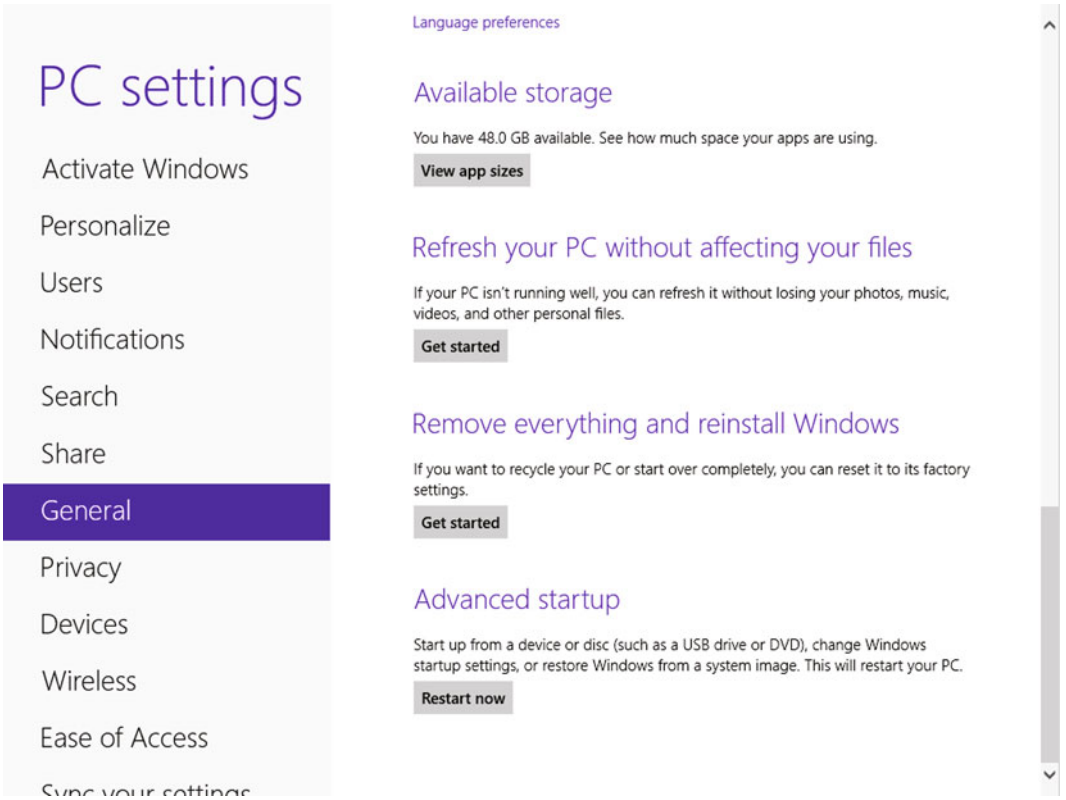

Figure 1-2. *The Refresh and Reset options in Windows 8*

■ **Tip** Using Refresh to fix your computer retains all your apps, but it wipes out all the desktop software you have installed on your computer. You can create a custom refresh image, however. I cover how to do this in Chapter 12, where I also discuss how it differs from a system image backup and why this is important.

When you use the Reset feature, all your files, settings, and apps are deleted, and your computer is returned to its factory default state. This can be useful if you want to give away or sell your computer.

Windows To Go

The Windows To Go system allows you to create a bootable USB flash drive containing your copy of Windows 8 with its software and settings. It is compatible with both USB 2.0 and USB 3.0 drives, and on BIOS and UEFI motherboards.

Windows To Go sounds like a takeaway for a very good reason. No longer will people have to worry about finding mobile versions of apps, or using cloud services. With Windows To Go, you really can carry around your entire Windows installation, safely and securely.

Windows To Go is an Enterprise-only feature in Windows 8, however, and so it isn't included in the standard and Pro editions of the operating system.

Hyper-V

Probably the most talked-about feature in Windows 8, after the new UI, is the inclusion of Microsoft's Hyper-V virtualization software (see Figure 1-3). First released in 2008 as part of the Windows Server 2008 operating system, this is a virtualization tool that allows other operating systems—including earlier versions of Windows and GNU/Linux—to be run inside the main installed *host* operating system, this being Windows 8.

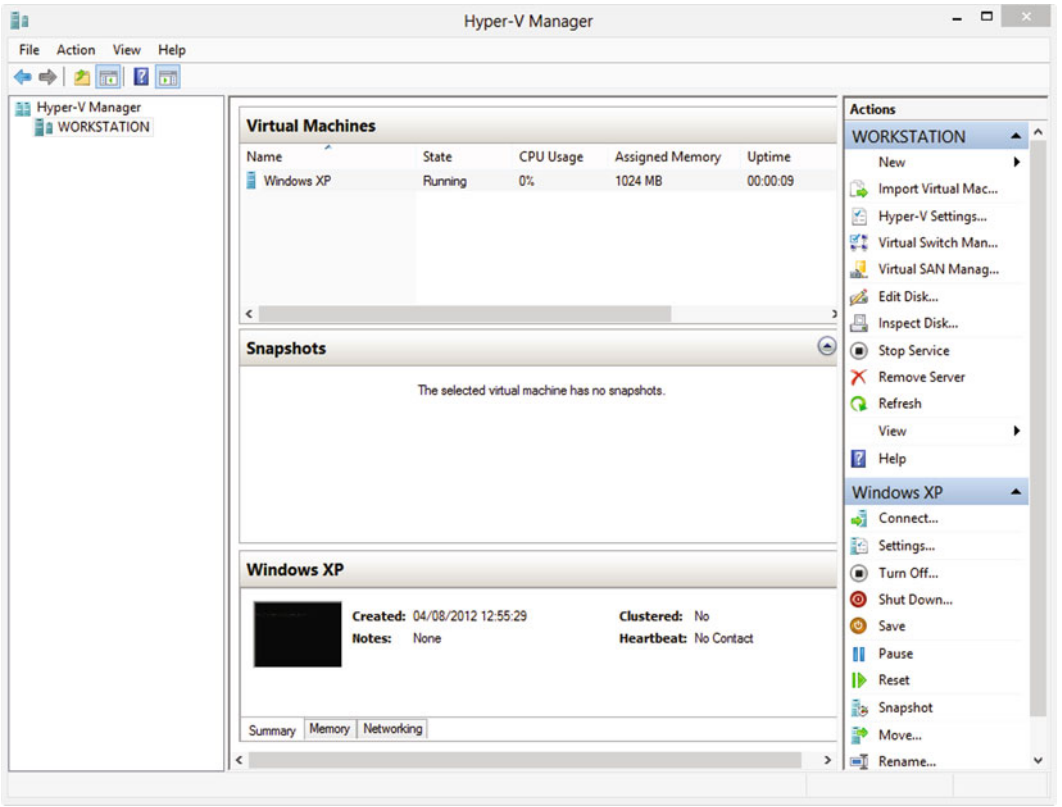

Figure 1-3. *Hyper-V in Windows 8*

Each virtualized OS runs effectively in a self-contained ISO disk image file. You can run multiple operating systems side by side on a single Windows desktop.

Hyper-V is a Type-1 hypervisor, which means it can communicate directly with your computer's hardware and take full advantage of it. One advantage of hypervisors such as this is that they can be programmed to take full control of a specific processor core in a multicore chip. This maximizes processing efficiency and ensures there is no latency while each running operating system waits for processing resources to become available.

By contrast, older Type-2 hypervisors used the host operating system to *simulate* the hardware of a computer, not allowing access to the actual PC's hardware. This type included the now-aging Microsoft Virtual PC.

Storage Spaces

Storage Spaces is a feature that allows you to aggregate multiple hard disks into a single large storage location. For example, if you have a 750GB HDD and a 2TB HDD, you can pool these into a single 2.75TB drive. You can also use USB-attached disks with the feature.

Windows 8 manages the data distribution and can also create built-in resiliency with mirroring or striping of data across the various physical hard disks to prevent data loss.

Secure Boot

One of the more controversial features of Windows 8 is Secure Boot, a feature that prevents any UEFI-equipped motherboard from booting an operating system that is not signed with a security certificate. This feature, sometimes called Trusted Boot, will most commonly be found on the computers you buy from manufacturers such as Samsung, HP, Dell, and so forth, where it will be enabled by default.

The reason behind Secure Boot is to stop unauthorized firmware, operating systems, or UEFI drivers from loading at boot time. This is to prevent the spread of malware and viruses that can attack the computer at boot time.

■ **Note** Secure Boot can be disabled, but UEFI systems vary across manufacturers. To disable it, you need to refer to the documentation for the system used on your computer.

What Else Is New?

There are many other new features in Windows 8, including new multimonitor support; drivers for new hardware types such as USB 3.0; an improved Task Manager, Windows Live ID, and SkyDrive integration; improved boot times that make use of hibernation; and a new security system for product activation.

Configuring the Windows 8 Lock Screen

The new lock screen in Windows 8 is much more useful than those of previous Windows versions in that it can display additional information about Internet connectivity, battery status (very useful), e-mail, appointments, and more.

You can also plug third-party apps into the Logon screen as they become available. But how do you do this?

■ **Tip** On a desktop PC or laptop, you can quickly open the Logon screen without having to swipe upward with your mouse. Just press any key on your keyboard—and the Logon screen opens.

You access the Logon screen settings using the new PC Settings in the interface. This is a multistep action. If you are using touch, swipe your finger in from the far right of the screen to bring up the charms (see Figure 1-4). I talk about charms in detail in Chapter 2 and discuss touch in Windows 8 later in this chapter.