



Part I

Getting Started

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What's New in Windows 10

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If you have been using Windows 8 or Windows 8.1, you'll find Windows 10 both familiar and new. Windows 10 builds on the significant development done for Windows 8.x but adds improved usability. Windows 10 isn't just a tweak to Windows 8.1, however. Not only does Windows 10 offer a better user interface, but you'll find a long list of new and enhanced features.

If you are currently using Windows 7 or even Windows XP, you'll find Windows 10 to be a bit of a departure from your current experience in some ways. In other ways, Windows 10 isn't much different from Windows 7. For example, the Windows desktop still functions the way it does in Windows 7. With the changes introduced in Windows 8.1 and refined in Windows 10, you'll find that working in Windows 10 — whether on the Windows desktop or on the Start menu — is really not that different from your current experience. That means you can become productive with Windows 10 in a very short time.

In this chapter, we don't focus on the features you've encountered in previous versions of Windows — we explore the new and changed features in Windows 10. This chapter provides an overview of these features, and other chapters provide a deeper explanation. Although we can't cover every new feature in this chapter, we hope to give you a good overview of the key features and conceptual changes introduced in Windows 10.

Now, whip out that new Windows 10 tablet or PC, start reading, and start taking advantage of the great new features that Windows 10 has to offer.

New Platforms and Devices

One of the most significant additions to Windows 8 was its support for platforms other than the traditional PC. Windows 8 moved beyond the Intel and AMD x86 processor family to support System on a Chip (SoC) devices from both the x86 and ARM architectures. Windows 8.1 naturally also supported the ARM architecture, as does Windows 10.

ARM, which stands for Advanced RISC Machine, was developed by the company now known as ARM Holdings. Although you may not have heard of ARM processors, they are common in tablets, cell phones, MP3 players, gaming consoles, computer peripherals, and many other consumer electronics devices.

While the traditional PC portable form factor continues to shrink with ultra-light tablets and notebooks, SoC support for Windows 10 offers the capability to provide a Windows experience on small form-factor tablets, cell phones, and smaller handheld devices, in addition to the generally larger (and typically more powerful) traditional PC platforms. For ARM devices, the result is an opportunity for device manufacturers to provide a new selection of handheld devices running a Windows operating system (dubbed *Windows 10 IoT Core*) 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 can be largely the same on your notebook, your tablet, and your cell phone. A single app can give you the same data and user experience across each device, with only small interface differences driven by screen size. Support for ARM also opens up some interesting possibilities for embedding Windows in consumer electronic devices. Someday soon your TV may be running Windows and giving you the same streaming experience as your PC. Devices such as these are loosely labeled as *Internet of Things (IoT)* devices.

Windows 10 Mobile and IoT Core

In addition to the more traditional PC editions for home, professional, and enterprise users, Windows 10 is available for a variety of IoT devices. Windows 10 supports a common platform for universal apps and drivers across all of these types of devices, which further reinforces the capability to deploy apps across a very broad range of devices. But even with a common platform, the user experience on these three categories of devices is different depending in part on which edition of Windows 10 the device runs.

Windows 10 Mobile targets mobile devices and provides features such as a familiar and consistent user interface, instant on, and long battery life. Windows 10 Mobile supports universal apps, meaning an app developed for a desktop or tablet device can also run on a mobile device. Although Windows 10 Mobile does not support classic Win32/.NET apps, it

provides lockdown capabilities to enable developers to create and deploy line-of-business (LOB) apps to mobile devices. For example, the app you use to submit and approve expense reports on your PC can also deploy and run on a special-purpose handheld device running Windows 10 Mobile as well as your Windows Phone, also running Windows 10 Mobile. Windows 10 Mobile is also available in an Enterprise edition that provides additional device management capability and security.

Windows 10 IoT Core is a small-footprint edition of Windows 10 with a subset of features that targets small devices and single-purpose devices, and has lower requirements for RAM, processor, and storage. Windows 10 IoT Core supports universal apps and drivers, the same development tools as for all Windows 10 devices, and the key features that Windows 10 provides on other platforms, such as security, update capability, manageability, and modern apps.

NOTE

Windows 10 IoT Core supports headed devices (those with a video display) as well as headless devices (those without a display).

However, Windows 10 IoT Core does not include any Microsoft branding or Windows UI, has no Windows shell or apps, and does not include the apps you would otherwise expect on a tablet or other multi-use device, such as Windows Explorer, the Mail app, or a browser. Windows 10 IoT Core is geared toward device-specific user experience scenarios. For example, a GPS manufacturer might design a GPS device that uses Windows 10 IoT Core as its operating system, or a wearable technology company might use Windows 10 IoT Core as the underlying OS for a new smart watch.

NOTE

Windows 10 IoT Core supports SoC devices as well as the Raspberry Pi 2 single-board computer. The latter enables hobbyists and developers to create Windows 10 apps for this credit card-sized device.

Xbox and Windows 10

Xbox has been the leading game console for several years, and although users have been able to control and integrate with their Xbox from a Windows 8.x PC, they could play Xbox games only on their Xbox consoles. Windows 10 changes that paradigm.

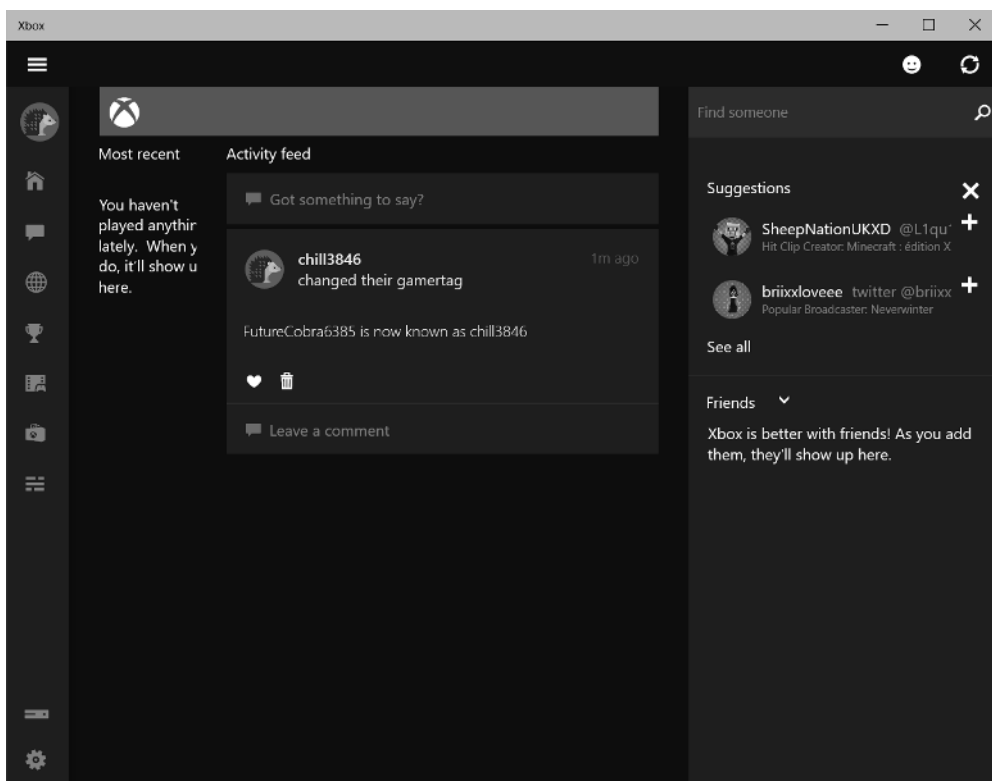
Windows 10 enables users to play Xbox games on their Windows 10 PCs and tablets. The games do not run natively on the PC, but instead stream from the Xbox to the other device using the Xbox app on the Windows 10 device. For example, if you're playing a game on your Xbox but need to move to another room, you pick up your tablet, connect to the Xbox, move to the other room, and continue playing.

If you have visions of playing Xbox games at work, that's still a dream (unless you have an Xbox at work). The only way Windows 10 streams is via Wi-Fi on a local network, and you can stream to only one device at a time. In addition, the game must be designed specifically to support streaming.

The Windows 10 Xbox app (Figure 1.1) enables you to stream compatible Xbox games to your Windows 10 device as well as to interact with your Xbox console and Xbox Live.

FIGURE 1.1

Use the Xbox app to stream games to your PC.



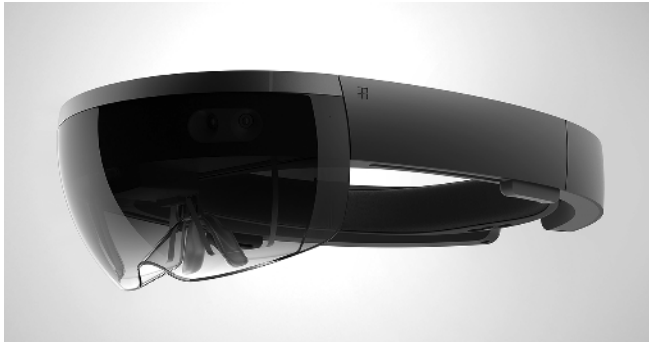
HoloLens

HoloLens is a new product from Microsoft that was conceptualized as part of the initial Microsoft Kinect project. HoloLens is essentially a wearable computer in the form of a

headset that Microsoft touts as the “first fully untethered holographic computer” (see Figure 1.2). HoloLens is a perfect example of Windows 10 IoT in action. The device is fully self-contained and does not require an external computer to drive it.

FIGURE 1.2

Microsoft HoloLens is a wearable holographic PC running Windows 10.



HoloLens overlays holographic content on your real-world view for an augmented reality experience. The device has obvious potential in the gaming world, but even more so as a means for artists, engineers, educators, and many others to change the way we work, teach, and learn.

Surface Hub

Microsoft's Surface Hub is a large-screen, hybrid TV/computer/tablet device designed for in-person collaboration as well as video conferencing through Skype for Business. The Surface Hub is essentially a giant touchscreen TV with an integrated PC running Windows 10 (see Figure 1.3). The Surface Hub includes built-in cameras, speakers, microphones, Wi-Fi, Bluetooth, and Near Field Communication (NFC). It uses OneNote to enable people to collaborate on a digital whiteboard, supporting both finger and pen input. Surface Hub also includes other Office apps as well as Skype for Business, and can run other modern apps in a large-screen format. You can even connect apps from your personal device and drive them from Surface Hub.

Microsoft Surface Hub is available in two sizes, 55" HD and 84" 4K. A variety of stands and wall mounts are available to enable you to either position Surface Hub in a fixed location or move it as needed.

FIGURE 1.3

Microsoft Surface Hub is a large-format, touchscreen, PC running Windows 10.



The Windows 10 Interface

Windows 8 represented a fairly significant departure from the traditional Windows interface found in previous versions, in large part to support a new genre of touch-enabled devices. Windows 10 maintains much of the user interface found in Windows 8.x, reintroduces some familiar legacy experiences, and introduces some new features. This section covers the most significant changes in the Windows 10 interface.

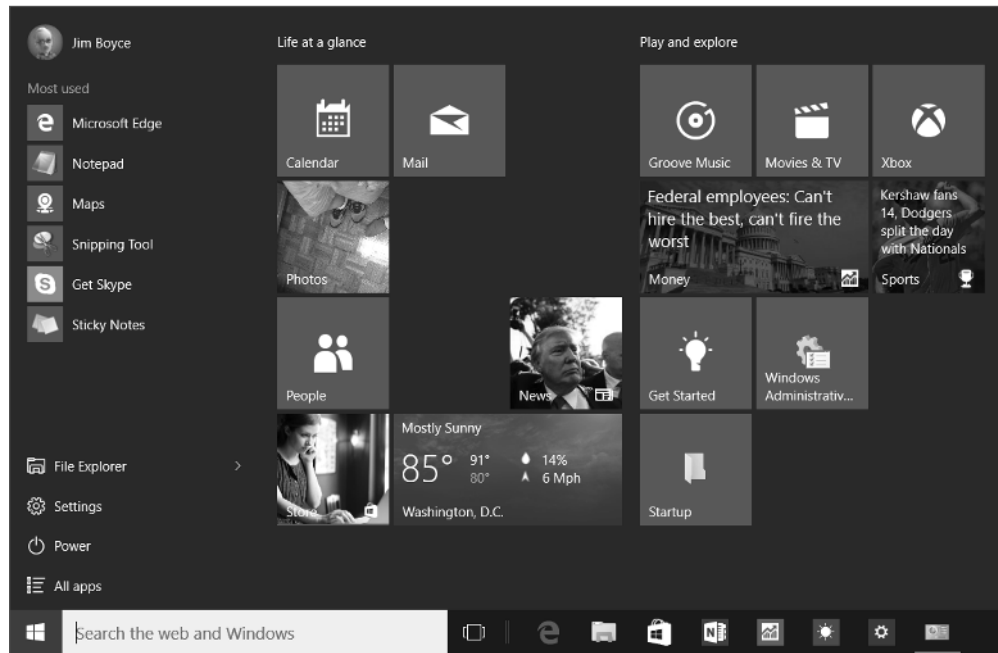
The Start menu

One of the main complaints from users about Windows 8, after they got past the Start screen, was the removal of the Start menu. Many users were accustomed to getting to their programs and settings through the Start menu. As Figure 1.4 shows, Windows 10 brings back the Start menu, although it is in a somewhat modified form that marries the Start menu with the Start screen.

Clicking the Windows icon in the lower left corner of the display opens the Start menu. On the left side of the menu are icons for your most used apps, links to commonly-used resources such as File Explorer and Documents, and at the bottom, a link that, when clicked, shows your apps in alphabetical order (Figure 1.5).

FIGURE 1.4

The Start menu is back in Windows 10.



The right side of the Start menu should be fairly familiar to Windows 8.x users because it is similar in concept to the Start screen in Windows 8.x. Tiles on the Start screen give you access to apps, and, as on the Start screen, can display dynamic data within the tile (known as *live tiles*).

NOTE

The Weather and News app tiles are good examples of tiles that support live data.

Items in the lower-left part of the Start menu provide quick access to File Explorer, Power options (such as Sleep, Shutdown, and Restart), Settings, and a list of all apps installed on the device. You can resize the Start menu like other windows, simply by dragging the edge of the Start menu to make it larger or smaller. Figure 1.6 shows the Start menu resized to a much larger size.

FIGURE 1.5

Click or tap All Apps to show a list of all apps on the device.

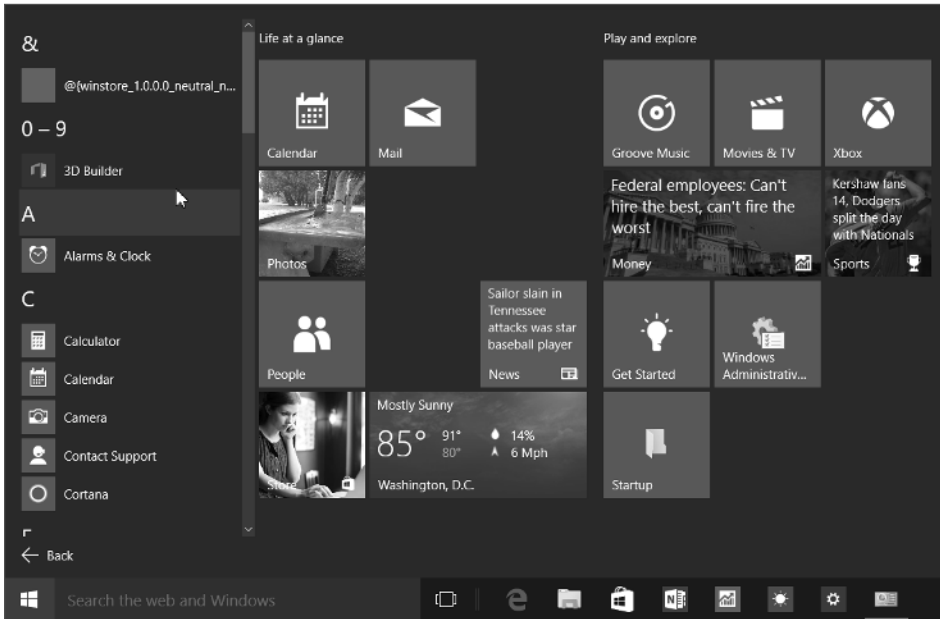
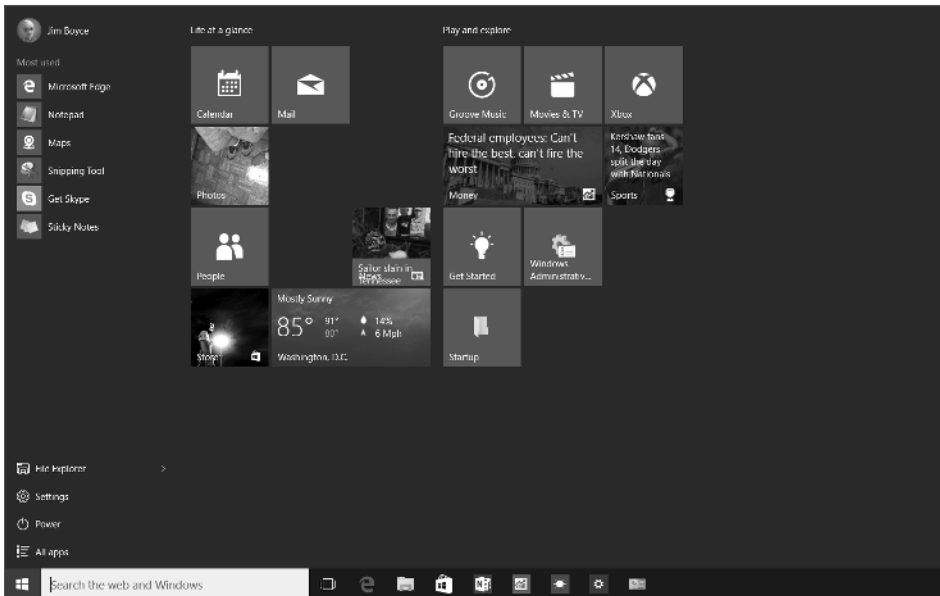


FIGURE 1.6

You can expand the Start menu to fill the display.



Tip

Just as you can with the Windows 8.x Start screen, you can modify the Start menu to add or remove tiles and group apps as you see fit.

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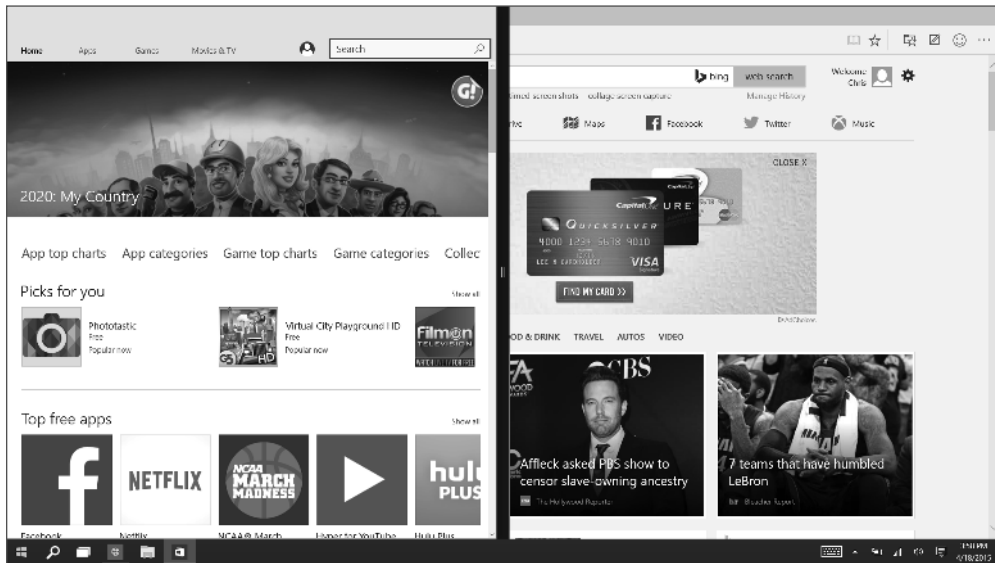
The Windows 10 Start screen and the methods you can use to modify it are covered in other chapters.

Tablet Mode (aka Continuum)

Windows 10 Tablet Mode, formerly code-named Continuum, is intended to optimize the user's touch experience on tablet devices. Essentially, Tablet Mode switches the device to a full-screen Start menu and causes apps to open in full-screen mode. Apps that are already running in a window automatically switch to full-screen mode. Clicking the Restore button in Tablet Mode has no effect because no "windowed" app experience exists. However, you can drag apps to dock them, as shown in Figure 1.7.

FIGURE 1.7

You can dock apps on the display.



You can turn Tablet Mode on or off through the Settings app. In addition, when you switch the device from a traditional desktop configuration to a tablet configuration, Windows 10 detects the change and asks if you want to enable Tablet Mode. For example, if you disconnect the keyboard from a Surface running Windows 10 or fold the keyboard to the back of the device to use it as a tablet, Windows 10 prompts to ask if you want to switch to Tablet Mode.

TIP

You can configure Tablet Mode behavior in the Settings app, configuring Windows 10 to always stay in the current mode without prompting you, prompt you to confirm a switch, or automatically switch modes without prompting.

The Taskbar

The familiar Taskbar is still a component of the Windows 10 interface; it behaves in much the same way as in previous versions of Windows. For example, if the Taskbar is unlocked, you can position it at any of the four edges of the display. Figure 1.8 shows the Taskbar docked at the left edge of the display.

FIGURE 1.8

The Taskbar is docked at the left edge of the display.



You can pin apps to the Taskbar as you can in previous versions of Windows, including both modern apps and legacy desktop apps. The Taskbar retains the notification area, which shows icons and messages for running apps and services, with the date and time at the

far right corner (when the Taskbar is docked at the bottom of the display). The Taskbar by default shows the Search box at the left next to the Start button. The Taskbar includes an icon for Task View, which is described in the following section.

TIP

The Taskbar remains when you switch to Tablet Mode, but changes slightly. For example, the Search box changes to a Search button and shortcut icons on the taskbar are hidden.

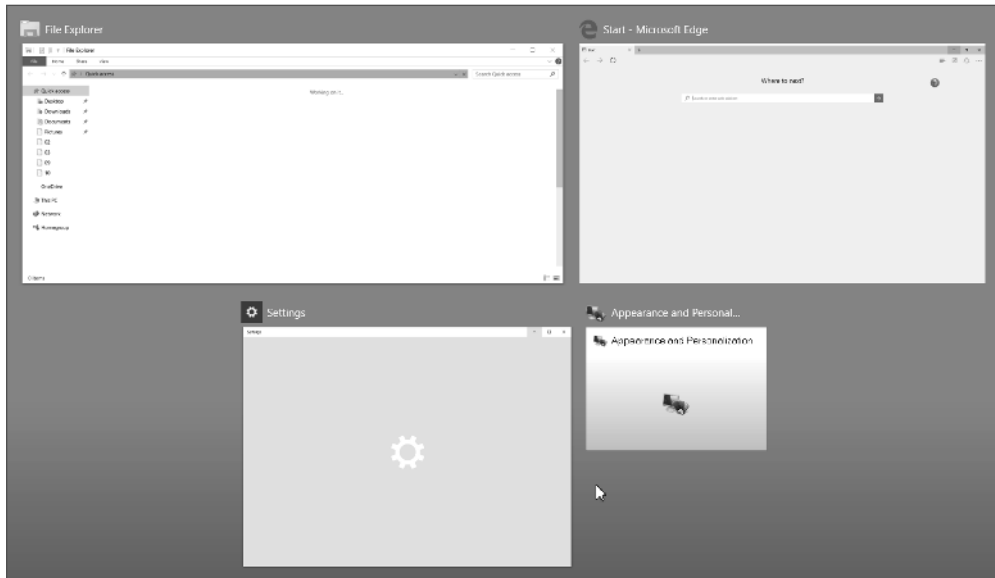
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Task View

Experienced Windows users are familiar with the Alt+Tab feature in Windows, which enables you to switch between running applications. The Task View is a similar feature that is available from the Taskbar, both in desktop mode and Tablet Mode. Clicking or tapping the Task View icon in the Taskbar displays a filmstrip of the running apps (Figure 1.9). You can then click or tap an app to make it active and bring it to the foreground. You can also close apps from the Task View by first highlighting an app and then clicking or tapping the close button in the upper right of the app's tile.

FIGURE 1.9

Use the Task View to switch between running apps.



TIP

Task View lets you switch between multiple virtual desktops, which are described in the following section.

Multiple desktops

In Windows, the term *multiple desktops* refers to the capability to create more than one virtual desktop, each with one or more apps running on that virtual desktop, and switch between desktops. Windows has supported multiple virtual desktops for several years in multiple versions, although not as a mainstream feature. Windows 10 is the first version to offer multiple displays as a prominent feature of the interface.

If your device has multiple displays, you may be wondering why you would want to create multiple desktops; after all, you can simply move apps from one display to another and group them as needed. Multiple desktops let you group together apps onto a virtual desktop. Although they are most useful on single-display devices, multiple desktops can also be useful on multi-display devices.

For example, you may be multitasking between work and personal activities. In this scenario, you can create a desktop for your work apps and another for your personal apps and switch between the two desktops as needed. Even on a multi-display device, you may find multiple desktops useful for helping you group specific apps together so you can focus on them as a set.

Creating a virtual desktop is easy. Just open the Task View from the Taskbar and click or tap New Desktop. Then open the apps that you want to use on that desktop. When you need to switch between desktops, either use the Task View or press Windows Key+Ctrl+Left Arrow or Windows Key+Ctrl+Right Arrow.

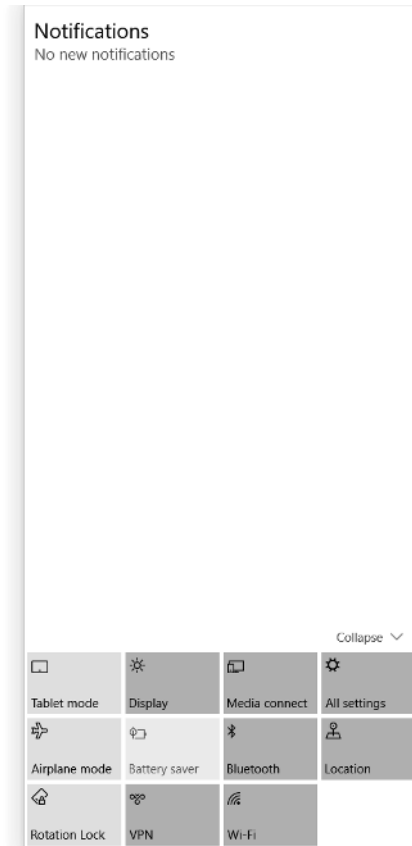
Action Center replaces Charms bar

One of the Windows 8.x interface elements that is gone from Windows 10 is the Charms bar. In Windows 8.x, the Charms bar expands out from the right side of the display to give you access to settings, device functions, search, and other features. Many of these items have been moved into other parts of the Windows 10 interface. For example, Search has been integrated into the Taskbar.

Even though the Charms bar is gone, something similar to it remains in Windows 10. In the Taskbar, next to the date and time, is a Notifications button that, when clicked or tapped, displays the fly-out interface element called the Action Center, shown in Figure 1.10.

FIGURE 1.10

The Action Center replaces some of the functions in the Charms bar.



The Action Center shows notifications, and through a selection of tiles at the bottom, gives you quick access to the Settings app, tablet mode, airplane mode, and other settings and features. When you need to change display brightness, for example, open the Action Center, tap the Display tile, and then use the brightness slider in the Settings app that subsequently opens.

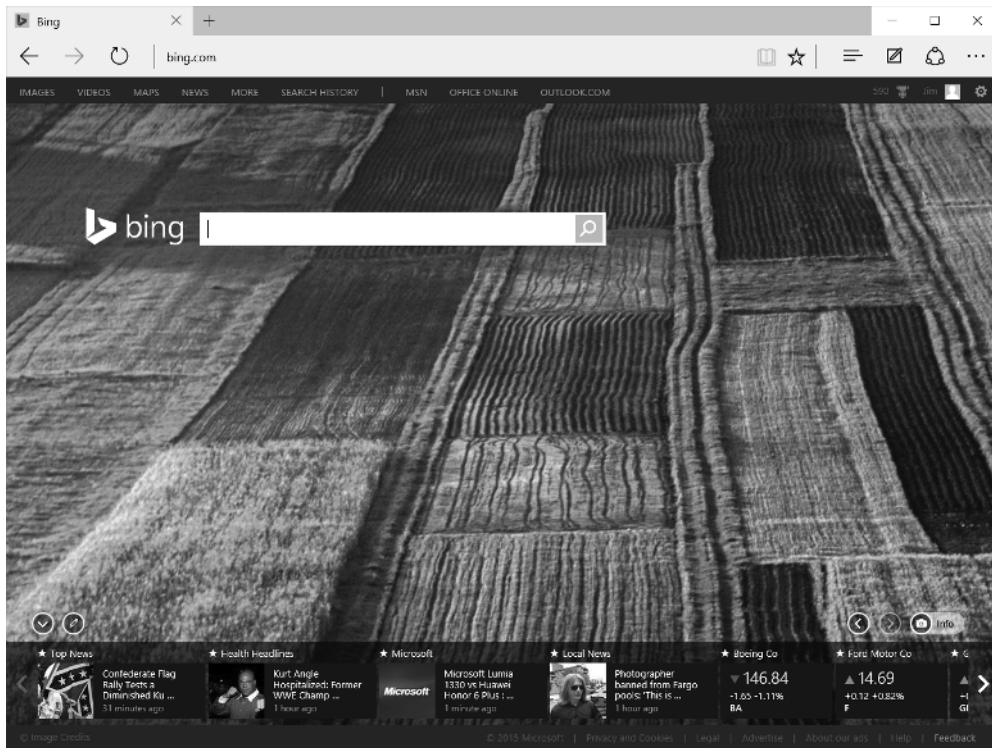
Web Browsing

Internet Explorer (IE) has long been a love/hate app. Some users love it, but other users hate it (and often move to Firefox or Chrome because of IE's drawbacks). In addition, application compatibility for line-of-business apps and in-house apps has long been a consideration with IE for businesses that have sometimes struggled to keep their apps compatible with IE as the browser evolved.

Windows 10 ships with a new browser named Microsoft Edge (Figure 1.11). Some of the key goals of the Edge development team were to streamline the interface, integrate Cortana for faster search and better discoverability, optimize browsing across multiple platforms, provide a great experience on touch devices, and add features such as the capability to annotate web pages. Edge is a single browser designed to work across the entire Windows 10 device family.

FIGURE 1.11

The Edge web browser provides a streamlined browsing experience.



Edge moves from the markup used in IE to the same markup used in other modern browsers. Edge introduces a new proprietary rendering engine dubbed EdgeHTML that replaces the Trident rendering engine found in IE. In the initial beta releases of Edge, the new browser incorporated both the legacy Trident rendering engine and the new Edge rendering engine. During the development cycle, however, Microsoft decided to use only the Edge engine in Edge. In order to support legacy sites that require the Trident engine, Windows 10 ships with both the new Edge and legacy IE 11 browsers. Organizations can choose to designate the default browser through group policy, enabling them to ensure that IE 11 is the users' default browser if needed to support intranet sites or line-of-business apps that require IE compatibility.

In addition to a new rendering engine, Edge also integrates Cortana as a built-in search assistant, a new reading list that enables you to gather content to read and even export web pages to PDF, and as mentioned previously in this section, the new inking features that enable you to mark up and annotate web content and share those comments with others.

Cortana

Cortana, named for the fictional artificial intelligence character in the Halo game series, was introduced on the Windows Phone 8.1 platform. It is an intelligent personal assistant that can help you set reminders, perform searches, answer questions, recognize music, and launch apps using voice or text commands. If you speak a question, Cortana typically speaks the answer. If you type a question, Cortana answers with a text response.

Cortana (if you let her) can learn about you, your interests and habits, locations you often visit, and other information to simplify your work or personal life. For example, Cortana can search for and detect flight schedules in your e-mails and add the information to your calendar for you, or identify tracking information in e-mails to keep you up-to-date on whether your online orders are in transit or still sitting in the seller's warehouse.

Office Universal Apps

Windows 10 includes touch-optimized versions of the popular Office apps Word, Excel, PowerPoint, and OneNote. The apps are preinstalled on Windows phones and small tablets running Windows and are available as a download from the Windows Store for other devices. These apps enable you to view and edit Office documents and send and receive e-mail. Although the Office apps included with Windows 10 don't give you the same range of features as the full versions of the Office suite, they provide the most commonly-used features for reading and editing documents and can minimize the number of times you need to switch from your phone or tablet to your PC to work with a document.

The Windows Store

Another change in Windows 10 is a complete revamp of the Windows Store. A key aspect of this change is that the Store is a single point of app delivery supporting phones, tablets, and PCs. In addition, IT organizations can deploy a customized version of the Windows Store that integrates in-house apps and public apps. A web-based management interface enables IT staff to assign apps, manage updates, and accomplish other Windows Store management tasks. So, when you need that line-of-business app installed on your new work PC running Windows 10, you can open the Windows Store and download it.

Another important change in the new Windows Store is the type of apps you can download. Previously, the Windows Store supported only modern Windows apps. The revamped store enables you to obtain modern Windows apps, traditional desktop apps, and hosted web apps. The latter enable developers to convert components of their web sites into apps that they then make available through the Windows Store. These web apps are hosted on the vendor's infrastructure rather than being downloaded to the users' devices but have access to the notifications, camera, calendar, Cortana, and other features on the device.

Finally, the new Windows Store integrates content as well as apps. You can purchase and stream TV shows, movies, and music from the Windows Store to your Windows 10 devices.

Wrapping Up

Windows 10 is by far the most significant change in the Microsoft operating system ecosystem, potentially rivaling the shift from DOS to Windows in the early days of the PC.

This chapter scratched the surface of what's new in Windows 10. Some of the topics, such as HoloLens, Surface Hub, and Windows 10 IoT are not covered in detail in this book. Instead, we focus on helping you understand how to interact with and get the most from Windows 10 on your PCs and tablets. Where appropriate, we cover mobile devices and the key features that Windows 10 brings to these devices.

Your next step is to dive into Windows 10 and become familiar with the user interface. Chapter 2, "Navigating the Windows 10 Interface," helps you do just that. So, turn the page and dive in!