

# 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 with 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.

### NOTE

The first part of this chapter focuses on what is new in Windows 10, compared to previous editions of Windows (Windows 7 and Windows 8.x). See the section “Windows 10 Anniversary Edition Update,” later in this chapter, for details on many of the new features and changes in Windows 10 build 1607, known as the *Windows 10 Anniversary Edition*.

## New Platforms and Devices

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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 Machines, 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 Windows apps.

#### NOTE

Apps designed for the new Windows 8.x and Windows 10 interface and available through the Microsoft Store were originally called *Metro apps*, then *Modern apps*, and now, simply *Windows apps*. Legacy apps written for previous editions of Windows are called *Windows desktop apps*. The term *Windows app* throughout this book refers to these modern Windows 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 and 3 single-board computers. 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.

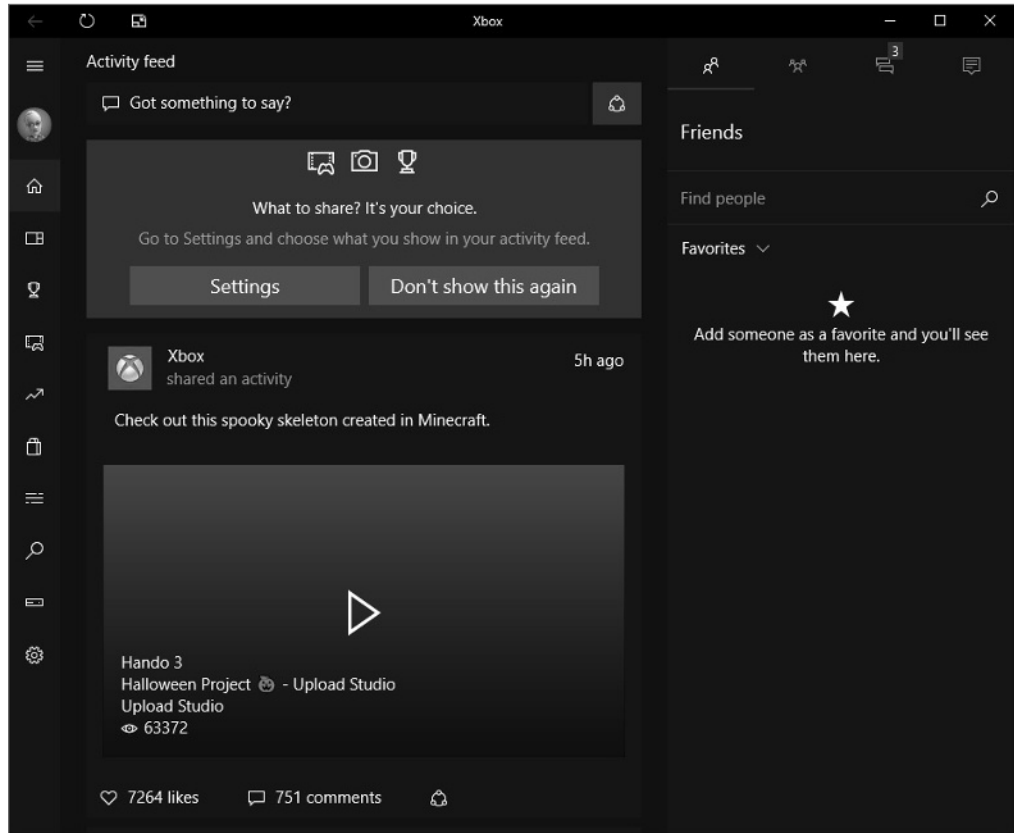
## HoloLens

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.

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.

**FIGURE 1.1**

Use the Xbox app to stream games to your PC.



## 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 Windows apps in a large-screen format. You can even connect apps from your personal device and drive them from Surface Hub.

**FIGURE 1.2**

Microsoft HoloLens is a wearable holographic PC running Windows 10.



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 your apps in alphabetical order.

**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*).

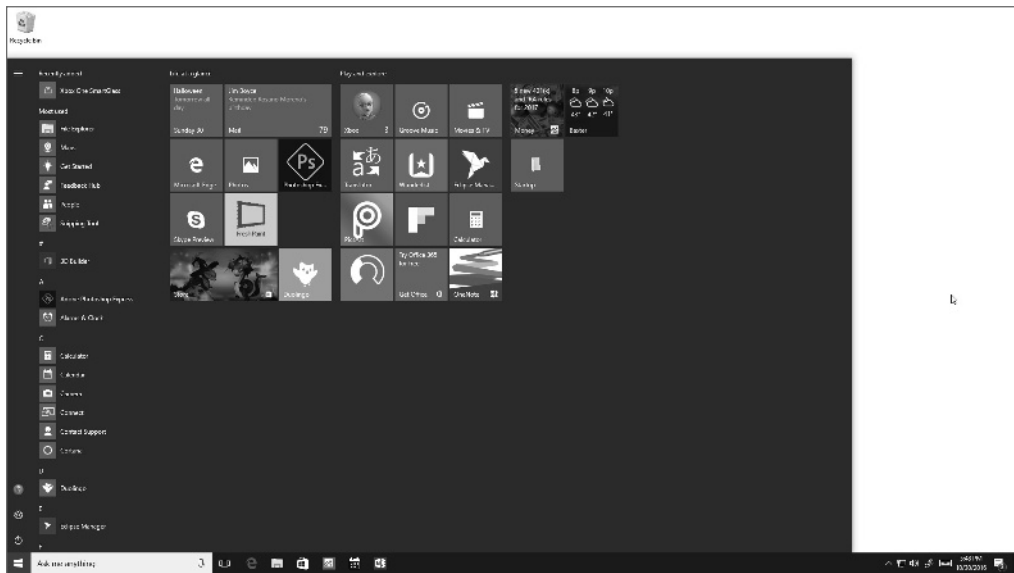
**NOTE**

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 your account, Power options (such as Sleep, Shutdown, and Restart), and Settings. 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 1.5 shows the Start menu resized to a much larger size.

**FIGURE 1.5**

You can expand the Start menu to fill much of 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.

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

### Tablet Mode

Windows 10 Tablet Mode 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.

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 1.6 shows the Taskbar 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 Windows apps and legacy Windows 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.

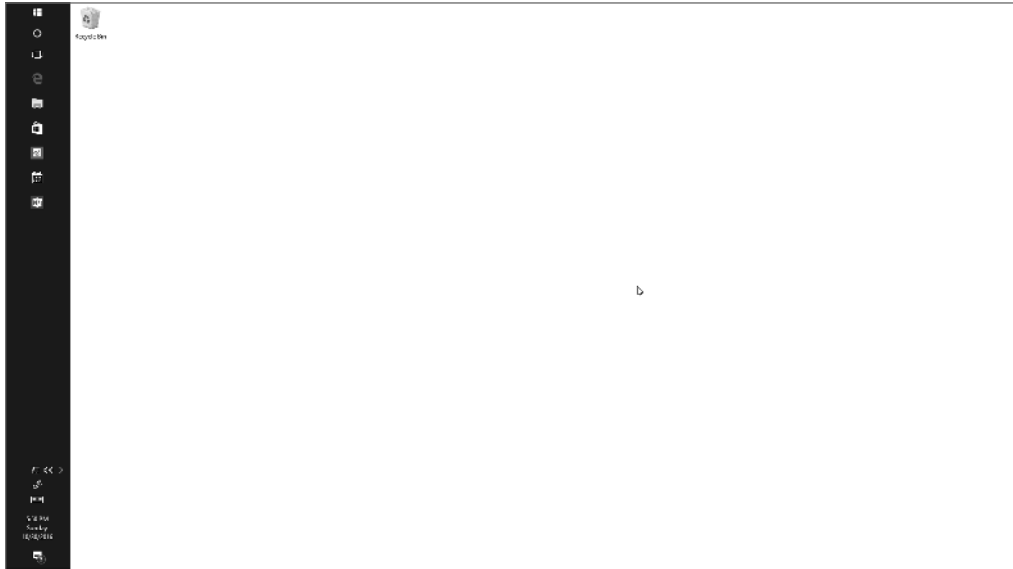
### Task View

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 1.7).

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 1.6**

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



### TIP

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

## Multiple desktops

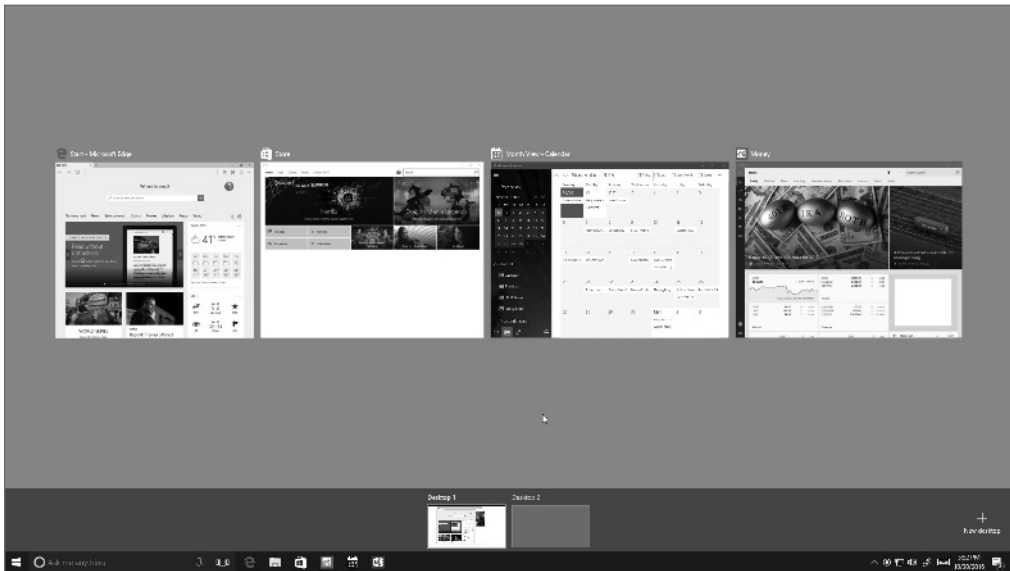
In Windows, the term *multiple desktops* refers to the capability to create more than one virtual desktop, each with one or more apps running on that virtual desktop, and switch between desktops. Windows has supported multiple virtual desktops for several years in multiple versions, although not as a 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.

**FIGURE 1.7**

Use the Task View to switch between running apps.



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

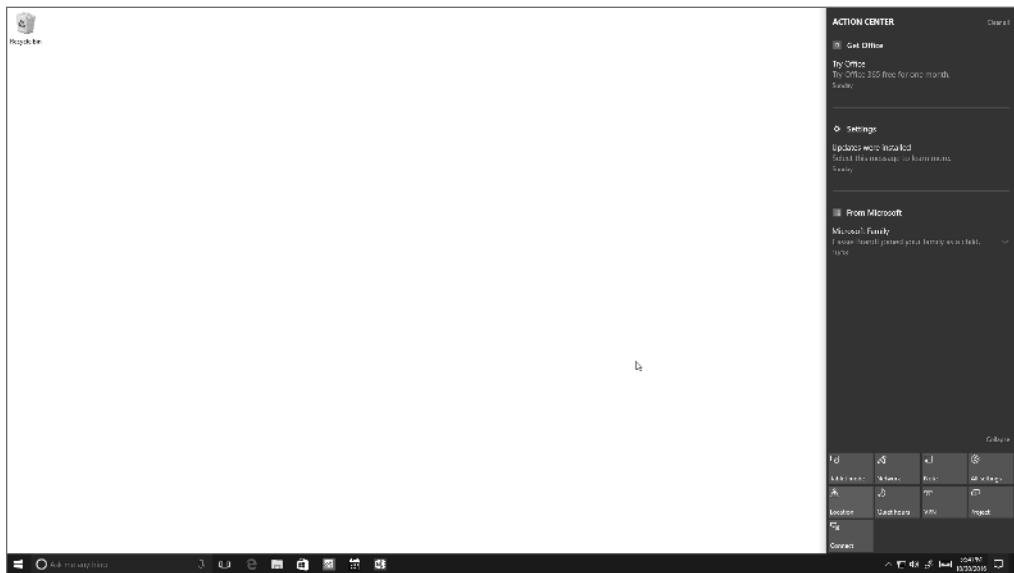
One of the Windows 8.x interface elements that is gone from Windows 10 is the Charms bar. In Windows 8.x, the Charms bar expands out from the right side of the display to give you access to settings, device functions, search, and other features. Many of these items have

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 1.8.

**FIGURE 1.8**

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 1.9). 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 1.9**

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

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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

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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

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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 Windows apps. The revamped store enables you to obtain Windows apps, traditional Windows 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.

### Windows 10 Anniversary Edition Update

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Windows 10 build 1607, known as Windows 10 Anniversary Edition, includes several updates and new features that were developed during the first year after Windows 10's initial release. This section explores many of these features and updates.

#### Start menu tweaks

One update in the Anniversary Edition is a collection of small changes to the Start menu. Previously, the Start menu displayed your most recently used apps and a selection of icons for common items including File Explorer, Settings, and Power. Clicking All Apps showed an alphabetized list of all installed apps. In the new Start menu (Figure 1.10), the Start menu by default shows your most-used apps and recommended apps, along with what was formerly the All Apps menu. Buttons at the left edge of the Start menu give you access to your account, Settings, and Power.

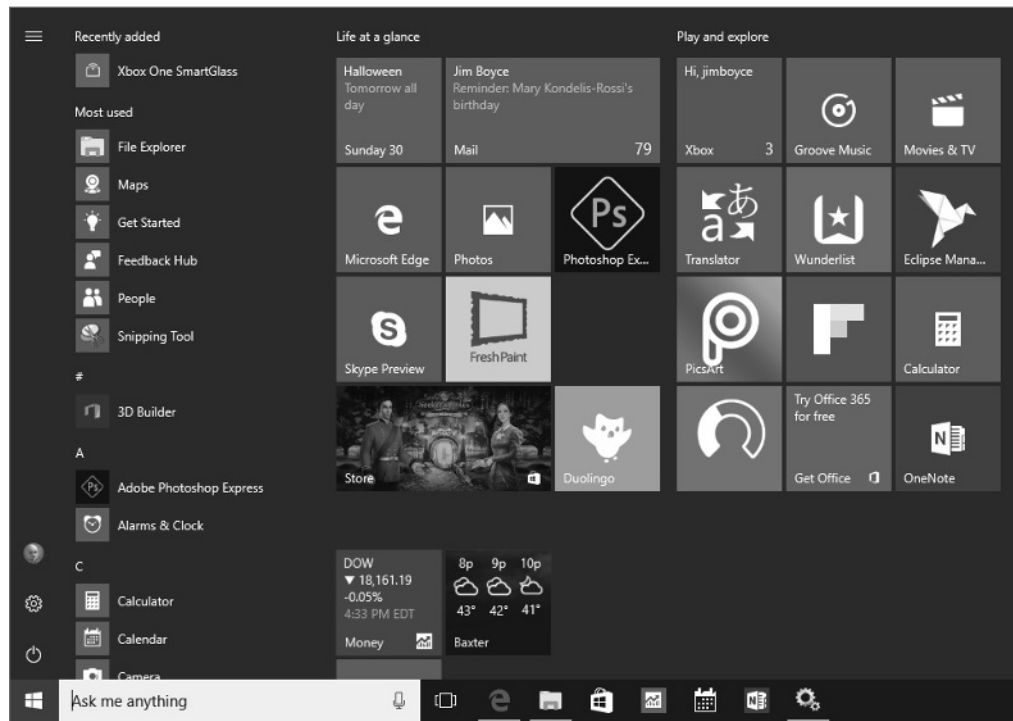
#### Action Center updates

Like the Start menu, the Action Center sees a bit of a change in the Anniversary Edition. You'll find Cortana now integrated into the Action Center, where it can offer alerts and notifications on things like stocks, sports scores, and more. The Action Center layout is also

improved, grouping notifications so that a single, chatty app doesn't fill the Action Center and hide notifications from other apps.

**FIGURE 1.10**

The Start menu has been updated.



## Notification badges

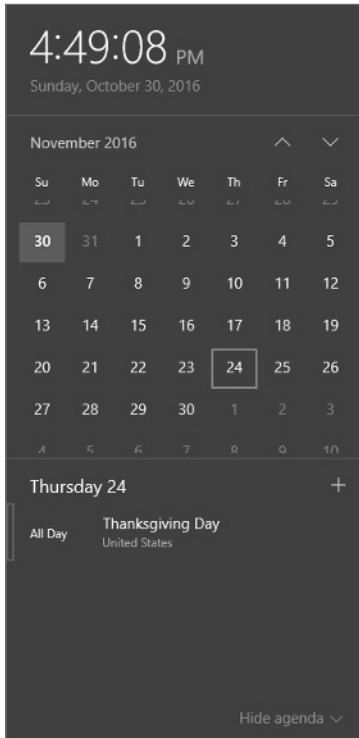
Universal Windows Platform apps can now display information on their taskbar icons. For example, a UWP mail app could display the number of new messages in your Inbox. Note that notification badges are not available for legacy Windows desktop apps, or for Windows apps that are not developed as UWP apps.

## Taskbar calendar

The taskbar calendar is improved in build 1607 to add meetings and events, as shown in Figure 1.11. You can view the items in the calendar, or click on an item to open it in a window, as shown in Figure 1.12.

**FIGURE 1.11**

The taskbar Calendar is much improved.

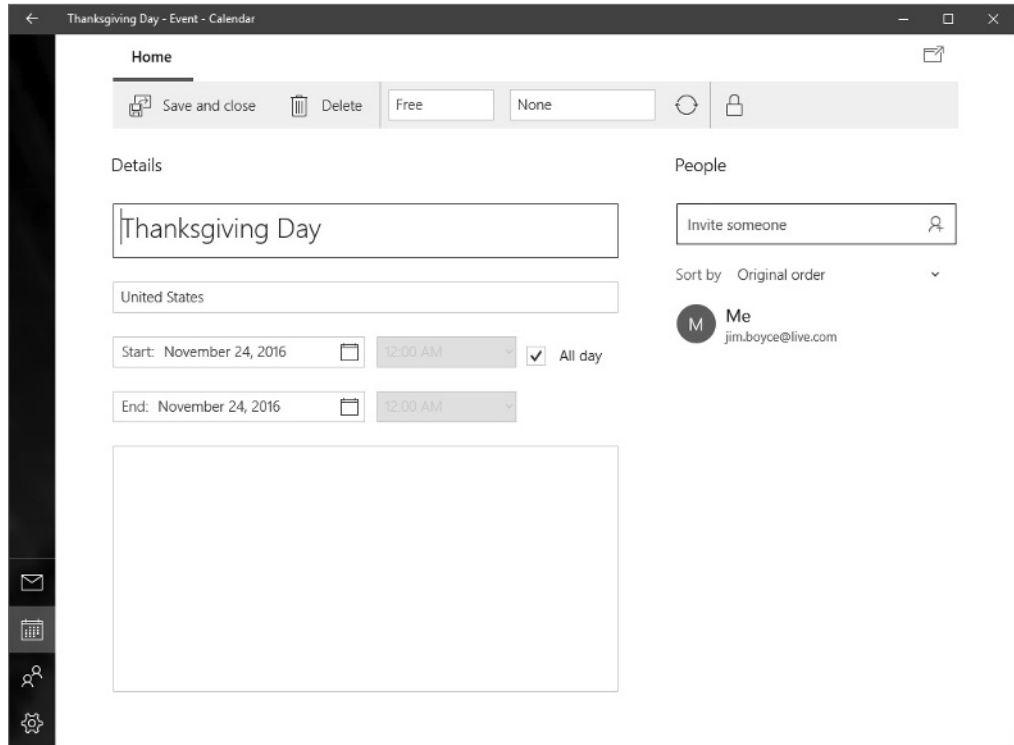


## Pin apps to all virtual desktops

Virtual desktops in Windows 10 enable you to create multiple workspaces in Windows, each with its own set of apps. Previously, an app in Windows 10 appeared only on a single virtual desktop. With the Windows 10 Anniversary Update, you can pin an app to all virtual desktops, which is useful when you want to keep a particular app visible and easily accessible from every virtual desktop. To pin an app in this way, press Windows Key + Tab to open the Task View, then right-click the app and choose Show This Windows on All Desktops.

**FIGURE 1.12**

You can open calendar items from the taskbar.

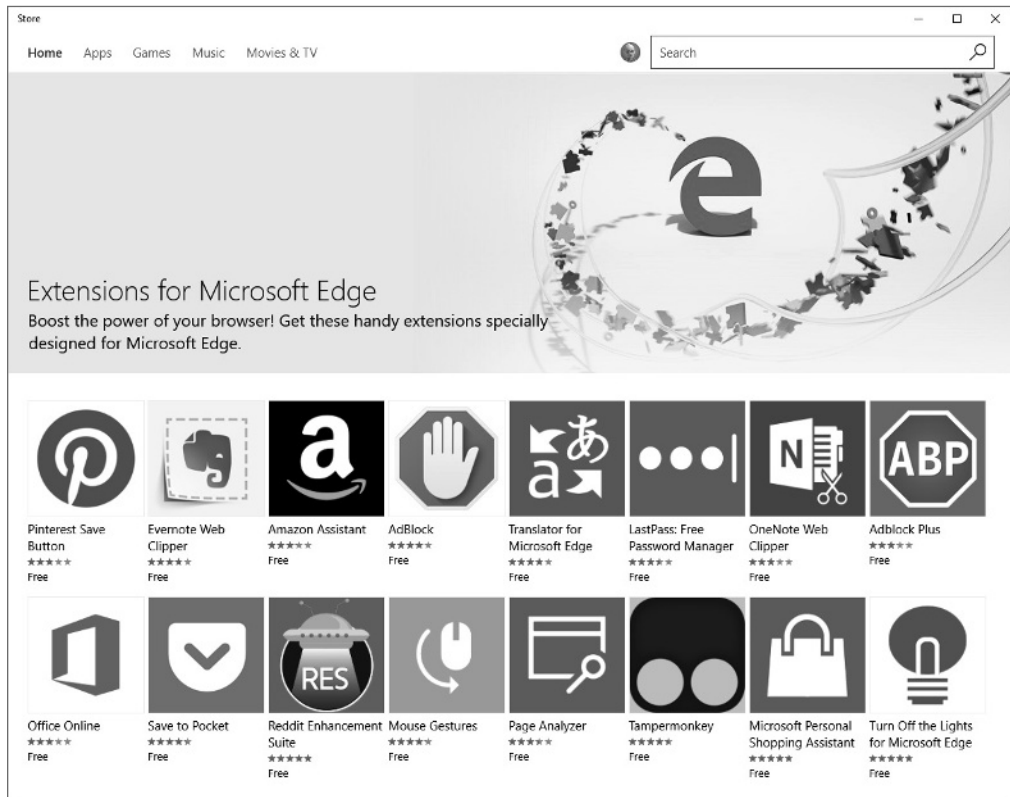


## Edge improvements

Edge, the new web browser introduced with the initial release of Windows 10, gets some welcome improvements in the Anniversary Edition. For example, Edge now supports extensions. This capability enables developers to extend Edge with new features, such as ad blocking and enhanced experiences for certain sites like Amazon. To add extensions, click the ellipsis in the upper right corner of the Edge window and choose Extensions. Then, click Get Extensions from the Store. Figure 1.13 shows the Store with Edge extensions available as of this writing.

**FIGURE 1.13**

Use extensions to add new features to Edge.



## Xbox Play Anywhere

This new feature enables you to buy a game from the Store and play it on a Windows 10 PC as well as an Xbox One console, with settings, game saves, and other game data moving from device to device along with the game itself. Games must be specifically written to support Xbox Play Anywhere, but this new feature will be a welcome addition for gamers.

## And more

Windows 10 Anniversary Update offers many more new features in addition to the ones covered in this chapter. For example, a Dark Theme is now available for users who want a darker color scheme. This feature is particularly helpful if you use your device in darker environments. An Activation Troubleshooter helps you work through Windows activation problems. Some additional features for Windows Ink improve the user experience when

using a stylus. Cortana also has several enhancements and improvements, not only making it function better but also integrate within more apps.

You'll find additional enhancements and new features scattered throughout Windows 10. What's more, a host of new features have also been announced for the next Windows 10 update, named the Windows 10 Creators Update, due out in early 2017. With the new Windows 10 release model, you can be sure to see new features appear throughout the year.

## Wrapping Up

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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!

