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Windows 10

Ed Bott and Craig Stinson

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Windows 10 Inside Out 3rd Edition

Ed Bott Craig Stinson Windows 10 Inside Out, 3rd Edition
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ISBN-13: 978-1-5093-0766-1 ISBN-10: 1-5093-0766-4

Library of Congress Control Number: 2018966103

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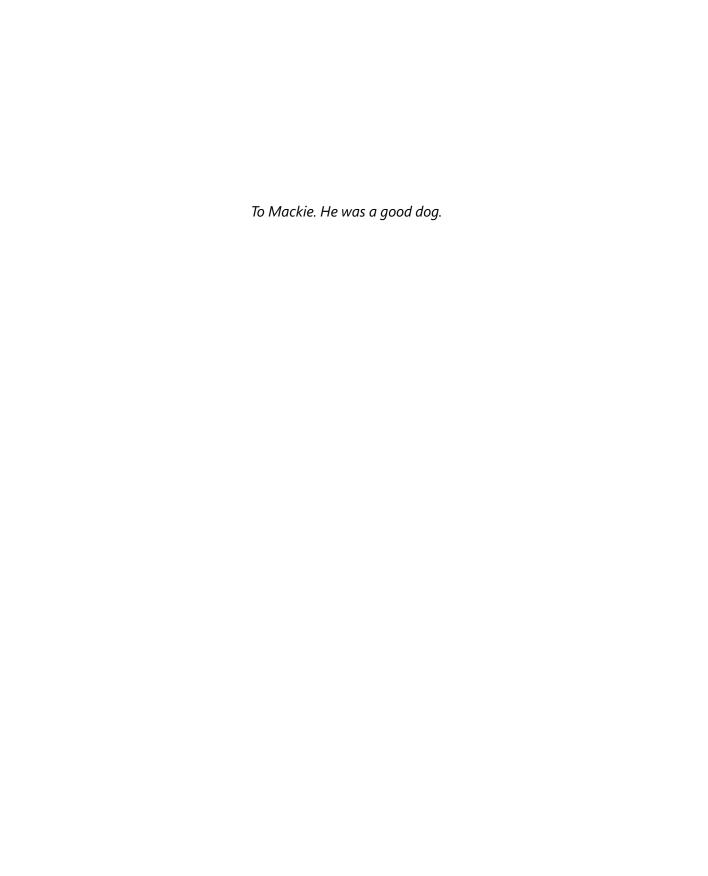
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About the authors

Ed Bott is an award-winning author and technology journalist who has been researching and writing about Windows and PC technology, in print and on the internet, for more than two decades. He has written more than 30 books, all on Windows and Microsoft Office, which in turn have been translated into dozens of languages and been read worldwide. You can catch up with Ed's latest opinions and get hands-on advice at *The Ed Bott Report* on ZDNet (*zdnet.com/blog/bott*). You can also follow his lively and occasionally irreverent Twitter feed (@edbott). Ed and his wife, Judy, live in northern New Mexico with an adorable English Springer spaniel, Lucy, who was adopted with the help of English Springer Rescue America (*springerrescue.org*). She makes several cameo appearances in this book.

Craig Stinson, an industry journalist since 1981, was editor of *Softalk for the IBM Personal Computer*, one of the earliest IBM-PC magazines. He is the author or coauthor of numerous books about Windows and Microsoft Excel. Craig is an amateur musician and reformed music critic, having reviewed classical music for various newspapers and trade publications, including *Billboard*, the *Boston Globe*, the *Christian Science Monitor*, and *Musical America*. He lives in Bloomington, Indiana.

Introduction

Microsoft Windows has been around for more than three decades. During that time, it has grown to become a mainstay of business and personal computing, running on some 1.5 billion devices worldwide.

The authors of this book began working together in 2001 with the very first title in the Inside Out series, covering Windows XP. Like many of you, we took a break a few years ago, watching from the sidelines as Microsoft released Windows 8 and Windows 8.1. We returned for Windows 10 because, quite frankly, we were excited by the possibilities of "Windows as a service." As we predicted in the first edition of this book, published shortly after the initial release of Windows 10 in 2015, Windows 10 is evolving rapidly.

That evolution has been a key part of our experience over the past three years, as we researched and wrote what turned out to be a very significant revision to the original edition and then did a series of ebook-only updates. This third edition incorporates all that learning and covers the two editions of Windows 10 released in 2018.

One bedrock fact we've discovered over the past three years is that the core features of Windows 10 are familiar and change very slowly. The fundamentals of NTFS security and the registry, for example, have remained reassuringly consistent throughout many generations of Windows. But there's also plenty that's new in Windows 10, some of it obvious (the new Start experience) and some not so obvious (Windows Hello).

The challenge of writing a book like this one is that Microsoft keeps updating Windows 10, releasing new features twice each year instead of every few years, as in the past. To our great relief, we've found that most of the changes in these semi-annual Windows 10 feature updates are evolutionary, not revolutionary. You might notice small changes in a dialog box or in the appearance of a feature, but its fundamental workings remain the same as before. Our goal in this edition is to help you accomplish those familiar tasks using a new set of tools.

Who this book is for

This book offers a well-rounded look at the features most people use in Windows. It serves as an excellent starting point for anyone who wants a better understanding of how the central features in Windows 10 work. If you're a Windows expert-in-training, or if your day job involves IT responsibilities, or if you're the designated computer specialist managing computers and networks in a home or small business, you'll discover many sections we wrote just for you. And if you consider yourself a Windows enthusiast—well, we hope you'll find enough fun and interesting tidbits to hold your attention because, after all, we're unabashed enthusiasts ourselves.

Assumptions about you

This book was written for people who have some experience with Windows and are comfortable with and even curious about the technical details of what makes Windows work. It touches only briefly on some of the basic topics that you'll find covered in more detail elsewhere. (For people who require a more basic introduction, we recommend other Microsoft Press titles, such as Windows 10 Step by Step or Windows 10 Plain & Simple.)

Whether you've been working with Windows for a few years or a quarter-century, we expect that you're comfortable finding your way around the desktop, launching programs, using copy and paste operations, and finding information in a web browser. We don't assume that you're a hardware tinkerer, hacker, hardcore gamer, or developer.

How this book is organized

Part I, "Windows 10 essentials," offers an overview of what's new in this version, along with details on installing, configuring, and personalizing Windows 10. For this edition, we've added a brand-new chapter covering the tools and techniques for managing Windows security and feature updates.

Part II, "Productivity," covers the essentials of using and managing Universal Windows Platform (UWP) apps and desktop programs, with details on built-in productivity tools (including Mail) and entertainment apps. This section also introduces Microsoft Edge, the new default web browser. In this section, we explain how to organize your personal data using local drives and the built-in OneDrive cloud storage service. Finally, we explain how to find those files as well as answers from the internet, when you need them, using Cortana and Windows 10's powerful search tools.

Part III, "Managing Windows 10," starts with a detailed guide to keeping your user accounts and devices secure. Additional chapters cover routine maintenance tasks and explore tools and techniques for measuring and improving your computer's performance, keeping your network connections fast and secure, and configuring hardware. The section closes with advice on how to back up your important files, how to recover quickly from problems, and how to troubleshoot issues when they arise.

Part IV, "For IT professionals and Windows experts," leads off with a chapter about Hyper-V, a powerful virtualization platform built into Windows 10 Pro and Enterprise editions. Additional chapters cover advanced tools for managing business networks and the Windows 10 devices connected to those networks. Windows 10 security gets its own in-depth chapter, and we close with a look at the unique features available for mobile computing.,

Finally, we provide three appendixes of reference information: a concise look at the differences between Windows 10 editions, a hands-on guide to the Windows Insider Program, and an overview of help and support resources.

Acknowledgments

For this edition we're once again fortunate to have an expert production team led by Loretta Yates. Proofreader Karen Davis, compositor Tricia Bronkella, and indexer Cheryl Lenser were invaluable additions to our team, asking the right questions and offering excellent suggestions to help smooth away our rough edges. And, as usual, they made it all happen quickly and efficiently, despite all the curveballs that the crazy fast "Windows as a service" development pace threw our way.

They were joined by a very special team member, Carl Siechert, who was our co-author on every previous edition but put on the technical editor's hat for this revision. It was a perfect fit.

And we've saved a special tip of the hat to our longtime colleagues Rick and Charlotte Kughen. This book would never have gotten into your hands without their production magic.

CHAPTER 3 Using Windows 10

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This chapter covers the basics of the Windows 10 user interface. We'll look at all the things that you tap, click, drag, and drop in order to make Windows do what you want it to do. If you're just arriving in Windows 10 after spending months or years with Windows 7, you'll find both familiarity and novelty here. But even if you've been happily and productively working with Windows 10 since the system debuted in July 2015, you might want to give this chapter a quick perusal. Microsoft now provides semiannual updates to Windows, continually introducing new features and enhancing existing ones. The interface has "matured" over these last several years—that is to say, changed in subtle and significant ways for the better. It's worth getting reacquainted to see what's new.

A quick disclaimer: In this chapter and throughout, we write and depict the operating system as it stood in the summer of 2018. Version 1803 is the basis for this book, but by the time you read this, you may be looking at version 1809 (the next feature update after 1803, due in the fall of 2018) or perhaps one of the two versions scheduled for release in 2019. (To see which version you're using, look under Windows Specifications at Settings > System > About.) It's possible that some of the screenshots and step-by-step instructions you find in this book may not match exactly the system you're working with. We hope that our descriptions are clear enough that you'll be able to take small changes in stride.

An overview of the Windows 10 user experience

Before we dive into detailed descriptions of individual features, please join us for a brief tour of Windows 10. Our goal is to introduce the different parts of Windows, new and old, so that we can be sure you're on the same page...or at least looking at the same arrangement of pixels.

Figure 3-1 shows the basic building blocks of Windows 10 and offers a hint of its signature visual style.

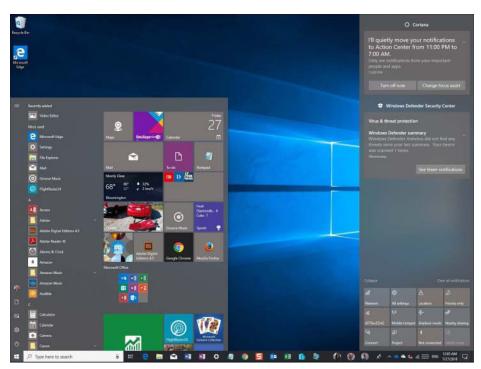


Figure 3-1 Start and Action Center are at the core of the Windows 10 experience, with the familiar desktop front and center for conventional PCs.

When you first start up a conventional PC running Windows 10, you see the familiar Windows 7–style desktop and taskbar. Clicking the Start button—the Windows logo in the lower-left–corner—opens Start, which is conceptually similar to its predecessor but differs dramatically in the details.

HOW THE CLOUD CHANGES YOUR EXPERIENCE

One noteworthy difference between the initial Windows 10 experience and the traditional Windows experience that reached its zenith with Windows 7 is the amount of personalization you see when you sign in on a new PC or device. If you use a Microsoft account that you've already used on a different device, the customized settings saved with your account appear automatically on the new device, making it feel familiar right away.

On a clean install or a refresh, you can create a local account, which gives you the standard default layout and themes, as defined by Microsoft. If you sign in to a corporate network, your personalized settings roam according to policies defined by your network administrator. (If your organization allows you to, you can attach a Microsoft account to your domain account, and both your personal and work settings roam together as you switch between devices.)

When you allow your Microsoft account to sync settings between devices, you don't have to go through a tedious process of tweaking the default settings to match those preferences; instead, your visual themes, browser settings, and saved Wi-Fi passwords appear exactly as you expect. If your Microsoft account is connected to OneDrive, your online files, photos, and music collection will be available, too. We discuss these features in more detail in "Syncing your settings between computers" in Chapter 4, "Personalizing Windows 10."

A click on the right side of the taskbar opens Action Center, which is also shown in Figure 3-1. This pane, which uses the full height of your display, contains notifications from apps and services as well as action buttons that allow quick access to settings.

As with previous versions, Windows 10 offers multiple ways to switch between tasks. The Task View button, located at the left end of the taskbar, produces the view shown in Figure 3-2, which also shows a portion of Timeline. We discuss Task View and Timeline in more detail later in this chapter.

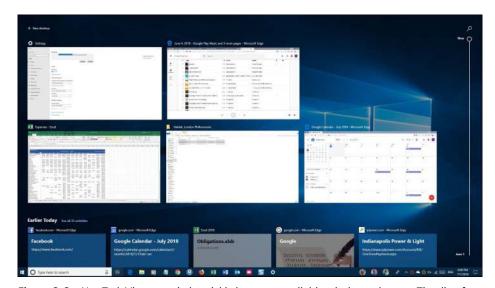


Figure 3-2 Use Task View to switch quickly between available windows; the new Timeline feature allows you to switch to activities or sites from the immediate or more distant past.

Navigating Windows 10

Touchscreens might represent the future of computing, but the present is still ruled by more-or-less conventional desktop and laptop PCs, each equipped with a keyboard and a mouse or touchpad. For that type of device, the desktop is where you'll likely spend most of your time, and it's what we concentrate on in this section. We discuss Tablet Mode separately, later in this chapter. (See "Using Windows 10 on a touchscreen device.")

Using and customizing Start

The Windows 7 interface element that you knew as the Start menu is now called Start in Windows 10. Start is divided into three segments. At the very left is a thin column, near the bottom of which appear the current user's name and picture and icons for the Documents and Pictures folders, as well as for Settings and Power. You can display descriptive labels alongside each of those icons by clicking the hamburger menu at the top.

Next to this thin column is a wider column that includes a list of any recently added apps, the apps you use most often, and a scrolling list of all your apps. In the app list, you'll find the names and launch icons for your programs, listed in alphabetical order. You can move through the list by swiping directly on a touchscreen, using two-finger scrolling gestures on a touchpad, or using the scroll wheel with a mouse. Often the quickest way to get from one part of the list to another is by clicking any of the letter headings. That produces an index menu, like this:



You can click or tap any letter or symbol in this menu to jump to the associated part of the allapps list.

Inside OUT

Hold the suggestions

Below the Most Used list and above the app list, you might occasionally find a suggestion from the Store. Windows tries to make these suggestions congruent with your usage habits, and it's possible you'll welcome them. If you don't, they're easy to eliminate. Go to Settings > Personalization > Start. Then deselect Show Suggestions Occasionally In Start.

Obviously, you can launch any item in the app list by tapping or clicking it. Alternatively, if you're comfortable typing, you can skip all the scrolling and simply type the beginning characters of an item you want in the search box, directly to the right of the Start button. (See Figure 3-1.) What you're looking for will soon appear at or near the top of the search results. This approach is especially handy when you're not sure exactly where in the app list the item you desire is located. (Where's Notepad, for example? Its default location is within the Windows Accessories folder, several clicks or taps away from the top of the list. You'll get to it more quickly by typing.)

Inside OUT

Change your Start picture

The picture that appears on the left side of Start is the one associated with your user account (the one that also appears on the Welcome screen). If you're not happy with that picture, click it, and then click Change Account Settings. That takes you to the Settings page for your account, where you can choose a different picture or snap one with a webcam.

The remainder of Start consists of tiles. This is the remnant of the Start screen that filled the desktop in Windows 8. As in Windows 8, tiles can be live or not. The live ones update their appearance periodically with relevant content. Windows gives you some tiles to get you going (including some that you might want to get rid of), but, of course, this part of Start is completely customizable, as we discuss shortly.

You can change the size and shape of Start by dragging it up (to a maximum height that is 100 pixels below the top of the display), to the right, or both ways.

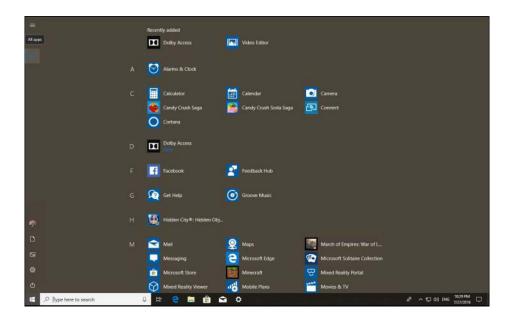
Customizing the contents of Start

If you're accustomed to the extensive array of customization options for items on the Start menu in earlier Windows versions, you'll need to make some adjustments. You can remove programs from the Most Used section, but you can't pin program shortcuts to the left side of Start.

You can, however, add or remove certain folder shortcuts from the narrow column of options at the left edge of Start. The Documents and Pictures folders are there by default, but you can put various others there as well. You might want to have File Explorer or Network accessible on the narrow strip, for example. To see the list of possibilities, go to Settings > Personalization > Start, and then click or tap Choose Which Folders Appear On Start.

What if you actually prefer the visual style of Windows 8.1 and would rather work only with tiles instead of program names? To express this preference, visit Settings > Personalization > Start, and turn Show App List In Start Menu to Off. On the same settings page, you might then also want to turn on Use Start Full Screen. Windows 10 will respond by spreading your Start tiles across the full expanse of your screen, much as they might have appeared in Windows 8.1.

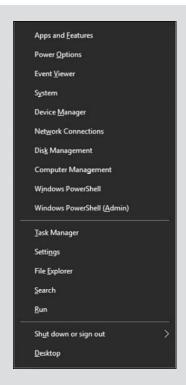
If you choose to hide the alphabetical app list, you can easily redisplay it when you need it. With the app list absent, Windows adds two new buttons, called Pinned Tiles and All Apps, near the top of the narrow strip at the left of Start. Clicking All Apps produces a display comparable to the one shown in the following illustration. Clicking Pinned Tiles then restores the visual style of Windows 8.1:



Inside OUT

Master the powerful "other" start menu

Here's some good news for anyone who misses the system shortcuts from earlier iterations of the Start menu. Most of those tools are available as part of a hidden menu, called the Quick Link menu, that appears when you right-click the Start button or press Windows key+X, as shown here.



Most of the major system management and troubleshooting tools are on that list, including Disk Management, Event Viewer, and the Computer Management console.

Windows traditionalists will appreciate the fact that the Shut Down Or Sign Out menu item is here, along with links to Settings and Task Manager. The menu also includes the current command-line shell (Windows PowerShell or Command Prompt). The default in Windows 10 version 1803 is PowerShell. If you're not a PowerShell user, you can use an option in Settings > Personalization > Taskbar to replace the two PowerShell options with Command Prompt equivalents.

If you've been using Windows 10 since the Anniversary Update, version 1607, you might notice that the top item in the Quick Link menu has changed from Programs And Features to Apps And Features and the Control Panel item has changed to Settings. These changes reflect the ongoing migration of configuration commands from Control Panel to Settings. Apps is now a top-level entry point in Settings—hence the name change in the Quick Link menu.

Inside OUT

Which programs are included in the Most Used list?

The list of most-used programs—the items that appear at or near the top of the left side of Start—is controlled by Windows. In previous Windows versions, this list included only shortcuts to executable files you open, such as .exe files and .msc files. Windows 10 continues this behavior.

Several types of items are excluded by default, so you won't see things like setup programs, installer and uninstaller packages, Control Panel modules, and MMC consoles. You can find a list of what's excluded in the AddRemoveApps value of the registry key:

 $HKLM \setminus Software \setminus Microsoft \setminus Windows \setminus Current \lor Version \setminus Explorer \setminus File Association.$

We do not recommend trying to edit these values manually.

Adding and arranging tiles

Clicking a tile has the same effect as clicking a Start program shortcut or a pinned taskbar button. What makes tiles different is the variety of sizes and their ability to display information or notifications from the app, making a tile *live*.

To pin a program as a tile to the right side of Start, drag it from the app list or the Most Used list on the left side of Start into position. As an alternative, right-click its entry in the app list or the Most Used list on the left side of Start, and then click or tap Pin To Start. The item will take up residence as a medium-sized tile in the first available empty space, and from there you can move and resize it as needed.

To remove a program from the right side of Start, right-click it and then click Unpin From Start.

You can adjust the size of any tile by right-clicking the tile to see the menu shown in Figure 3-3.



Figure 3-3 These options are available for most modern apps, including those you acquire from the Windows Store. Not all apps support this full list of sizes.

Note that not all tiles support the full range of sizes shown in this figure. Windows desktop programs, for example, offer only the Small and Medium options.

On a touchscreen, you can accomplish the same tile customization tasks with a long press on the tile. That produces two options shown in white circles on the right side of the tile. Tapping the top option unpins the tile, while tapping the ellipsis at the bottom right reveals a menu with Resize and Live Tile items.

NOTE

Options for a specific app might allow additional customization of the live tile. The Photos app, for example, allows you to choose a specific image for its tile.

Right-clicking the tile for a Windows desktop program produces a menu with an extra set of options: Run As Administrator, for example.

Tiles can be arranged into groups, with or without custom group names. Drag tiles, one at a time, into the position you prefer. If the position you choose is sufficiently far from the edge of an existing group, your tile ends up in a new group of its own. You can move it back to an existing group or add other tiles to the new group.

A slim bar sits above every group of tiles. Click (as we have in Figure 3-4) to display a text box where you can type a group name of your choosing. (We created a group named Microsoft Office here.) Click the horizontal lines to the right of the name box to drag the entire group to a new location.



Figure 3-4 Click above any group of tiles to give that group a descriptive label.

Gathering tiles into folders

Another technique for grouping tiles is to create a folder. A folder of tiles looks like an ordinary tile with small icons inside, representing the contents of the folder. The following is a folder of Microsoft Office apps:



When you click or tap a folder, the folder opens to reveal its components, like this:



With the folder thus expanded, you can launch a component app in the usual way or return the folder to its former state by clicking the upward arrow.

To create a folder, drag one tile and drop it on top of another. To drop additional apps into the folder, simply drag them to the existing folder.

Using and customizing the taskbar

The taskbar is that strip of real estate along one screen edge (bottom by default) that contains, from left to right, the Start button, the search box, the Task View button, program buttons, notification icons, icons for people, and a clock. The taskbar made its first appearance in Windows 95. In the years since, it has slowly evolved without changing its basic shape.

The Windows 10 taskbar continues to serve the same basic functions as its progenitors—launching programs, switching between programs, and providing notifications—with only subtle changes in functionality.

Every running program with a user interface has a corresponding taskbar button. When you close that program, the button vanishes as well, unless you pinned it to the taskbar. A faint line appears underneath the icon for a running program, and the program with the current focus has a subtle but noticeable transparent shadow to identify it.

The Windows 10 taskbar offers a limited selection of customization options, most of which are available through Settings > Personalization > Taskbar (or right-clicking an empty space on the taskbar or the Task View button and clicking Settings). Figure 3-5 shows the first group of options on that Settings page.

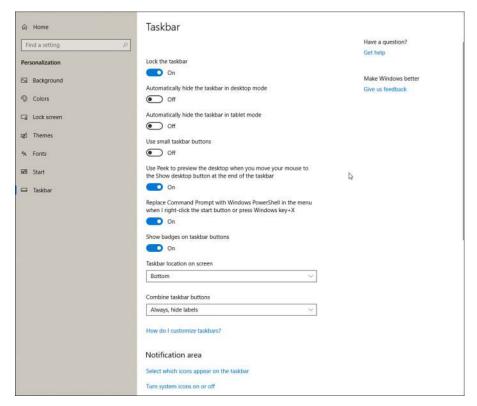


Figure 3-5 For most people, the options set here will be acceptable, especially Lock The Taskbar, which prevents you from accidentally dragging the taskbar to the side of the monitor.

Here is a rundown of the options shown in Figure 3-5:

Lock The Taskbar. On by default, this option prevents you from accidentally dragging
the taskbar to the side of the monitor. Note that the shortcut menu that appears when
you right-click the taskbar also includes this command. It's there so that you can easily

switch in and out of the locked mode when you need to adjust the size or position of the taskbar. Also note that locking the taskbar does not prevent you from rearranging taskbar icons. (If your Windows configuration includes multiple monitors, this command changes to Lock All Taskbars.)

- Automatically Hide The Taskbar. By default, the taskbar remains visible at all times. If that's inconvenient for any reason, you can tell it to get out of the way. The Settings page provides separate Hide options for Desktop and Tablet modes. With either option set, the taskbar retreats into the edge of the desktop whenever a window has the focus. To display the hidden taskbar, move the mouse pointer to the edge of the desktop where the taskbar normally resides. On a touchscreen, swipe from that edge toward the center of the screen.
- Use Small Taskbar Buttons. Select this option if you want to reduce the height of taskbar buttons, making them similar in size to buttons in earlier Windows versions. In our experience, buttons of this size are too small for practical use. If you have the eyesight of a hawk, your opinion might differ.
- **Use Peek To Preview The Desktop.** With this option on, moving your mouse to the extreme edge of the taskbar (beyond the Action Center button) hides all open windows temporarily, giving you the opportunity to see the underlying desktop. This option is off by default; we don't see a good reason not to turn it on (and Figure 3-5 shows the option set to on).
- Replace Command Prompt With Windows PowerShell. Leave this option on if you're
 a PowerShell user. You'll save some steps getting to the command line.
- Show Badges On Taskbar Buttons. Badges are small circular notifications that can appear on the lower-right corner of certain taskbar buttons. In the following illustration, for example, badges on the Alarms & Clock, Weather, and Mail buttons indicate that an alarm has been set, that a weather alert is in effect, and that a stack of mail is waiting to be read.



- **Taskbar Location On Screen.** The taskbar appears at the bottom of the screen by default. As you would expect, the alternatives are top, left, and right. You don't have to visit Settings to change positions, however. Simply unlock the taskbar and drag it.
- Combine Taskbar Buttons. The default setting for Combine Taskbar Buttons is Always,
 Hide Labels. This setting instructs Windows to always group multiple windows from a
 single application (such as Microsoft Word documents) into a single taskbar button. The
 Hide Labels setting for this option ensures that each running program has one and only

one button, which consists of the program's icon. With either of the other settings (When Taskbar Is Full or Never), Windows gives each window its own separate taskbar button and adds the name of the running program or open document as a label to the right of the program icon, if space permits. It groups windows only when the taskbar becomes too crowded or continues to shrink the size of taskbar buttons as you open more windows. We recommend the default setting here.

➤ If you have more than one display attached to a Windows 10 PC, some extra customization options are available for the taskbar. See "Configuring the taskbar with multiple displays," later in this chapter, for details.

Pinning programs to the taskbar

Pinning a taskbar button makes it easy to find and run favorite programs without the need to open Start or use the search box to find the program's shortcut. To pin a program to the taskbar, simply drag its icon or a shortcut (from Start, from the desktop, or from any other folder) to the taskbar. Alternatively, right-click a program icon wherever you find it or the taskbar button for a running program and then click Pin To Taskbar.

To remove a pinned program from the taskbar, right-click the pinned icon and then click Unpin From Taskbar. This command also appears on other shortcuts to the program, including those on the desktop and on Start.

You can use taskbar buttons to launch a program that's not currently running or to switch from one running program to another. You can also click a taskbar button to minimize an open window or to restore a minimized window. If those features sound too obvious, here's a trick you might not know: You can open a new instance of a program that's already running—a new Microsoft Word document, for example, or a fresh File Explorer window—by right-clicking the taskbar button and then clicking the program name; alternatively, hold Shift and click the program name.

Using Jump Lists for quick access to documents and folders

A Jump List is the official name of the menu that appears when you right-click a taskbar button or a tile pinned to Start. Each Jump List includes commands to open the program, to pin the program to the taskbar (or unpin it), and to close all open windows represented by the button.

In addition, for programs developed to take advantage of this feature, Jump Lists can include shortcuts to common tasks that can be performed with that program, such as New Window or New InPrivate Window on a Microsoft Edge Jump List. For Microsoft Office programs, Adobe Acrobat, and other similarly document-centric programs, Jump Lists also typically include links to recently opened files.

Figure 3-6 shows the default Jump List for File Explorer.

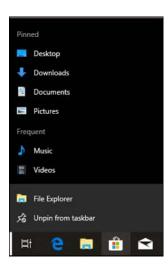


Figure 3-6 Right-click a taskbar button, such as File Explorer, to see a Jump List showing recently opened files and folders with the option to pin items for quick access.

Individual files and folders can't be pinned directly to the taskbar, but you can add them to Jump Lists by using the following techniques:

- To pin a document to the taskbar, drag its icon or a shortcut to any empty space on the
 taskbar. If the taskbar already has a button for the program associated with the document, Windows adds the document to the Pinned section of the program's Jump List. If
 the document's program is not on the taskbar, Windows pins the program to the taskbar
 and adds the document to the program's Jump List.
- To pin a folder to the taskbar, drag its icon or a shortcut to the taskbar. Windows adds the folder to the Pinned section of the Jump List for File Explorer.
- To open a pinned document or folder, right-click the taskbar button and then click the name of the document or folder.
- To remove a pinned document or folder from the Jump List, right-click the taskbar button and point to the name of the document or folder to be removed. Click the pushpin icon that appears.

Changing the order of taskbar buttons

To change the order of buttons on the taskbar, simply drag them into position. Pinned program icons retain their order between sessions, allowing you to quickly find your most used programs in their familiar (to you) location.

Inside OUT

Use shortcut keys for taskbar buttons

The first 10 taskbar buttons are accessible by keyboard as well as by mouse. Press Windows key+1 for the first, Windows key+2 for the second, and so on (using 0 for the tenth). Using one of these shortcuts is equivalent to clicking the corresponding taskbar button: If the button's program isn't running, it starts; if it has a single open window, you switch to that window; if it has multiple open windows, Windows displays previews of all windows and switches to the first window. Hold down the Windows key and tap the number key repeatedly to cycle between all open windows for that program.

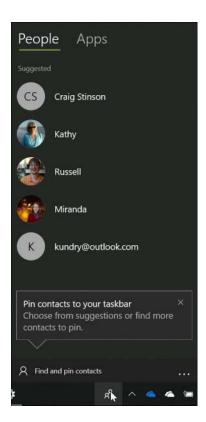
Note that when you change the order of a taskbar button, you also change the Windows key+number combination that starts that particular program.

Another useful shortcut key is Windows key+T, which brings focus to the first item on the taskbar. At that point, you can repeatedly press Windows key+T, Shift+Windows key+T, or the arrow keys to select other taskbar buttons. When a taskbar button is selected, you can press Spacebar to "click" the button or press the Menu key to display its Jump List.

Pinning people to the taskbar

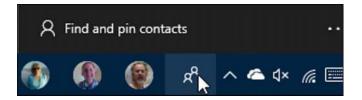
To simplify communication with your most important contacts, you can pin them to the area at the right side of your taskbar (in the typical left-to-right taskbar orientation), just to the left of the notification area. Windows displays a thumbnail image for a pinned person if such an image is available or initials if not. The resulting icon can serve as a drop target for a sharing operation (drag a document to a people icon and search options appear), or you can click an icon to review recent communication, see upcoming events for the selected contact, or initiate new communication.

To pin a contact to the taskbar, click the People icon, near the notification area of the taskbar. Then choose Find And Pin Contacts.



Windows displays a list of suggested contacts. To pin one of those, click it. To locate contacts not on the suggested list, click Find And Pin Contacts.

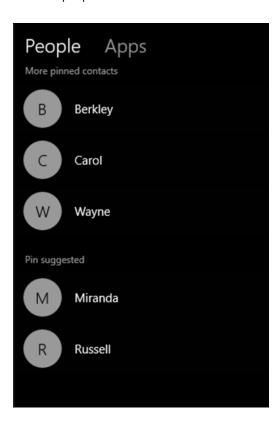
Pinned contacts appear just to the left of the People icon:



Note that if you use Focus Assist to squelch calls and notifications during particular hours of the day, any contacts you have pinned to the taskbar are automatically "white listed"; that is, their messages break through the Focus Assist screen. (We discuss Focus Assist in Chapter 4; see "Eliminating distractions with Focus Assist.")

By default, you can pin up to three contacts on the taskbar. Windows will accommodate as many as ten, however. To allow for more than three, go to Settings > Personalization > Taskbar

and change the number under Choose How Many Contacts To Show. Because adding a lot of contacts to the taskbar might crowd out your application icons, Windows provides an overflow area at the top of the pane that appears when you click the People icon. In this illustration, there are three people in the overflow area:



You can put as many people as you want in the overflow area, where they function exactly as they would on the taskbar.

To change the order in which taskbar contacts appear, simply drag and drop. You can also drag and drop to move a contact from the overflow area to the taskbar. Display the overflow area, grab the contact you want, and drag it to the taskbar. Windows moves one of the current taskbar occupants to the overflow area when you do this. To move an existing taskbar resident to the overflow area, drag it laterally. When your mouse reaches the People icon, the People pane appears, and you can deposit the contact in the overflow area. Windows responds by moving someone from the overflow area to the taskbar.

To remove a pinned contact, right-click it and choose Unpin From Taskbar.

Changing the taskbar's size and appearance

The default height of the taskbar is enough to display one button. (If you switch to small buttons, the taskbar automatically shrinks its height to fit.) You can enlarge it—and given the typical size and resolution of computer displays these days, enlarging it is often a great idea. Before you can change the taskbar's dimensions, you need to unlock it. Right-click an unoccupied area of the taskbar; if a check mark appears next to the Lock The Taskbar command, click the command to clear the check mark. Then position the mouse along the border of the taskbar farthest from the edge of the screen. When the mouse pointer becomes a two-headed arrow, drag toward the center of the screen to expand the taskbar. Drag the same border in the opposite direction to restore the original size.

Moving the taskbar

The taskbar docks by default at the bottom of the screen, but you can move it to any other edge. You do this by selecting the Taskbar Location On Screen option in Settings > Personalization > Taskbar.

As an alternative, you can manipulate the taskbar directly. Unlock it, and then drag any unoccupied part of the taskbar in the direction you want to go. (Don't drag the edge of the taskbar closest to the center of the screen; doing that changes the taskbar's size, not its position.)

Adding toolbars to the taskbar

A seldom-used feature of the taskbar is its ability to host other toolbars. Optional toolbars date back to much older versions of Windows, offering shortcuts to folders, documents, and applications. Third parties can also write add-ons that operate entirely within the confines of the taskbar. Built-in toolbars you can choose to install include the following:

- Address. The Address toolbar provides a place where you can type an internet address
 or the name and path of a program, document, or folder. When you press Enter or click
 the Go button, Windows takes you to the internet address, starts the program, opens the
 document, or displays the folder in a File Explorer window. The Address toolbar is functionally equivalent to the Run command in Start or the address bar in File Explorer or the
 Microsoft Edge browser.
- **Links.** The Links toolbar provides shortcuts to internet sites; its contents are drawn from the Favorites Bar in Internet Explorer.
- Desktop. The Desktop toolbar provides access to all the icons currently displayed on your desktop. In addition, it includes links to your Libraries, This PC, Network, Control Panel, and other user profile folders. When you click the toolbar's double arrow, a cascading menu of all the folders and files on your system appears.

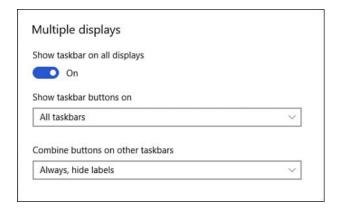
To install a new toolbar or remove one you're currently using, right-click any unoccupied part of the taskbar or any existing toolbar. Click Toolbars on the menu that appears, and then choose from the ensuing submenu. A check mark beside a toolbar's name means that it's already displayed on the taskbar. Clicking a selected toolbar name removes that toolbar.

In addition, any folder on your system can become a toolbar. To create a new toolbar, right-click an existing toolbar or a spot on the taskbar, click Toolbars, and then click New Toolbar. In the next dialog box, navigate to a folder and click Select Folder.

The folder's name becomes the name of the new toolbar, and each item within the folder becomes a tool.

Configuring the taskbar with multiple displays

If your computer has more than one monitor attached, you have additional options for configuring the taskbar: You can show it on just the main display or on all displays, and you can vary its appearance on each display. To review these options, right-click the taskbar and choose Settings. The following illustration shows the multiple-display options. You'll find them near the bottom of the page at Settings > Personalization > Taskbar.



Selecting the first option shows a taskbar on each monitor. If you set it to Off, the taskbar appears only on the main display. (You specify the "main display" in Settings > System > Display. For details, see "Configuring displays and graphics adapters" in Chapter 4, "Hardware and devices.")

The Show Taskbar Buttons On setting determines where the taskbar button for a particular app appears—on all taskbars or only the one where that app's window resides.

The last setting specifies how taskbar buttons are combined on displays other than the main display.

Customizing the notification area

The notification area extends from the right edge of your taskbar (on a left-to-right arrangement) to the People area and application tiles. Typically, this includes the Action Center icon, the clock, and a variety of system and application-specific items.

To customize the system icons, go to Settings > Personalization > Taskbar. Under the Notification Area heading, click Turn System Icons On Or Off to specify which icons appear. As Figure 3-7 shows, the available items are denoted by icons and switches.

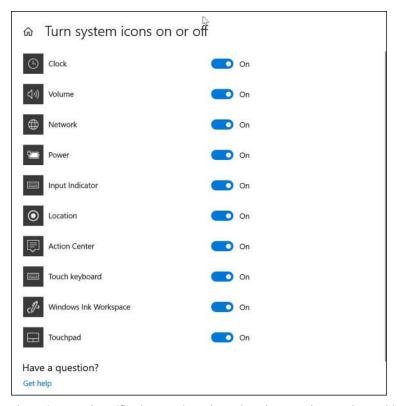


Figure 3-7 Each notification area icon shown here is currently turned on. With a flick of the switch, you can remove any that you don't need or want.

To customize the rest of your notification area, click Select Which Icons Appear On The Taskbar. You'll probably see a longer list, including some items specific to applications or devices on your system. Figure 3-8 shows an example.

You can use the On-Off switches to add or remove items. In case you want them all, Windows provides a master switch at the top of the list.

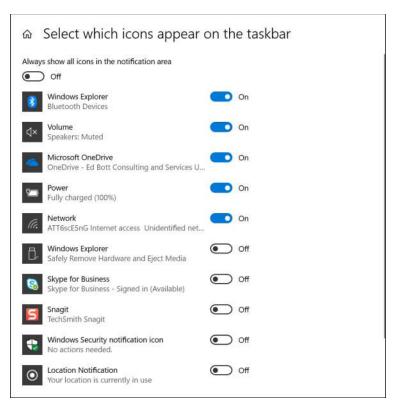


Figure 3-8 Some icons in this list provide status messages. Others are shortcuts to associated programs.

Using and customizing Action Center

Action Center is the formal name of the pane that appears at the right side of your screen when you swipe in from the right (on a touchscreen), press Windows key+A, or click the small button just to the right of the clock on your taskbar. It serves two important functions. First, it supplies a notification area that can display messages from various apps and system components. These notifications occupy the upper part of Action Center. Second, it provides a panel of Quick Action buttons for such things as switching in and out of Airplane Mode or Tablet Mode, creating a note in OneNote, connecting to a Wi-Fi access point, and so on. The action buttons appear as one or more rows of tiles along the lower edge of Action Center. Figure 3-9 shows an example of Action Center with three notifications and three rows of Quick Action buttons. Notifications are grouped under headings corresponding to the notifying applications. Collapse icons beside each notification to reduce the verbosity of the notification; these are handy if your Action Center is teeming with messages.

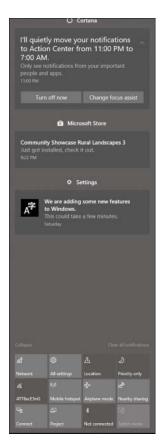


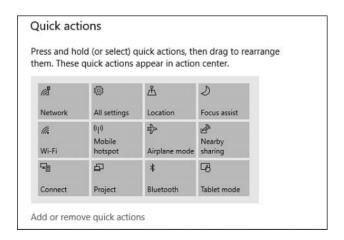
Figure 3-9 Action Center consists of two parts: a set of notifications at the top and one or more rows of Quick Action buttons at the bottom.

You can respond to notifications in various ways. If you hover the mouse pointer over a notification, a Close button appears in its upper-right corner, and you can dismiss the notification by clicking there. If you click on the body of the notification, the relevant action occurs. For example, clicking on a news bulletin opens the story in the News app; clicking on a message from Windows Update telling you that a system restart is pending might open a secondary message with more details and a button for effecting an immediate restart.

Some Quick Action buttons are simple commands. Clicking All Settings, for example, opens Settings. Others, such as Tablet Mode and Wi-Fi, are toggle switches. Action Center uses the current accent color to indicate which switches are currently on.

Customizing the Quick Actions panel

To rearrange the contents of the Quick Actions panel, go to Settings > System > Notifications & Actions. The current Quick Actions layout is shown near the top of the page:



You can change the order in which your Quick Actions are displayed by dragging with the mouse or other pointer. On a touchscreen, press and hold a button to select it, and then drag. Note that you do not have to have an empty space in the panel to do the rearranging; Windows adjusts button positions as you drag.

The arrangement of the Quick Actions panel matters in one way. With the Collapse button that appears directly above the panel in Action Center (shown in Figure 3-9), you can reduce the panel to a single row of four. The row that appears then is the top row shown in Settings > System > Notifications & Actions. You can think of this row as the quickest of your Quick Actions. If you want to get in and out of Airplane Mode effortlessly, for example, you can put that button in the top row, collapse the panel in Action Center, and then swipe in from the right when you board the plane. Your Airplane Mode Quick Action button will be right there, more or less under your thumb.

To change the content of the Quick Actions panel, click Add Or Remove Quick Actions. (See the previous illustration.) The list of choices that appears is appropriate for your hardware. Figure 3-10, for example, shows the Quick Actions available on a Surface Pro 3. Some of these, such as Battery Saver and Rotation Lock, would not appear on a desktop computer.

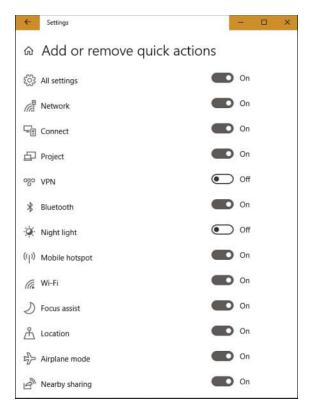


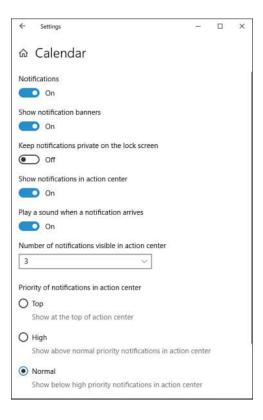
Figure 3-10 The list of available Quick Actions is appropriate for your hardware.

Customizing notifications

The options for controlling which "senders" can deliver messages to the notification area of Action Center are also located at Settings > System > Notifications & Actions, just below those for Quick Actions. Switches here also control whether messages are displayed on your lock screen. The following illustration shows the options governing general notification behavior.



Scroll down from these general switches, and you'll come to switches for individual senders. You can use the switches to squelch or permit notifications from particular senders. Clicking on the sender takes you to a more granular set of controls, such as the ones for the Calendar app, shown next:



You can use this set of controls for such things as determining whether a sender provides a notification banner (a pop-up that appears briefly when a notification arrives), whether a sound is played, the maximum number of notifications that will be displayed at one time in Action Center (you can use an Expand button to see the remainder), and the priority given to the sender's notifications. For example, if you want your Calendar notifications always to show up at the top of Action Center, you can select Top.

Switching tasks

As in previous Windows versions, you can switch to a different program by clicking its taskbar button. And if you're not sure which icon your document is hidden under, hover the mouse pointer over a taskbar button to display a thumbnail image of the window above the button. If a taskbar button combines more than one window (representing multiple Microsoft Excel spreadsheets, for example), hovering the mouse pointer over the taskbar button displays a preview of each window.

If the live thumbnail isn't enough to help you select the correct window, hover the mouse pointer over one of the preview images. Windows brings that window to the forefront, temporarily masking out the contents of all other open windows.

The alternative to this manual hunt-and-click technique is Task View, which displays large, live thumbnails of running programs on the screen so that you can switch with confidence.

To begin, click the Task View button or use the Windows key+Tab shortcut. On a touchscreenequipped device, you can swipe in from the left edge. Figure 3-11 shows the results on a system with seven running programs.

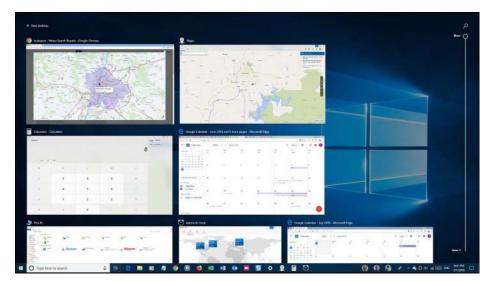


Figure 3-11 Opening Task View shows running programs using their windowed dimensions. Clicking or tapping any thumbnail opens it in its current position.

Those thumbnails remain open until you do something, usually by clicking or tapping a thumbnail to switch to that window or by pressing Esc to return to the current window.

If there are too many open windows to fit as thumbnails on the display, use the up and down arrows at the bottom of the screen to scroll through the full list.

The old-fashioned Alt+Tab task switcher, familiar to every Windows user of a certain age, is still available as well. The concept is similar, but the thumbnails appear only as long as you continue to hold down the Alt key. Hold down Alt and tap the Tab key to cycle (left to right, top to bottom) through all open windows. When you've highlighted the window you want to bring to the fore, release the Alt and Tab keys.

When using Task View, you also have the option of closing a window by clicking the red X in the upper-right corner of the preview or, if your mouse scroll wheel supports clicking, by middle-clicking anywhere in the preview image. Other basic window tasks are available on the shortcut menu that appears when you right-click the preview image.

Reviewing, revisiting, resuming with Timeline

Timeline, introduced in version 1803, extends Task View into the past, showing thumbnails for the places you have been and the things you have done within the most recent 30 days. If you forget where you found that important article on the Internet, or if you saved your notes *somewhere* (but who knows where?), relax; Windows knows. Press Windows key+Tab or click the Task View button. Then scroll down below the thumbnails for your current apps to get to your timeline. Figure 3-12 shows the beginning two days of a user's timeline.

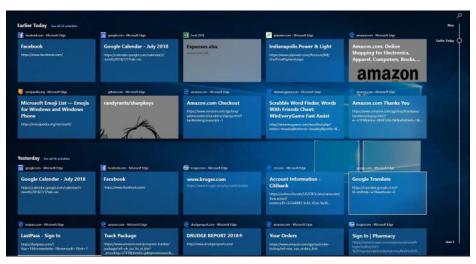


Figure 3-12 Each tile in Timeline represents an activity or site to which you can return. Initially, two rows of tiles appear for each day heading; you can click links beside the headings to see more.

Each tile represents the combination of an app, a piece of content, and a specific time. Clicking a tile takes you back to the activity in question.

Timeline initially displays two rows of tiles per day, and it selects the activities that it considers to be most "relevant." If you don't find what you're looking for, click the link beside the head to display all activities for the selected day. When you do this, Timeline divides the full day's activities into hourly subgroups. If you're still not finding what you need, press Ctrl+F to get to the search box in the upper-right corner of the display.

The scrollbar at the right side of the display is annotated by date. If you want to rediscover what you were up to on a particular day, drag the annotated scrollbar until that date appears.

What if you don't want to be reminded of certain activities or don't want others to see what you've been doing? You can remove any tile by right-clicking it and choosing Remove. Or you can suppress an entire day's (or hour's if you have expanded a day) history by right-clicking a tile and choosing the command at the bottom of the context menu (Clear All From Earlier Today, for example). Timeline also ignores any Microsoft Edge browsing you do in an InPrivate session.

Timeline is a good example of a feature that is evolving as this book goes to press and one that can be expected to undergo more changes in the future. In its debut with Windows 10 version 1803 in the summer of 2018, Timeline supported Microsoft Edge, the document-oriented components of Microsoft Office (Word and Excel, for example, but not Outlook), Photos, News, Notepad, and Maps. Adobe Acrobat DC and VLC Media Player were among third-party programs supporting Timeline, and you can certainly expect to see others arrive as time passes. Stay tuned.

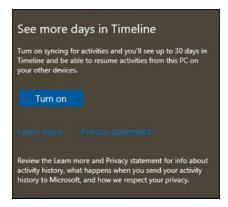
Inside OUT

Add timeline support to your app

Developers looking to build Timeline support into their applications can find a good introduction to the topic in the blogpost "Application Engagement in Windows Timeline with User Activities," located at https://bit.ly/Timeline-Win10.

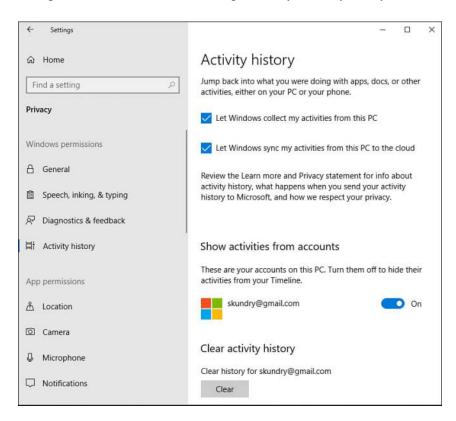
One of the most useful things about Timeline is its ability to track activities across all systems that share a common Microsoft account. If you leave the office *in medias res*, you can pick up where you left off on another device in another location.

On first use, when you scroll to the bottom of Timeline's array of tiles, you might encounter the message shown in the next illustration:



Clicking Turn On in this dialog box enables the syncing of Timeline data across devices and, at the same time, extends Timeline's reach from four days to thirty.

Settings for Timeline are located at Settings > Privacy > Activity History:



With the first and second check boxes selected, Timeline is enabled, and your sites and activities can be revisited on any device sharing a common Microsoft account. If you open an activity requiring a modern app on a device where that app is not installed, Windows will assist you to install it.

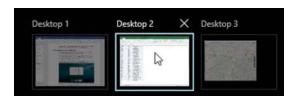
In the Show Activities From Accounts section of the page, you can enable or disable tracking for particular Microsoft accounts, in the event that you have multiple—a work account and a school account, for example. Finally, the Clear button at the bottom of the page provides a way to erase your current history and start fresh.

Switching between virtual desktops

The idea of virtual desktops is straightforward: Instead of just a single desktop, you create a second, third, fourth, and so on. On each desktop, you arrange individual programs or combinations of apps you want to use for a specific task. Then, when it's time to tackle one of those tasks, you switch to the virtual desktop and get right to work.

To create a desktop, click New Desktop at the top of the Task View window.

Virtual desktops show up as a row of thumbnails along the top of the Task View window, like this:



The system depicted here has three virtual desktops, of which the second is currently active. You can switch from one virtual desktop to another by clicking its thumbnail. You'll notice that your taskbar changes to reflect the makeup of the current desktop.

Managing and arranging windows

Windows 10 includes a host of keyboard shortcuts and mouse gestures that greatly simplify the everyday tasks of resizing, moving, minimizing, arranging, and otherwise managing windows. The most useful trick is a collection of "snap" techniques. These have been around for several Windows versions, but Windows 10 adds some extremely useful new tricks to the old familiar methods.

The simplest window-snapping scenario is a PC with a single display, where you want to arrange two windows side by side. You might want to compare two Word documents, move files

between the Documents folder and an archive, or do financial research in a web browser and plug the numbers into an Excel spreadsheet.

Drag a window title bar to the left or right edge of the screen, and it snaps to fill that half of the display. As soon as you let go of the title bar, the window snaps into its position and Windows helpfully offers thumbnails for all other open windows to help you choose what to run along-side your first snapped window.

In Figure 3-13, for example, we've just snapped a Microsoft Edge browser window to the left side of the screen and now have a choice of two other running windows to snap opposite it. (If you don't feel like snapping a second window, just press Esc or click anywhere except on one of those thumbnails. They vanish immediately and retain their previous size and position.)

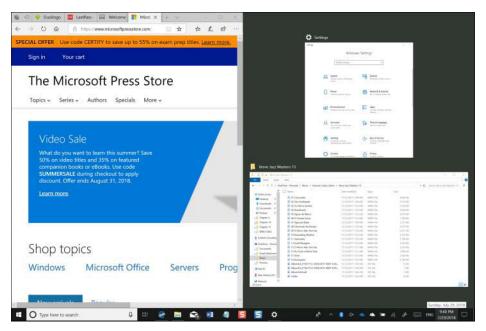


Figure 3-13 When you snap a window to one edge of the display, Windows shows other open windows in thumbnails alongside the snapped window for easy side-by-side arrangement.

Note that the window resizes when the mouse pointer hits the edge of the screen. To use this feature with minimal mouse movement, start your drag action by pointing at the title bar near the edge you're going to snap to.

As soon as you begin dragging a snapped window away from the edge of the screen, it returns to its previous size and position.

Here are a few ways you can snap windows in Windows 10 by using a mouse or by dragging directly on a touchscreen:

- Drag the title bar to the top of the screen to maximize the window, or drag the title bar away from the top edge to restore it to its previous window size.
- Drag a window title bar to any corner of the screen, and it snaps to fill that quadrant
 of the display. This capability is new in Windows 10 and is most useful on large, highresolution desktop displays.
- Drag the top window border (not the title bar) to the top edge of the screen, or drag the
 bottom border to the bottom edge of the screen. With either action, when you reach the
 edge, the window snaps to full height without changing its width. When you drag the
 border away from the window edge, the opposite border snaps to its previous position.

Inside OUT

Snap side-by-side Windows at different widths

Although Windows automatically arranges side-by-side windows at equal widths, you don't have to settle for symmetry. On a large desktop monitor, for example, you might want to arrange a news feed or Twitter stream along the right side of your display, using a third or less of the total display width and leaving room for Word or Excel to have a much larger share of the screen real estate.

The secret is to snap the first window and immediately drag its inside edge to adjust the window to your preferred width. Now grab the title bar of the window you want to see alongside it and snap it to the opposite edge of the display. The newly snapped window expands to fill the space remaining after you adjusted the width of the first window.

The rules work the same with multimonitor setups. With two side-by-side monitors, for example, you can drag the mouse to the inside edge of a display and snap a window there, allowing for two pairs of equal-size windows lined up from left to right. By dragging the title bar, you also can move a maximized window from one screen to another on a multimonitor system.

Inside OUT

Shake to minimize distractions

An ancient Windows feature called Aero Shake, introduced with Windows Vista, survives in Windows 10. Grab the window's title bar with the mouse or a finger and quickly move it back and forth a few times. Suddenly, all windows retreat to the taskbar except the one whose title bar you just shook. This move takes a bit of practice, but it's worth mastering. It requires only three smooth "shakes"—a left, right, left motion is best—not maniacal shaking.

Windows 10 includes keyboard shortcuts that correspond with the preceding mouse gestures. These (and a few extras) are shown in Table 3-1.

Table 3-1 Keyboard shortcuts and gestures for resizing and moving windows

Task	Keyboard shortcut	Gesture
Maximize window	Windows key+ Up Arrow	Drag title bar to top of screen
Resize window to full screen height without changing its width	Shift+Windows key+ Up Arrow	Drag top or bottom border to edge of screen
Restore a maximized or full-height window	Windows key+ Down Arrow	Drag title bar or border away from screen edge
Minimize a restored window	Windows key+ Down Arrow	Click the Minimize button
Snap to the left half of the screen	Windows key+ Left Arrow*	Drag title bar to left edge
Snap to the right half of the screen	Windows key+ Right Arrow*	Drag title bar to right edge
Move to the next virtual desktop	Ctrl+Windows key+ Left/Right Arrow	Three-finger swipe on pre- cision touchpad; none for mouse
Move to the next monitor	Shift+Windows Key+ Left/Right Arrow	Drag title bar
Minimize all windows except the active window (press again to restore windows previously minimized with this shortcut)		"Shake" the title bar
Minimize all windows	Windows key+M	
Restore windows after minimizing	Shift+Windows key+M	

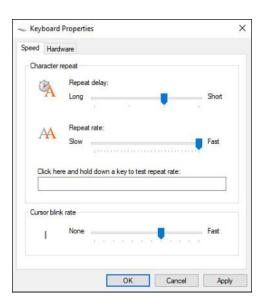
^{*} Pressing this key repeatedly cycles through the left, right, and restored positions. If you have more than one monitor, it cycles these positions on each monitor in turn.

The Windows 10 taskbar also exposes some traditional window-management menus. The secret? Hold the Shift key as you right-click a taskbar button. For a button that represents a single window, the menu includes commands to Restore, Move, Size, Minimize, Maximize, and Close the window. For a grouped taskbar button, Shift+right-click displays commands to arrange, restore, minimize, or close all windows in the group.

If you find it disconcerting to have windows snap to a certain size and position when you drag their title bars, you can disable Snap. The options controlling Snap are at Settings > System > Multitasking.

Using a keyboard and mouse in Windows 10

As of version 1803, the options for customizing a keyboard had not yet made the transition from Control Panel to Settings. To find these options, type **keyboard** in the Search box. The options are few, but they might affect your typing comfort level:



The repeat delay—the amount of time Windows waits as you hold down a key before repeating that key—is set, by default, a bit long for the tastes of some proficient typists. You can make it shorter by dragging the slider to the right. On the other hand, if you sometimes find that Windows gives you an unwanted string of repeated characters, you can drag the slider leftward. You might also then want to reduce the repeat rate.

Inside OUT

Reconfigure the Caps Lock key to avoid shouting

If you occasionally find yourself accidentally stuck in Caps Lock mode so that your emails are shouting, or your text documents look like a demand letter from a creditor, consider the following tweak.

On a standard 101-key desktop keyboard, you can disable the Caps Lock key so that it does nothing whatsoever: Open Registry Editor and navigate to HKLM\System\ CurrentControlSet\Control\Keyboard Layout. Add a Binary value called Scancode Map. Set the data for this key to

00000000 00000000 02000000 00003A00 00000000

Close Registry Editor, restart, and you'll never be stuck in Caps Lock again.

Alternatively, you can use SharpKeys (a free download from https://github.com/randyrants/sharpkeys) to remap the Caps Lock key to anything you might find more useful—a second Windows key, for example.

Mastering keyboard shortcuts

Windows 10 offers so many keyboard shortcuts that mastering them all would be a remarkable feat, a bit like memorizing 80 digits of pi. Learning a handful or several handfuls, on the other hand, can definitely improve your productivity.

Table 3-1, earlier in this chapter, offered a list of keyboard shortcuts having to do with window management. Table 3-2 presents an idiosyncratic selection of everyday shortcuts—the ones that we use most often and would have trouble living without. Because your own needs probably differ from ours, however, you might want to peruse the exhaustive list that appears at https://aka.ms/keyboard-shortcuts.

A shortcut for emojis

A recent addition to the repertoire of keyboard shortcuts, one that was introduced in Version 1709, simplifies access to the Windows 10 emoji library. Press Windows key+. or Windows key+; in any window that accepts text input, and the emoji panel appears. Within the panel, you can use the Tab key to navigate between categories of emojis and the left and right arrow keys to move within a category. Mouse and fingers work as well, of course. To change from one category of emoji to another (smiley faces to people, for example), click or tap along the bottom row of the pop-up display. To change the skin tone of an emoji in the people category, click the Skin Tone button, next to the Close button in the upper-right corner of the window. You may choose from six color gradations. The emoji panel remains visible until you press Esc or click the Close button.

The emoji library is also accessible via the Touch Keyboard, and we discuss its use there later in this chapter (see "Using the Touch Keyboard").

Table 3-2 A short list of general-purpose keyboard shortcuts

Shortcut	Effect
Ctrl+C	Copy selection
Ctrl+X	Cut selection
Ctrl+V	Paste Clipboard contents

Ctrl+Z	Undo	
Ctrl+Y	Redo	
Ctrl+N	Open new window (in many apps)	
Ctrl+S	Save	
Ctrl+W	Close current window (in many apps)	
Ctrl+P	Print (in many apps)	
Ctrl+A	Select all	
Ctrl+Shift+Esc	Open Task Manager	
F2	Rename (in File Explorer)	
F3	Search (File Explorer and many browsers)	
F5	Refresh (File Explorer and many browsers)	
Alt+F4	Close current window	
Alt+Enter	Display properties dialog box	
Windows key	Display Start	
Windows key+E	Open new File Explorer window	
Windows key+I	Open Settings	
Windows key+R	Open the Run command	
Windows key+X	Open the Quick Link menu	

Using alternative keyboard layouts

Windows 10 offers keyboard support for more than 300 languages. Most of these languages are available as full language packs, and installing a language pack changes the entire Windows user interface—menus, dialog boxes, and all—to the selected language. But you can also simply install a keyboard layout for another language, without changing the user interface. This might prove handy if you work in an international environment and occasionally need to dash off an email to, say, a Russian-speaking colleague or customer.

To install another keyboard, go to Settings > Time & Language > Region & Language. When you click Add A Language, the entire set of available languages appears, and you can make your choice. When the keyboard is installed, it becomes available through the Input Indicator system icon, which typically lives on the taskbar, adjacent to the clock. Clicking there pops up a menu of available keyboards, along with a Language Preferences command.



Clicking Language Preferences takes you back to Settings > Time & Language > Region & Language.

To remove a language, make it the default, or set options relating to the language, return to Settings > Time & Language > Region & Language, and then click on the language.

Inside OUT

For emojis, accented characters, and language assistance, use the Touch Keyboard

The primary purpose of the Touch Keyboard, as its name suggests, is to facilitate input on a touch-enabled device. We discuss and illustrate it, therefore, later in this chapter. (See "Using Windows 10 on a touchscreen device.") But it's invaluable for certain kinds of input on any computer—which is why it's available on nontouch machines as well as tablets.

To enter an emoji—one of the whimsical characters available on all mobile platforms and on Windows 10—click on the smiley-face icon on the bottom row of the keyboard. To enter a character with a diacritical mark, click and hold the unadorned character; your choices will appear in a pop-up window. Hold the n, for example, and the option to type \tilde{n} will appear. Hold the o, and you'll have the opportunity to enter variants like \tilde{o} , \tilde{o} , \tilde{o} , and even \tilde{o} e. If you've ever labored to memorize ANSI codes or wandered through Character Map in search of the accent you need, you'll certainly appreciate this feature.

As for language assistance, suppose you're a whiz touch typist in English but you hunt and peck in Russian. When you select Russian as your input source, the Touch Keyboard will turn to Cyrillic. You can use it as a visual layout guide while you type with your standard keyboard. Or you can use the Touch Keyboard to do the pecking as well as the hunting.

Taming your mouse or other pointing device

To teach your mouse new tricks, go to Settings > Devices > Mouse. With settings here, you can swap the functions of your left and right mouse buttons (great for left-handed folks) and control how much to scroll each time you roll the mouse wheel. The remainder of the mouse configuration options are still in Control Panel; to get there, click Additional Mouse Options. The Mouse Properties dialog box in Control Panel looks like this:



Mouse Properties has settings that define a double-click (that is, how quickly you must twice press the mouse button for it to be detected as a double-click instead of two clicks), change pointer shapes, configure other pointer options, and more. Depending on the mouse you have, you might find additional options in Mouse Properties or in a separate app.

If your computer has a precision touchpad, the Touchpad page in Settings > Devices has a lot to offer, as shown in Figure 3-14.

You can use options here to turn off the touchpad when you have a mouse attached or disable it altogether. Those who've been annoyed when the pointer suddenly hops to a new location while they type (usually because a thumb lightly grazed the touchpad) will shout hosannas about the sensitivity drop-down. Setting this to Low Sensitivity should eliminate most grazing accidents. Other settings determine what various gestures (tapping, double-tapping, tapping with two or three fingers, dragging with two or three fingers, and so on) will do.

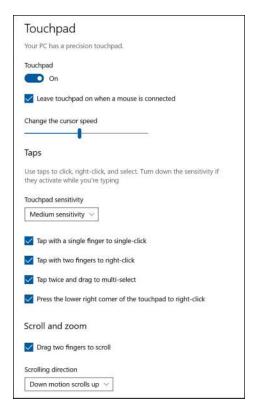


Figure 3-14 Touchpad users are richly rewarded by visiting Settings > Devices > Touchpad.

Using Windows 10 on a touchscreen device

Tablet Mode was specifically designed for sustained use with a touchscreen-equipped device such as a tablet or hybrid PC. We already discussed the Windows user experience with a conventional PC. Tablet Mode introduces a series of significant changes—automatically if it detects you're using a touchscreen device without a keyboard attached, or manually if you want to treat a touchscreen-equipped laptop as if it were a tablet.

Turning on Tablet Mode makes the following changes in the Windows 10 user experience:

 It reconfigures the taskbar, bumping up button sizes, adding a back button, replacing the search box with a search button, and hiding all taskbar buttons. The following comparison shows the normal taskbar on top and the same area in Tablet Mode below it:



- All apps run in full screen. It's possible to snap two apps side by side, but they have a thick sizing bar between them, similar to the one introduced in Windows 8.
- Start opens in full screen, with the app list hidden by default and accessible only by tapping the hamburger menu icon in the upper-left corner of the display.

Windows 10 makes some assumptions about your preferences based on your hardware. On conventional PCs with a keyboard and mouse, Tablet Mode is off. On dedicated tablets, this mode is on by default. You can adjust these preferences at Settings > System > Tablet Mode. On a hybrid device with a relatively small touchscreen, you might prefer to have Tablet Mode on full time, for example.

Using the Touch Keyboard

The other essential feature of a touchscreen-equipped device, especially one without a keyboard, is the presence of the extremely versatile Windows 10 Touch Keyboard. It allows text entry into dialog boxes, web forms, your browser's address bar, documents, the search box—anywhere you would normally need a physical keyboard to provide input.

Figure 3-15 shows the standard Touch Keyboard.

The Touch Keyboard should appear automatically when you tap to position the insertion point in a place that accepts text entry. On touchscreen-equipped devices, you can make the Touch Keyboard appear by tapping its button, which appears in the notification area on the right of the taskbar. (If this button is hidden, right-click or do a long press on the taskbar and then select the Show Touch Keyboard Button option.)



Figure 3-15 This is the default layout of the Touch Keyboard; use the control in the upper-left corner to change the keyboard display mode, dock or float the keyboard, or jump to language or typing settings.

The limited screen space available for the Touch Keyboard means you have to switch layouts to enter symbols and numbers. Tap the &123 key in the lower-left corner to switch between the standard QWERTY layout and the first of two symbol layouts, as shown in Figure 3-16. Note that the layout includes a dedicated number pad, which is extremely handy for working with spread-sheets and performing other data-entry tasks.



Figure 3-16 Tap the &123 key in the lower-left corner to switch between the standard QWERTY keys and this alternate view of symbols and numbers.

In some respects, the Touch Keyboard is more versatile than its physical counterparts. Entering a typographic symbol like the interrobang or an emoji doesn't require the use of ANSI codes. Instead, you can enter characters directly. To see the vast array of available emojis, click the "happy face" button on the bottom row.

With the emoji keyboard layout visible, the bottom row displays keys you can use to switch between different categories. All the categories offer more symbols than can be displayed at one time in the Touch Keyboard. To explore a category fully, swipe left and right. If you don't have a touch display, you can scroll by clicking the minuscule arrows in the lower-right and -left corners of the emoji layout. Figure 3-17 shows an example of the people category. Note that by clicking and holding the people category icon, you can change the skin tone of the people emojis.

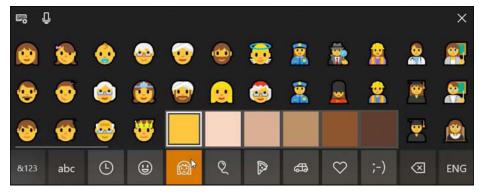


Figure 3-17 Windows 10 supports hundreds of emoji characters. Pick a category from the bottom row and use the arrow keys to scroll through different character sets, 30 at a time.

NOTE

For a full list of officially supported Windows-compatible emoji characters, see https://emojipedia.org/microsoft-emoji-list/.

Dictating text with the Touch Keyboard

By clicking the microphone button near the upper-left corner of the Touch Keyboard, you can dictate text instead of typing. In addition to words, you can dictate punctuation symbols and such editing instructions as "delete last ten words."

Typing with shapes

If you find hunting and pecking is onerous and slow, draw your words instead. Using either the compact or the wide (default) layout of the Touch Keyboard, you can create words by drawing a line from one letter to the next. Windows does an excellent job of recognizing your intentions, and where it cannot it proposes alternative possibilities (just as it would if you misspelled using conventional typing methods). Mobile phones have had this capability for some time, and if you've texted this way on a hand-held platform you'll find it much the same on your Windows tablet.

Changing keyboard styles and docking

Tapping the button in the upper-left corner of the Touch Keyboard reveals a unified settings menu for the keyboard:



The two options in the middle row of this menu control whether the keyboard floats or is docked against the lower edge of your screen. The bottom row includes buttons to display language settings, typing settings, and tips.

The buttons on the top row of the menu change the layout of the keyboard itself. With the button on the left, you get the default layout shown earlier. The button on the right displays the "full" layout, which, like a typical laptop keyboard, includes Alt and Ctrl keys, a Tab key, and an Fn key. If you're handy with thumbs, you'll like the third button from the left, which compresses the keyboard into a one-handed miniature that takes up a minimum of screen space and

functions just like your cell phone. The second layout from the left splits the keyboard into left and right sections, each of which you can operate with one-handed dexterity.

With all these layouts, you can take advantage of Microsoft's superb text-prediction engine. As soon as you finish a word (and sometimes before), likely continuations appear in a row at the top of the keyboard. So, for example, to write "Give me a few minutes to get the money," all you need to type is the first two letters. You can click your way through the rest of the sentence. If you're sending input to a modern (UWP) app, the engine will suggest appropriate emojis as well as text continuations.

Typing suggestions are an opt-in feature. To enable them, go to Settings > Devices > Typing. Under the Typing heading on the Typing page, turn on Show Text Suggestions As I Type On The Software Keyboard.

Inside OUT

Get typing suggestions on the hardware keyboard

The inherent slowness of typing on the Touch Keyboard makes the purpose of typing suggestions self-evident. But you can also take advantage of suggestions and corrections while using your computer's ordinary hardware keyboard. The prediction engine is slightly less versatile in this context as on the Touch Keyboard, because it shows only three suggestions at a time. Even so, suggestions may prove useful, particularly for novice typists or language learners. To turn this feature on, go to Settings > Devices > Typing. Under the heading Hardware Keyboard, turn on Show Text Suggestions As I Type.

Meanwhile, the fourth button from the left in the menu's middle row replaces the keyboard with a handwriting input panel, shown in Figure 3-18. Text that you enter in the input box is automatically translated into characters for entry at the current insertion point.

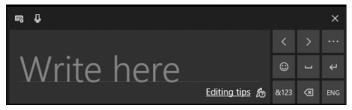


Figure 3-18 The handwriting panel does a remarkable job at translating even sloppy penmanship into readable results.

Even if your handwriting is so bad that no one but you (and perhaps not even you) can read it, you might be in for a surprise. In the unlikely event that the panel misreads your intent, you can still select from a row of alternatives that appears at the top of the window.

Although the handwriting panel is most useful with devices that support pen input, if you find yourself without a stylus, you can still use it with your fingertip. To do this, visit Settings > Devices > Pen & Windows Ink and turn on Write In The Handwriting Panel With Your Fingertip. On this page, you can also choose which font you want your handwriting efforts to appear in.

Using the Windows Ink workspace

The Windows Ink workspace, shown in Figure 3-19, gathers pen-enabled apps into a pane that appears on the right side of your screen when you tap (or click) the Windows Ink Workspace taskbar button. (If you don't see that button, right-click the taskbar and click or tap the Show Windows Ink Workspace button.)

The three apps shown in the figure are Sticky Notes, Sketchpad, and Screen Sketch. Sticky Notes has been around for many iterations of Windows. Sketchpad is a blank canvas for freehand drawing, and Screen Sketch offers an image of the desktop for drawing. Much as you use the Web Note feature in Microsoft Edge to annotate the current webpage, Screen Sketch gives you a way to mark up whatever is on your desktop. An editing toolbar atop both Screen Sketch and Sketchpad provides basic drawing tools, a ruler for drawing straight lines, and commands to copy, save, share, and delete your work.



Figure 3-19 The Windows Ink workspace offers a menu of pen-enabled applications, along with links to recently used apps of any kind and links to items you might want to pick up at the Windows Store.

The apps in the Windows Ink workspace, of course, are intended to give you a taste of what you can do with the pen. Much more elaborate pen-friendly programs exist, and you can use them to perform some remarkable feats. Using Microsoft Word, for instance, you can insert handwritten comments and annotations into a document. Another member of the Office family, One-Note, goes even further, indexing your handwritten notes and allowing you to search through an entire notebook for a word or phrase.

Setting pen options

Options relating to your pen are located at Settings > Devices > Pen & Windows Ink. In the lower portion of that settings page, you'll find a set of options for configuring pen shortcuts. (See Figure 3-20.) These options, which require a pen with a shortcut button, govern what happens when you press that button once, press it twice in quick succession, and press and hold.

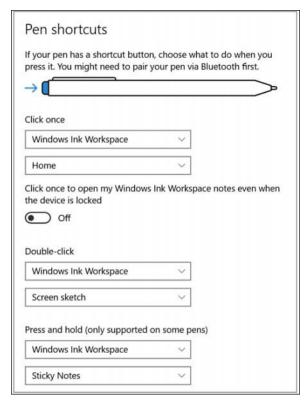


Figure 3-20 With the single-click, double-click, and hold settings, you can train your pen to launch a program, perform a screen capture, summon Cortana, or simply open the Windows Ink workspace.

Within the three sets of drop-downs, you'll find options to launch programs, capture screens, and more.

Working with fonts

Introduced in Windows 10 version 1803 is a Fonts page in Settings (Settings > Personalization > Fonts). If you miss the ancestral font home in Control Panel, you can still visit, but the new Settings page, shown in Figure 3-21, is perhaps easier on the eyes. In the new venue, fonts that include color information are displayed in color, and the page that appears when you click a font presents more information about licensing, trademark, version, manufacturer, and assorted other details. A link at the top of the Fonts page in Settings transports you to the Microsoft Store, where additional fonts are available.

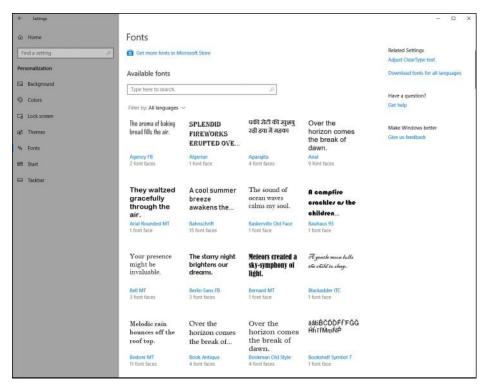


Figure 3-21 Font management has migrated to Settings in version 1803, but the Fonts page in Control Panel remains.

The primary font format used by Windows is TrueType. Windows also supports OpenType and PostScript Type 1 fonts. To install a new font, you can drag its file from a folder or compressed .zip archive to Fonts in Control Panel. But you don't need to open Fonts; the simplest way to install a font is to right-click its file in File Explorer and choose Install. Because font file names

are often somewhat cryptic, you might want to double-click the file, which opens the font preview window, to see what you're getting. If it's a font you want, click the Install button.

NOTE

PostScript Type 1 fonts normally consist of two or three files. The one you use to install the font—regardless of which method you use—is the .pfm file, whose file type is shown in File Explorer as Type 1 Font File.

Making text easier to read

If you like to work at high screen resolutions but find yourself straining to read the text, you can try the following:

- Look for scaling ("zoom") commands in the text-centric programs you use. Many programs, including most modern word processors, include these scaling features. Scaling text up to a readable size is a good solution for particular programs, but it doesn't change the size of icon text, system menus (such as Start), or system dialog boxes.
- To enlarge part of the screen, use the Magnifier tool. (For more information, see "Overcoming challenges" in Chapter 4.)
- Use the scaling options in Display settings. Adjusting the scaling to a higher level enables you to have readable text at higher screen resolutions.

Beginning with version 1809, you can change the size of text everywhere, without changing the overall scaling of your system. Go to Settings > Ease Of Access > Display. Then use the slider under the heading Make Text Bigger. A sample text window will show you how large your text becomes as you drag the slider (see Figure 3-22). You can choose any size from 100 to 225 percent.

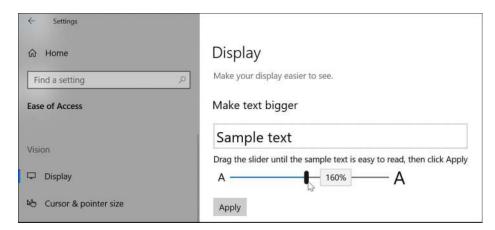


Figure 3-22 By moving this slider, you can magnify the size of text throughout Windows.

Using font smoothing to make text easier on the eyes

ClearType is a font-smoothing technology that reduces jagged edges of characters, thus easing eye strain.

To check or change your font-smoothing settings, type **cleartype** in the search box and then click Adjust ClearType Text. Doing so opens the ClearType Text Tuner, which, in its first screen, has a check box that turns ClearType on when it's selected. The ensuing screens that appear each time you click Next offer optometrist-style choices ("Which Is Better, Number 1 or Number 2?") to help you reach ClearType perfection. If you have more than one monitor attached, the ClearType Text Tuner goes through this exercise for each one.

Windows includes seven fonts that are optimized for ClearType. The names of six of these—Constantia, Cambria, Corbel, Calibri, Candara, and Consolas—begin with the letter c—just to help cement the connection with ClearType. If you're particularly prone to eye fatigue, you might want to consider favoring these fonts in documents you create. (Constantia and Cambria are serif fonts, considered particularly suitable for longer documents and reports. The other four are sans serif fonts, good for headlines and advertising.) The seventh ClearType-optimized font, Segoe UI, is the typeface used for text elements throughout the Windows user interface. (Windows also includes a ClearType-optimized font called Meiryo that's designed to improve the readability of horizontally arrayed Asian languages.)

➤ For information about how ClearType works, visit Microsoft's ClearType site at https://bit.ly/ ClearTypeInfo.

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