Windows:

**Microsoft Windows, commonly referred to as Windows, is a group of several**[**proprietary**](https://en.wikipedia.org/wiki/Proprietary_software)[**graphical**](https://en.wikipedia.org/wiki/Graphical_user_interface)[**operating system**](https://en.wikipedia.org/wiki/Operating_system)**families, all of which are developed and marketed by**[**Microsoft**](https://en.wikipedia.org/wiki/Microsoft)**.**

**Active Microsoft Windows families include**[**Windows NT**](https://en.wikipedia.org/wiki/Windows_NT)**and**[**Windows IoT**](https://en.wikipedia.org/wiki/Windows_IoT)**; these may encompass subfamilies, (e.g.**[**Windows Server**](https://en.wikipedia.org/wiki/Windows_Server)**or**[**Windows Embedded Compact**](https://en.wikipedia.org/wiki/Windows_Embedded_Compact)**) (Windows CE).**

**Each family caters to a certain sector of the computing industry.**

Defunct Microsoft Windows families include [Windows 9x](https://en.wikipedia.org/wiki/Windows_9x), [Windows Mobile](https://en.wikipedia.org/wiki/Windows_Mobile), and [Windows Phone](https://en.wikipedia.org/wiki/Windows_Phone).

As of October 2020, the most recent version of Windows for PCs, [tablets](https://en.wikipedia.org/wiki/Tablet_computers) and [embedded devices](https://en.wikipedia.org/wiki/Embedded_system) is [Windows 10](https://en.wikipedia.org/wiki/Windows_10), version 20H2.

**The most recent version for**[**server computers**](https://en.wikipedia.org/wiki/Server_(computing))**is**[**Windows Server**](https://en.wikipedia.org/wiki/Windows_Server)**, version 20H2.**[**[9]**](https://en.wikipedia.org/wiki/Microsoft_Windows#cite_note-9)[**A specialized version of Windows**](https://en.wikipedia.org/wiki/Xbox_One_system_software)**also runs on the**[**Xbox One**](https://en.wikipedia.org/wiki/Xbox_One)[**video game console**](https://en.wikipedia.org/wiki/Video_game_console)**.**[**[10]**](https://en.wikipedia.org/wiki/Microsoft_Windows#cite_note-10)

**Microsoft Windows**, also called **Windows** and **Windows OS**, computer [operating system](https://www.britannica.com/technology/operating-system) (OS) developed by [Microsoft Corporation](https://www.britannica.com/topic/Microsoft-Corporation) to run [personal computers](https://www.britannica.com/technology/personal-computer) (PCs). Featuring the first [graphical user interface](https://www.britannica.com/technology/graphical-user-interface) (GUI) for [IBM](https://www.britannica.com/topic/International-Business-Machines-Corporation)-compatible PCs, the Windows OS soon dominated the PC market. Approximately 90 percent of PCs run some version of Windows.

**On PCs, Windows is still the most popular operating system in all countries.**

Windows 10

**Windows 10 is a series of**[**operating systems**](https://en.wikipedia.org/wiki/Operating_system)**developed by**[**Microsoft**](https://en.wikipedia.org/wiki/Microsoft)**and released as part of its**[**Windows NT**](https://en.wikipedia.org/wiki/Windows_NT)**family of operating systems.**

**It is the successor to**[**Windows 8.1**](https://en.wikipedia.org/wiki/Windows_8.1)**, released nearly two years earlier, and was**[**released to manufacturing**](https://en.wikipedia.org/wiki/Software_release_cycle#Release_to_manufacturing_(RTM))**on July 15, 2015, and broadly released for the general public on July 29, 2015.**

Windows 10 was made available for download via [MSDN](https://en.wikipedia.org/wiki/MSDN) and [Technet](https://en.wikipedia.org/wiki/Microsoft_Technet" \o "Microsoft Technet), and as a free upgrade for retail copies of [Windows 8](https://en.wikipedia.org/wiki/Windows_8) and [Windows 8.1](https://en.wikipedia.org/wiki/Windows_8.1) users via the [Windows Store](https://en.wikipedia.org/wiki/Windows_Store).

**Windows 10 receives new**[**builds**](https://en.wikipedia.org/wiki/Software_build)**on an ongoing basis, which are available at no additional cost to users**, in addition to additional test builds of Windows 10, which are available to [Windows Insiders](https://en.wikipedia.org/wiki/Windows_Insider).

Devices in enterprise environments can receive these updates at a slower pace, or use long-term support milestones that only receive critical updates, such as security [patches](https://en.wikipedia.org/wiki/Patch_(computing)), over their ten-year lifespan of extended support.[[19]](https://en.wikipedia.org/wiki/Windows_10#cite_note-zdnet-onebillion-19)[[20]](https://en.wikipedia.org/wiki/Windows_10#cite_note-20)

Windows is by far the most popular [operating system](https://in.pcmag.com/mobile-operating-system/136008/windows-vs-macos-vs-chrome-os-vs-ubuntu-linux-which-operating-system-reigns-supreme) for desktop computers, with over a billion active PCs running it. Microsoft has worked hard to recover from disastrous releases like Vista and Windows 8 which is its predessor and responded by adding state-of-the-art capabilities like touch input, a voice-based virtual assistant, face login, and mixed reality along with updated tools for more pedestrian things like taking screenshots, arranging windows, and getting notifications. The latest released version, Windows 10 October 2020 Update (aka 20H2), features a slicker Start menu, a more functional Edge web browser, and other worthwhile tweaks.

was [released to manufacturing](https://en.wikipedia.org/wiki/Software_release_cycle#Release_to_manufacturing_(RTM)) on July 15, 2015, and released for the general public on July 29, 2015.

Release:

**On September 30, 2014, Microsoft announced**[**Windows 10**](https://en.wikipedia.org/wiki/Windows_10)**as the successor to Windows 8.1.**

**It was released on July 29, 2015, and addresses shortcomings in the user interface first introduced with Windows 8.**

It is the successor to [Windows 8.1](https://en.wikipedia.org/wiki/Windows_8.1), released nearly two years earlier, and was [released to manufacturing](https://en.wikipedia.org/wiki/Software_release_cycle#Release_to_manufacturing_(RTM)) on July 15, 2015, and broadly released for the general public on July 29, 2015.

**Changes on PC include the return of the Start Menu, a**[**virtual desktop**](https://en.wikipedia.org/wiki/Virtual_desktop)**system, and the ability to run Windows Store apps within windows on the desktop rather than in full-screen mode.**

[Windows 10](https://en.wikipedia.org/wiki/Windows_10" \o "Windows 10) is said to be available to update from qualified [Windows 7](https://en.wikipedia.org/wiki/Windows_7) with SP1, [Windows 8.1](https://en.wikipedia.org/wiki/Windows_8.1) and [Windows Phone 8.1](https://en.wikipedia.org/wiki/Windows_Phone_8.1) devices from the Get Windows 10 Application (for [Windows 7](https://en.wikipedia.org/wiki/Windows_7), [Windows 8.1](https://en.wikipedia.org/wiki/Windows_8.1)) or [Windows Update](https://en.wikipedia.org/wiki/Windows_Update) ([Windows 7](https://en.wikipedia.org/wiki/Windows_7)).[[47]](https://en.wikipedia.org/wiki/Microsoft_Windows#cite_note-47)

**In February 2017, Microsoft announced the migration of its Windows source code repository from**[**Perforce**](https://en.wikipedia.org/wiki/Perforce)**to**[**Git**](https://en.wikipedia.org/wiki/Git)**.**

This migration involved 3.5 million separate files in a 300 gigabyte repository.[[48]](https://en.wikipedia.org/wiki/Microsoft_Windows#cite_note-PBright-48) By May 2017, 90 percent of its engineering team was using Git, in about 8500 commits and 1760 Windows builds per day.[[48]](https://en.wikipedia.org/wiki/Microsoft_Windows#cite_note-PBright-48)

Announcement:

On September 30, 2014, Microsoft officially announced that Threshold would be unveiled during a media event as Windows 10, **Myerson said that** **Windows 10 would be Microsoft's "most comprehensive platform ever"**, providing **a single, unified platform** for [desktop](https://en.wikipedia.org/wiki/Desktop_computer) and [laptop](https://en.wikipedia.org/wiki/Laptop) computers, [tablets](https://en.wikipedia.org/wiki/Tablet_computer), smartphones, and [all-in-one](https://en.wikipedia.org/wiki/All-in-One_PC) devices.

**He emphasized that Windows 10 would take steps towards restoring user interface mechanics** from [Windows 7](https://en.wikipedia.org/wiki/Windows_7) to improve the experience for users on non-touch devices, noting criticism of Windows 8's touch-oriented interface by keyboard and mouse users.[[42]](https://en.wikipedia.org/wiki/Windows_10#cite_note-verge-win10-42)[[43]](https://en.wikipedia.org/wiki/Windows_10#cite_note-verge-continuum-43) Despite these concessions, Myerson noted that the touch-optimized interface would evolve as well on 10.[[44]](https://en.wikipedia.org/wiki/Windows_10#cite_note-ext-liveblog-44)

**In regards to Microsoft naming the new operating system Windows 10 instead of Windows 9, Terry Myerson said that "based on the product that's coming, and just how different our approach will be overall, it wouldn't be right to call it Windows 9."**[**[**](https://en.wikipedia.org/wiki/Windows_10#cite_note-Guardian-name-45)

The real reason why **Windows 9** was ditched? We reckon it's simply because **Microsoft** wanted to literally put some distance between the flop that was (and still is) **Windows** 8 and its successor. It's a psychological play and a reference to the fact that **Windows 10** is a big step on, and far removed, from **Windows** 8.

**We're trying to create one platform, one eco-system that unites as many of the devices [**[***sic***](https://en.wikipedia.org/wiki/Sic)**] from the small embedded Internet of Things, through tablets, through phones, through PCs and, ultimately, into the Xbox.**

Further details surrounding Windows 10's consumer-oriented features were presented during another media event held on January 21, 2015, entitled "Windows 10: The Next Chapter". The keynote featured the unveiling of Cortana integration within the operating system, new [Xbox](https://en.wikipedia.org/wiki/Xbox)-oriented features, Windows 10 Mobile, an updated [Office Mobile](https://en.wikipedia.org/wiki/Office_Mobile) suite, [Surface Hub](https://en.wikipedia.org/wiki/Surface_Hub)‍—‌a large-screened Windows 10 device for enterprise collaboration based upon [Perceptive Pixel](https://en.wikipedia.org/wiki/Perceptive_Pixel) technology,[[48]](https://en.wikipedia.org/wiki/Windows_10#cite_note-verge-surfacehub-48) along with [HoloLens](https://en.wikipedia.org/wiki/HoloLens)‑[augmented reality](https://en.wikipedia.org/wiki/Augmented_reality) eyewear and an associated platform for building apps that can render [holograms](https://en.wikipedia.org/wiki/Holograms) through HoloLens.

Changes:

Critics praised Microsoft's decision to provide a desktop-oriented interface in line with previous versions of Windows, contrasting the tablet-oriented approach of Windows 8, although Windows 10's touch-oriented user interface mode was criticized for containing regressions upon the touch-oriented interface of its predecessor. Critics also praised the improvements to Windows 10's bundled software over Windows 8.1, [Xbox Live](https://en.wikipedia.org/wiki/Xbox_Live) integration, as well as the functionality and capabilities of the [Cortana](https://en.wikipedia.org/wiki/Cortana) personal assistant and the replacement of [Internet Explorer](https://en.wikipedia.org/wiki/Internet_Explorer) with [Microsoft Edge](https://en.wikipedia.org/wiki/Microsoft_Edge).

Changes on PC include the return of the Start Menu, a [virtual desktop](https://en.wikipedia.org/wiki/Virtual_desktop) system, and the ability to run Windows Store apps within windows on the desktop rather than in full-screen mode.

Features:

Windows 10 supports [universal apps](https://en.wikipedia.org/wiki/Universal_app), an expansion of the [Metro-style](https://en.wikipedia.org/wiki/Metro-style_app) first introduced in [Windows 8](https://en.wikipedia.org/wiki/Windows_8). Universal apps can be designed to run across multiple Microsoft product families with nearly identical code‍—‌including [PCs](https://en.wikipedia.org/wiki/Personal_computer), [tablets](https://en.wikipedia.org/wiki/Tablet_computer), [smartphones](https://en.wikipedia.org/wiki/Smartphone), [embedded systems](https://en.wikipedia.org/wiki/Embedded_system), [Xbox One](https://en.wikipedia.org/wiki/Xbox_One), [Surface Hub](https://en.wikipedia.org/wiki/Surface_Hub) and [Mixed Reality](https://en.wikipedia.org/wiki/Windows_Mixed_Reality).

The Windows user interface was revised to handle transitions between a mouse-oriented interface and a [touchscreen](https://en.wikipedia.org/wiki/Touchscreen)-optimized interface based on available input devices‍—‌particularly on [2-in-1 PCs](https://en.wikipedia.org/wiki/2-in-1_PC), both interfaces include an updated [Start menu](https://en.wikipedia.org/wiki/Start_menu) which incorporates elements of [Windows 7](https://en.wikipedia.org/wiki/Windows_7)'s traditional Start menu with the tiles of [Windows 8](https://en.wikipedia.org/wiki/Windows_8).

Windows 10 also introduced the [Microsoft Edge](https://en.wikipedia.org/wiki/Microsoft_Edge) [web browser](https://en.wikipedia.org/wiki/Web_browser), a [virtual desktop](https://en.wikipedia.org/wiki/Virtual_desktop) system, a window and desktop management feature called [Task View](https://en.wikipedia.org/wiki/Task_View), support for [fingerprint](https://en.wikipedia.org/wiki/Fingerprint_recognition) and [face recognition](https://en.wikipedia.org/wiki/Face_recognition) login, new security features for enterprise environments, and [DirectX 12](https://en.wikipedia.org/wiki/DirectX_12).

The Windows Runtime app ecosystem was revised into the [Universal Windows Platform](https://en.wikipedia.org/wiki/Universal_Windows_Platform) (UWP).[[34]](https://en.wikipedia.org/wiki/Windows_10#cite_note-windowsApps-34)[[59]](https://en.wikipedia.org/wiki/Windows_10#cite_note-msdn-uwp-59)[[60]](https://en.wikipedia.org/wiki/Windows_10#cite_note-60) These universal apps are made to run across multiple platforms and device classes, including smartphones, tablets, Xbox One consoles, and other devices compatible with Windows 10.

Windows apps share code across platforms, have [responsive designs](https://en.wikipedia.org/wiki/Responsive_design) that adapt to the needs of the device and available inputs, can synchronize data between Windows 10 devices (including notifications, credentials, and allowing cross-platform multiplayer for games), and are distributed through [Microsoft Store](https://en.wikipedia.org/wiki/Microsoft_Store_(digital)) (rebranded from Windows Store since September 2017).

 Developers can allow "cross-buys", where purchased licenses for an app apply to all of the user's compatible devices, rather than only the one they purchased on (e.g., a user purchasing an app on PC is also entitled to use the smartphone version at no extra cost).[[](https://en.wikipedia.org/wiki/Windows_10#cite_note-pcworld-universalapps-35)

On Windows 10, Microsoft Store serves as a unified storefront for apps, video content, and eBooks.[[64]](https://en.wikipedia.org/wiki/Windows_10#cite_note-bw-entertainment-64) Windows 10 also allows [web apps](https://en.wikipedia.org/wiki/Web_app) and desktop software (using either [Win32](https://en.wikipedia.org/wiki/Win32) or [.NET Framework](https://en.wikipedia.org/wiki/.NET_Framework)) to be packaged for distribution on Microsoft Store. Desktop software distributed through Windows Store is packaged using the [App-V](https://en.wikipedia.org/wiki/App-V) system to allow [sandboxing](https://en.wikipedia.org/wiki/Sandbox_(computer_security)).

### User interface and desktop

A new iteration of the [Start menu](https://en.wikipedia.org/wiki/Start_menu) is used on the Windows 10 desktop, with a list of places and other options on the left side, and tiles representing applications on the right.

The menu can be resized, and expanded into a full-screen display, which is the default option in Tablet mode.[[42]](https://en.wikipedia.org/wiki/Windows_10#cite_note-verge-win10-42)[[57]](https://en.wikipedia.org/wiki/Windows_10#cite_note-tomsguide-unveiled-57)[[67]](https://en.wikipedia.org/wiki/Windows_10#cite_note-verge-closerlook-67)

A new virtual desktop system was added. A feature known as Task View displays all open windows and allows users to switch between them, or switch between multiple workspaces.[[42]](https://en.wikipedia.org/wiki/Windows_10#cite_note-verge-win10-42)[[57]](https://en.wikipedia.org/wiki/Windows_10#cite_note-tomsguide-unveiled-57)

Universal apps, which previously could be used only in full screen mode, can now be used in self-contained windows similarly to other programs.[[42]](https://en.wikipedia.org/wiki/Windows_10#cite_note-verge-win10-42)[[57]](https://en.wikipedia.org/wiki/Windows_10#cite_note-tomsguide-unveiled-57)

Program windows can now be snapped to quadrants of the screen by dragging them to the corner. When a window is snapped to one side of the screen, Task View appears and the user is prompted to choose a second window to fill the unused side of the screen (called "Snap Assist").[[57]](https://en.wikipedia.org/wiki/Windows_10#cite_note-tomsguide-unveiled-57) Windows' system icons were also changed.[[67]](https://en.wikipedia.org/wiki/Windows_10#cite_note-verge-closerlook-67)

[Charms](https://en.wikipedia.org/wiki/Windows_shell#Charms) have been removed; their functionality in universal apps is accessed from an *App commands* menu on their title bar.[[42]](https://en.wikipedia.org/wiki/Windows_10#cite_note-verge-win10-42)[[57]](https://en.wikipedia.org/wiki/Windows_10#cite_note-tomsguide-unveiled-57) In its place is Action Center, which displays notifications and settings toggles. It is accessed by clicking an icon in the notification area, or dragging from the right of the screen. Notifications can be synced between multiple devices.[[58]](https://en.wikipedia.org/wiki/Windows_10#cite_note-verge-thisiswp10-58)[[67]](https://en.wikipedia.org/wiki/Windows_10#cite_note-verge-closerlook-67) The Settings app (formerly PC Settings) was refreshed and now includes more options that were previously exclusive to the desktop [Control Panel](https://en.wikipedia.org/wiki/Control_Panel_(Windows)).

Windows 10 is designed to adapt its user interface based on the type of device being used and available input methods. It offers two separate user interface modes: a user interface optimized for mouse and keyboard, and a "Tablet mode" designed for touchscreens.

Users can toggle between these two modes at any time, and Windows can prompt or automatically switch when certain events occur, such as disabling Tablet mode on a tablet if a keyboard or mouse is plugged in, or when a [2-in-1 PC](https://en.wikipedia.org/wiki/2-in-1_PC) is switched to its laptop state.

In Tablet mode, programs default to a maximized view, and the taskbar contains a back button and hides buttons for opened or pinned programs by default; Task View is used instead to switch between programs. The full screen Start menu is used in this mode, similarly to Windows 8, but scrolls vertically instead of horizontally.[[43]](https://en.wikipedia.org/wiki/Windows_10#cite_note-verge-continuum-43)[[70]](https://en.wikipedia.org/wiki/Windows_10#cite_note-thurrotcom-tablet1-70)[[71]](https://en.wikipedia.org/wiki/Windows_10#cite_note-thurrotcom-tablet2-71)[[72]](https://en.wikipedia.org/wiki/Windows_10#cite_note-winbeta-w10touch-72)

### System security

Windows 10 incorporates [multi-factor authentication](https://en.wikipedia.org/wiki/Multi-factor_authentication) technology

The operating system includes improved support for [biometric authentication](https://en.wikipedia.org/wiki/Biometric_authentication) through the Windows Hello platform.

Devices with supported cameras (requiring [infrared](https://en.wikipedia.org/wiki/Infrared) illumination, such as [Intel RealSense](https://en.wikipedia.org/wiki/Intel_RealSense)) allow users to log in with iris or [face recognition](https://en.wikipedia.org/wiki/Face_recognition), similarly to [Kinect](https://en.wikipedia.org/wiki/Kinect).

In addition to biometric authentication, Windows Hello supports authentication with a [PIN](https://en.wikipedia.org/wiki/Personal_identification_number). By default, Windows requires a PIN to consist of four digits, but can be configured to permit more complex PINs.

When Windows 10 was first introduced, multi-factor authentication was provided by two components: Windows Hello and Passport (not to be confused with [the Passport platform of 1998](https://en.wikipedia.org/wiki/Microsoft_account)). Later, Passport was merged into Windows Hello.[[77]](https://en.wikipedia.org/wiki/Windows_10#cite_note-77)[[75]](https://en.wikipedia.org/wiki/Windows_10#cite_note-ars-hello-75)

Devices with supported readers allow users to log in through [fingerprint recognition](https://en.wikipedia.org/wiki/Fingerprint_recognition). Support was also added for palm-vein scanning through a partnership with [Fujitsu](https://en.wikipedia.org/wiki/Fujitsu) in February 2018.[[74]](https://en.wikipedia.org/wiki/Windows_10#cite_note-74) Credentials are stored locally and protected using [asymmetric encryption](https://en.wikipedia.org/wiki/Asymmetric_encryption).[[75]](https://en.wikipedia.org/wiki/Windows_10#cite_note-ars-hello-75)

The enterprise edition of Windows 10 offers additional security features; administrators can set up policies for the automatic [encryption](https://en.wikipedia.org/wiki/Data_encryption) of sensitive data, selectively block applications from accessing encrypted data, and enable *Device Guard*‍—‌a system which allows administrators to enforce a high-security environment by blocking the execution of software that is not digitally signed by a trusted vendor or Microsoft. Device Guard is designed to protect against [zero-day exploits](https://en.wikipedia.org/wiki/Zero-day_exploit), and runs inside a [hypervisor](https://en.wikipedia.org/wiki/Hypervisor) so that its operation remains separated from the operating system itself.[[73]](https://en.wikipedia.org/wiki/Windows_10#cite_note-zdnet-nextgencredentials-73)[[78]](https://en.wikipedia.org/wiki/Windows_10#cite_note-techradar-deviceguard-78)

### Command line

[Windows Console](https://en.wikipedia.org/wiki/Windows_Console) windows (for both [PowerShell](https://en.wikipedia.org/wiki/PowerShell) and the legacy [Command Prompt](https://en.wikipedia.org/wiki/Cmd.exe)) can now be resized without any restrictions, can be made to cover the full screen by pressing Alt+↵ Enter, and can use standard keyboard shortcuts, such as those for [cut, copy, and paste](https://en.wikipedia.org/wiki/Cut,_copy,_and_paste). Other features such as word wrap and transparency were also added. These functions can be disabled to revert to the legacy console if needed.[[79]](https://en.wikipedia.org/wiki/Windows_10#cite_note-79)

### Storage requirements

To reduce the storage footprint of the operating system, Windows 10 automatically [compresses](https://en.wikipedia.org/wiki/Data_compression) system files.

The system can reduce the storage footprint of Windows by approximately 1.5 GB for [32-bit](https://en.wikipedia.org/wiki/32-bit) systems and 2.6 GB for [64-bit](https://en.wikipedia.org/wiki/64-bit_computing) systems. The level of compression used is dependent on a performance assessment performed during installations or by [OEMs](https://en.wikipedia.org/wiki/Original_equipment_manufacturer), which tests how much compression can be used without harming operating system performance.

Furthermore, the Refresh and Reset functions use runtime system files instead, making a separate recovery partition redundant, allowing [patches](https://en.wikipedia.org/wiki/Patch_(computing)) and updates to remain installed following the operation, and further reducing the amount of space required for Windows 10 by up to 12 GB.

These functions replace the [WIMBoot mode](https://en.wikipedia.org/wiki/Features_new_to_Windows_8" \l "Installation" \o "Features new to Windows 8) introduced on Windows 8.1 Update, which allowed OEMs to configure low-capacity devices with flash-based storage to use Windows system files out of the compressed [WIM image](https://en.wikipedia.org/wiki/Windows_Imaging_Format) typically used for installation and recovery.[[89]](https://en.wikipedia.org/wiki/Windows_10#cite_note-89)[[90]](https://en.wikipedia.org/wiki/Windows_10#cite_note-90)[[91]](https://en.wikipedia.org/wiki/Windows_10#cite_note-winblog-compression-91)

Windows 10 also includes a function in its Settings app that allows users to view a breakdown of how their device's storage capacity is being used by different types of files, and determine whether certain types of files are saved to internal storage or an [SD card](https://en.wikipedia.org/wiki/SD_card) by default.

### Online services and functionality

Windows 10 introduces [Microsoft Edge](https://en.wikipedia.org/wiki/Microsoft_Edge), a new default [web browser](https://en.wikipedia.org/wiki/Web_browser). It initially featured a new [standards](https://en.wikipedia.org/wiki/Web_standards)-compliant rendering engine derived from [Trident](https://en.wikipedia.org/wiki/Trident_(layout_engine)), and also includes annotation tools and integration with other Microsoft platforms present within Windows 10.[[93]](https://en.wikipedia.org/wiki/Windows_10#cite_note-zdnet-underhood-93)[[94]](https://en.wikipedia.org/wiki/Windows_10#cite_note-ieblog-spartan-94)[[95]](https://en.wikipedia.org/wiki/Windows_10#cite_note-verge-msedge-95) Internet Explorer 11 is maintained on Windows 10 for compatibility purposes, but is deprecated in favor of Edge and will no longer be actively developed.[[96]](https://en.wikipedia.org/wiki/Windows_10#cite_note-verge-relegatesie11-96)[[97]](https://en.wikipedia.org/wiki/Windows_10#cite_note-ieblog-edge-97) In January 2020, the initial version of Edge was succeeded by a new iteration derived from the [Chromium project](https://en.wikipedia.org/wiki/Chromium_project) and the [Blink layout engine](https://en.wikipedia.org/wiki/Blink_(layout_engine)) and the old Edge based on EdgeHTML is now called 'Microsoft Edge Legacy'.[[98]](https://en.wikipedia.org/wiki/Windows_10#cite_note-98) The legacy version of Edge is currently being replaced by the new Chromium-based Edge via Windows Update. It can also be downloaded manually. In both the cases, it will replace the old Edge. Every Windows 10 version from 20H2, which was released on October 20, 2020, will come with the new version of the browser preinstalled.[[99]](https://en.wikipedia.org/wiki/Windows_10#cite_note-99) The Windows 10 October 2020 update added a price comparison tool to the Edge browser.[[100]](https://en.wikipedia.org/wiki/Windows_10#cite_note-auto2-100)

Windows 10 incorporates a universal [search box](https://en.wikipedia.org/wiki/Windows_Search) located alongside the Start and Task View buttons, which can be hidden or condensed to a single button.[[101]](https://en.wikipedia.org/wiki/Windows_10#cite_note-auto1-101)[[102]](https://en.wikipedia.org/wiki/Windows_10#cite_note-102) Previous versions featured Microsoft's [intelligent personal assistant](https://en.wikipedia.org/wiki/Intelligent_personal_assistant) Cortana, which was first introduced with Windows Phone 8.1 in 2014, and supports both text and voice input. Many of its features are a direct carryover from Windows Phone, including integration with [Bing](https://en.wikipedia.org/wiki/Bing_(search_engine)), setting reminders, a *Notebook* feature for managing personal information, as well as searching for files, playing music, launching applications and setting reminders or sending emails.[[103]](https://en.wikipedia.org/wiki/Windows_10#cite_note-103)[[104]](https://en.wikipedia.org/wiki/Windows_10#cite_note-104)[[67]](https://en.wikipedia.org/wiki/Windows_10#cite_note-verge-closerlook-67) Since the November 2019 update, Microsoft has begun to downplay Cortana as part of a repositioning of the product towards enterprise use, with the May 2020 update removing its Windows shell integration and consumer-oriented features.

[Microsoft Family Safety](https://en.wikipedia.org/wiki/Microsoft_Family_Safety) is replaced by Microsoft Family, a [parental controls](https://en.wikipedia.org/wiki/Parental_controls) system that applies across Windows platforms and Microsoft online services. Users can create a designated family, and monitor and restrict the actions of users designated as children, such as access to websites, enforcing age ratings on Microsoft Store purchases, and other restrictions. The service can also send weekly e-mail reports to parents detailing a child's computer usage. Unlike previous versions of Windows, child accounts in a family must be associated with a Microsoft account‍—‌which allows these settings to apply across all Windows 10 devices that a particular child is using.[[108]](https://en.wikipedia.org/wiki/Windows_10#cite_note-thurrott-family-108)[[109]](https://en.wikipedia.org/wiki/Windows_10#cite_note-bi-emailfamily-109)

Windows 10 also offers the Wi-Fi Sense feature originating from Windows Phone 8.1; users can optionally have their device automatically connect to suggested open hotspots, and share their home network's password with contacts (either via [Skype](https://en.wikipedia.org/wiki/Skype), [People](https://en.wikipedia.org/wiki/People_(Microsoft_service)), or [Facebook](https://en.wikipedia.org/wiki/Facebook)) so they may automatically connect to the network on a Windows 10 device without needing to manually enter its password. Credentials are stored in an encrypted form on Microsoft servers and sent to the devices of the selected contacts. Passwords are not viewable by the guest user, and the guest user is not allowed to access other computers or devices on the network.

### Multimedia and gaming

Windows 10 provides heavier integration with the Xbox ecosystem. Xbox SmartGlass is succeeded by the [Xbox Console Companion](https://en.wikipedia.org/wiki/Xbox_Console_Companion) (formerly the Xbox app), which allows users to browse their game library (including both PC and Xbox console games), and Game DVR is also available using a [keyboard shortcut](https://en.wikipedia.org/wiki/Keyboard_shortcut), allowing users to save the last 30 seconds of gameplay as a video that can be shared to Xbox Live, OneDrive, or elsewhere.

Windows 10 also allows users to control and play games from an Xbox One console over a local network.

## **Editions and pricing**

Windows 10 is available in five main [editions](https://en.wikipedia.org/wiki/Windows_10_editions) for personal computing devices; the Home and Pro editions of which are sold at retail in most countries, and as pre-loaded software on new computers. Home is aimed at home users, while Pro is aimed at power users and small businesses.

On May 2, 2017, Microsoft unveiled Windows 10 S (referred to in leaks as Windows 10 Cloud), a feature-limited edition of Windows 10 which was designed primarily for devices in the education market (competing, in particular, with [Chrome OS](https://en.wikipedia.org/wiki/Chrome_OS) netbooks), such as the [Surface Laptop](https://en.wikipedia.org/wiki/Surface_Laptop) that Microsoft also unveiled at this time.

The OS restricts software installation to applications obtained from Microsoft Store; the device may be upgraded to Windows 10 Pro for a fee to enable unrestricted software installation. As a time-limited promotion, Microsoft stated that this upgrade would be free on the Surface Laptop until March 31, 2018.[[137]](https://en.wikipedia.org/wiki/Windows_10#cite_note-137) Windows 10 S also contains a faster initial setup and login process, and allows devices to be provisioned using a USB drive with the Windows Intune for Education platform.

 In March 2018, Microsoft announced that Windows 10 S would be deprecated because of market confusion and would be replaced by "S Mode", an OEM option wherein Windows defaults to only allowing applications to be installed from Microsoft Store, but does not require payment in order to disable these restrictions.