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Pairing information for desktop build 14993

These release notes include the list of new features, bug fixes, known issues, and breaking changes since Windows 10, build 14986.1000.

This release of Windows 10 includes the following configuration:

Component	Build Number
Windows 10 Mobile OS	14993.1000.161211-1700
Windows Assessment and Deployment Kit (ADK)	N/A
Windows Driver Kit (WDK)	N/A
Windows Hardware Lab Kit (HLK)	N/A
Windows Standalone SDK (for use with WDK)	N/A

Key information

Here's a look at key information that must be reviewed prior to testing the latest build.

No kits are included in this build	Because of problems with producing localized content in the kits, we are not releasing new kits with this OS build.
For upgrade scenarios, flight signing support must be enabled	<p>To test upgrade scenarios to non-RTM signed EEAP builds that are signed with certificates that are not trusted by default, you must enable support for flight signing through one of the following two methods:</p> <ul style="list-style-type: none">Join the Windows Insider Program by navigating to Settings > Update & Recovery > Windows Insider Program. This option will enable the PC to automatically update to the latest available build in the Windows Insider Program.Use the following boot configuration data editor (BCDEdit) commands to enable support for flight signing: <pre>Bcdedit /set {bootmgr} flightsigning on Bcdedit /set flightsigning on</pre>After you execute those BCDEdit commands, reboot the PC. <p>Note that these steps are not required for booting from media (clean) install scenarios.</p>

What's new

The following is a list of some new features that are included in this build. For a summary of new features in Windows 10, see [What's new in Windows 10](#) on MSDN.

A different keyboard shortcut to invoke the Narrator	To help reduce the accidental launch of Windows Narrator, we changed the keyboard shortcut for opening the Narrator from Windows+Enter to Ctrl+Windows+Enter.
Cortana available during OOBE	A user can now listen and respond to Cortana verbally (when asked questions) to further simplify and make the initial setup process more accessible to even more people. This new out-of-box experience (OOBE) is still a work in progress, so some places may still include the older OOBE pages where Cortana is unable to help a user get their computer fully set up.
Updates to Windows Ink	We updated the pen, pencil and highlighter control in Windows Ink to now visually indicate what color has been selected. A user can try this out now in the Windows Ink Workspace. Other applications can take advantage of this with future updates of the SDK. We also updated Windows Ink to support a rich color range experience when using a device in high contrast.
An updated Windows sharing experience	We redesigned the Windows sharing experience to be more app focused and integrated to where a user is sharing from. The new Windows sharing experience will pop up the new share flyout within the app a user is sharing from, to give a user a list of applications that they can share to. This list will adjust based on a user's own usage. Also, we removed the Windows+H keyboard shortcut that was used in the old Windows sharing experience.
Automatically reduced blue light emissions	Windows can now automatically lower the amount of blue light emitted from a computer at night. A user can turn this functionality on or off, use a local sunset and sunrise, or use a custom schedule by navigating to Settings > System > Display . If a user needs to quickly override the schedule or always wants manual control, they can enable this quick action in Settings > System > Notifications & actions .
General settings improvements:	<ul style="list-style-type: none">• Settings pages now contain additional information on the right or bottom of the window (depending on the window size), providing links to support, feedback, and any other related settings if available.• We moved app related settings out of the System category and into a new category called Apps.• The header on the landing page of each Settings category now stays in place as a user pan the page.• The Settings > System > Display page is now clearer and easier to use.• The Settings > Devices > Wheel page now allows a user to further customize the Wheel experience for each application.

Recent colors in Windows Personalization	We added a new recent colors section to the Settings > Personalization > Colors page, so a user can easily pick between the colors that they have decided on in the past.
Windows theme management in Settings	We moved the management of themes out of Control Panel and into the Settings application. It can be found, along with the other familiar personalization options, under Settings > Personalization .
Windows Hello enrollment Improvements	On devices and peripherals that support Windows Hello. A user can now see a visual guidance that tracks their face in real time, shows an improved progress indicator, and gives them real-time feedback to quickly and smoothly set their face up for signing in. A user can set up or improve their Windows Hello facial recognition under Settings > Accounts > Sign-in options > Windows Hello > Face recognition .
Improved high DPI support for desktop applications	We updated Performance Monitor (Perf Mon) to be more crisp on high dots per inch (DPI) machines. While we enabled these improvements by default for some Windows desktop applications, but they can be enabled for other Graphics Device Interface (GDI)-based applications by right-clicking the application's .exe file and selecting Properties . In the Compatibility tab, turn on System (Enhanced) DPI scaling, and click OK . This will override the way that applications handle DPI scaling (which sometimes uses bitmap stretching, and can result in applications rendering blurry) and force them to be scaled by Windows. The setting that was previously labeled Disable display scaling on high DPI settings is now referred to as Application scaling.
Smooth window resizing	Animation when resizing windows is now smoother and faster when resizing GDI-based desktop applications such as File Explorer Task Manager, and Notepad. When a user resizes a Universal Windows Platform (UWP) application, the background is now transparent instead of a flat base color.
Improved notification experience for application developers and end users	We now provide Universal Windows Platform (UWP) application developers a way to create custom groups and subgroups for their notifications in Action Center. Also, to address issues where notifications might have the wrong time stamp (for example, if the computer was asleep when a user received a cross-device notification from their phone), we now allow application developers to override the notification timestamp. If you are an application developer, please check out the Tiles and Toasts blog for coming posts about how you can leverage these new features.

Using Cortana to resume work on another computer	When a user switches computers, Cortana can now pop up quick links in the Action Center to help them easily get back into the Microsoft Edge websites and SharePoint (or other cloud-based) documents that they were most recently using. For example, if a user was working on a PowerPoint deck on their laptop, when they return to their desktop, a link to that deck will appear in Action Center. Or if the user was browsing recipes in Microsoft Edge on their PC downstairs, then grabs their laptop to bake in the kitchen, Cortana can have the link to that recipe ready to go on the laptop. In adding this feature, we also updated Cortana to take advantage of the notification grouping feature above, so a user can more easily differentiate between the types of messages.
Improved dialog box for signing in to applications	We improved the application sign in experience for users with multiple accounts. The new sign in dialog box will show a user's available Microsoft, work, or school accounts and give the user the ability to add new accounts to Windows.
WIP changes	<p>Some enterprise customers have found that saving work files to a removable drive would prevent them from accessing the files on a different device due to encryption. We added a prompt to let a user choose what they want to do in this case, which should make it easier to transfer work files to a removable drive:</p> <ol style="list-style-type: none">1. When copying Windows Information Protection (WIP)-encrypted files to a removable drive, we now ask if a user wants to keep their files as work, convert them to personal, or cancel the copy operation.2. When saving WIP-encrypted files to a removable drive, we now ask if a user wants to keep their files as work, convert them to personal, or save to a different location. <p>We protect companies using Windows Information Protection (WIP) by displaying a warning message when opening work files in unallowed applications (in other words, applications that are not on the whitelist of approved apps that can be used in an enterprise setting). When opening WIP files in unallowed applications, we now inform the user that the file is a work file and cannot be converted to personal in unallowed applications.</p>
Lunar Calendar support in the taskbar	Users who follow the Simplified or Traditional Chinese lunar calendar can now use the taskbar calendar to quickly check the lunar date next to the current Gregorian date. Special holidays are called out in accent-colored text. A user can go to Settings > Time & language > Date & time to pick which additional calendar that they would like to see.

Microsoft Pinyin IME improvements

- A user can now access Microsoft Pinyin input method editor (IME) settings when using the language bar.
 - We split the Microsoft Pinyin settings page into five categories for easier navigation.
 - We added keyboard shortcut configuration options for the Microsoft Pinyin IME, including candidate window switch keys configuration, the Chinese/English punctuation switch, full/half-width switch, default full/half-width mode, Simplified/Traditional Chinese output switch, and second/third candidate submission. Learn about this new option in **Microsoft Pinyin settings > Keys**. We also added a new keyboard shortcut to open the emoji panel (Ctrl+Shift+B), so a user can open it directly without having to first have the candidate window visible.
 - If a user has a Microsoft account connected to their device, their self-learned phrases will now roam between all of their Microsoft account-connected devices.
 - We gave the emoji panel an updated look and feel, and we added a Stickers section. The Stickers tab appears for applications that support sticker input. In addition, based on the words a user types, we now bubble up suggested emoji and stickers. Simply type something and click the face icon in the candidate pane (or use the new keyboard shortcut and tap the thought bubble), and the emoji predictions will be presented to the user.
 - Since no pinyin words begin with U or V, we added two new modes: U-mode and V-mode. U-mode can now be used for advanced input features, like inputting complex characters, and V-mode can be used to input content that normally is not easy or quick to type (for example, **2016年6月6日, 十三时三十分**, or **壹仟贰佰叁拾肆**). Once a user starts typing **u** or **v** with the IME on, a tip appears, displaying all of the available options.
 - We are introducing a new name input mode for the Microsoft Pinyin IME. When a user enters name input mode, instead of their normal candidate predictions, all candidates will be from a dictionary of names, thus making it more likely that the user will find the one that they want. Press the semicolon (“;”) key (in double pinyin mode, press Shift+; key combination), and then press the **r** key to enter the name input mode. Name input mode can be disabled or enabled in the Microsoft Pinyin settings page.
 - Microsoft Pinyin IME users can now add, edit, or delete custom double pinyin schemes, so a user can create the one that feels best. To do this, go to the **IME > General settings** page and switch the pinyin style from **Full** to **Double**. The user will then be presented with options for setting up the scheme of their choice.
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3D Builder	We moved the 3D Builder application into the Windows Accessories folder in the app list. Previously, 3D Builder had its own entry in the app list.
Invoking Cortana in listening mode	We changed the keyboard shortcut to invoke Cortana in listening mode to Windows+C. The shortcut is disabled by default, but a user can go to the Cortana settings and find a new option to enable it. The Windows+Shift+C keyboard shortcut now opens the App Charms menu, which is seen in the title bar of Windows 8 applications.

Bug fixes

The following bug fixes are new in this build.

9940956	We fixed an issue that prevented Set up the mic wizard from being launched on some systems.
8295507	We fixed an issue that caused UI errors in a firmware update tool when performing a BIOS update on some systems.
8293946, 9515677	We fixed an issue that caused Microsoft Edge to crash due to an assertion failure when viewing certain websites.
9748806, 9510983, 9803287, 10076216, 10078475, 10085140, 10097674, 10097971, 10098808, 10173582	We fixed an issue that caused the monitor brightness hotkey to fail on some systems.
9227329, 9674240, 9825730	We fixed an issue that caused some systems to hang when using a Bluetooth mouse and keyboard to resume the system from sleep mode.
7751558, 9792486	System that don't support simultaneous touch and pen input will do longer display the Ignore touch input when I'm using my pen setting.
9394277, 9530027	We fixed an issue that caused a bugcheck on some devices if the user uses a two finger zoom in/out gesture while logging off of the system.
9713123	We fixed an issue that prevented Windows Ink Workspace from being launched from a shortcut button on some systems after resuming from sleep mode.
9808579	We fixed an issue that caused Windows to display an CMD error and then fail to continue when running a custom installation with an answer file that contains an invalid locale.
9641985, 10000513	We fixed an issue that caused Connected Devices Platform Service (cdpsvc.dll) to crash.
9589971, 10059928	We fixed an issue that caused Desktop Window Manager (dwm.exe) to crash.
7474402, 7728870	We fixed an issue that caused some applications such as Microsoft Edge to display an incorrect app background.

9825731	We fixed an issue that displayed a black screen, and then caused a WIN32K_POWER_WATCHDOG_TIMEOUT bugcheck on some systems.
9727997	We fixed an issue that caused the dism tool to fail to export an image from a WIM file when the destination name is specified.
9672649	We fixed an issue that prevented video card settings from being updated on the Surface Hub when Automatically turn on the screen using motion sensors is turned on in Windows Settings.
9417147	We fixed an issue that caused escape commands to fail when sent from a smart card reader to a Windows 10-based device.
9361150	We fixed an issue that associated virtual functions (VFs) for SR-IOV (single root input/output virtualization) capable PCIe Root Complex Integrated Endpoints (RCIEP) with incorrect IOMMUs (input-output memory management unit), which caused a page fault in guest virtual machines.
9797740, 9706215	We fixed an issue that skipped the setup of facial recognition in the out-of-box experience (OOBE) on some systems.
9706653, 9998461	We fixed an issue that caused some systems to hang and then crash when running applications that use the camera.
7448411	We fixed an issue that cause the camera to stop working and display an error message after the user locks the device and then logs in with Windows Hello.
9733773	We fixed an issue that degraded the performance video memory manager.
9672693	We fixed an issue that displayed a black screen during VP9 playback in the Movies & TV app.
9472118	We fixed an issue that caused a bugcheck on some systems when loading a certain GPU driver.
9405364	We fixed an issue that caused Miracast connections to fail and display the message "Oops, something went wrong" on the external display.
9180964	We fixed an issue that occasionally caused a bugcheck during video playback on systems that have certain GPU drivers installed.
9589971, 10059928	We fixed an issue that caused Desktop Window Manager (dwm.exe) to crash.
9825732	We fixed an issue that caused the onscreen menu to fail on some systems when using the Surface Dial.
8769641	We fixed an issue that prevented some Bluetooth Low Energy devices from pairing with Windows when the user taps the setup notification.
9320006, 9182368	We fixed an issue that caused Miracast connections to fail when using the Connect app or when streaming to an external monitor on certain PCs.
9019037, 9531437, 8728221	We fixed an issue that caused video playback to lag when the user clicks the battery icon in the taskbar.

Known issues

The following known issues are new in this build, or they were not resolved in the last build.

10159909	[NEW] You will not be able to create images for certain East Asian locales (ja-JP, ko-KR, zh-CN, and zh-TW), because the OS build cannot boot normally on physical computers and VMs. If you copy an image for an affected locale onto a USB flash drive and then attempt to install on a physical computer, the Windows logo is displayed, but then the computer becomes unresponsive with a black screen and no mouse cursor. If you try to install the image on a VM, setup will be successful, but when you start eh VM, a black screen with spinning gears persists on the screen.
10143630	[NEW] If you attempt an automated unattended build with the Core Single Language Edition of Windows 10, the OEM default product key does not work, and the device asks for a product key. You can manually enter the product key to get to audit mode. This problem also prevents a user from playing media from licensed codecs successfully with that Windows 10 edition.
10068706	[NEW] On 64-bit devices, an upgrade from Windows 7 to the latest Windows 10 build may fail with error code 0x8007007E-0x40004.
9734512	[NEW] After a device upgrade, icons and text may be displayed instead as colored text boxes in the Settings application, the Store application, and Windows Push Notification Services (WNS) notifications. In addition, the icons in the application list and in pinned Start tiles are displayed instead as white squares.
10127049	[NEW] When a user taps or clicks the microphone icon to speak a command, Cortana starts and stops listening abruptly, announcing that she is sorry that she could not hear anything. The reported error code is AUDCLNT_E_INVALID_DEVICE_PERIOD (0x88890020).
10163586	[NEW] When a user attempts to play video content on version 6.15.59.0 of a common streaming media application, the audio may play, but the video may display simply a black screen, because the renderer puts the media engine into frame server mode, which is disallowed for Digital Rights Management (DRM)-protected content.
10170521	[NEW] A common third-party streaming music application may fail to produce audio while a track is being played. The application may also skip three or four tracks when it is launched, and it may become unresponsive when a user attempts to create a new station.
5819968	[NEW] An invalid pointer read error (0xC0000005) in the network configuration API library (NetSetupShim.dll) may cause the host process for Windows services (svchost.exe) to crash while the library attempts to perform garbage collection.
9987454	[NEW] A crash may occur when a user opens Microsoft Edge because of an access violation during the handling of a XAML OnLaunched event.
9885184	[NEW] Microsoft Edge may crash because of an invalid handle error (0xC0000008) in the TwinAPI.AppCore.dll library.

8450966	[NEW] Microsoft Edge may crash because of an invalid argument failure error (0Xc0000409) in the Microsoft Edge model library (eModel.dll).
9894324	[NEW] A null class pointer write error (0xC0000005) may cause Internet Explorer to crash while the Internet extensions for classic Windows library (wininet.dll) attempts to scavenge expired entries in the cache store.
2021413, 9742148, 9954899	[NEW] Version 16.1128.10012.0 of the Photos application may crash because of a null class pointer read error (0xC0000005) in the Microsoft.Windows.Photos component. This error can also cause a problem when a user zooms within a photo, depending on whether the photo is local or in OneDrive.
10109237	[NEW] Direct flip (dFlip) and independent flip (iFlip) presentation do not work successfully during full screen video playback (FSVP) of Universal Windows Platform (UWP) applications that use the CreateSwapChainForCoreWindow method (such as the Movies & TV application), causing a 15 percent regression in power usage.
9758022	[NEW] An application crash may occur because of a remote procedure call (RPC) call failed error (0x800706BE) in the Javascript engine library while the just-in-time (JIT) manager attempts to handle a server call result.
9644724	[NEW] An application fault (0xC0000005) in the compatibility appraiser library (appraiser.dll) may cause an application crash while the appraiser is applying an inbox data source.
8692786	[NEW] A memory management problem in ComponentUI may occur when a user opens Microsoft Edge, drags a tab out of a window into its own window, and then drags the tab back into the original Microsoft Edge window.
9664363	[NEW] If a user plays audio while the screen is turned off, the power consumption is higher than expected (1,250 milliwatts instead of 700 milliwatts).
9855152	[NEW] The network location awareness (NLA) version 2 service library (NlaSvc.dll) may run unexpectedly for over 1.5 hours on battery power, causing severe battery drain.
8009540	[NEW] A power save polling (PSP) exit thread process (PspExitThread) in the host process for Windows services (svchost.exe) may cause unexpected activity in the CPU while the device screen is turned off, resulting in unexpected battery drain.
9343070	[NEW] The Microsoft compatibility telemetry process (CompatTelRunner.exe) may unexpectedly invoke scans for about a minute while a device is on battery power, even if the device successfully completed inventory while the device was plugged in. This process scanning causes unnecessary battery drain.

4603983	[NEW] A Windows power dependency coordinator (PDC) driver (pdc.sys) reliability failure during live kernel debugging (error 0x15C / 0x58) may cause a system crash. It also results in battery drain, because PDC activation of the chat service client for the Rich Communication Suite (RCS) is held for a long time or is only revoked after five minutes.
9714341	[NEW] On a common Windows 10-based detachable device, a common hardware vendor's host controller for SD cards may cause unnecessary battery drain while the device is in connected standby mode.
9774966	[NEW] On a common Windows 10-based detachable device, a common hardware vendor's Peripheral Component Interconnect Express (PCIe) root port may cause unnecessary battery drain while the device is in connected standby mode.
9956555	After a user installs Visual Studio 2015 Community RTM, the application may occasionally fail to open successfully. Instead, an E_ABORT COM exception (0x80004004) may occur.
9859338	[MODIFIED] A user of a common Windows 10-based detachable device may experience heat and noise issues (because of a buzzing fan). These issues occur when the Windows-based script host application (WScript.exe) is executing a sleep command while using an older virtual private network (VPN) configuration.
8801864	If a user creates an event on the calendar, uninstalls the Calendar application, and then performs a search in Cortana for keywords in the calendar event, the search finds the calendar event, and tapping or clicking that search result opens the event within in the Calendar, even though the Calendar application was previously uninstalled.
9269849	On a device that has the DirectPlay Feature On Demand (FOD) disabled, if a user installs and attempts to open a common third-party graphics editing application that requires DirectPlay, the application fails to launch, and the following error message is shown: DirectX could not be initialized. Please be sure that it is installed on your system. Normally, opening the application should cause the DirectPlay FOD dialog box to appear, prompting the user to install.
9713433	Several applications, including succession planning software and other legal and business applications from a common third-party software vendor, may crash upon launch because of a failfast exception (0xC0000602) in the CoreMessaging.dll library.
9932313	If a user opens a common Swedish crisis information application, clicks TRAFIK , and double-clicks any button, the application launches Microsoft Edge, which then crashes with the following debug message: args->PreviousExecutionState set to Running even though there is no other Edge instance open.
2879322	Memory corruption may cause a significant percentage of kernel mode system crashes on Windows 10-based devices.

9799209	A common family of Windows 10-based detachable devices may experience crashes because of an invalid pointer read (0xC0000005) error in a process that is specific to that OEM device family, while it attempts to remove telemetry-related items.
8675640	The host process for Windows services (svchost) may crash because of a fatal application exit (0xC0000409) error in the runtime utility for Internet Explorer (iertutil.dll).
9222421, 9374270	The host process for Windows services (svchost.exe) may crash because of a stack immune error (0xC0000374), probably due to problems with the user data access service (UserDataSvc).
9564182	A null class pointer read error scenario (0xC0000005) in the MessagingNativeCore.dll library may cause a crash on a device with the Messaging application.
8644262	The Photos application may crash because of null class pointer read error (0xC0000005) in the PhotosApp.Windows.dll library while it determines whether to update a tile.
9208114	A breakpoint error (0x80000003) in the Microsoft OneDrive client library (FileSyncClient.dll) may cause OneDrive to crash. For example, if a user disconnects a Windows 10-based device that is hosting a local OneDrive location and reboots the device, OneDrive errors are displayed in the lock screen.
9452294	In version 6.13.45.0 of a common third-party media streaming application, when a user selects a television series to view the episode list, the images associated with the various episodes may not be rendered until the user hovers over the episode image placeholder or scrolls by using the scroll bar (instead of a mouse wheel).
9049636	When a user starts a game that uses a common third-party digital rights management (DRM) distribution platform, the game may crash after about 15 minutes, regardless of whether the user is actively playing the game.
5008363	A stowed exception error scenario (0x80070005) in the MessagingNativeCore.dll library can cause a crash on a device with the Messaging application. This error occurs during the process of updating the Messaging tile.
7840261	The dispatch content queue function in the Advanced Configuration and Power Interface (ACPI) driver (ACPI.sys) may cause the CPU to run at an elevated level, preventing a device from entering deepest runtime idle platform state (DRIPS) when the device screen is turned off.
8466769	When a user of a common detachable device updates to the latest Windows 10 build, a crash may occur because of an invalid pointer read error (0xC0000005) in a process that is specific to that OEM device family.
8485045	If a user who has joined Azure Active Directory (Azure AD) updates a device to the latest Windows 10 build, automatic VPN access may not work anymore.

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Users of devices that contain a common graphics display adapter may see certain images disappear while hovering over images on common e-commerce web sites. This problem can be mitigated by temporarily using software rendering instead of GPU rendering. To make this change, navigate to **Control Panel > Network and Internet > Internet Options**, go to the **Advanced** tab in the **Internet Properties** dialog box, and under the **Accelerated graphics** category, set the **Use software rendering instead of GPU rendering** option.

Breaking changes

The following breaking changes are new in this build.

Unsigned modules are blocked from running inside Microsoft Edge

Starting in EdgeHTML 13, unsigned modules are blocked from running inside Microsoft Edge, and the registry value that previously disabled Secure Boot is no longer supported. If you are developing a device driver, you might need to enable unsigned drivers to run in Microsoft Edge so that you can test the driver. To disable the DLL security protection and enable your unsigned driver to run inside Microsoft Edge, enable test-signing as described in [The TESTSIGNING Boot Configuration Option](#) on Hardware Dev Center.

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