

What is the Windows registry?

The Windows registry is a centralized, hierarchical database that manages resources and stores configuration settings for applications on the Windows operating system. Security account services, user interfaces, and device drivers can all use the Windows registry. It also helps monitor system performance and diagnose system errors.

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The Windows registry has been in use since Windows 95, and it's also used to help configure programs in Windows XP, Vista, Windows 7, and all the way up to Windows 10 and Windows 11.

Windows computers used to use a number of individual config files — such as autoexec.bat, config.sys, and .ini files — but with the release of Windows 95, those were replaced with an organized, hierarchical folder system. You can access the Windows registry by typing regedit in the Windows taskbar.

Because the Windows registry controls important configuration settings on your computer, you shouldn't try to access or edit it without knowing exactly what you're doing.

If you're experiencing [100% disk usage](#), need more [RAM](#), or just want to [clean up your PC](#), making changes to the registry probably won't help. But there are always exceptions, so it's good to know how the Windows registry works and how to use the regedit tool if you absolutely need to.

What is regedit used for?

Regedit is the Windows registry editor, a graphical tool that lets you view and monitor the Windows operating system's registry and edit if necessary. Regedit lets you make root-level or administrative-level changes to your computer and the configuration settings of applications that connect to the registry, so you should be very careful when using it.

Only authorized users with administrative access can use the regedit tool — if you're using a work computer you may not have admin rights.

How does the Windows registry work

The registry helps Windows manage and operate your computer, ensuring access to critical resources and helping important programs configure settings. A hierarchical database structure of keys and values makes up the registry.

Registry keys are containers that act like folders, with values or subkeys contained within them. **Registry values** are similar to files (not containers). The relatively straightforward syntax and simple user interface keep the size of the registry low.

Not all applications use the registry. Some apps use XML files or local executable files to store their settings. If you uninstall a program, you usually delete its settings from the registry — but not always. Sometimes, even after you uninstall an app, certain configurations or other settings stick around. In those cases, it helps to [remove the junk from your PC](#).

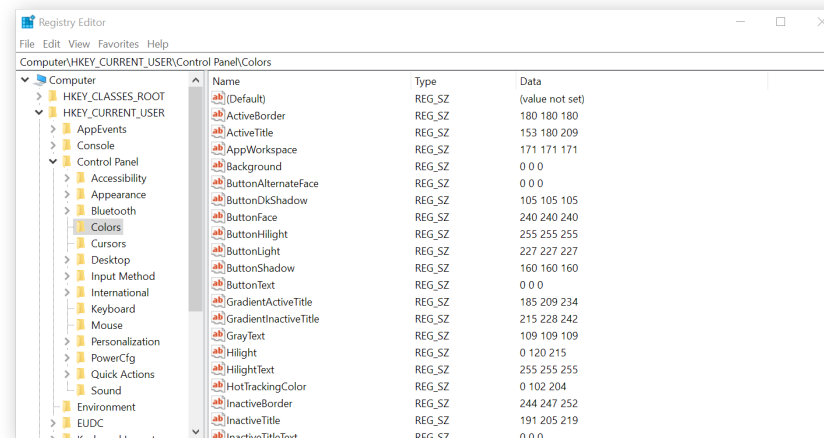
The main branches of the registry are called **hives**. And most PCs have five of them. All the folders in the registry are called *keys* except for these five hives. The hives in the Windows registry have the following names:

- **HKEY_CLASSES_ROOT** — keeps track of default file associations. This is how your computer knows to open a Word (doc) file.
- **HKEY_CURRENT_USER** — contains settings specific to your username in Windows.
- **HKEY_LOCAL_MACHINE** — contains passwords, boot files, software installation files, and security settings. This hive is abbreviated as HKLM and is the most critical hive.
- **HKEY_USERS** — like the CURRENT_USER hive, except it's for when more than one user is logged onto the server or computer.
- **HKEY_CURRENT_CONFIG** — a real-time measurement of different hardware activities. Information in this hive isn't saved permanently to the registry.

Inside these hives are more folders called keys. Keys contain values, which are the settings themselves. Key settings are very granular, consisting of numbers and codes

that dictate, for example, how fast a letter repeatedly appears on your screen when you hold down its key. You likely rarely think about those kinds of settings, but they need to be specified. And Windows registry keys and values are where those definitions are stored.

Here is the registry editor in Windows 10, showing individual, detailed color settings:



The registry offers a significant amount of system customization, but you should back up your system before you edit the registry. Whether you have [the best possible Windows 10 gaming PC](#) or if your laptop is a low-powered work computer, the registry is equally important and should be fiddled with only when absolutely necessary.

When to use the Windows registry

You may need to use the Windows registry to fix performance issues, like if your [computer keeps crashing](#). Or, you might want to edit the registry to change parts of your user experience, like your desktop settings. Sometimes, items in your registry might be broken, in which case you should use a [registry cleaner](#) from a trusted software provider.

Before making any changes, always create a backup of the registry — a backup doesn't take up much space and will save you in case something goes wrong.

Registry errors can happen when keys or values aren't found in their usual place. A power cut can make part of the registry go unsaved, upsetting the hierarchical structure. More urgently, [malware](#) might have gained access to your registry. If you think that's happened, use [malware removal software](#) immediately. For real-time, comprehensive security, download [free antivirus for Windows 10](#) or [Windows 11](#).

The granular nature of registry values means you can customize your experience far beyond what's possible in the normal settings menu. In fact, if you're an expert user, you can edit the Windows registry to try to [speed up your PC](#).

Of course, if you have broken registry items or junk clogging up your system, you should first try using one of [the best PC cleaning tools](#) out there. Even simply your [deleting temporary files](#) can help.

Since the registry is critical to system performance, your computer can malfunction quickly if items get jumbled there. Using a trusted [PC optimization tool](#) will help tidy things up, without the risk that comes with trying to edit the registry yourself.

[Avast Cleanup](#) clears out the clutter that builds up in the registry, ensuring your computer stays streamlined and runs smoothly. And it has an automatic maintenance feature, so after you install it, you don't have to worry about fiddling with any settings.



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How to open the Windows registry

Accessing the registry is easy — but, as mentioned above, don't make any changes