

More about Selecting an OS

Windows:

Windows is very popular OS right now in the field of business software to home computing apps. The main disadvantage of Windows is that it is the main target of large amounts of malware. If you are using Windows, it is very important to keep it up to date because in every update, Microsoft makes it more malware-free.

One group of people for whom Windows is the best OS is gamers. If you like to play games, especially AAA titles, then the best operating system for your PC will be Windows.

MacOS:

A preferred operating system among creative professionals is macOS. Unlike Windows, which you can install on most PC hardware, macOS is generally only available on Mac hardware. (You can install macOS on non-Apple hardware to create what's called a Hackintosh, but this is complex.) For most users who want to use macOS, they'll need to buy a Mac machine.

The advantage of macOS is its exceptional support for creative software such as Adobe Photoshop or Premier. While this kind of software is available on Windows too, it generally functions better and has more options on macOS. Another plus point for macOS is that Apple updates it regularly, and that upgrading to the latest version of the OS is usually free. It is also less frequently targeted by malware.

The disadvantage of macOS is that Apple hardware can be expensive, with laptops and desktops costing thousands of dollars. There's also much less free software available for macOS than other operating systems, so be prepared to spend more on software too.

Should You Use Linux?

One option you might not have considered in your search for the best operating system for a laptop or desktop is Linux. Linux has a reputation for being hard to use, although in recent years more user-friendly distributions have become available.

Linux's greatest strength is its flexibility. You can change just about anything you want in a Linux system, as long as you have the required knowledge. This is why the operating system is so popular among power users who want to perform complex tasks in an efficient way.

However, for the average user the learning curve for Linux is rather steep. Some people are intimidated by the command line. And it can take a long time before you learn the commands you need to use the operating system efficiently. For this reason, Linux isn't well suited to less techy-savvy users.

There's one area where Linux does absolutely shine, though---resurrecting old hardware. If you have an ancient computer which is too slow to run Windows, try installing a lightweight Linux distribution on it and you may be able to keep using it for simple tasks like web browsing and email..

Should You Use Chrome OS?

One interesting contender for the best laptop operating system is Chrome OS. Google's Chrome OS is a lightweight competitor that's capturing more of the market. Chromebooks run a simplified operating system that's basically just the Chrome web browser with some desktop bits. You have access to Chrome, Chrome apps, and Android apps---that's it. You can't run Windows desktop software.

Chrome OS can be the best OS for laptops because Chromebooks are simple. They update automatically, sync with Google Drive for file storage, and don't require antivirus software. Most Chromebooks cost between \$200 and \$300, and don't include bloatware.

If you only ever use Chrome and want a simple PC with a full keyboard and powerful desktop web browser for not much money, a Chromebook is a good option. On the other hand, there's still a lot a Chromebook can't do---if you use Photoshop daily, look elsewhere.

Dual Booting OSes and Virtual Machines

One option to consider if you can't decide on an OS or if you like features of more than one OS is a dual boot. This is where you install two (or more) operating systems onto one machine. When your computer boots up, you can choose which operating system you'd like to use for that session. This gives you the opportunity for the best of both worlds.

For example, you could install Linux for your primary productivity tasks, then also have Windows available for gaming. However, there are risks associated with dual booting Linux and Windows that you should be aware of.

Another option if you only need a few functions from a different operating system is to run a virtual machine. This is where you run a different operating system virtually, inside your main operating system. To learn more about these options, see our guide to dual booting versus virtual machines.

10 Risks of Dual Booting Operating Systems

Dual booting refers to installing and running two operating systems on a single computer, allowing the user to select which OS to boot at startup. While this setup offers flexibility, it also comes with risks and challenges. Below are 10 potential risks of dual booting operating systems:

1. Disk Partitioning Errors

To dual boot, you must partition your hard drive to allocate space for each OS. This process can lead to:

- **Data Loss:** Mistakes during partitioning may result in deleting or corrupting existing data.
- **OS Overwrite:** Accidentally installing the second OS over the existing OS can wipe all files and applications.

2. Bootloader Issues

The bootloader (e.g., GRUB for Linux) is critical for managing the dual boot menu. Risks include:

- **Bootloader Corruption:** If the bootloader is misconfigured or corrupted, you may lose access to one or both operating systems.
 - **Dependency on Bootloader:** Removing one OS improperly may render the other OS unbootable.
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3. Reduced Disk Space

Dual booting requires allocating storage for two operating systems:

- **Limited Space:** Each OS takes up space for the system itself, plus additional space for applications and files.
 - **Storage Constraints:** Large files (e.g., videos, games) may fill the available storage quickly, especially if not properly planned.
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4. System Performance Degradation

- **Shared Resources:** Both OS installations share the same hardware resources, such as disk storage, which can slow down performance.
 - **Fragmentation:** Increased partitioning and switching between OSes may lead to disk fragmentation, reducing read/write speeds.
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5. Hardware Compatibility Issues

- **Driver Conflicts:** Each OS may require different hardware drivers. One OS might not fully support certain components (e.g., printers, webcams).
 - **Firmware Limitations:** Some systems with UEFI firmware may have issues managing multiple OSes.
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6. Security Risks

- **Shared Vulnerabilities:** If one OS is infected with malware, it can potentially spread to shared partitions or storage areas used by the other OS.
 - **Improper Permissions:** File systems shared between OSes (e.g., an NTFS partition accessible by both Windows and Linux) may lack proper security measures.
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7. Increased Complexity

- **Learning Curve:** Managing two operating systems can be challenging for less experienced users.
 - **Configuration Errors:** Mistakes in managing boot settings, file permissions, or updates can disrupt the system.
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8. OS Update Conflicts

- **Update Overwrites:** Updates to one OS might overwrite the bootloader or affect partitions.
 - **Driver Replacements:** Updates in one OS can change shared drivers or settings, causing issues for the other OS.
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9. Potential for Data Corruption

- **Shared File Access:** If you use a shared partition for files accessible by both OSes, improper shutdowns or crashes can corrupt data.
 - **Filesystem Compatibility:** OSes often use different file systems (e.g., NTFS for Windows, EXT4 for Linux), which may cause compatibility issues or errors when accessing shared files.
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10. Warranty and Support Limitations

- **Void Warranties:** Installing a second OS may void the warranty on some devices, especially for pre-installed operating systems (e.g., macOS on Apple hardware).
 - **Limited Manufacturer Support:** Manufacturers may not provide support for issues arising from dual boot configurations, leaving users to troubleshoot independently.
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Mitigation Tips

To minimize risks when dual booting:

1. **Back Up Data:** Always back up your data before partitioning or installing a second OS.
 2. **Use Reliable Tools:** Use trusted partitioning and bootloader management tools like GParted or GRUB.
 3. **Allocate Adequate Space:** Plan storage requirements for both OSes, including additional space for future updates and applications.
 4. **Learn Basics:** Understand the fundamentals of bootloaders, file systems, and partitioning before proceeding.
 5. **Secure Shared Files:** Use read-only permissions for shared partitions or cloud storage to prevent accidental modification or corruption.
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Dual booting can offer flexibility and functionality, but these risks highlight the importance of careful planning, maintenance, and system knowledge.