



## At a Glance

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## Expert's Rating

### Pros

- Frequent updates and new features
- Good performance on multi-core Apple chips
- Slick, easy-to-use interface
- Powerful new AI features and tools for developers

### Cons

- Most editions require a subscription
- AI features not available in all editions
- Virtual machines require a lot of memory and processor power
- Windows On ARM is expensive



## Our Verdict

Parallels Desktop is one of the best options for Mac users who need to run Windows, Linux – and even macOS – as a virtual machine on their Mac. Parallels Desktop 20 is an impressive upgrade, and a strong focus on developers and AI means it is now a powerful tool for developers on all platforms.

Price When Reviewed

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Best Pricing Today

Macworld Software Store

\$79.99

## Best Prices Today: Parallels Desktop for Mac

Macworld Software Store

\$79.99

The Mac is no longer dismissed as an insignificant niche market that struggles to compete with Microsoft Windows. But, even so, there are still times when many Mac users need to run [apps](#) and software that are only available for Windows PCs. Perhaps your employer uses particular business software that's only available for Windows, or you may need to use a website that relies on some Windows-only technologies. Many developers need to test their apps and services on both [Macs](#) and PCs and, of course, there are all those A-List games that only run on Windows as well.

It used to be easy to install Windows on Macs, thanks to Apple's Boot Camp software and the fact that from 2006 to 2020 all Macs used the same Intel processors as Windows PCs. However, with the advent of M-series Macs, Boot Camp is no more, so if you want to run Windows on a Mac you need to consider one of the various virtualization options that we feature in our round-up of the Best Virtual Machine software for Mac.

The advent of Apple's own chips, aka Apple Silicon, also means that the standard version of Windows, designed for X-86 chips, won't run on Arm-based chips like Apple's M-series. If you want to run Windows on an M-series Mac you need the Arm version of Windows.

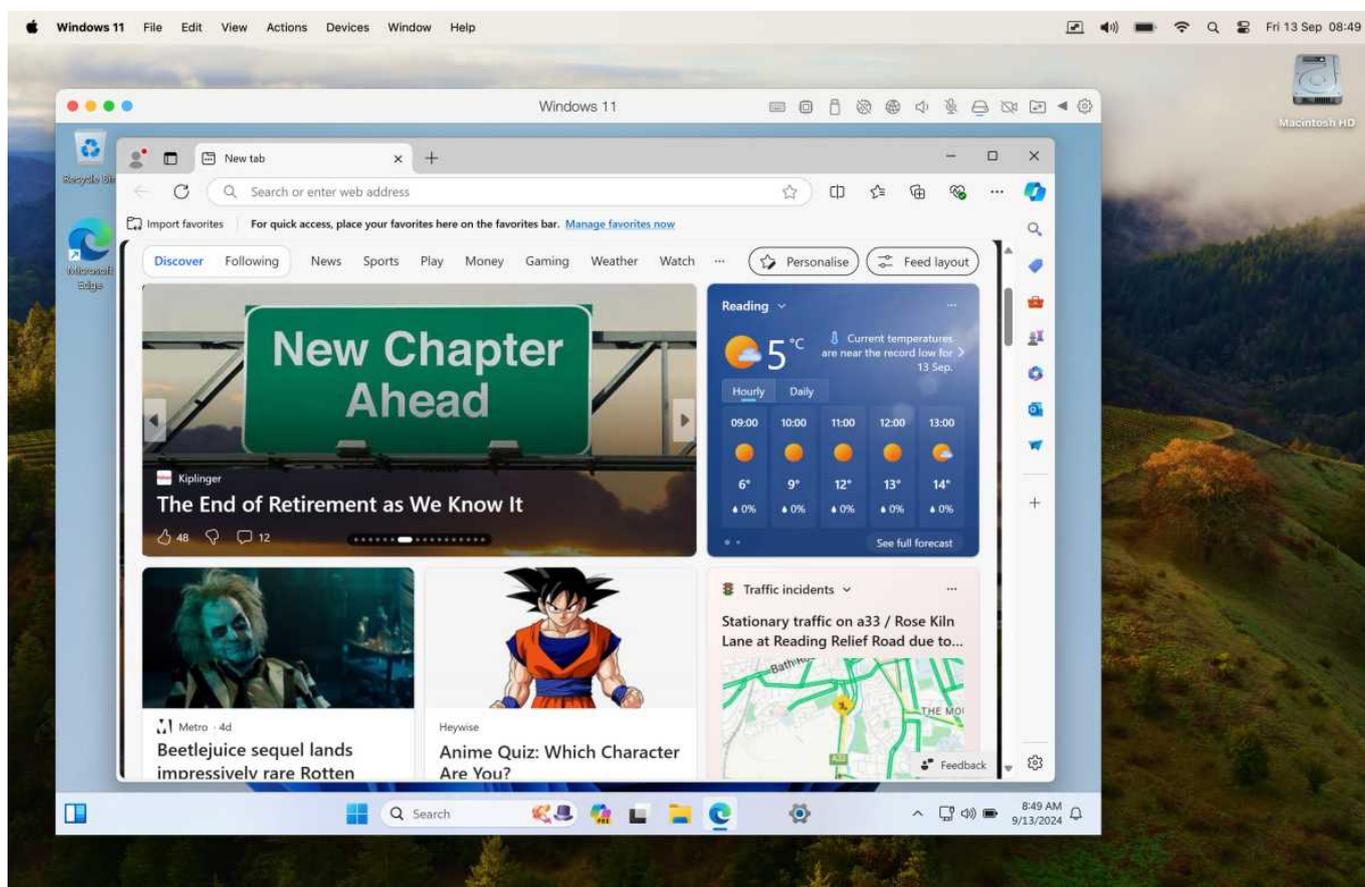


Our top solution for running Windows on a Mac is Parallels Desktop. Read on to find out why.

## What is Parallels Desktop for Mac

Parallels Desktop is referred to as a virtualization program, because it allows you to create a virtual machine on your Mac - sometimes known as a VM - which is essentially a piece of software that simulates the physical [hardware](#) of a Windows PC (process also known as emulation) and lets you run Windows on your Mac.

One of the benefits of a solution like Parallels Desktop is it allows you to run Mac and Windows apps side by side, without having to reboot your Mac to switch between the macOS and Windows (which you had to do with Boot Camp).



Screenshot

Foundry

Parallels gives you a lot of control over how you integrate Windows on your Mac. You could choose to keep Windows and macOS completely separate, with a full Windows desktop



window floating on the Mac desktop, or the Windows VM can be expanded to full-screen size to hide the Mac desktop. But you can also use Coherence mode to run your Windows apps on your Mac so that they integrate fully with your Mac apps—you can even add them to your Dock.

You can run more than Windows as a VM on your Mac with Parallels Desktop. You can create a VM that runs Linux, or even a VM that runs a different version of macOS itself. This can be useful for developers who need to test a website or an app on different versions of the macOS, although it's currently only possible to create VMs that run Monterey (macOS 12.0) or later on Macs with Apple Silicon. However, Intel-based Macs can go right back to Mac OS X 10.7 Lion—we have the details of how to find old version of macOS here.

Another useful feature of Parallels is Rollback mode, which lets you run Windows (or Linux, or macOS) like a kiosk. What this means is that nothing is saved and after you have finished working and restart the computer the VM will return to its original state, this is perfect for developers who can experiment and then return to a clean slate.

Parallels also makes installing Windows really easy. Since Parallels Desktop version 18 it has been possible to download and buy the ARM version of Windows 11 directly within Parallels. You do need to buy a license for the ARM version of Windows 11 Pro or Enterprise in order to create a Windows VM on Macs with Apple Silicon processors – unfortunately, the less expensive Home edition isn't supported – although it's also possible to use an existing license if you have one available. Microsoft doesn't differentiate between Windows On Intel and Windows On Arm, so a Windows 11 license can be used for either version.

This is a big deal because the Arm version of Windows isn't normally licensed to individual users. Fortunately, Parallels has worked closely with Microsoft to simplify the process of creating VMs that use the ARM version of Windows. Just select the File/New command to create a new VM (or press the '+' button in the program's main Control Centre window) and it will present you with a big button labeled: Get Windows 11 From Microsoft.

Windows 11 On ARM allows you to run most older software and apps that were originally written for the Intel version of Windows, so you shouldn't have any compatibility problems when running virtual machines that use Windows On ARM.

Older Intel-based Macs can still run Windows 10 via Parallels, although older versions of Windows are no longer supported.

Read our guide to How to use Parallels Desktop to run Windows on a Mac for more information.

## **Parallels Desktop system requirements**

Since your Mac is effectively running two operating systems at the same time—the macOS



and Windows—so you'll need a reasonably fast Mac with plenty of memory, disk space and —above all — processor power in order to run your virtual machines efficiently.

Fortunately, modern multi-core processors like Apple's M-series of chips can run routine apps such as the Windows versions of Microsoft Word or Excel using virtualization with no trouble at all, and faster Mac models can do a pretty good job running 3D games or high-end tools for design and graphics work.

You do need plenty of memory to run the macOS and Windows alongside each other though. Parallels Desktop generally recommends a minimum of 1-2GB for each VM, but that really is the absolute minimum, and it's in addition to the memory that your Mac needs just to run the macOS, so if you've got a Mac with just 8GB of memory then you're not going to get the best possible performance when running Windows in a VM.

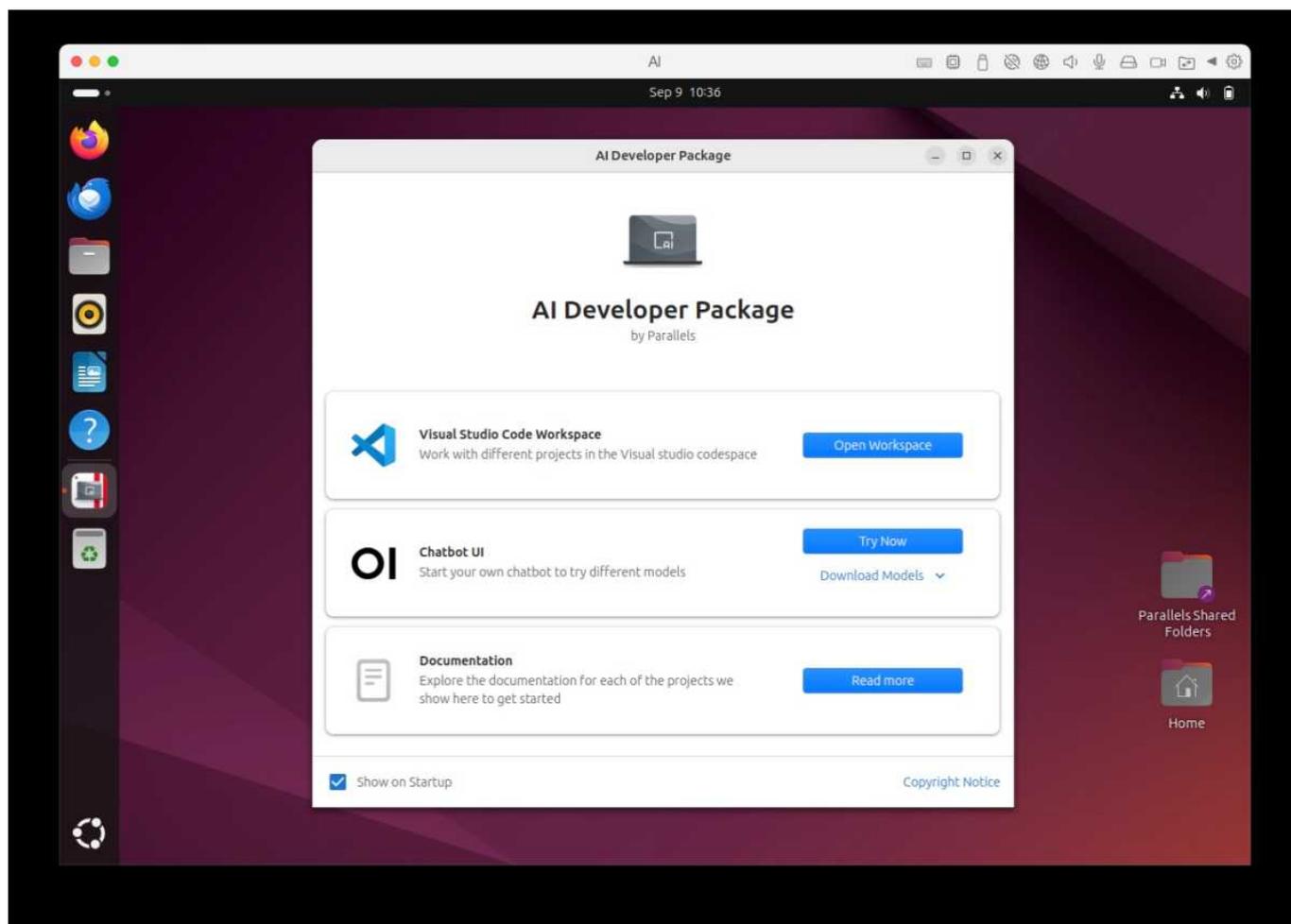
Juggling memory and processor cores can be confusing for less experienced users, but Parallels Desktop can help by recommending settings that will be suitable for running different types of Windows apps and software. On high-end Macs, such as the Mac Studio, you can configure your virtual machines to use up to 62GB of memory and 18 CPU cores for improved performance. Unfortunately, Parallels informed us that the multiple GPU cores on Apple Silicon chips are controlled solely by the macOS itself, so Parallels doesn't currently allow you to also specify the number of GPU cores used by your virtual machines.

## **Parallels Desktop update: What's in Parallels Desktop 20 for Mac?**

One other benefit is that Parallels Desktop has a regular update cycle of annual updates that generally coincide with Apple's big updates to the macOS itself. Parallels also keeps up with the rapid development of Apple's M-series processors.

Speaking of regular updates, Parallels Desktop 20 arrived in September 2024, bringing support for macOS Sequoia and new features in that version of macOS.

Parallels 20 includes a number of new features that are only available to Mac's running Sequoia. With Sequoia as your Mac's main operating system — rather than just a guest running in a virtual machine — you now have the ability to sign into a Mac virtual machine (VM) using your Apple ID, which will allow you to use your Apple email and other Apple services. And it will be possible to use the Apple Intelligence-powered Writing Tools feature within Windows apps once that arrives on Macs later in 2024. See: [Apple Intelligence FAQ: What it is, what it does, and when you'll get it.](#)



Screenshot

Foundry

There are performance improvements when using Parallels' file-sharing features to exchange files between your main Mac and your virtual machines. Macs with Apple Silicon also gain the ability to quickly save and restore 'snapshots' of your VMs so that you can make or discard changes to your VMs for testing purposes (although the snapshots feature was already available when running Parallels on Macs with Intel processors in the past).

Parallels Desktop 20 is also compatible with the latest Windows 11 On Arm update - known as 24H2 - which has an improved Prism emulator that provides as much as 80% performance improvement when running some older Windows apps that were written for Intel processors. Prism is similar to Apple's Rosetta, which allows old Mac apps that were written for Intel processors to run on modern Macs with Apple Silicon - and, strictly speaking, this is an improvement provided by Microsoft within Windows 11 24H2, but it still benefits Parallels users by speeding up older Windows apps running within your virtual machines.



Currently, Macs with Apple Silicon only have the ability to create virtual machines that run Windows 11 On Arm - a special version of Windows developed specifically for computers that use ARM processors (including Apple Silicon). However, Parallels informed us that it is working on an update for Parallels Desktop 20 that will also allow Macs with Apple Silicon to run the original Intel version of Windows. That will be useful for developers who want to work on both ARM and Intel platforms, and Parallels says that there will be a preview of this feature available for developers soon.

## **Parallels Desktop version history**

Parallels Desktop 19 arrived in August 2023 and introduced a redesigned interface with windows and dialogue boxes that adopted the curved lines and candy colors of macOS. More serious eye candy also arrived with support for 3D graphics in Windows using OpenGL 4.1, improving compatibility and performance for some important graphics and design programs, such as ArcGIS Pro, VectorWorks and VariCAD. The 2023 update also brought Touch ID to Windows virtual machines, allowing users to sign in to a Windows VM using both Touch ID and a personal Microsoft account.

Apple changed the printing system used in Sonoma, so Parallels Desktop 19 also introduced a new Internet Printing Protocol (IPP) to allow users to print documents from a virtual machine using their normal printer.

Parallels Desktop 19.2 brought a faster option for cloning VMs. That's useful for developers and professional users who may need to create multiple VMs based on an existing template. It also improved the ability to use Sign In With Apple to sign in to a Parallels account using hardware security keys that users may have created on their Mac. The introduction of Sonoma changed the way the macOS handles Windows disk formats, causing some VMs to become unstable when running from an external hard drive or SSD, so version 19.2 also fixed this problem to improve the stability of VMs on external drives.

And, in March 2024, the program was updated to version 19.3. This fixed graphics problems that had affected a number of well-known Windows games, such as Dark Souls II and Genshin Impact. Gamers should be aware, though, that (at the time of writing) Parallels is still working on support for Microsoft's DirectX 12 graphics software, and Parallels Desktop is still limited to games that use DirectX 11.

## **Parallels Desktop Pro vs Standard, Business vs Enterprise**

Parallels Desktop has traditionally been available in three separate versions, with the Standard Edition designed for home users and education, the Pro Edition for developers, and the Business Edition for corporate users. However, 2024 sees the arrival of a new Enterprise Edition, which is due for release 'later this fall' (with pricing available on



request).

## Features for developers

Parallels states that it is seeing more and more Mac users running the macOS as a guest operating system on a VM, especially developers who need to test their apps with different versions of the macOS.

Parallels therefore supplies configuration options when creating VMs that run the macOS, providing greater freedom to configure the number of processors and the amount of memory used. Developers get a command-line interface to speed up testing, advanced networking features, and the ability to share folders and volumes between different versions of the macOS. There's even some TLC for Linux users, with improved handling of Mac trackpads, and faster installation for the popular [Ubuntu](#) version of Linux.

The version 20 update to Parallels Desktop Pro brings an assortment of new features for developers including the Parallels AI Package (available in all editions, apart from Standard). This will allow developers to create a ready-made virtual machine that includes 14 different sets of AI tools, along with code samples and instructions. It's even possible to use ordinary language commands - such as "Parallels, start my Windows 11 VM". These tools are designed to help all developers, including students and smaller teams, so that they can start experimenting with AI quickly and easily. There is also improved support for Microsoft's Visual Studio development tools, which now includes the use of Microsoft's CoPilot AI features within Windows. ([www.parallels.com/products/desktop/ai/](http://www.parallels.com/products/desktop/ai/))

Version 19 brought several new features specifically aimed at developers including an extension for using Visual Studio code that makes it easier to organize and use multiple VMs, and improved support for creating VMs that run different versions of macOS.

As we mentioned above, Parallels has confirmed it is working on a feature that will also allow Macs with Apple Silicon to run the original Intel version of Windows. This will be a breakthrough for developers who want to work on both ARM and Intel platforms.

## Features for businesses

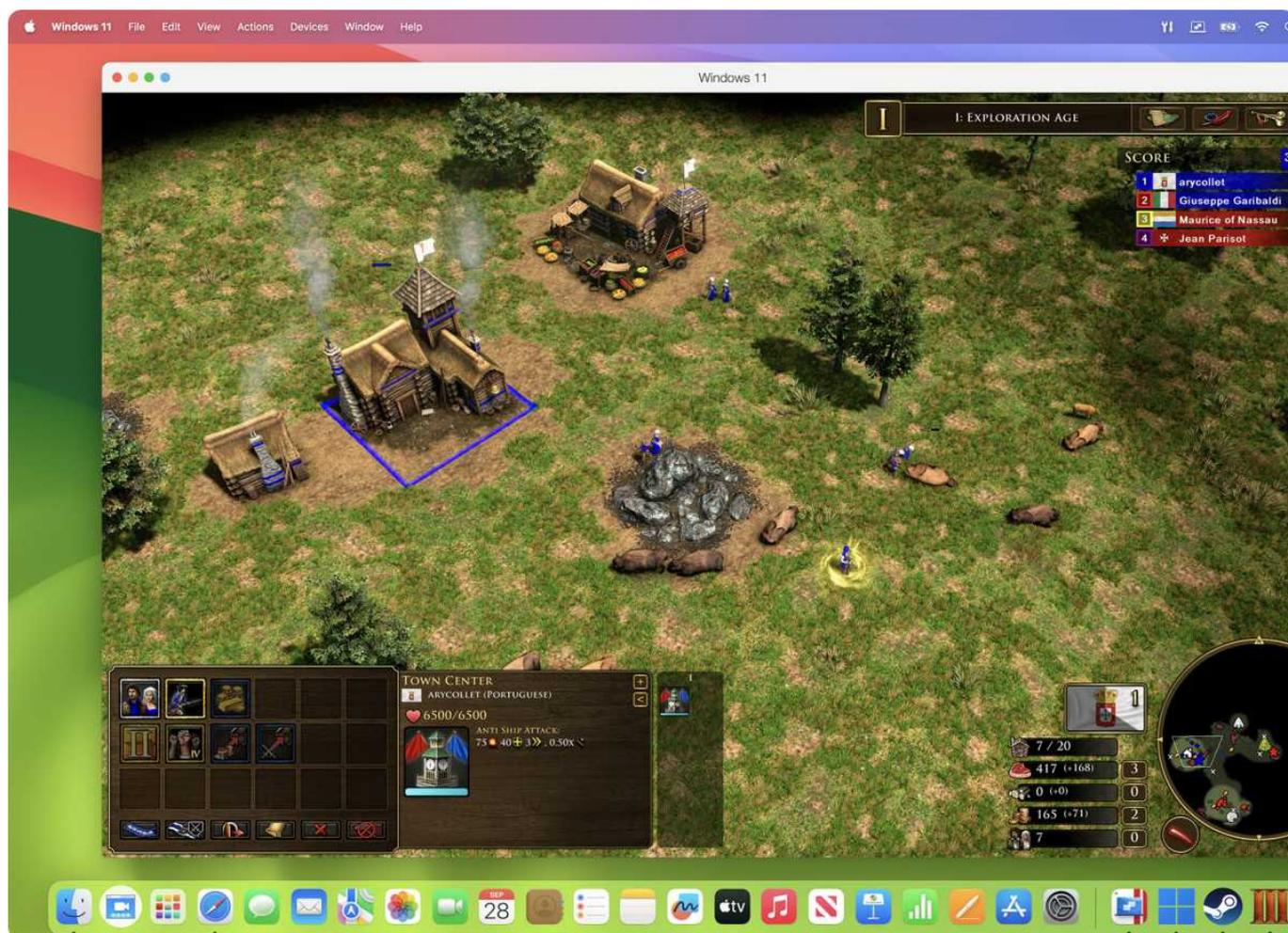


## Foundry

The Business Edition of Parallels Desktop includes several features to help IT departments in large organizations quickly roll out Parallels virtual machines to multiple users. There are improved security features, and, since version 19, those with the Business edition of Parallels Desktop can use their VMs with corporate management systems such as Hashicorp Packer and Microsoft's InTune.

The Enterprise Edition, coming later in 2024, will include a Management Portal that makes it easier to install and manage virtual machines for large numbers of users within an organisation. This Edition will also provide SOC Type 2 reports, which are used to maintain security standards within large organisations.

## Features for gamers



## Foundry

Gamers who want to run Windows games on a Mac can do so via Parallels Desktop, and are able to use game controllers with those games.

There has been support for DirectX 11 since Parallels Desktop 15. There is no DirectX 12 support yet.

Version 4.1 of OpenGL is also supposed.

## Parallels Desktop for Mac pricing

Parallels Desktop is available in three different editions: Standard, Pro and Business.

The Standard edition is mainly aimed at home and educational users and costs **\$99.99/£89.99** per year, with additional discounts also available for students and education users. That annual subscription fee includes any new versions and updates that may be released in the future. It's also possible to buy the standard edition with a perpetual license



for a one-time fee of **\$129.99/£104.99** (although you'll have to pay extra for future upgrades).

The Pro edition, which is mainly aimed at developers, is only available as a subscription, costing **\$119.99/£99.99** (currently reduced to \$/£74.99) annually, while the Business edition for larger organizations also requires a subscription and costs \$149.99/£119.99 per year (currently reduced to \$/£89.99).

Pricing for the forthcoming Enterprise Edition is available from Parallels on request.

It's worth mentioning that there's also a version of Parallels Desktop that is sold on the Mac App Store—however, Apple imposes some serious technical limitations on this version so it's probably best to buy Parallels Desktop directly from Parallels itself.

## **Can you use Parallels for Mac for free?**

The Parallels website offers a 14-day free trial so that you can see how Parallels Desktop works before buying the full version. Just remember that you do still need to buy a license for Windows 11 Pro or Enterprise, which starts at a rather hefty **\$199.99/£219.99**.

## **Can you use Parallels Desktop on more than one Mac?**

To use Parallels desktop on two or more Macs you will need to buy additional licenses. If you are just moving to a new Mac you can uninstall the software on the first Mac and install it on the new Mac.

## **Should You Buy Parallels Desktop?**

Parallels isn't the only option available for running Windows on a Mac, but its constant cycle of regular updates has ensured that it continues to outpace rival virtualization programs, such as VMWare Fusion. It's also more straightforward to use than alternative technologies, such as CrossOver from Codeweavers.

Parallels keeps up with the latest developments on Macs with Apple Silicon to ensure that it remains one of the best options currently available for running Windows and Windows software on a Mac.

## **Should you update to Parallels Desktop 20?**

The strong focus on developers in this version means that Parallels Desktop 20 may not be an essential upgrade for ordinary home users and small businesses. However, it remains the best virtualization option for any Mac user who needs to run Windows - or Linux - apps on their Mac.