

OpenGL support in Linux and macOS virtual machines

- Parallels Desktop for Mac Standard Edition
- Parallels Desktop for Mac Pro Edition
- Parallels Desktop for Mac Business Edition

OpenGL is a powerful graphics rendering API that enables software to display high-quality 2D and 3D graphics. Many applications, including computer-aided design (CAD), video games, and scientific simulations, rely on OpenGL to deliver rich and immersive graphics.

If you use Parallels Desktop to run Linux or macOS virtual machines, you may want to use OpenGL to run certain applications that require it. Here's what you need to know about OpenGL in macOS and Linux virtual machines.

OpenGL in Linux virtual machines

OpenGL 3.3 support has been implemented in Parallels Desktop 16 and newer Parallels Desktop versions.

OpenGL in macOS virtual machines

Parallels Desktop doesn't provide a native support of OpenGL in macOS virtual machines (VMs).

- All macOS virtual machines up to and including macOS Catalina don't have a graphics processing unit (GPU) that was a known limitation, and all the graphics calculations are managed by the virtual central processing unit (CPU).
- Starting with macOS 11 Big Sur, Apple has introduced the [Paravirtualized Graphics framework](#), which finally enables a virtual GPU inside macOS virtual machines powered by the Mac computer's real GPU.

This greatly increases performance because instead of making the CPU handle all the graphics, guest applications can finally utilize the host graphics card by means of the [Metal API](#). For this feature to work, both the host and the virtual machine must be running macOS Big Sur or above.

It is important to note that since this virtual adapter only supports [Metal API](#), guest applications that require OpenGL will still not run.

As opposed to Windows/Linux virtual machines, this virtual GPU is entirely managed by Apple, and therefore there aren't many details available.