



Graphics in macOS virtual machines on Mac computers with Intel processors

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

This article describes an issue when applications launched in macOS virtual machine not working properly (graphical artifacts/issues) or cannot be started.

For example, working with any of iWork applications you cannot see the page content, which disappears after a few seconds from starting an application or Mozilla Firefox window isn't scaled or Google Chrome/Safari interface isn't correctly drawn or has some glitches and artifacts. The same for GitHub Desktop/Chrome applications which use the Cocoa GUI framework.

The nature of this behaviour is due to Parallels Desktop not supporting 2D/3D acceleration in OS X/macOS guest operating systems (installed inside the virtual machine) earlier than macOS 11 Big Sur. It was caused by the lack of the API for creating a video driver with 2D/3D acceleration support.

As a result, there might be any kind of graphical artifacts or an application could behave incorrectly, even doesn't not work at all if the 2D or 3D acceleration is required for its functionality.

Resolution

Starting with **macOS Big Sur 11.0**, Apple has introduced [Paravirtualized Graphics framework](#), which finally enables a virtual GPU inside macOS virtual machines, powered by the Mac'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 [Metal API](#).

Note: for this feature to work, both the host and the virtual machine must be running **macOS Big Sur 11.0** or above.

If there is a pre-existing Big Sur virtual machine (running on a Big Sur host) with the virtual Paravirtualized Graphics adapter disabled, to enable the feature, simply [install/update Parallels Tools](#) and restart the virtual machine.
