



Use automatic graphics memory in Parallels Desktop for Mac

- Parallels Desktop for Mac Standard Edition 14
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Starting with Parallels Desktop 14 for Mac, a new powerful feature has been introduced to help you manage system and graphics memory with maximum efficiency - **Automatic graphics memory**.

When selected, Windows will use up to half of the assigned system memory (RAM) for graphics when required. For example: if your Mac video card has 3GB of vRAM, but your virtual machine has 4GB of System Memory (RAM) assigned, then Windows will use only up to 2GB of the video card's vRAM. To use all Mac vRAM in Windows, the amount of assigned RAM should be twice higher - 6GB in this case.

To enable this feature open virtual machine's configuration > **Hardware** > **Graphics** > set 'Memory' to **Auto**. Then close the configuration window and start the virtual machine. To check the amount of system memory dedicated to Windows, navigate to the **CPU & Memory** tab. See more details in [KB 122705](#).

Note: starting with [Parallels Desktop 17](#), system memory is used for graphics by default for new virtual machines and the virtual machines that have had the **Auto** option enabled earlier. The graphics memory selector has been removed since pre-allocating graphics memory is not efficient.

Note: this feature is available for Windows 8 and newer operating systems since these operating systems support automatic graphics memory allocation.

Technical note: the difference between the automatic and dedicated graphics memory

Regardless of the setting you choose, Parallels Desktop does not have direct access to the Mac graphics card (no Mac applications have). In macOS, OpenGL and Metal APIs manage graphics memory allocations and virtualizes it for applications' use. Parallels Desktop uses OpenGL to implement 3D acceleration.

Graphics memory: 2GB dedicated

Note: when you define an amount of graphics memory manually, Parallels Desktop wires it in Mac system memory, increasing the total amount of Mac RAM used by Windows.

Graphics memory: Auto

In this case, Windows allocates memory for graphics purposes from available RAM (which is allocated from Mac RAM), but not more than half of assigned RAM.

* - Aperture Segment is a type of segmentation model that allows graphics processing unit (GPU) to access physical memory. See [this article](#) for more details.

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