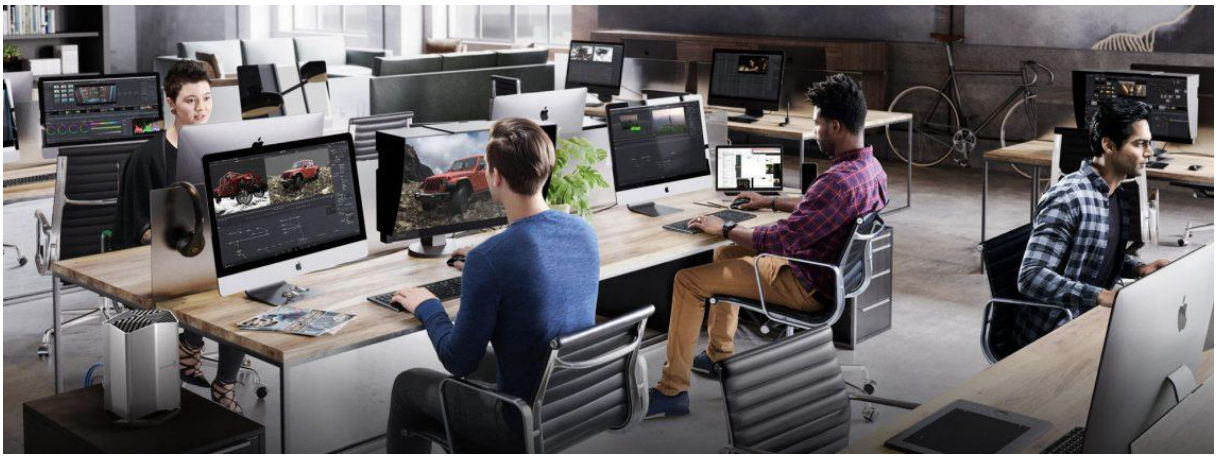
DaVinci Resolve System Requirements: All You Need to Know



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Published 12 September 2022

DaVinci Resolve is one of the most versatile post-production tools available today. Used by everyone from amateur enthusiasts to the biggest Hollywood studios, it combines every aspect of finishing a film. Inevitably, such extensive capabilities demand impressive computing power.

To build a powerful DaVinci Resolve workstation, your machine will need at least a four-core processor, 16 GB of RAM, and a graphics card with 4 GB of VRAM. You also need macOS 11 or Windows 10 or later with the latest drivers installed. Your storage requirements vary depending on your project.

Let's take a more in-depth look at each of these.

Operating System

The operating system provides the backdrop to your workstation. Ideally, you should have the latest version of the OS you are using. This way, your machine is more likely to better integrate with powerful components and best use their capabilities.

For instance, updated operating systems are likely to better utilize the capabilities of the latest graphics cards.

Similarly, you also need to have the latest video drivers installed to properly send the output from your system to a monitor or external viewer.

As of Version 18, Blackmagic Design recommends that Mac users update to macOS 11 Big Sur or later. Similarly, Windows users are advised to move to Windows 10 Creators Update.

Graphics Capabilities

Processing video demands powerful computing power dedicated to graphics processing. This makes the graphics card or GPU the single most important component of your Resolve machine.

Today, many consumers own 4K TVs, and it is not uncommon for high-value productions to shoot in 6K or even 8K. Remember that when the headline number doubles, the video resolution quadruples.

Such high-resolution workflows compound the intensity of processing power required in audio-visual post-production.

Moreover, Resolve is not a standalone editing software. Its differentiated workspaces allow you to edit your film, grade it, mix and finish its soundtrack, overlay effects and render it for final viewing while collaborating with multiple artists.

As of Version 18 of Resolve, these are Blackmagic Design's recommendations for your machine's minimum graphics handling capabilities.

	Minimum Requirements
Mac	2 GB VRAM with OpenCL 1.2 or Metal support
Win	2 GB VRAM with OpenCL 1.2 or CUDA 11 support

Note that these are only the minimum recommended specifications. They should work just fine if you are editing a single layer of 1080P video without complex effects or audio work.

When working with higher resolutions, multiple layers of audio and video, and complex effects, your system is likely to hang, lose synchronization, or drop frames during playback. It will also be slow to render output and incredibly frustrating to work with.

For these reasons, you will likely need higher graphics processing power. Here are a few general guidelines based on the video resolution you expect to work with.

	Resolution	Recommended Capability
Mac	HD	4GB VRAM with OpenCL 1.2 or Metal support
	4K	8GB VRAM with OpenCL 1.2 or Metal support
	6-8K	20 GB VRAM with OpenCL 1.2 or Metal support
Win	HD	4 GB VRAM with OpenCL 1.2 or CUDA 11 support
	4K	8 GB VRAM with OpenCL 1.2 or CUDA 11 support
	6-8K	20 GB VRAM with OpenCL 1.2 or CUDA 11 support

Finally, note that while the free version of Resolve limits you to using a single GPU, the Studio version lets you use multiple GPUs. This is another aspect to consider when deciding which graphics card to install.

Processing Power

Blackmagic Design does not have a minimum requirement regarding the make or specifications of your processor or CPU. However, we recommend using a processor with at least four cores.

The more cores your processor has, the more powerful it will be. More cores allow parallel processing, speeding up the tasks you perform. They can be handy if you work with higher resolution video, run multiple GPUs, or use processor-intensive codecs such as H.265.

Here are a few general guidelines regarding the CPU you should use for your Resolve workstation.

Video Resolution	Minimum Recommended Processor Cores
HD	4
4K	6
6-8K	18

Memory

As with CPU cores, the more and newer the iteration of RAM, the better your Resolve workstation will function.

You can get away with using just 8GB of RAM editing HD video on a mac running a new M1 processor. You can also run DDR3 RAM without encountering problems. However, we recommend using at least 16GB DDR4 RAM. Learn the difference between DDR4 & DDR5 RAM here.

If you are working on higher resolutions and doing more intensive grading or effects work, 32 GB DDR4 RAM is ideal. Advanced users without budget constraints will want to install as much RAM as their motherboards accept.

Storage

Consider both the size and the speed of hard disks when installing storage for your Resolve system. You will need high-volume disks to store large amounts of video data. The greater the resolution and complexity of the work, the higher your volume requirements will be.

At the same time, installing a slow disk is the surest way to squander any gains bestowed by the other high-quality components in your machine. So, projects working with high-resolution video and complex effects will also need faster disk read and write speeds.

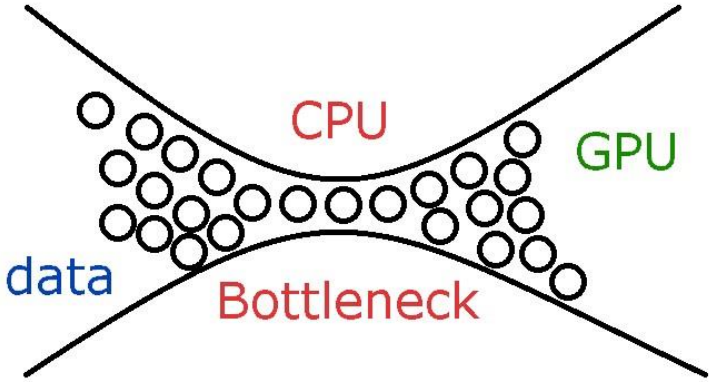
Because of contrasting requirements for disk volume and speed, video editors often use multiple disks in their work and split their processing across disks.

We recommend using separate Solid State Drives for your boot drive and rendering locations. SSDs are fast and will ensure you get the most out of your processing capabilities elsewhere.

However, they are still expensive. So, you will still need to rely on older drives for your video storage needs. Check your HDD's disk speeds; if they are too low, clubbing them into a RAID array can offer a compromise between greater volume and speed.

It is vital to match the capabilities between your various components to get the best bang for your buck. One inadequate component can bottleneck an otherwise perfect Resolve workstation.

The diagram below perfectly describes a bottleneck when, for example, the CPU is bottlenecking the rest of the system.



Source: WePC

Frequently asked questions

Do you need a good PC for DaVinci Resolve?

Sort of, it's a very open-ended question. It depends on the resolution you're editing at and whether you're using advanced editing effects or not.

Essentially, for basic video editing, you just need at least 8GB of average RAM, a modern processor with at least 4 cores & a good GPU that offers at least 2GB of video RAM.

Can DaVinci Resolve run on 8GB RAM?

Absolutely, 8GB RAM is plenty for DaVinci Resolve to use. These are the recommended amounts of RAM storage depending on your editing resolution.

1080p – 8GB RAM
4k – 16GB RAM
8k – 32GB RAM

Do you need a graphics card to run DaVinci Resolve?

In short, yes. You'll need a modern GPU with at least 2GB of VRAM (Video RAM) to be able to run DaVinci Resolve without encountering major issues.

We recommend at least 4GB of VRAM to leave some breathing room in case the software exceeds 2GB to avoid any potential crashes and loss of work.

Final Thoughts

There is no limit on the resources that DaVinci Resolve can consume when producing your videos. However, to get an acceptable experience, you'll need a powerful CPU, plenty of RAM, and the latest operating system version.