

## **Buying a 2017 Apple Computer for Adobe CC 2017 video applications**

### **1. The Main Consideration: The Graphics Card**

Adobe Premiere requires a decent graphics card to work well.

In Premiere's General Project Settings, and when you create a new project, there is an option called "video rendering and playback". There are three potential choices:

1. Mercury Playback Engine GPU acceleration using Open CL
2. Mercury Playback Engine GPU acceleration using CUDA
3. Software only.

This option also appears in Adobe After Effects under the Project Settings/Video Rendering and Effects. In After Effects, you have two choices: Mercury Playback Engine GPU acceleration using Open CL and Software only. After Effects has recently (2016) been re-coded to take advantage of GPU acceleration for playback and rendering.

GPU acceleration means using the memory on your video card for multiple tasks: playing back video, seeing effects in real time, generating preview files and rendering. The more video memory you have; the better Premiere and After Effects perform. GPU acceleration in Adobe applications works best using CUDA on computers with NVIDIA graphics cards. Unfortunately, no current Apple computers use NVIDIA cards.

All current Apple computers use graphics cards made either by Intel or by AMD. The AMD cards use Open CL for GPU acceleration. Open CL works well with AMD cards and Adobe CC 2015 and up. However, this is not the case for Intel cards. The Intel graphics cards on cheaper iMacs, cheaper Mac Book Pros, Mac Books, Mac Book Airs, and Mac Minis supposedly work with Open CL but in practice they do not. There are errors generating preview files and rendering. This means you will have to use the third "Software Only" option for Mercury Playback. This greatly slows down rendering, effects and playing back video from the timeline. It is a very poor option. You will wonder why you paid so much money for a machine that performs so poorly.

For the Apple computers with AMD graphics cards, you will have a choice of how much video memory (VRAM) is on the card. Cheaper models might have 2 GB of VRAM on the card, more expensive models might have 8 GB of VRAM. Buy the best that you can afford.

There are other factors involved in choosing a computer for video editing and compositing: the speed and number of processors, the amount of RAM (especially for After Effects), and the ability to plug-in external devices. However, if you want to have a good editing experience using Premiere, and a better experience with After Effects, avoid all Apple computers that only have Intel graphics cards.

Apple has released their new computers for 2017 and the line-up is much better for video production than in 2016. There are more models with AMD cards and in addition many new models come with Thunderbolt 3 ports. With a Thunderbolt 3 connection you can, if you wish, add an external video card for GPU acceleration. You can purchase a more powerful PCI video

card and place it in a PCI expansion chassis with a Thunderbolt 3 connection. This is very good news for Apple users who may be tempted by the wide range of powerful NVIDIA graphics cards available. GPU acceleration is only possible through the new Thunderbolt 3 connection that has a much greater bandwidth than Thunderbolt 2. This is an expensive but interesting option for those wishing to get even better video performance.

## **2. Other Considerations: RAM, Hard Drive, Processor**

### **RAM**

When purchasing a computer for video, I recommend a minimum of 16 GB of RAM. On some computers, like the 21" iMacs, RAM is not upgradable after the purchase so make sure you have at least 16 GB. In After Effects, the amount of RAM (and video memory) determines how many seconds or minutes you can play back in real time, so RAM is even more important for this application than Premiere. If you are working with 4K compositions in After Effects, consider 32 GB of RAM.

### **Hard Drive**

Current Mac OS versions really need a SSD hard drive to operate smoothly. There is no reason for Apple to be selling computers with standard SATA drives or with the Fusion option (thank you to Tim Sutton for pointing this out). In the long run, a smaller SSD drive will serve you better. Video media can be stored on the external drive of your choice. This could be a SATA USB 3 drive or a SSD Thunderbolt drive or even a RAID array (see my other document on purchasing an external drive for video).

### **Processor**

How much faster is a 3 GHz i5 to a 3.8 GHz i5 processor?

These are mind numbing questions. Luckily there are websites, like barefeats (barefeats.com), that do performance tests between Mac Models. Think about the types of projects that you will require the computer for. Will you be creating HD or 4K videos? Are you trying to edit 4K RAW video or work with 4K image sequences? Are you often racing against deadlines, working for clients or do you have the extra time for rendering? A slower computer translates into less real-time playback for very compressed codecs, more rendering, longer render times.

## **3. Recommended 2017 Apple computers**

Here are your possible choices for computers to use with Adobe CC 2017 video applications:

### **Mac Book Pro 15"**

The Mac Book Airs and Mac Books are simply not powerful enough for video editing. Avoid them. In the Mac Book Pro, the 13" machines have Intel graphics cards, so go directly to the 15" models. Both 15" models have AMD Radeon Pro graphics cards. Pick the model you can afford.

**iMacs:**

You can now buy a 21.5" iMac with an AMD graphics card. This is an improvement over 2016 models. Avoid the 2.3 Ghz model that has Intel card only. Both the 3.0 GHz and 3.4 GHz model have AMD cards. As always, buy the model with the best specs you can afford.

All the 27" iMacs are recommended.

**iMac Pro**

This model will be released in December. This is an iMac for those who need more processing power and expansion. With four Thunderbolt 3 ports, there will probably be two Thunderbolt buses allowing, for example, to add on one bus, a RAID array and a video I/O card to a color correction monitor and on another bus an external graphics card for GPU acceleration. The iMac Pro might also be suitable for VR creation.

**Mac Pros:**

I would not, at this point in time, purchase a Mac Pro.

Apple has stopped production on this second-generation model and they have not been updated since 2013. They do not have Thunderbolt 3 connections, only Thunderbolt 2. A new third generation Mac Pro will be issued sometime in 2018 with a completely new design.

The Mac Pros (the little black ones that look like coffee urns) use AMD graphics cards but these particular cards that are custom made for the Mac Pro design are prone to error. It seems to be a matter of chance whether you get a good graphics card or not! Apple has a recall program on these cards and will replace them if necessary but in my experience the replacement cards can be just as faulty. I'm not sure if this issue is completely resolved. I suspect not. If the graphics card is not working and you have to run Premiere in "Software Only" mode on a Mac Pro, 6 or 8 core, the software will respond worse than on a 27" i5 iMac with a working AMD graphics card.

Buy at your own risk.