Hardware Recommendations
For Premiere Pro and After Effects users

Choosing the right system will help you to realize the full potential of your Adobe video applications. This document outlines the key considerations for building or upgrading a system to run Adobe Premiere Pro or After Effects, including updated recommendations for Multi-Frame Rendering in After Effects 22.0.

Building a system for video production
The four key variables in building a video workstation are the processor (CPU), memory, graphics (GPU), and storage. A well-equipped high end system can run Premiere Pro and After Effects well. Understanding how each application uses system resources will help you to build the best system for your needs.

Processors
Both After Effects and Premiere Pro benefit from CPU clock speeds of 3.2 GHz or higher. With the transition to Multi-Frame Rendering, After Effects is able to take advantage of multi-core CPUs. Starting with After Effects 22.0, users should see immediate performance improvements for previews and exports. On high-end systems, After Effects with Multi-Frame Rendering is up to 4x faster.

For Premiere Pro, 8 cores is sufficient. Depending on the task, Premiere Pro runs at 93-98% efficiency with 8 cores.

• At least a Core i7 or Core i9 Intel processors, AMD equivalents, or Apple M1.
  • Intel Core i7 and Core i9 (and the latest mobile Xeon processors) offer Quick Sync technology which accelerates decoding/playback of H.264 and HEVC.
  • Some desktop Intel Xeon processors do not offer QuickSync. These may be better suited for high-end workflows with cinema camera formats, (e.g. RED, Sony Venice, ARRI) and broadcast formats (e.g. XDCam HD).

After Effects 22.0 and later, an 8 or 12-core CPU is a good starting point. For demanding workflows, 32-cores take full advantage of Multi-Frame Rendering. Note that the amount of memory also impacts how After Effects is able to utilize the available CPU cores.

• AMD Ryzen 7 (8 core) or Ryzen 9 (12 or 16 core) deliver great performance and support 64GB of RAM and higher.
  • For very high-end performance AMD Threadripper (24 or 32 core) or Intel Xeon (24 or 32 core) which support 256GB of RAM and higher
  • For After Effects users who are also running Premiere Pro, consider Intel Core i7 or Core i9 with Quick Sync hardware acceleration for H.264 and HEVC formats. Use with at least 32GB of memory.
  • Note: native support for Apple silicon is currently in After Effects (Beta).

Memory
Premiere Pro: Windows systems or Intel-based Mac video editing workstation should have at least 32GB of memory or more. For Apple M1 Macs we recommend at least 16GB of shared memory.

After Effects 22.0 or higher: we recommend starting with 64GB of RAM. As a rule of thumb for Multi-Frame Rendering, include 4GB of RAM for each CPU core, add 20GB, and round up to the nearest standard RAM configuration.
Graphics
Both Premiere Pro and After Effects are engineered to take advantage of the GPU.
- For Premiere Pro we recommend a GPU with at least 4GB of memory (VRAM)
- For After Effects 22.0 or higher, a GPU with at least 8GB of VRAM is recommended.
  - Multiple GPUs, including eGPUs, will speed up export and rendering in Premiere Pro.
  - Apple M1 systems use shared memory for graphics processing. For video editing we recommend M1 systems have at least 16GB of Unified Memory.

Storage
Fast storage is mission critical for video production. That means using fast SSD or NVMe storage. Unless you have a fast RAID array, spinning disks do not offer sufficient speed for HD and UHD video.
- SSD or NVMe flash memory drives
- For local storage, an optimal setup uses three drives:
  - System Drive for OS and apps
  - Drive for the Media Cache - these are accelerator files, including peak files (.pek), conformed audio (.cfa). Premiere can make thousands of call to these files every second.
  - Media Drive for video assets and other project media
You can use a fast external drives for media and Media Cache. If only two drives are available, Media Cache and Media can be stored on the same drive.

Shared storage: With a fast connection of 10Gps or higher, both Premiere Pro and After Effects work well with Network Attached Storage (NAS) systems, including mixed environments with macOS and Windows. With shared storage, the Media Cache should always be stored locally for individual users.

Upgrading your system
For additional performance gains, systems can be upgraded with faster components.

Upgrading for Premiere Pro
For most use-cases, consider upgrading components in this order of priority:
1. Add more RAM – up to 128GB if the motherboard supports it (especially for long-form content)
2. A faster GPU – or additional GPUs for faster export and rendering with Premiere Pro
3. For storage: Faster (or additional) SSD or NVMe drives
4. CPU with a faster clock speed

Upgrading for After Effects 22.0 and later
1. A CPU with 32 cores will maximize the advantages of Multi-Frame Rendering
2. Add more RAM – 128GB or more, depending on the use-case.
3. Storage: Faster SSD or NVMe drives or faster connection for shared storage
4. Faster GPU with more than 8GB of VRAM

More information on Multi-Frame Rendering in After Effects
How to choose the best hardware for Multi-Frame Rendering in After Effects (Puget Systems)
After Effects Multi-Frame Rendering Processor Performance Analysis (Puget Systems)
After Effects Multi-Frame Rendering GPU Performance Analysis (Puget Systems)

Additional Resources
System Requirements for Premiere Pro
System Requirements for After Effects
Best Practices for using Productions with Premiere Pro (PDF)