Mastercam 2024+ Hardware Recommendations

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Processors

Intel i7 or i9 / AMD Ryzen 7 or 9 series – Intel processors are defined by their generation. Every generation will have i3, 5, 7, and now 9 for current processors. But the numbers following the i-series dictate the generation. An i7-6700k for example, is a 6th generation i7 processor. This is important to note when looking at the market for a processor's age, price-range, and how long you can expect it to last. AMD products are similar in the sense of having the Ryzen 3, 5, and 7 with a secondary number climbing based on generation. Keep in mind Intel switched motherboard sockets with their 10th generation and newer processors.

My current recommendations in order are:

1. Intel i9-14900K (or KF, Alder Lake Arch.) – 24 cores @ 3.2ghz native
2. Intel i7-14700K (or KF, Alder Lake Arch.) – 20 cores @ 3.4ghz native
3. AMD Ryzen-9 7900X – 12 cores, 4.7ghz native
4. AMD Ryzen-7 7800X3D – 8 cores, 4.2ghz native
5. AMD Ryzen-7 5800X3D – 8 cores, 3.6ghz native

Graphics Cards

Nvidia GeForce/Quadro or AMD – The margins have narrowed between Nvidia and AMD in the most recent generation, however, due to pricing and performance gains not being as significant in some cases, I can't really recommend the RTX 4000 series as a whole. AMD is in a similar position with cards like the 7900XT being strong, but is difficult to recommend due to potential Mastercam conflicts.

My current recommendations in order are:
(Please note the statistics are based on the initial recommended model, not the similar models)

1. Nvidia GeForce RTX 4080 – Release: Q4 2022, 16gb dedicated ram
2. Nvidia RTX A5000 – Release: Q2 2021, 24gb dedicated ram
3. Nvidia GeForce RTX 4070 ti – Release: Q1 2023, 12gb dedicated ram
4. Nvidia GeForce RTX 4070 – Release Q2 2023, 12gb dedicated ram
5. Nvidia Geforce RTX 3070 ti – Release: Q4 2020, 8gb dedicated ram

Please note that while laptop versions of the recommended cards generally exist, they do sacrifice some power and performance to be in a mobile setting. Ratings are based on a scale including both configurations.

System Memory

Speed and Latency – RAM is something that is flaunted by many companies and builders alike. It is something critical to running multiple operations and applications along with response times. While having more is generally a good thing, an important factor is the speed and latency of your RAM. The further apart these numbers are from one stick to the next, the harder the time your motherboard will have operating them in unison. For example, you will have a latency for a stick of Corsair RAM that's listed latency is 13-15-15-28 with a speed of 2133MHz. To properly calculate the actual speed of the ram you would take the speed divided by the first number of the latency, thus giving you 164ips (instructions per second the RAM can carry out). While "faster" RAM may seem more appealing, the clock speed doesn't always equate to being faster if the latency is higher. Keep this in mind when selecting your system memory and try to find something appropriate for what you need, as well as matching your other ram to promote efficiency.

Drives

NVMe m.2, Solid State, and Hard Drives – Many people aren't aware of the difference of some of these products. While all of them store, read, and write information, they are very different in performance. A standard hard drive anymore will be about 1TB of data that will last you years and years of read/write cycles. These standard hard drives unfortunately don't even compare when stacked up against solid states which also lose to m.2 drives. An important factor to note is that solid state and m.2 drives essentially have a limited number of writes. They are designed for permanent data such as your operating system, dedicated programs, etc. So, the more you delete and rewrite files from them, the more the fragmentation and potential corruption of the drive grows.

7200 RPM Hard Disk Drive – Read/Write speed – ~128MBps/120MBps
Name Brand Solid-State Drive – Read/Write speed – ~450MBps/450MBps
Name Brand Gen 4 m.2 Drive – Read/Write speed – 5000+MBps/5000+MBps

*** Please note these numbers are averages based on current market products and will vary by brand and tier of product. ***

As a final word of warning, custom configurations are your friend.
Don't buy prebuilt systems without knowing exactly what is in them.

If you have any additional questions regarding this information and recommendations on hardware for effectively running Mastercam 2024+, feel free to contact me directly at the following address:

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