



# PC BUILDING GUIDE

## 2021 edition

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The new normal has forced more and more people to spend on buying computers. A shortage in semiconductor production has pushed up the prices manifold, and hence, building a computer has become a daunting task. You have to spend your money carefully and get the right parts for the build. So, here are some tips for buying the most important parts of your next computer.



### CPU

The CPU is the essential part that you will build your computer around. You can go in either direction of the two: AMD or Intel. AMD's Ryzen processors have gained massive popularity in the last few years. They offer more cores for your money than Intel and their 5000 series Ryzen CPUs can make use of all of them

without needing to be slowed down for instability, which was an issue for the last generations. More cores are helpful in multitasking and productivity workloads.

Their phenomenal IPC is benefiting gaming as well. Intel on the other hand boasts higher clock speeds, AI capability and huge compatibility. Their 19% IPC improvement in the Rocket Lake processors is helpful in Gaming.

Also, memory speed can be overclocked to a higher point in Intel builds which some games are taking advantage of. Everything considered, your choice comes down to your specific use case.

### Motherboard

The CPU is going to determine which motherboard you have to buy as it should be compatible with the processor socket. Generally, Intel uses LGA and AMD uses PGA sockets. The most popular motherboard form factors are ATX and micro ATX. You should also be mindful of how many memory slots you are getting: 4 slots leaves you with enough upgradability in the future.

Moreover, find out how many PCI expansion slots, SATA and M.2 connectors and peripherals connectors you get. Modern motherboards come with onboard audio, WiFi and Bluetooth. These add to the price but otherwise, you'd have to spend money on expansion

cards for these features. You don't need to go for super expensive motherboards as they do not offer lots more than cheap ones other than more overclocking capabilities, which most people won't do.

### Memory

Memory or RAM is another component on which you might feel tempted to overspend. The sweet spot for the price to performance ratio is 16 GBs. Anything more than that is for server tier computers. Memory clock speed is also a factor here as manufacturers are pushing them up to 5100 Mhz. However, that high clock speed is only good for CPU overclocking. Around 3000 MHz is the suggested memory speed. You should get two memory sticks and put them in separate channel slots on the motherboard to take advantage of dual-channel memory bandwidth.

### Graphics Card

Assuming that you are going to get one, the graphics card is the part that you should save up for. The GPU market has dried up as cryptocurrency values skyrocketed and miners started piling graphics cards. Nvidia cards have had an advantage over AMD in the last few years because of their real-time ray tracing feature, delivering realistic reflections, refractions and shadows. AMD, with their 6000-series cards, are bringing ray-tracing for the first time. They recently

released FidelityFX Super Resolution resolution upscaling. However, Nvidia is more experienced in these areas and has had DLSS for years, Nvidia's AI-assisted resolution upscaling. Although it is not a good time to buy a GPU, some of us cannot ignore the necessity and should go for the best one we can get.

### Power Supply

A good power supply is central to your PC's long term health. You should never go cheap on the PSU. PSUs that come with some cases usually have cheap capacitors and poor electrical performance. First, you need to calculate your PC's power draw which you can do with online tools such as Outervision's power supply calculator. Then, you should get a power supply with higher than required wattage as you might want to add components in the future and power supplies simply don't deliver the same performance over long periods.

Finally, 80 plus ratings are important and you should not go lower than an 80 plus Bronze certified PSU. It indicates how much of the AC it can convert into DC, which your computer needs. EVGA, Thermaltake, Corsair, Antec can be considered as quality PSU manufacturers.

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