

You could always just buy a computer and call it a day. But building a gaming PC takes a lot more than that. Several factors go into the making of a dedicated gaming rig, and ordinarily, a gaming PC has far more specs than an average computer. Thus, it is important to familiarise yourself with how some of the most basic features of a regular PC can differ in a gaming PC. Here is a quick guide on understanding device specifications, or specs, for gaming PCs.

#### CPU

As we all know, the CPU (Central Processing Unit) is the brain of the computer. It manages and processes all the tasks you wish to accomplish using a computer. For a dedicated gaming PC, look out for an 8 core, 16 threaded CPU with a base speed of 3.5 GHz.

For gaming, that amount won't suffice. If all the RAM is used up without any free memory, the CPU will start to lag. Keeping more than necessary is the way to go.

There are two types of RAM - SRAM (Static) and DRAM (Dynamic). The SRAM does not rewrite data while working, but the DRAM does. Commonly, you would find the DDR4 (Double Data Rate) RAM. The DDR RAM can transmit twice the data as regular RAM. In the case of a gaming PC, 32GB RAM is enough, as most AAA games don't use more than 16GB of RAM space.

#### STORAGE

Storage comes in two different forms - HDD (Hard Drives) and SSD (Solid State Drives). The HDD has an integrated disk where all the data is written. The

suited for gaming is approximately 9.62 inches by 12 inches. These are called the ATX (Advanced Technology eXtended). These motherboards have four slots for RAM, which are very helpful with RAM allocation. They can hold a maximum of 32GB of RAM. With each RAM stick being 8GB, the higher the amount on the stick, the more RAM it holds.

The smaller versions like Micro ATX motherboards have 3 RAM slots while the Mini has only 1. The ATX mini motherboards suffice for mid to low-end gaming. The commonly preferred ATX motherboard has approximately 3 Peripheral Component Interconnect Express, PCIe, x16 slots and a handful of PCI slots. Lastly, the current generation Serial Advanced Technology Attachments, or SATA 3.0, can transfer 6GB of data per second.

#### GRAPHICS CARD

This is the pivotal component of your dedicated gaming PC. Containing the GPU (Graphics Processing Unit), this part is completely dedicated to processing visual data. The graphics card has a built-in memory unit, which stores details of visual outputs like textures and colours. The functionality is similar to RAM, with higher the capacity, the more data that can be stored for processing. The memory on the graphics card is built-in and cannot be changed.

High-end, graphics-hungry games have tiny details. Without a proper graphics card, it is impossible to get proper video output. A proper graphics card for intense gaming needs 8GB memory with approximately 1900 MHz of speed. Only then should you be able to run AAA games with ease.

#### CLOCK SPEED AND OVERCLOCKING

Clock speed refers to the amount of data a CPU processes in a second to complete a Fetch-Execute Cycle. Fetch-Execute Cycle is the process in which the CPU takes a command, decodes it and executes it. A regular CPU can process at speeds of more than 1 GHz, or 1 billion cycles per second. So, the higher the GHz, the faster your machine is. A 3.5 GHz, 8 core processor has 16 threads and executes 3.5 billion cycles per second, which is the optimum speed for a gaming PC.

The same principle applies to RAM and GPU. Their speed is measured in MHz. The current 8 GB DDR4 can execute 3000 MHz of data, or 3 billion cycles, per second. GPU is also the same. For example, an 8 GB graphics card with 1905 MHz executes 19.05 billion cycles per second while keeping 2GB of free data in the memory. AAA games need approximately 6GB of video memory and 16 GB of RAM.

Straight after assembly, your computer will run at default speed. Overclocking allows you to force your computer to run at its full potential. This is achieved by using various software that re-writes the default settings. But, this always bears the risk of overheating the components. In this case, the safe approach would be to overclock, but not to the full extent. The GPU of 1900 MHz should be overclocked up to 2100 MHz, even if it can go 2200 MHz.

Lastly, when going for a gaming PC, you need to understand that these are power-hungry machines. Ordinarily, a computer can run with a 500W power supply. But a gaming PC has more components and consumes more power. For this, an 850 to 1000W power supply should do the trick.



# Beginners' guide to understanding gaming PC specs

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Most of the CPUs of the current generation have multiple cores and multiple threads. A multi-threaded core, with the usual 1:2 ratio, will make it seem like two cores are processing the same command simultaneously. Some multi-core processors tend to have 4 cores and 8 threads. If you want to build a low-end gaming PC, the regular 4 core and 8 thread with a speed of 2.8 GHz will be enough.

#### RAM

The RAM (Random Access Memory) and the CPU of a PC are intertwined. The RAM has dedicated space that holds the memory for constant use. That space determines how fast the CPU processes the activities. The operating system of the computer comes with minimum criteria of RAM and allocates those RAM to applications being used. A standard of 2 GBs of RAM is recommended for a computer.

transducers on the HDD allow it to read and write the data, and generally cost less compared to SSD. As the SSD uses integrated circuits to read and write the data, it is smaller and more expensive. However, the SSD is much faster than the HDD in terms of reading and writing the data.

For a high-end gaming PC, it is best to keep a 2 terabytes HDD and a 520 GB SSD. Incorporating both amps up the speed, keeping the SSD and HDD spaces separate. You can use the SSD for installing the games, since the SSD has an integrated circuit it takes half the amount of time to load the saved data. AAA games on average don't need more than 80GB of space. So you can install and save your favourite games and all the high games there. For everything else, you can utilise the HDD space.

#### MOTHERBOARD

Commonly bought motherboards well