

Difference between i3, i5, and i7 Processors

Intel Core i3, i5, and i7 are three different intel core processors designed to use in PCs, laptops, workstations as the CPU (Central Processing Unit). However, these three processors are quite different from each other in terms of number of cores, frequency range, cache size, and more. Therefore, each of these three processors offer a different level of performance.

Intel Core i3 Processor

Intel Core i3 processor is an entry level processor developed by Intel Corporation. Intel Core i3 processor is design to use as CPU in desktops, laptops, etc. The Core i3 processor was first introduced in 2010. Core i3 is a two core (dual-core) processor. The speed range of Core i3 processors is between 1.30 GHz and 3.50 GHz. It can have a cache memory of size either 3 MB or 4 MB.

Therefore, the Core i3 processor is available in different models based on speeds, cache sizes, etc. To mount the Core i3 processor on the motherboard, there are two types of sockets used, namely, LGA 1150 and LGA 1155.

Core i3 processor is most commonly used in laptops because its low power requirements and low heat generation.

Intel Core i5 Processor

Core i5 processor is a mid-range processor designed to use in desktop and laptop computers. This processor was introduced by Intel Corporation in 2009. Core i5 processors are available in dual-core (two cores) and quad-core (four cores) constructions.

The speed of Core i5 processor ranges between 1.90 GHz and 3.80 GHz. It has either 3 MB or 4 MB or 6 MB of cache memory. Similar to Core i3 processor, the Core i5 processor also mounted on the motherboard by using either LGA 1150 or LGA 1155 socket.

Core i5 processors are widely used in computers employed for everyday use in moderately high-performance applications.

Intel Core i7 Processor

Core i7 processor is a high-end processor developed by Intel Corporation in 2008. Core i7 is a powerful and very high-performance processor designed to use in desktops, laptops, workstations, etc. It is primarily suitable for computer

systems used for high-end applications like video editing, gaming, simulation, graphics designing, etc.

Core i3 processors are available in four cores, six cores, or eight cores with a speed ranging from 2.6 GHz to 3.7 GHz, depending on the models. In addition to all these characteristics, Core i7 processors also offer some advanced features like hyper-threading technology, Intel vPro, etc. The cache size of Core i7 processors can be up to 20 MB. Also, the Core i7 processors has built-in Intel HD Graphics that provides better graphics performance in graphics intensive applications like video-editing, gaming, etc. However, Core i7 processor consumes more energy and generates more heat as compared to Core i3 and Core i5 processors.

Therefore, the Core i7 processor is a highly suitable processor where extra processing power is needed like in graphics designing, gaming, etc.

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Intel Core i3

Intel Core i3 is an entry-level processor design for low-end applications.

Core i3 processor is a dual core processor, i.e. it has two physical cores.

Core i3 has a cache of size either 3 MB or 4 MB.

The clock speed of Core i3 processor is ranging between 1.30 GHz and 3.50 GHz.

Core i3 processor supports 4 threads.

Intel Core i5

Intel Core i5 is a mid-range processor developed for everyday use computer systems.

Core i5 is available in quad-core (2 cores) and quad core (4 cores).

Core i5 has a cache of size ranging between 3 MB and 8 MB.

The clock speed of Core i5 processor is ranging between 1.90 GHz and 3.80 GHz.

Core i5 processor also supports 4 threads.

Intel Core i7

Intel Core i7 is a high-end processor designed for applications that need high processing power.

Core i7 is available in quad core (4 cores), six cores, and eight-cores.

Core i7 has a cache of size ranging between 4 MB and 8 MB.

The clock speed of Core i7 processor is ranging between 2.6 GHz and 3.7 GHz.

Core i7 processor supports 8 threads.

Core i3 processor does not support turbo boost feature.

Core i5 supports turbo boost.

Core i7 processor also supports turbo boost.

Core i3 processor does not support virtualization technology.

Core i5 processor supports virtualization technology.

Core i7 processor also supports virtualization technology.

Core i3 processor does not support Intel vPro technology.

Core i5 processor does not support Intel vPro technology.

Core i7 processor supports Intel vPro technology.

Core i3 processor is cheapest among the three.

Core i5 is mid-range processor.

Core i7 is expensive.

Core i3 processor is suitable to use for entry level tasks such as word processing, browsing, documentation, watching videos, etc.

Core i5 processor is suitable for basic work like web browsing, word processing, spreadsheets, basic graphics designing, etc.

Core i7 processor is suitable for high end applications, such as gaming, graphics designing, video editing, simulation, etc.

Conclusion

The most significant difference between Core i3, Core i5, and Core i7 processors is in their processing capabilities. Core i3 is used for entry level processing applications like word processing, Core i5 is suitable for mid-range performance applications, and Core i7 is suitable for high-end performance applications like multimedia editing.

Ref: <https://www.tutorialspoint.com/difference-between-i3-i5-and-i7-processors>