Multi-core processor

http://en.wikipedia.org/wiki/Multi-core_(computing)

In computing, a processor is the unit that reads and executes program instructions, which are fixed-length (typically 32 or 64 bit) or variable-length chunks of data. The data in the instruction tells the processor what to do. The instructions are very basic things like reading data from memory or sending data to the user display, but they are processed so rapidly that we experience the results as the smooth operation of a program.

Processors were originally developed with only one core. The core is the part of the processor that actually performs the reading and executing of instructions. Single-core processors can process only one instruction at a time. (To improve efficiency, processors commonly utilize pipelines internally, which allow several instructions to be processed together; however, they are still consumed into the pipeline one at a time.)

A multi-core processor is composed of two or more independent cores. One can describe it as ***an integrated circuit which has two or more individual processors*** (called cores in this sense). Manufacturers typically integrate the cores onto a single integrated circuit die (known as a chip multiprocessor or CMP), or onto multiple dies in a single chip package. A many-core processor is one in which the number of cores is large enough that traditional multi-processor techniques are no longer efficient — this threshold is somewhere in the range of several tens of cores — and probably requires a network on chip.

Dual-Core Processors

http://compreviews.about.com/od/cpus/a/dualcore.htm

Both Intel and AMD have been slowing down the rate for increasing the clock speeds of processor. Part of this is due to the limitations of the current technology and designs. To try and keep up to pace with future developments, both companies are introducing dual-core processors in 2005.

For some time now, the benefits of multiple processors have been seen in the server environment. By having multiple processors on a single server, the tasks running on the server can be divided between the processors to allow the system has a whole to function faster. The goal of ***a dual-core CPU is to take two physical processors and integrate them on one physical chip.***

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