
CPU Cores

The main difference between CPU cores and threads is that cores are physical entities, while threads are virtual constructs. CPU cores are physical components of a processor that are responsible for executing instructions. The number of cores a processor has is limited by the physical space available on the chip.

Actually, the simplest analogy is probably you. You are one person, but you have two hands. So you are a single core, but able to simultaneously handle two threads (one task in each hand). Due to limitations in how well your brain can control both hands, it's better than using one hand, but is nowhere near effective as two persons using one hand each (two core w/ 1 thread each for a total of 2 threads is better than one core w/ 2 threads).

Where the analogy starts to fall apart is in the types of tasks. For you, it's easier to do two similar things with both hands simultaneously (e.g., shampooing your hair). For a CPU, the second thread tries to use parts of the core which aren't being used by the first thread. So, it works best when the two threads are doing very different tasks.

Technically a thread is a single software process - a program or sub-program; a set of sequential instructions. A thread runs on a core. So, a core does not have threads, it handles or runs threads.