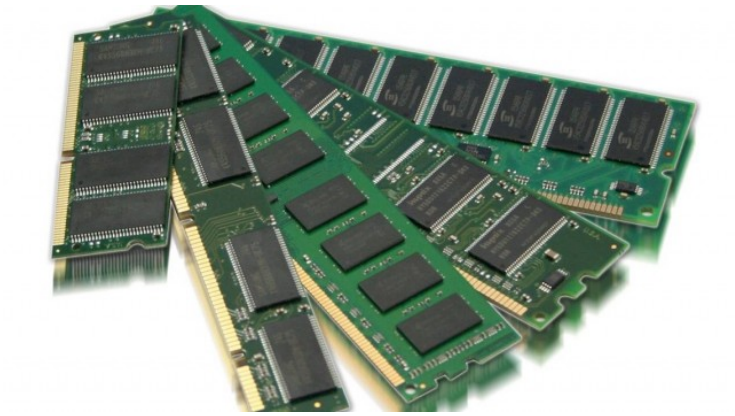
IT • Technology

Difference Between Flash Memory and Cache Memory

Flash Memory vs Cache Memory

Summary: Difference Between **Flash Memory and Cache Memory** is that Flash memory is a type of nonvolatile memory that can be erased electronically and rewritten. Most computers use flash memory to hold their startup instructions because it allows the computer easily to update its contents. While Memory cache helps speed the processes of the computer because it stores frequently used instructions and data.



Flash Memory

Flash memory is a type of nonvolatile memory that can be erased electronically and rewritten. Most computers use flash memory to hold their startup instructions because it allows the computer easily to update its contents. For example, when the computer changes from standard time to daylight savings time, the contents of a flash memory chip (and the real-time clock chip) change to reflect the new time. Flash memory chips also store data and programs on many mobile computers and devices, such as smart phones, portable media players, PDAs, printers, digital cameras, automotive devices, digital voice recorders, and pagers. Some portable media players store music on flash memory chips. Others store music on tiny hard disks or flash memory cards. Flash memory cards contain flash memory on a removable device instead of a chip.

Cache Memory

Most of today's computers improve processing times with cache (pronounced cash). Two types of cache are memory cache and disk cache. Memory cache helps speed the processes of the computer because it stores frequently used instructions and data. Most personal computers today have at least two types of memory cache: L1 cache and L2 cache.

L1 Cache

L1 cache is built directly in the processor chip. L1 cache usually has a very small capacity, ranging from 8 KB to 128 KB.

L2 Cache

L2 cache is slightly slower than L1 cache but has a much larger capacity, ranging from 64 KB to 16 MB. Current processors include advanced transfer cache, a type of L2 cache built directly on the processor chip. Proces sors that use advanced transfer cache perform at much faster rates than those that do not use it. Personal computers today typically have from 512 KB to 12 MB of advanced transfer cache.

Cache speeds up processing time because it stores frequently used instructions and data. When the processor needs an instruction or data, it searches memory in this order: L1 cache, then L2 cache, then RAM — with a greater delay in processing for each level of memory it must search. If the instruction or data is not found in memory, then it must search a slower speed storage medium such as a hard disk or optical disc.

Also Read:

Difference Between Access Time and Cycle Time of Memory

Difference Between Flash Memory and Ram

Difference Between Volatile and Non-Volatile Memory

Difference Between Memory and Flash Storage