

Hard Disk

A hard disk is part of a unit, often called a "disk drive," "hard drive," or "hard disk drive," that stores and provides relatively quick access to large amounts of data on an electromagnetically charged surface or set of surfaces. Today's computers typically come with a hard disk that contains several billion bytes (gigabytes) of storage.

A hard disk is really a set of stacked "disks," each of which, like phonograph records, has data recorded electromagnetically in concentric circles or "tracks" on the disk. A "head" (something like a phonograph arm but in a relatively fixed position) records (writes) or reads the information on the tracks. Two heads, one on each side of a disk, read or write the data as the disk spins. Each read or write operation requires that data be located, which is an operation called a "seek." (Data already in a disk cache, however, will be located more quickly.)

A hard disk/drive unit comes with a set rotation speed varying from 4500 to 7200 rpm. Disk access time is measured in milliseconds. Although the physical location can be identified with cylinder, track, and sector locations, these are actually mapped to a logical block address (LBA) that works with the larger address range on today's hard disks.

Disk Cache

A disk cache is a mechanism for improving the time it takes to read from or write to a hard disk. Today, the disk cache is usually included as part of the hard disk. A disk cache can also be a specified portion of random access memory (RAM).

The disk cache holds data that has recently been read and, in some cases, adjacent data areas that are likely to be accessed next. Write caching is also provided with some disk caches.