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Hard Drive Types



3.5 hard drives



2.5 hard drive



SCSI Hard drive

The two most common [form factors](#) for modern HDDs are 3.5-[inch](#), for desktop computers, and 2.5-inch, primarily for laptops. HDDs are connected to systems by standard [interface](#) cables such as [PATA](#) (Parallel ATA), [SATA](#) (Serial ATA), [USB](#) or SAS ([Serial Attached SCSI](#)) cables.

The factors that limit the [time to access the data](#) on an HDD are mostly related to the mechanical nature of the rotating disks and moving heads, including:

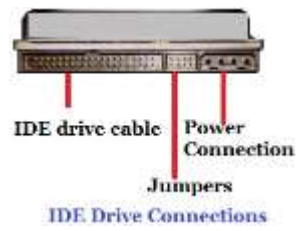
- Seek time is a measure of how long it takes the head assembly to travel to the track of the disk that contains data.
- Rotational latency is incurred because the desired [disk sector](#) may not be directly under the head when data transfer is requested. Average rotational latency is shown in the table, based on the statistical relation that the average latency is one-half the rotational period.
- The [bit rate](#) or data transfer rate (once the head is in the right position) creates delay which is a function of the number of blocks transferred; typically relatively small, but can be quite long with the transfer of large contiguous files.

Delay may also occur if the drive disks are stopped to save energy.

[Defragmentation](#) is a procedure used to minimize delay in retrieving data by moving related items to physically proximate areas on the disk.^[129] Some computer operating systems perform defragmentation automatically. Although automatic defragmentation is intended to reduce access delays, performance will be temporarily reduced while the procedure is in progress.^[130]

Time to access data can be improved by increasing rotational speed (thus reducing latency) or by reducing the time spent seeking. Increasing areal density increases [throughput](#) by increasing data rate and by increasing the amount of data under a set of heads, thereby potentially reducing seek activity for a given amount of data. The time to access data has not kept up with throughput increases, which themselves have not kept up with growth in bit density and storage capacity.

Connections of the drives are



SCSI has various methods of connection

The drives mentioned here is internal drives. There is also [external](#) drives