

NIELIT Gorakhpur

Course Name: O Level (2nd Sem)

Topic: Hard Disk Interfaces

Subject: ICT

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Chapter 2:[Utilities]

Hard disk interfaces:

The hard disk interface defines the physical and logical means by which the hard disk connects to the PC.

The Hard Drive is connected to the motherboard via an interface cable. There are three main types of Hard Drive interface including the older IDE (Integrated Drive Electronics) also called PATA (Parallel ATA), the new SATA (Serial ATA), and SCSI (Small Computer System Interface) which is mainly used on servers and in industry.

PATA:

PATA stands for Parallel Advanced Technology Attachment. It came before SATA but it is currently out-dated and not in use. PATA is not as fast as SATA. It has a maximum speed of about 133MB/s, which is a moderate speed. The maximum length of the cable in PATA is 18 inches. PATA does not support hot-swapping. It can have 40 to 80 pins.



SATA:

Stands for "Serial Advanced Technology Attachment," or "Serial ATA." It is an interface used to connect ATA hard drives to a computer's motherboard. SATA transfer rates start at 150MBps. SATA is a computer bus interface that connects host bus adapters to mass data storage devices, including SSD, Hard Drive, optical drives, etc. SATA has several advantages over PATA, including superior cabling and connectors, higher bandwidth, and greater reliability. It has 4 to 6 pins.



Small Computer System Interface (SCSI):

SCSI hard disks are generally used in servers and high-end workstations, where they provide two major advantages: improved performance relative to IDE and SATA in multitasking, multiuser environments and the ability to daisy-chain many drives on one computer. SCSI interfaces are available in various subtypes, which have different physical and electrical interfaces and transfer rates. Modern SCSI hard disks are the largest, fastest disks available. Within the different SCSI flavors, interfaces are well defined and standardized, but configuring SCSI to work on a standard PC can be complicated. The latest version, 16-bit Ultra-640 (Fast-320) SCSI, was introduced in 2003 and has a 640 MBps transfer speed, connecting up to 16 devices with a 12 meter cable length

Exercise:

1. What is hard disk interface? why is it important?
2. Compare and contrast PATA and SATA Drives.