Fibre Distributed Data Interface (FDDI) &

Fibre Channel (FC)

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The Fiber Distributed Data Interface (FDDI), an open fiber standard was produced by ANSI in the mid-1980s. FDDI specifies a 100 Mbps, token passing, dual-rings LAN using the fiber-optic transmission medium. The FDDI ring network can connect up to 500 stations with a total fiber distance of 200 Km. The FDDI have excellent fault tolerant features with the dual counter rotation rings architectures. If any of the stations fails, or link fail between the stations, the FDDI station management will reconfigured (wrapped around) the network using the secondary backup rings. The main limitation of the FDDI is the limited bandwidth of 100 Mbits/sec and the packets delay. The performances of the FDDI network are proportion to the number of stations connected in the rings. In heavy load conditions, the average packets delay increased dramatically with the number of stations (workload).

The FDDI-II an upward compatible enhancement of the basic FDDI includes circuit switching capability in addition to the packet switching capability of the basic FDDI. The hybrid mode of the FDDI-II dynamically allocated small portions of the bandwidth for the circuit switched data in unit of full duplex "WideBand Channels" (WBC).

The new Fibre Channel (FC), a gigabit interconnection technology maps several common transport protocols including IP and SCSI, allowing it to merge high-speed I/O and networking functionality in a single connectivity technology. Fibre Channel is an open standard as defined by ANSI and OSI standards and operates over copper and fiber optic cabling at distances of up to 10 Kilometers. It is unique in its support of multiple inter-operable topologies including point-to-point, arbitrated-loop and switching and it offers several qualities of service for network optimization. With its large packet sizes, Fibre Channel is ideal for storage, video, graphic and mass data transfer applications.

Note : Why Fibre Channel spelled as "fibre" ?
Fibre Channel was originally designed to support fiber optic cabling only. When copper support was added to its feature set some years ago, an ISO (International Standards Organization) task force decided to rename the technology. The committee decided to change the spelling of Fiber, to the French spelling Fibre, to reduce the association with fiber optics while maintaining the name recognition of the Fiber Channel technology.

Questions & Answers

Q1. What is the full name for FDDI ? What are the main characteristics of the FDDI ? What are the limitations that prevent the growth of FDDI ?

Answers : The **Fiber Distributed Data Interface** (FDDI) main characteristics are **100 Mbit/s** , *token passing, dual counter rotating ring* network and the *fault tolerant* features. The main limitation of the FDDI is the *limited 100 Mbps bandwidth* and the *packet delay*. In heavy load conditions, the average packet delay increased dramatically with the number of stations (workload).

Q2. What are the main characteristics of the Fiber Channel ? Why the Fibre Channel was spelled as "Fibre"?

Answers : The main characteristics of the Fibre Channel are **gigabit** interconnection that maps several transport protocol including IP and SCSI, allowing it to merge *the high speed I/O and networking* into single connectivity technology. The FC can operates over both *copper and fiber optic* cabling. It also supports multiple topologies *including point to point, arbitrated loop and switching*.

The Fibre Channel was originally designed to support Fiber optic cabling only, when copper cabling was supported, the ISO rename it to French spelling of "Fibre" to reduce the association with fiber optics while maintaining the name recognition of the Fiber Channel technology.