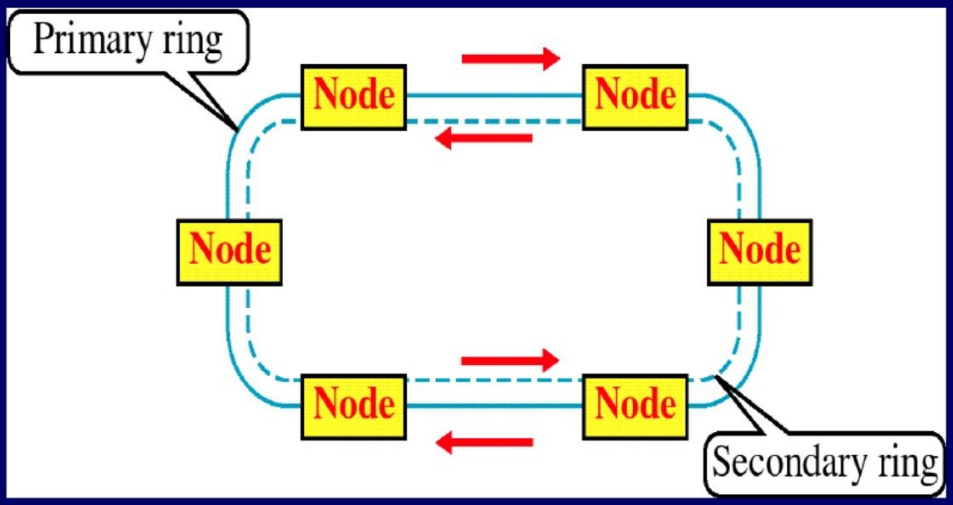
What is FDDI?

- Fiber Distributed Data Interface
- 100-Mbps token passing
- Dual-ring LAN
- A high-speed backbone technology
- High bandwidth
- Optical fiber transmission
- Allows up to 1000 stations

What is FDDI?

- Fiber Distributed Data Interface
- 100-Mbps token passing
- Dual-ring LAN
- A high-speed backbone technology
- High bandwidth
- Optical fiber transmission
- Allows up to 1000 stations

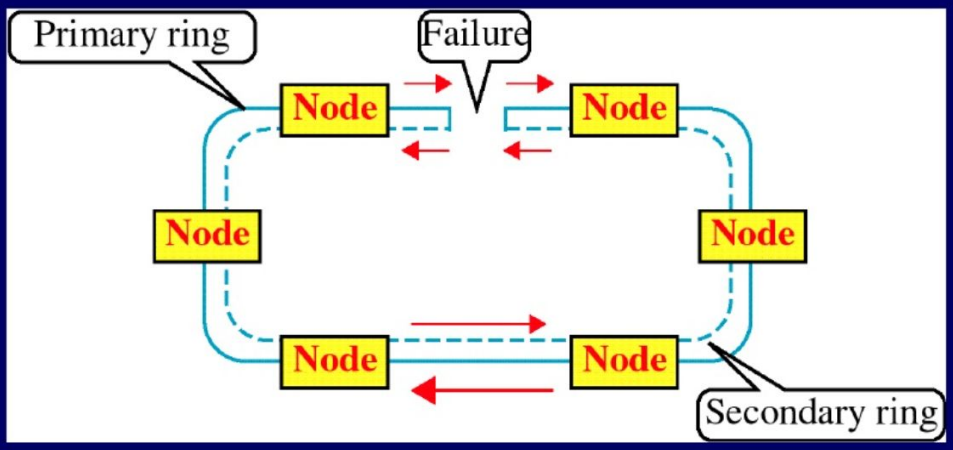
FDDI Architecture



Components of FDDI

- Fiber optic cable
- A concentrator (ring)
- Stations: 2 types
  - DAS (Dual Attachment Station) or Class A:
    - Connected to both the rings
  - SAS (Single Attachment Station) or Class B:
    - Connected to primary ring

Ring Wrapping



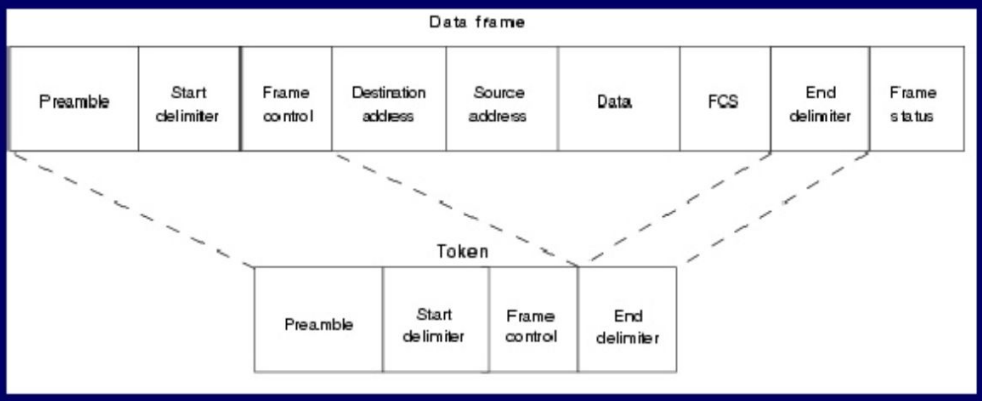
When a single station fails, devices on either side of the failed (or powered-down) station wrap, forming a single ring. Network operation continues for the remaining stations on the ring.

FDDI Access Method

- FDDI uses token passing as an access method similar to the IEEE 802.5 token ring.
- Any station wants to transmit information holds the token and then transmits the information and when it finish it releases the token in the ring.
- The time a station holds the token is called Synchronous Allocation Time (SAT) and this time is variable for each station. The allocation of this time to each station is achieved by Station Management (SMT).
- The functions of SMT are ring control, ring initialization, station insertion and station removal.

FDDI Frame Format

- Similar to token ring frame



FDDI Frame Fields

- **Preamble**: Gives a unique sequence that prepares each station for an upcoming frame
- **Start delimiter:** Indicates the beginning of a frame
- **Frame control:** Indicates the size of the address fields and whether the frame contains asynchronous or synchronous data, among other control information
- **Destination address:** Contains a unicast (singular), multicast (group), or broadcast (every station) address
- **Source address:** Identifies the single station that sent the frame
- **Data:** Contains either information destined for an upper-layer protocol or control information.

FDDI Frame Fields (continued)

- **Frame check sequence (FCS):** Is filed by the source station with a calculated cyclic redundancy check value dependent on frame contents. The destination address recalculates the value to determine whether the frame was damaged in transit. If so, the frame is discarded.
- **End delimiter:** Contains unique symbols; cannot be data symbols that indicate the end of the frame.
- **Frame status**: Allows the source station to determine whether an error occurred; identifies whether the frame was recognized and copied by a receiving station.

FDDI Characteristics

- 100 Mbps of data throughput
- Two interfaces
- Connects equipment to the ring over long distances
- Allows all stations to have equal amount of time to transmit data
- FDDI is a LAN with Station Management