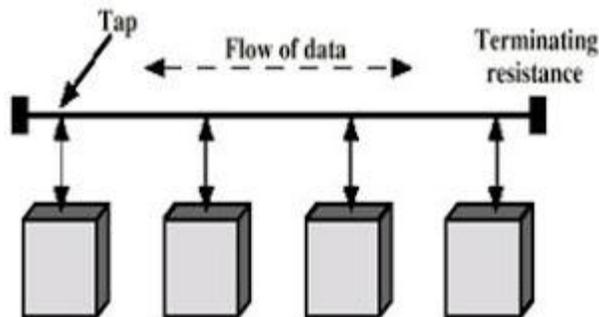


LAN Topologies

LAN TOPOLOGIES

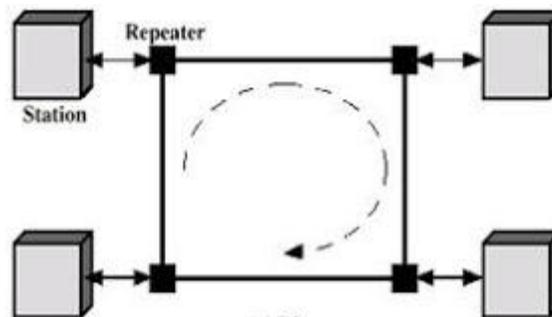
The physical layout of the device is called topology. There are several physical structure in which we can layout our computers/devices. (1) Bus (2) Star (3) Ring (4) Mesh.

BUS TOPOLOGY:



In bus topology all stations are attach through appropriate hardware interfacing known as tap, directly to a linear transmission medium or bus. At the end terminators are placed to absorb the frame. Nodes/stations are connected to the bus cable by drop lines and tap. A tap is a connector that either splices the main cable or punctures the sheeting of a cable to create a contact with a metallic core. As the signal travel along the backbone, some of its energy is transformed into heat. Therefore it becomes weaker & weaker as it travels farther & farther. For this reason there is a limit on the number of taps a bus can support and on the distance between the taps.

RING TOPOLOGY:

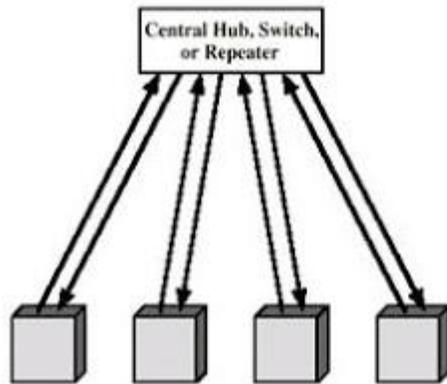


In this topology each device has a dedicated point-to-point connection with only two devices on either side of it. A signal is passed along the ring in one direction from device to device until it reaches its destination. When a device receives a signal

intended for another device, it's repeater regenerates the bits and passes them along.

A ring is relatively easy to install and configure. Each device is linked to only immediate neighbor.

STAR TOPOLOGY:



In the star LAN topology, each station is directly connected to a common central node. Typically, each station attaches to a central node, referred to as the star coupler, via two point-to-point links, one for transmission and one for reception.

In general, there are two alternatives for the operation of the central node.

One approach is for the central node to operate in a broadcast fashion. A transmission of a frame from one station to the node is retransmitted on all of the outgoing links. In this case, although the arrangement is physically a star, it is logically a bus; a transmission from any station is received by all other stations, and only one station at a time may successfully transmit.

Another approach is for the central node to act as a frame switching device. An incoming frame is buffered in the node and then retransmitted on an outgoing link to the destination station.

Source: <http://datacombasic.blogspot.in/2011/03/lan-topologies.html>