IT Homework Help – Topology – Sample

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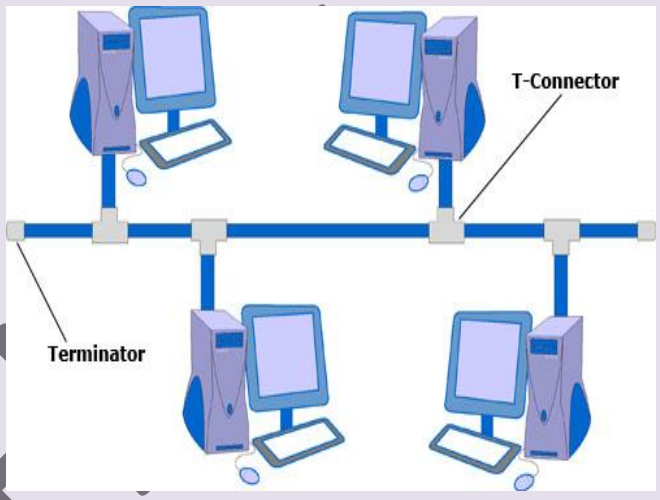
1.Introduction

Topology refers to the layout of connected device in computer networking parlance. There are 2 types of topology namely the Physical and the logical. Topology is the geometrical representation of how nodes are connected in a LAN.

Physical topology describes the layout of a network while a logical topology describes how the data is sent across the network and methods used to pass information across computers. Physical topology deals with cables, computers and its peripherals, its design, location and cable installation. It can be Bus topology, Ring topology, Mesh topology, Star topology, Tree topology.

2. Bus topology



This network supports shared communication because transmission is done through common vehicle. Each computer or network device is connected to a common bus (basically a coax cable). In bus topology only one device can transmit at one point of time. Direct access protocol keeps the information about data transmission by different stations. The data are transmitted in the form of frames that will further give us information about network address as well as source name. Bus network is basically passive – A signal can be just listened by computers. There is facility to handle collisions which normally occur when 2 nodes transmit at the same time resulting in 2 signals on single bus simultaneously. To keep check on above scenario CSMA/MA, a media access method is used.

2.1 Bus topology Functionality

Each node or computer on the network is connected to a single cable or bus or communication line. This segment trunk has 2 end points and signal will move from one end point to another end point. One end point will have terminator attached to it. Basically transmitter is used to understand direction of data flow. Moreover it is also used to absorb signals. Incase terminator is not placed; in that case signal will be reflected back therefore confusing the data flow on the bus.

2.2. Advantages

1) It is very simple.
2) If one nodes stops working, others will not be effected and continue to work.

3) It's comparatively easy to build a bus network.
4) Bus network is economical since it uses least quantity of cable
5) Implementation and installation are easy.
6) Cable faults can be detected very easily
7) Lighter in weight due to less amount of cable being used.

2.3. Disadvantages

1) It does not support heavy traffic flow of data.
2) A network connection is required to identify if data is getting transferred between two computers
3) It can't be used as large networks due to limitation on no. of nodes that can be used with single Bus.
4) With the increase in number of nodes the data transmission rate decreases noticeably.
5) The entire network collapse if problem in bus occurs.
6) There is need of proper termination.
7) In the long run maintenance cost can be noticeably high.

To be continued……