NIELIT Gorakhpur

Course Name: O Level (2nd Sem) **Subject: ICT**
Topic: Network Topologies **Date: 12-05-20**

Topology:

Geometric representation of how the computers are connected to each other is known as topology. It also includes the schematic description of a network arrangement, connecting various nodes(sender and receiver) through lines of connection.

Types of Topology:

There are five types of topology in computer networks:

1) Mesh Topology:

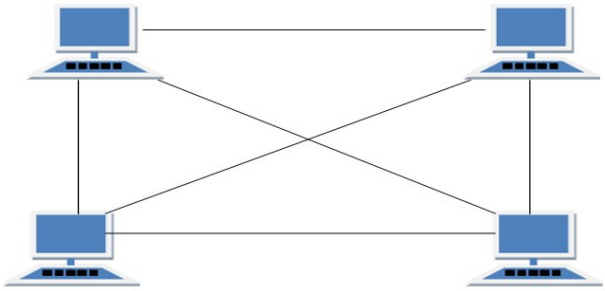
In mesh topology each device is connected to every other device on the network through a dedicated point-to-point link. Dedicated means that the link only carries data for the two connected devices only. Further mesh topology is divided into full mesh and partial mesh topology.

Advantages of Mesh topology:

1. No data traffic issues.
2. Mesh topology is reliable and robust as failure of one link doesn't affect other links
3. No unauthorized access.
4. Fault detection is easy.

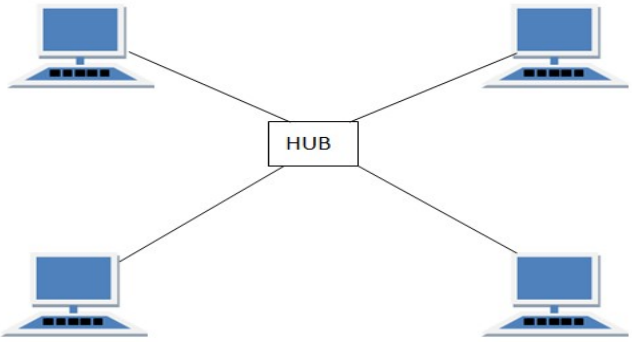
Disadvantages of Mesh topology:

1. Large amount of wires required.
2. Number of I/O ports required must be huge.



2) Star Topology:

In star topology each device in the network is connected to a central device called hub. A device must have to communicate through hub. If one device wants to send data to other device, it has to first send the data to hub and then the hub transmit that data to the designated device.



Advantages of Star Topology:

1. Hub can be upgraded easily.
2. Easy to troubleshoot.
3. Easy to setup and modify.
4. Only that node is affected which has failed, rest of the nodes can work smoothly.

Disadvantages of Star Topology:

1. If the hub fails then the whole network is down because all the nodes depend on the hub.
2. Performance is based on the hub and its capacity.

Exercise:

1. What is topology? Explain.
2. Exaplain mesh and star topology.