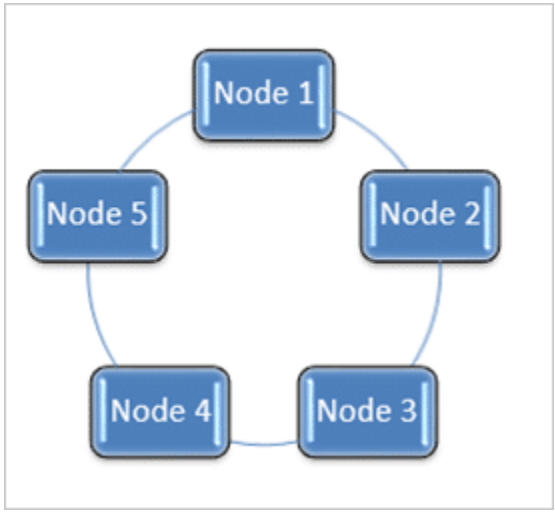
#2) RING Topology:

In this topology, each computer is connected to another computer in the form of a ring with the last computer connected to the first one.



Each device will have two neighbors. The data flow in this topology is unidirectional but can be made bidirectional by using the dual connection between each node which is called a dual ring topology.

In a dual ring topology, two rings work in the main and protection link so that if one link fails then the data will flow through the other link and keep the network alive, thereby providing self-healing architecture.

Advantages:

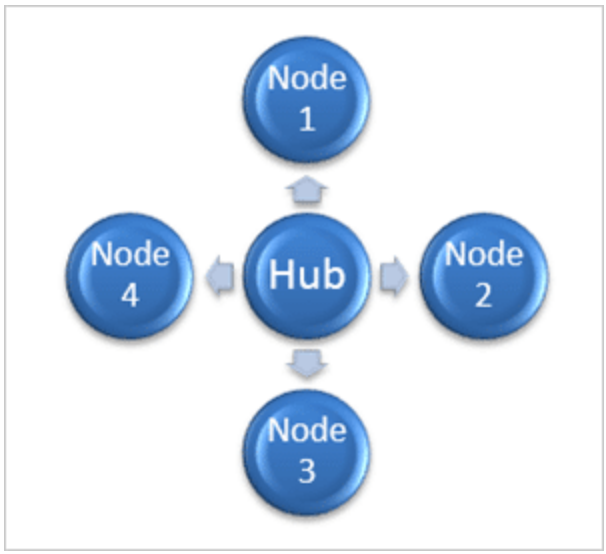
- Easy to install and expand.
- Can be easily used for transmitting huge traffic data.

Disadvantages:

- Failure of one node will affect the whole network.
- Troubleshooting is difficult in a ring topology.

#3) STAR Topology:

In this type of topology, all the nodes are connected to a single network device through a cable.



The network device can be a hub, switch or router, which will be a central node and all the other nodes will be connected with this central node. Every node has its own dedicated connectivity with the central node. The central node can behave as a repeater and can be used with OFC, twisted wire cable etc.

Advantages:

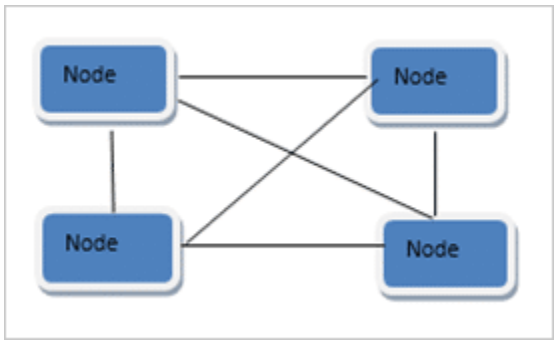
- Up-gradation of a Central node can be done easily.
- If one node fails, then it will not affect the whole network and the network will run smoothly.
- Troubleshooting of fault is easy.
- Simple to operate.

Disadvantages:

- High cost.
- If the central node gets faulty then the whole network will get interrupted as all nodes are dependent on the central one.
- Performance of the network is based on the performance and capacity of the central node.

#4) MESH Topology:

Every node is connected to another one with a point to point topology and every node is connected to each other.



There are two techniques to transmit data over the Mesh Topology. One is routing and the other is flooding. In the routing technique, the nodes follow a routing logic as per the network required to direct the data from the source to destination using the shortest path.

In the flooding technique, the same data is transmitted to all the nodes of the network, hence no routing logic is required. The network is robust in case of flooding and it is hard to lose any data, however, it leads to unwanted load over the network.

Advantages:

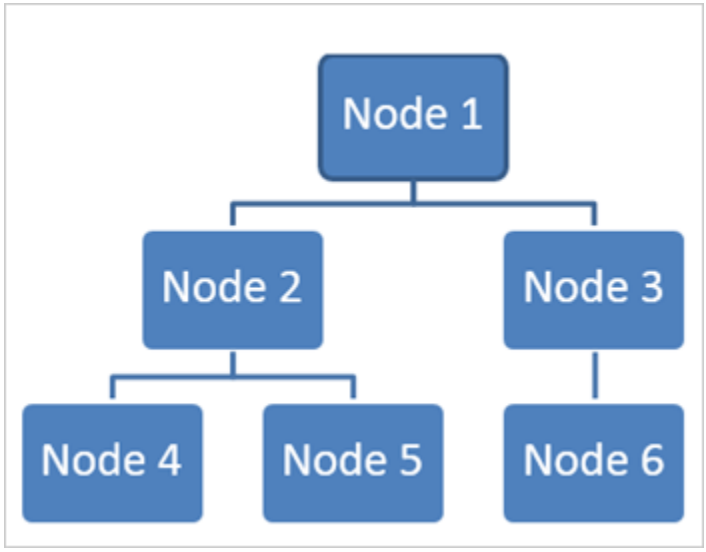
- It is robust.
- Fault can easily be detected.
- Very secure

Disadvantages:

- Very costly.
- Installation and configuration are hard.

#5) TREE Topology:

It has a root node and all the sub-nodes are connected to the root node in the form of the tree, thereby making a hierarchy. Normally, it has three levels of hierarchy and it can be expanded according to the need of the network.



Advantages:

- Fault detection is easy.
- Can expand the network whenever needed as per the requirement.
- Easy maintenance.

Disadvantages:

- High cost.
- When used for WAN, it is difficult to maintain.

Transmission Modes in Computer Networks

It is the method of transmitting the data between two nodes connected over a network.

There are three types of Transmission modes, which are explained