

## Unit - 2 Networking

### 1 Describe Network Topologies.

There are four type of Network Topologies.

- 1 Bus Topology
- 2 Star Topology
- 3 Ring Topology
- 4 Mesh Topology

### 1 Bus Topology:

In Bus Topology, all stations attach through appropriate hardware interfacing know as a tap.

Bus Topology is very cost effective.

### → Advantages:

- 1 Cheap and Easy to implement

2 Require less cable.

3 Does not use any specialized network

-> Disadvantages:

1 Network Disruption

2 Difficult to troubleshoot.

2 Star Topology:

In star topology, each station is directly connected to a common central node.

Use of star topology, very high speeds of data transfer can be achieved.

-> Advantages:

1 Easily expanded without disruption.

2 Cable failure affects only a single user.

2 Require less cable.

3 Does not use any specialized network

-> Disadvantages:

1 Network Disruption

2 Difficult to troubleshoot.

2 Star Topology:

In star topology, each station is directly connected to a common central node.

Use of star topology, very high speeds of data transfer can be achieved.

-> Advantages:

1 Easily expanded without disruption

2 Cable failure affects only a single user

3 Easy to troubleshoot.

→ Disadvantages:

1 Requires more cable.

2 More difficult to implement

3 Ring Topology:

In ring topology, each station is jointed by point-to-point links in a closed loop.

In this topology, data are transmitted in one direction only.

→ Advantages:

1 Cable faults are easily located

2 Making troubleshooting easier

3 Easy to install.

-> Disadvantages:

1 Cause network Disruption

2 A single break in the cable can disrupt the entire network

4 Mesh Topology:

In mesh topology, every stations are conneted with each other

In this topology, two nodes are connected by dedicated point-point links between them

-> Advantages:

1 Provides redundant paths between devices.

2 Expanded without disruption

-> Disadvantages :

1 Not Flexible

2 A poor expandability

3 Requires more cable.

2 Explain any two networking devices.

There are many type of networking devices.

1 Hub

2 Switch

3 Bridge

4 Router

5 Proxy Server.

=> Router :

A router is a networking device that forwards data packets between computer networks.

More commonly, a router is used to provide connectivity across WAN links.

Routers are an increasingly common sight in any network environment.

Routers manage data communication with disparate remote sites.

Routers can reduce network traffic by creating domains.

Routers provide sophisticated routing, flow control and traffic isolation.

Routers are expensive compared to other network devices.

=> Bridge:

Bridges are networking devices that connect networks.

The basic function of bridge is blocking or forwarding.

Bridge reduces network traffic with minor segmentation and also reduces collisions.

Bridge increase the number of attached workstation and network segments.

Bridge are more expensive compare to another network devices.

Bridge is slower compare to repeaters due to the filtering process.

Some bridge connect network having different architectures and media types.