

Network Topologies

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What is Network Topology?

Network topology is the way devices are connected in a network. It defines how these components are connected and how data transfer between the network. Understanding the different types of network topologies can help in choosing the right design for a specific network.

Types of Network Topology

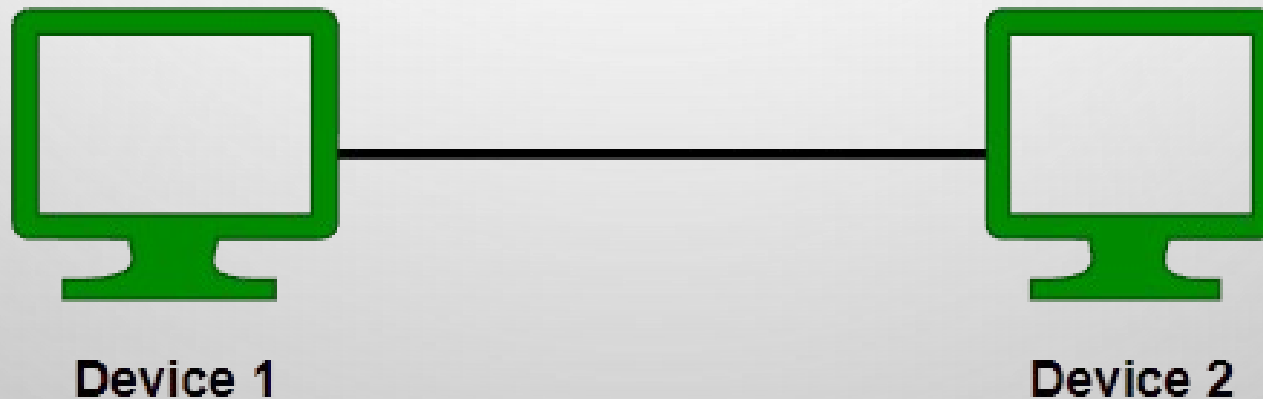
Below mentioned are the types of Network Topology

1. Point to Point Topology
2. Mesh Topology
3. Star Topology
4. Bus Topology
5. Ring Topology
6. Tree Topology
7. Hybrid Topology

1. Point to Point Topology

Point-to-point topology is a type of topology that works on the functionality of the sender and receiver. It is the simplest communication between two nodes, in which one is the sender and the other one is the receiver. Point-to-Point provides high bandwidth.

Point to Point Topology



2. Mesh Topology

In computer networking, a mesh topology is a network where each device is directly connected to every other device, creating multiple paths for data transmission.

This redundancy enhances fault tolerance and reliability, allowing data to bypass failed links and still reach its destination.

$$N(N-1)/2$$

Total Nodes= 6

So,

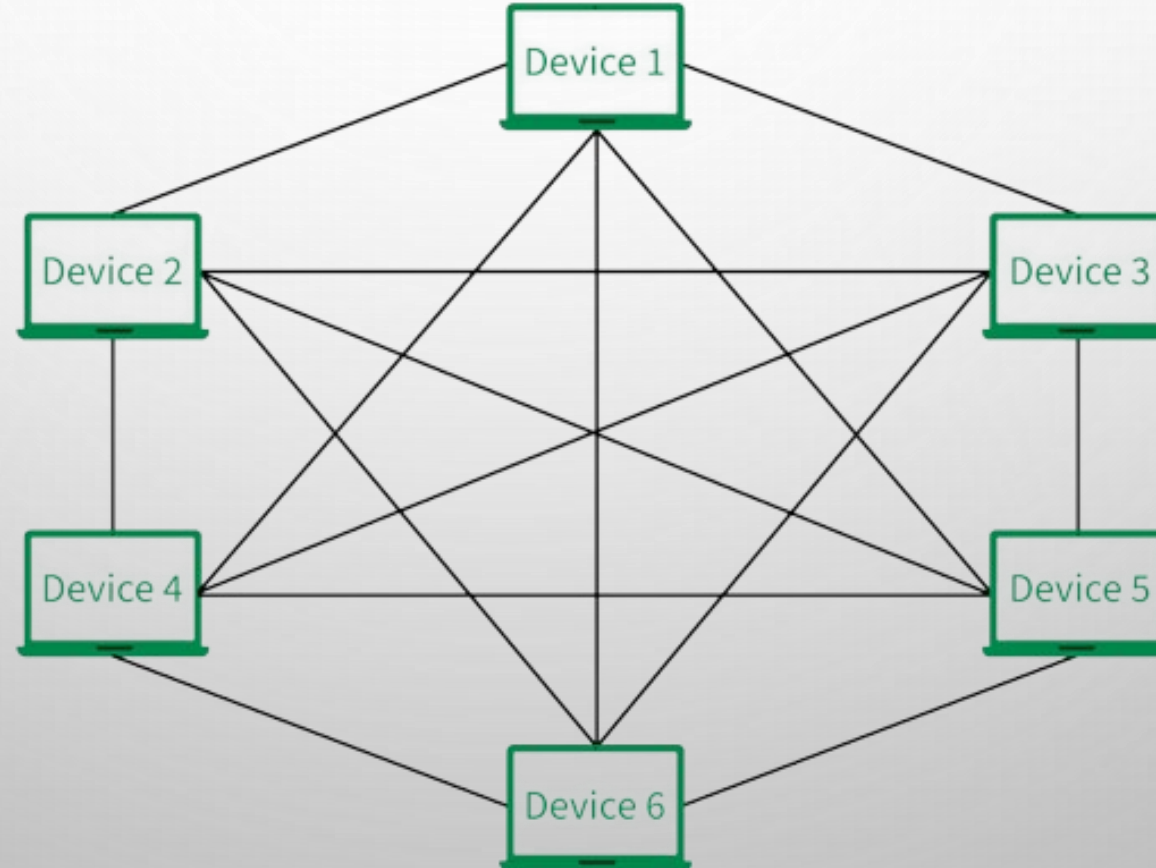
$$N(N-1)/2$$

$$=6(6-1)/2$$

$$=6(5)/2$$

$$=30/2$$

$$=15$$



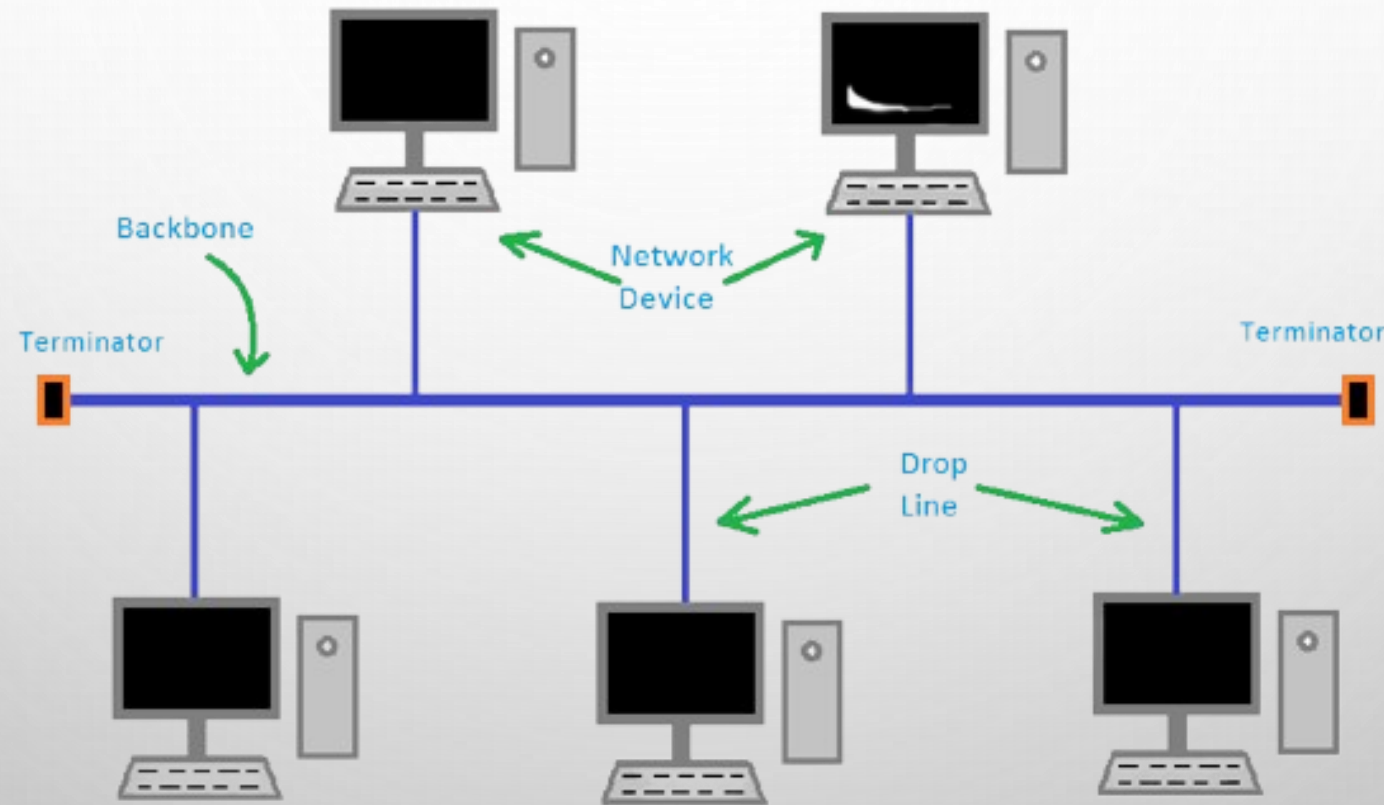
3. Star Topology

In Star Topology, all the devices are connected to a single hub through a cable. This hub is the central node and all other nodes are connected to the central node.



4. Bus Topology

Bus Topology is a network type in which every computer and network device is connected to a single cable. It is bi-directional. It is a multi-point connection

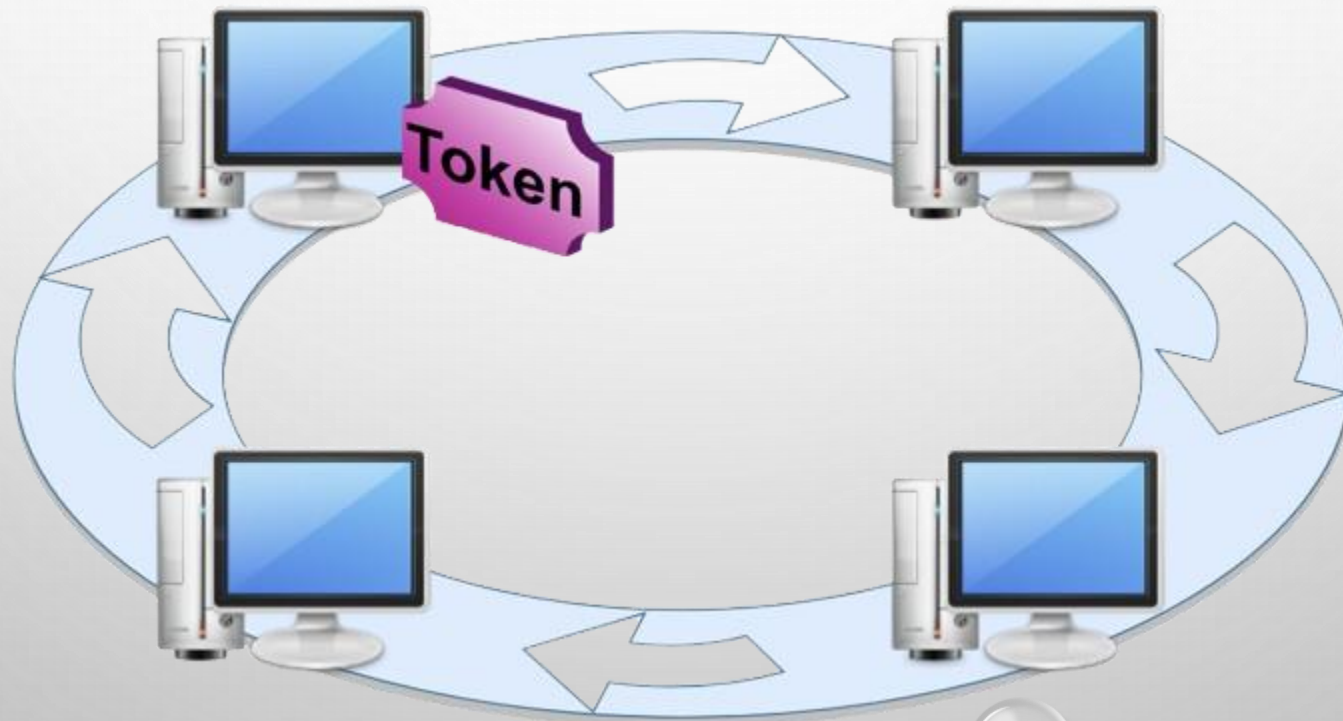


Bus Topology

5. Ring Topology

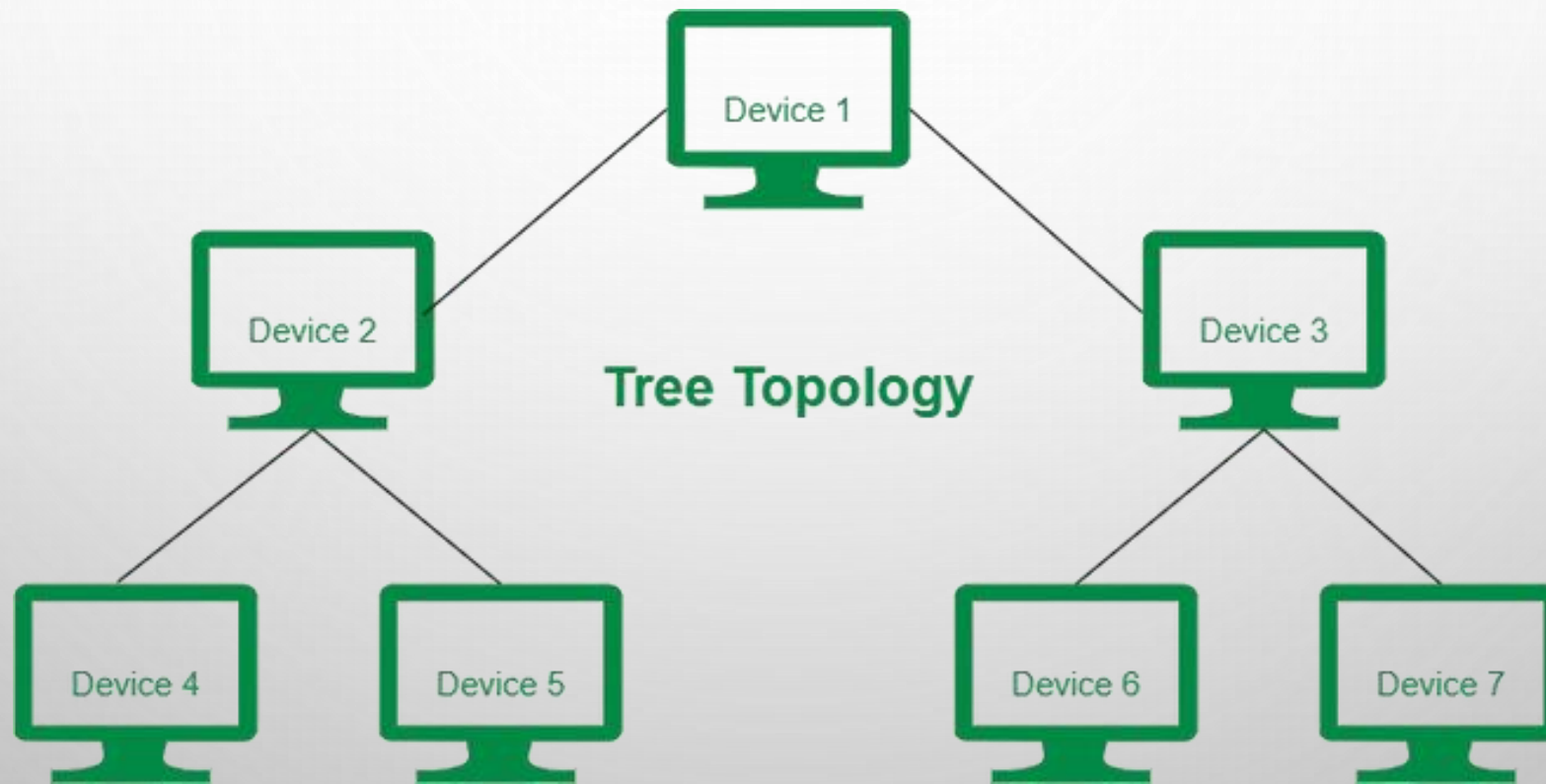
In computer networking, a ring topology connects network devices in a circular path, forming a closed loop where each device is linked to exactly two others.

Data travels in one direction around the ring, passing through each device until it reaches its destination



6. Tree Topology

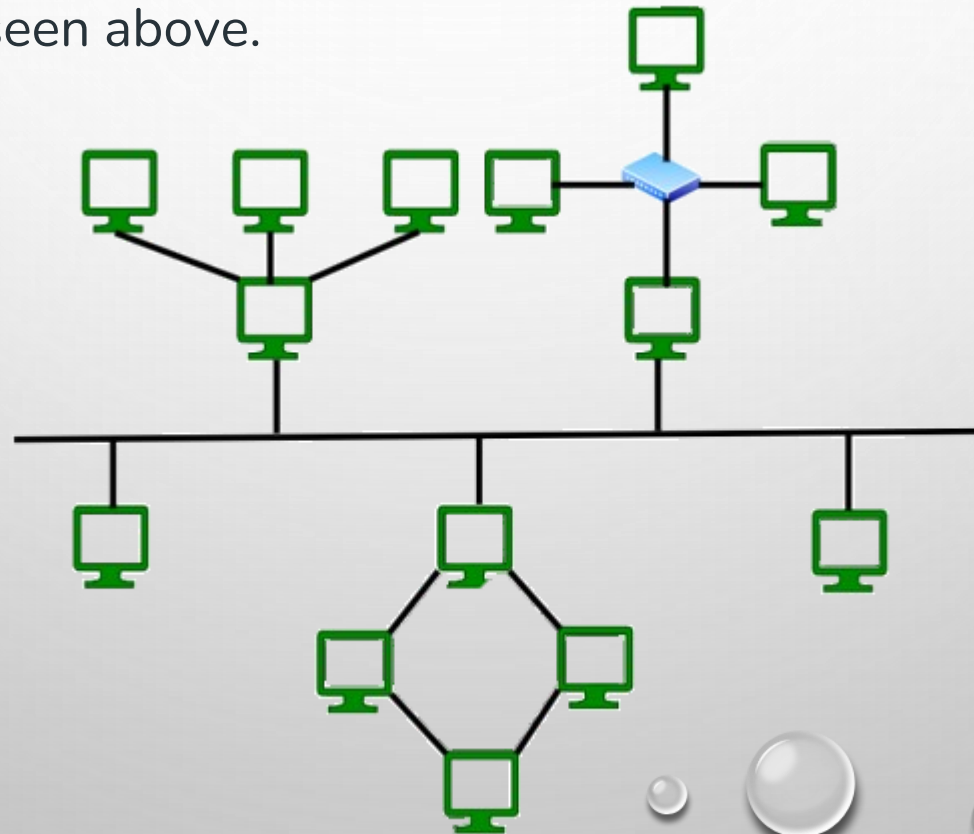
Tree topology is the variation of the Star topology. This topology has a hierarchical flow of data.



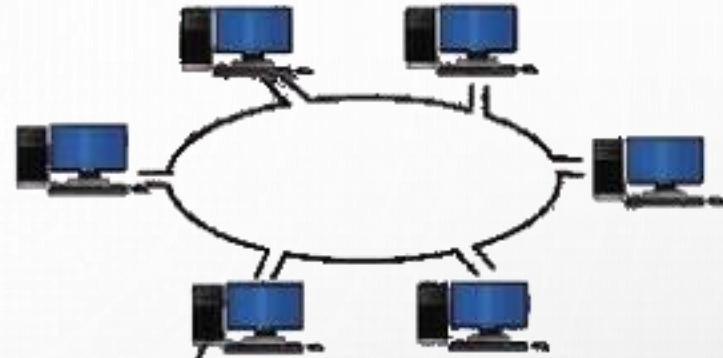
7. Hybrid Topology

Hybrid Topology is the combination of all the various types of topologies we have studied above.

Hybrid Topology is used when the nodes are free to take any form. It means these can be individuals such as Ring or Star topology or can be a combination of various types of topologies seen above.



Computer Networks



Hybrid Topology



END!

