Advantages and Disadvantages of Different Network Topologies

A network topology refers to the way in which nodes in a network are connected to one another. The way in which they are connected defines how they communicate. Each kind of arrangement of network nodes has its own advantages and disadvantages. Here we tell you about the same.

Network topologies describe the ways in which the elements of a network are connected. They describe the physical and logical arrangement of network nodes. Let us look at the advantages different network topologies offer and get to know their shortfalls.

Bus Topology

Advantages
It is easy to handle and implement.
It is best suited for small networks.

Disadvantages
The cable length is limited. This limits the number of stations that can be connected.
This network topology can perform well only for a limited number of nodes.

Ring Topology

Advantage
The data being transmitted between two nodes passes through all the intermediate nodes. A central server is not required for the management of this topology.

Disadvantages
The failure of a single node of the network can cause the entire network to fail.
The movement or changes made to network nodes affects the performance of the entire network.

Mesh Topology

Advantage
The arrangement of the network nodes is such that it is possible to transmit data from one node to many other nodes at the same time.

Disadvantage
The arrangement wherein every network node is connected to every other node of the network, many of the connections serve no major purpose. This leads to the redundancy of many of the network connections.

Star Topology

Advantages
Due to its centralized nature, the topology offers simplicity of operation.
It also achieves an isolation of each device in the network.

Disadvantage
The network operation depends on the functioning of the central hub. Hence, the failure of the central hub leads to the failure of the entire network.

For a detailed description of the various network topologies, you must go through the different types of network topologies.

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