

Network Topologies

- Topology can also be defined as the geometrically interconnection pattern by which the stations (nodes/computers) are connected using suitable transmission media (which can be point-to-point and broadcast).
- Different types of topologies are:
 1. Mesh Topology
 2. Bus Topology
 3. Star topology
 4. Ring topology
 5. Tree Topology

Mesh Topology:

- A mesh topology is a network topology in which each device is connected to every other device.
- Total number of links to connect n nodes are $n(n-1)/2$.
- The key characteristics of this topology are as follows:
 1. Fully connected
 2. Robust (highly reliable)
 3. Not flexible
 4. Poor expandability

Bus Topology:

- A bus topology is a network topology in which all devices are connected to a single cable.
- Total number of links to connect n nodes are $n-1$.
- The key characteristics of this topology are as follows:
 1. Moderately reliable
 2. Flexible
 3. Expandable
 4. Moderate performance

Star topology:

- A star topology is a network topology in which all devices are connected to a central hub or switch.
- Total number of links to connect n nodes are $n-1$.
- The key characteristics of this topology are as follows:
 1. High speed
 2. High flexibility
 3. High reliability
 4. High maintainability

Ring topology:

- A ring topology is a network topology in which devices are connected in a circular fashion.
- Total number of links to connect n nodes are n .
- The key characteristics of this topology are as follows:
 1. Moderately reliable
 2. Flexible
 3. Expandable
 4. Moderate performance

Tree Topology:

- A tree topology is a network topology in which devices are connected in a hierarchical fashion.
- Total number of links to connect n nodes are $n-1$.
- The key characteristics of this topology are as follows:
 1. Highly reliable
 2. Flexible
 3. Expandable
 4. High performance