

Lab - 5 [Network topology design using CISCO software]

Objective

- Design a network topology using CISCO software

Theory

- Network topology is defined as the way of arranging different nodes/components of a computer network in different patterns to define the flow of data and resources.
- There are many types of topologies:
 1. **BUS topology:** In BUS topology all the computers are connected in a single line, and failure in one node fails the entire system, although it is easy to implement and maintain.
 2. **Ring topology:** In RING topology the computers are connected in a ring-like pattern resolving the single direction flow of data in BUS topology although the failure of a single node to failure of the entire system still persists
 3. **STAR topology:** In Star topology, we have a central server computer and all other computers are connected to that central computer, which means the failure of one computer does not affect others unless it is the central computer itself.
 4. **TREE topology:** In TREE topology we have a hierarchical parent-child-like pattern, which is good for expanding the network, though it needs more wires and maintenance.
 5. **MESH topology:** In MESH topology all the computers are connected to each other which means failure in one computer does not affect the system at all, though more wires are needed.
 6. **HYBRID topology:** In HYBRID topology we use more than one kind of topology which will bring the advantage of each topology though disadvantages of each topology will be present too.

Procedures

- We use the options in CISCO to create some computers and some routers
- We then connect the routers and computers with wires
- Configure the IP address and subnet mask of routers
- Configure the IP address and subnet mask of computers according to the connected routers

- ## Output

