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FACULTY OF ENGINEERING & TECHNOLOGY

DCS-503 Computer Networks

Lecture-04

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OUTLINE

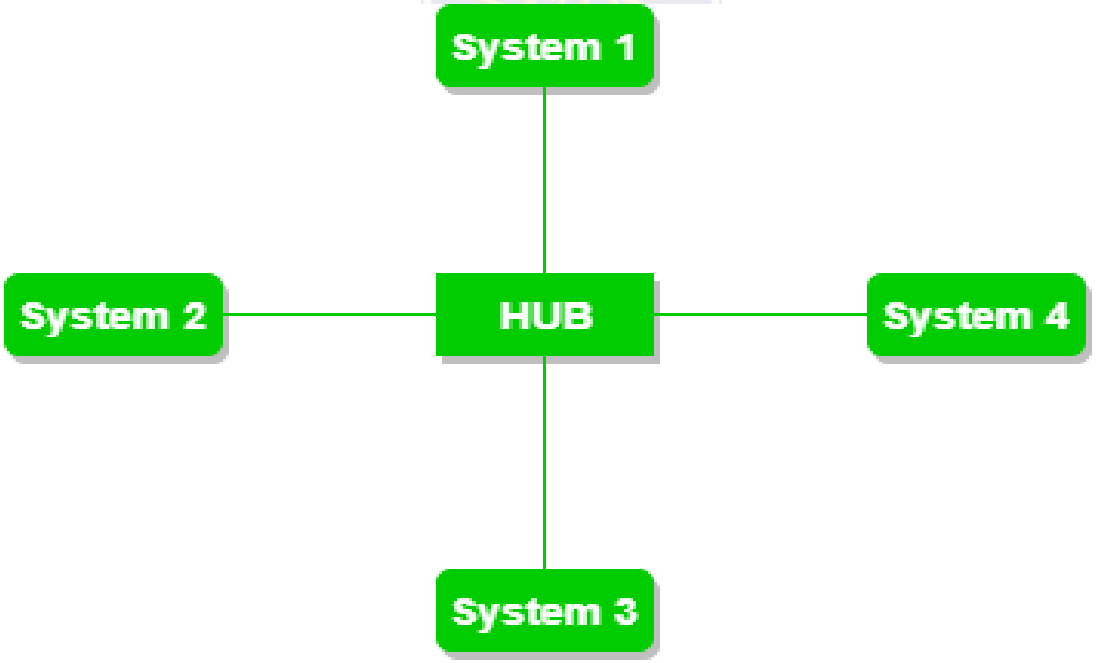
- CATEGORIES OF TOPOLOGY
- STAR TOPOLOGY
- RING TOPOLOGY
- HYBRID TOPOLOGY

TOPOLOGY IN COMPUTER NETWORK

A Network Topology is the arrangement with which computer systems or network devices are connected to each other. Topologies may define both physical and logical aspect of the network. Both logical and physical topologies could be same or different in a same network.

STAR TOPOLOGY IN COMPUTER NETWORK

In star topology, all the devices are connected to a single hub through a cable. This hub is the central node and all others nodes are connected to the central node. The hub can be passive in nature i.e. not intelligent hub such as broadcasting devices, at the same time the hub can be intelligent known as active hubs.



STAR TOPOLOGY ADVANTAGE AND PROBLEM

ADVANTAGE :

- If N devices are connected to each other in star topology, then the number of cables required to connect them is N.

So, it is easy to set up.

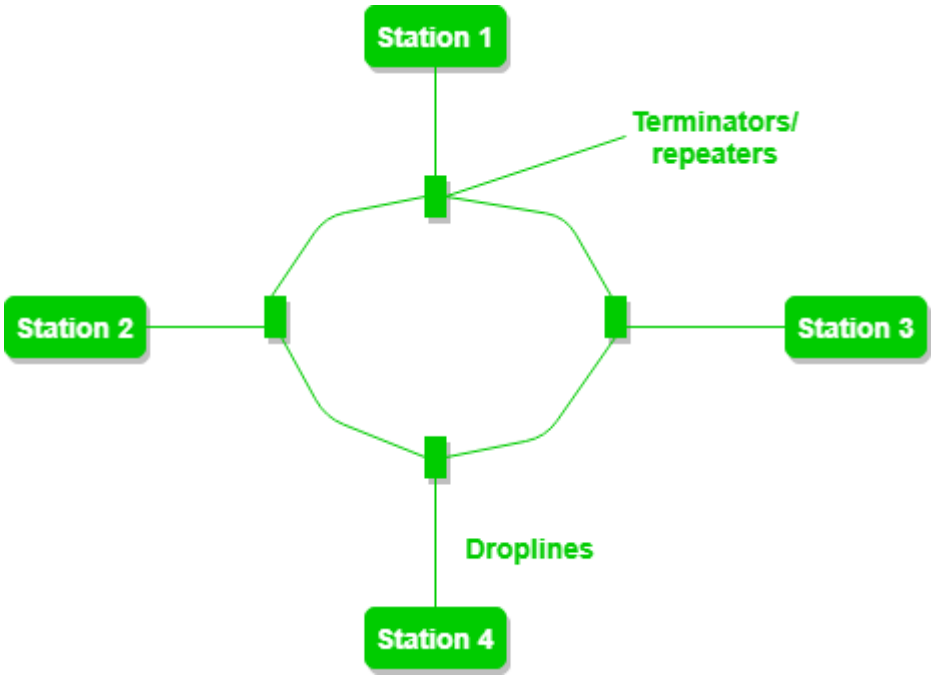
- Each device require only 1 port i.e. to connect to the hub.

PROBLEM:

- If the concentrator (hub) on which the whole topology relies fails, the whole system will crash down.
- Cost of installation is high.
- Performance is based on the single concentrator i.e. hub.

RING TOPOLOGY IN COMPUTER NETWORK

In this topology, it forms a ring connecting a devices with its exactly two neighboring devices.



RING TOPOLOGY ADVANTAGE AND PROBLEM

ADVANTAGE :

- The possibility of collision is minimum in this type of topology.
- Cheap to install and expand.

PROBLEM:

- Troubleshooting is difficult in this topology.
- Addition of stations in between or removal of stations can disturb the whole topology.

HYBRID TOPOLOGY IN COMPUTER NETWORK

This topology is a collection of two or more topologies which are described above. This is a scalable topology which can be expanded easily. It is reliable one but at the same it is a costly topology.

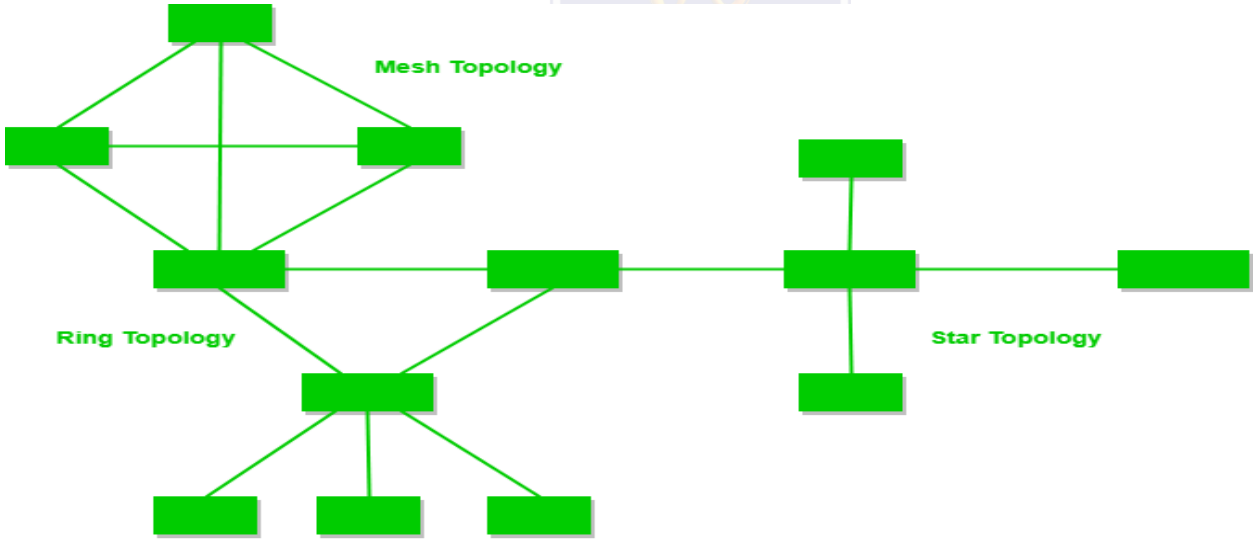


Figure - A Hybrid Topology

Multiple Choice Question

MUTIPLE CHOICE QUESTIONS:

1. A term that refers to the way in which the nodes of a network are linked together.

a)network b)topology c)connection d) interconnectivity

2. A network comprising of multiple topologies

A) Complex B)Hybrid C)BUS D)STAR

3. A Topology that involves Tokens

A)RING B)Hybrid C)BUS D)STAR

4._____ LAN topology describes the possible connections between pairs of networked end-points that can communicate.

A) Complex B)Hybrid C)logical D)STAR Intranet

5. A _____WAN can be developed using leased private lines or any other transmission facility

A)Hybrid B)Peer-to-Peer C)Autonomous D)Integrated

REFERENCES

- http://www.engppt.com/2009/12/networking-fourozan-ppt-slides.html