Networking Device Icons

Network Devices		
Repeater	Bridge	
10BASE-T Hub	Workgroup Switch	
100BASE-T Hub	Router	
Hub	Network Cloud	

Repeater

A repeater is a network device used to regenerate a signal. Repeaters regenerate analog or digital signals distorted by transmission loss due to attenuation. A repeater does not perform intelligent routing.
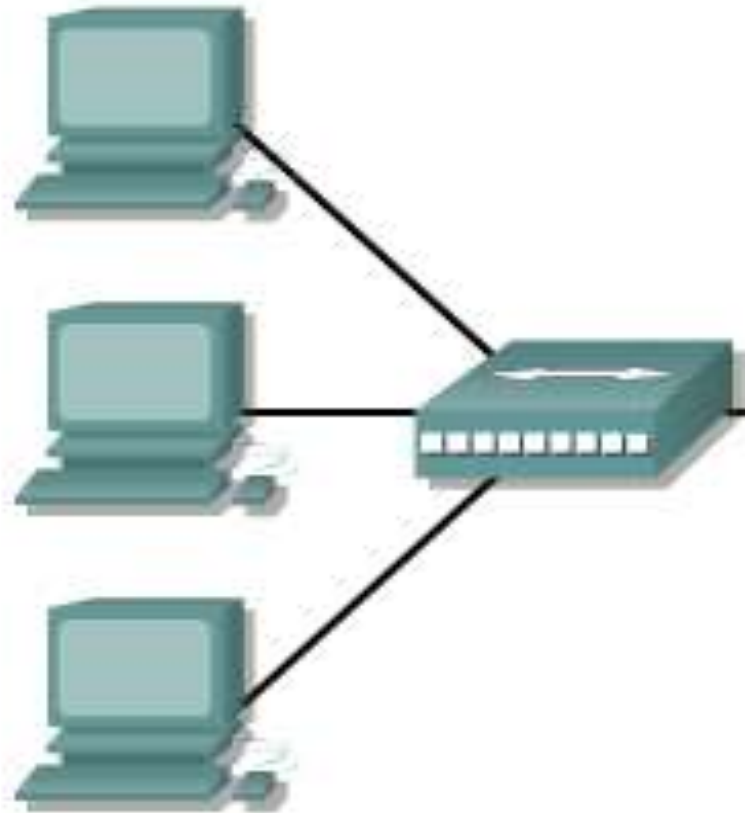

2-1-3 fig 6
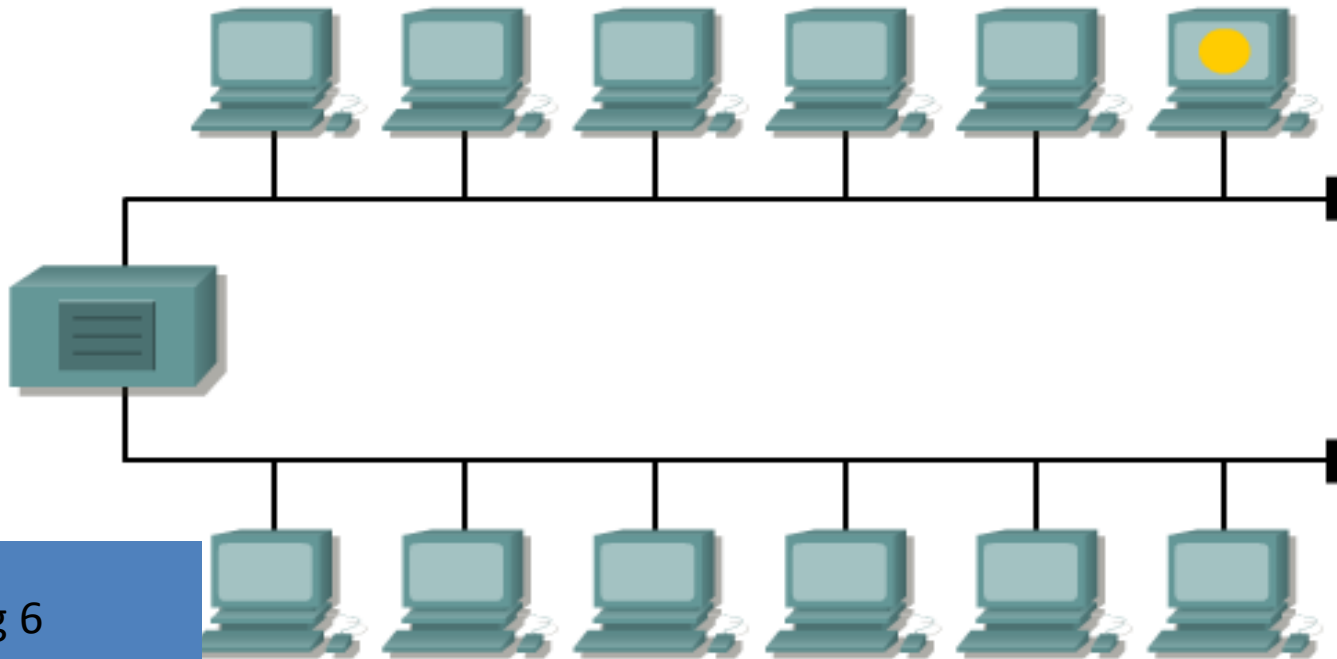
Hub

Hubs concentrate connections. In other words, they take a group of hosts and allow the network to see them as a single unit.

This is done passively, without any other effect on the data transmission.

Active hubs not only concentrate hosts, but they also regenerate signals.

Bridge

Bridges convert network transmission data formats as well as perform basic data transmission management. Bridges, as the name implies, provide connections between LANs. Not only do bridges connect LANs, but they also perform a check on the data to determine whether it should cross the bridge or not. This makes each part of the network more efficient.

**Segment 1**   **Segment 2**
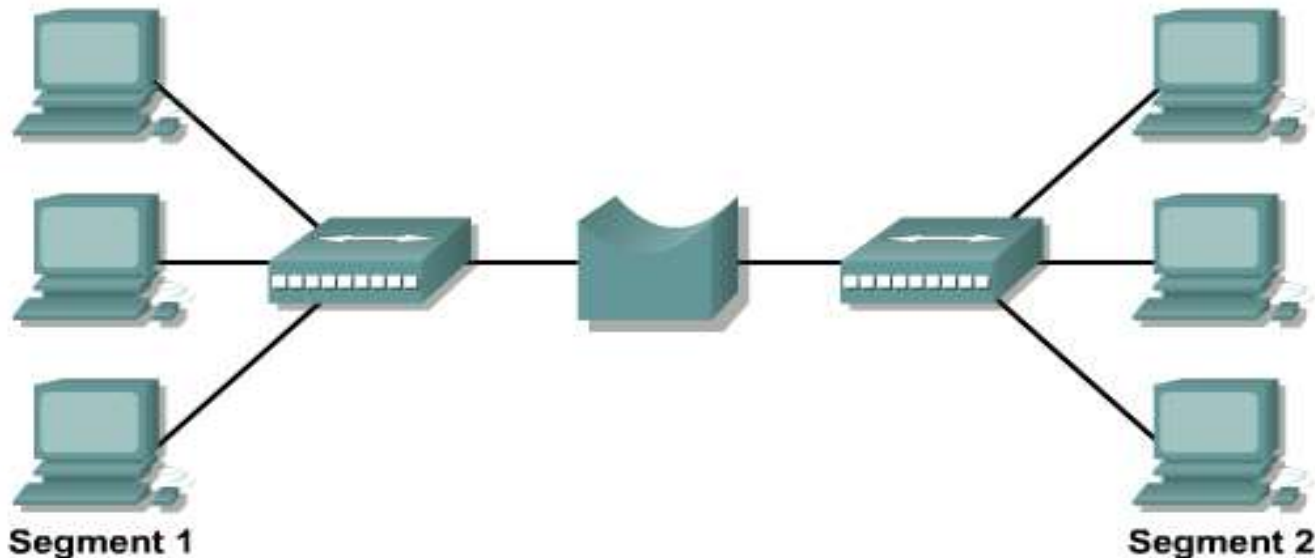
Workgroup Switch

Workgroup switches add more intelligence to data transfer management.

Switches can determine whether data should remain on a LAN or not, and they can transfer the data to the connection that needs that data.
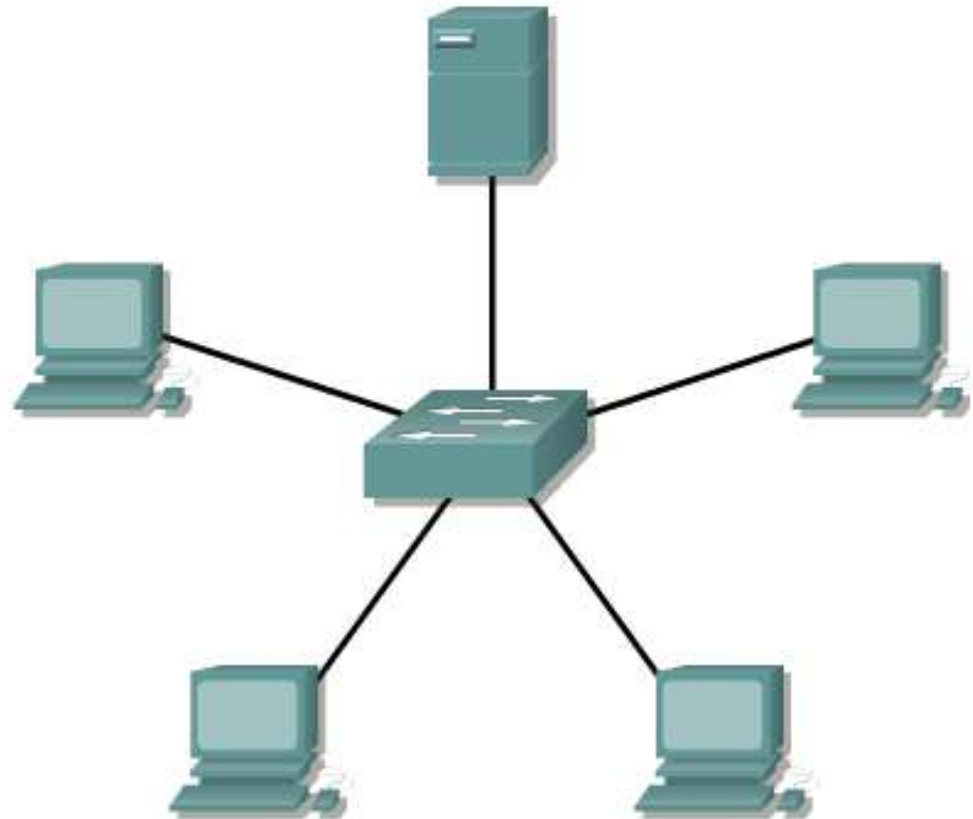
Router

Routers have all capabilities of the previous devices. Routers can regenerate signals, concentrate multiple connections, convert data transmission formats, and manage data transfers.They can also connect to a WAN, which allows them to connect LANs that are separated by great distances.
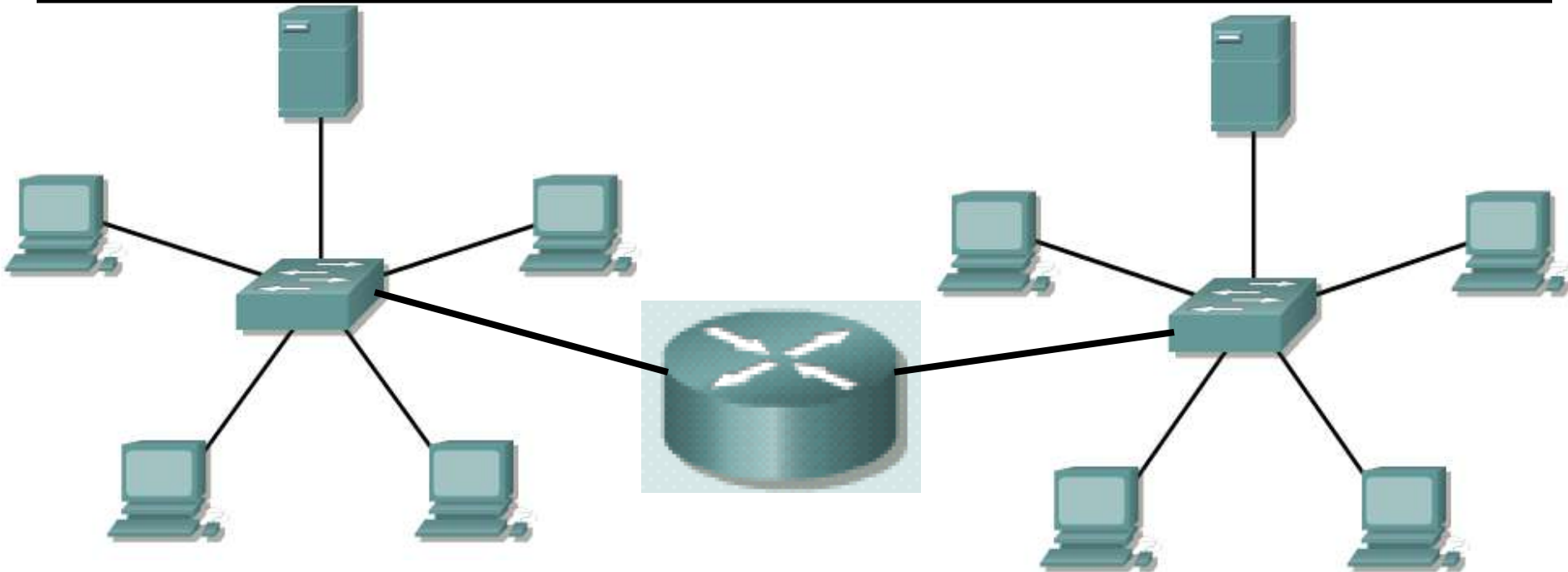
"The Cloud"

The cloud is used in diagrams to represent where the connection to the internet is.

It also represents all of the devices on the internet.
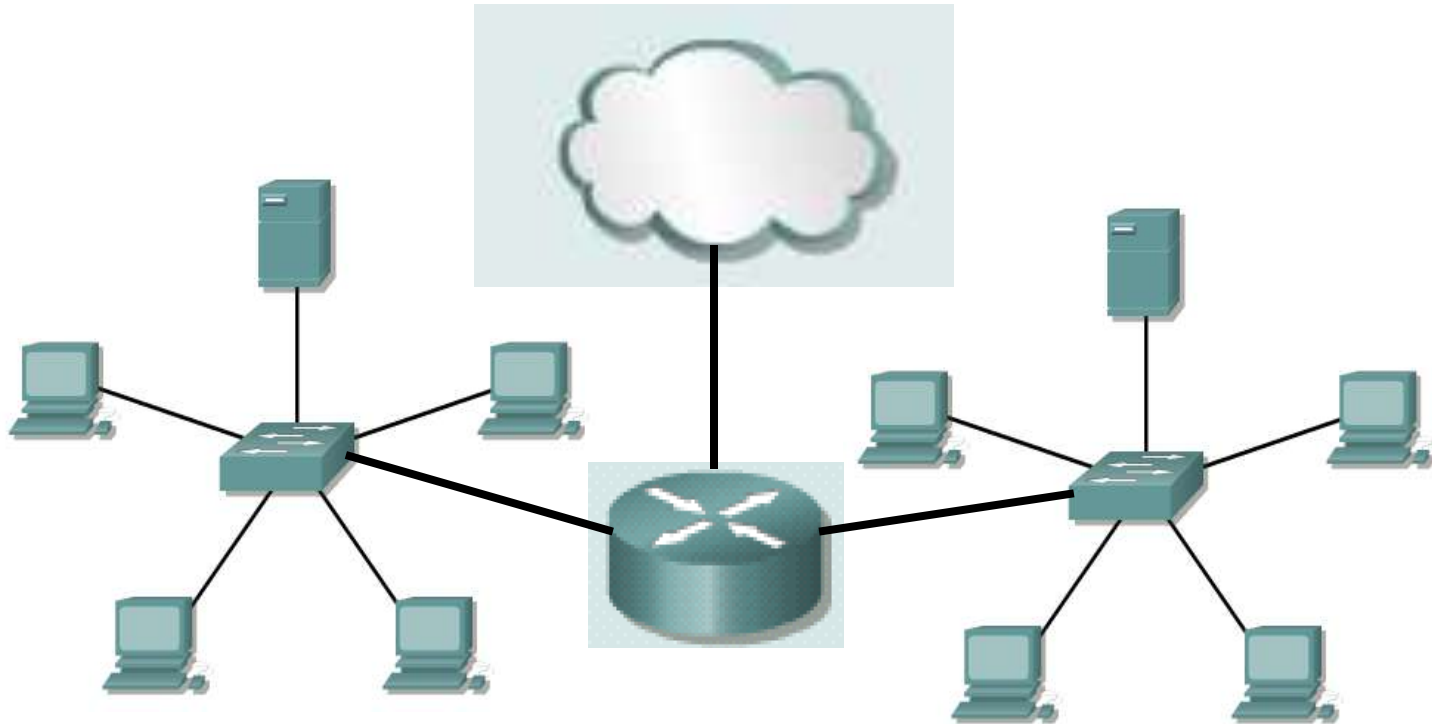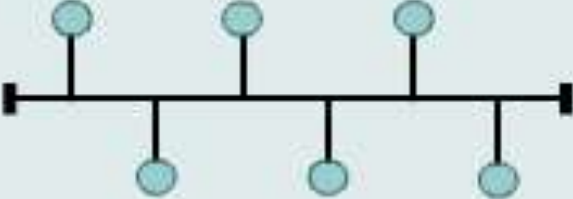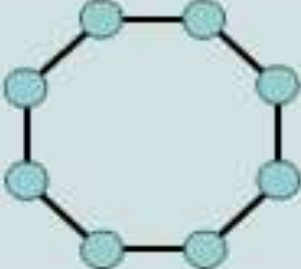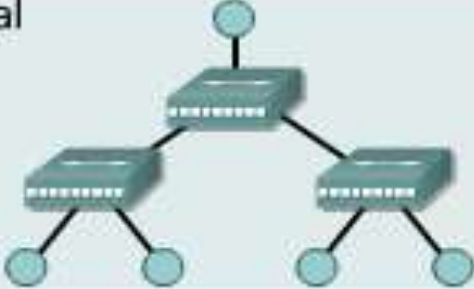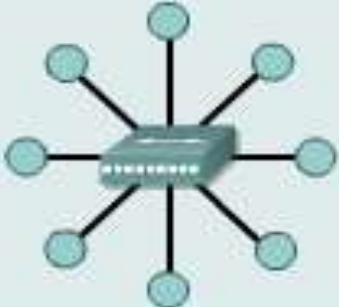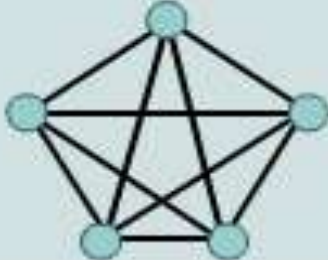
Network Topologies

Network topology defines the structure of the network.

One part of the topology definition is the physical topology, which is the actual layout of the wire or media.

The other part is the logical topology,which defines how the media is accessed by the hosts for sending data.
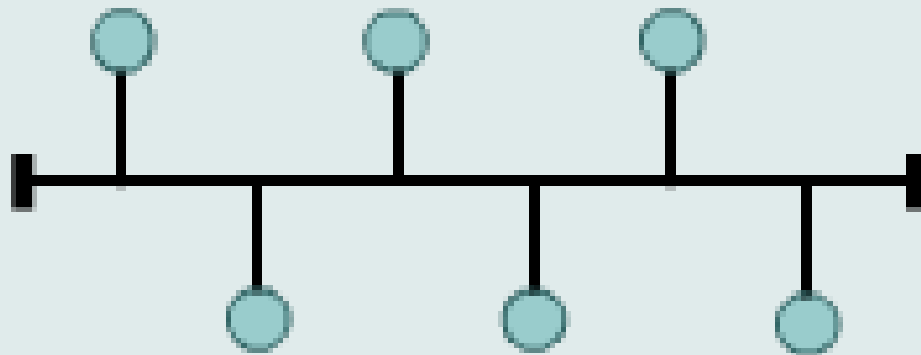
Physical Topologies

Bus Topology

A bus topology uses a single backbone cable that is terminated at both ends.

All the hosts connect directly to this backbone.
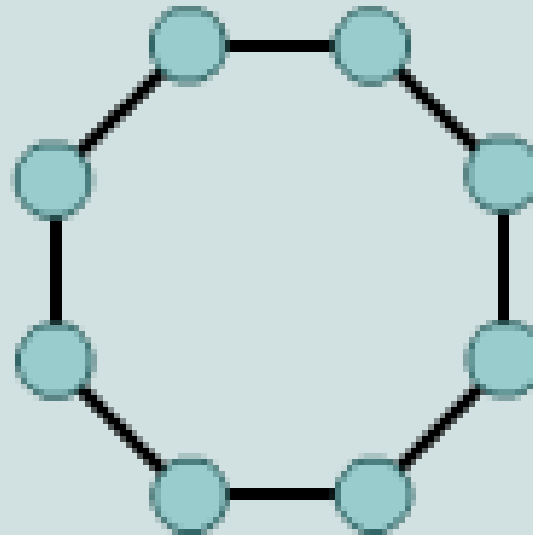
Bus Topology

Ring Topology

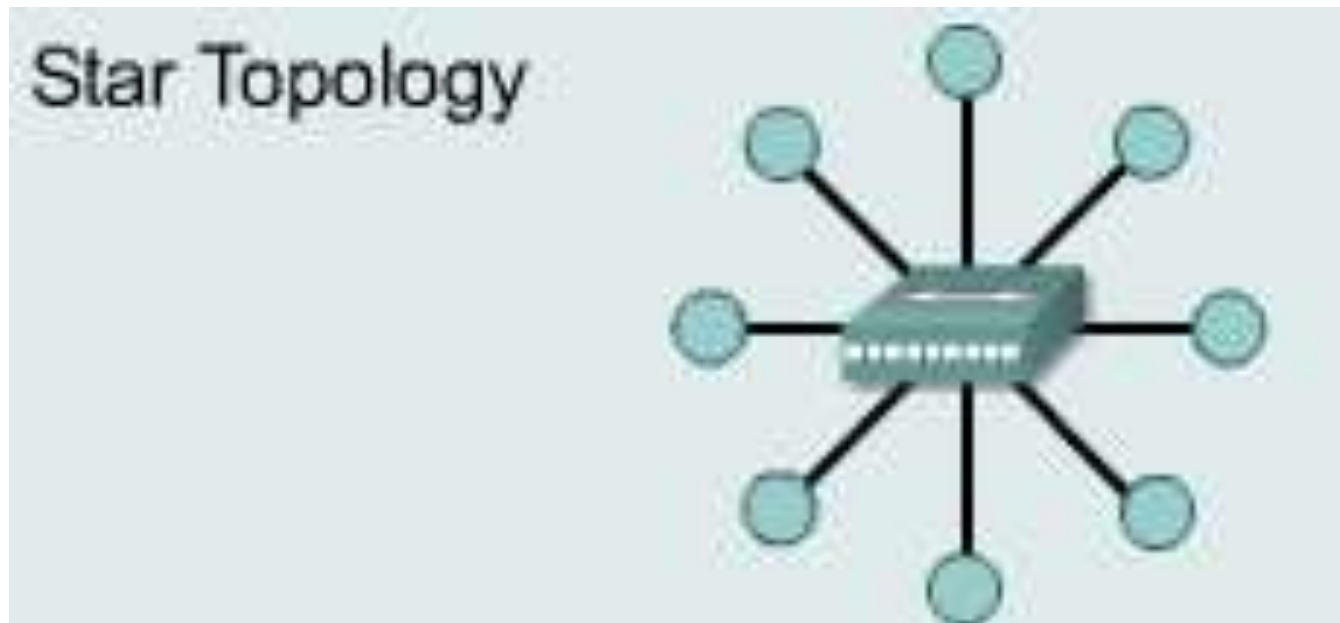A ring topology connects one host to the next and the last host to the first.

This creates a physical ring of cable.

Ring Topology

Star Topology

A star topology connects all cables to a central point of concentration.
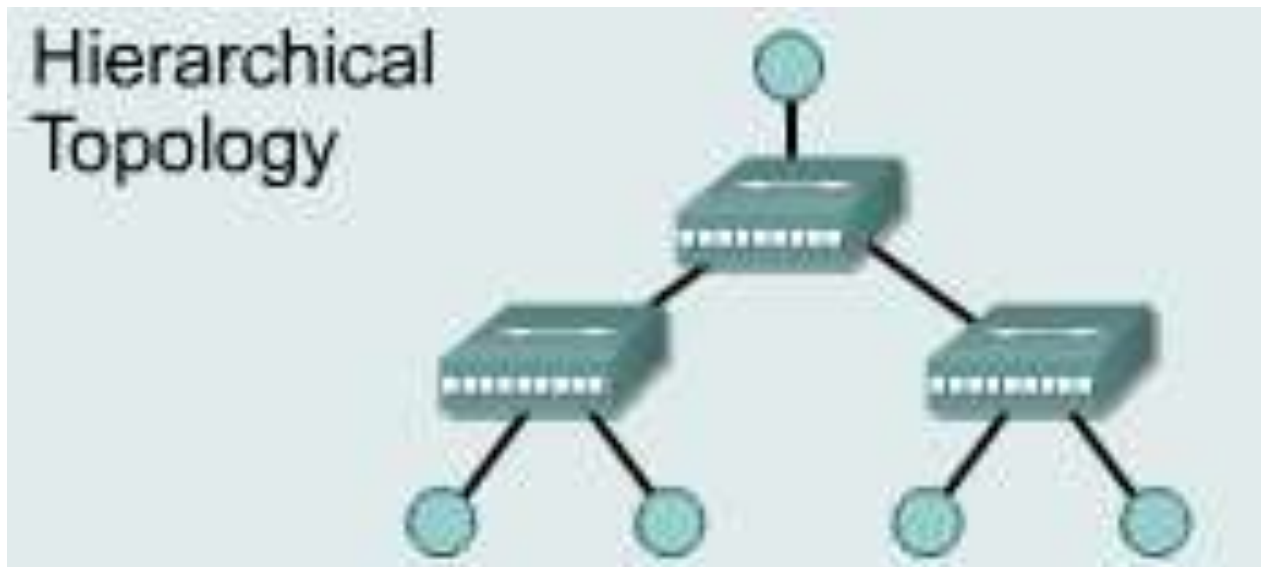

Star Topology

Extended Star Topology

An extended star topology links individual stars together by connecting the hubs and/or switches.This topology can extend the scope and coverage of the network.

Extended Star Topology
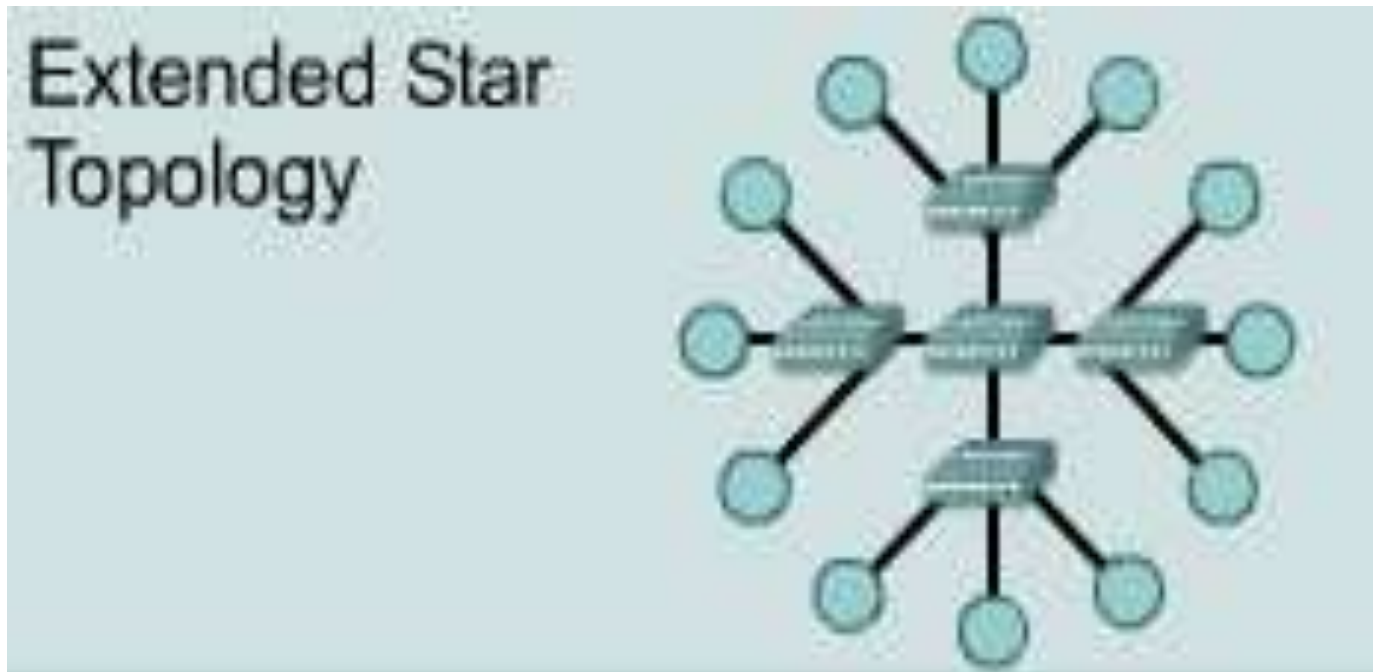
Hierarchical Topology

A hierarchical topology is similar to an extended star.

Hierarchical Topology

Mesh Topology

A mesh topology is implemented to provide as much protection as possible from interruption of service.
Each host has its own connections to all other hosts. Although the Internet has multiple paths to any one location, it does not adopt the full mesh topology.

Mesh Topology