Tutorial 3 – Network Topologies

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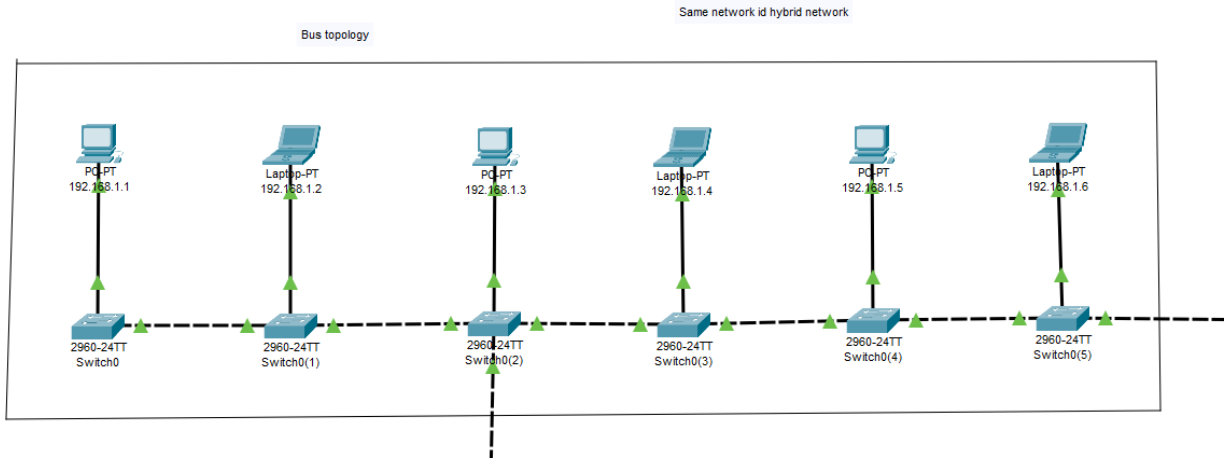
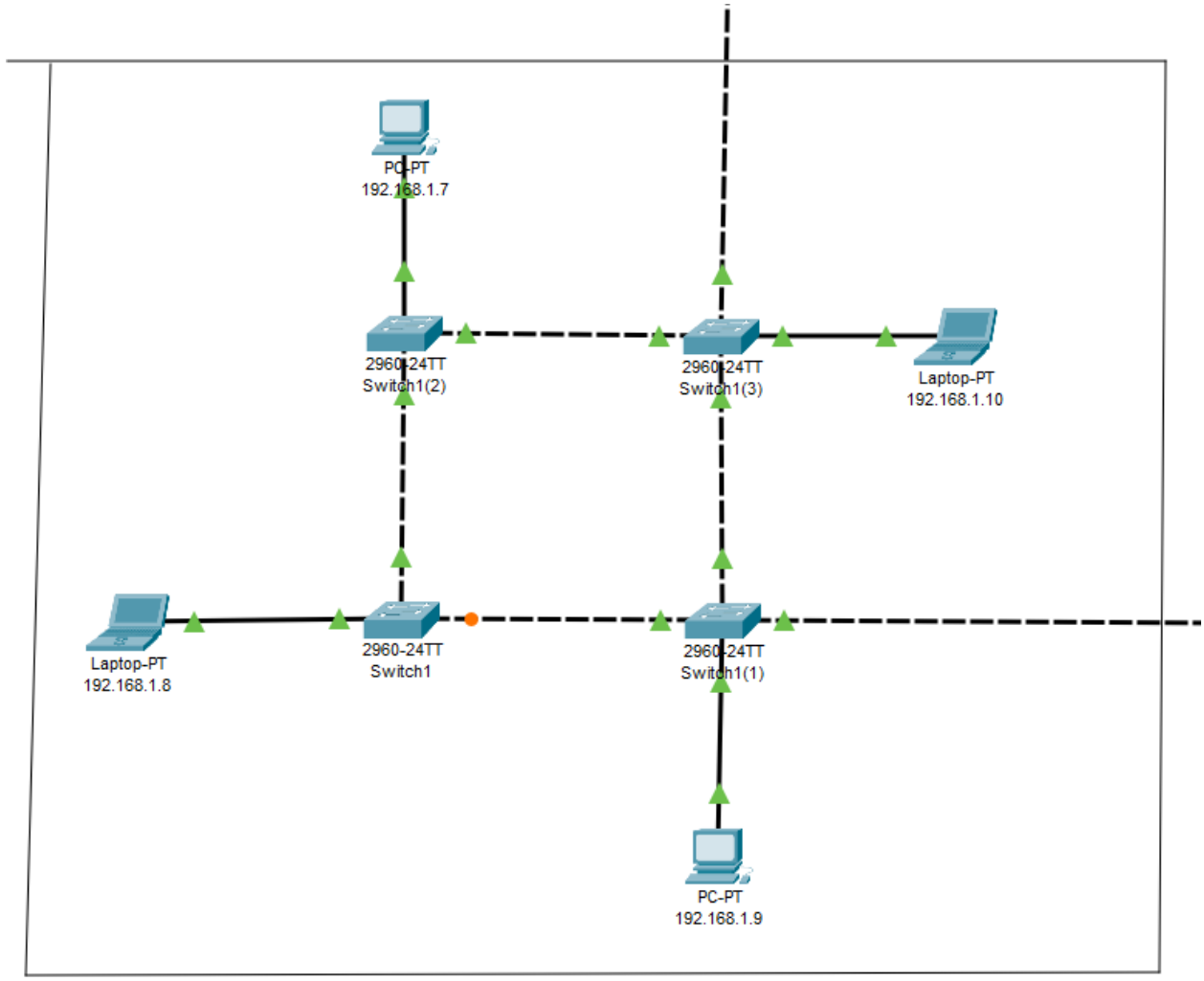
CS21B1053

Bus Topology



This topology is formed when the central network components are connected in a series fashion.
The network topology is not reliable as the unavailability of any one link can stop the network from functioning properly.

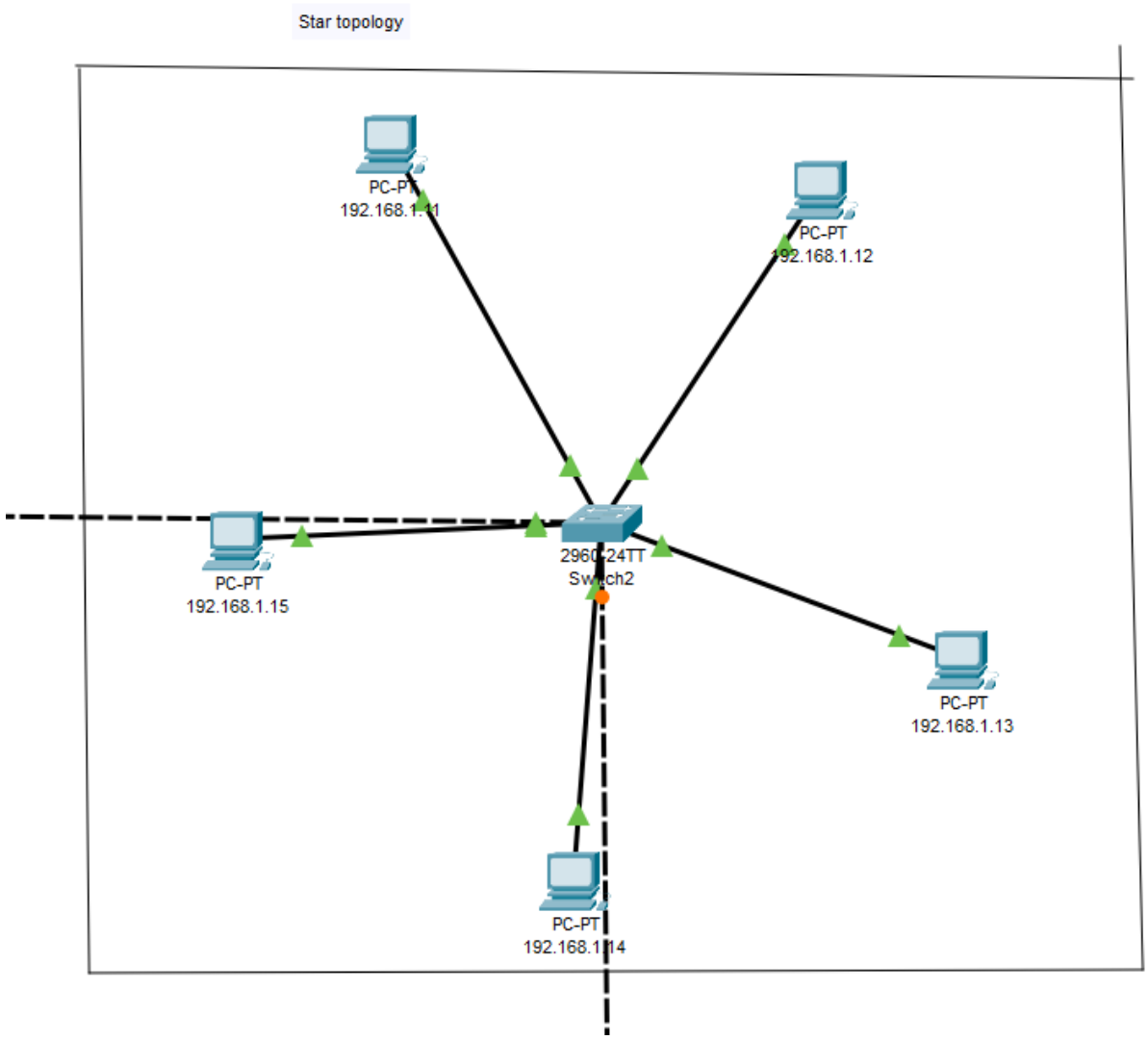
Ring topology



Ring Topology

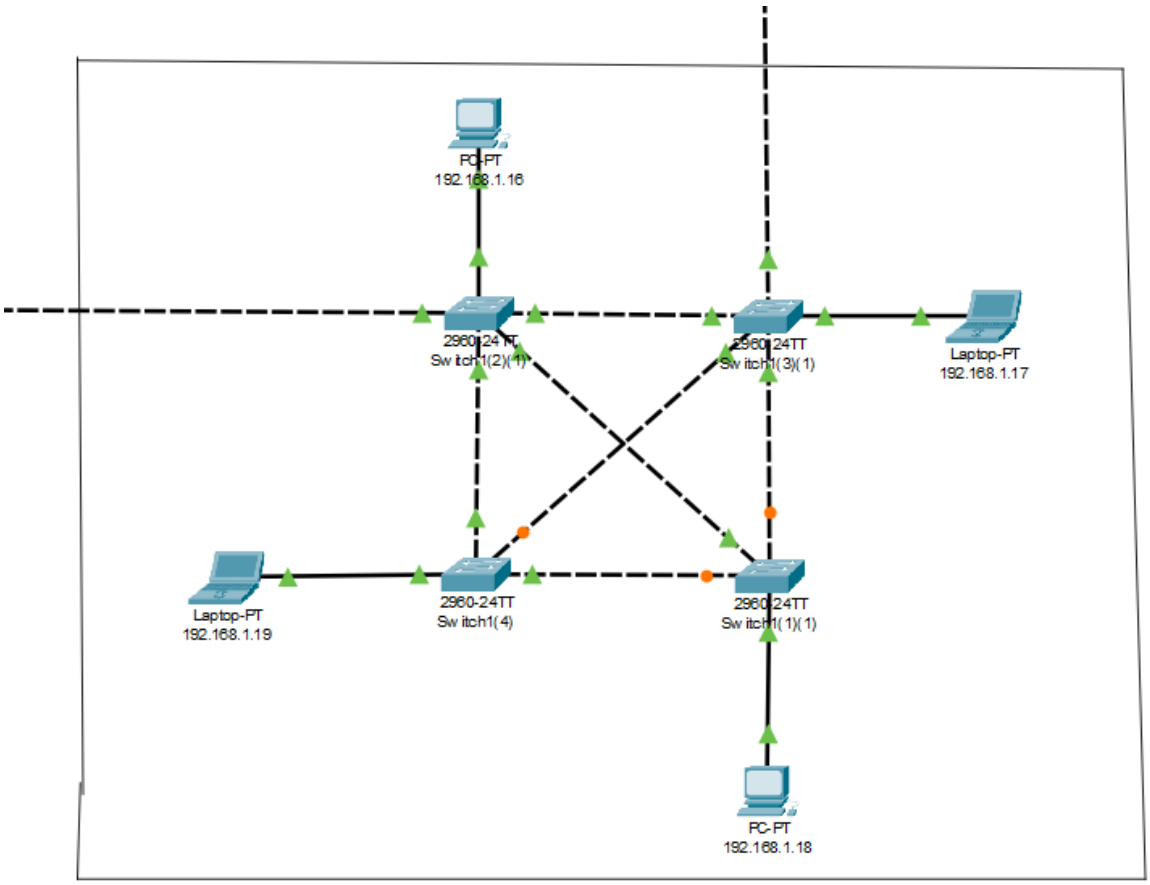
Ring topology is formed when each switch is connected to two other central network components in a circular fashion.
This topology is more reliable than bus topology as it provides two paths between any two systems which serves as a backup.

Star Topology



Star topology is formed when all the systems are connected to the central network component individually.
The topology is fast and reliable as it takes only a single hop for the packet to reach the central component.

Mesh Topology



Mesh Topology

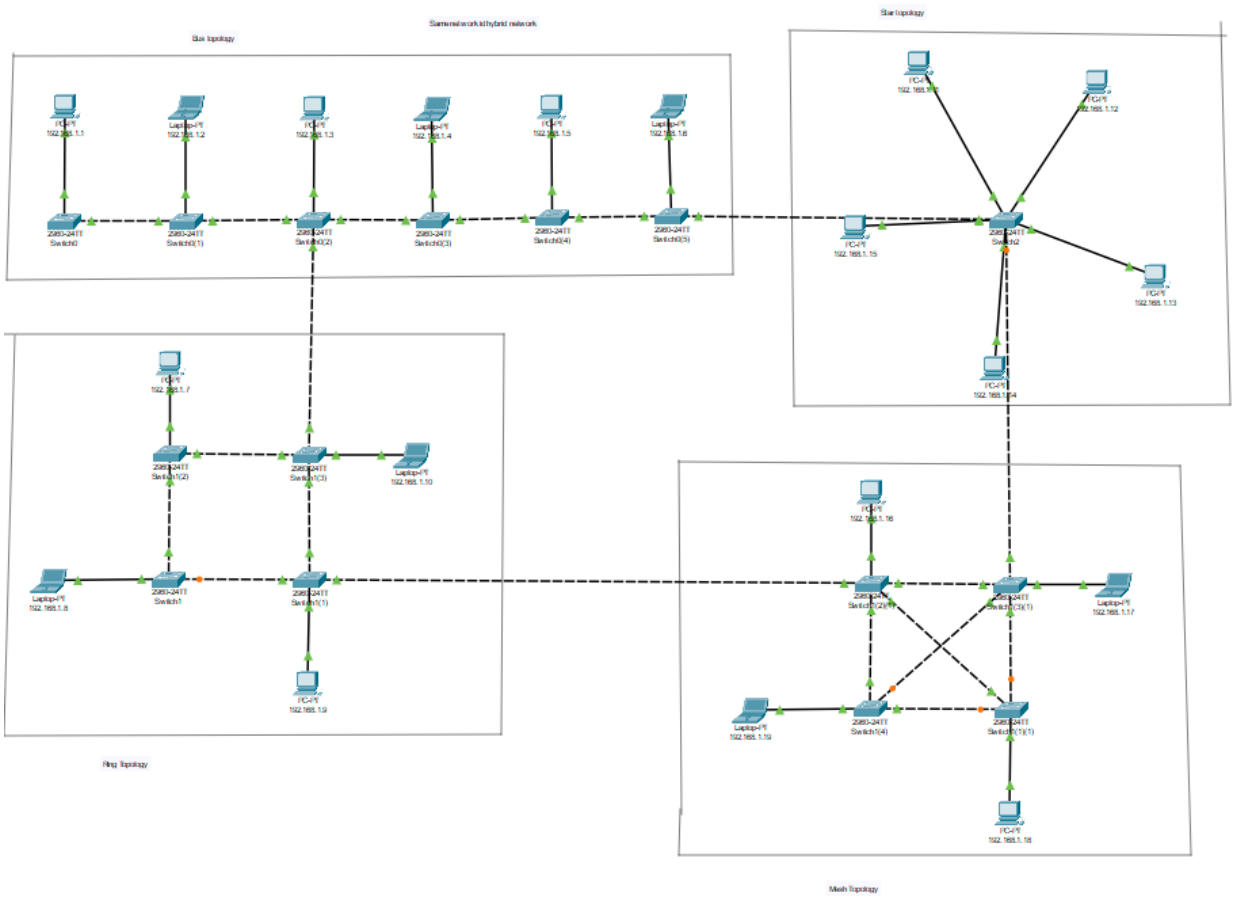
Mesh topology is a network where each central network component is connected with each other.

This network topology is very reliable as there are multiple pathways for a packet to travel, but it is also very resource intensive.

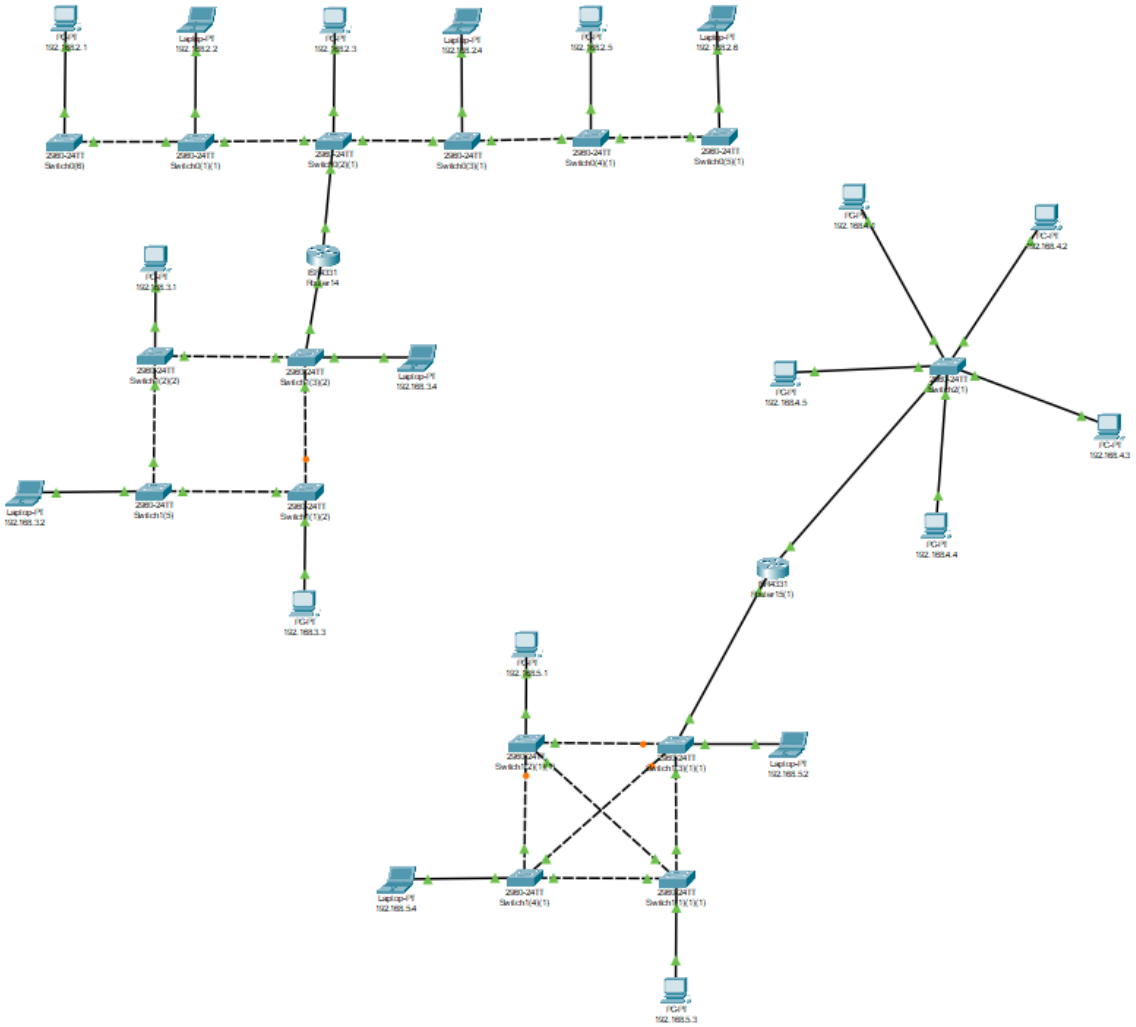
Hybrid topology

This topology is when different topologies are connected to each other to form a larger network. This network is a cumulation of multiple topologies and is very flexible.

Single Network id Hybrid Network



Hybrid Topology using different network ids



The packets are unable to travel from one network to another network topology with different network ids when connected directly. The different networks can be connected using a router. We can use routers in a hierarchical manner which would help to connect the packets with different networks.