



WORKSHEET 2.2

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Subject Name: Computer Networks

Semester: 4th

1. **Aim:** Implement Mesh topology and Hybrid topology with the help of Cisco packet tracer or NS2 software.

2. **Software required:** Cisco Packet Tracer

3. **Procedure:**

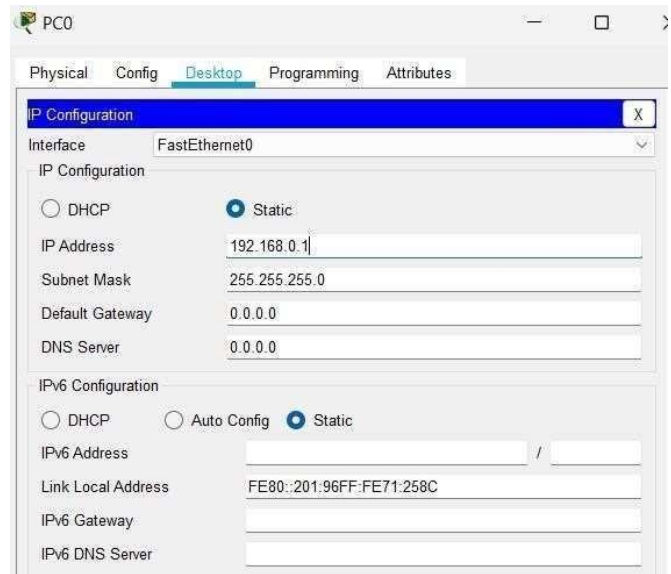
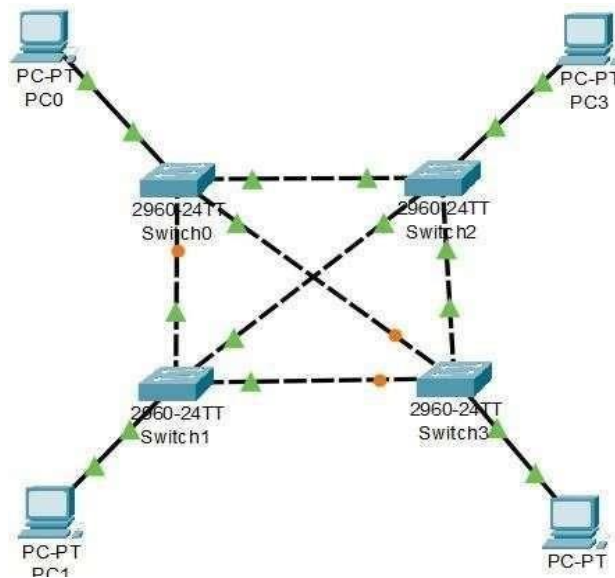
- Attach End devices & Switch in the packet tracer software.
- Connect all the end devices to each other.
- Assign IP address to devices.
- Select source and destination and drop packet from source to destination.
- Go to Simulation mode and click capture/Play.
- Simulation will start and packet will only be accepted by destination.

4. **Theory:**

a) **Mesh Topology:** In the mesh topology of networking, each and every device sends its own signal to the other devices that are present in the arrangement of the network.

b) **Hybrid topology:** A hybrid topology is a kind of network topology that is a combination of two or more network topologies, such as mesh topology, bus topology, and ring topology

5. Input Screenshots:



6. Output Screenshots:

Simulation Panel				
Event List				
Vis.	Time(sec)	Last Device	At Device	Type
	0.000	--	PC0	ICMP
	0.000	--	PC3	ARP
	0.000	--	PC3	ICMP
	0.000	--	PC3	ARP
	0.001	PC0	Switch0	ICMP
	0.001	PC3	Switch2	ARP
	0.001	--	PC3	ARP
	0.002	PC3	Switch2	ARP
	0.002	Switch0	Switch2	ICMP
	0.002	Switch2	Switch3	ARP
	0.002	Switch2	Switch0	ARP
	0.002	Switch2	Switch1	ARP
	0.003	Switch2	Switch3	ARP
	0.003	Switch2	Switch0	ARP
	0.003	Switch2	Switch1	ARP
	0.003	Switch2	PC3	ICMP

Reset Simulation ☒ Constant Delay Cap

```

Command Prompt

Packet Tracer PC Command Line 1.0
C:\>ping 192.168.0.1

Pinging 192.168.0.1 with 32 bytes of data:

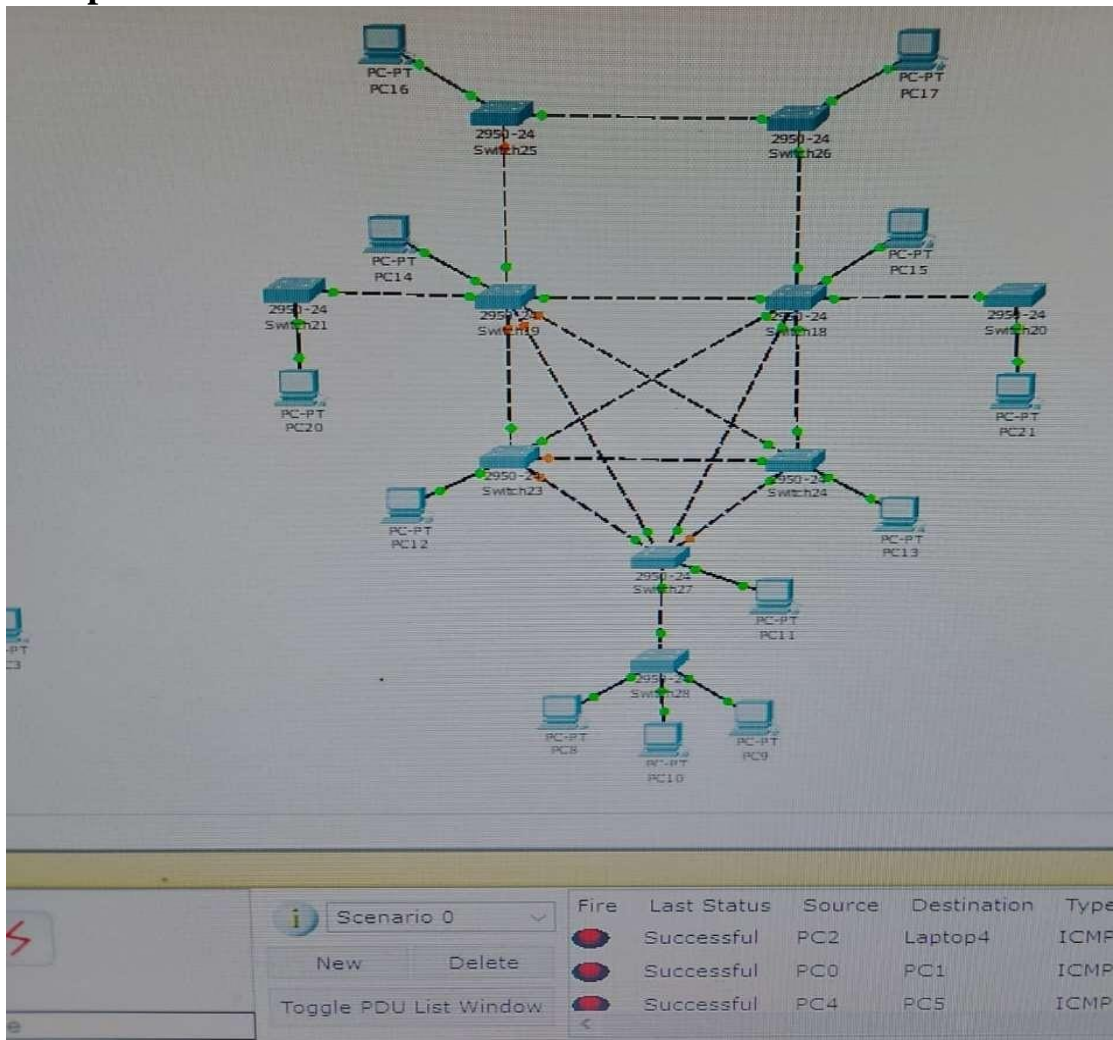
Reply from 192.168.0.1: bytes=32 time=3ms TTL=128
Reply from 192.168.0.1: bytes=32 time=1ms TTL=128
Reply from 192.168.0.1: bytes=32 time=1ms TTL=128
Reply from 192.168.0.1: bytes=32 time=2ms TTL=128

Ping statistics for 192.168.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 3ms, Average = 1ms

C:\>

```

7. Input Screenshots:



PC7

Physical Config **Desktop** Programming Attributes

IP Configuration

Interface FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IP Address 192.168.1.2

Subnet Mask 255.255.255.0

Default Gateway 0.0.0.0

DNS Server 0.0.0.0

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address /

Link Local Address FE80::207:ECFF:FE52:E168

IPv6 Gateway

IPv6 DNS Server

PC3

Physical Config **Desktop** Programming Attributes

IP Configuration

Interface FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IP Address 192.168.0.2

Subnet Mask 255.255.255.0

Default Gateway 0.0.0.0

DNS Server 0.0.0.0

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address /

Link Local Address FE80::20B:BEFF:FE2A:537D

IPv6 Gateway

IPv6 DNS Server

Simulation Panel				
Event List				
Vis.	Time(sec)	Last Device	At Device	Type
	2.184	--	Switch3	STP
	2.184	Switch4	PC4	STP
	2.184	Switch4	PC6	STP
	2.184	Switch4	PC5	STP
	2.184	Switch4	Switch0	STP
	2.184	Switch4	PC7	STP
	2.184	--	Switch1	STP
	2.185	Switch3	Switch2	STP
	2.185	Switch3	Switch0	STP
	2.185	Switch3	PC2	STP
	2.185	Switch3	Switch1	STP
	2.185	Switch1	Switch0	STP
	2.185	Switch1	PC1	STP
	2.185	Switch1	Switch3	STP
	2.185	Switch1	Switch2	STP
	2.185	Switch0	Switch4	STP

Command Prompt

Packet Tracer PC Command Line 1.0

C:\>ping 192.168.1.1

Pinging 192.168.1.1 with 32 bytes of data:

Reply from 192.168.1.1: bytes=32 time=4ms TTL=128

Reply from 192.168.1.1: bytes=32 time=2ms TTL=128

Reply from 192.168.1.1: bytes=32 time=1ms TTL=128

Reply from 192.168.1.1: bytes=32 time=3ms TTL=128

Ping statistics for 192.168.1.1:

Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),

Approximate round trip times in milli-seconds:

Minimum = 1ms, Maximum = 4ms, Average = 2ms

C:\>|

8. Output Screenshots:

Command Prompt

Packet Tracer PC Command Line 1.0

C:\>ping 192.168.0.1

Pinging 192.168.0.1 with 32 bytes of data:

Reply from 192.168.0.1: bytes=32 time=3ms TTL=128

Reply from 192.168.0.1: bytes=32 time=1ms TTL=128

Reply from 192.168.0.1: bytes=32 time=1ms TTL=128

Reply from 192.168.0.1: bytes=32 time=2ms TTL=128

Ping statistics for 192.168.0.1:

Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),

Approximate round trip times in milli-seconds:

Minimum = 1ms, Maximum = 3ms, Average = 1ms

C:\>

9. Learning Outcomes:

1. In this experiment, we learnt about Mesh and Ring topologies.
2. We executed Mesh topology and Hybrid topology using Cisco Packet Tracer.