WEEK – 1

1. Create a topology and simulate sending a simple PDU from source to destination using hub and switch as connecting devices and demonstrate ping message.

LAB-1

25/09/24

①

Cisco Packet Tracer:

Packet Tracer is a medium fidelity, network-capable, simulation-based learning environment for networking devices to design, configure & troubleshoot computer network at a CCNA level of complexity.

Connections:

1) Console: It can be made. Console connections can be made between PCs & routers or switches.

2) Copper Straight through: This cable type is the standard Ethernet media for connecting b/w devices that operates at different OSI layers.

3) Copper Cross over: This cable type is the Ethernet media for connecting b/w devices that operates at the same OSI layer.

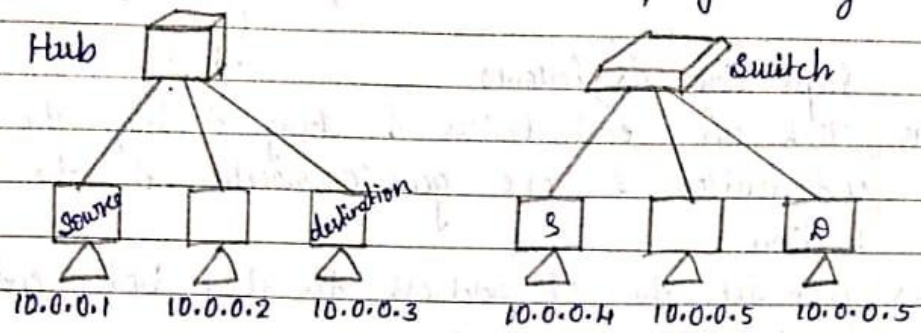
4) Fiber: Fiber media is used to make connections b/w fiber ports.

5) Phone: Phone line connections can only be made b/w devices with modem ports.

6) Coaxial: Coaxial media is used to make connections b/w coaxial ports such as a cable modem connected to a packet tracer cloud.

7) Octal: The 8-port asynchronous cable provides the high density connector on one end & eight RJ-45 plugs on the other.

1) Net Create a topology & Simulate sending a simple PDU from source to destination using hub & Switch as Connecting devices and demonstrate ping message.

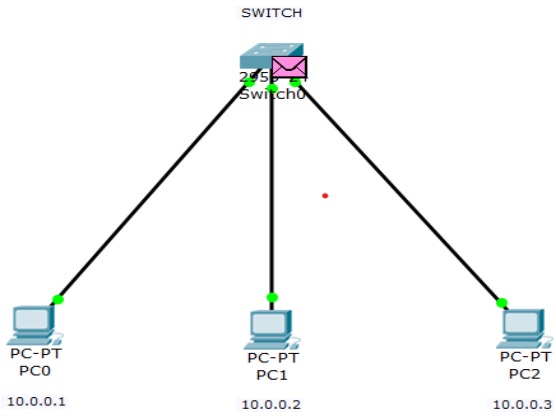


Steps are as follows

1) Setup the topology
   - Connect PC1, PC2 & PC3 to Hub
   - Connect PC4, PC5 & PC6 to Switch
2) Configure the IP addresses
3) Connect the Copper Straight through Cable to the hub & Switch.
4) Send a Ping from PC1 to PC3 in hub & Send a ping from PC4 to PC6 in Switch.
5) Observe the transmission Process

	Hub, 4/12 ports	Switch multi port & b/w 4 & 48 port.
1)	It is a broadcast device	It is a point to point device.
2)	It operates at physical layer	It operates at datalink layer
3)	It is not an intelligent device	It is an intelligent device.
4)	It Simply broadcasts the incoming packet	It uses the switching table to find the correct destination.
5)	It can be used as a repeater	It Cannot be used as a repeater
6)	Not very costly	very costly.
7)	Not a Sophisticated device	It is a Sophisticated device.
8)	Transmission mode is Half duplex.	transmission mode is half / full duplex.

SWITCH:



PING RESULTS:

```
Packet Tracer PC Command Line 1.0
C:\>ping 10.0.0.1

Pinging 10.0.0.1 with 32 bytes of data:

Reply from 10.0.0.1: bytes=32 time<1ms TTL=128
Reply from 10.0.0.1: bytes=32 time<1ms TTL=128
Reply from 10.0.0.1: bytes=32 time<1ms TTL=128
Reply from 10.0.0.1: bytes=32 time<1ms TTL=128

Ping statistics for 10.0.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

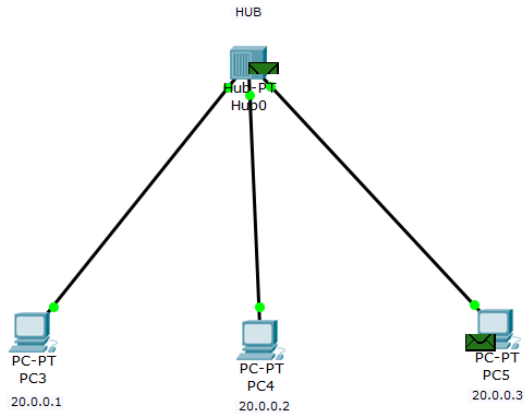
```
Packet Tracer PC Command Line 1.0
C:\>ping 10.0.0.3

Pinging 10.0.0.3 with 32 bytes of data:

Reply from 10.0.0.3: bytes=32 time<1ms TTL=128
Reply from 10.0.0.3: bytes=32 time<1ms TTL=128
Reply from 10.0.0.3: bytes=32 time<1ms TTL=128
Reply from 10.0.0.3: bytes=32 time<1ms TTL=128

Ping statistics for 10.0.0.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

HUB:



PING RESULTS:

```
Packet Tracer PC Command Line 1.0
C:\>ping 20.0.0.1

Pinging 20.0.0.1 with 32 bytes of data:

Reply from 20.0.0.1: bytes=32 time<1ms TTL=128
Reply from 20.0.0.1: bytes=32 time=1ms TTL=128
Reply from 20.0.0.1: bytes=32 time<1ms TTL=128
Reply from 20.0.0.1: bytes=32 time<1ms TTL=128

Ping statistics for 20.0.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 1ms, Average = 0ms
```

```
Packet Tracer PC Command Line 1.0
C:\>ping 20.0.0.3

Pinging 20.0.0.3 with 32 bytes of data:

Reply from 20.0.0.3: bytes=32 time=1ms TTL=128
Reply from 20.0.0.3: bytes=32 time<1ms TTL=128
Reply from 20.0.0.3: bytes=32 time=1ms TTL=128
Reply from 20.0.0.3: bytes=32 time<1ms TTL=128

Ping statistics for 20.0.0.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 1ms, Average = 0ms
```