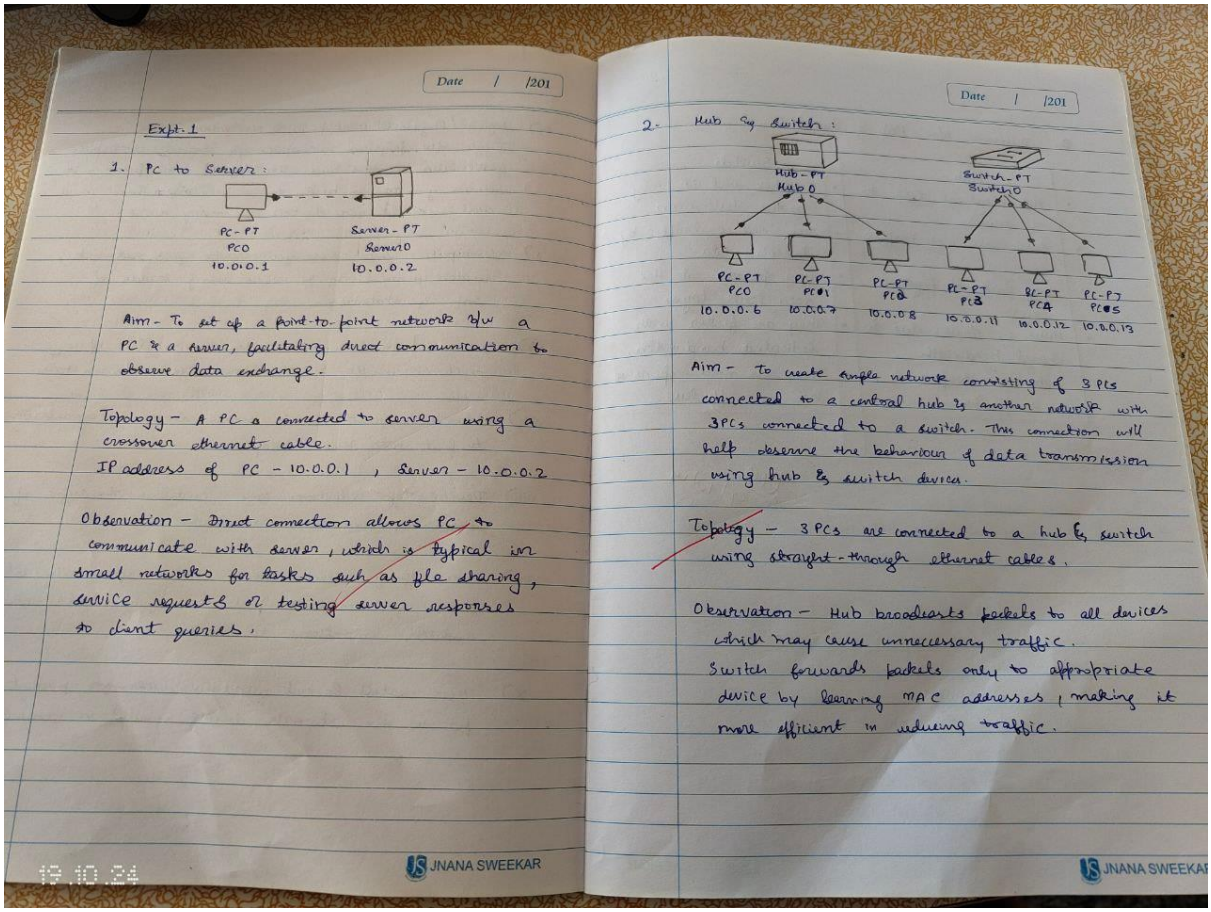
LAB 0 – 25/9/2024



Date / /201

Expt. 1

1. PC to Server:

Aim - To set up a point-to-point network b/w a PC & a server, facilitating direct communication to observe data exchange.

Topology - A PC is connected to server using a crossover ethernet cable.
IP address of PC - 10.0.0.1 , Server - 10.0.0.2

Observation - Direct connection allows PC to communicate with server, which is typical in small networks for tasks such as file sharing, service requests & testing server responses to client queries.

19.10.24

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2. Hub & Switch:

Aim - To create simple network consisting of 3 PCs connected to a central hub & another network with 3 PCs connected to a switch. This connection will help observe the behaviour of data transmission using hub & switch devices.

Topology - 3 PCs are connected to a hub & switch using straight-through ethernet cables.

Observation - Hub broadcasts packets to all devices which may cause unnecessary traffic.
Switch forwards packets only to appropriate device by learning MAC addresses, making it more efficient in reducing traffic.

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Difference b/w Hub & Switch :

Hub	Switch
• Hub broadcast data to all devices.	• Switches send it only to the destination.
• Hubs create more traffic	• They reduce traffic by directing data
• They work at physical layer	• They operate at the data link layer
• Hubs are slower due to shared bandwidth	• They are faster with dedicated bandwidth.
• Hubs are cheaper & less effective.	• They are more expensive but more effective

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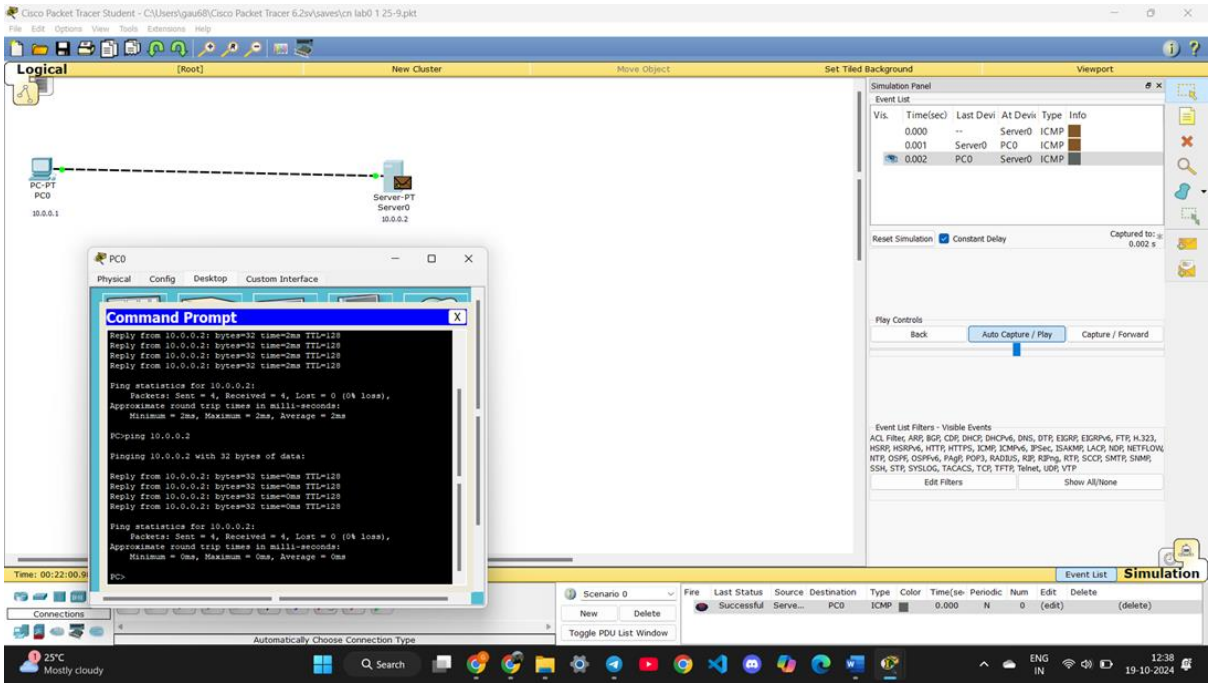
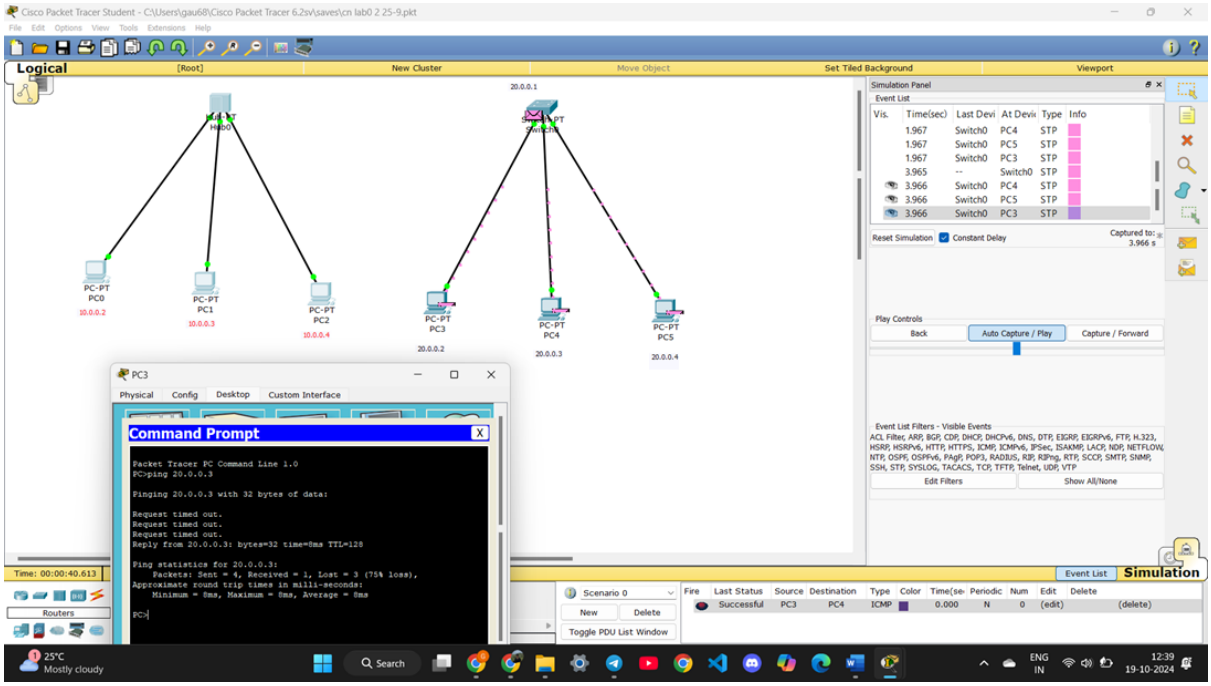

Cisco Packet Tracer Student - C:\Users\gau68\Cisco Packet Tracer 6.2sv\saves\cn lab0 1 25-9.pkt
Logical
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
PC-PT PC0
10.0.0.1
Server-PT Server0
10.0.0.2
PC0
Physical
Config
Desktop
Custom Interface
Command Prompt
Reply from 10.0.0.2: bytes=32 time=2ms TTL=128
Reply from 10.0.0.2: bytes=32 time=2ms TTL=128
Reply from 10.0.0.2: bytes=32 time=2ms TTL=128
Reply from 10.0.0.2: bytes=32 time=2ms TTL=128
Ping statistics for 10.0.0.2:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 2ms, Maximum = 2ms, Average = 2ms
PC>ping 10.0.0.2
Pinging 10.0.0.2 with 32 bytes of data:
Reply from 10.0.0.2: bytes=32 time=0ms TTL=128
Reply from 10.0.0.2: bytes=32 time=0ms TTL=128
Reply from 10.0.0.2: bytes=32 time=0ms TTL=128
Reply from 10.0.0.2: bytes=32 time=0ms TTL=128
Ping statistics for 10.0.0.2:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms
PC>
Simulation Panel
Event List
Vis. Time(sec) Last Devi At Devi Type Info
0.000 -- Server0 ICMP
0.001 Server0 PC0 ICMP
0.002 PC0 Server0 ICMP
Reset Simulation
Constant Delay
Play Controls
Back
Auto Capture / Play
Capture / Forward
Event List Filters - Visible Events
Edit Filters
Show All/None
Simulation
Connections
Automatically Choose Connection Type
Scenario 0
New
Delete
Toggle PDU List Window
Fire Last Status Source Destination Type Color Time(se Periodic Num Edit Delete
Successful Serve... PC0 ICMP 0.000 N 0 (edit) (delete)
25°C
Mostly cloudy
Search
ENG
IN
12:38
19-10-2024


Cisco Packet Tracer Student - C:\Users\gau68\Cisco Packet Tracer 6.2sv\saves\cn lab0 2 25-9.pkt
Logical
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
Hub0
Switch0
20.0.0.1
PC-PT PC0
10.0.0.2
PC-PT PC1
10.0.0.3
PC-PT PC2
10.0.0.4
PC-PT PC3
20.0.0.2
PC-PT PC4
20.0.0.3
PC-PT PC5
20.0.0.4
PC3
Physical
Config
Desktop
Custom Interface
Command Prompt
Packet Tracer PC Command Line 1.0
PC>ping 20.0.0.3
Pinging 20.0.0.3 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Reply from 20.0.0.3: bytes=32 time=0ms TTL=128
Ping statistics for 20.0.0.3:
Packets: Sent = 4, Received = 1, Lost = 3 (75% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms
PC>
Simulation Panel
Event List
Vis. Time(sec) Last Devi At Devi Type Info
1.967 Switch0 PC4 STP
1.967 Switch0 PC5 STP
1.967 Switch0 PC3 STP
3.965 -- Switch0 STP
3.966 Switch0 PC4 STP
3.966 Switch0 PC5 STP
3.966 Switch0 PC3 STP
Reset Simulation
Constant Delay
Play Controls
Back
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Event List Filters - Visible Events
Edit Filters
Show All/None
Simulation
Routers
Scenario 0
New
Delete
Toggle PDU List Window
Fire Last Status Source Destination Type Color Time(se Periodic Num Edit Delete
Successful PC3 PC4 ICMP 0.000 N 0 (edit) (delete)
25°C
Mostly cloudy
Search
ENG
IN
12:39
19-10-2024