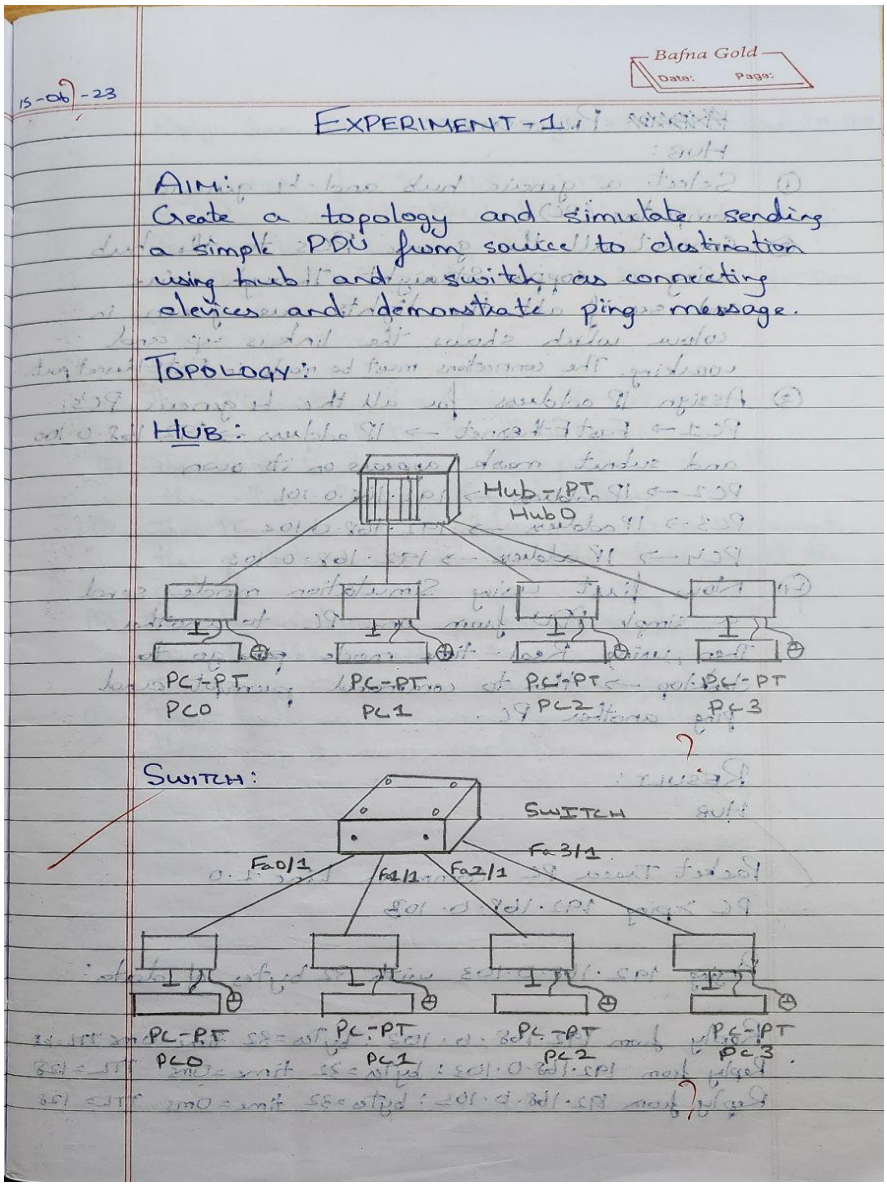
EXPERIMENT 1

AIM:

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

OBSERVATION:



PROCEDURE:

HUB:

① Select a generic hub and 4 generic computers (PC)

② Connect all the generic PC's to the hub using a copper Straight-Through wire and see if all the lights are green in colour which shows the link is up and working. The connections must be made in FastEthernet port.

③ Assign IP address for all the 4 generic PC's.
PC1 → FastEthernet → IP address → 192.168.0.100 and subnet mask appears on its own.
PC2 → IP address → 192.168.0.101
PC3 → IP address → 192.168.0.102.
PC4 → IP address → 192.168.0.103.

④ Now first using Simulation mode send a simple PDU from one PC to another. Then, using Real-time mode go to desktop → then to command prompt and ping another PC.

RESULT:

HUB

Packet Tracer PC Command Line 1.0
PC > ping 192.168.0.103

Pinging 192.168.0.103 with 32 bytes of data:

Reply from 192.168.0.103: bytes=32 time=0ms TTL=128
Reply from 192.168.0.103: bytes=32 time=0ms TTL=128
Reply from 192.168.0.103: bytes=32 time=0ms TTL=128

Reply from 192.168.0.103: bytes=32 time=0ms TTL=128

Ping statistics for 192.168.0.103
Packets: Sent=4, Received=4, Lost=0 (0% loss);
Approximate round trip times in milli-seconds:
Minimum=0ms, Maximum=1ms, Average=0ms

OBSERVATION

1. The PC with IP address 192.168.0.100 sends a packet to the HUB.
2. The HUB broadcasts the packet to all the other PC's in the topology.
3. The PC with the IP address 192.168.0.103 accepts the packet whereas the other PC's reject the packet.
4. The acknowledgement packet goes from the PC 192.168.0.103 to the sender. The other devices ignore the packet.
5. This cycle repeats again everytime the sender sends a packet.

PROCEDURE:

SWITCH:

① Select a generic switch and 4 generic computers. (PC).

② Connect all the generic PC's to the switch using a copper Straight-through wire and see if all the lights are green in colour which shows the link is up and working. The connections must be made in FastEthernet port.

③ Assign IPaddress for all the 4 generic PC's
PC1 → FastEthernet → IPaddress → 192.168.0.100 and subnet mask appears on its own.
PC2 → IPaddress → 192.168.0.101
PC3 → IPaddress → 192.168.0.102
PC4 → IP address → 192.168.0.103

④ Now first using Simulation mode send a simple PDU from one PC to another. Then, using real-time mode go to desktop → then to command prompt and ping another PC.

RESULT:

SWITCH:

Packet Tracer PC Command Line 1.0
PC > ping 192.168.0.103

Pinging 192.168.0.103 with 32 bytes of data:

Reply from 192.168.0.103: bytes=32 time=0ms TTL=128

Bafna Gold
Date: Page:

Reply from 192.168.0.103: bytes=32 time=0ms TTL=128
Reply from 192.168.0.103: bytes=32 time=0ms TTL=128
Reply from 192.168.0.103: bytes=32 time=0ms TTL=128

Ping statistics for 192.168.0.103:
Packets: Sent=4, Received=4, Lost=0 (0% Loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms.

OBSERVATION:

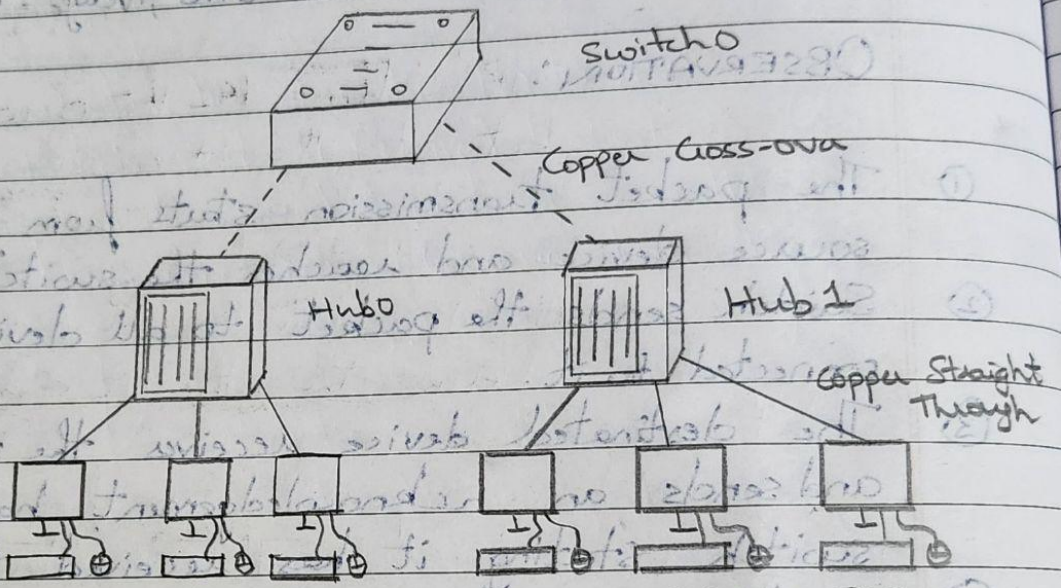
1. The packet transmission starts from the source device and reaches the switch.
2. Switch sends the packet to all devices connected to it.
3. The destinated device receives the packet and sends an acknowledgement back to switch stating it has received the packet.
4. Switch remembers the device sending the acknowledgement and only communicates with that device for further transmission.
5. Other devices do not receive the packet from next transmission.

15-06-23

AIM:

Create a topology involving multiple hubs and a switch connecting them to simulate a simple PDU

TOPOLOGY:



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PROCEDURE:

1. Select the end devices and connect them to two different separate hubs.
2. Connect the two hubs to a switch.
3. End devices are connected to the hub using copper straight through wire.
4. Hubs are connected to switch using copper cross-over wire.
5. Select the message. Select the source device connected to one hub and destination device connected to another hub.
6. Observe the packet transmission and acknowledgement procedure.

OBSERVATION:

1. The packet transmission starts from source device which sends it to the hub connected to it.
2. This hub sends the packet to all the devices connected to it and to the switch.
3. Switch sends the packet to the other hub connected to it which in turns sends the packet to all end devices connected to it.
4. The destinated device sends back the acknowledgement that it received the message.
5. All other devices ignore the received packet.
6. The acknowledgement from second hub is sent back to the source device through switch in the same manner.

RESULT:

PC > ping 192.168.0.[redacted]114

Reply from 192.168.0.114: bytes=32 time=1ms TTL=128
Reply from 192.168.0.114: bytes=32 time=1ms TTL=128
Reply from 192.168.0.114: bytes=32 time=1ms TTL=128
Reply from 192.168.0.114: bytes=32 time=1ms TTL=128

Ping statistics for 192.168.0.114:
Packets: Sent=4, Received=4, Lost=0 (0% Loss),
Approximate round trip times in milli-seconds:
Minimum=0ms, Maximum=10ms, Average=2ms.

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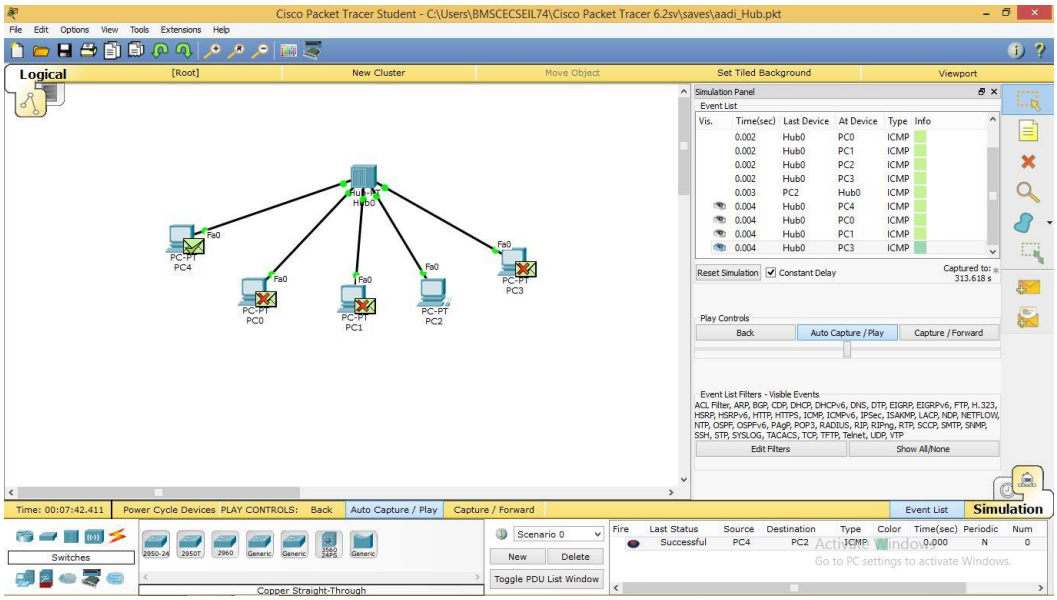
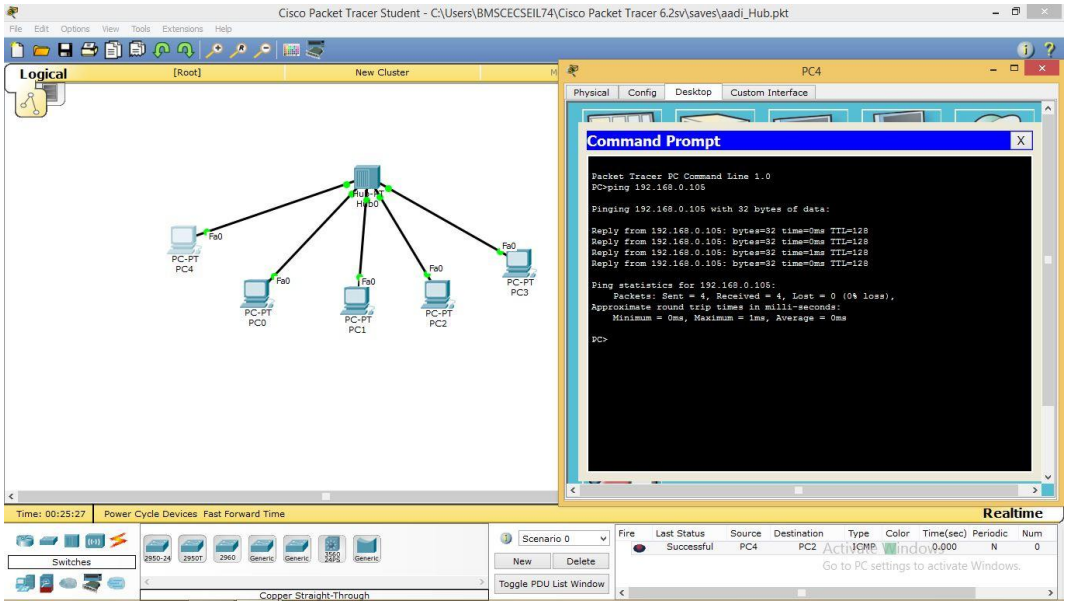
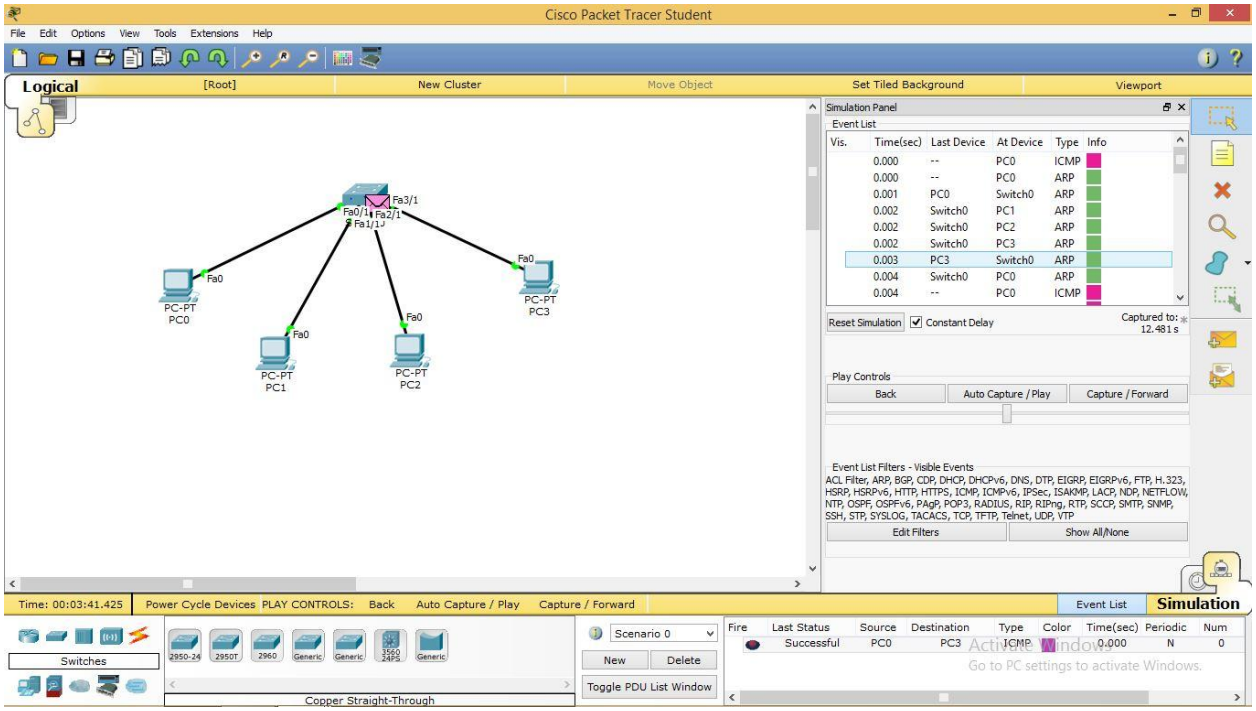
Result:

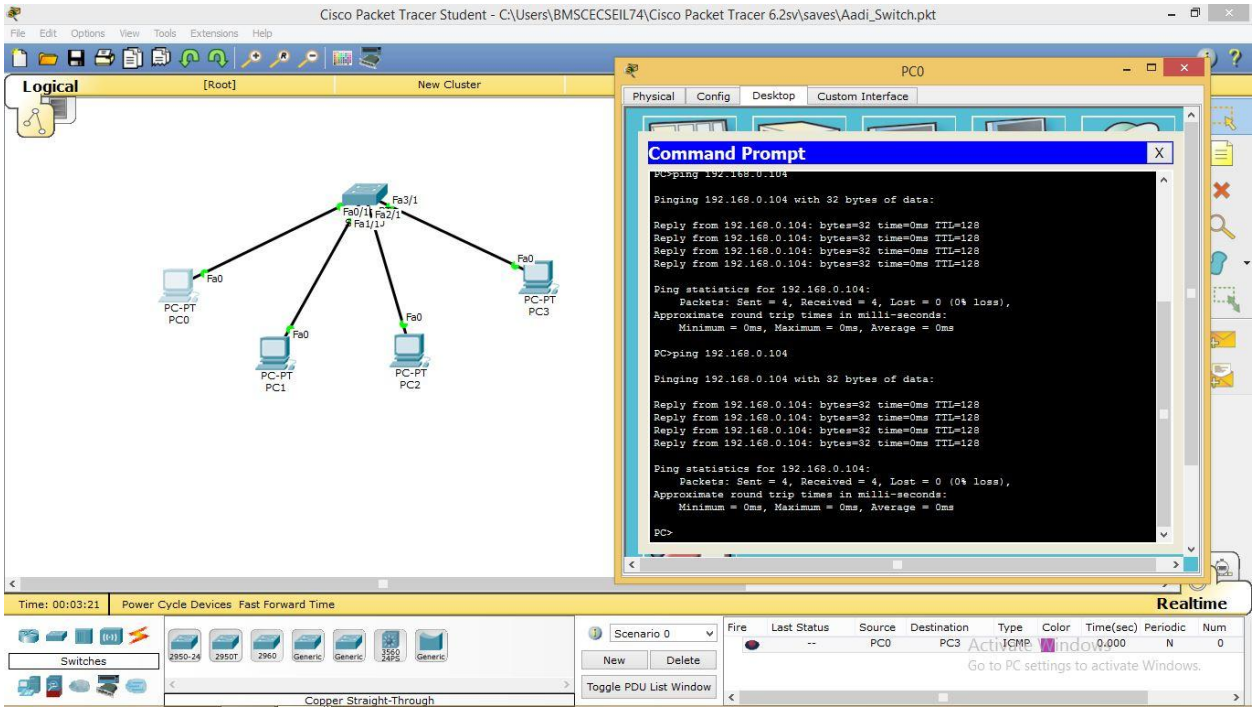
Hub:


Cisco Packet Tracer Student - C:\Users\BMSCECSEIL74\Cisco Packet Tracer 6.2sv\saves\aadi_Hub.pkt
Logical
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
Simulation Panel
Event List
Reset Simulation
Constant Delay
Play Controls
Back
Auto Capture / Play
Capture / Forward
Edit Filters
Show All/None
Time: 00:07:42.411
Power Cycle Devices PLAY CONTROLS: Back Auto Capture / Play Capture / Forward
Event List
Simulation
Switches
Copper Straight-Through
Scenario 0
New
Delete
Toggle PDU List Window
Fire Last Status Source Destination Type Color Time(sec) Periodic Num
Successful PC4 PC2 ICMP 0.000 N 0

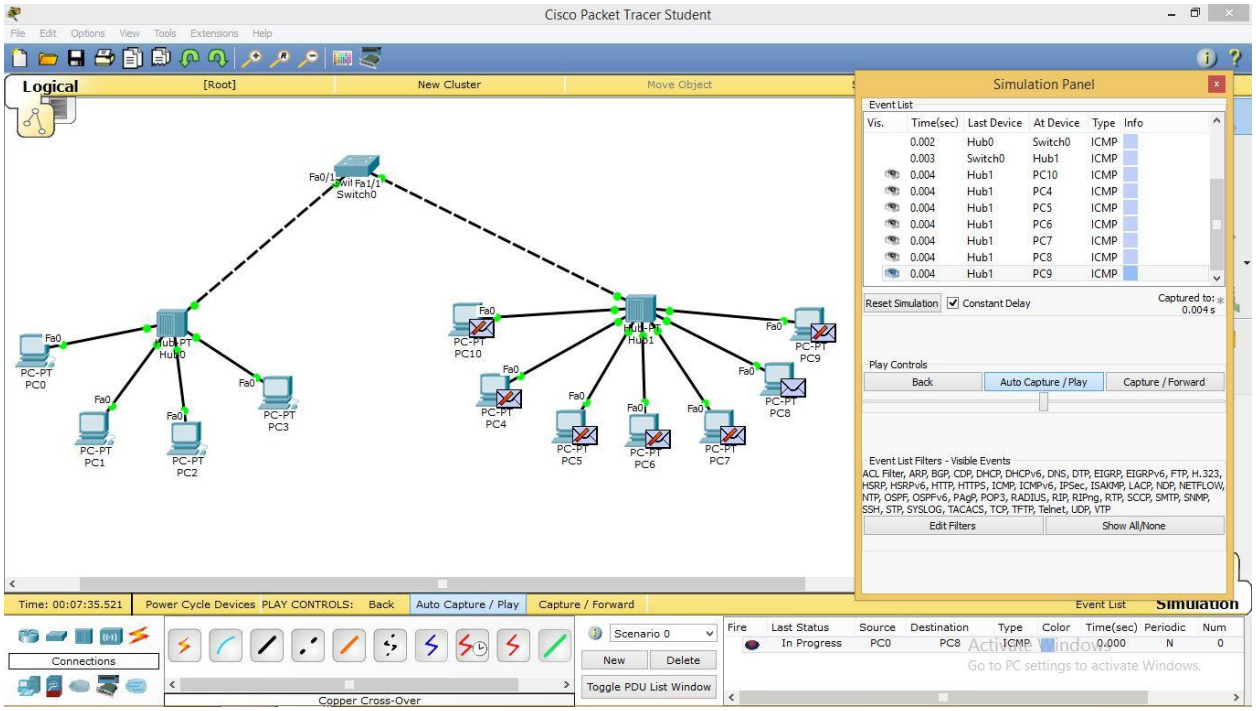

Cisco Packet Tracer Student - C:\Users\BMSCECSEIL74\Cisco Packet Tracer 6.2sv\saves\aadi_Hub.pkt
Logical
[Root]
New Cluster
PC4
Physical
Config
Desktop
Custom Interface
Command Prompt
Packet Tracer PC Command Line 1.0
PC>ping 192.168.0.105
Pinging 192.168.0.105 with 32 bytes of data:
Reply from 192.168.0.105: bytes=32 time=0ms TTL=128
Reply from 192.168.0.105: bytes=32 time=0ms TTL=128
Reply from 192.168.0.105: bytes=32 time=1ms TTL=128
Reply from 192.168.0.105: bytes=32 time=0ms TTL=128
Ping statistics for 192.168.0.105:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 1ms, Average = 0ms
PC>
Time: 00:25:27
Power Cycle Devices Fast Forward Time
Realtime
Switches
Copper Straight-Through
Scenario 0
New
Delete
Toggle PDU List Window
Fire Last Status Source Destination Type Color Time(sec) Periodic Num
Successful PC4 PC2 ICMP 0.000 N 0

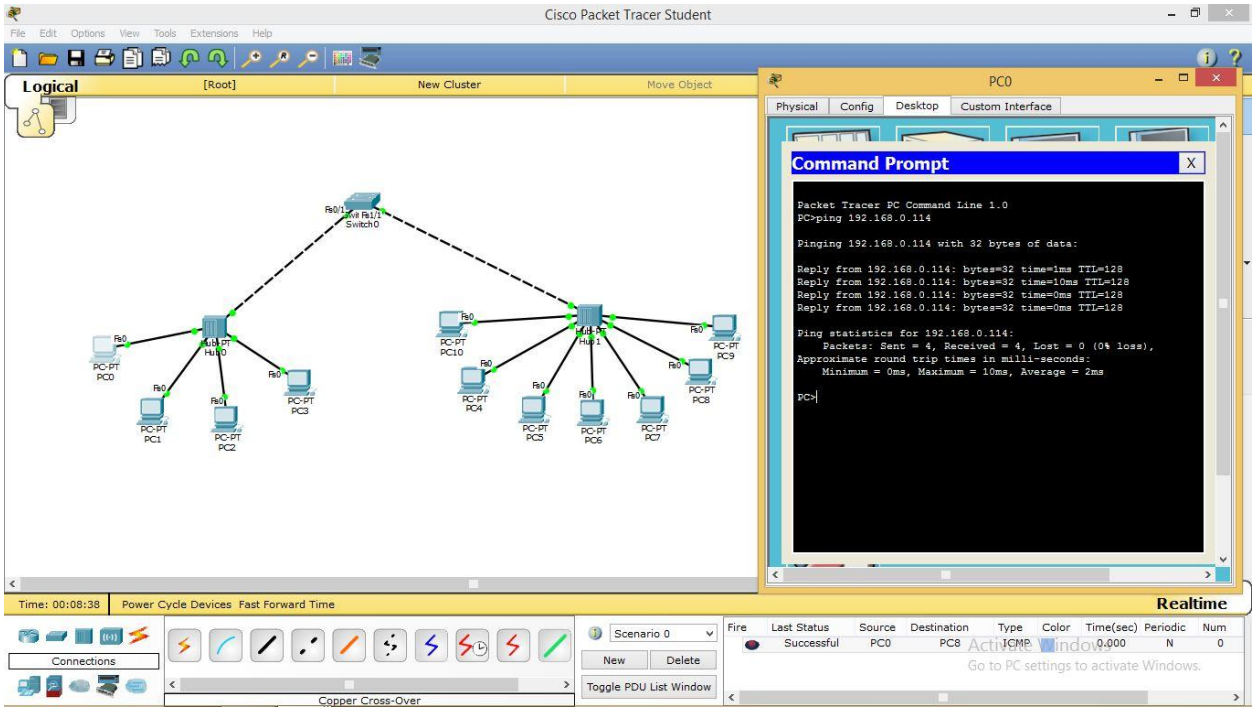
Switch:


Cisco Packet Tracer Student
File Edit Options View Tools Extensions Help
Logical [Root] New Cluster Move Object Set Tiled Background Viewport
Simulation Panel
Event List
Vis. Time(sec) Last Device At Device Type Info
0.000 -- PC0 ICMP
0.000 -- PC0 ARP
0.001 PC0 Switch0 ARP
0.002 Switch0 PC1 ARP
0.002 Switch0 PC2 ARP
0.002 Switch0 PC3 ARP
0.003 PC3 Switch0 ARP
0.004 Switch0 PC0 ARP
0.004 -- PC0 ICMP
Reset Simulation Constant Delay
Captured to: 12.481 s
Play Controls
Back Auto Capture / Play Capture / Forward
Event List Filters - Visible Events
ACL Filter, ARP, BGP, CDP, DHCP, DHCPv6, DNS, DTP, EIGRP, EIGRPv6, FTP, H.323, HSRP, HSRPv6, HTTP, HTTPS, ICMP, ICMPv6, IPSec, ISAKMP, LACP, NDP, NETFLOW, NTP, OSPF, OSPFv6, PAgP, POP3, RADIUS, RIP, RIPng, RTP, SCCP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TCP, TFTP, Telnet, UDP, VTP
Edit Filters Show All/None
PC-PT PC0
PC-PT PC1
PC-PT PC2
PC-PT PC3
Fa0 Fa0/1 Fa1/1 Fa2/1 Fa3/1
Time: 00:03:41.425 Power Cycle Devices PLAY CONTROLS: Back Auto Capture / Play Capture / Forward
Event List Simulation
Switches
Copper Straight-Through
Scenario 0 New Delete Toggle PDU List Window
Fire Last Status Source Destination Type Color Time(sec) Periodic Num
Successful PC0 PC3 ICMP 0.000 N 0
Activate Windows
Go to PC settings to activate Windows.


Cisco Packet Tracer Student - C:\Users\BMSCECSEIL74\Cisco Packet Tracer 6.2sv\saves\Aadi_Switch.pkt
File Edit Options View Tools Extensions Help
Logical [Root] New Cluster
PC0
Physical Config Desktop Custom Interface
Command Prompt
PC>ping 192.168.0.104
Pinging 192.168.0.104 with 32 bytes of data:
Reply from 192.168.0.104: bytes=32 time=0ms TTL=128
Reply from 192.168.0.104: bytes=32 time=0ms TTL=128
Reply from 192.168.0.104: bytes=32 time=0ms TTL=128
Reply from 192.168.0.104: bytes=32 time=0ms TTL=128
Ping statistics for 192.168.0.104:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms
PC>ping 192.168.0.104
Pinging 192.168.0.104 with 32 bytes of data:
Reply from 192.168.0.104: bytes=32 time=0ms TTL=128
Reply from 192.168.0.104: bytes=32 time=0ms TTL=128
Reply from 192.168.0.104: bytes=32 time=0ms TTL=128
Reply from 192.168.0.104: bytes=32 time=0ms TTL=128
Ping statistics for 192.168.0.104:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms
PC>
PC-PT PC0
PC-PT PC1
PC-PT PC2
PC-PT PC3
Time: 00:03:21 Power Cycle Devices Fast Forward Time
Realtime
Switches
Copper Straight-Through
Scenario 0 New Delete Toggle PDU List Window
Fire Last Status Source Destination Type Color Time(sec) Periodic Num
-- PC0 PC3 ICMP 0.000 N 0
Activate Windows
Go to PC settings to activate Windows.

Hybrid:


Cisco Packet Tracer Student
Logical
[Root]
New Cluster
Move Object
Simulation Panel
Event List
Vis. Time(sec) Last Device At Device Type Info
0.002 Hub0 Switch0 ICMP
0.003 Switch0 Hub1 ICMP
0.004 Hub1 PC10 ICMP
0.004 Hub1 PC4 ICMP
0.004 Hub1 PC5 ICMP
0.004 Hub1 PC6 ICMP
0.004 Hub1 PC7 ICMP
0.004 Hub1 PC8 ICMP
0.004 Hub1 PC9 ICMP
Reset Simulation
Constant Delay
Captured to: 0.004 s
Play Controls
Back
Auto Capture / Play
Capture / Forward
Event List Filters - Visible Events
ACL Filter, ARP, BGP, CDP, DHCP, DHCPv6, DNS, DTP, EIGRP, EIGRPv6, FTP, H.323, HSRP, HSRPv6, HTTP, HTTPS, ICMP, ICMPv6, IPSec, ISAKMP, LACP, NDP, NETFLOW, NTP, OSPF, OSPFv6, PAgP, POP3, RADIUS, RIP, RIPng, RTP, SCCP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TCP, TFTP, Telnet, UDP, VTP
Edit Filters
Show All/None
Switch0
Hub0
Hub1
PC0
PC1
PC2
PC3
PC4
PC5
PC6
PC7
PC8
PC9
PC10
Time: 00:07:35.521
Power Cycle Devices
PLAY CONTROLS:
Back
Auto Capture / Play
Capture / Forward
Event List
Simulation
Connections
Copper Cross-Over
Scenario 0
New
Delete
Toggle PDU List Window
Fire Last Status Source Destination Type Color Time(sec) Periodic Num
In Progress PC0 PC8 ICMP 0.000 N 0
Activate Windows
Go to PC settings to activate Windows.


Cisco Packet Tracer Student
Logical
[Root]
New Cluster
Move Object
PC0
Physical
Config
Desktop
Custom Interface
Command Prompt
Packet Tracer PC Command Line 1.0
PC>ping 192.168.0.114
Pinging 192.168.0.114 with 32 bytes of data:
Reply from 192.168.0.114: bytes=32 time=1ms TTL=128
Reply from 192.168.0.114: bytes=32 time=10ms TTL=128
Reply from 192.168.0.114: bytes=32 time=0ms TTL=128
Reply from 192.168.0.114: bytes=32 time=0ms TTL=128
Ping statistics for 192.168.0.114:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 10ms, Average = 2ms
PC>
Switch0
Hub0
Hub1
PC0
PC1
PC2
PC3
PC4
PC5
PC6
PC7
PC8
PC9
PC10
Time: 00:08:38
Power Cycle Devices
Fast Forward Time
Realtime
Connections
Copper Cross-Over
Scenario 0
New
Delete
Toggle PDU List Window
Fire Last Status Source Destination Type Color Time(sec) Periodic Num
Successful PC0 PC8 ICMP 0.000 N 0
Activate Windows
Go to PC settings to activate Windows.