21BCE7371 RADHA KRISHNA GARG
COMPUTER NETWORKS LAB ASSIGNMENT-2

1. Why the link triangles on the interface lines to switches from clients are in a range?

ANS:

The link triangles on the interface lines to switch from clients are in a range in order to show when the system is on or off and it also indicates when the switch is ready to receive data or messages from clients by changing colour from orange to green.

2. What do the line RJ45 parts in the switch symbolize?

ANS:

The line in RJ45 parts in the switch symbolise represents cross-over cable used in RJ-45.

3. Observe the transmissions in view of Cn:

a) PC5 to PC6 and PC5 to PC7 (in hub)

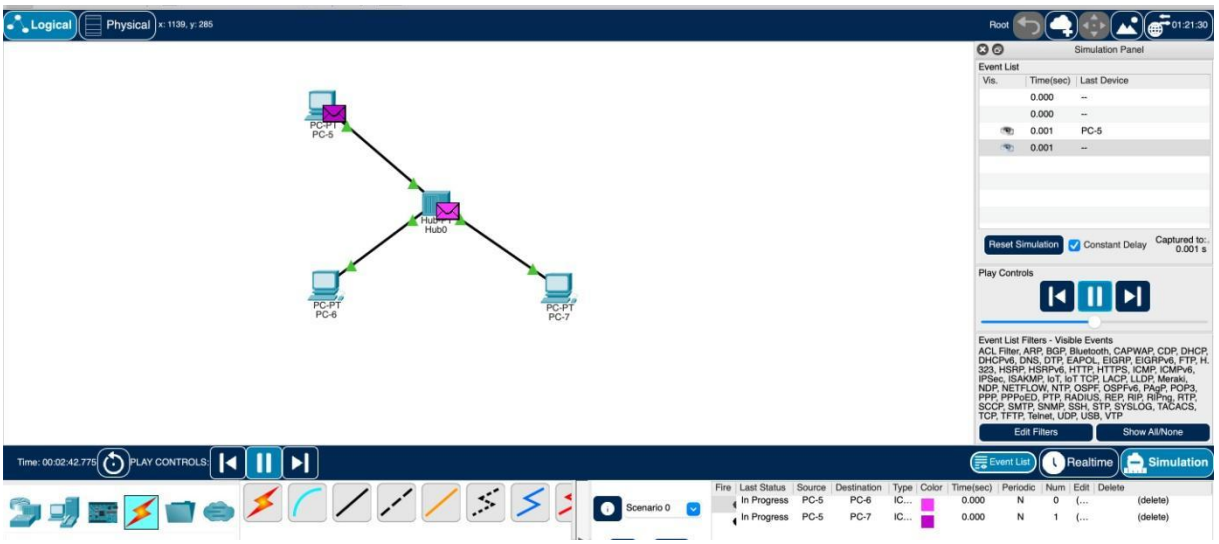
b) PC1 to PC4 and PC4 to PC1 (in switch)

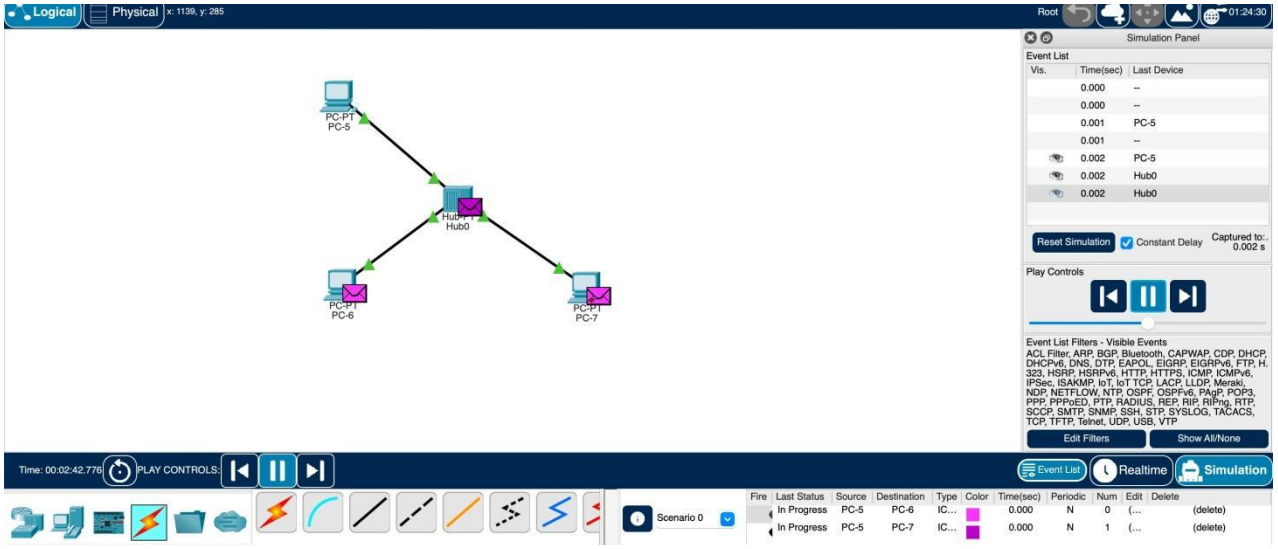
c) PC3 to PC4 and PC2 to PC4 (in hub and switch as CC)

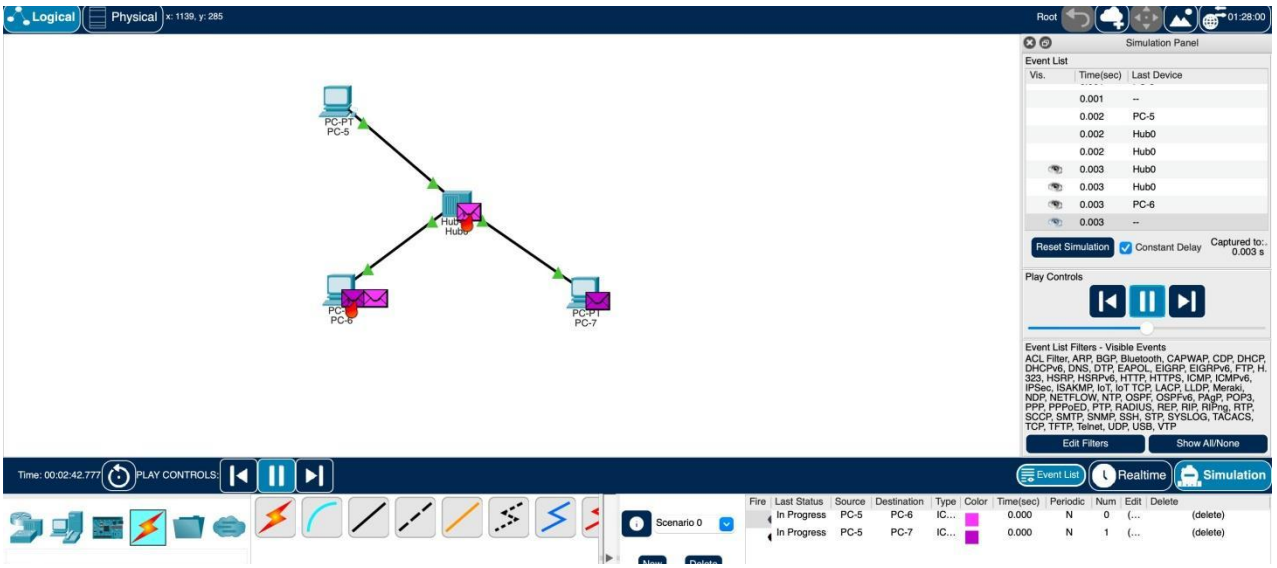
d) Why are collisions seen at the client level?

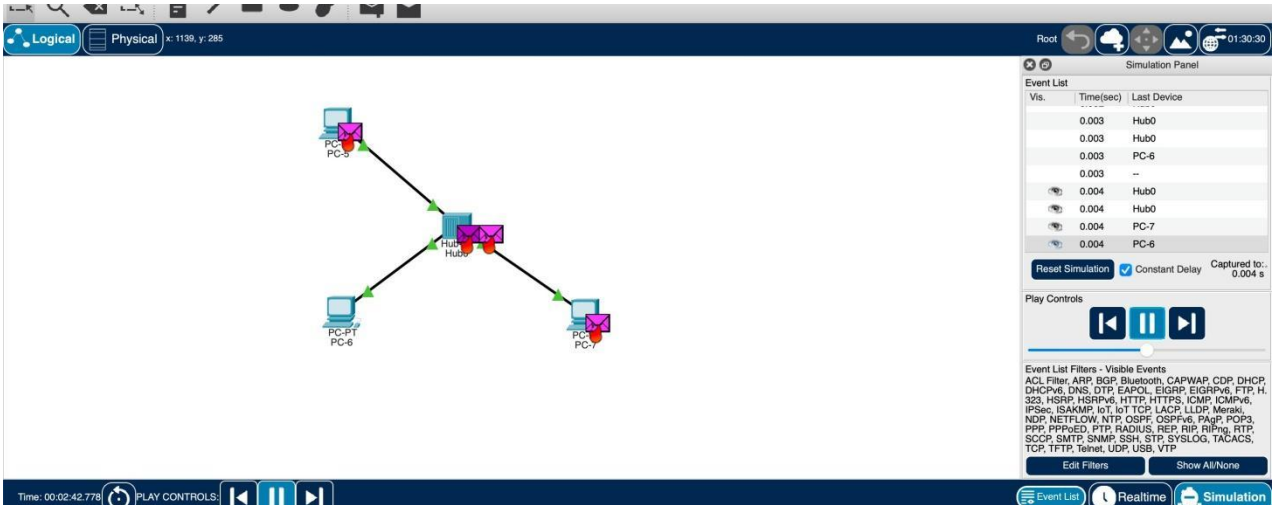
ANS:

a) PC5 to PC6 and PC5 to PC7 (in hub)

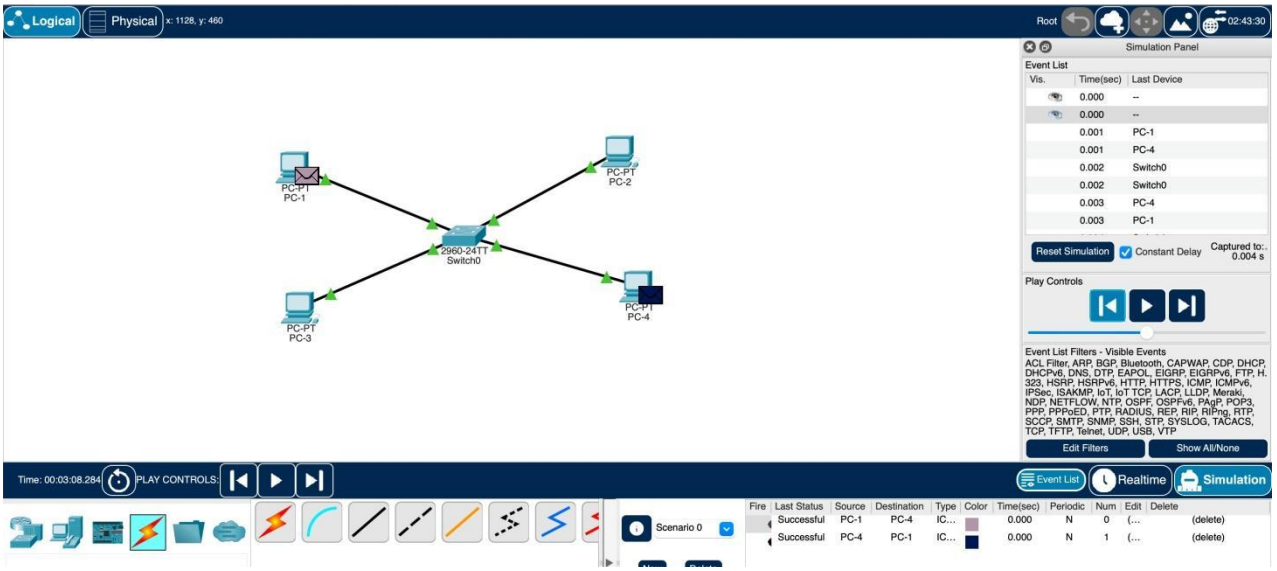


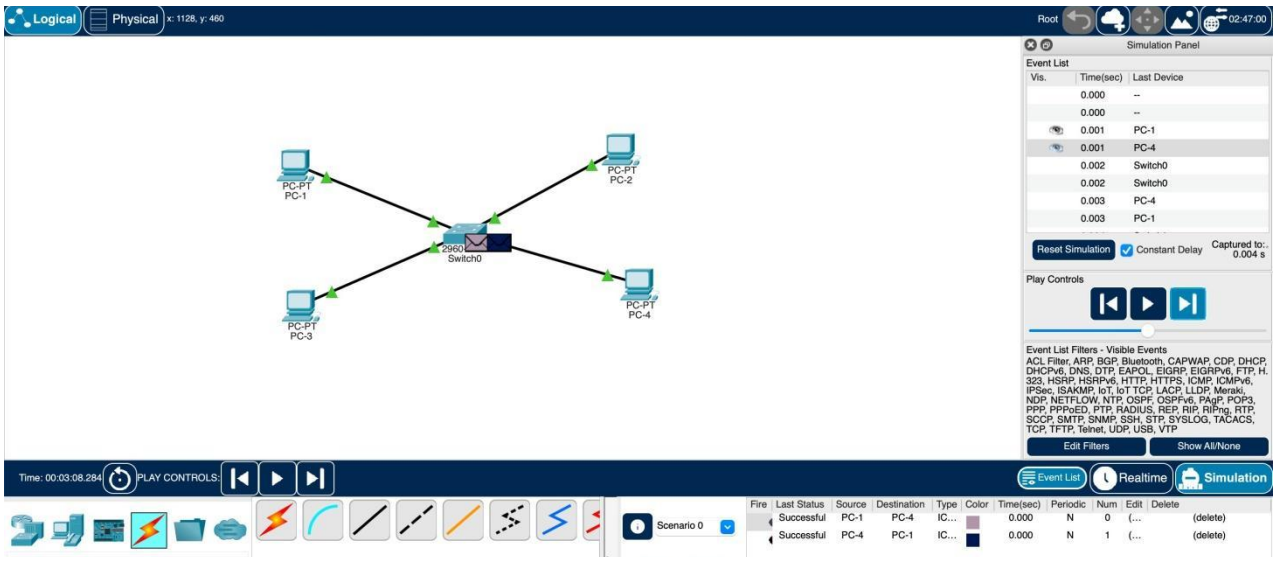

Logical
Physical
x: 1139, y: 285
Root
01:24:30
Simulation Panel
Event List
Vis.
Time(sec)
Last Device
0.000 --
0.000 --
0.001 PC-5
0.001 --
0.002 PC-5
0.002 Hub0
0.002 Hub0
Reset Simulation
Constant Delay
Captured to:
0.002 s
Play Controls
Event List Filters - Visible Events
ACL Filter, ARP, BGP, Bluetooth, CAPWAP, CDP, DHCP, DHCPv6, DNS, DTP, EAPOL, EIGRP, EIGRPv6, FTP, H.323, HSRP, HSRPv6, HTTP, HTTPS, ICMP, ICMPv6, IPSec, ISAKMP, IoT, IoT TCP, LACP, LLDP, Meraki, NDP, NETFLOW, NTP, OSPF, OSPFv6, PAgP, POP3, PPP, PPPoED, PTP, RADIUS, REP, RIP, RIPng, RTP, SCCP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TCP, TFTP, Telnet, UDP, USB, VTP
Edit Filters
Show All/None
Time: 00:02:42.776
PLAY CONTROLS:
Event List
Realtime
Simulation
Scenario 0
Fire
Last Status
Source
Destination
Type
Color
Time(sec)
Periodic
Num
Edit
Delete
In Progress PC-5 PC-6 IC... 0.000 N 0 (... (delete)
In Progress PC-5 PC-7 IC... 0.000 N 1 (... (delete)
PC-PT PC-5
Hub-PT Hub0
PC-PT PC-6
PC-PT PC-7

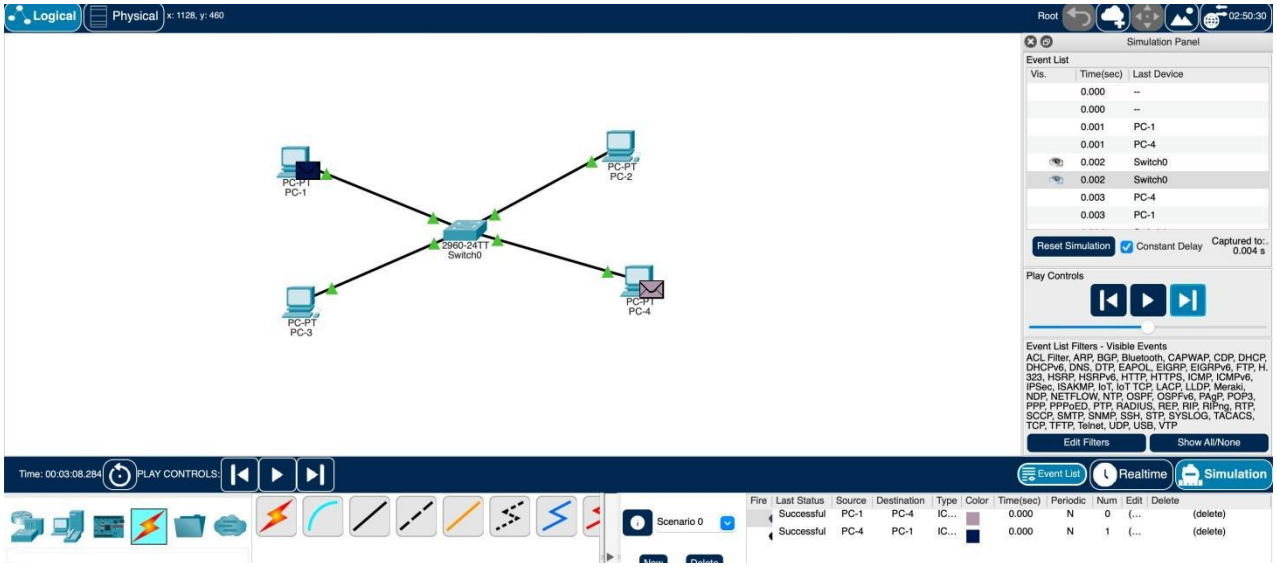

Logical
Physical
x: 1139, y: 285
Root
01:28:00
Simulation Panel
Event List
Vis.
Time(sec)
Last Device
0.001 --
0.002 PC-5
0.002 Hub0
0.002 Hub0
0.003 Hub0
0.003 Hub0
0.003 PC-6
0.003 --
Reset Simulation
Constant Delay
Captured to:
0.003 s
Play Controls
Event List Filters - Visible Events
ACL Filter, ARP, BGP, Bluetooth, CAPWAP, CDP, DHCP, DHCPv6, DNS, DTP, EAPOL, EIGRP, EIGRPv6, FTP, H.323, HSRP, HSRPv6, HTTP, HTTPS, ICMP, ICMPv6, IPSec, ISAKMP, IoT, IoT TCP, LACP, LLDP, Meraki, NDP, NETFLOW, NTP, OSPF, OSPFv6, PAgP, POP3, PPP, PPPoED, PTP, RADIUS, REP, RIP, RIPng, RTP, SCCP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TCP, TFTP, Telnet, UDP, USB, VTP
Edit Filters
Show All/None
Time: 00:02:42.777
PLAY CONTROLS:
Event List
Realtime
Simulation
Scenario 0
Fire
Last Status
Source
Destination
Type
Color
Time(sec)
Periodic
Num
Edit
Delete
In Progress PC-5 PC-6 IC... 0.000 N 0 (... (delete)
In Progress PC-5 PC-7 IC... 0.000 N 1 (... (delete)
PC-PT PC-5
PC-PT PC-6
PC-PT PC-7

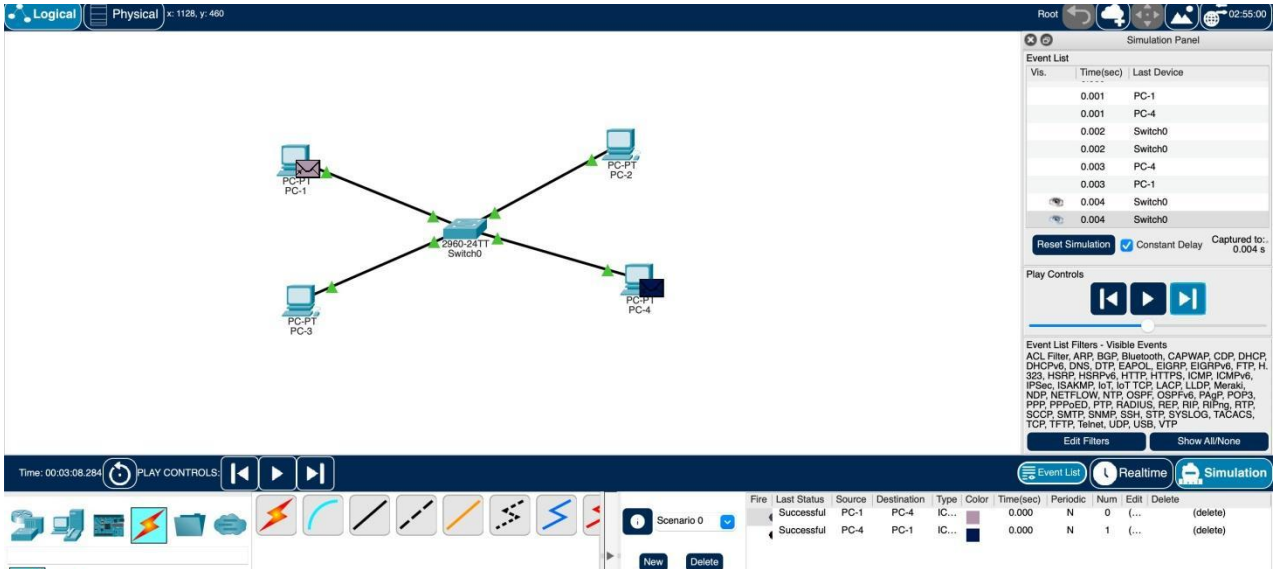

Logical
Physical
x: 1139, y: 285
Root
01:30:30
Simulation Panel
Event List
Vis.
Time(sec)
Last Device
0.003 Hub0
0.003 Hub0
0.003 PC-6
0.003 --
0.004 Hub0
0.004 Hub0
0.004 PC-7
0.004 PC-6
Reset Simulation
Constant Delay
Captured to:
0.004 s
Play Controls
Event List Filters - Visible Events
ACL Filter, ARP, BGP, Bluetooth, CAPWAP, CDP, DHCP, DHCPv6, DNS, DTP, EAPOL, EIGRP, EIGRPv6, FTP, H.323, HSRP, HSRPv6, HTTP, HTTPS, ICMP, ICMPv6, IPSec, ISAKMP, IoT, IoT TCP, LACP, LLDP, Meraki, NDP, NETFLOW, NTP, OSPF, OSPFv6, PAgP, POP3, PPP, PPPoED, PTP, RADIUS, REP, RIP, RIPng, RTP, SCCP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TCP, TFTP, Telnet, UDP, USB, VTP
Edit Filters
Show All/None
Time: 00:02:42.778
PLAY CONTROLS:
Event List
Realtime
Simulation
PC-PT PC-5
PC-PT PC-6
PC-PT PC-7

b) PC1 to PC4 and PC4 to PC1 (in switch)

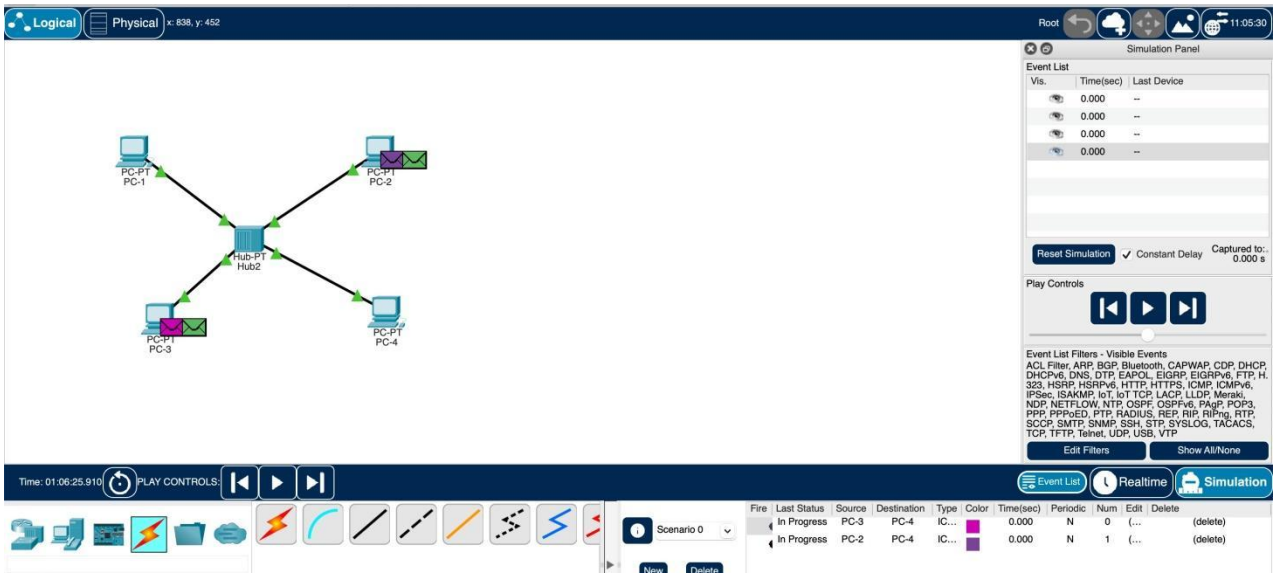


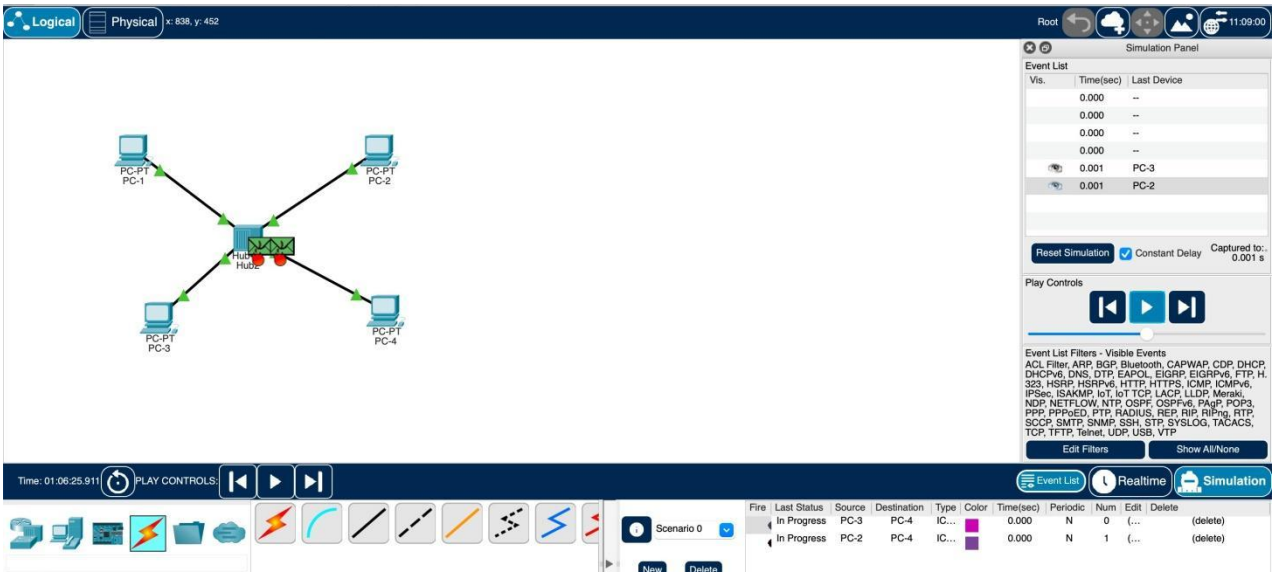


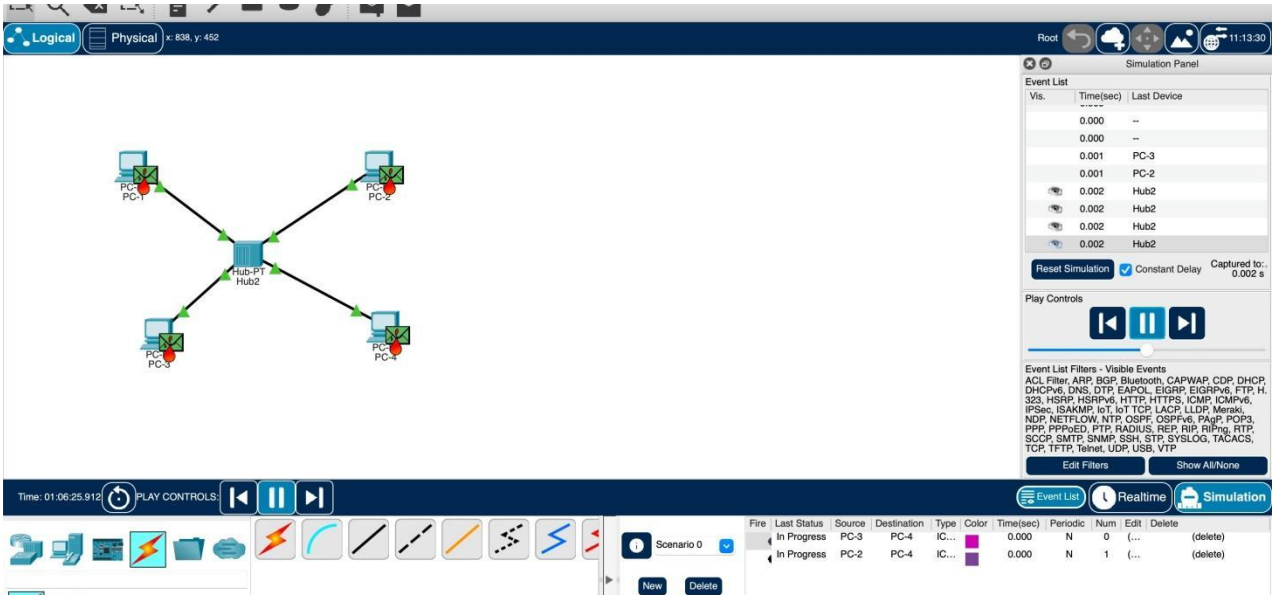


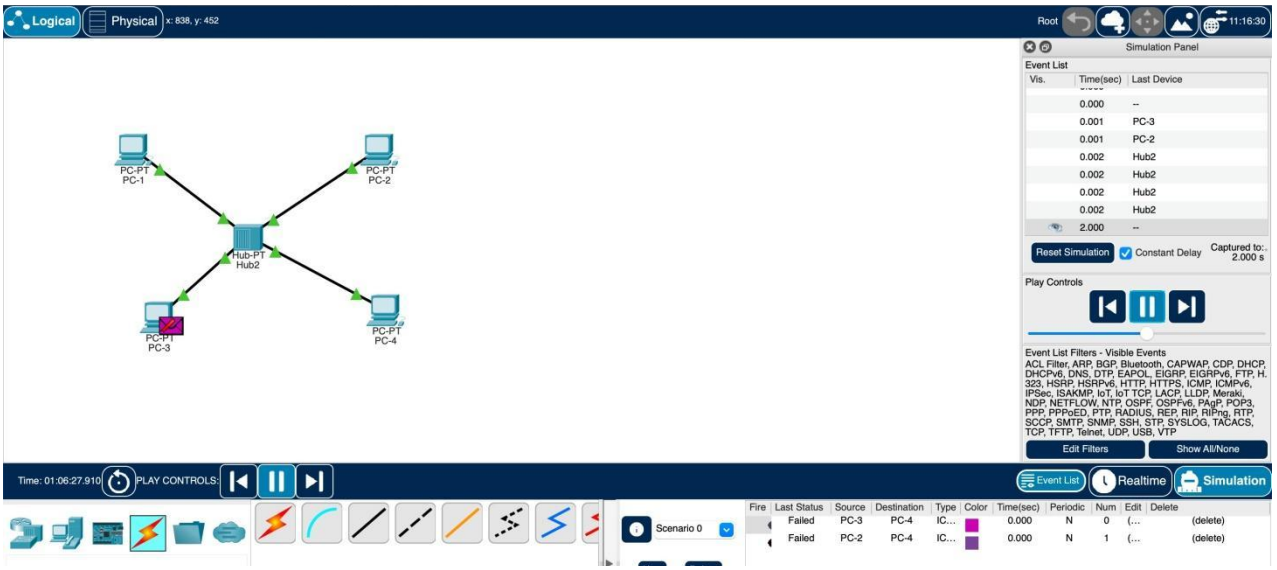


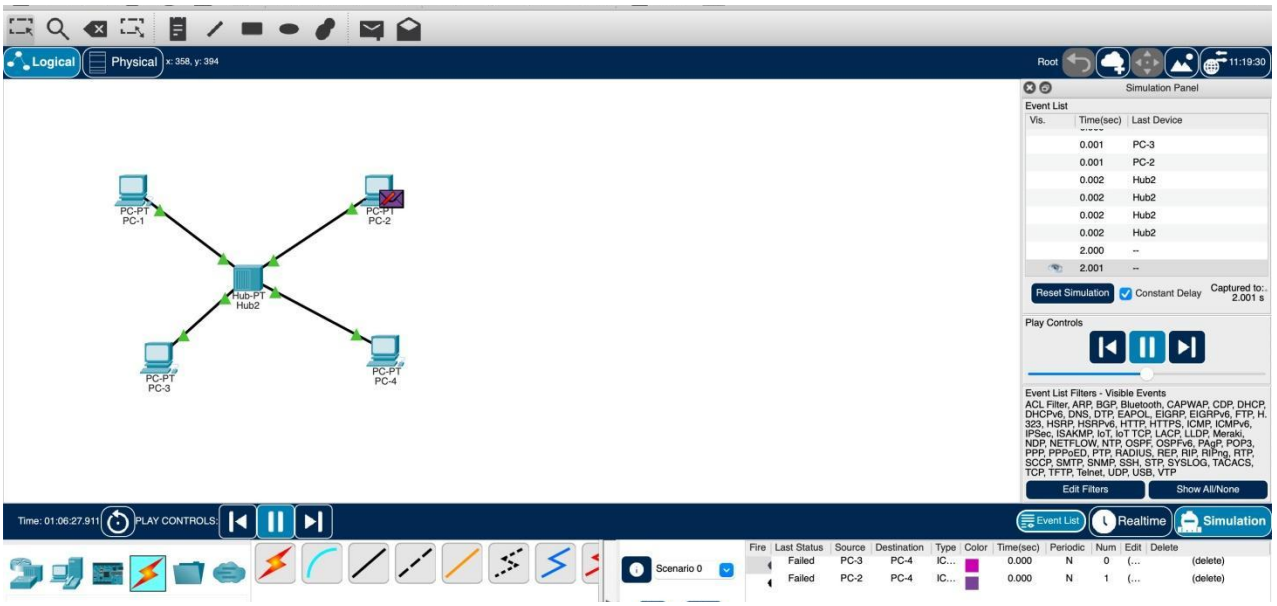
c) PC3 to PC4 and PC2 to PC4 (in hub and switch as CC)



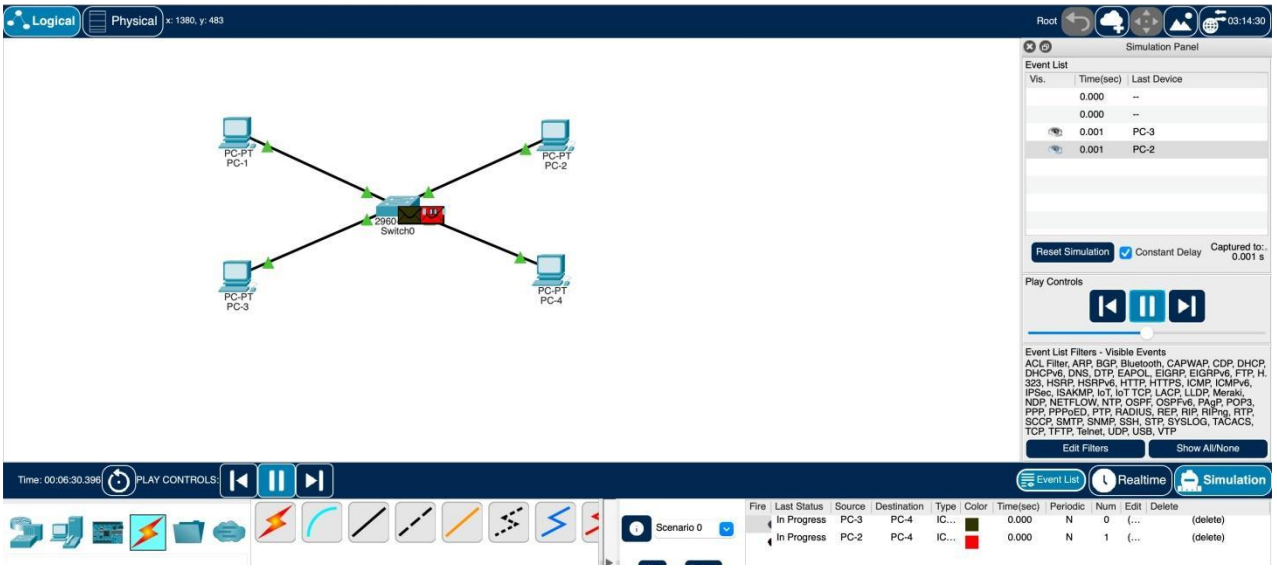


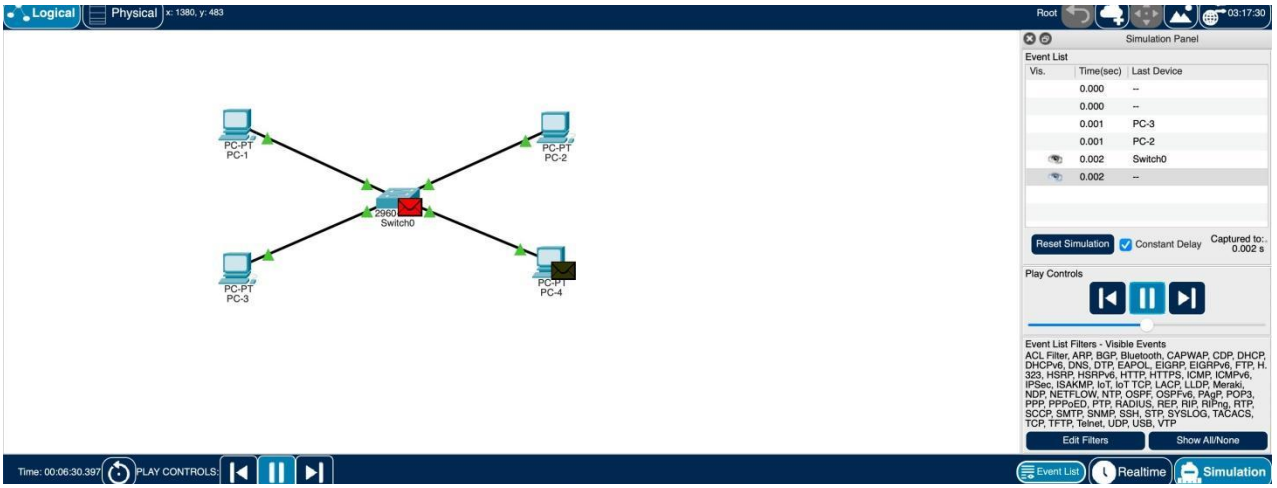

Logical
Physical
x: 838, y: 452
Root
11:13:30
Simulation Panel
Event List
Vis.
Time(sec)
Last Device
0.000 --
0.000 --
0.001 PC-3
0.001 PC-2
0.002 Hub2
0.002 Hub2
0.002 Hub2
0.002 Hub2
Reset Simulation
Constant Delay
Captured to: 0.002 s
Play Controls
Event List Filters - Visible Events
ACL Filter, ARP, BGP, Bluetooth, CAPWAP, CDP, DHCP, DHCPv6, DNS, DTP, EAPOL, EIGRP, EIGRPv6, FTP, H.323, HSRP, HSRPv6, HTTP, HTTPS, ICMP, ICMPv6, IPSec, ISAKMP, IoT, IoT TCP, LACP, LLDP, Meraki, NDP, NETFLOW, NTP, OSPF, OSPFv6, PAgP, POP3, PPP, PPPoED, PTP, RADIUS, REP, RIP, RIPng, RTP, SCCP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TCP, TFTP, Telnet, UDP, USB, VTP
Edit Filters
Show All/None
Hub-PT Hub2
PC-PT PC-1
PC-PT PC-2
PC-PT PC-3
PC-PT PC-4
Time: 01:06:25.912
PLAY CONTROLS:
Event List
Realtime
Simulation
Scenario 0
New
Delete
Fire
Last Status
Source
Destination
Type
Color
Time(sec)
Periodic
Num
Edit
Delete
In Progress PC-3 PC-4 IC... 0.000 N 0 (... (delete)
In Progress PC-2 PC-4 IC... 0.000 N 1 (... (delete)

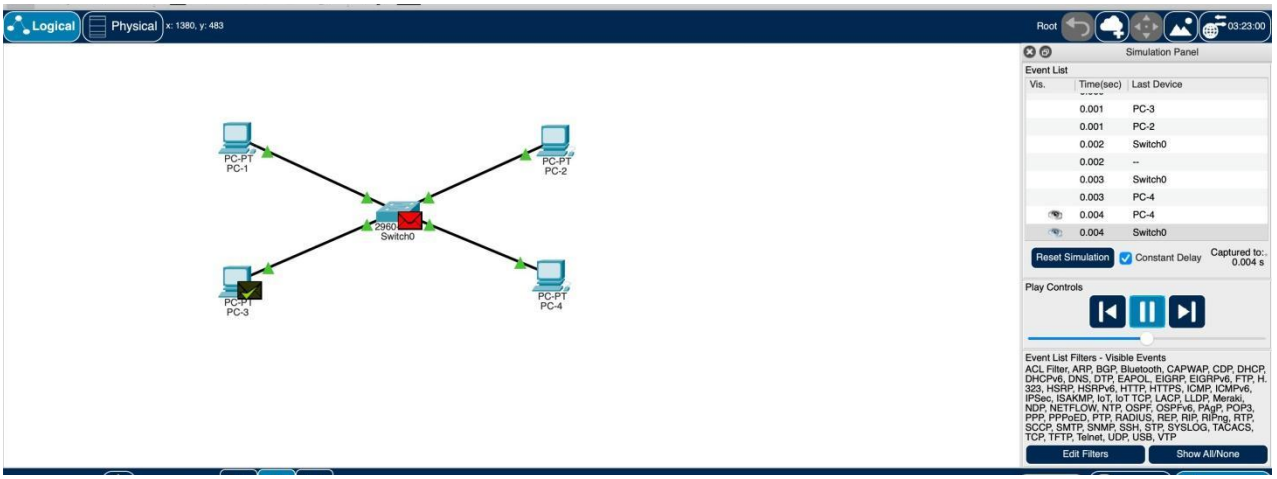

Logical
Physical
x: 838, y: 452
Root
11:16:30
Simulation Panel
Event List
Vis.
Time(sec)
Last Device
0.000 --
0.001 PC-3
0.001 PC-2
0.002 Hub2
0.002 Hub2
0.002 Hub2
0.002 Hub2
2.000 --
Reset Simulation
Constant Delay
Captured to: 2.000 s
Play Controls
Event List Filters - Visible Events
ACL Filter, ARP, BGP, Bluetooth, CAPWAP, CDP, DHCP, DHCPv6, DNS, DTP, EAPOL, EIGRP, EIGRPv6, FTP, H.323, HSRP, HSRPv6, HTTP, HTTPS, ICMP, ICMPv6, IPSec, ISAKMP, IoT, IoT TCP, LACP, LLDP, Meraki, NDP, NETFLOW, NTP, OSPF, OSPFv6, PAgP, POP3, PPP, PPPoED, PTP, RADIUS, REP, RIP, RIPng, RTP, SCCP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TCP, TFTP, Telnet, UDP, USB, VTP
Edit Filters
Show All/None
Hub-PT Hub2
PC-PT PC-1
PC-PT PC-2
PC-PT PC-3
PC-PT PC-4
Time: 01:06:27.910
PLAY CONTROLS:
Event List
Realtime
Simulation
Scenario 0
Fire
Last Status
Source
Destination
Type
Color
Time(sec)
Periodic
Num
Edit
Delete
Failed PC-3 PC-4 IC... 0.000 N 0 (... (delete)
Failed PC-2 PC-4 IC... 0.000 N 1 (... (delete)

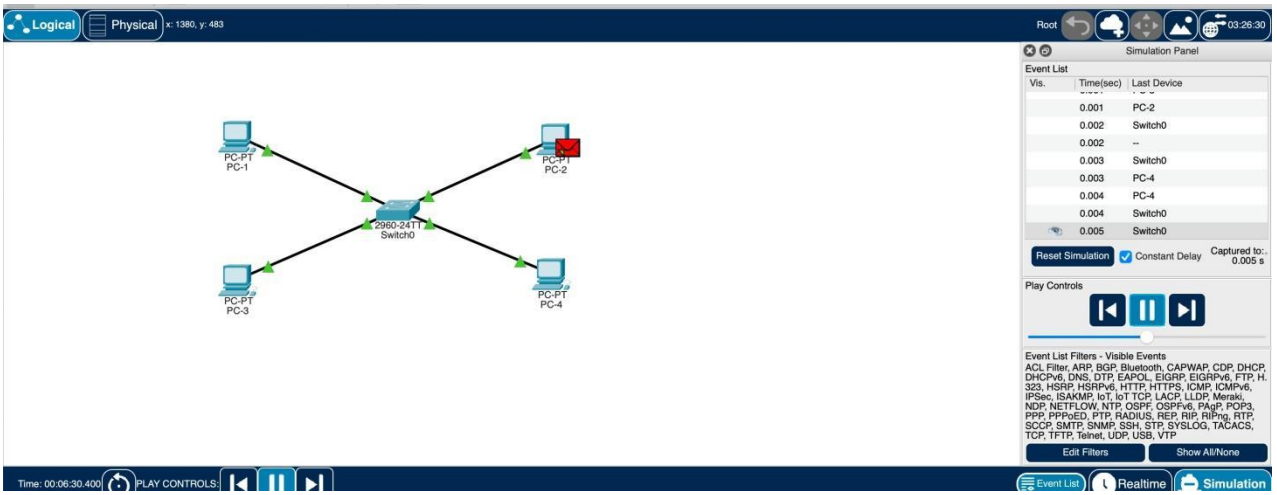

Logical
Physical
x: 358, y: 394
Root
11:19:30
Simulation Panel
Event List
Vis.
Time(sec)
Last Device
0.001 PC-3
0.001 PC-2
0.002 Hub2
0.002 Hub2
0.002 Hub2
0.002 Hub2
2.000 --
2.001 --
Reset Simulation
Constant Delay
Captured to: 2.001 s
Play Controls
Event List Filters - Visible Events
ACL Filter, ARP, BGP, Bluetooth, CAPWAP, CDP, DHCP, DHCPv6, DNS, DTP, EAPOL, EIGRP, EIGRPv6, FTP, H.323, HSRP, HSRPv6, HTTP, HTTPS, ICMP, ICMPv6, IPSec, ISAKMP, IoT, IoT TCP, LACP, LLDP, Meraki, NDP, NETFLOW, NTP, OSPF, OSPFv6, PAgP, POP3, PPP, PPPoED, PTP, RADIUS, REP, RIP, RIPng, RTP, SCCP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TCP, TFTP, Telnet, UDP, USB, VTP
Edit Filters
Show All/None
Hub-PT Hub2
PC-PT PC-1
PC-PT PC-2
PC-PT PC-3
PC-PT PC-4
Time: 01:06:27.911
PLAY CONTROLS:
Event List
Realtime
Simulation
Scenario 0
Fire
Last Status
Source
Destination
Type
Color
Time(sec)
Periodic
Num
Edit
Delete
Failed PC-3 PC-4 IC... 0.000 N 0 (... (delete)
Failed PC-2 PC-4 IC... 0.000 N 1 (... (delete)

Switch:


Logical
Physical
x: 1380, y: 483
Root
03:14:30
Simulation Panel
Event List
Vis.
Time(sec)
Last Device
0.000 --
0.000 --
0.001 PC-3
0.001 PC-2
Reset Simulation
Constant Delay
Captured to: 0.001 s
Play Controls
Event List Filters - Visible Events
ACL Filter, ARP, BGP, Bluetooth, CAPWAP, CDP, DHCP, DHCPv6, DNS, DTP, EAPOL, EIGRP, EIGRPv6, FTP, H.323, HSRP, HSRPv6, HTTP, HTTPS, ICMP, ICMPv6, IPSec, ISAKMP, IoT, IoT TCP, LACP, LLDP, Meraki, NDP, NETFLOW, NTP, OSPF, OSPFv6, PAgP, POP3, PPP, PPPoED, PTP, RADIUS, REP, RIP, RIPng, RTP, SCCP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TCP, TFTP, Telnet, UDP, USB, VTP
Edit Filters
Show All/None
PC-PT PC-1
PC-PT PC-2
2960 Switch0
PC-PT PC-3
PC-PT PC-4
Time: 00:06:30.396
PLAY CONTROLS:
Event List
Realtime
Simulation
Scenario 0
Fire
Last Status
Source
Destination
Type
Color
Time(sec)
Periodic
Num
Edit
Delete
In Progress PC-3 PC-4 IC... 0.000 N 0 (... (delete)
In Progress PC-2 PC-4 IC... 0.000 N 1 (... (delete)


Logical
Physical
x: 1380, y: 483
Root
03:17:30
Simulation Panel
Event List
Vis.
Time(sec)
Last Device
0.000 --
0.000 --
0.001 PC-3
0.001 PC-2
0.002 Switch0
0.002 --
Reset Simulation
Constant Delay
Captured to: 0.002 s
Play Controls
Event List Filters - Visible Events
ACL Filter, ARP, BGP, Bluetooth, CAPWAP, CDP, DHCP, DHCPv6, DNS, DTP, EAPOL, EIGRP, EIGRPv6, FTP, H.323, HSRP, HSRPv6, HTTP, HTTPS, ICMP, ICMPv6, IPSec, ISAKMP, IoT, IoT TCP, LACP, LLDP, Meraki, NDP, NETFLOW, NTP, OSPF, OSPFv6, PAgP, POP3, PPP, PPPoED, PTP, RADIUS, REP, RIP, RIPng, RTP, SCCP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TCP, TFTP, Telnet, UDP, USB, VTP
Edit Filters
Show All/None
PC-PT PC-1
PC-PT PC-2
2960 Switch0
PC-PT PC-3
PC-PT PC-4
Time: 00:06:30.397
PLAY CONTROLS:
Event List
Realtime
Simulation


Logical
Physical
x: 1380, y: 483
Root
03:23:00
Simulation Panel
Event List
Vis.
Time(sec)
Last Device
0.001 PC-3
0.001 PC-2
0.002 Switch0
0.002 --
0.003 Switch0
0.003 PC-4
0.004 PC-4
0.004 Switch0
Reset Simulation
Constant Delay
Captured to: 0.004 s
Play Controls
Event List Filters - Visible Events
ACL Filter, ARP, BGP, Bluetooth, CAPWAP, CDP, DHCP, DHCPv6, DNS, DTP, EAPOL, EIGRP, EIGRPv6, FTP, H.323, HSRP, HSRPv6, HTTP, HTTPS, ICMP, ICMPv6, IPSec, ISAKMP, IoT, IoT TCP, LACP, LLDP, Meraki, NDP, NETFLOW, NTP, OSPF, OSPFv6, PAgP, POP3, PPP, PPPoED, PTP, RADIUS, REP, RIP, RIPng, RTP, SCCP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TCP, TFTP, Telnet, UDP, USB, VTP
Edit Filters
Show All/None
PC-PT PC-1
PC-PT PC-2
2960 Switch0
PC-PT PC-3
PC-PT PC-4



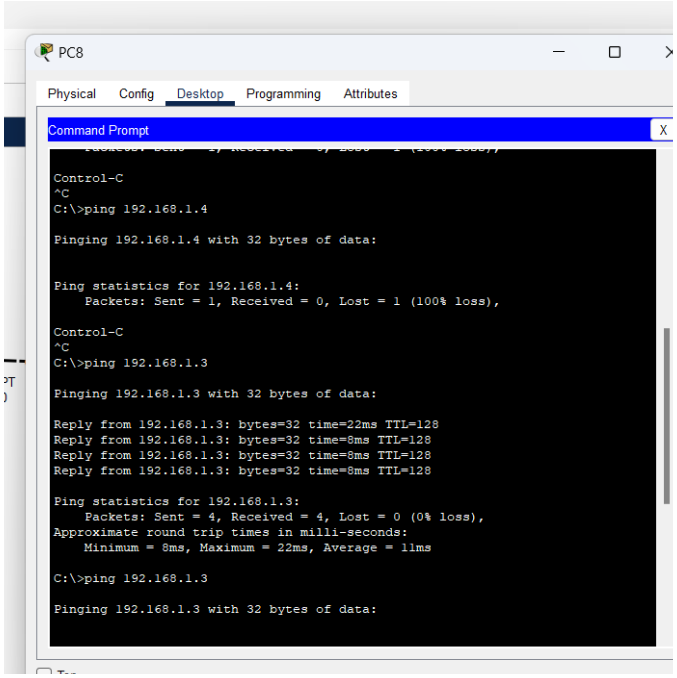
d) Why collisions are seen at the client level?

ANS:

Collisions occur since Hub follows a Half Duplex Model. In a half Duplex model, Sender can send and receive the data but one at a time. So, collisions are seen at the client level.

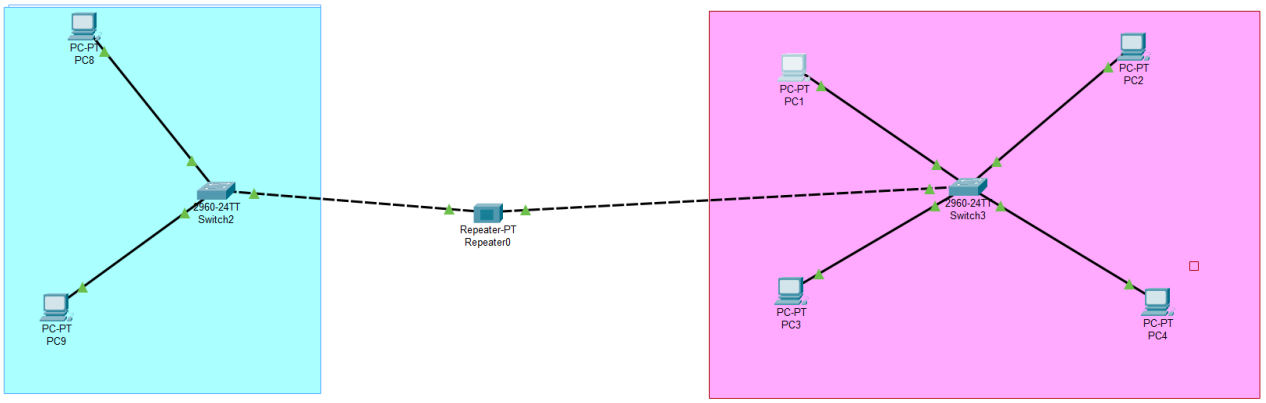
4. Ping 192.168.1.3 from 192.168.1.10 which networking device would you use to ensure they are connected?

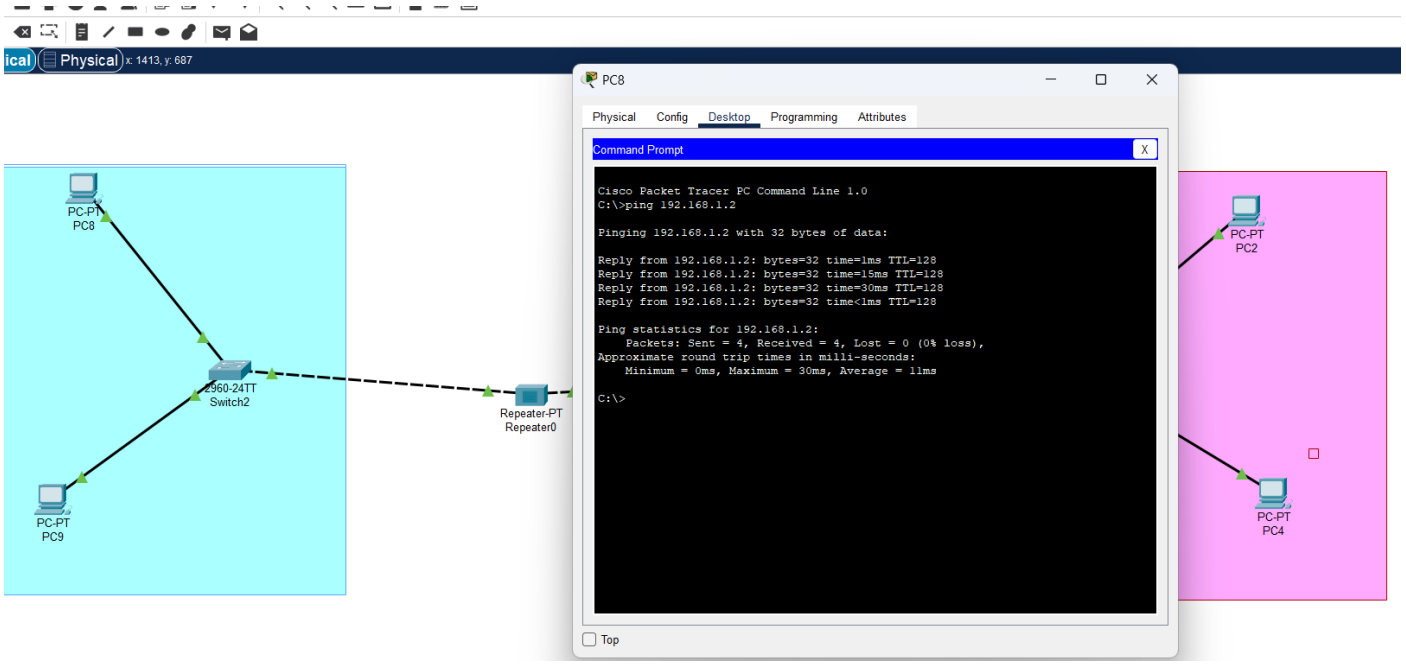
A router can be used as a networking device to make sure they are connected.



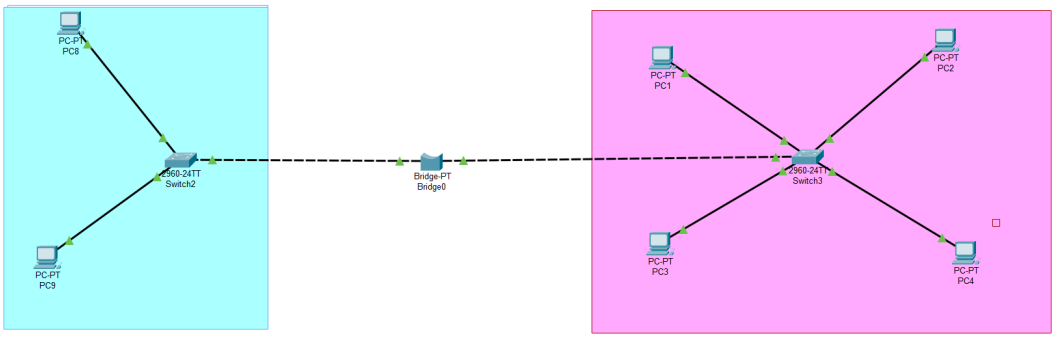
5. Connect LAN 1 to LAN 2 using

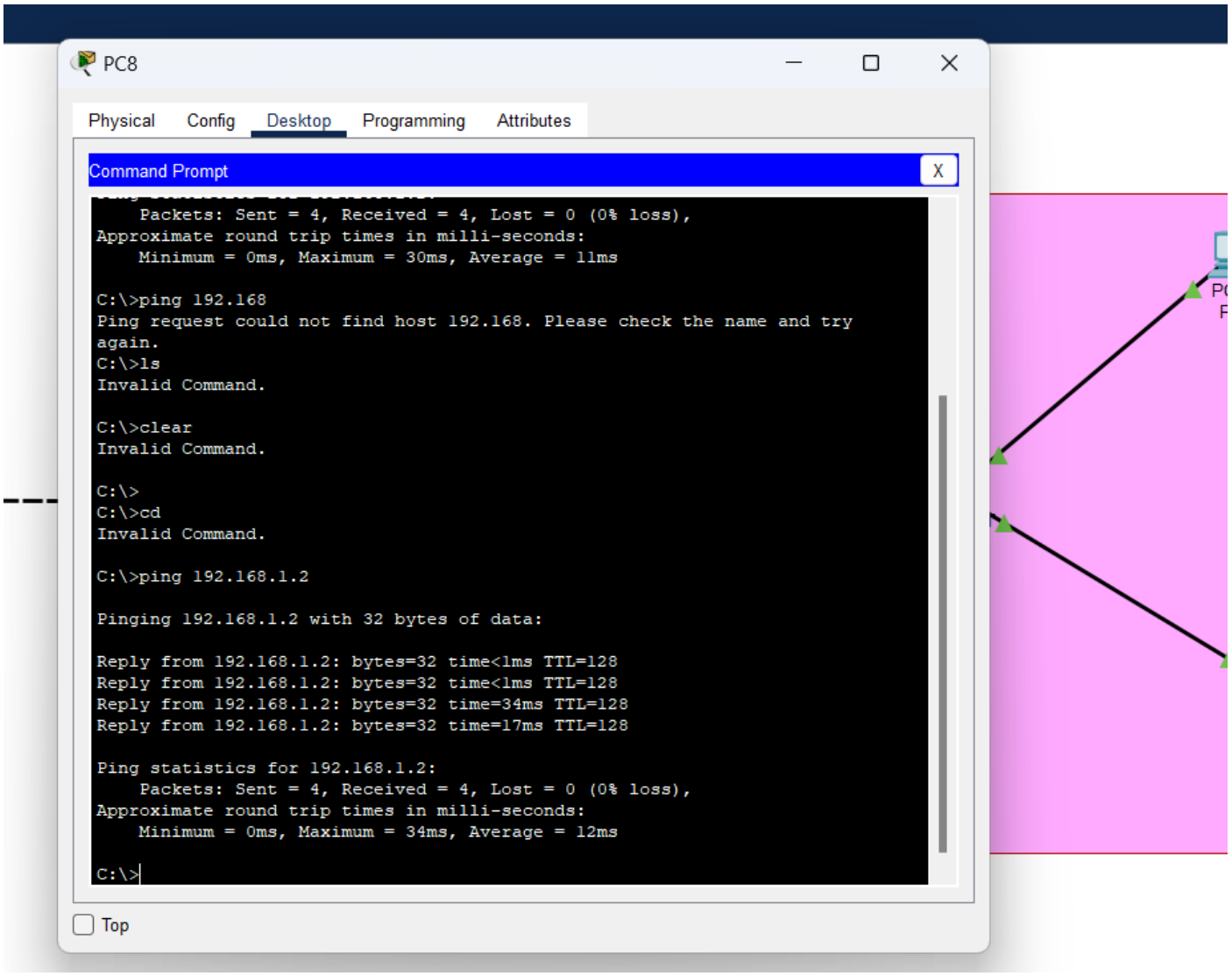
a) Repeater





b) Bridge





Verify Connectively?

When there is no connectivity i.e. there is no bridge or repeater. It shows requests timed out between two same networks. When there is network connectivity i.e. there is a bridge or a repeater a connection is established between two networks. On using a ping command connection is established between the two networks.