Experiment No. - 1.1

Student Name: Deepak Saini **UID: 20BCS4066**
Branch: 20BCC1 **Section/Group: A**
Semester: 5th **Date of Performance: 01/08/2022**
Subject Name: COMPUTER NETWORKS LAB
Subject Code: 20CSP-342

1. Aim:

Build and configure the basic computer network on Cisco Packet Tracer.

2. Task to be done:

To build and configure the basic computer network on Cisco Packet Tracer.

3. Applications:

Requirements:

- PC
- Cisco Packet Tracer Software

An IP address is a 32-bit number that uniquely identifies a host (computer or other device, such as a printer or router) on a TCP/IP network.
A layer 2 switch is a type of network switch or device that works on the data link layer to connect and transmit data in a local area network.
The Cisco IOS is a package of routing, switching, internetworking and telecommunications functions integrated into a multitasking operating system.

4. Steps for the practical:

a) **Basic network**

1. Open the Cisco packet tracer software and login using your credentials.
2. In real-time environment, select two end devices(PCs)
3. Establish a connection using the automatic wire selection otherwise using suitable straight through or cross over links.
4. For data flow it is necessary to provide the PCs with appropriate IP address.

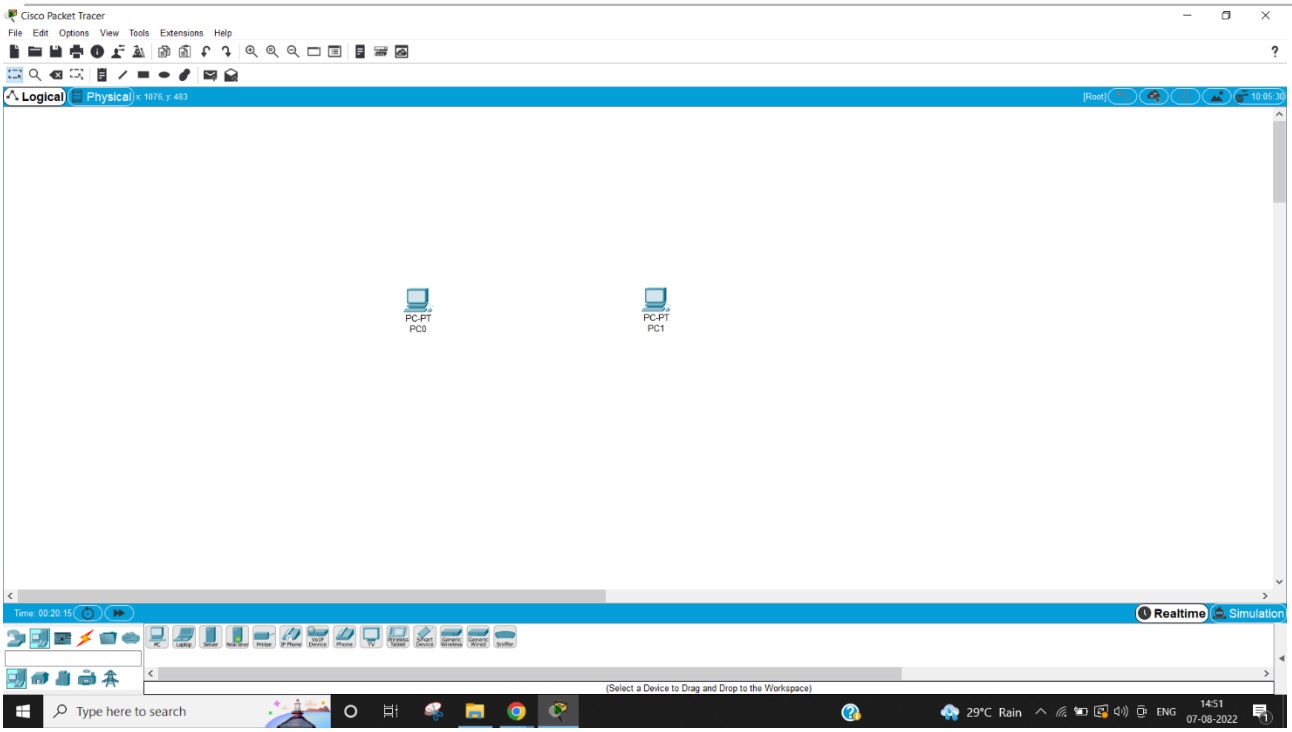
5. Click on an end device. Select desktop option and then click on IP configuration icon and enter appropriate IP address. The subnet mask will automatically get generated. Rename the end devices with same IP addresses for better understanding.
6. Now select the message option and drop on sender and receiver end devices one by one.
7. Message is sent successfully. Verify the same by running it on the simulation environment and check whether message sending is successful.
8. Delete the message by clicking on the left arrow button on the bottom right corner and click delete to delete the messages selected for transmission.

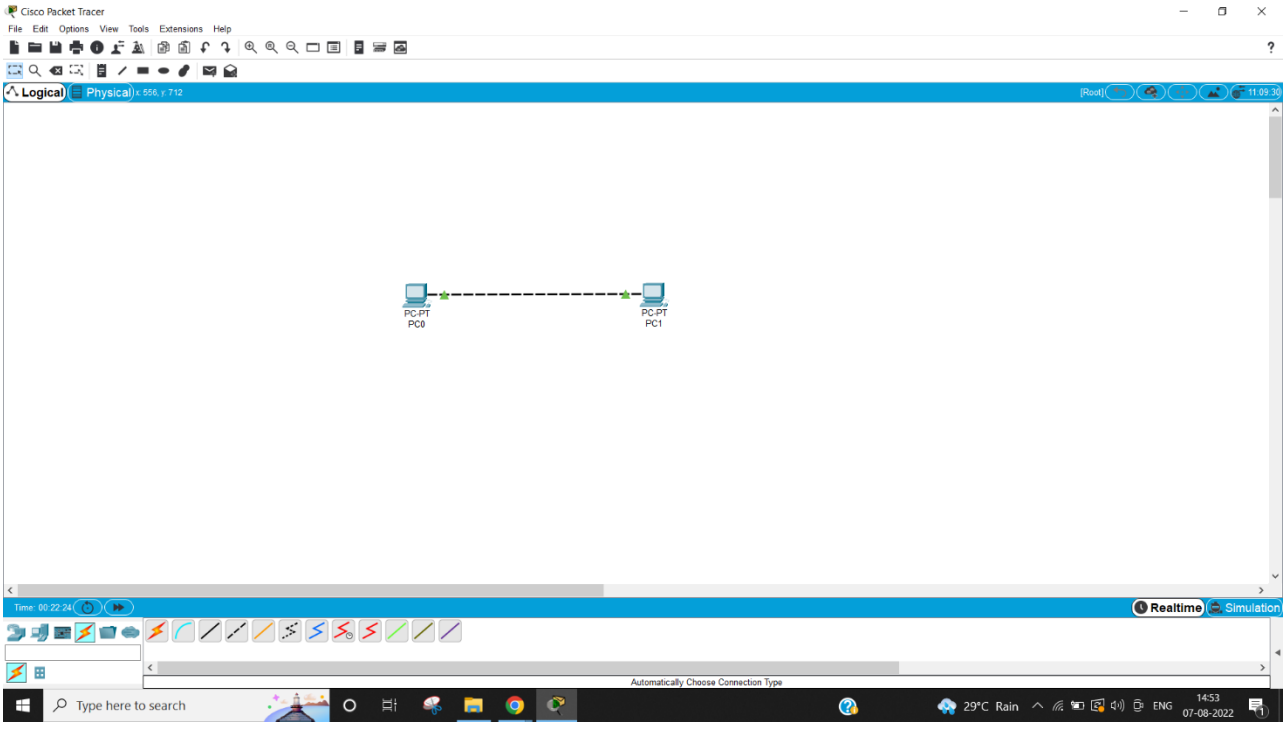
b) Basic network with a switch

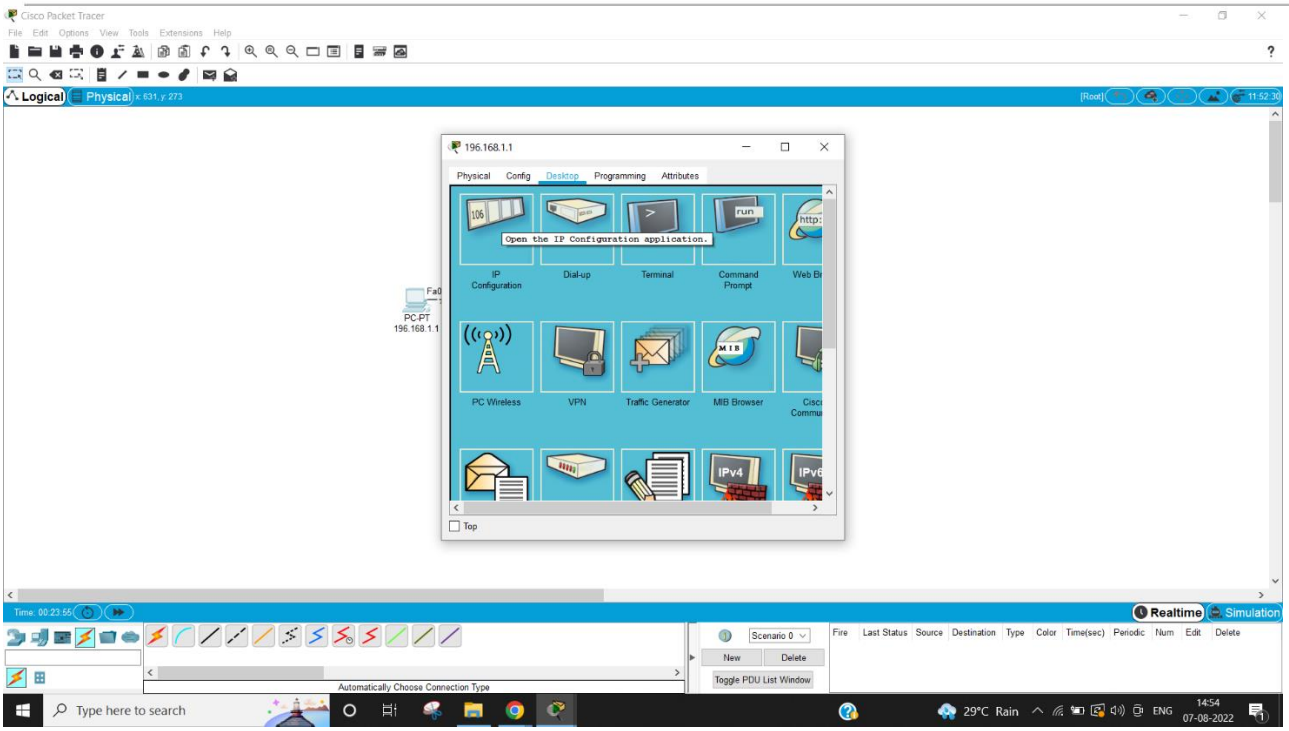
1. In real-time environment, select three end devices(PCs/Laptops).
2. Connect the PCs using a network device(switch- 2960) in between.
3. Establish a connection using the automatic wire selection otherwise using suitable straight through or cross over links(Fast Ethernet).
4. For data flow it is necessary to provide the PCs with appropriate IP address.
5. Click on an end device. Select desktop option and then click on IP configuration icon and enter appropriate IP address. The subnet mask will automatically get generated. Rename the PCs with same IP addresses for more understanding.
6. Now select the message option and drop on sender and receiver end devices one by one. One along the PCs and one along PC to Laptop.
7. Messages are sent successfully. Verify the same by running it on the simulation environment and check whether message sending is successful.
8. Delete the messages by clicking on the left arrow button on the bottom right corner and click delete to delete the messages selected for transmission.

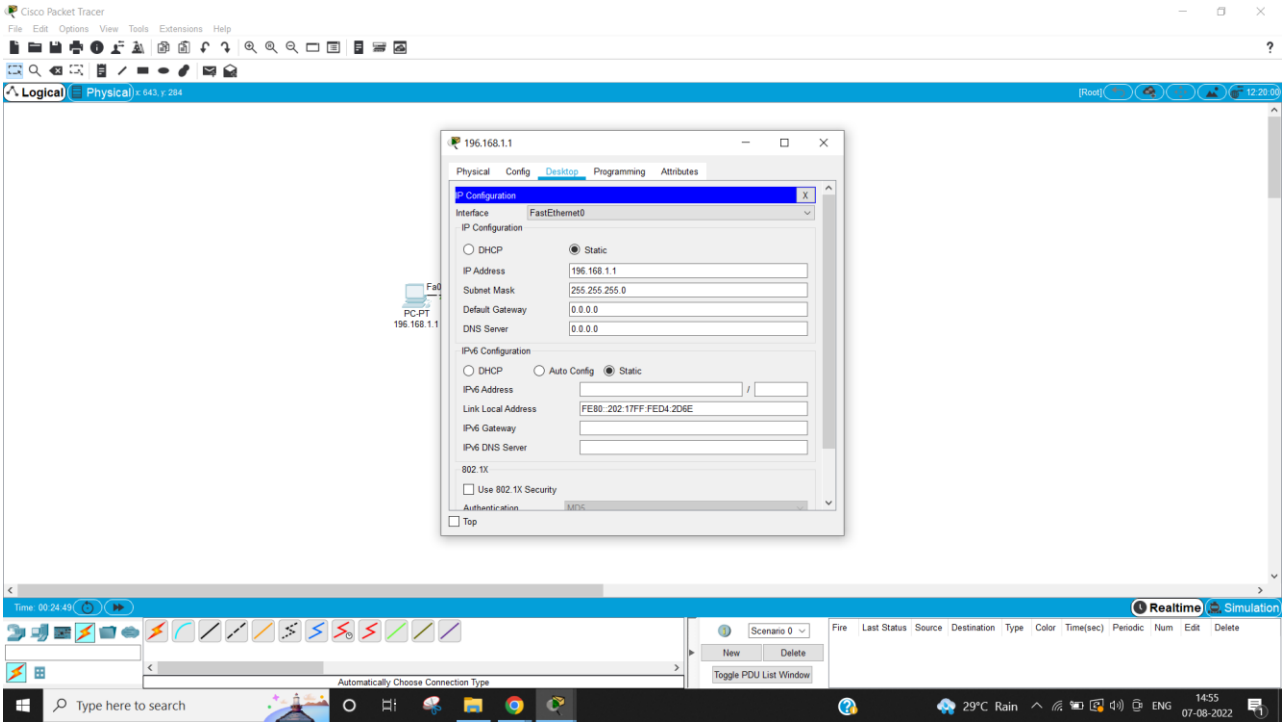
5. Result/Output

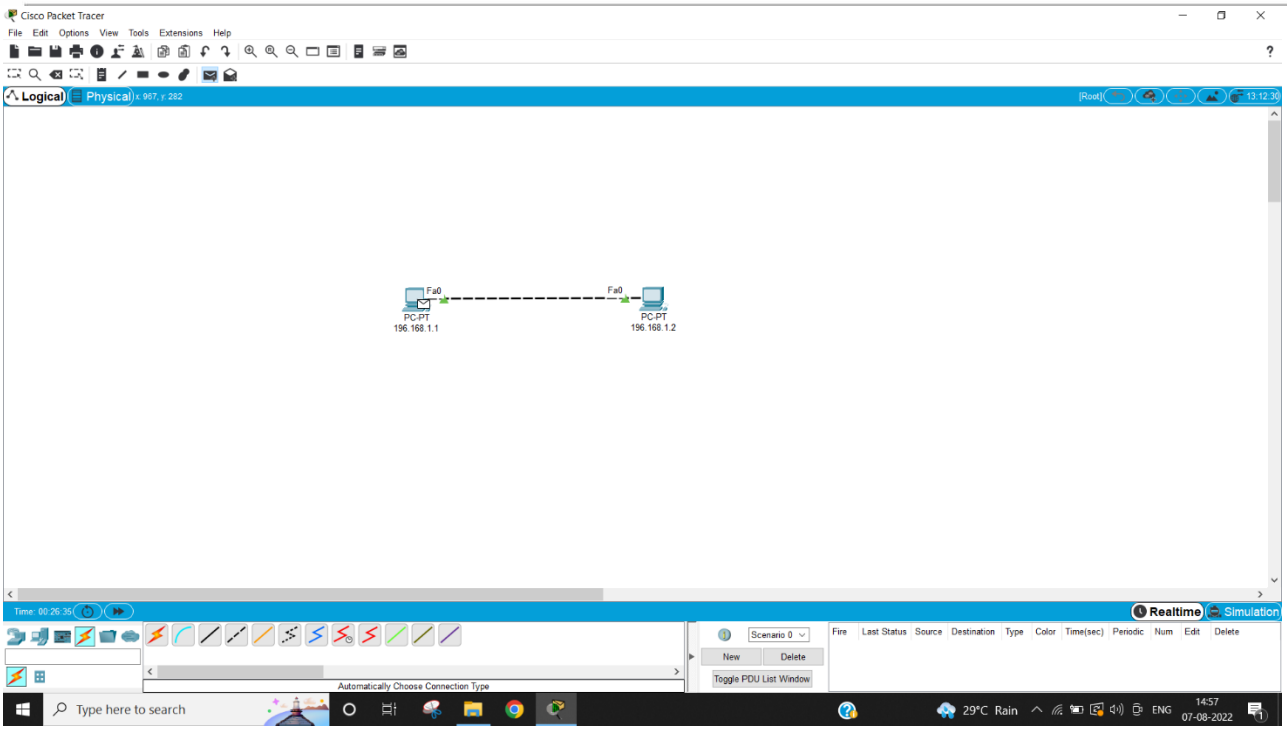
a)Basic network

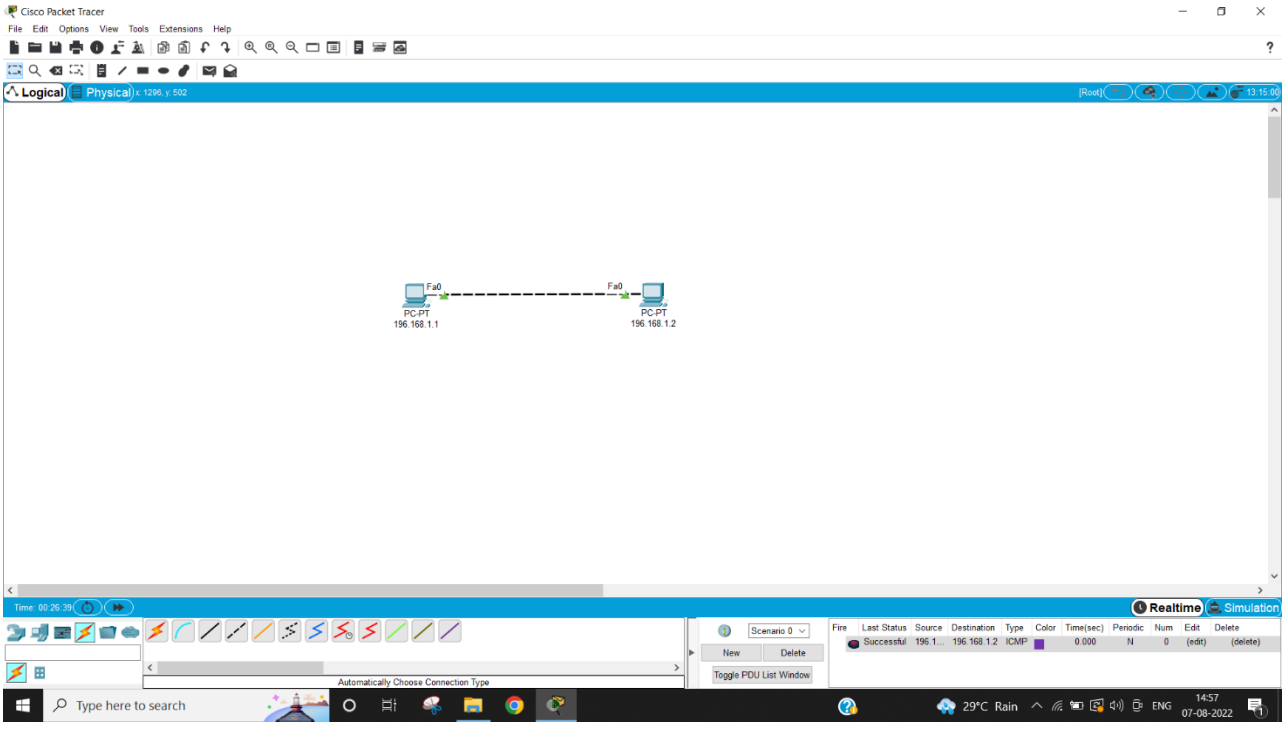

Cisco Packet Tracer
File Edit Options View Tools Extensions Help
Logical Physical
PC-PT PC0
PC-PT PC1
Realtime Simulation
(Select a Device to Drag and Drop to the Workspace)
Type here to search
29°C Rain
ENG
14:51
07-08-2022

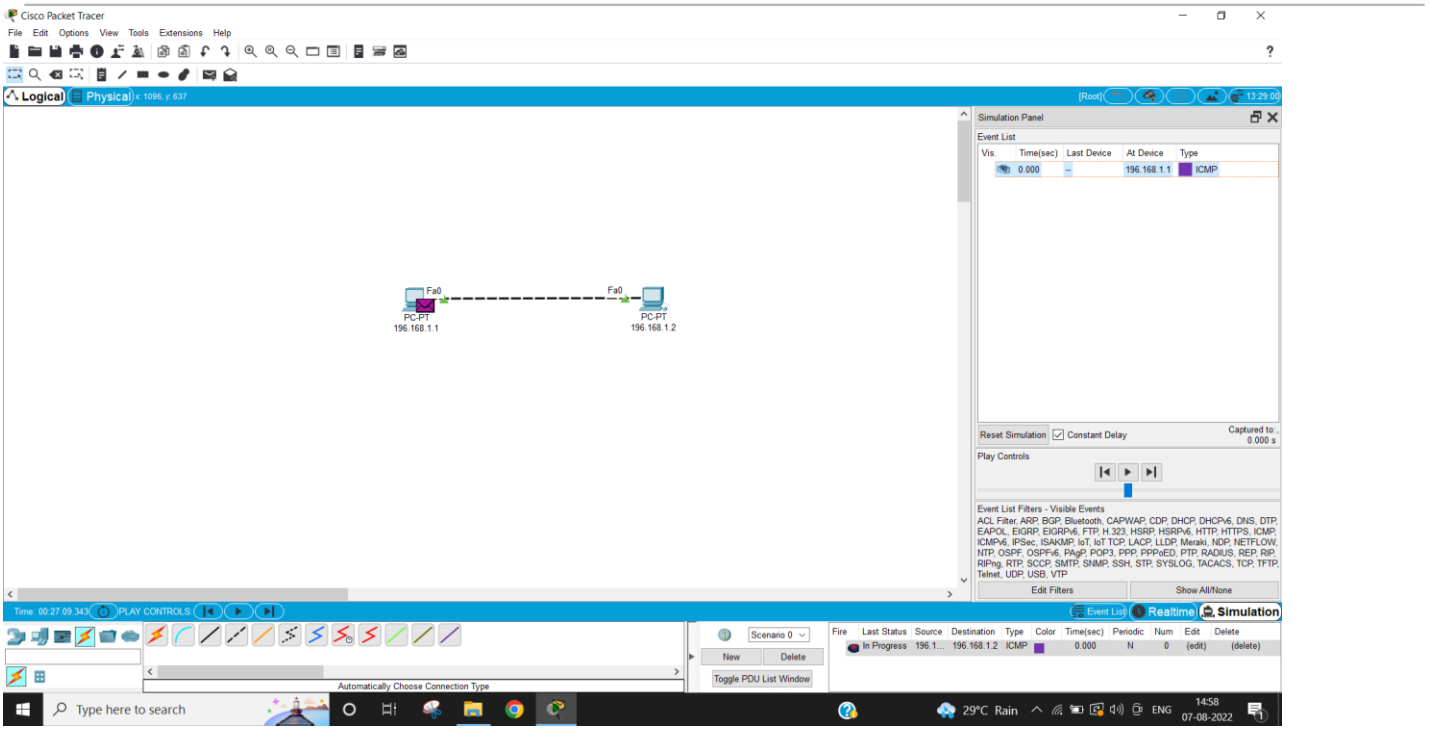

Cisco Packet Tracer
File Edit Options View Tools Extensions Help
Logical Physical
PC-PT PC0
PC-PT PC1
Realtime Simulation
Automatically Choose Connection Type
Type here to search
29°C Rain
ENG
14:53
07-08-2022

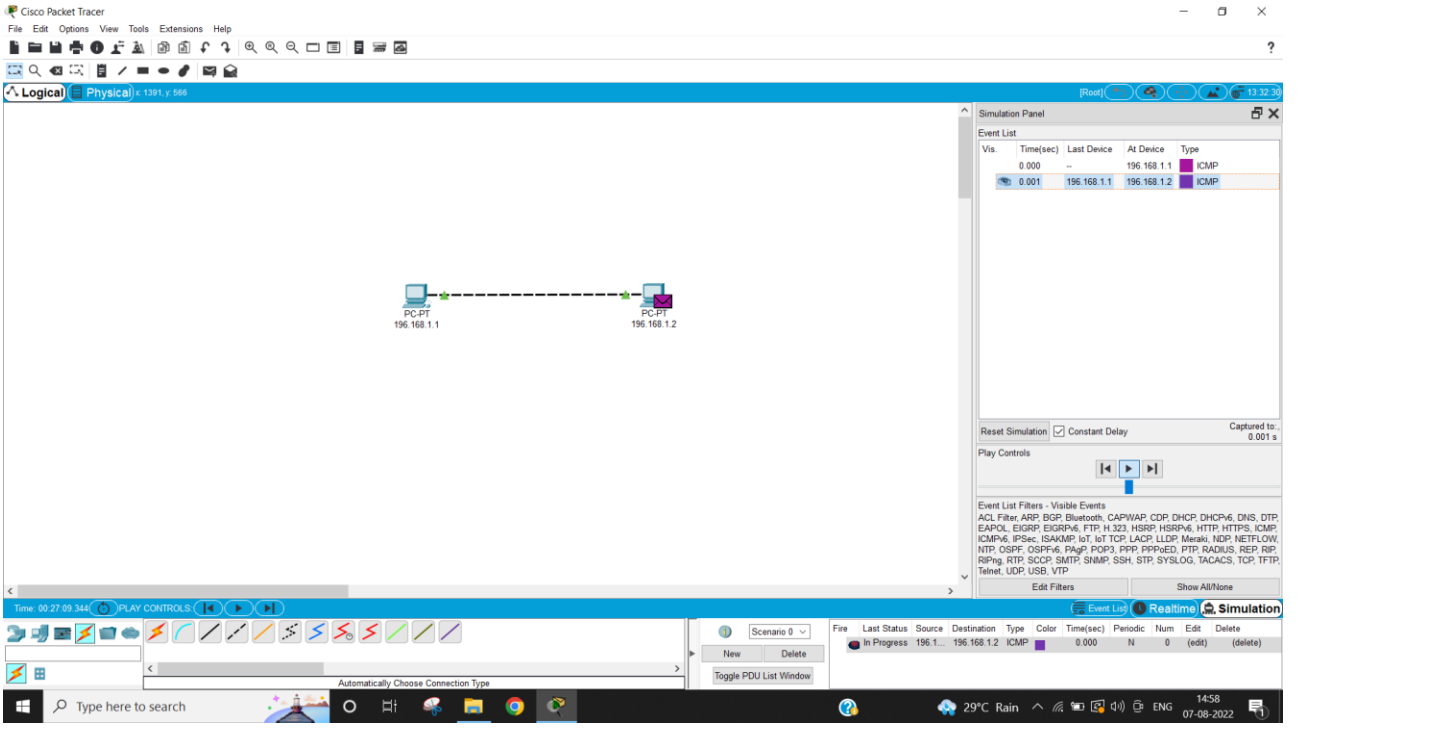

Cisco Packet Tracer
Logical
Physical
196.168.1.1
Physical Config Desktop Programming Attributes
Open the IP Configuration application.
IP Configuration
Dial-up
Terminal
Command Prompt
PC Wireless
VPN
Traffic Generator
MIB Browser
IPv4
PC-PT
196.168.1.1
Top
Realtime
Simulation
Automatically Choose Connection Type
Type here to search
29°C Rain
ENG
14:54
07-08-2022

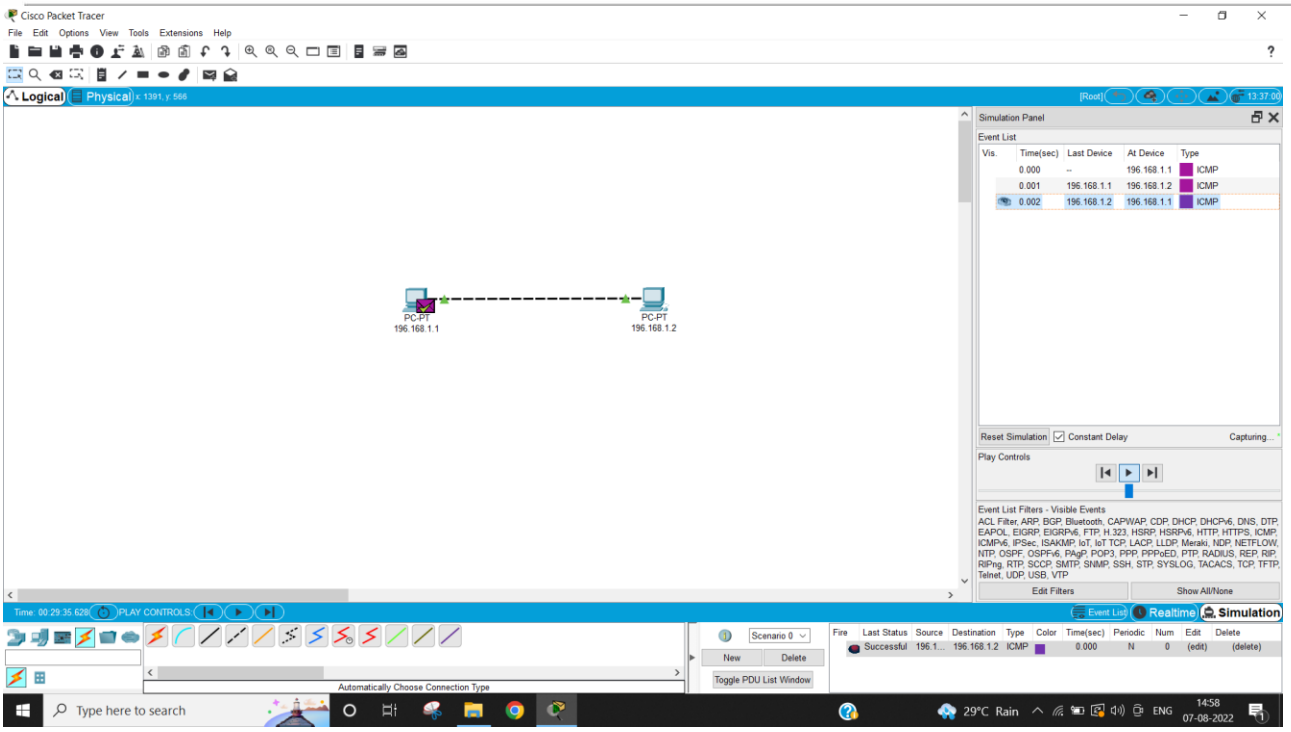

Cisco Packet Tracer
Logical
Physical
196.168.1.1
Physical Config Desktop Programming Attributes
IP Configuration
Interface
FastEthernet0
IP Configuration
DHCP
Static
IP Address
196.168.1.1
Subnet Mask
255.255.255.0
Default Gateway
0.0.0.0
DNS Server
0.0.0.0
IPv6 Configuration
DHCP
Auto Config
Static
IPv6 Address
Link Local Address
FE80::202:17FF:FED4:2D6E
IPv6 Gateway
IPv6 DNS Server
802.1X
Use 802.1X Security
PC-PT
196.168.1.1
Top
Realtime
Simulation
Automatically Choose Connection Type
Type here to search
29°C Rain
ENG
14:55
07-08-2022

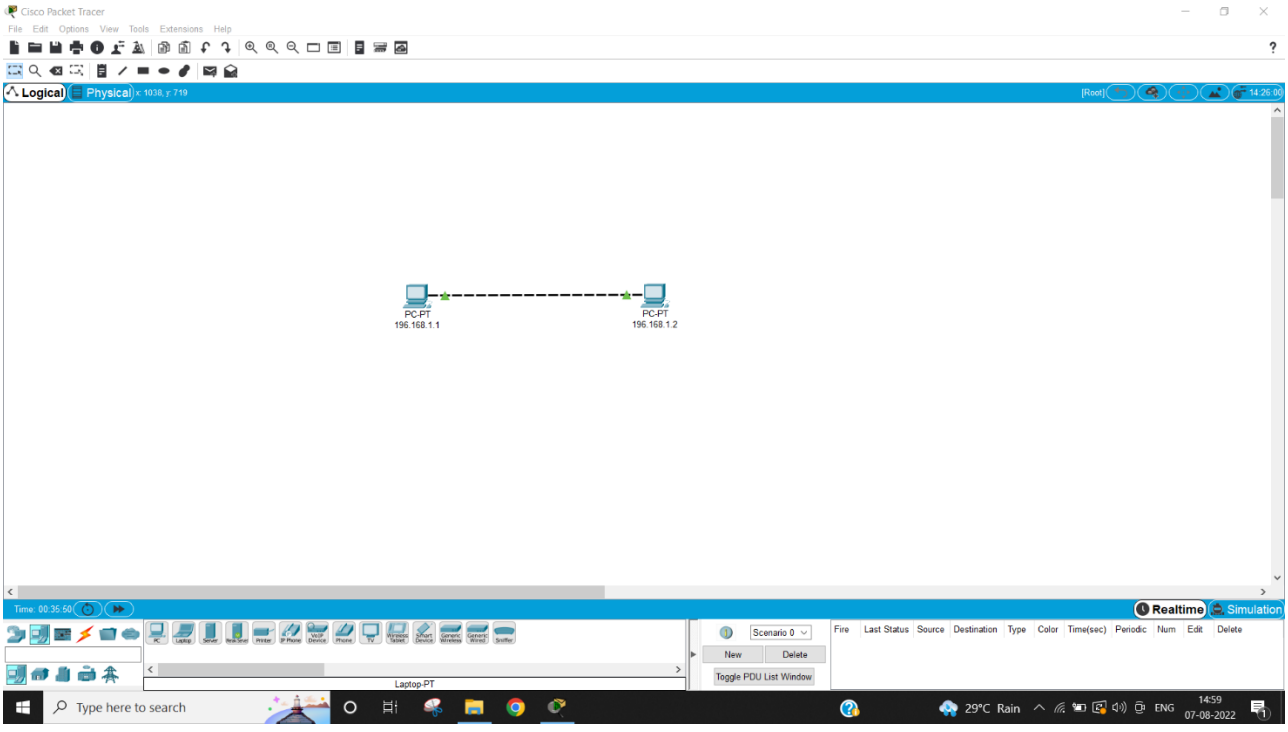

Cisco Packet Tracer
File Edit Options View Tools Extensions Help
Logical Physical
Fa0
PC-PT
196.168.1.1
Fa0
PC-PT
196.168.1.2
Realtime Simulation
Automatically Choose Connection Type
Scenario 0
New Delete
Toggle PDU List Window
Fire Last Status Source Destination Type Color Time(sec) Periodic Num Edit Delete
Type here to search
29°C Rain
ENG
14:57
07-08-2022


Cisco Packet Tracer
File Edit Options View Tools Extensions Help
Logical Physical
Fa0
PC-PT
196.168.1.1
Fa0
PC-PT
196.168.1.2
Realtime Simulation
Automatically Choose Connection Type
Scenario 0
New Delete
Toggle PDU List Window
Fire Last Status Source Destination Type Color Time(sec) Periodic Num Edit Delete
Successful 196.1... 196.168.1.2 ICMP 0.000 N 0 (edit) (delete)
Type here to search
29°C Rain
ENG
14:57
07-08-2022

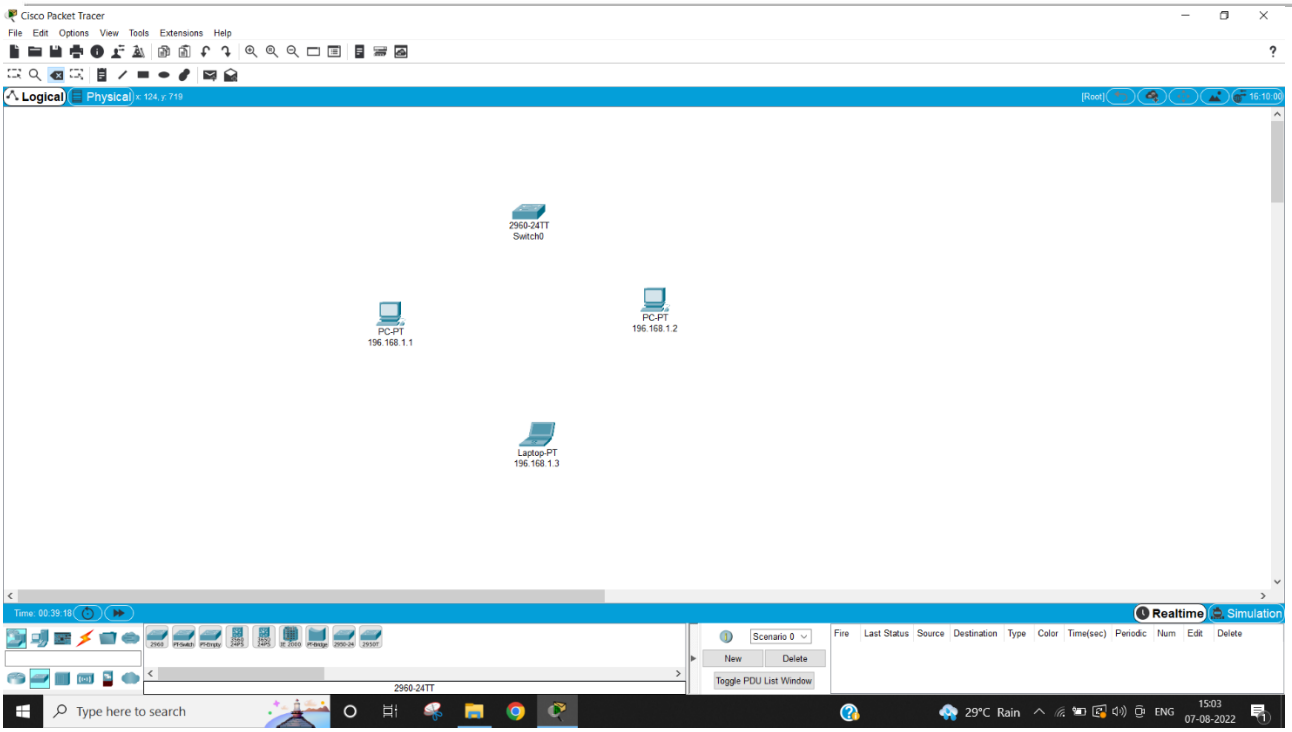

Cisco Packet Tracer
File Edit Options View Tools Extensions Help
Logical Physical
Simulation Panel
Event List
Vis. Time(sec) Last Device At Device Type
0.000 -- 196.168.1.1 ICMP
Reset Simulation Constant Delay
Play Controls
Event List Filters - Visible Events
Edit Filters Show All/None
Fa0 Fa0
PC-PT 196.168.1.1
PC-PT 196.168.1.2
Realtime Simulation
Fire Last Status Source Destination Type Color Time(sec) Periodic Num Edit Delete
In Progress 196.1... 196.168.1.2 ICMP 0.000 N 0 (edit) (delete)
Automatically Choose Connection Type
Type here to search
29°C Rain
ENG
14:58
07-08-2022

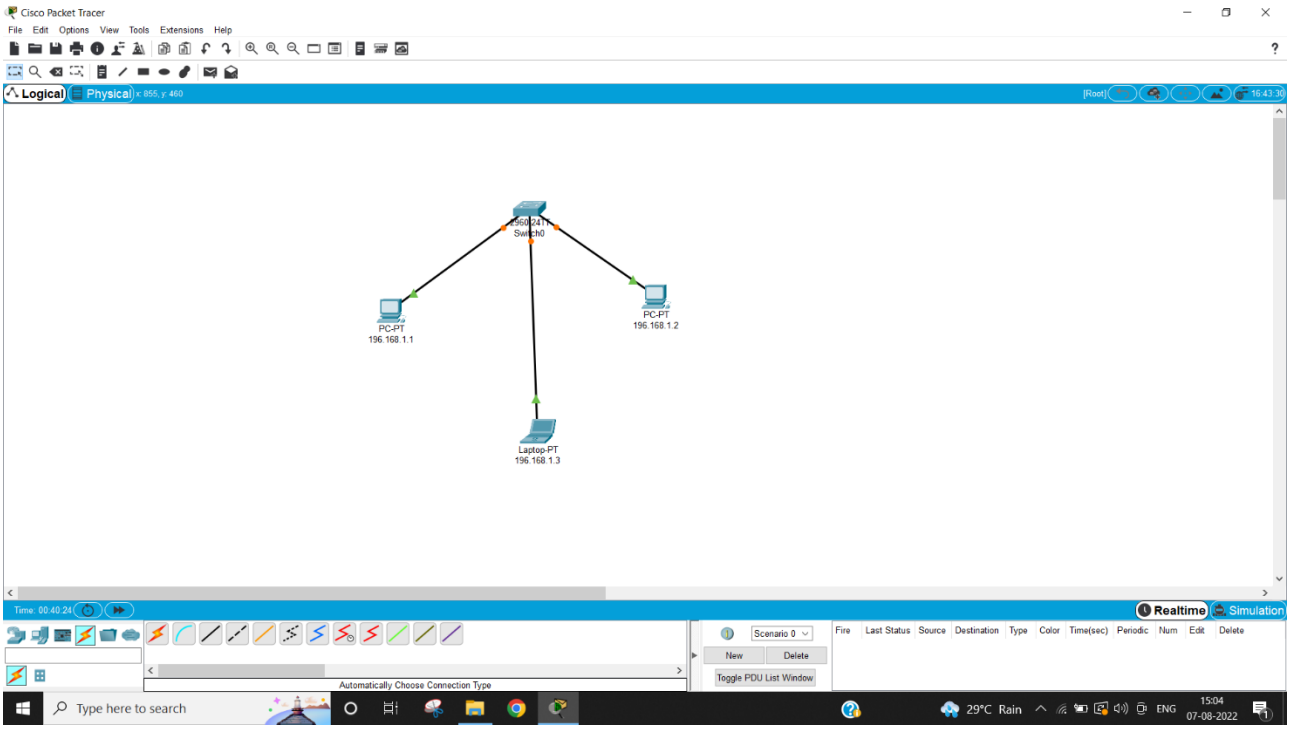

Cisco Packet Tracer
File Edit Options View Tools Extensions Help
Logical Physical
Simulation Panel
Event List
Vis. Time(sec) Last Device At Device Type
0.000 -- 196.168.1.1 ICMP
0.001 196.168.1.1 196.168.1.2 ICMP
Reset Simulation Constant Delay
Play Controls
Event List Filters - Visible Events
Edit Filters Show All/None
PC-PT 196.168.1.1
PC-PT 196.168.1.2
Realtime Simulation
Fire Last Status Source Destination Type Color Time(sec) Periodic Num Edit Delete
In Progress 196.1... 196.168.1.2 ICMP 0.000 N 0 (edit) (delete)
Automatically Choose Connection Type
Type here to search
29°C Rain
ENG
14:58
07-08-2022

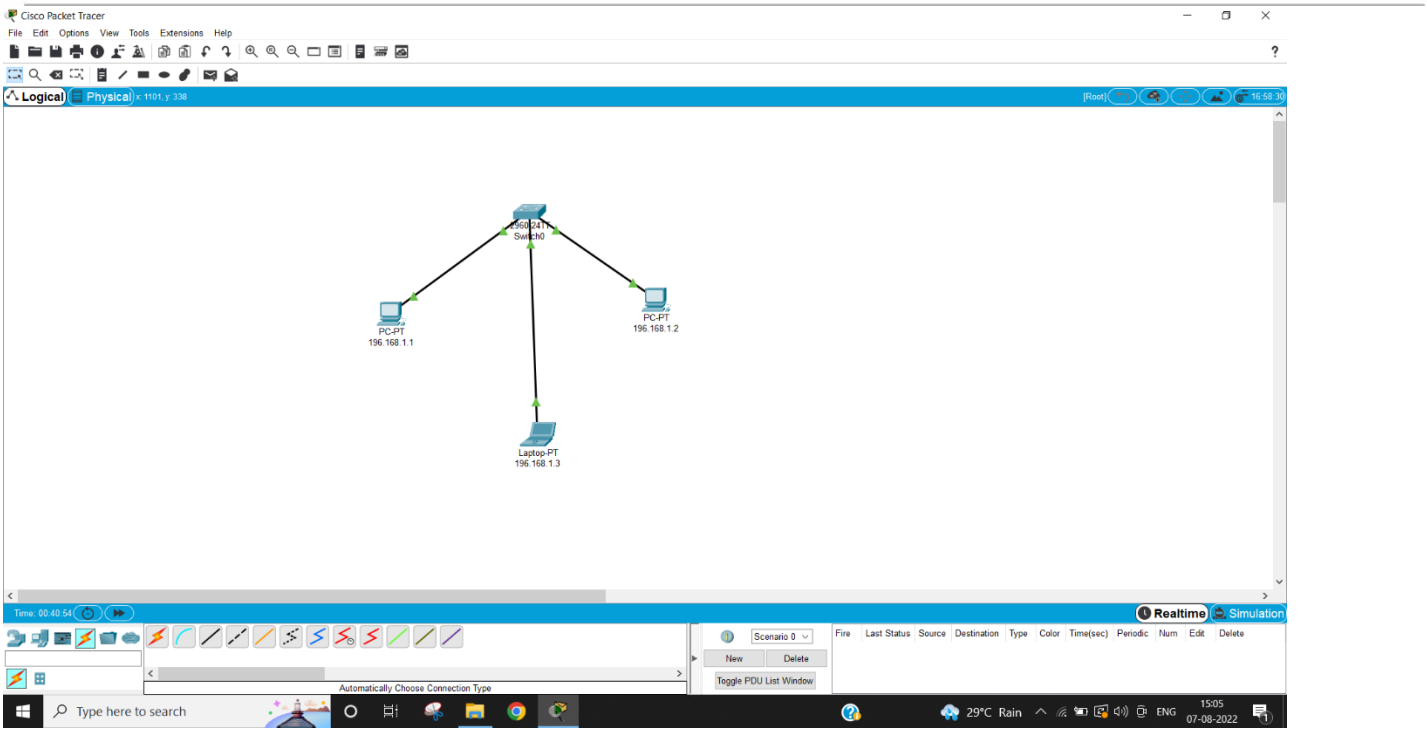


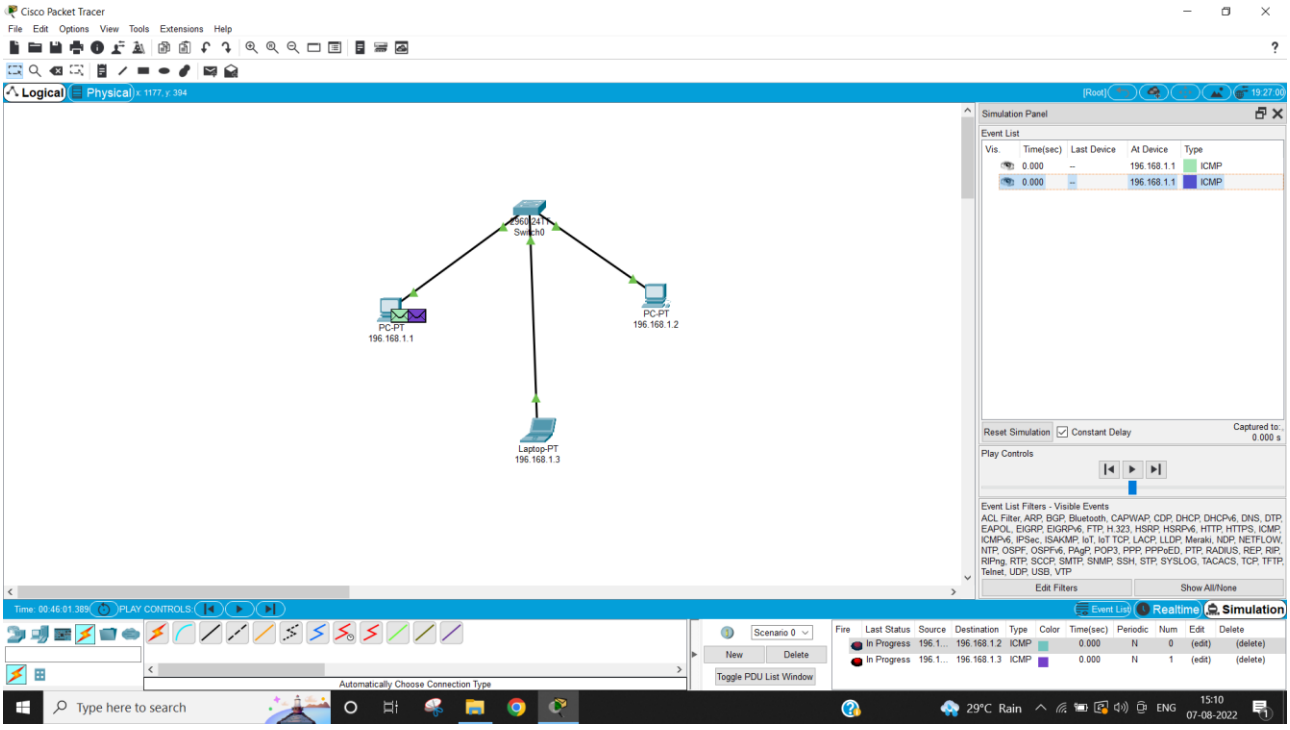


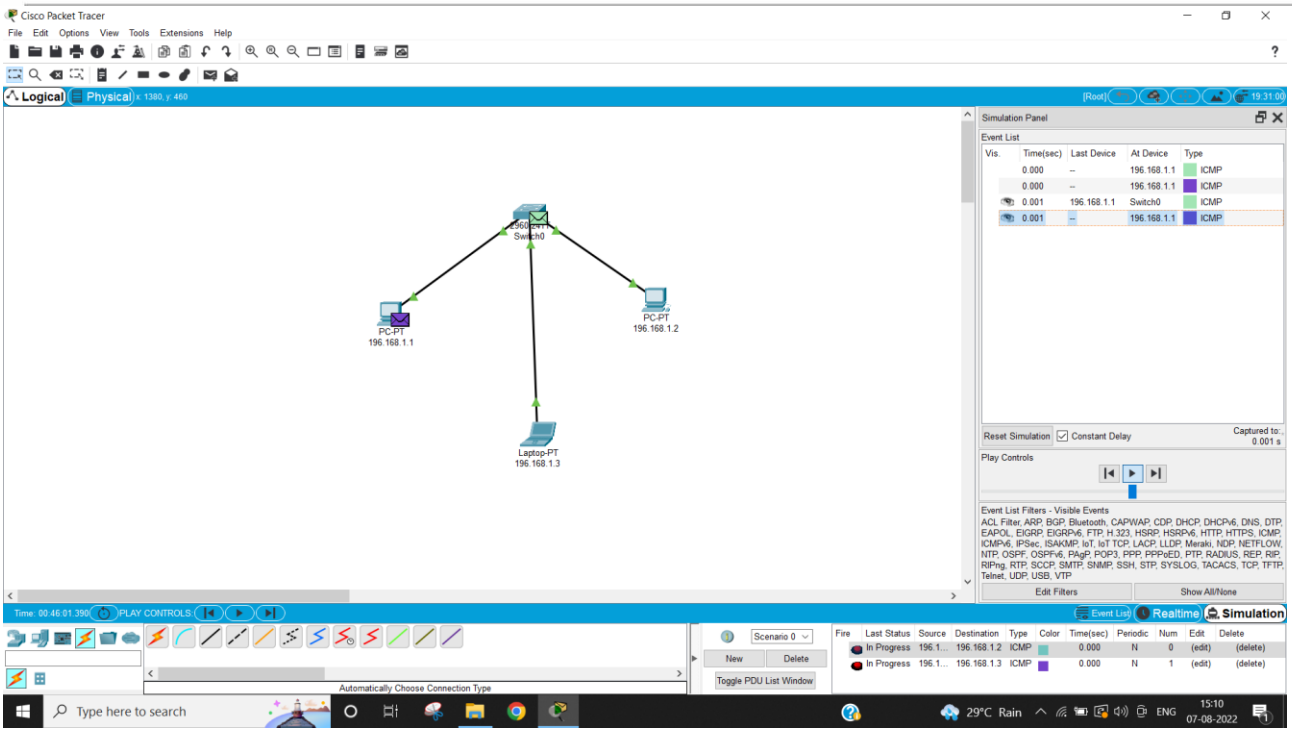
b) Basic network with a switch

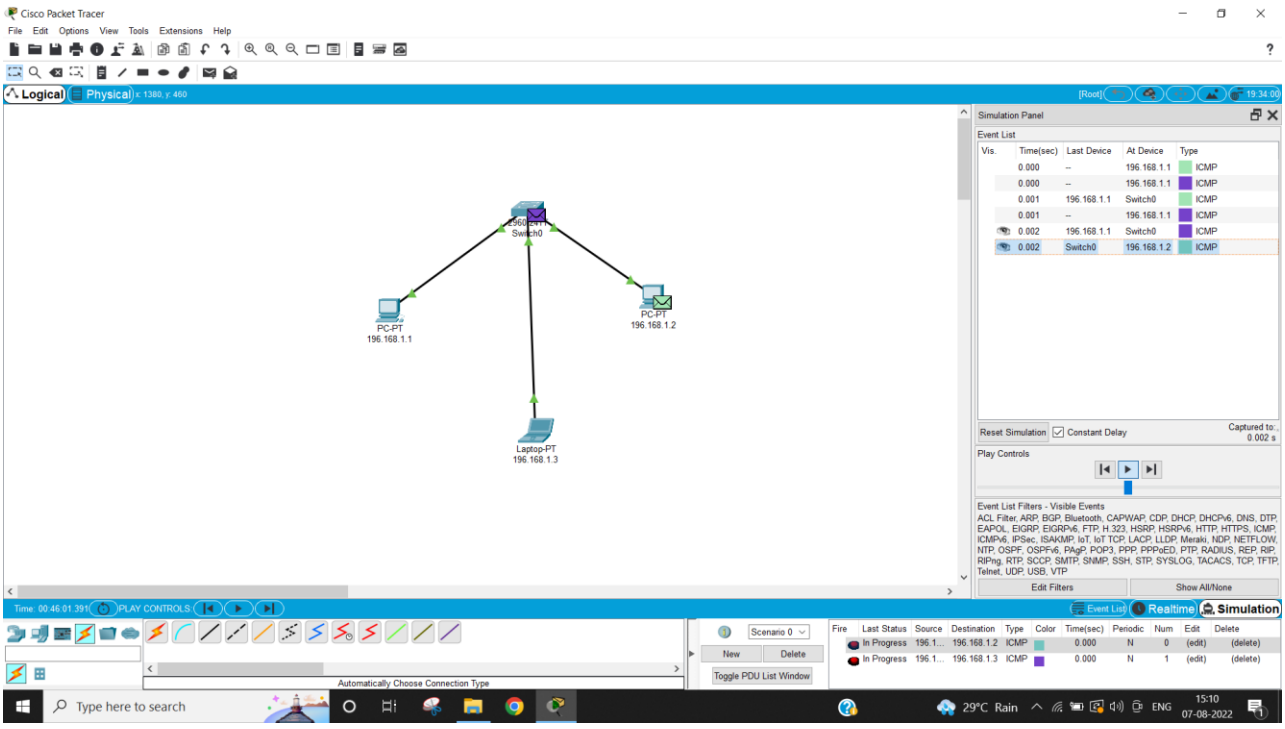

Cisco Packet Tracer
File Edit Options View Tools Extensions Help
Logical Physical
2960-24TT
Switch0
PC-PT
196.168.1.1
PC-PT
196.168.1.2
Laptop-PT
196.168.1.3
Realtime Simulation
Scenario 0
New Delete
Toggle PDU List Window
Fire Last Status Source Destination Type Color Time(sec) Periodic Num Edit Delete
2960-24TT
Type here to search
29°C Rain
ENG
15:03
07-08-2022

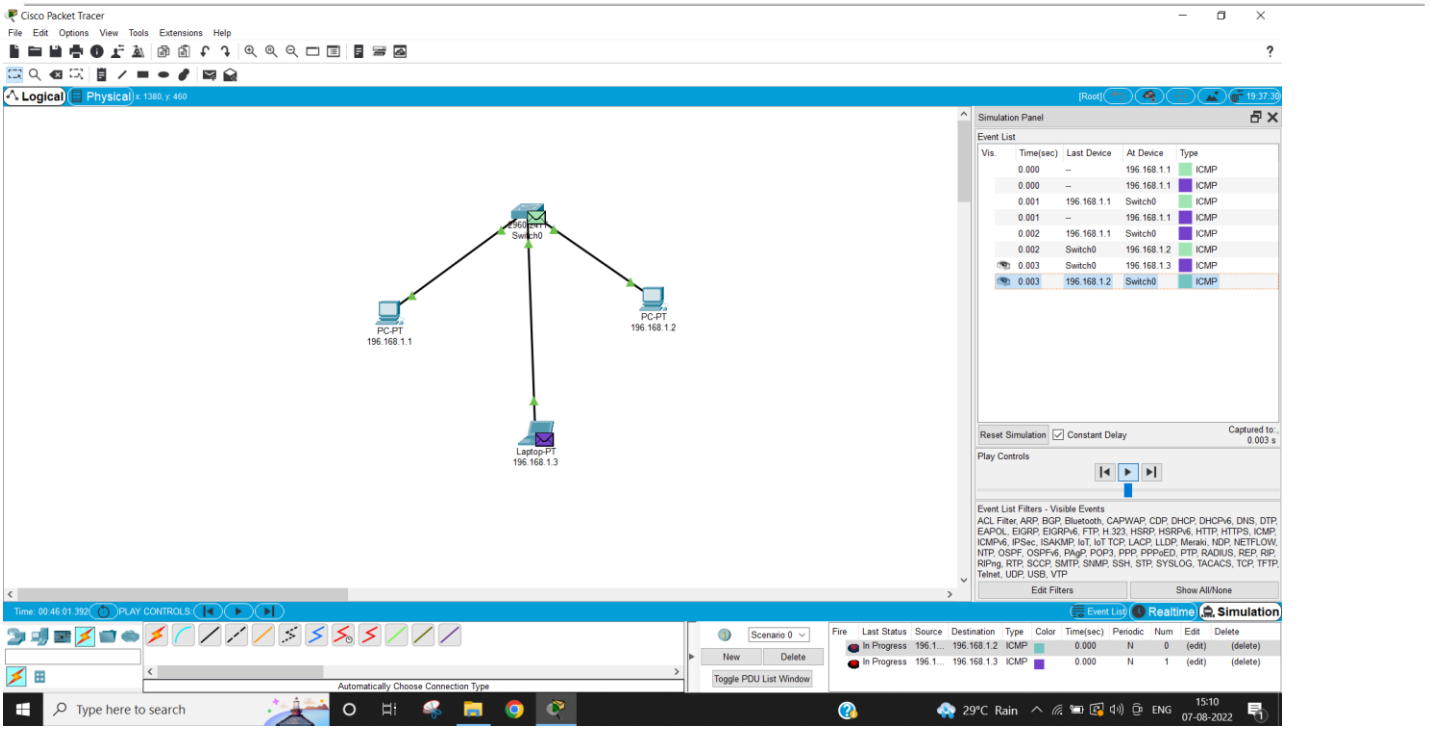

Cisco Packet Tracer
File Edit Options View Tools Extensions Help
Logical Physical
2960-24TT
Switch0
PC-PT
196.168.1.1
PC-PT
196.168.1.2
Laptop-PT
196.168.1.3
Realtime Simulation
Scenario 0
New Delete
Toggle PDU List Window
Fire Last Status Source Destination Type Color Time(sec) Periodic Num Edit Delete
Automatically Choose Connection Type
Type here to search
29°C Rain
ENG
15:04
07-08-2022

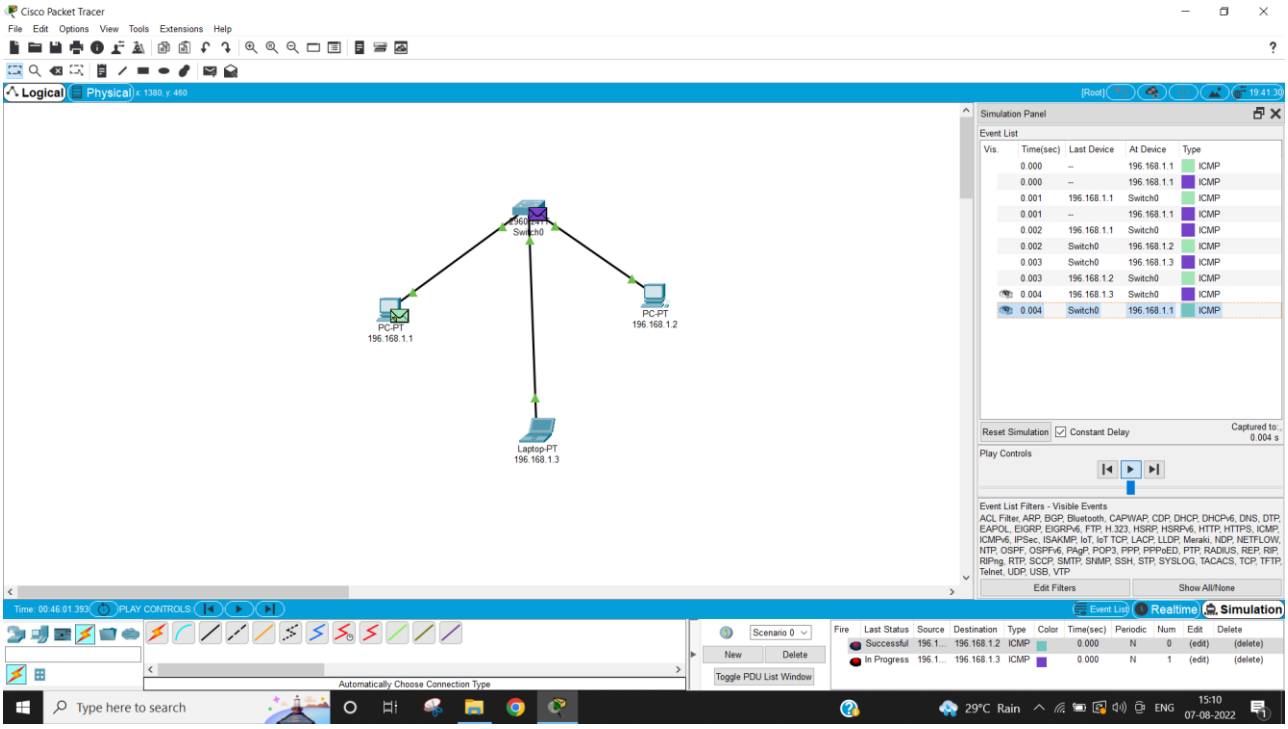

Cisco Packet Tracer
File Edit Options View Tools Extensions Help
Logical Physical
Switch0
PC-PT
196.168.1.1
PC-PT
196.168.1.2
Laptop-PT
196.168.1.3
Realtime Simulation
Type here to search
29°C Rain
ENG
15:05
07-08-2022

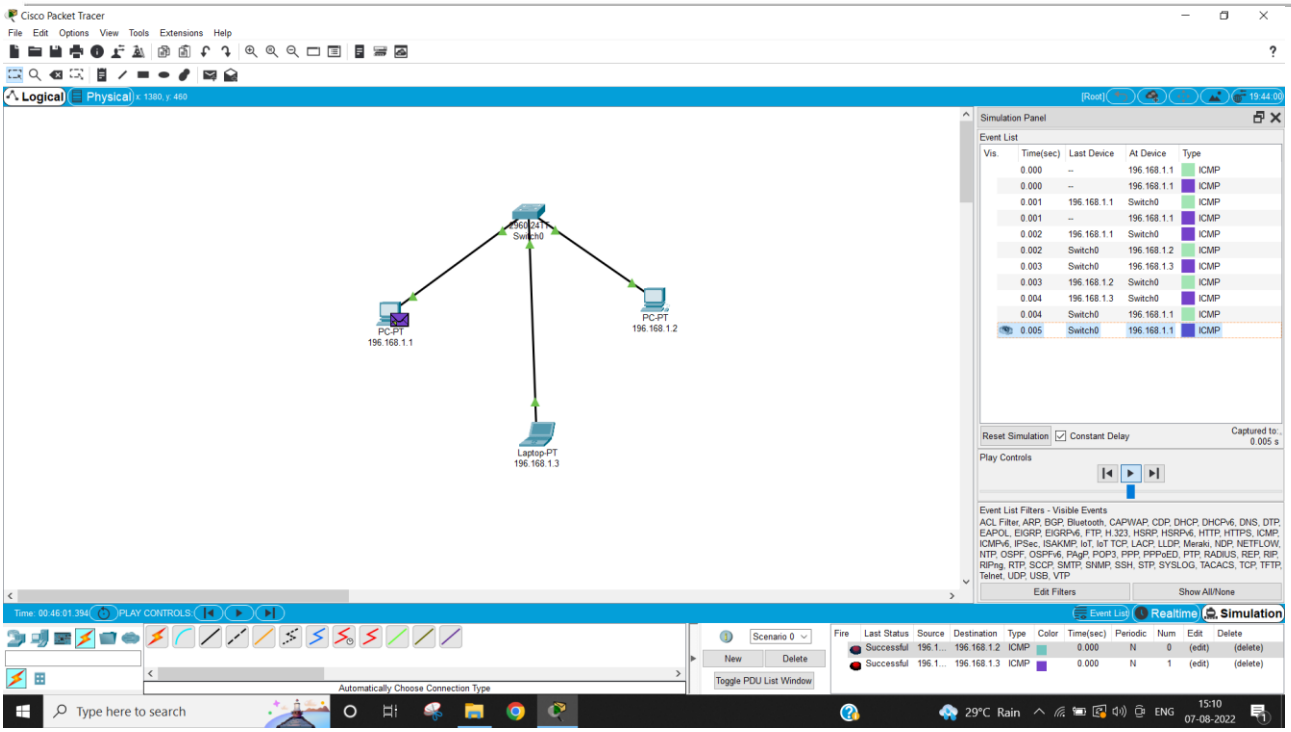

Cisco Packet Tracer
File Edit Options View Tools Extensions Help
Logical Physical
Simulation Panel
Event List
Vis. Time(sec) Last Device At Device Type
0.000 -- 196.168.1.1 ICMP
0.000 -- 196.168.1.1 ICMP
Switch0
PC-PT
196.168.1.1
PC-PT
196.168.1.2
Laptop-PT
196.168.1.3
Reset Simulation
Constant Delay
Play Controls
Realtime Simulation
Type here to search
29°C Rain
ENG
15:10
07-08-2022

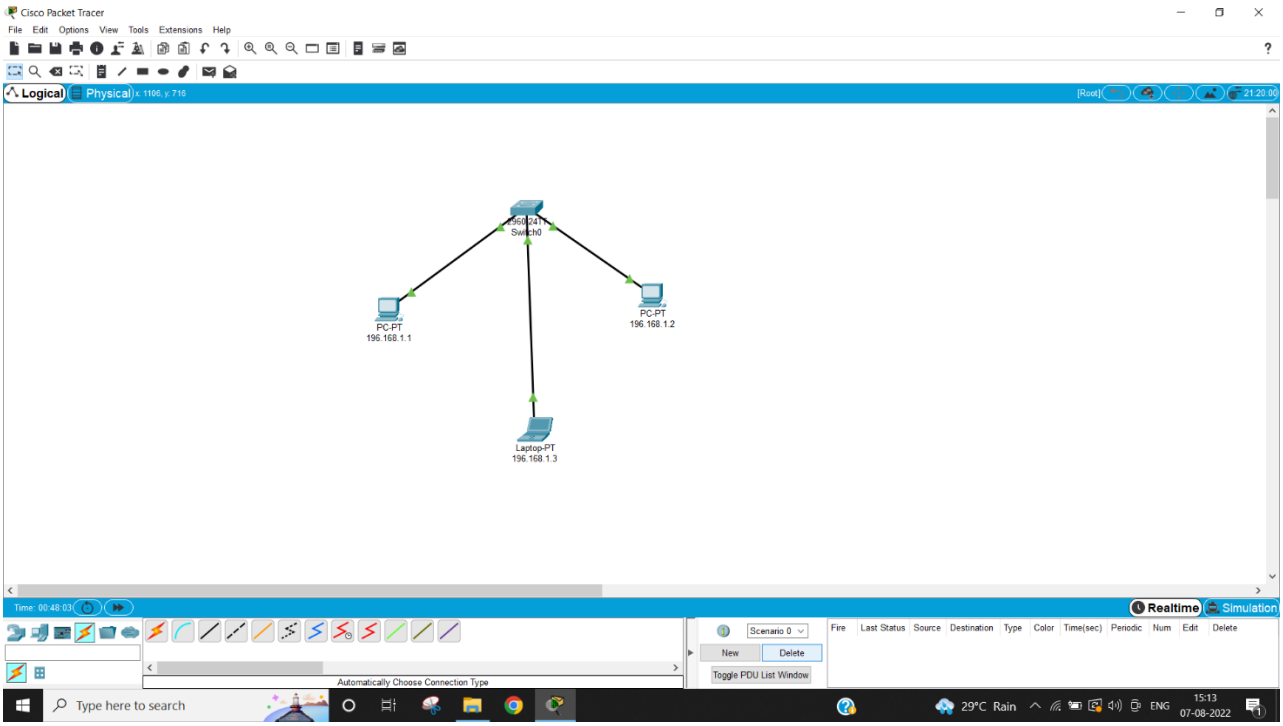

Cisco Packet Tracer
File Edit Options View Tools Extensions Help
Logical Physical
Switch0
PC-PT
196.168.1.1
PC-PT
196.168.1.2
Laptop-PT
196.168.1.3
Simulation Panel
Event List
Vis. Time(sec) Last Device At Device Type
0.000 -- 196.168.1.1 ICMP
0.000 -- 196.168.1.1 ICMP
0.001 196.168.1.1 Switch0 ICMP
0.001 -- 196.168.1.1 ICMP
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
Time: 00:46:01.390
PLAY CONTROLS
Realtime Simulation
Scenario 0
New Delete
Toggle PDU List Window
Fire Last Status Source Destination Type Color Time(sec) Periodic Num Edit Delete
In Progress 196.1... 196.168.1.2 ICMP 0.000 N 0 (edit) (delete)
In Progress 196.1... 196.168.1.3 ICMP 0.000 N 1 (edit) (delete)
Automatically Choose Connection Type
Type here to search
29°C Rain
ENG
15:10
07-08-2022


Cisco Packet Tracer
File Edit Options View Tools Extensions Help
Logical Physical
Switch0
PC-PT
196.168.1.1
PC-PT
196.168.1.2
Laptop-PT
196.168.1.3
Simulation Panel
Event List
Vis. Time(sec) Last Device At Device Type
0.000 -- 196.168.1.1 ICMP
0.000 -- 196.168.1.1 ICMP
0.001 196.168.1.1 Switch0 ICMP
0.001 -- 196.168.1.1 ICMP
0.002 196.168.1.1 Switch0 ICMP
0.002 Switch0 196.168.1.2 ICMP
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: 00:46:01.391
PLAY CONTROLS
Realtime Simulation
Scenario 0
New Delete
Toggle PDU List Window
Fire Last Status Source Destination Type Color Time(sec) Periodic Num Edit Delete
In Progress 196.1... 196.168.1.2 ICMP 0.000 N 0 (edit) (delete)
In Progress 196.1... 196.168.1.3 ICMP 0.000 N 1 (edit) (delete)
Automatically Choose Connection Type
Type here to search
29°C Rain
ENG
15:10
07-08-2022


Cisco Packet Tracer
File Edit Options View Tools Extensions Help
Logical Physical
Switch0
PC-PT
196.168.1.1
PC-PT
196.168.1.2
Laptop-PT
196.168.1.3
Simulation Panel
Event List
Vis. Time(sec) Last Device At Device Type
0.000 -- 196.168.1.1 ICMP
0.000 -- 196.168.1.1 ICMP
0.001 196.168.1.1 Switch0 ICMP
0.001 -- 196.168.1.1 ICMP
0.002 196.168.1.1 Switch0 ICMP
0.002 Switch0 196.168.1.2 ICMP
0.003 Switch0 196.168.1.3 ICMP
0.003 196.168.1.2 Switch0 ICMP
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
Realtime
Simulation
Scenario 0
New
Delete
Toggle PDU List Window
Fire Last Status Source Destination Type Color Time(sec) Periodic Num Edit Delete
In Progress 196.1... 196.168.1.2 ICMP 0.000 N 0 (edit) (delete)
In Progress 196.1... 196.168.1.3 ICMP 0.000 N 1 (edit) (delete)
Automatically Choose Connection Type
Type here to search
29°C Rain
ENG
15:10
07-08-2022


Cisco Packet Tracer
File Edit Options View Tools Extensions Help
Logical Physical
Switch0
PC-PT
196.168.1.1
PC-PT
196.168.1.2
Laptop-PT
196.168.1.3
Simulation Panel
Event List
Vis. Time(sec) Last Device At Device Type
0.000 -- 196.168.1.1 ICMP
0.000 -- 196.168.1.1 ICMP
0.001 196.168.1.1 Switch0 ICMP
0.001 -- 196.168.1.1 ICMP
0.002 196.168.1.1 Switch0 ICMP
0.002 Switch0 196.168.1.2 ICMP
0.003 Switch0 196.168.1.3 ICMP
0.003 196.168.1.2 Switch0 ICMP
0.004 196.168.1.3 Switch0 ICMP
0.004 Switch0 196.168.1.1 ICMP
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
Realtime
Simulation
Scenario 0
New
Delete
Toggle PDU List Window
Fire Last Status Source Destination Type Color Time(sec) Periodic Num Edit Delete
Successful 196.1... 196.168.1.2 ICMP 0.000 N 0 (edit) (delete)
In Progress 196.1... 196.168.1.3 ICMP 0.000 N 1 (edit) (delete)
Automatically Choose Connection Type
Type here to search
29°C Rain
ENG
15:10
07-08-2022





Learning Outcomes:

- To successfully understand the basic networking concepts.

- To learn about working on Cisco Packet Tracer.
- To build a basic computer network using the components in a network.