

# Experiment 4A

## PART A

To implement basic connection establishment by using Packet Tracer Software

### A.1—Aim:

The purpose of this session is to implement the basic connection and sending echo messages from one device to another using packet tracer software

### A.2--- Prerequisite:

Understanding the basic knowledge of connecting devices

### A.3--- Outcome:

After successful completion of this experiment students will be able to:

- Interact the basic interface of the Packet tracer software

### A.4--- Procedure:

#### Task:

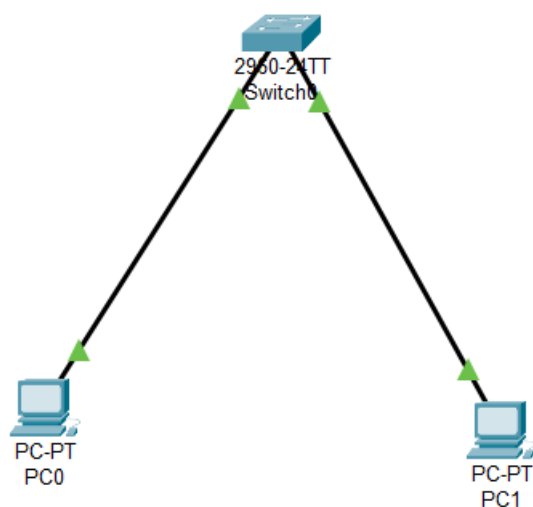
1. To connect client to server
2. See the simulation of sent and received packet using general and complex PDU
3. Check the OSI layers of the packet
4. Observe the output and complete PART B of lab manual
5. Save and close the file and name it as **EXP4\_ your Roll no.**

## PART - B

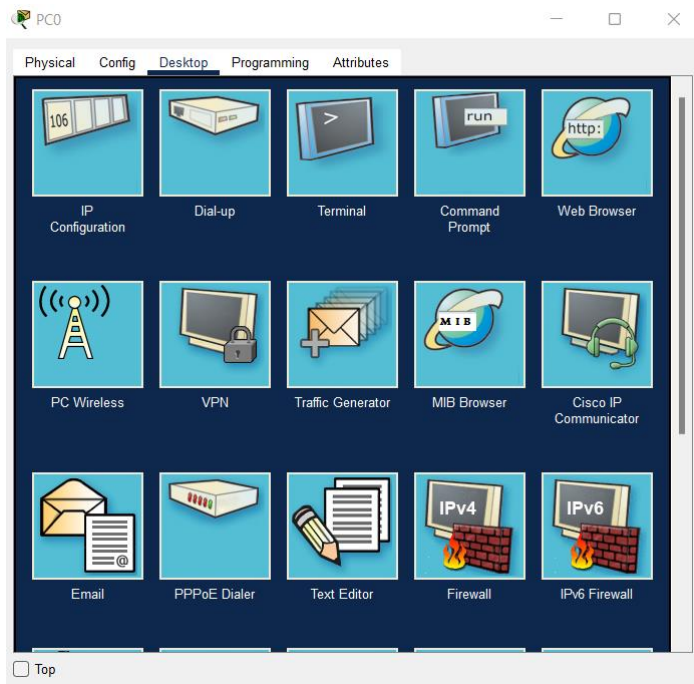
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Date of Experiment: 22-01-2022	Date of Submission:05-02-2022

### B.1: Procedure of performed experiment

1. In Cisco Packet Tracer, create a connection in Logical Mode.



2. Click on both the PC simultaneously and click on Desktop and select IP Configuration, a new box will open. In that box under the IP Configuration section, assign the IP addresses as 192.168.10.1 and 192.168.10.3 respectively of both the PC.



PC0

Physical Config **Desktop** Programming Attributes

**IP Configuration** [X]

Interface: FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IPv4 Address: 192.168.10.1

Subnet Mask: 255.255.255.0

Default Gateway: 0.0.0.0

DNS Server: 0.0.0.0

IPv6 Configuration

☐ Automatic ☒ Static

IPv6 Address: /

Link Local Address: FE80::260:47FF:FE45:8952

Default Gateway:

DNS Server:

802.1X

☐ Use 802.1X Security

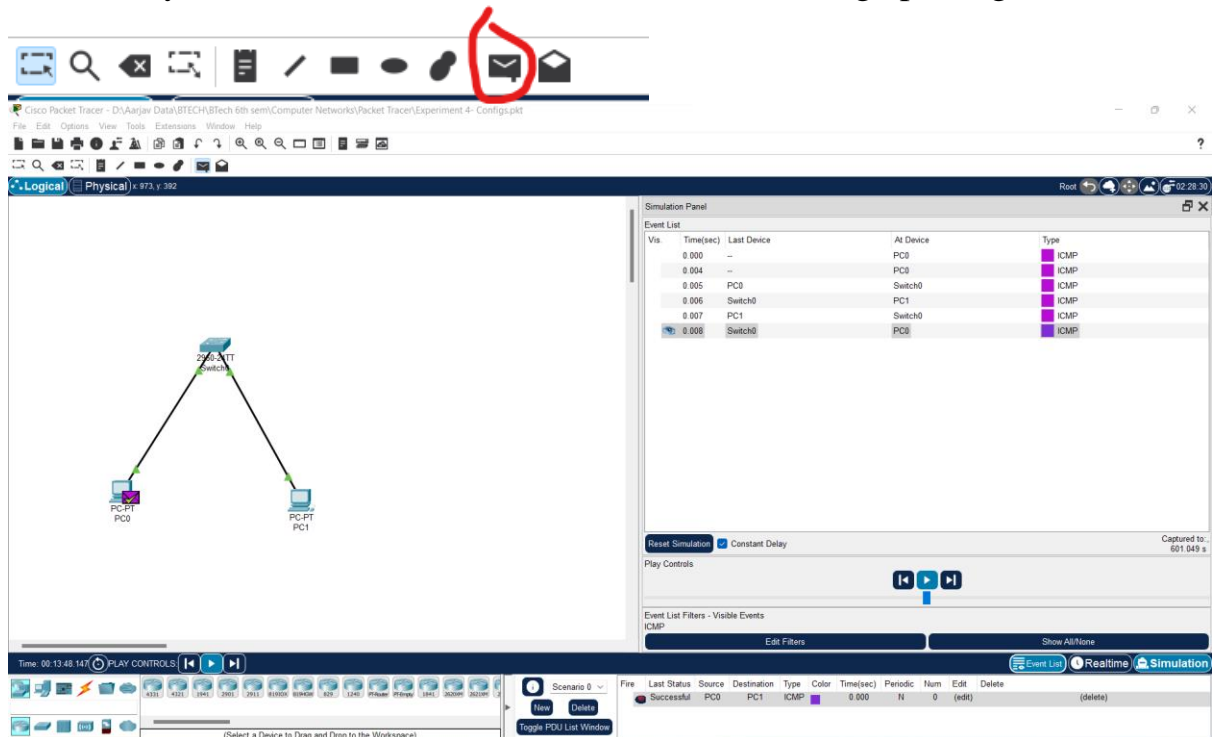
Authentication: MD5

Username:

Password:

Top

3. Now from the task bar select the 'Add simple PDU' button and select PC0 one by one and start the simulation to see the message parsing.



## B.2: Observations and Learning's:

Initial State:

message is at PC0 and the parsing has not been started yet. There is only out layer because the message will be outgoing and nothing is coming in.

*Layer 1:*

shows the port connection (i.e., FastEthernet0) from where the message will be transferred.

*Layer 2:*

the MAC addresses have been determined and the flow is built.

*Layer 3:*

destination and source IP Addresses have been mentioned.

## PDU Information at Device: PC0

**OSI Model** Outbound PDU Details

At Device: PC0  
Source: PC0  
Destination: PC1

### In Layers

Layer7
Layer6
Layer5
Layer4
Layer3
Layer2
Layer1

### Out Layers

Layer7
Layer6
Layer5
Layer4
Layer 3: IP Header Src. IP: 192.168.10.1, Dest. IP: 192.168.10.3 ICMP Message Type: 8
Layer 2: Ethernet II Header 00E0.F980.4922 >> 0060.2F44.6E77
Layer 1: Port(s): FastEthernet0

1. The Ping process starts the next ping request.
2. The Ping process creates an ICMP Echo Request message and sends it to the lower process.
3. The source IP address is not specified. The device sets it to the port's IP address.
4. The device sets TTL in the packet header.
5. The destination IP address is in the same subnet. The device sets the next-hop to destination.

PC0 to Switch0:

now the message is transferred to switch from the FastEthernet0 port, message from PC0 will be coming in and later the message will be going out so both In and Out layers will be used.

*In Layer 1:*

message coming in through FastEthernet0/1.

*In Layer 2:*

Mac address flow is shown from PC0 to switch0.

*Out Layer 1:*

message will be going out from FastEthernet 0/2.

*Out Layer 2:*

Mac addresses flow is setup from switch0 to PC1.

## PDU Information at Device: Switch0

**OSI Model** Inbound PDU Details Outbound PDU Details

At Device: Switch0  
Source: PC0  
Destination: PC1

### In Layers

Layer7
Layer6
Layer5
Layer4
Layer3
Layer 2: Ethernet II Header 00E0.F980.4922 >> 0060.2F44.6E77
Layer 1: Port FastEthernet0/1

### Out Layers

Layer7
Layer6
Layer5
Layer4
Layer3
Layer 2: Ethernet II Header 00E0.F980.4922 >> 0060.2F44.6E77
Layer 1: Port(s): FastEthernet0/2

1. FastEthernet0/1 receives the frame.

Switch0 to PC1:

now FastEthernet0/2 of Switch0 transfers the message to PC1, In layers show 3 layers for incoming message, Out Layers shows 3 layers for the message going back to source.

*In Layer1:*

message arrived at FastEthernet0 port of PC1 from Switch0.

*In Layer2:*

Mac addresses connection shown.

*In Layer3:*

final flow of message from source to destination in IP Addresses.

*Out Layer1:*

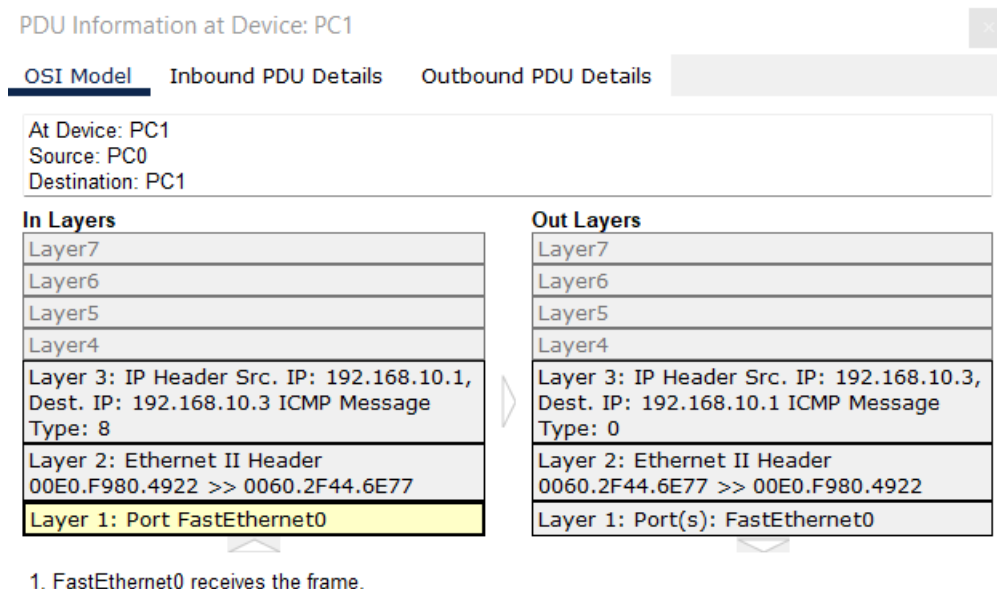
message will be transferred through FastEthernet0 port of PC1.

*Out Layer2:*

Mac addresses connection built between Switch0 and PC1.

*Out layer3:*

the source and destination for message determined.



The message will flow from PC1 to Switch0 and finally to PC0 and layers will be built similar to the above fashion

### B.3: Conclusion:

We were able to configure PC and Router and simulate a message transfer from one PC to another.