

AIM: TO DEMONSTRATE COMMUNICATION B/W TWO DEVICES USING A WIRELESS LAN

OBSERVATION:

ds/11/b/g Lab-08

AIM: To demonstrate communication between two devices using a wireless LAN

1) For accesspoint configure SSID

2) Steps for configuration by connection :-

3) Connection :-

1) Select Wireless Device → (generic) Accesspoint-PT, (end device) - Smart Device, (generic) Laptop-PT and (generic) PC-PT

2) Connect all the devices as PC - Switch; switch - Router; Switch - Accesspoint.

3) Configure PC and Router

1) click on PC0 → ipaddress = 10.0.0.1 Gateway 10.0.0.2

2) click on Router → CLI commands → ipaddress = 10.0.0.2

3) click on Laptop0 enter

4) click on Smartphone0 → wireless0 :-

Enter SSID = WLAN1
Authentication = WPA2-PSK
PSK Pass Phrase = 12345678
Static → IP Address = 10.0.0.4

After Access point

5) click on Laptop0 → fastethernet0/0 → ipaddress = 10.0.0.3 gateway = 10.0.0.2

6) Go to Accesspoint0 → port0 → check ☒ Auto ☐ Auto

port1 ⇒ SSID = WLAN
Authentication = WPA2-PSK
PSK Pass Phrase = 12345678

Step 5 (press) → smartphone0

Step 6 → Select Laptop0

go to physical → in picture

click on Switch to turn it off (greenlight off)

click wireless port drag to any module on left in bottom given wireless port drag and place then turn Switch on.

Now go to config → wireless0

1) SSID = WLAN1

2) Authentication → WPA2-PSK

3) PSK Pass Phrase → 12345678 (8 character)

IP configuration

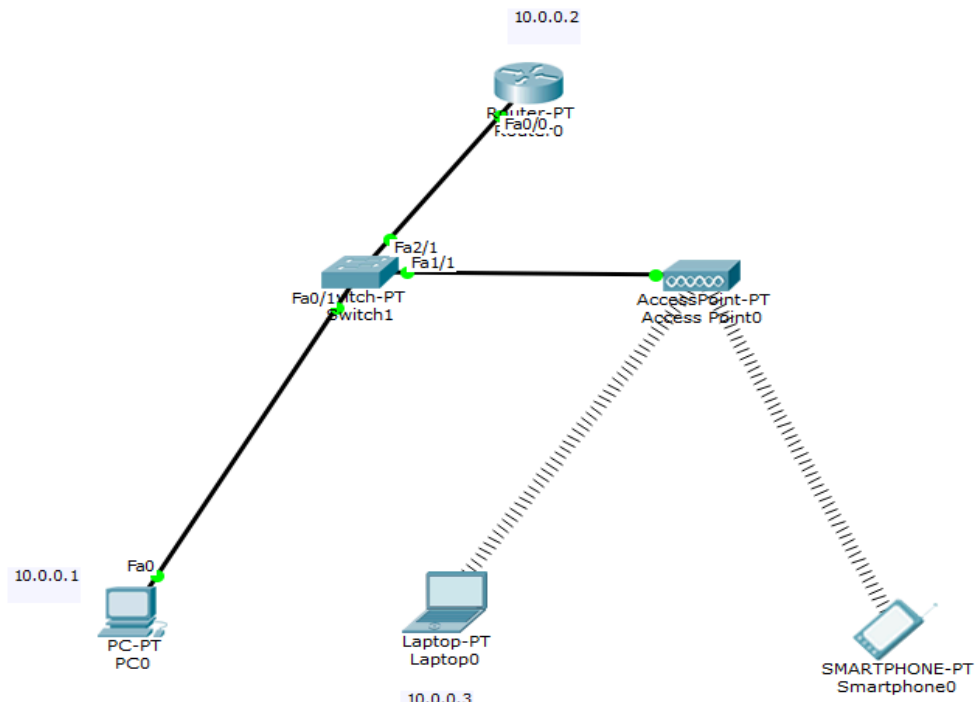
Static → IP address = 10.0.0.5
Subnetmask = 255.0.0.0

on Topology, connection built b/w Laptop - Accesspoint & smartphone - Accesspoint

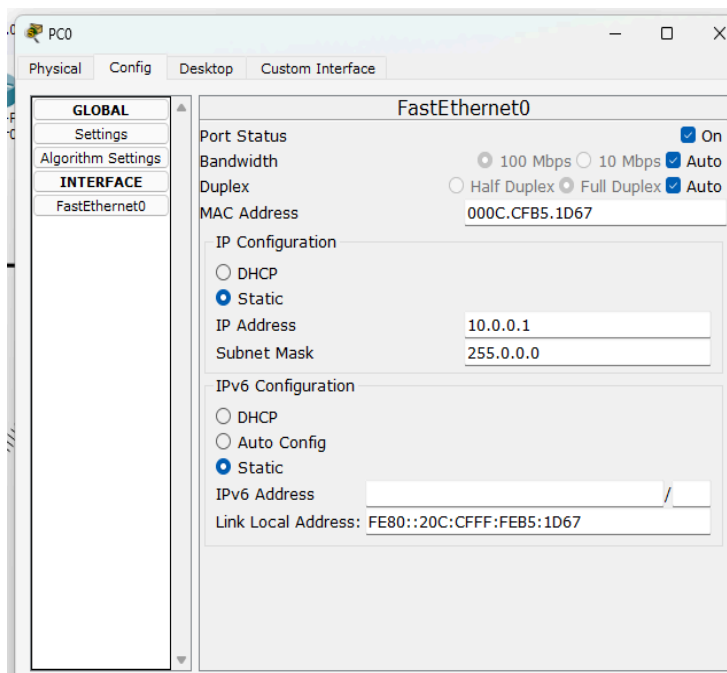
Now ping 10.0.0.1 → (any device) (from and to)

2024.11.26 10:49

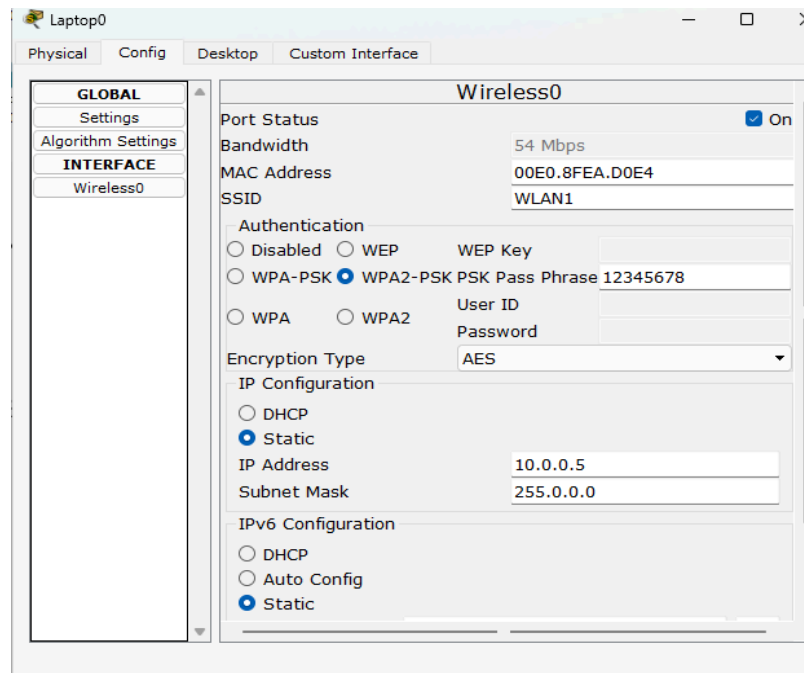
TOPOLOGY:



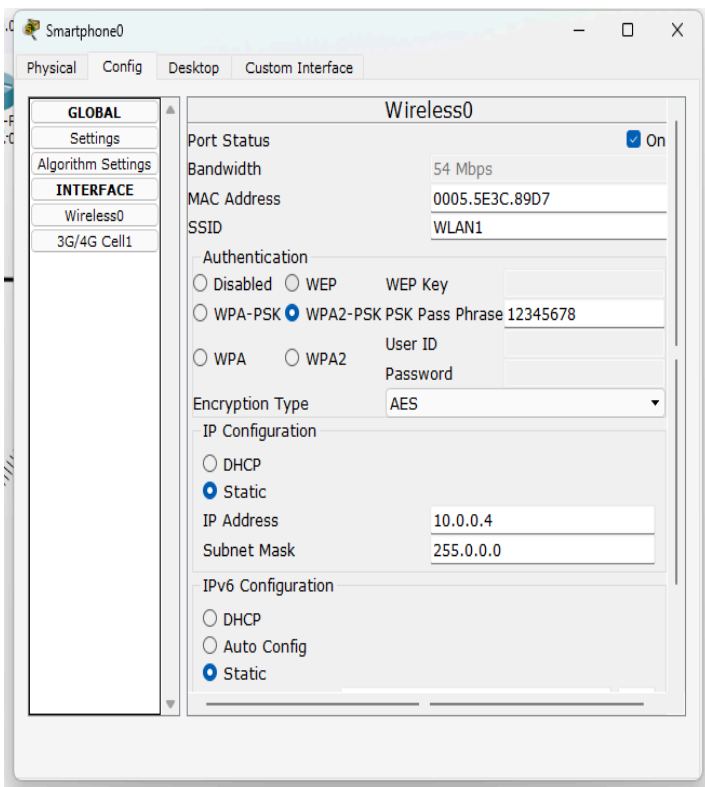
PC0 CONFIGURATION:



LAPTOP CONFIGURATION:



SMART-PHONE CONFIGURATION:



Smartphone0 Configuration Window

Physical Config Desktop Custom Interface

GLOBAL

Settings

Algorithm Settings

INTERFACE

Wireless0

3G/4G Cell1

Wireless0

Port Status ☒ On

Bandwidth 54 Mbps

MAC Address 0005.5E3C.89D7

SSID WLAN1

Authentication

☐ Disabled ☐ WEP WEP Key

☐ WPA-PSK ☒ WPA2-PSK PSK Pass Phrase 12345678

☐ WPA ☐ WPA2 User ID Password

Encryption Type AES

IP Configuration

☐ DHCP ☒ Static

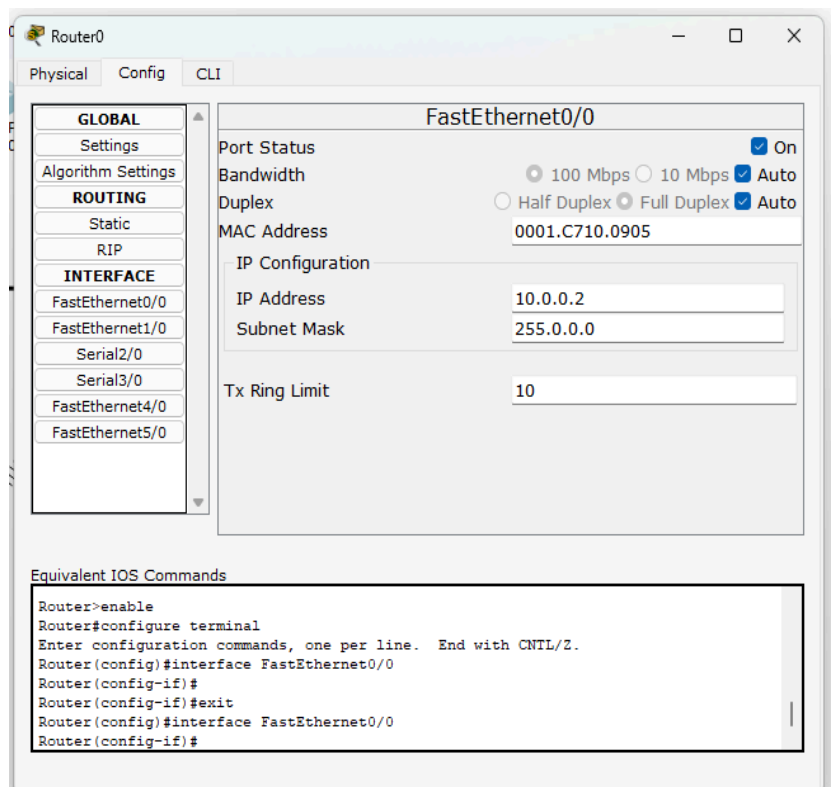
IP Address 10.0.0.4

Subnet Mask 255.0.0.0

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

ROUTER0 CONFIGURATION:



Router0 Configuration Window

Physical Config CLI

GLOBAL

Settings

Algorithm Settings

ROUTING

Static

RIP

INTERFACE

FastEthernet0/0

FastEthernet1/0

Serial2/0

Serial3/0

FastEthernet4/0

FastEthernet5/0

FastEthernet0/0

Port Status ☒ On

Bandwidth ☒ 100 Mbps ☐ 10 Mbps ☒ Auto

Duplex ☐ Half Duplex ☒ Full Duplex ☒ Auto

MAC Address 0001.C710.0905

IP Configuration

IP Address 10.0.0.2

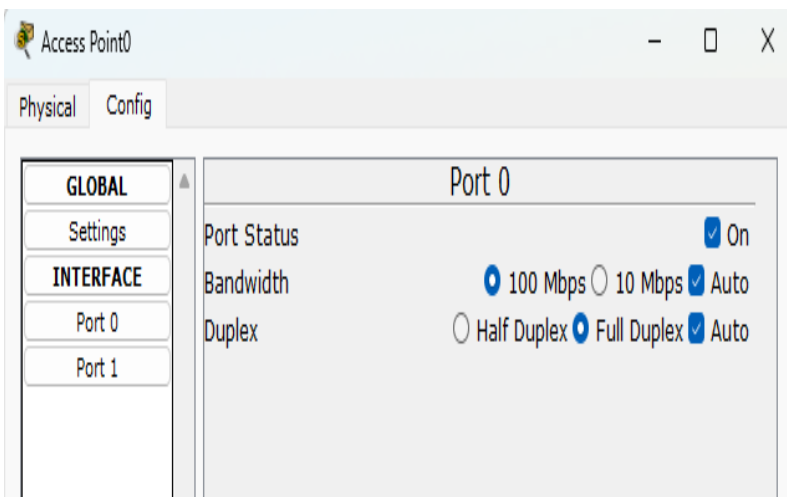
Subnet Mask 255.0.0.0

Tx Ring Limit 10

Equivalent IOS Commands

```
Router>enable
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface FastEthernet0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet0/0
Router(config-if)#
```

ACCESS-POINT PORT0



Access Point0 Configuration Window

Physical Config

GLOBAL

Settings

INTERFACE

Port 0

Port 1

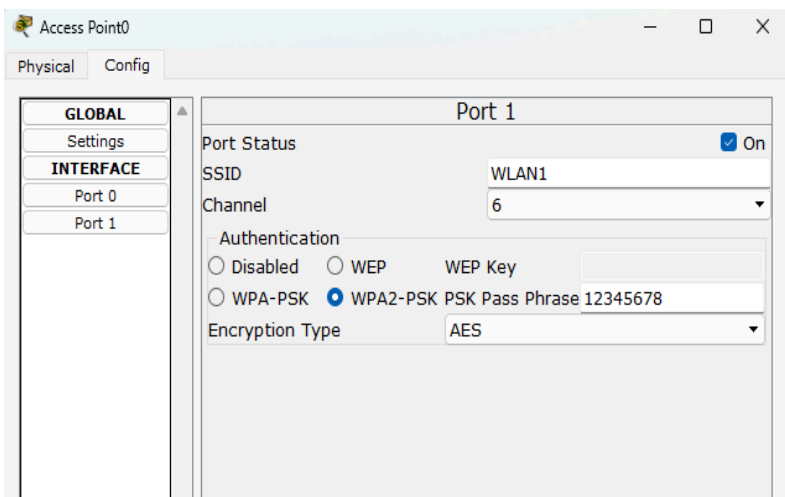
Port 0

Port Status ☒ On

Bandwidth ☒ 100 Mbps ☐ 10 Mbps ☒ Auto

Duplex ☐ Half Duplex ☒ Full Duplex ☒ Auto

ACCESS-POINT PORT1



Access Point0 Configuration Window

Physical Config

GLOBAL

Settings

INTERFACE

Port 0

Port 1

Port 1

Port Status ☒ On

SSID WLAN1

Channel 6

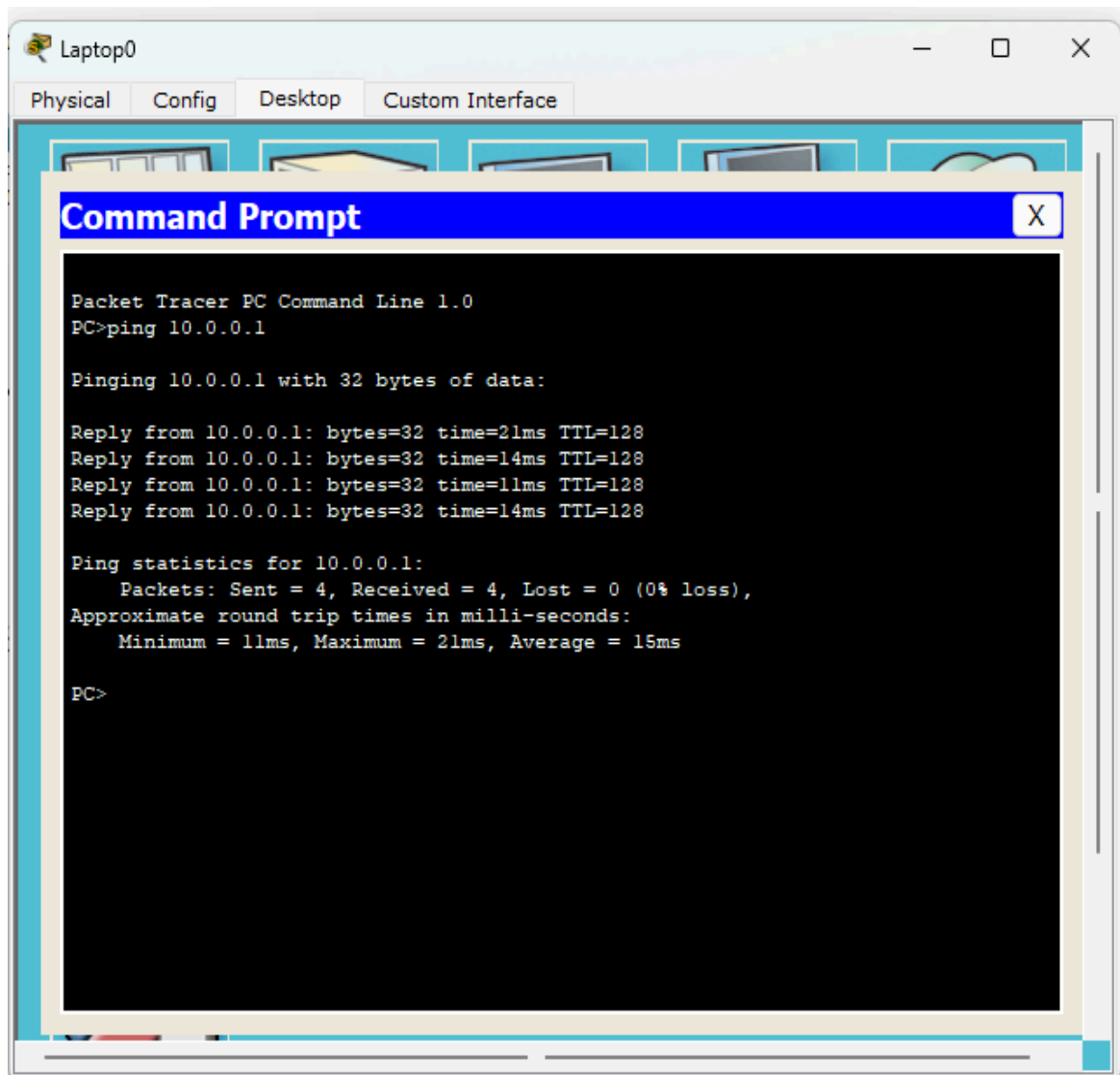
Authentication

☐ Disabled ☐ WEP WEP Key

☐ WPA-PSK ☒ WPA2-PSK PSK Pass Phrase 12345678

Encryption Type AES

PING FROM LAPTOP TO PC



AIM: TO DEMONSTRATE THE WORKING OF ARP FOR COMMUNICATION WITHIN A LAN

OBSERVATION:

26/11/24

Aim: To demonstrate the working of ARP for communication within a LAN.

→ `arp -a` displays arp table entry for particular device
→ if device communicates it got mac layer Address.

Topology

```

graph TD
    Server0[Server0  
10.0.0.4] --- Switch[Switch]
    Switch --- PC0[PC0  
10.0.0.1]
    Switch --- PC1[PC1  
10.0.0.2]
    Switch --- PC2[PC2  
10.0.0.3]
    
```

Connection :-

- Select EndDevice :-
- (i) PC-PT :- PC0, PC1, PC2
- (ii) Server :- Server-PT
- (iii) Switches :- Generic switch-PT

→ Connect PC's & Switch, Switch & Server

Configuration:-

PC0 ⇒ `fastEthernet0/0` ⇒ IP Address : 10.0.0.1

PC1 ⇒ `fastEthernet0/0` ⇒ IP Address : 10.0.0.2

PC2 ⇒ `fastEthernet0/0` ⇒ IP Address : 10.0.0.3

Server0 ⇒ `fastEthernet0/0` ⇒ IP Address : 10.0.0.4

ARP Tables

• Select PDU, from PC0 to server0,
→ select msg → Arp table → empty [for both PC & Server]

→ same, send PDU from PC1 to Server0 and from PC2 to server0

• Select PC0 → command prompt enter `arp -a`
→ No arp entries found, throw
→ arp table entries →
IP Address : 10.0.0.4 some Hardware Address

Similar way, check for Server0,
→ command prompt → `arp -a`,
→ arp table entries :-
IP Address : 10.0.0.1
IP Address : 10.0.0.2

Similar way for all devices we can check arp table options

or method 2 to display table → (magnifying glass icon),
right hand side, click search icon,
then select device and server to see pdu table

• Once send pdu check msg inbound-outbound → Target → then capture/forward.

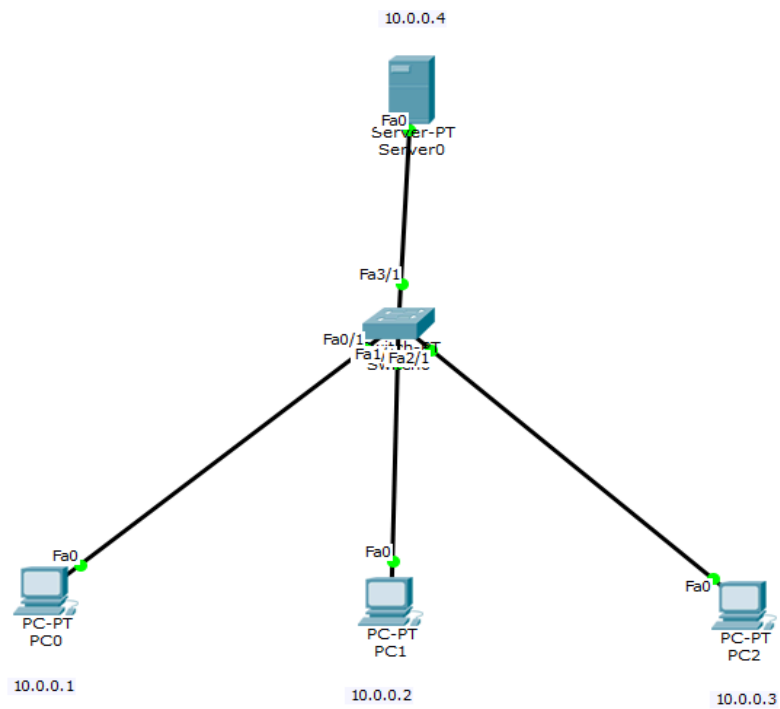
O/p:-

PC0 ⇒ command prompt
PC> `arp -a`

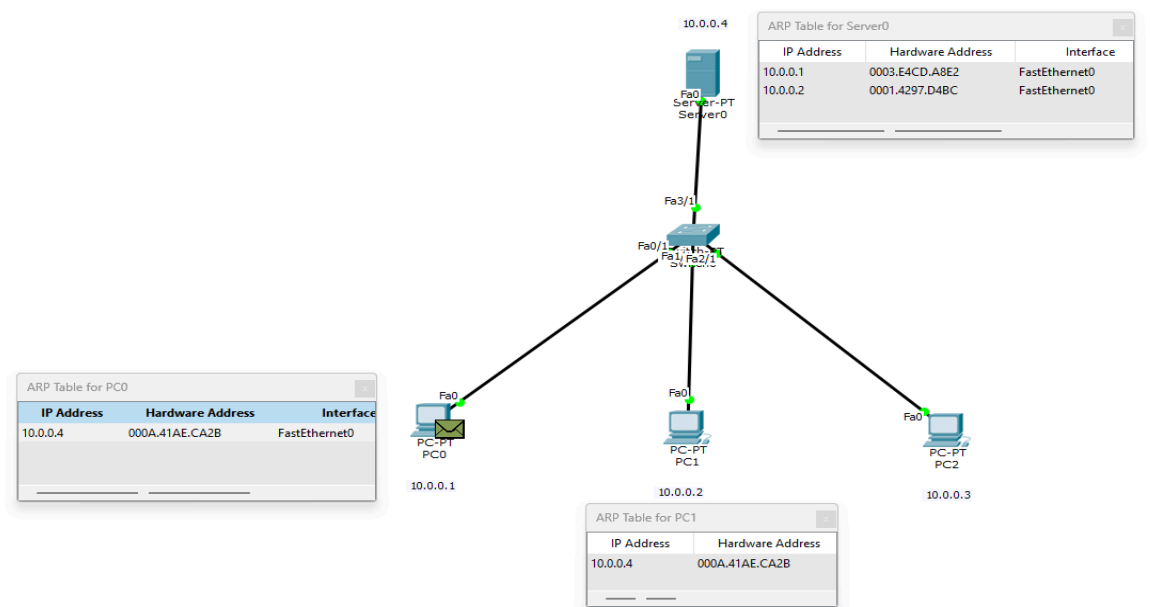
Internet Address	Physical Address	Type
10.0.0.4	00:0a:42:ae:ce:26	dynamic

2024.11.26 10:50

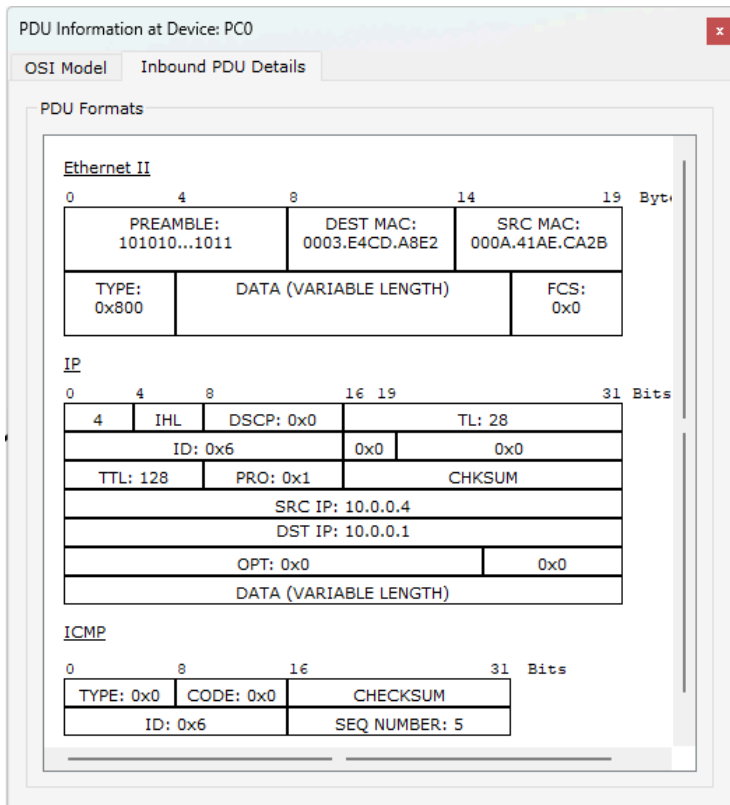
TOPOLOGY:



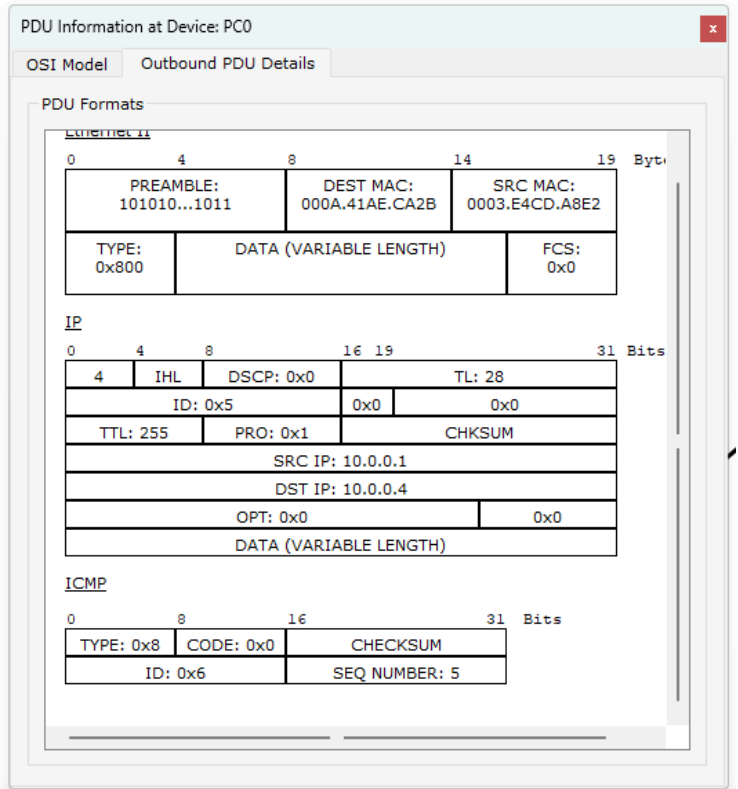
ARP TABLES:



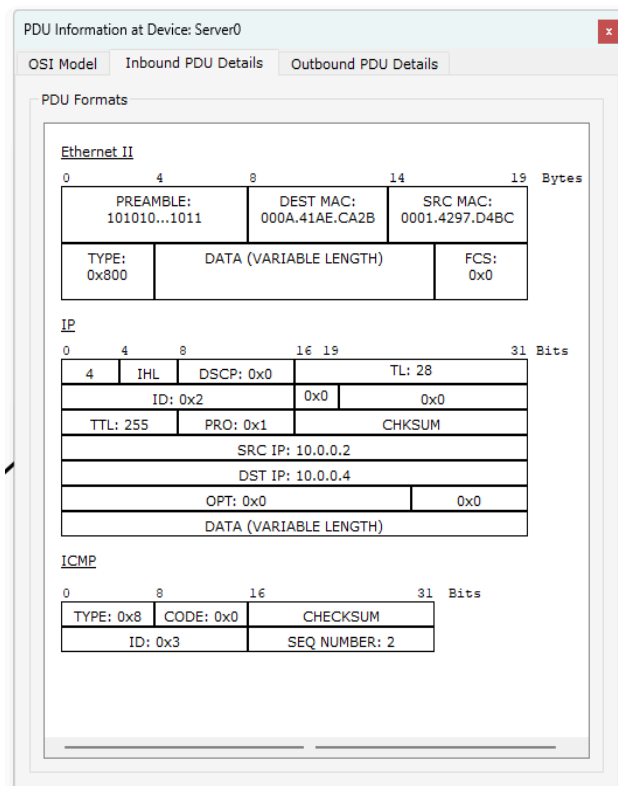
PC0 INBOUND



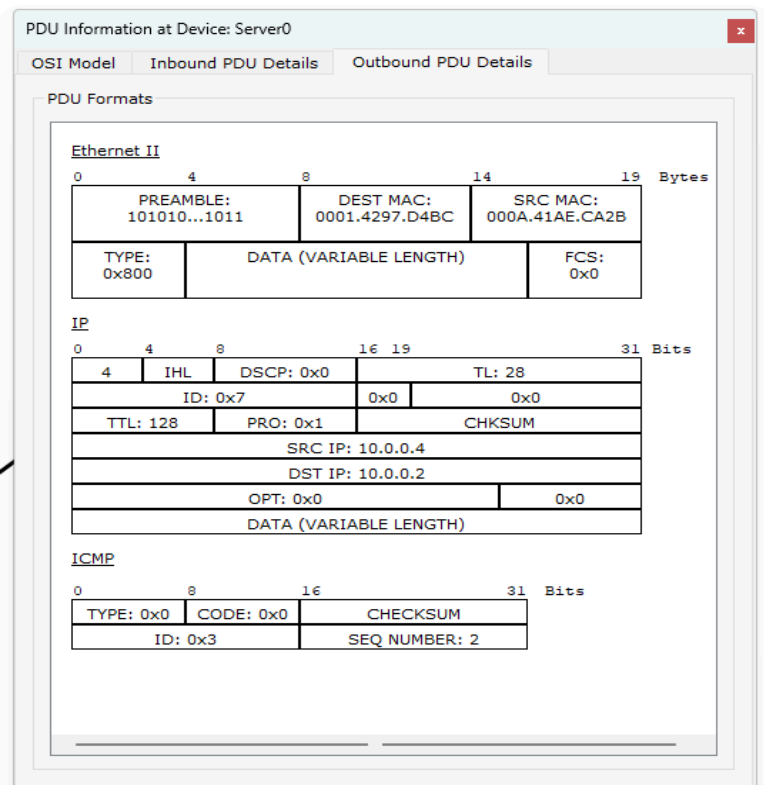
PC0 OUTBOUND



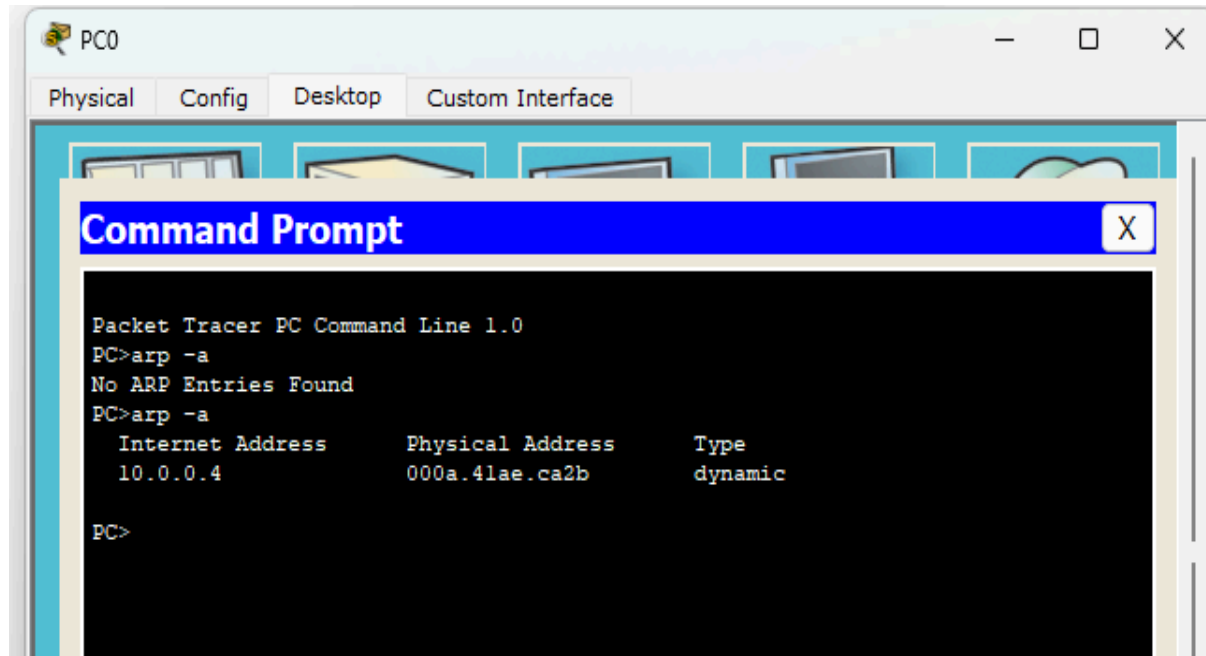
PC1 INBOUND



PC1 OUTBOUND



PING FROM PC0



PING FROM SERVER0

