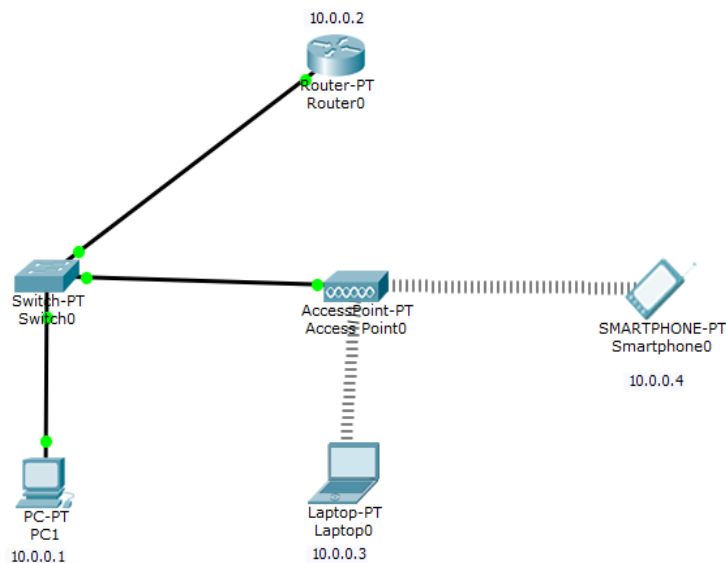


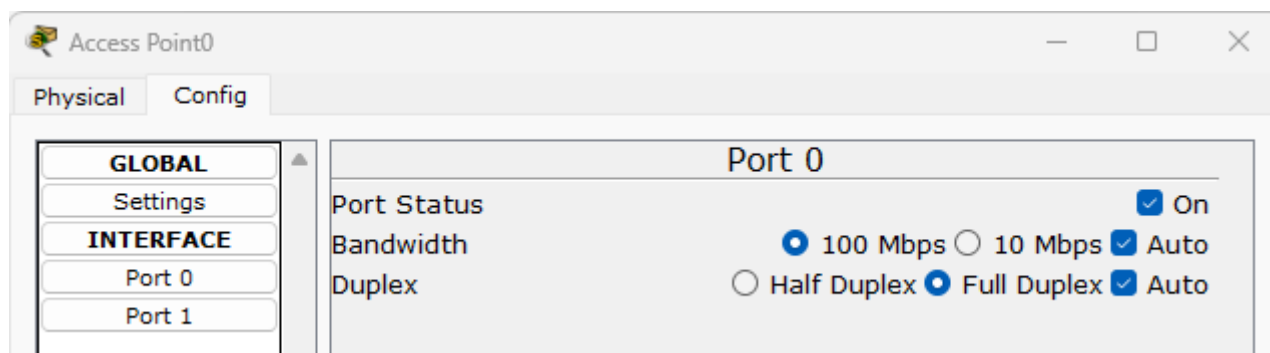
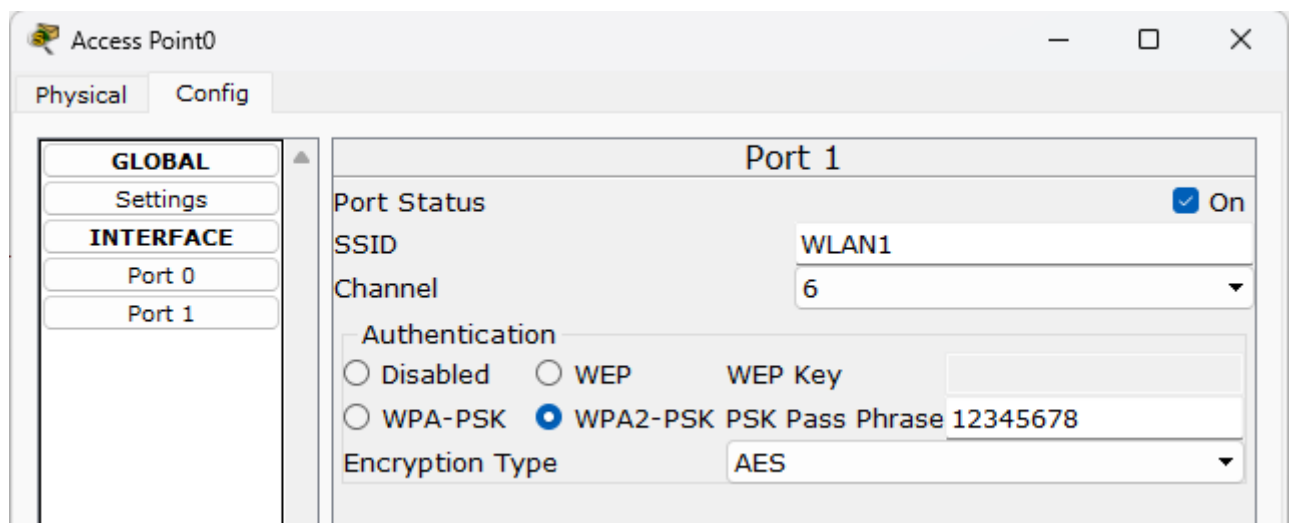
Lab-07

1. To demonstrate communication between two devices using a wireless LAN.

Topology:



Access Point Configuration:



Output:

```
PC>ping 10.0.0.1

Pinging 10.0.0.1 with 32 bytes of data:

Reply from 10.0.0.1: bytes=32 time=16ms TTL=128
Reply from 10.0.0.1: bytes=32 time=12ms TTL=128
Reply from 10.0.0.1: bytes=32 time=6ms TTL=128
Reply from 10.0.0.1: bytes=32 time=11ms TTL=128

Ping statistics for 10.0.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 6ms, Maximum = 16ms, Average = 11ms

PC>ping 10.0.0.2

Pinging 10.0.0.2 with 32 bytes of data:

Reply from 10.0.0.2: bytes=32 time=7ms TTL=255
Reply from 10.0.0.2: bytes=32 time=8ms TTL=255
Reply from 10.0.0.2: bytes=32 time=11ms TTL=255
Reply from 10.0.0.2: bytes=32 time=10ms TTL=255

Ping statistics for 10.0.0.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 7ms, Maximum = 11ms, Average = 9ms

PC>ping 10.0.0.3

Pinging 10.0.0.3 with 32 bytes of data:

Reply from 10.0.0.3: bytes=32 time=13ms TTL=128
Reply from 10.0.0.3: bytes=32 time=15ms TTL=128
Reply from 10.0.0.3: bytes=32 time=12ms TTL=128
Reply from 10.0.0.3: bytes=32 time=17ms TTL=128

Ping statistics for 10.0.0.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 12ms, Maximum = 17ms, Average = 14ms
```

Observation:

Bafra Gold
Date: 26/11/24

Lab-07

1. Aim: To demonstrate communication b/w two devices using a wireless LAN

```
graph TD
    Router[Router 0: 10.0.0.2] --- Switch0[Switch 0]
    Router --- AP[Access Point]
    Switch0 --- PC1[PC-1: 10.0.0.1]
    Switch0 --- Laptop[Laptop 0: 10.0.0.3]
    AP --- Smartphone[Smart Phone 0: 10.0.0.4]
```

Configuration Steps:

1. Select a switch, Router, PC & Access point and connect them. And also select a smartphone & a Laptop.
2. Configure IP address for Router, PC & Laptop.

PC → 10.0.0.1	} IP 10.0.0.2 } Gateway
Router → 10.0.0.2	
Laptop → 10.0.0.3	
3. Go to Access Point → Config & then Select Port 0, Make sure that Bandwidth & Duplex to Auto.
4. In Port 1, Give SSID as WLAN1 & choose authentication as WPA2-PSK, & give password.
5. Go to Smartphone, select wireless & Config SSID, Authentication & IP address (10.0.0.4).
6. Ping it from smartphone to PC & Router.
7. Go to Laptop → Physical → Power off → drag ~~down~~ to left side → Power on

- 8 Go to config do the same thing did for smartphone.
- 9 Ping the message from smartphone to Laptop.

Output:

→ PC > ping 10.0.0.1
pinging 10.0.0.1 with 32 bytes of data:

Reply from 10.0.0.1: bytes=32 time=16ms TTL=128
_____ 12ms _____
_____ 6ms _____
_____ 11ms _____

ping statistics for 10.0.0.1:

Packets: Sent=4, Received=4, Lost=0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum=6ms, Maximum=16ms, Average=11ms.

→ PC > ping 10.0.0.2:

pinging 10.0.0.2 with 32 bytes of data:

Reply from 10.0.0.2: bytes=32 time=7ms TTL=255
_____ 8ms _____
_____ 11ms _____
_____ 10ms _____

ping statistics for 10.0.0.2:

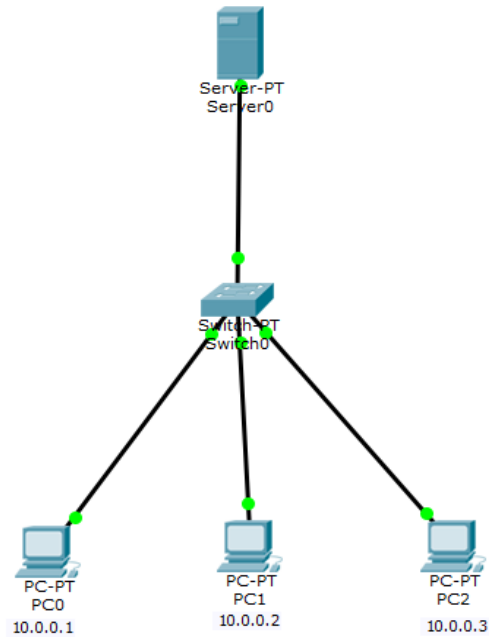
Packets: Sent=4, Received=4, Lost=0 (0% loss),
Approximate round trip in milli-seconds:
Minimum=7ms, Maximum=11ms, Average=9ms.

→ PC > ping 10.0.0.3:

pinging 10.0.0.3 with 32 bytes of data:

2. Demonstrate the working of ARP for communication with a LAN.

Topology:



Configuration:

ARP Table for PC0			
IP Address	Hardware Address	Interface	
10.0.0.4	0002.164C.EC82	FastEthernet0	

ARP Table for PC1			
IP Address	Hardware Address	Interface	
10.0.0.4	0002.164C.EC82	FastEthernet0	

ARP Table for PC2			
IP Address	Hardware Address	Interface	
10.0.0.4	0002.164C.EC82	FastEthernet0	

ARP Table for Server0			
IP Address	Hardware Address	Interface	
10.0.0.1	00D0.BA77.8E57	FastEthernet0	
10.0.0.2	0001.6308.A3CE	FastEthernet0	
10.0.0.3	0060.7081.4447	FastEthernet0	

Output:

```
PC>ping 10.0.0.1

Pinging 10.0.0.1 with 32 bytes of data:

Reply from 10.0.0.1: bytes=32 time=16ms TTL=128
Reply from 10.0.0.1: bytes=32 time=12ms TTL=128
Reply from 10.0.0.1: bytes=32 time=6ms TTL=128
Reply from 10.0.0.1: bytes=32 time=11ms TTL=128

Ping statistics for 10.0.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 6ms, Maximum = 16ms, Average = 11ms

PC>ping 10.0.0.2

Pinging 10.0.0.2 with 32 bytes of data:

Reply from 10.0.0.2: bytes=32 time=7ms TTL=255
Reply from 10.0.0.2: bytes=32 time=8ms TTL=255
Reply from 10.0.0.2: bytes=32 time=11ms TTL=255
Reply from 10.0.0.2: bytes=32 time=10ms TTL=255

Ping statistics for 10.0.0.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 7ms, Maximum = 11ms, Average = 9ms

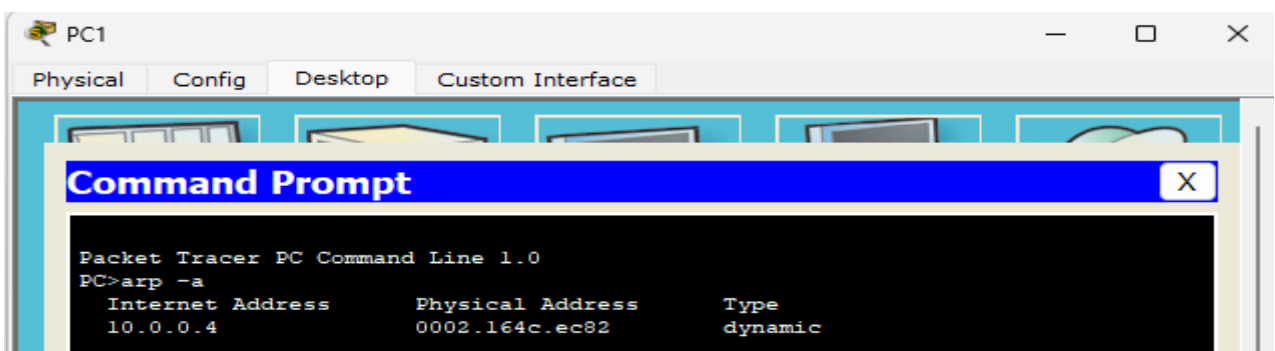
PC>ping 10.0.0.3

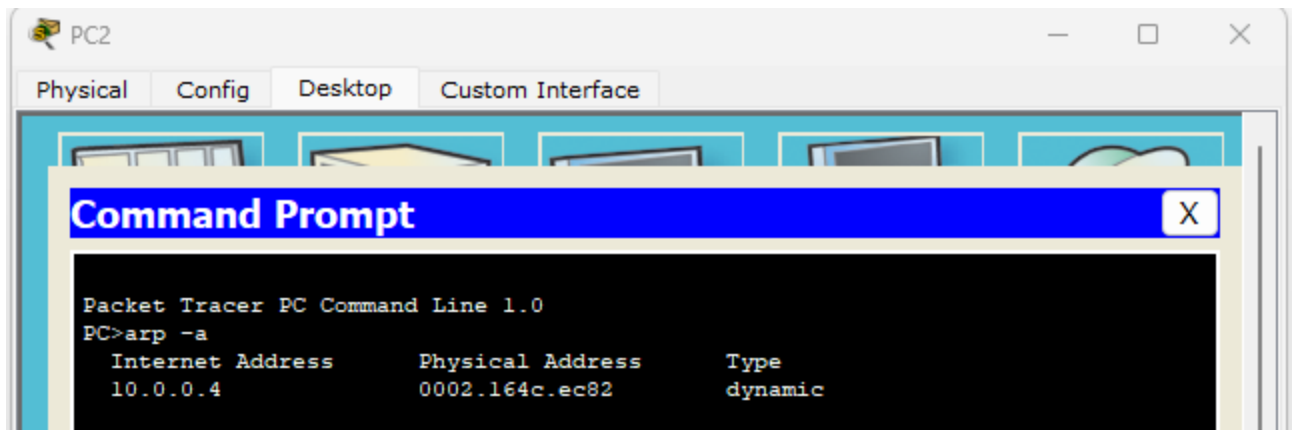
Pinging 10.0.0.3 with 32 bytes of data:

Reply from 10.0.0.3: bytes=32 time=13ms TTL=128
Reply from 10.0.0.3: bytes=32 time=15ms TTL=128
Reply from 10.0.0.3: bytes=32 time=12ms TTL=128
Reply from 10.0.0.3: bytes=32 time=17ms TTL=128

Ping statistics for 10.0.0.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 12ms, Maximum = 17ms, Average = 14ms
```

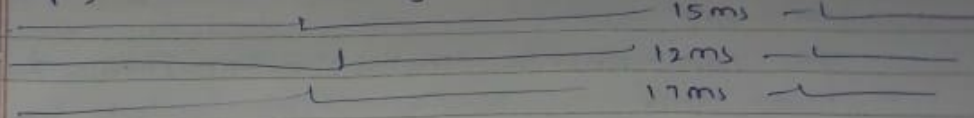
```
PC>arp -a
No ARP Entries Found
PC>arp -a
    Internet Address      Physical Address      Type
    10.0.0.4              0002.164c.ec82       dynamic
```





Observation:

Reply from 10.0.0.3: bytes=32 time=13ms TTL=128



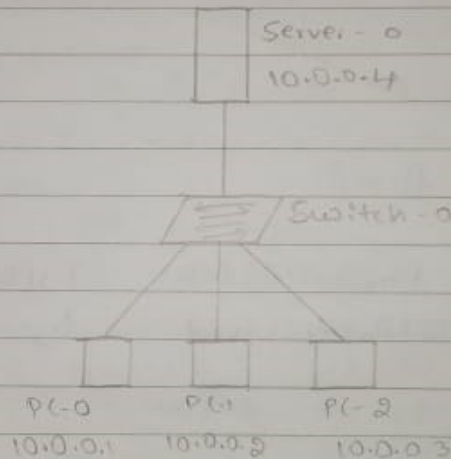
Ping Statistics for 10.0.0.3:

Packets: Sent: 4, Received: 4, Lost: 0 (0% loss),

Approximate round trip times in milli-seconds:

Minimum=12ms, Maximum=17ms, Average=14ms.

2. Aim: Demonstrate the working of ARP for communication with a LAN.



Configuration Steps:

1. Select 3 PC's, a switch & server. Connect them with appropriate cable.
2. Set IP addresses for PC & server.

PC-0 → 10.0.0.1

PC-1 → 10.0.0.2

PC-2 → 10.0.0.3

Server → 10.0.0.4

3. Go to PC0 command prompt type command
PC> arp -a.
You can observe that No ARP Entries Found.
4. Now, take a simple PDU select source address as PC-0 & destination address as Server.
5. click on that PDU & you can observe the Input & output PDU details.
6. Now, go to PC0 command prompt & type arp -a.
7. Do the same thing for PC1, & PC2

observation:

PC-0

PC> arp -a

No ARP Entries found.

PC> arp -a

Internet address	Physical Address	Type
10.0.0.4	0002.164C.EC82	dynamic

PC-1

PC> arp -a

Internet address	Physical address	Type
10.0.0.4	0002.164C.EC82	dynamic

Server-0 (ARP Table)

IP Address	Hardware Address	Interface
10.0.0.1	00D0.BA77.8E57	FastEthernet0
10.0.0.2	0001.6308.A3CE	FastEthernet0
10.0.0.3	0060.7081.4447	FastEthernet0

1000P
26/11/24