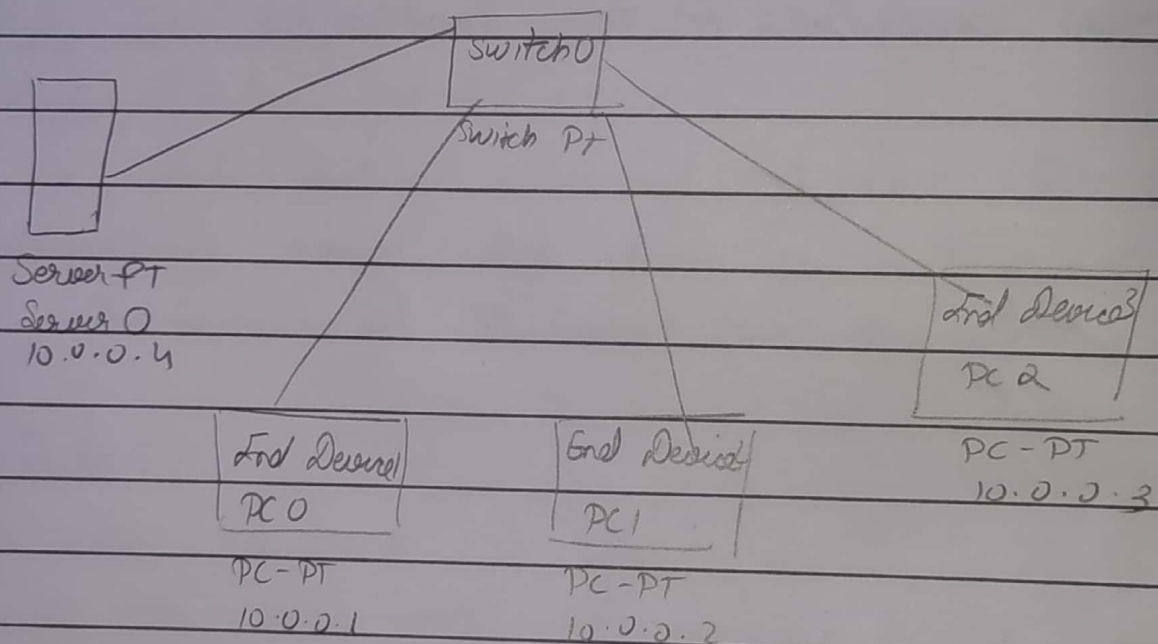


Exp - 8

Aim: To construct simple LAN and understand the concept and operation of Address Resolution Protocol (ARP)

Topology :



Procedure :

- Create a topology of 4 PC's and a server
- Assign IP addresses to all.
- Connect them through a switch.
- Use the infect tool to click on a PC to see the ARP Table (run command in command prompt - a)

- Initially the arp table is empty
- In CLI of switch → show mac address table can be given on an every transaction to see how the switch learns from transactions and build the address table.
- Use the capture button to see the process step by step.

Result:

PC > arp -a

Internet Address	Physical Address	Type
10.0.0.2	000d.bd15.3a18	dynamic
10.0.0.3	00e0.8b7.b7e8	dynamic
10.0.0.4	00d0.bc9f.9a38	dynamic

Mac' Table for Switch 0

VLAN	Mac address	Port
1	0005.5EDA.1C2B	FastEthernet 0/1
1	000D.BD15.3A18	FastEthernet 2/1
1	00D0.AC57.AA38	FastEthernet 1/1
1	00E0.8FB7.B7E8	FastEthernet 3/1

Observation.

- ARP is a protocol that uses the IP address to find out the physical address / MAC address.

Cisco Packet Tracer Student

File Edit Options View Tools Extensions Help

Logical [Root] New Cluster Move Object Set Tiled Background Viewport

```
graph TD
    S[Server-PT Server0 10.0.0.4] --- SW[Switch0]
    SW --- PC1[PC-PT PC1 10.0.0.1]
    SW --- PC2[PC-PT PC2 10.0.0.2]
    SW --- PC3[PC-PT PC3 10.0.0.3]
```

ARP Table for PC2

IP Address	Hardware Address	Interface
10.0.0.1	0005.5EDA.1C25	FastEthernet0

ARP Table for PC1

IP Address	Hardware Address	Interface
10.0.0.1	0005.5EDA.1C25	FastEthernet0

ARP Table for Server0

IP Address	Hardware Address	Interface
10.0.0.1	0005.5EDA.1C25	FastEthernet0

ARP Table for PC0

IP Address	Hardware Address	Interface
10.0.0.2	000D.BD15.3A18	FastEthernet0
10.0.0.3	00E0.8F87.B7E8	FastEthernet0
10.0.0.4	00D0.BC97.AA38	FastEthernet0

Simulation Panel

Vis.	Time(sec)	Last Device	At Device	Type	Info
	12.665	Switch0	Server0	STP	
	12.665	Switch0	PC2	STP	
	12.665	Switch0	PC0	STP	
	14.662	--	Switch0	STP	
	14.663	Switch0	Server0	STP	
	14.663	Switch0	PC2	STP	
	14.663	Switch0	PC0	STP	
	16.662	--	Switch0	STP	

PC0

Physical Config Desktop Custom Interface

Command Prompt

```
Ping statistics for 10.0.0.4:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
  Minimum = 0ms, Maximum = 3ms, Average = 1ms

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=4ms TTL=128
Reply from 10.0.0.2: bytes=32 time=4ms TTL=128
Reply from 10.0.0.2: bytes=32 time=4ms TTL=128
Reply from 10.0.0.2: bytes=32 time=4ms TTL=128

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

PC>arp -a
Invalid Command.

PC>arp -a

Internet Address      Physical Address      Type
10.0.0.2              000d.bd15.3a18       dynamic
10.0.0.3              00e0.8f87.b7e8       dynamic
10.0.0.4              00d0.bc97.aa38       dynamic

PC>#
```

Time: 00:10:29.825 Power Cycle Devices PLAY CONTROLS: Back Auto Capture / Play Capture / Forward

Scenario 0

New Delete

Toggle PDU List Window

Event List Simulation

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
------	-------------	--------	-------------	------	-------	-----------	----------	-----	------	--------