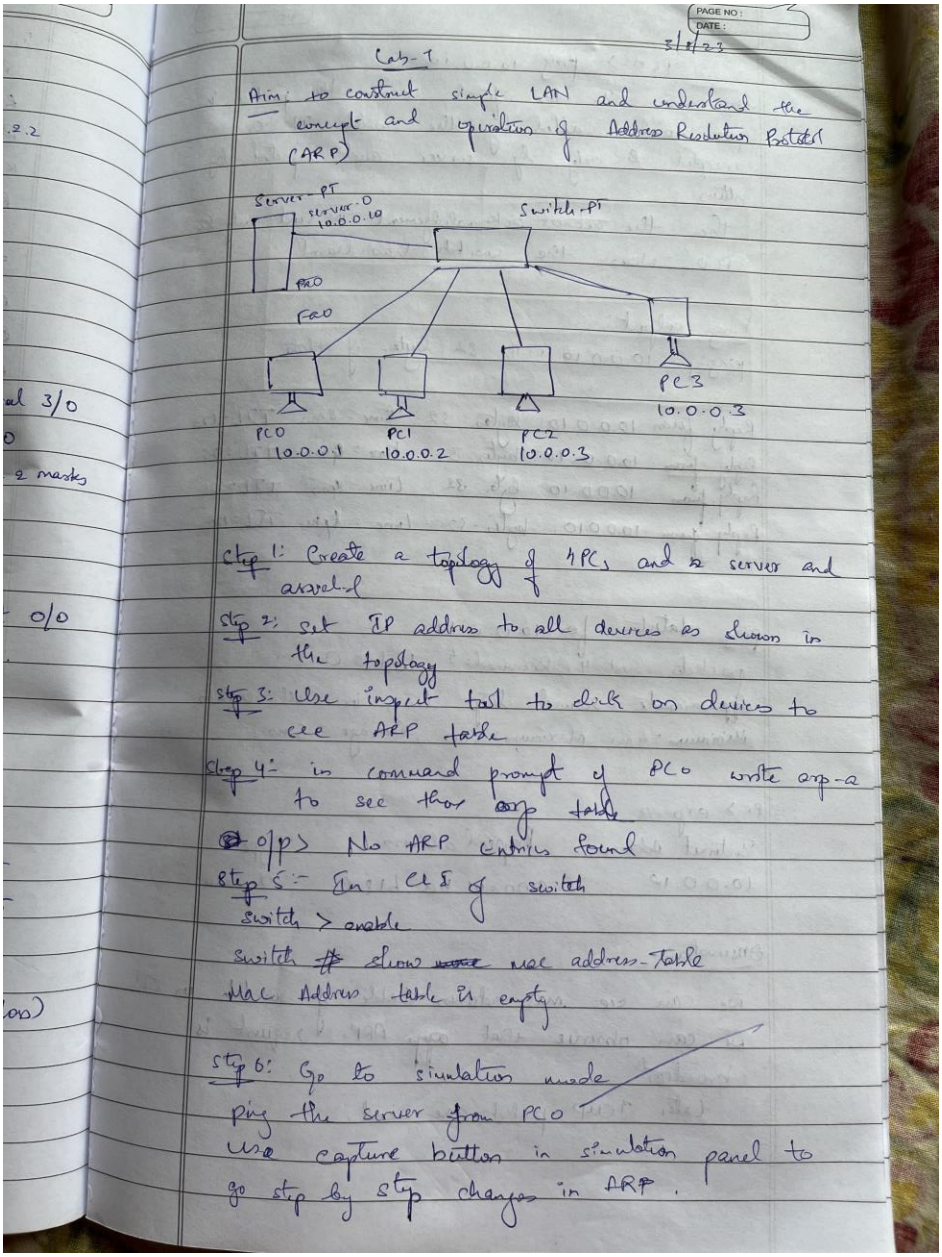
LAB 8

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

OBSERVATION:



PC0 > ping 10.0.0.10

observation: In the first term the packet is ~~pe~~ broad called by the switch. It is accepted only by server and rejected by others.

Then the ~~retract~~ acknowledgement is sent only to PC0. Now the switch has learnt.

Ping output:

pinging 10.0.0.10 with 32 bytes of data.

Reply from 10.0.0.10: bytes = 32 time = 8ms TTL=128

Reply from 10.0.0.10: bytes=32 time = 8ms TTL=128

Reply from 10.0.0.10: bytes = 32 time = 8ms TTL=128

Reply from 10.0.0.10: bytes=32 time = 8ms TTL=128

ping statistics for 10.0.0.10

packets sent=4, Received=4, lost = 0

Approximate round trip time in milli seconds

Minimum = 4ms, Maximum = 8ms, Average = 5ms

PC> arp -a

Internet Address	Physical address	Type
10.0.0.10	000a.41 ba.b18d	dynamic

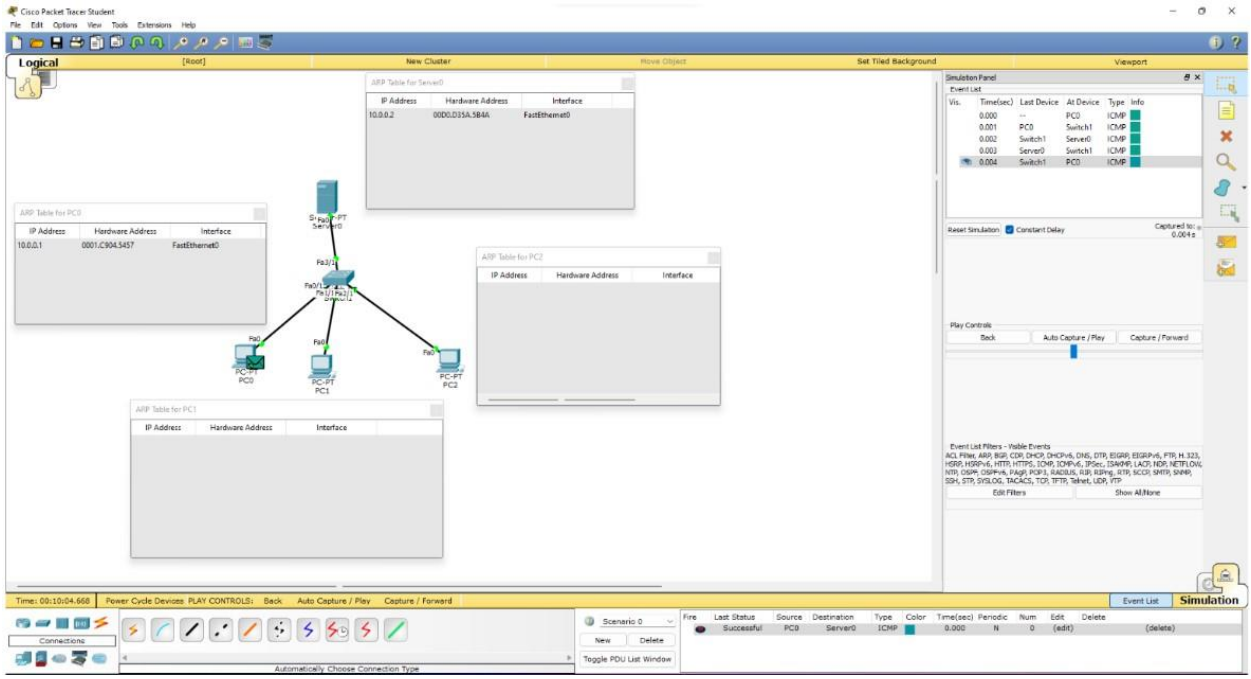
Observation:

we can see mac address table of switch in CLI

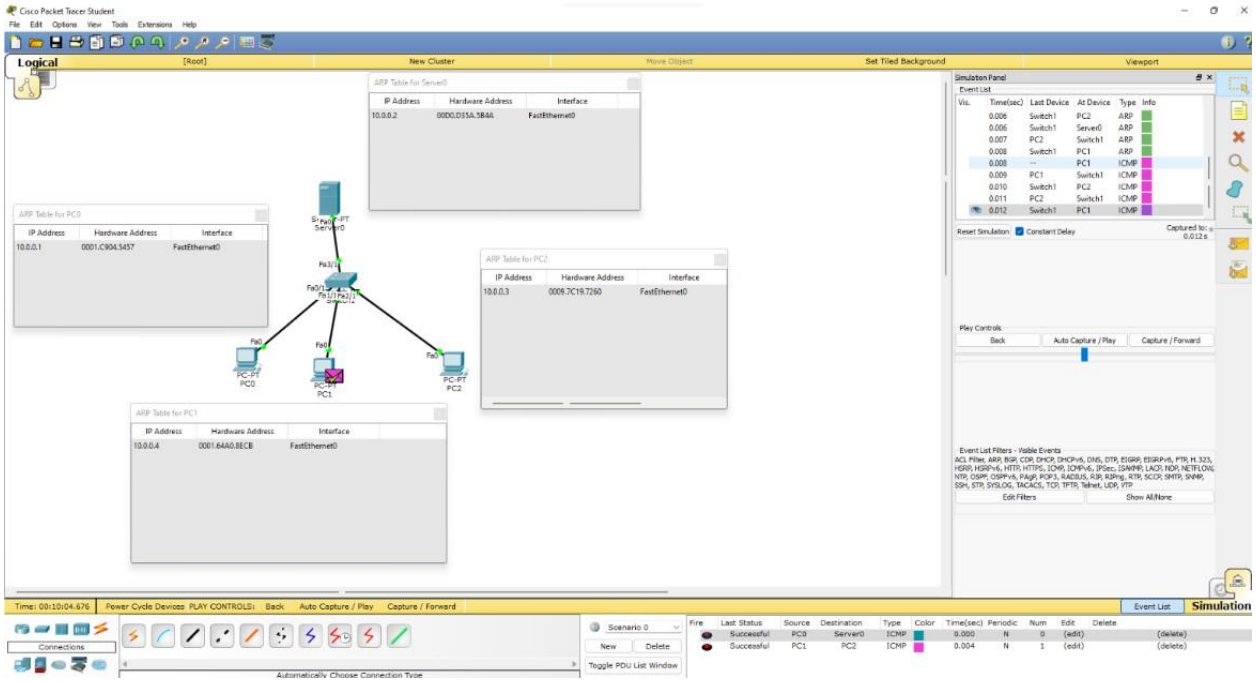
we can observe that ~~arp~~ ARP request is broadcast

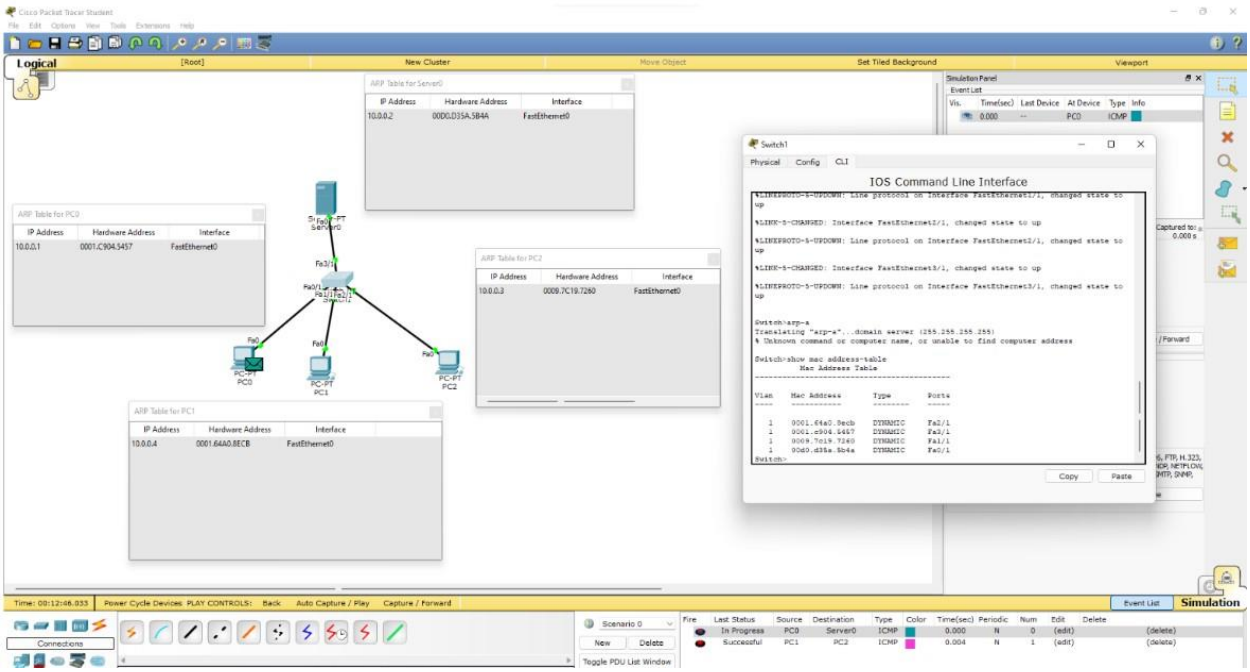
Later ICMP packets are sent.

TOPOLOGY:



OUTPUT:




Logical
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
ARP Table for Server0
IP Address
Hardware Address
Interface
10.0.0.2
00DG.D35A.5B4A
FastEthernet0
ARP Table for PC0
10.0.0.1
0001.C904.5457
ARP Table for PC2
10.0.0.3
0009.7C19.7260
ARP Table for PC1
10.0.0.4
0001.64A0.8ECB
Switch1
Physical
Config
CLI
IOS Command Line Interface
%LINK-5-CHANGED: Interface FastEthernet1/1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet1/1, changed state to up
%LINK-5-CHANGED: Interface FastEthernet2/1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet2/1, changed state to up
%LINK-5-CHANGED: Interface FastEthernet3/1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet3/1, changed state to up
Switch>arp -a
Translating "arp-a"...domain server (255.255.255.255)
% Unknown command or computer name, or unable to find computer address
Switch>show mac address-table
Mac Address Table
Vlan Mac Address Type Ports
1 0001.64a0.8ecb DYNAMIC Fa2/1
1 0001.c904.5457 DYNAMIC Fa3/1
1 0009.7c19.7260 DYNAMIC Fa1/1
1 00d0.d35a.5b4a DYNAMIC Fa0/1
Switch>
Copy
Paste
Simulation Panel
Event List
Vis.
Time(sec)
Last Device
At Device
Type
Info
0.000
PC0
ICMP
Time: 00:12:06.033
Power Cycle Devices
PLAY CONTROLS:
Back
Auto Capture / Play
Capture / Forward
Event List
Simulation
Connections
Scenario 0
New
Delete
Toggle PDU List Window
Fire
Last Status
Source
Destination
Type
Color
Time(sec)
Periodic
Num
Edit
Delete
In Progress
PC0
Server0
ICMP
0.000
N
0
(edit)
(delete)
Successful
PC1
PC2
ICMP
0.004
N
1
(edit)
(delete)