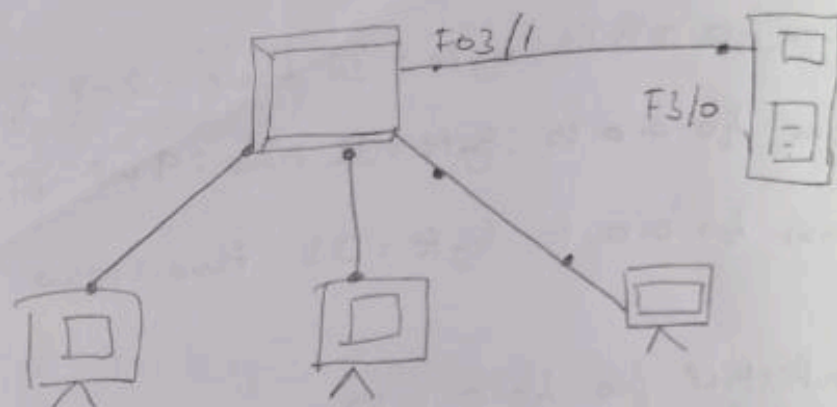


3/8/23 - ARP

To Construct simple LAN and understand the concept and operation of Address Resolution Protocol.

### ARP



### Procedure

- Create a topology of 4 PC's & a server.
- Set IP address to all of them.
- Connect the PC's through a switch.
- Use the inspect tool to click on a PC to see the ARP protocol.
- Initially ARP table will be empty.
- Use the capture button in the simulation panel to go step by step so that the changes in ARP protocol can be clearly noted.
- go to the search button in the panel to get ARP tables of all the end devices.
- Observe the switch as well the nodes update the ARP table as and when a new communication starts.

## Ping output.

PC > arp -a .

PC > Ping 10.0.0.2

PC > Ping 10.0.0.3

PC > Ping 10.0.0.4.

Internet address	Physical address	Type.
10.0.0.2	000d.6d15.3c18	dynamic
10.0.0.3	0000.0657.6488	dynamic
10.0.0.4	00d0.6c57.6c38	dynamic

## Observation

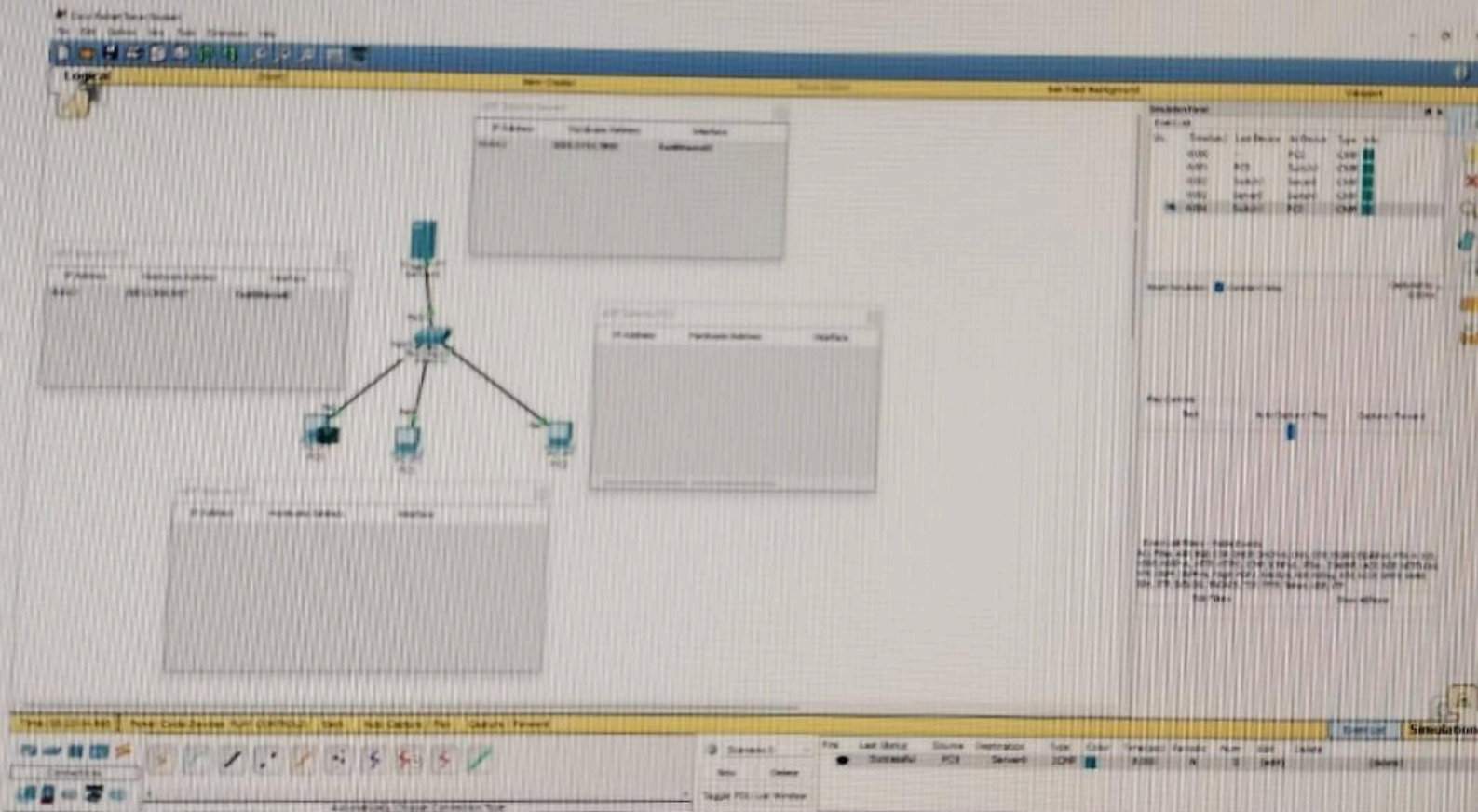
We observe the changes when we capture every time when we do in all the PC's.

ARP tables will have values empty at the starting & values will be formed whenever we ping each PC in the ping.

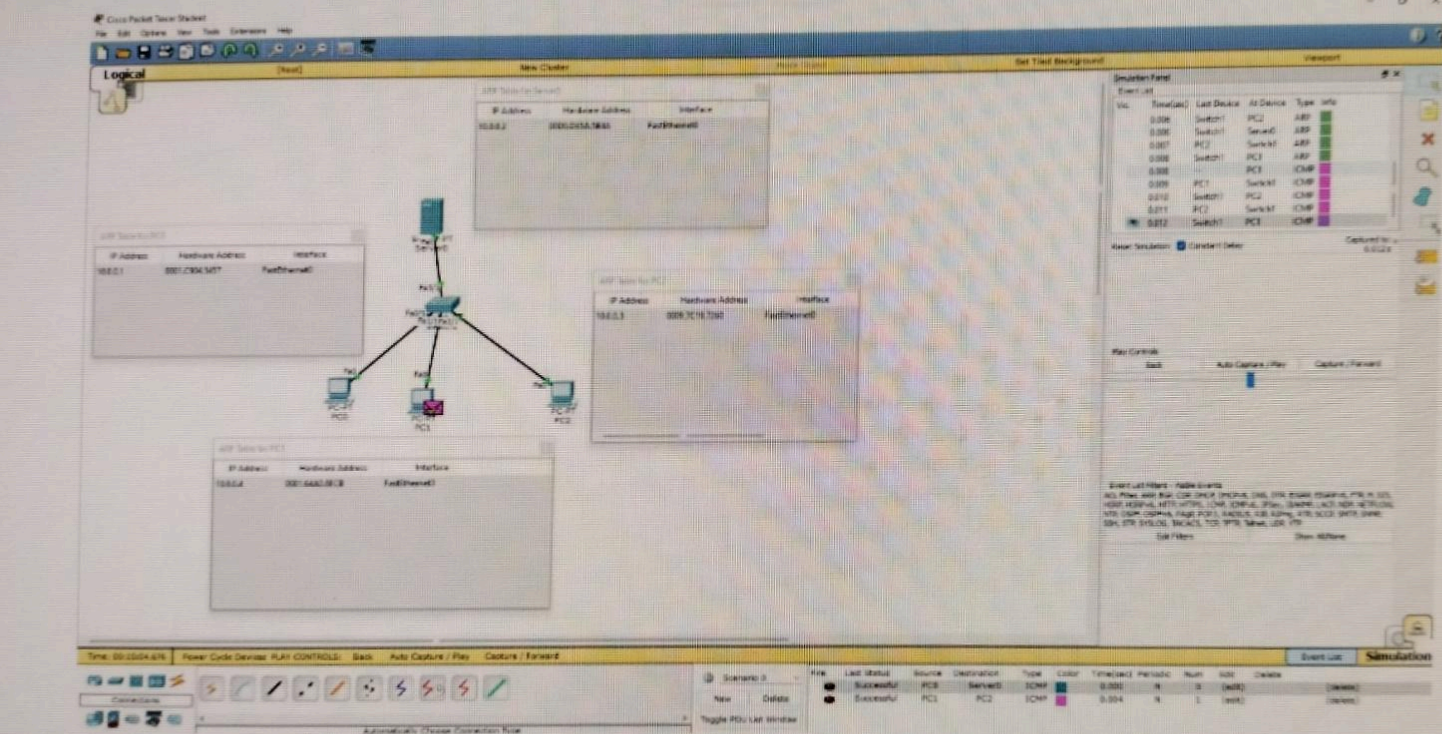
ALP  
17/8/2023



# TOPOLOGY:



# OUTPUT:





Packet Tracer Simulation Interface

**Logical View:**

- Router 1 (R1):** IP Address: 10.0.0.1, Hardware Address: 0800.0A.1A1A, Interface: FastEthernet0/0.
- Router 2 (R2):** IP Address: 10.0.0.2, Hardware Address: 0800.0A.1A1A, Interface: FastEthernet0/0.
- Router 3 (R3):** IP Address: 10.0.0.3, Hardware Address: 0800.0A.1A1A, Interface: FastEthernet0/0.
- Router 4 (R4):** IP Address: 10.0.0.4, Hardware Address: 0800.0A.1A1A, Interface: FastEthernet0/0.

**IOS Command Line Interface:**

```
Router>show ip route
Routing Table for 0.0.0.0
Codes: C - Connected, S - Static, I - ISMP, O - OSPF, E - EIGRP, B - BGP, D - DHCP, L - L2TP, U - User Defined, A - Autoconfig, P - PPP, G - GPRS, V - VPLS, T - Tunnel, W - WireGuard, M - Mobile, N - N/A, * - Unknown
Gateway of last resort is 0.0.0.0
R1#
R1>show ip route
Routing Table for 0.0.0.0
Codes: C - Connected, S - Static, I - ISMP, O - OSPF, E - EIGRP, B - BGP, D - DHCP, L - L2TP, U - User Defined, A - Autoconfig, P - PPP, G - GPRS, V - VPLS, T - Tunnel, W - WireGuard, M - Mobile, N - N/A, * - Unknown
Gateway of last resort is 0.0.0.0
R2#
R2>show ip route
Routing Table for 0.0.0.0
Codes: C - Connected, S - Static, I - ISMP, O - OSPF, E - EIGRP, B - BGP, D - DHCP, L - L2TP, U - User Defined, A - Autoconfig, P - PPP, G - GPRS, V - VPLS, T - Tunnel, W - WireGuard, M - Mobile, N - N/A, * - Unknown
Gateway of last resort is 0.0.0.0
R3#
R3>show ip route
Routing Table for 0.0.0.0
Codes: C - Connected, S - Static, I - ISMP, O - OSPF, E - EIGRP, B - BGP, D - DHCP, L - L2TP, U - User Defined, A - Autoconfig, P - PPP, G - GPRS, V - VPLS, T - Tunnel, W - WireGuard, M - Mobile, N - N/A, * - Unknown
Gateway of last resort is 0.0.0.0
R4#
R4>show ip route
Routing Table for 0.0.0.0
Codes: C - Connected, S - Static, I - ISMP, O - OSPF, E - EIGRP, B - BGP, D - DHCP, L - L2TP, U - User Defined, A - Autoconfig, P - PPP, G - GPRS, V - VPLS, T - Tunnel, W - WireGuard, M - Mobile, N - N/A, * - Unknown
Gateway of last resort is 0.0.0.0
```

**Simulation Log:**

Time	Host Address	Type	Port
0:00:00	10.0.0.1	Static	8080
0:00:00	10.0.0.2	Static	8080
0:00:00	10.0.0.3	Static	8080
0:00:00	10.0.0.4	Static	8080