

Program 10

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

Topology , Procedure and Observation:

Ex-8
Aim: To construct a simple LAN simulate operation of address Resolution Protocol ARP

Topology:-

1) Switch connected to 3 PC's and a server via three fast ethernet interfaces & one ethernet interface respectively,

2) All connections made via copper straight-through cable

Procedure:-

- 1) Place a switch, 3 PC's connected to switch 0 and server
- 2) Assign an IP Address & Subnet mask to all the devices then connect them via a switch
- 3) Use the Packet Tracer tool, click on a PC to view ARP Table

- 4) Display ARP Table
- 5) In CLI of switch
- show mac address
- 6) Use capture button in the simulation panel to go step by step so that there are changes in ARP
- 7) Observe switch as well as node updates in the ARP Table

Observation

- As the message travels from one source host to its destination host the ARP table of all devices gets updated

ARP maps an IP address to a MAC address. It ensures communications within a local network.

ARP Table for PC 0

IP	Hardware Address	Interface
10.0.0.3	0060.2F29.2CB8	FastEthernet0

Screen Shots:

The screenshot displays a network simulation environment. A central switch is connected to three PCs (PC0, PC1, PC2) and a Server-PT (Server0). The interface includes several panels:

- ARP Tables:**
 - ARP Table for PC0:**

IP Address	Hardware Address	Interface
10.0.0.2	0003.E490.6097	FastEthernet0
 - ARP Table for PC1:**

IP Address	Hardware Address	Interface
10.0.0.1	0004.8A10.2391	FastEthernet0
 - ARP Table for PC2:**

IP Address	Hardware Address	Interface
10.0.0.3	000A.41B0.B710	FastEthernet0
 - ARP Table for Server0:**

IP Address	Hardware Address	Interface
10.0.0.4	000C.42A0.1234	FastEthernet0
- Switch0 CLI:**

```

Switch0>show mac address-table
Mac Address Table
-----
Vlan  Mac Address      Type      Ports
----  -
1     0003.E490.6097    DYNAMIC  Fa1/1
1     0004.8A10.2391    DYNAMIC  Fa0/1
1     000A.41B0.B710    DYNAMIC  Fa3/1
Switch0>

```
- Simulation Panel:**

Vis.	Time(sec)	Last Device	At Device
	0.003	PC1	Switch0
	0.004	Switch0	PC0
	0.005	PC0	Switch0
	0.006	Switch0	PC1
	0.007	PC1	Switch0
	0.008	Switch0	PC0
	0.172	--	Switch0

