LABORATORY PROGRAM – 9

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

18/12/2024

Lab No 10

ARP (Address Resolution Protocol)

Aim:- To construct Simple LAN and understand the concept and Operation of address Resolution protocol (ARP)

Topology:

Server
10.0.0.4

Switch

PC
10.0.0.1

PC
10.0.0.2

PC
10.0.0.3

Procedure:-

① Create the topology as Shown above

② Configure the PC's and Server

③ Click on Inspect mode (Q), then click on the end devices and open ARP tables.

④ Send a data packet from any end device Say server to other end devices Say 10.0.0.3 PC.

⑤ Open simulation mode to Capture each step of data transfer.

OBSERVATIONS:

① The ARP tables of all end devices are initially empty.

② When the data packet from Server arrives at Switch, Since the Source MAC address is unknown, it sends a broadcast message to all devices.

③ The device with the IP address present in the destination address of the data packet responds to the message

④ The Server and the PC Update their ARP Tables matching IP address to MAC address.

⑤ Over time, the ARP tables grows as data packets are set.

⑥ The MAC Table of the Switch which was initially empty Updates its mac table gradually too

ARP Table for 10.0.0.4 :-

IP address	Hardware Address	Interface
10.0.0.3	0001.C726.A7E5	fastEthernet0

⑦ Similarly other ARP tables are Updated.