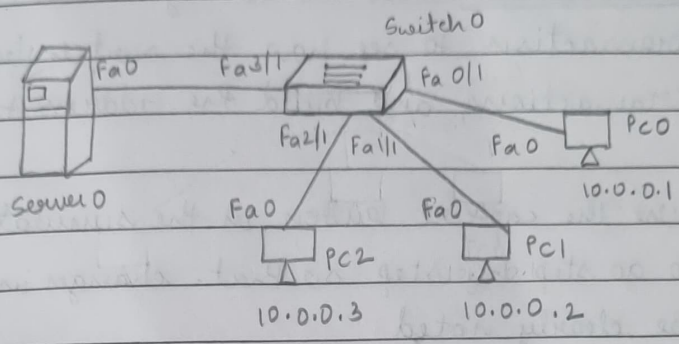
Date 9/12/24
Page

(9)

Experiment - 8: To construct a simple LAN & understand concept & operation of ARP.

Aim: construct a simple LAN simulate operation of Address Resolution Protocol.

Topology:



1. Switch connected to 3 PCs and a server via three fast ethernet interfaces & one ethernet interface respectively

2. All connections made via copper straight-through cable.

Procedure:

1. Open cisco packet tracer & drag the following switch, pc: place 3 PC's, each connected to switch 0 and server: place 1 server and connect it to switch 0.

2. Assign an IP address & subnet mask to all the devices then connect them via a switch.

3. Use the inspect tool ('9'), click on a PC to view

Date __/__/__
Page

ARP table

3. Display the ARP table of all the devices.

4. Initially ARP is empty for all

5. Also in CLI of switch, the command = show mac address-table can be given on every transaction to see how the switch learns from transactions and build the address table.

6. Use the capture button in the simulation panel to go step by step so that changes in ARP can be clearly noted

7. Observe the switch as well as nodes update the ARP table as and when new communication starts.

Observation:

* As the message travels from one source host to its destination host the ARP table of all devices get updated.
ARP maps an IP address to a MAC address.
It ensures communication within a local network

ARP table for PC0 (source):

IP address	Hardware Address	Interface
10.0.0.3	0060.2F29.2CB8	FastEthernet0

Date __/__/__
Page _____

ARP table for PC 2 (destination)

IP Address	Hardware Address	Interface
10.0.0.1	00D0.D302.96DB	FastEthernet0