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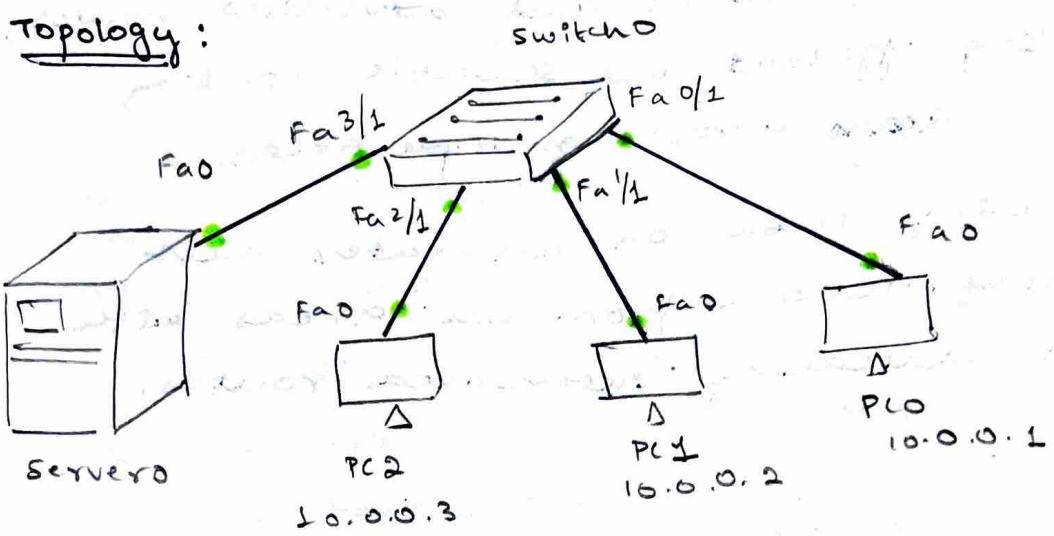
Experiment-8

9) To construct a simple LAN's and understand concept & operation of ARP.

Aim: construct a simple LAN's simulate operation of Address Resolution protocol.

Topology:



Topology Description:

1. Switch connected to 3 Pc's and a server via three three copperstraight wire (fastethernet interfaces) and one ethernet interface respectively.

2. All connections made via copper straight-through cable

3. No configuration required for switch

Procedure:

1. Open cisco packet tracer and drag it, following switch 0 and server, place in series and connect it to switch 0.

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

3. use the inspect tool ('🔍'), click on the PC to view the ARP table, Display ARP table for all devices

CLI
PC> arp -a

4. Initially ARP is empty for all

5. Also in CLI of switch,

show mac-address table

It gives the transaction on every device to see how the switch learns from transaction and build the address table

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

7. Observe the ~~switch~~ switch as well as nodes, it updates the ARP table as and when new communication starts.

Observation:

As the message travels from one source host to it's 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	00E0.F70C.4040	FastEthernet0

ARP table for PC2 (destination)

IP address	Hardware Address	Interface
10.0.0.2	0060.5CAB.D073	Fast ethernet0

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