Date 3/8/2023
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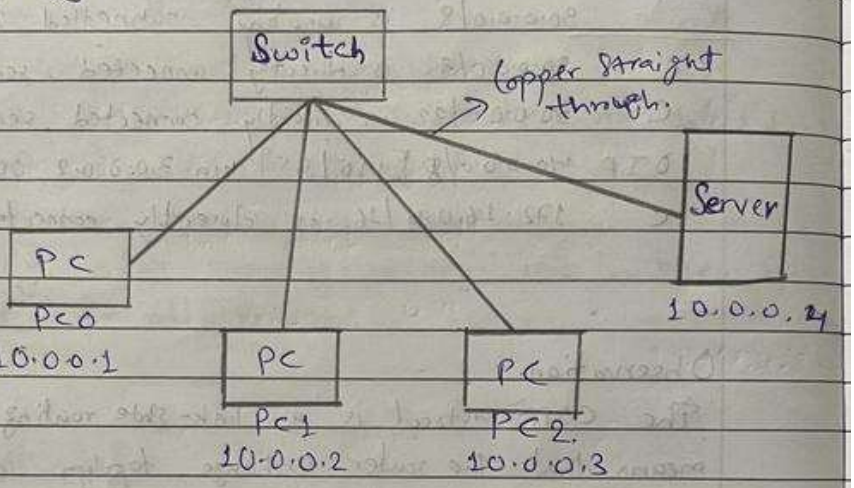
Experiment - 8

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

Topology:



Procedure:

1.) Select a switch server and 3 PC's and connect them to the switch as shown in the topology's above.
2.) Connect them with copper straight through wires.
3.) Set the IP address of switch and PC's as shown.
4.) Select the ~~inspect~~ inspect tool from the tool bar and open the ARP tables of all the devices.
5.) Then, ping the device from the command prompt of other devices and click on ~~top~~ capture in the simulation mode to know the packet routing.
6.) With every ping, the arp tables of devices get

filled with MAC address of the corresponding devices.

7.) Even the switch learns about the MAC address of all devices during pinging process.

8.) Once you ~~the~~ have pinged all the devices, you can check the ARP table of each device in command prompt of PC's.

>arp -a.

Internet address	Physical address	Type.
10.0.0.1	0090.2BBC.4B95	Dynamic
10.0.0.2	0020.4A8C.E3A7	Dynamic
10.0.0.3	0001.C735.6281	Dynamic.

9.) In the switch - CLI, you can chelk the MAC address of the devices as follows

switch> show mac address-table.

MAC Address Table.

VLAN	MAC address	Type	Ports
1	0005.5eal.0646	Dynamic	Fa 2/1
1	000c.8546.6aec	Dynamic	Fa 3/1
1	0060.47a4.0032	Dynamic	Fa 0/1
1	0060.47e5.1424	Dynamic	Fa 1/1

Observation

ARP protocol is communication protocol used for discovering the link layer address, such as a MAC address. After pinging, every device learns about the MAC address of the pinged devices and the switch stores these MAC address in the ARP table for future pinging ARP learns about the MAC addresses by pinging all devices and the right IP address responds with the acknowledge.