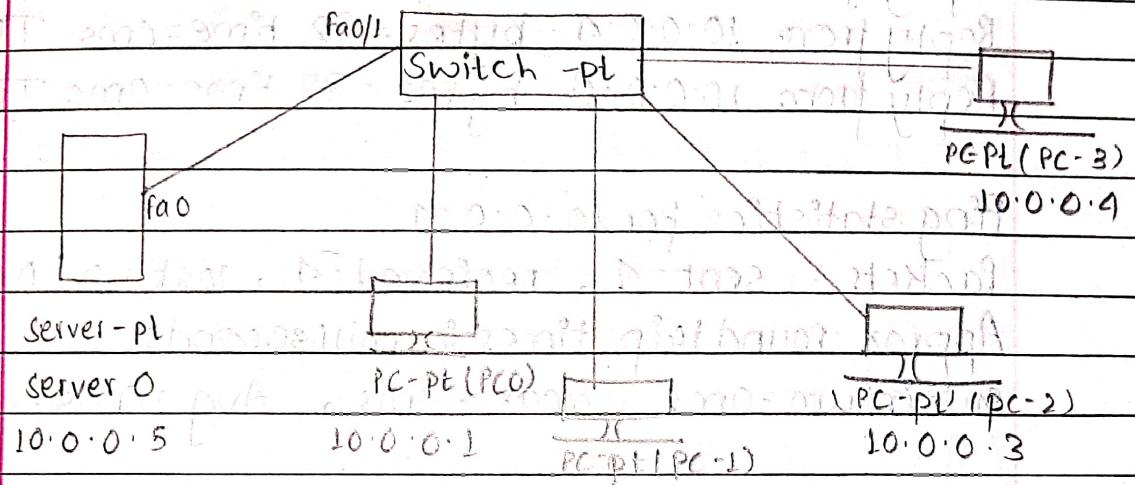


To construct simple LAN and understand the concept and operation of Address Resolution Protocol (ARP)

Aim: to construct simple LAN and understand the concept & operation of ARP.



Procedure

1. Create a topology of 4 PCs and a Server.
2. IP address assigned to all.
3. Connect them through a switch.
4. Use a inspect tool to click on a PC to see the ARP Table.
5. Command in CLI for the same `lsarp -a`.
6. Initially ARP table is empty.
7. Also in CLI for the same 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 add-table.
8. Use the capture button in the simulation panel to go step by step so that the changes in ARP can be clearly noted.
9. Observe the switch as well as the nodes update the ARP tables as and when a new communication starts.

Ping output

PC > ping 10.0.0.4

Pinging 10.0.0.4 with 32 bytes of data.

Reply from 10.0.0.4: bytes = 32 time = 0ms TTL = 128

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Ping statistics for 10.0.0.4.

packets: sent = 4, received = 4, lost = 0 (0% loss)

Approx round trip times in milliseconds:

minimum = 0ms, max = 0ms, Avg = 0ms.

PC > arp - a

Internet address

10.0.0.4

physical add.

00:02:2f:a0:32:9d dynamic.

Type

Observation

- When we ping 1 PC for server the address of servers is known to pc & vice versa.
- When we ping between other two PC's simultaneously the address of each other are unknown.
- Everytime a host requests a MAC address in order to send a packet to another host in LAN, it checks its ARP cache to see if the ip to Mac address translation address already exists. If the translation doesn't exist it performs ARP.

