9/10/2024

LAB-1

1. Create a topology and Simulate Sending a Simple PDU from Source to destination using hub and switch as connecting devices and demonstrate ping message.

Aim of the Experiment:

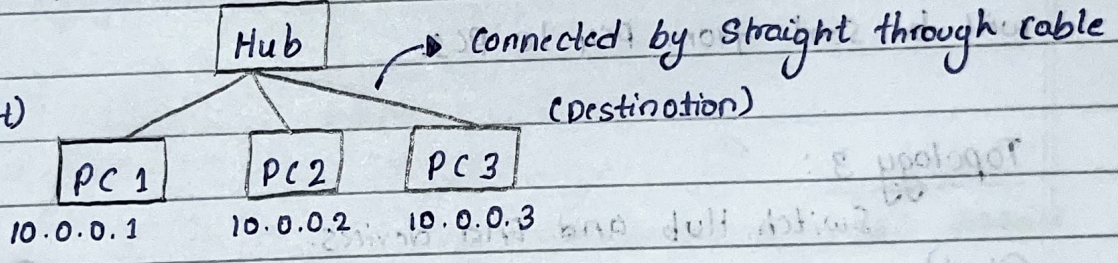
Simulating the transmission of simple PDU using Hub and Switch as connecting devices.

Device used

Hub, Switch and End Devices

Topology 1:

Hub and 3 End Devices.



Procedure & Observation

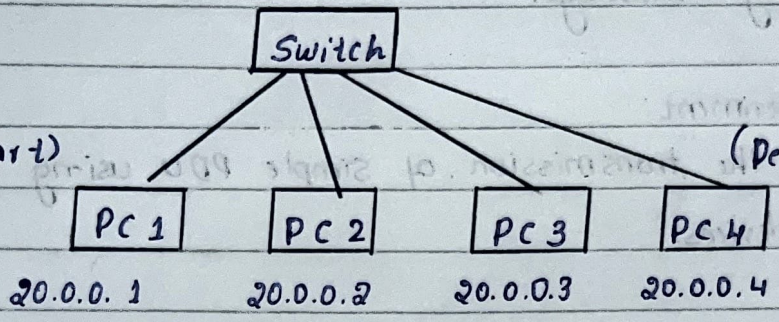
* Connect end devices PC 1, PC2 and Pc3 to the hub through Straight cable
* Assign IP address to each of the end devices.
* select a Simple PDU, select PC 1 as strart node and Pc 3 as destination

During Simulation, the message will be recieved by Pc 3 by PC 1 and acknowledges the same.

9/10/2024

Topology 2:

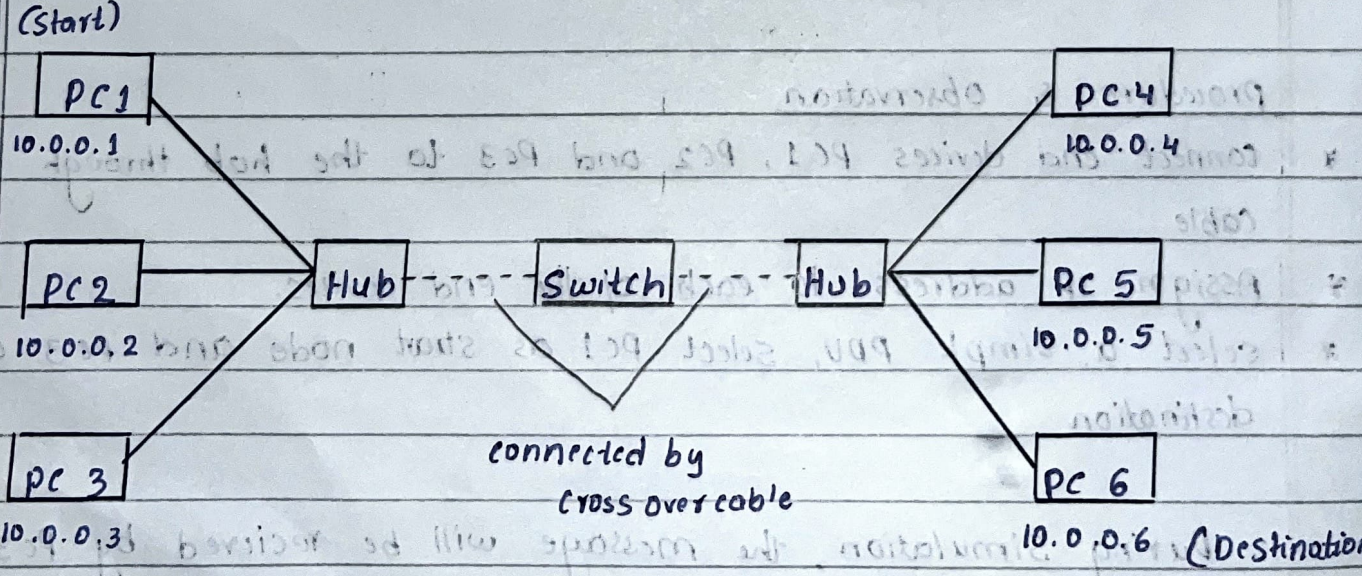
Switch and End devices



* Connect 4 devices PC1, PC2, PC3, PC4 to the switch with the mentioned IP address.
* Select simple PDU, PC1 as start and PC4 as destination and Simulate.
* Connection to be made through Straight through cables. The message will be sent from PC1 to PC4 and in return the acknowledgment will be sent from PC4 to PC1.

Topology 3:

Switch, Hub and End devices.



9/10/2024

* Connect the 3 end user devices PC1, PC2, and PC3 with mentioned IP addresses to a Hub and further is connected to a switch
* The connection between the Hub and switch is through a cross over cable.
* Then connect switch to another hub with 3 end user devices with mentioned IP addresses.
* select a simple PDU and assign anyone of the first three PC's as start node and any one of the other three PC's as destination node.
* Demonstrate the simulation and analyse the flow of message and acknowledgement from PC1 to PC6.

The successful ping message confirms the connectivity between the source and destination.

Difference b/w Hub and switch:

~~Hub operates at the physical layer (Layer 1) of OSI model.~~

Hub	Switch
* Hub broadcast data to all the devices.	* Switch sends it only to the destination.
* Hub create more traffic.	* Switch reduce traffic by directing data.
* Hub works at physical layer	* Switch operate at the data link layer
* Hubs are slower due to shared bandwidth	* Switches are faster with dedicated bandwidth.
* Hubs are cheaper.	* Switches are more expensive but more efficient.