LAB 01 :

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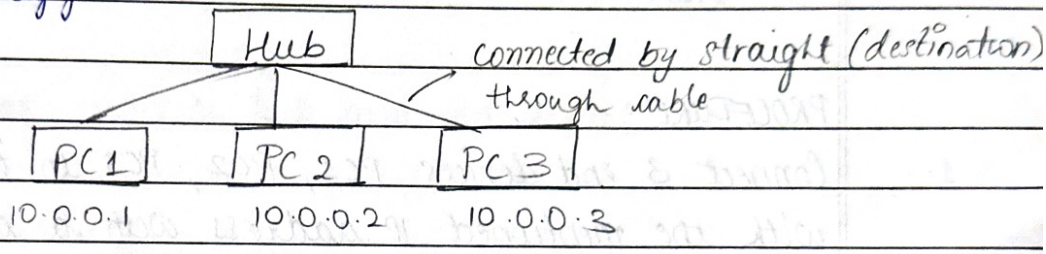
1. Create a topology and simulate sending a simple PDU from source to destination using hub and switch as connecting devices and demonstrate ping message

AIM

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

Topology 1 :



PROCEDURE

1. Connect end devices PC1, PC2, PC3 to the hub through straight cable.
2. Assign IP address to each of the end devices
3. Select a simple PDU, select PC1 as the start node and PC3 as destination

OBSERVATION

During simulation, the message will be recieved by PC3 and PC2 but only PC3 accepts the message and PC1 acknowledges the same i.e message is broadcasted

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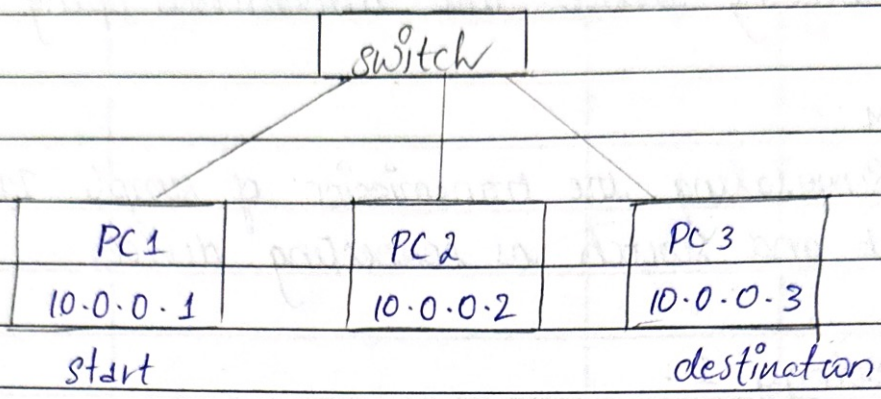
Topology 2

Devices : switch and end devices



PROCEDURE :

1. Connect 3 end devices PC1, PC2, PC3 to the switch with the mentioned IP address with a copper-straight through wire.
2. Configure the end devices with the mentioned IP addresses
3. Select simple PDU, PC1 as start and PC3 as destination and stimulate.
4. Play the whole circuit in simulation mode.

OBSERVATION :

Message will be sent from PC1 to PC3 only i.e it is unicasted and an acknowledgment is sent by PC3 to PC1.

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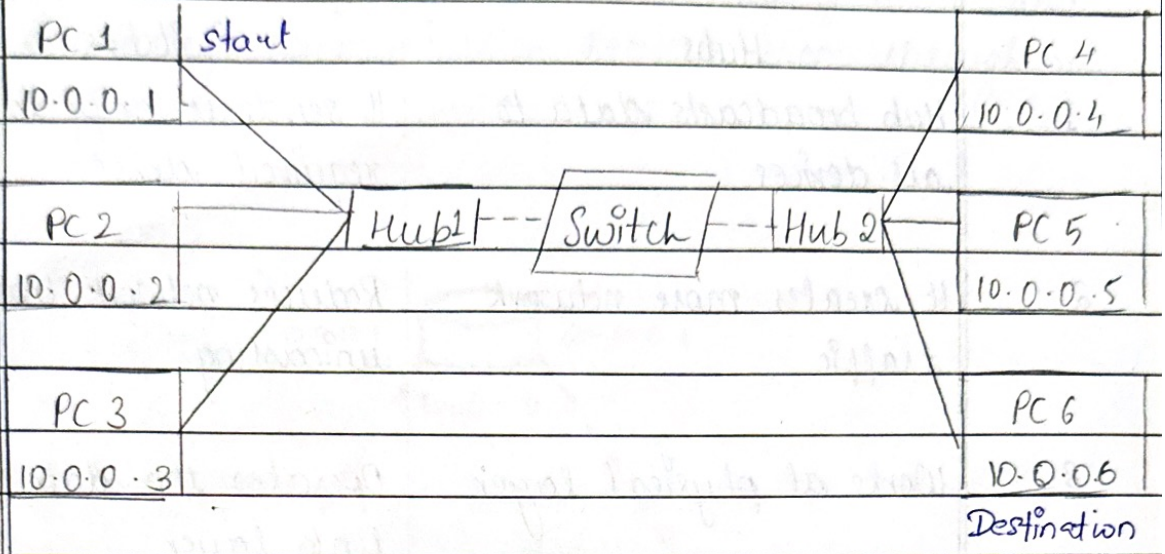
Topology 3



Devices : switch, hub and end devices

PROCEDURE

1. Connect 3 end devices PC1, PC2, PC3 with each other.
2. Connect the other 3 end devices PC4, PC5, PC6 with each other and then connect them to Hub 2, using the copper straight through wire
3. Similarly connect PC1, PC2, PC3 to the Hub using copper straight through wire.
4. Connect hub 1 to switch and Hub 2 to switch using copper cross over wire.
5. Configure all the end devices with respective IP address
6. Select a simple PDU and assign PC1 as source and PC6 as destination and then simulate the connection.

OBSERVATION :

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

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Difference between Hub and switch

	Hubs	Switches
1.	Hub broadcasts data to all devices	It sends it only to the required devices
2.	It creates more network traffic	Reduces network traffic by unicasting
3.	Works at physical layer	Operates the data at the link layer
4.	Slower due to shared bandwidth	Faster due to dedicated bandwidth
5.	Cheaper in cost but less efficient	More expensive compared hubs and have higher efficiency