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Create a topology and simulate sending a simple PDU from source to destination using a simple HUB and switch as connecting devices.

→ Aim

To create a topology and simulate sending a simple PDU from source to destination using a simple HUB and switch as connecting device.

Procedure:

1. Start creating the topology.
2. Select the HUB in the logical workspace and connect three PC's to the ~~HUB~~ generic HUB through cu straight wire.
3. Set the IP address for all 3 PC's by clicking on PC
4. ~~Similarly select the~~ going to config and typing the needed ip address.

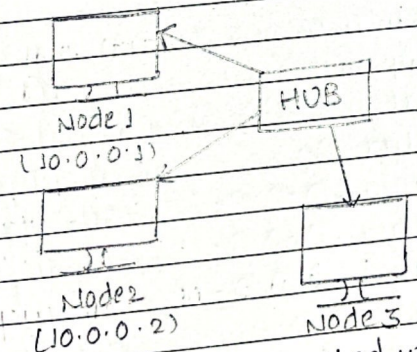

Fig: PC's connected with HUB.

4. Similarly a switch is selected in the logical workspace and connect 3 PC's to the generic switch - PT through copper st. wire.
5. set the IP address for all 3 PC's by clicking on PC, going to configure and typing the needed ip address.

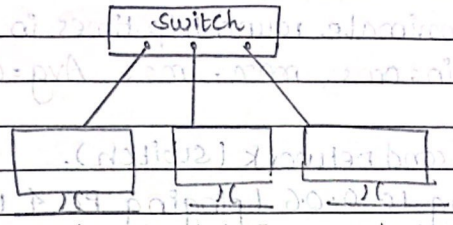

fig: PC's connected with switch

6. Now connect the HUB and the switch with the help of a copper-cross over wire. This completes the designing of the required topology.

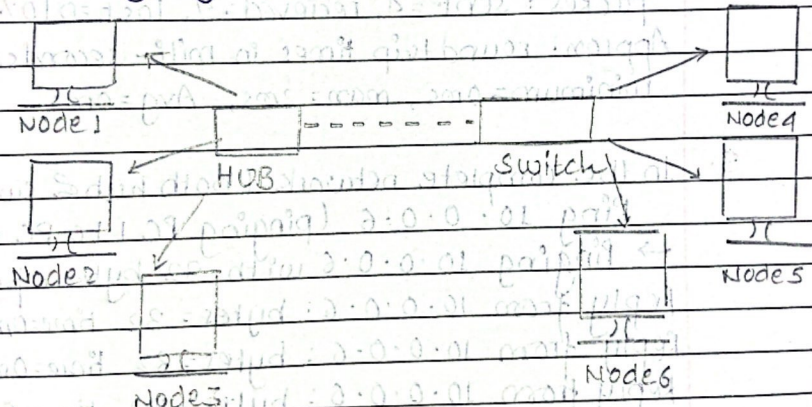

fig: The required topology.

Output:

1. In first network (HUB)

ping 10.0.0.3 (Pinged PC 1 with PC 3)

→ Pinging 10.0.0.3 with 32 bytes of data

Reply from 10.0.0.3 : bytes=32 time=0ms TTL=128

Reply from 10.0.0.3 : bytes=32 time=0ms TTL=128

Reply from 10.0.0.3 : bytes=32 time=0ms TTL=128

Reply from 10.0.0.3 : bytes=32 time=0ms TTL=128

Pinging statistics for 10.0.0.3

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Packets: sent = 4, recieved = 4, lost = 0 (0% loss).
Approximate round trip times in milliseconds:
min = 0ms, max = 0ms, Avg = 0ms.

2. In second network (switch).
Ping 10.0.0.6 (pinging PC 4 to PC 6)
→ Pinging 10.0.0.6 with 32 bytes of data.
Reply from 10.0.0.6 : bytes = 32 time = 0ms TTL = 128
Reply from 10.0.0.6 : bytes = 32 time = 0ms TTL = 128
Reply from 10.0.0.6 : bytes = 32 time = 0ms TTL = 128
Reply from 10.0.0.6 : bytes = 32 time = 2ms TTL = 128
Ping statistics for 10.0.0.6
packes : sent = 4, recieved = 4, lost = 0 (0% loss),
Approx. round trip times in mili-seconds:
minimum = 0ms, max = 2ms, Avg = 0ms.

3. In the complete network (both hub & switch).
Ping 10.0.0.6 (pinging PC 1 to PC 6)
→ Pinging 10.0.0.6 with 32 bytes of data.
Reply from 10.0.0.6 : bytes = 32 time = 0ms TTL = 128
Reply from 10.0.0.6 : bytes = 32 time = 0ms TTL = 128
Reply from 10.0.0.6 : bytes = 32 time = 0ms TTL = 128
Reply from 10.0.0.6 : bytes = 32 time = 0ms TTL = 128
Ping stats for 10.0.0.6
packets: sent = 4, recieved = 4, lost = 0 (0% loss)
Approximate round trips times in mili-second.
minimum = 0ms, max = 0ms, Avg = 0ms.

Observation.
1. when a packet is sent from PC 1 to PC 3 that are connected to the HUB it is broadcasted to all the PC, but acknowledgment is recieved from only the addressed PC.

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2. When ~~PC is~~ Packet is sent from PC 4 to PC 6 connected to a switch # at first it is broadcaled to all and acknowledgement is only recieved from the addressed PC but from next time it is only unicacted that is sent to the add. PC.

3. When Packet is sent from PC 1 to PC 6 that are connected to HUB and switch, which are also connected to eachother the packet is sent to all PC connected to HUB but no ackno. is recieved and it is only sent to the addressed PC through switch and ack. is also recieved only for it.

15/4/2023