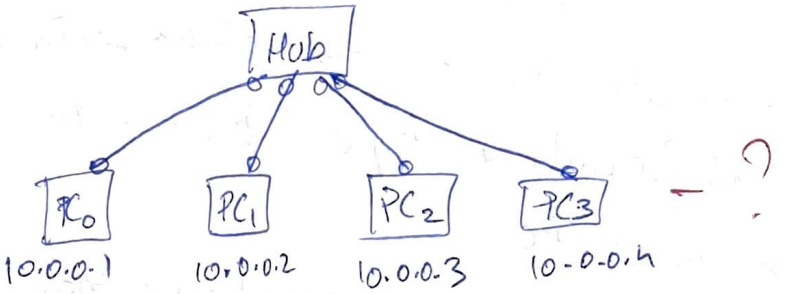
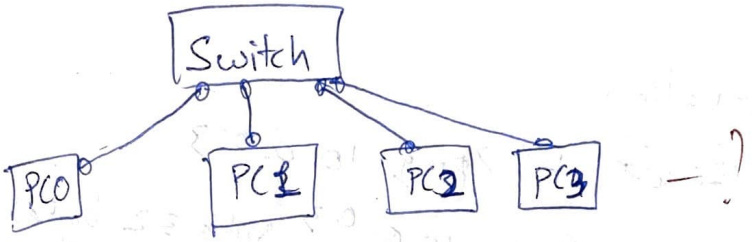
Create Experiment on Hubs & Switches

Aim: To create a Topology & simulate sending a simple PDU from source to destn using Hubs & Switch as connecting devices

Topology =





Procedure - From bottom left corner Click on Hub & select first generic hub & place it Now click on end devices select first generic PC & place it on the screen, repeat this step for as

Now click on wireless connection & select copper straight-Through & connect the PC's to the Hub Click on the PC i-> config -> Fast Ethernet 0 -> Type IP address for each PC

Similarly, Click on switches on bottom left corner & select first generic switch & place it on the screen

Then add PC's, enter their IP address & connect them to the switch by copper straight through connection

Switch to Simulation

Click add simple PDU & select source & destination PC's & then click Auto Capture / Play

Do the same for switch network also.

Switch to real time

Click on either PC of either network -> Desk top -> Command Prompt & type "Ping & IP address of an another PC

Repeat this for switch to network too.

Observation

HUb: Result PC ping 10.0.0.3

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

Learning - We can only select use copper straight-through

In simulation if we send PDU from one PC to another the message is sent to all other messages PC's

The message is rejected by the other PC's which weren't selected to receive

If we are out of ports -> Click the Hub -> Physical -> Turn off the switch drag the port from bottom right to the top the empty slots. & then turn on the switch

Switch : Result PC > Ping 10.0.0.12

Pinging 10.0.0.12 with 32 bytes of data:
Reply from 10.0.0.12: bytes=32 time=1ms TTL=128
Reply from 10.0.0.12: bytes=32 time=0ms TTL=128
Reply from 10.0.0.12: bytes=32 time=0ms TTL=128
Reply from 10.0.0.12: bytes=32 time=0ms TTL=128

- Copper straight through connection is to be used
In simulation send PDU from one PC to another
Simulation shows how the message is sent to receiver
it is accepted & the reply is sent back to the source
- The light will be ambes colored for some time after
connection is made then turns to green after it accepts
the connection

Differences

Hub	Switch
1) light turns green as soon as its connected	1) Light is amber in beginning after later turns green
2) Hub is not an intelligent device. gives messages to all the devices	2) Is an intelligent device send the message only to that device that is selected as receiver