# Lab: week 1

Interface overview:

Interface has 10 components

1. Menu Bar, main tool bar, common tol bar, Logical/ Physical Workspace and Navigation Bar, Workspace, Realtime / Simulation Bar, Network Component Bar Device-Type Selection Box, User created Packet Windows

It has 2 workspaces and 2 modes,
In logical you can build your network and in simulation you can run controlled networking.

You can change the settings according to your preference; you can toggle between animation, sounds, show like lights etc,
In admin panel you can disable access to a particular interface such as interface tabs, interface locking etc.

Under Hide parcel you can chose to show or hide Phy, config, CLI, Desktop, GUI & HTML. In fact you can change the format option. You can set User profile from the menu bar.

You can have Multiple Algorithms and you can save the package as PKT Auth

Save

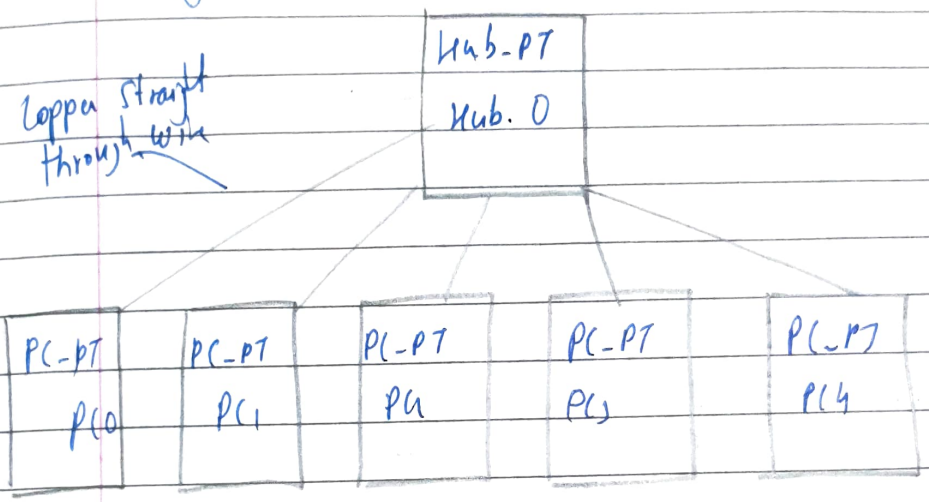
10/11/22

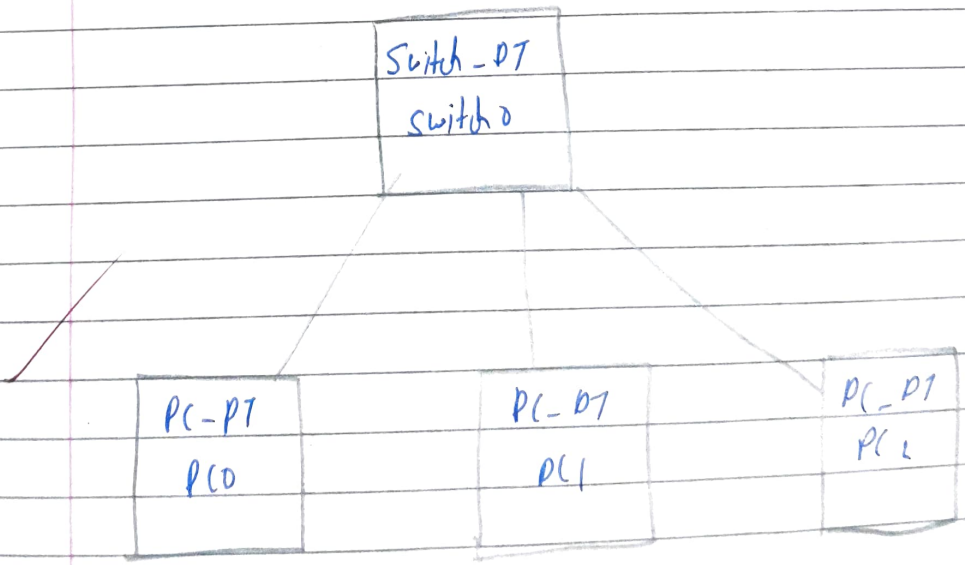
# Lab week 1

Aim: Creating a Topology and simulate sending a simple PDU from source to destination using hub and switch as connecting devices.

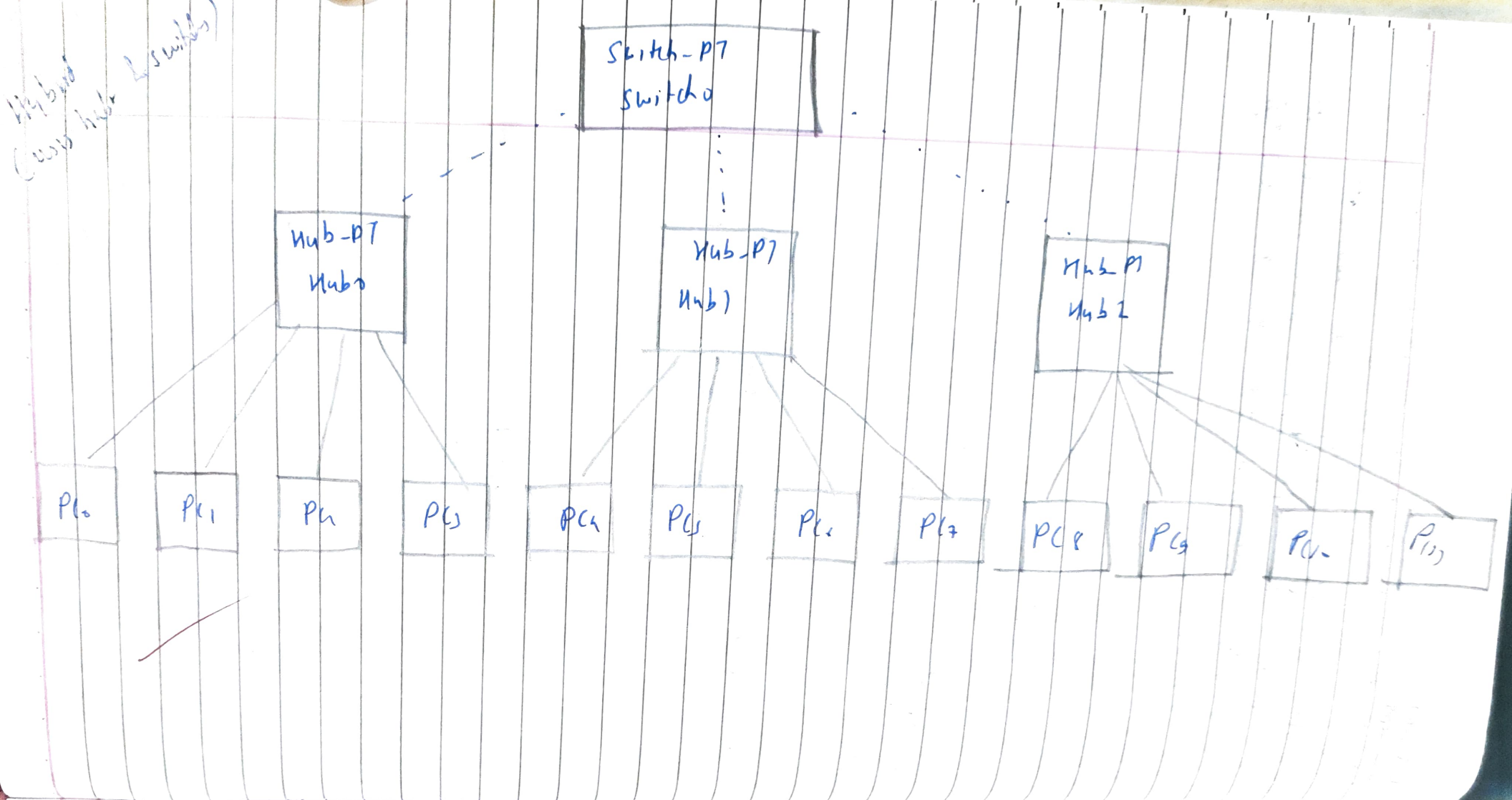
Topology:

Using hub:



Hybrid
(with hub & switches)



Procedure

Using Hub: 1) Add generic hub and seven PCs to workspace.
2) Give the IP address of each PC and make sure that IP is different for each device.
3) With the help of copper straight wire connect all PC's to hub.
4) Hub & PC ~~each~~ are connected to each other ~~by~~ fast ethernet connection.
5) If no of port are insufficient then add extra port, by clicking on device, turn off device & add necessary ports
6) Write down IP of all the end devices below the device.

Real time: select source PC in desktop tab, then select command prompt option in command prompt type.

ping 10.0.0.3: This is going to ping PC2 & response is generated in PC0

Simulation time:
Select simple PDU & select src and destination computer allows us to see how ~~ports~~ packets transformed to and from device

Hybrid Mode:

i) Add a switch, 3 hubs and 12 PCs to workspace

ii) Connect three hubs to switch & 4 PCs to each of the hubs using copper cross over and copper straight through wires respectively.

iii) Configure the IP of each of the PC in configure & add a note below each PC containg IP address.

Real time Mode: Select PC you want to send packet from & open its cmd prompt. Specify destination PC by specifying its IP address. A response is not sent by destination PC to source PC.

Simulation mode:
Add a simple PDU by selecting the ports of PC and click on auto capture. from right panel.

Observation:

→ Hub:

Learning Outcomes:

* When source sends a packet in network the hub source the packet and endsbroadcast over the network, i.e, it sends

data to all the end devices in network and mode where it matches with the specified address accepts the packet and acknowledge it. Remaining nodes ignore the message

ii) Comm" b/n hub & end devices is established through copper straight through wire as they belong to diffent layers.

iii) Number of ports can be added if needed by clicking on the device & adding the necessary ports

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
Reply from 10.0.0.3 : bytes = 32 time = 0ms

PT
ping statistics for 10.0.0.3
packets: sent = 4, Received = 4, lost = 4

## Switches

### Learning Options:

When some device sends a message to the switches once a connection is established which takes some time called learning time, the switch receives the packet it initially broadcasts the packet to all connected devices to locate the destination, once the destination is located the message is sent only to that device.

### Results

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

ping statistics for 10.0.0.3
Packets: Sent = 4, Received = 4, Lost = 0

### Hybrid Mode:

Learning Options

→ Switch and hub are connected through copper cables,

as as they belong to same network layer but PC and hubs are connected through straight wire.

2) message from source PC ~~to the hub~~ to the destination is sent through the hub which then sends to all its connected PCs and the switches. The switches then sends the message to all its connected PC. The distation PC ~~now~~ acknowledges that it has received the message by sending a acknowledgment to the source PC.

Present today

17/11/22