

Observation Book:

LAB-1 INTERFACE OVERVIEW 25/9/2024

The initial interface of the Cisco packet tracker consists of:

- Menu Bar: This bar provides the File, Edit, Options, View, Tools, Extensions and Help menus. Also consists of basic commands such as Open, Save, Save as Pkg, Print etc.
- Main Tool Bar: Provides shortcut options/icons to the file and Edit menu commands. Also has buttons for copy, Paste, Undo, Redo, Zoom etc.
- Common Tools Bar: provides access to Select, Move Layout, Place Note, Delete, Inspect, Resize shape, Add simple shape, Add simple PDU and Add Complex PDU.
- Workspace: This area is where one can create the network, watch stimulations, and view many kinds of information and statistics.
- Realtime / Simulation bar: One can toggle between Realtime mode and simulation mode with the tabs in bar. This bar also provides buttons to power cycle devices and fast forward time as well as the play control buttons, event lists.
- Network Component Box: One can choose devices and connections to put into the workspace. It contains Device-type selection Box and Device-specific selection box.
- Device-Type Selection Box: Box contains the type of devices and connections available. It will change depending on which type of device choosed.

8. Device-Specific Selection Box: Device is chosen specifically needed for network and connections.

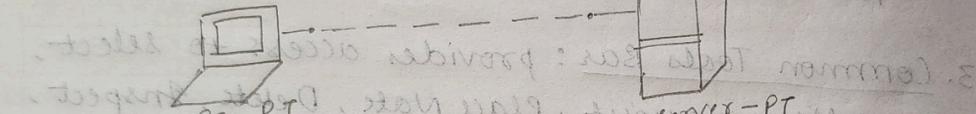
9. User Created Packet Window: manages the packets one at a time during simulation scenario.

10. Connections: The connections used

- → copper straight through
- - - → copper cross over.

TOPOLOGY:

* PC to Server:



PC - PT, server - PT

IP address of PC: 10.0.0.1
IP address of server: 10.0.0.2

Aim: To set up point-to-point network between a PC, server facilitating direct communication to observe data exchange.

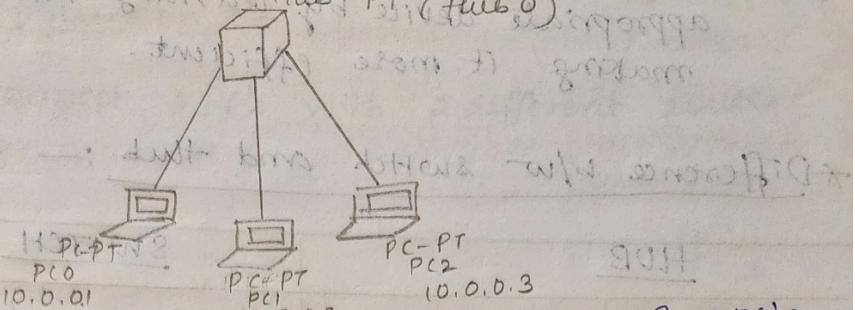
Topology: A PC is connected to server using cross-over ethernet cable

IP address of PC: 10.0.0.1

IP address of server: 10.0.0.2

Observation: The direct connection allows PC to communicate with server, which is typical in small networks for tasks such as file sharing, service requests / testing server responses to client queries.

* Connection of a hub to three PC's

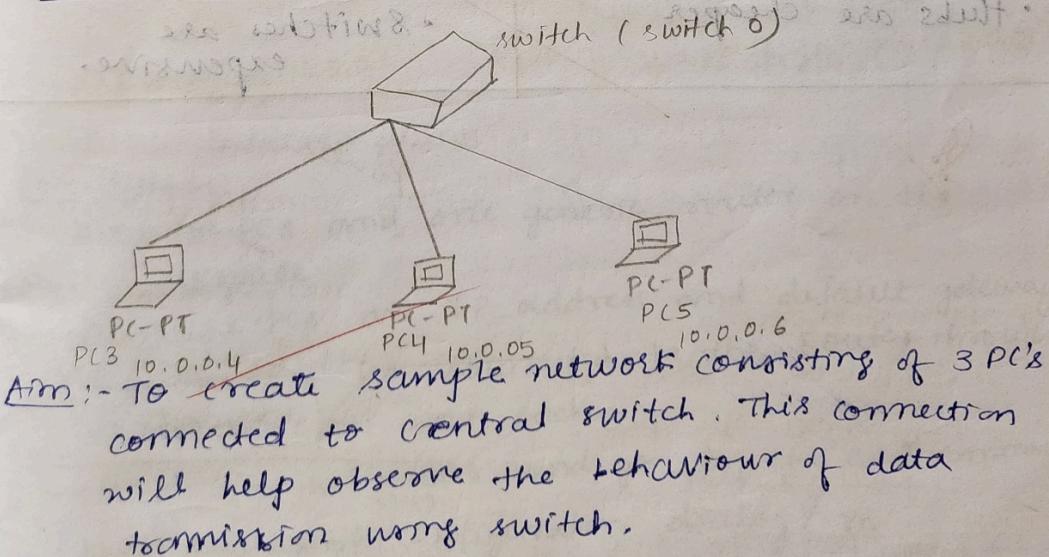


Aim: To create sample network consisting of 3 PC's connected to a central hub. This connection will help observe the behaviour of data transmission using hub.

Topology: 3 PC's are connected to a hub using straight through ethernet cables.

Observation: Hub broadcasts packets to all devices which may cause unnecessary traffic between them. Broadcasts of

* Connection of switch to three PC's



Aim: To create sample network consisting of 3 PC's connected to central switch. This connection will help observe the behaviour of data transmission using switch.

Topology: 3 PC's are connected to a switch using straight through ethernet cables.

Observation: switch forwards packets only to a appropriate device by learning MAC address, making it more efficient.

* Difference b/w switch and hub :-

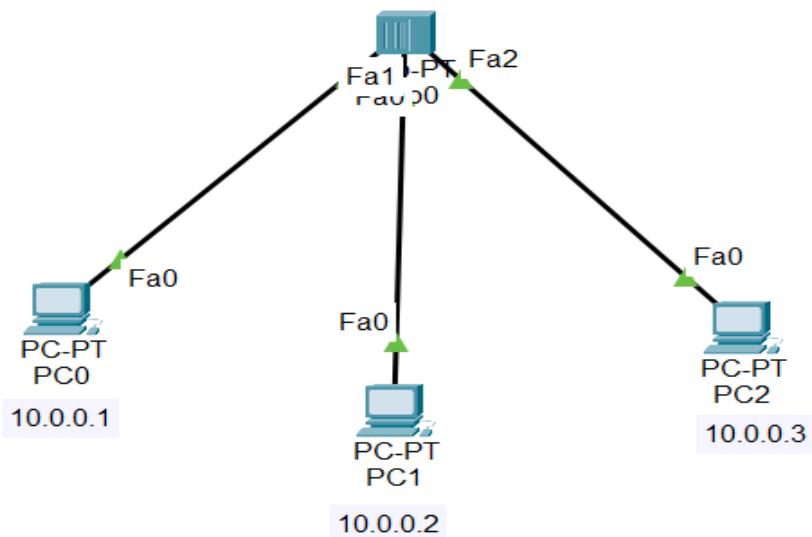
<u>HUB</u>	<u>SWITCH</u>
<ul style="list-style-type: none">hub broadcasts data to all deviceshubs create more traffichubs work at physical layerhubs are slower due to shared bandwidthhubs are cheaper	<ul style="list-style-type: none">switch sends data only to the destinationsswitches reduce traffic by directing data.switch operates at data link layerswitches are faster with dedicated bandwidth.switches are expensive.

Router

CLI
enable

Topology:

HUB:



Output:

```
C:\>ping 10.0.0.3

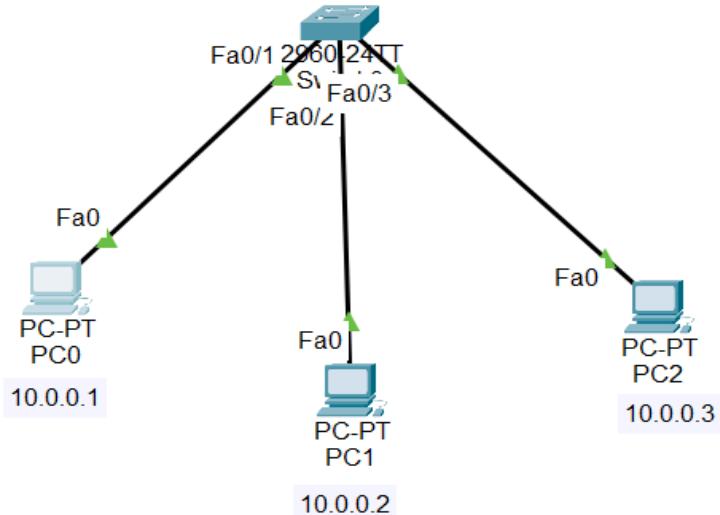
Pinging 10.0.0.3 with 32 bytes of data:

Reply from 10.0.0.3: bytes=32 time=8ms TTL=128
Reply from 10.0.0.3: bytes=32 time=4ms TTL=128
Reply from 10.0.0.3: bytes=32 time=4ms TTL=128
Reply from 10.0.0.3: bytes=32 time=4ms TTL=128

Ping statistics for 10.0.0.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 4ms, Maximum = 8ms, Average = 5ms

C:\>
```

SWITCH:



Output:

Physical Config Desktop **Desktop** Programming Attributes

Command Prompt

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 10.0.0.1

Pinging 10.0.0.1 with 32 bytes of data:

Reply from 10.0.0.1: bytes=32 time=8ms TTL=128
Reply from 10.0.0.1: bytes=32 time=4ms TTL=128
Reply from 10.0.0.1: bytes=32 time=4ms TTL=128
Reply from 10.0.0.1: bytes=32 time=4ms TTL=128

Ping statistics for 10.0.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 4ms, Maximum = 8ms, Average = 5ms

C:\>
```