

LAB-1

LAB: 01

25/09/2024

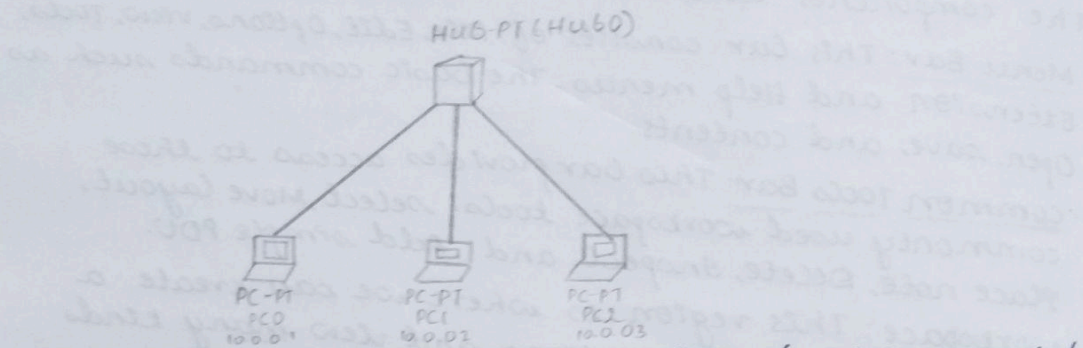
INTERFACE OVERVIEW

The components used are:

1. Menu Bar: This bar consists of File, Edit, Options, View, Tools, Extension and Help menus. The basic commands such as Open, Save, and Contents.
2. Common Tools Bar: This bar provides access to these commonly used workspace tools: Select, Move Layout, Place Note, Delete, Inspect, and Add Simple PDU.
3. Workspace: This region is where we can create a network, watch stimulations and view many kinds of information.
4. Realtime/Stimulation Bar: We can toggle between realtime and stimulation mode with tabs on this bar. This bar also provides buttons to Power Cycle Devices and fast forward time as well as the play control buttons.
5. Network Component Box: This component lets the user choose devices and connections to put into the workspace. It contains the Device-Type selection box and the Device-specific selection box.
6. Device-Type selection Box: This component contains the type of devices and connections available in Packet Tracer. The Device-specific selection box will change depending on which type of device you choose.
7. Device-specific selection Box: This component lets the user choose specifically which device they want to put in their network and the connections to be made.
8. User Created Packet Window: This window manages the packets that are put on the network during stimulation.

TOPOLOGY

connection of a hub to three PC's

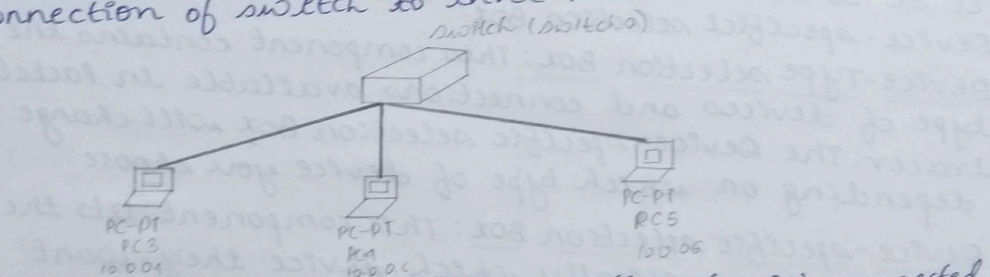


Aim: To create sample network consisting of 3 PC's connected to a central hub. This connection will help observe the behaviour of data transmission using hub.

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

connection of switch to three PC's



Aim: To create sample network consisting of 3 PC's connected to a 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 appropriate device by learning MAC addresses, making it more efficient

PC to server



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

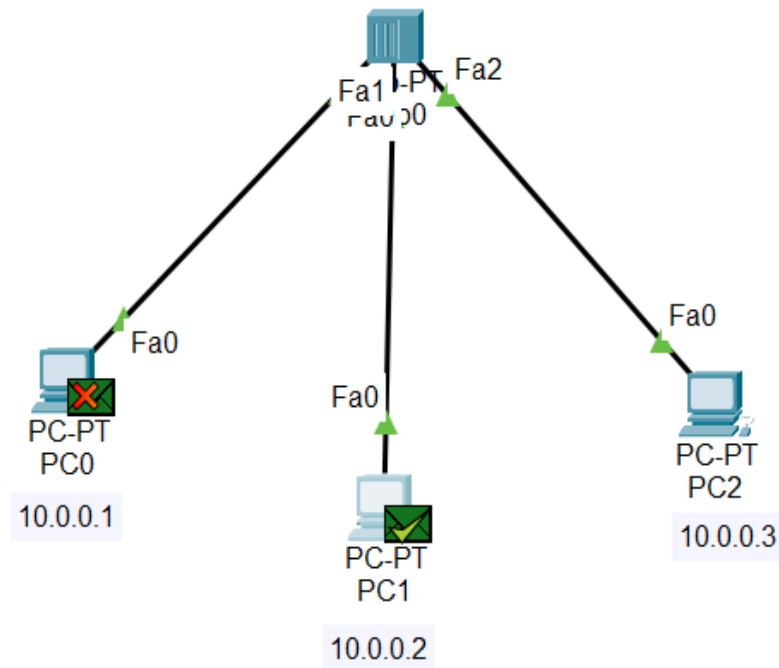
IP address of Server: 10.0.0.2

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

Difference Between Switch and Hub.

HUB	SWITCH
<ul style="list-style-type: none">• Hub broadcasts data to all devices• Hubs create more traffic• Hubs work at physical layer.• Hubs are slower due to shared bandwidth• Hubs are cheaper	<ul style="list-style-type: none">• switch sends data only to the destination.• switches reduce traffic by directing data• switch operates at data link layer.• switches are faster with dedicated bandwidth• switches are expensive.

HUB:



```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 10.0.0.3

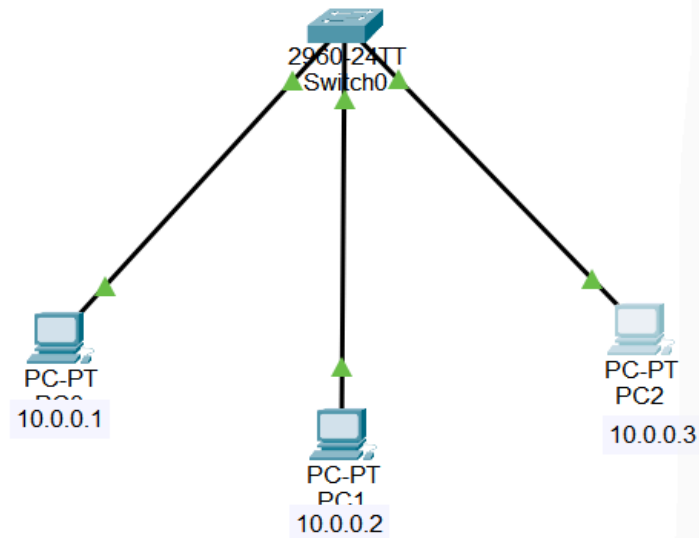
Pinging 10.0.0.3 with 32 bytes of data:

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:



```
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:\>
```