Observation Book:

INTERFACE OVERVIEW

25|9|'24

On opening cisco packet tracer student, we find an interface which consists of various components. The initial interface consists of tools such as:

1) **Menu Bar:** This bar consists of file, edit, options, view, tools, extensions and help. On clicking help, then contents we get Cisco Packet Tracer Help page opens up

2) **Main Tool Bar:** This bar provides shortcut icons to file and Edit menu commands. This bar provides buttons for Copy, Paste, Undo, Redo, Zoom. Also find Network Information button.

3) **Common Tools Bar:** Contains Select, Move, Layout, Place, Note, Delete, Inspect, Resize, Shape.

4) **Logical/Physical Workspace:** You can toggle between Physical and logical workspace. In physical, bar allows you to navigate through physical locations, creat city etc.

5) **Workspace:** This area is where you will creat your network, watch simulations, view many kinds of information

6) **Real time/Simulation Bar:** toggle between realtime and simulation mode.

7) **Network component Box:** This box contains Device-Type and Device-Selection Box, from where we can choose device and connections

8) **Device-Type Selection** - This box contains type of device and connections available.

9) **Device-Specific Selection** - This box is where you choose specifically which devices you want to put in your network

10) **Connections:** Are wires that are used to connect two devices. These consists of various type
→ copper straight-through
--- → copper cross-over

PC to Server:

PC - PT
PC0
10.0.0.1

Server - PT
Server 0
10.0.0.2
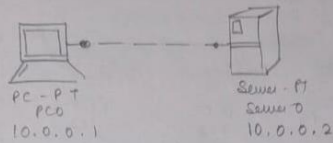
Aim: To set up point-to-point network between a PC, server facilitating direct communication to observe data exchange

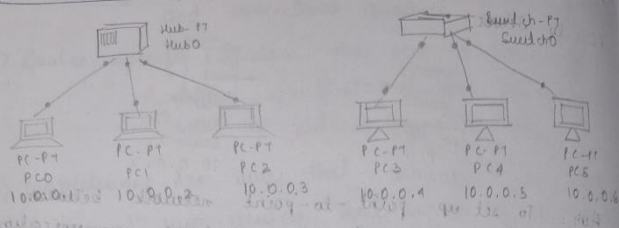**Topology:** A PC (PC0) is connected to server (server 0) using crossover ethernet cable

IP address of PC0: 10.0.0.1

IP address of server: 10.0.0.2

Observation: The direct connection allows PC0 to communicate with server0, which is typical in small networks for tasks such as file sharing, service requests or testing server responses to client queries.

Experiment 1:

Hub and Switch:

Hub - PT
Hub0

Switch - PT
Switch0

PC - PT
PC0
10.0.0.1

PC - PT
PC1
10.0.0.2

PC - PT
PC2
10.0.0.3

PC - PT
PC3
10.0.0.4

PC - PT
PC4
10.0.0.5

PC - PT
PC5
10.0.0.6

Aim: To create a simple network consisting of 3 PCs connected to central hub and another network with 3 PCs connected to a switch. This configuration will help observe the behaviour of data transmission using hub & switch devices.

Topology:

1. Hub Network: 3 PCs (PC0, PC1, PC2) are connected to a hub using straight-through ethernet cables.

   IP address: PC0 = 10.0.0.1   PC1 = 10.0.0.2
               PC2 = 10.0.0.3

2. Switch Network: Three PCs (PC3, PC4, PC5) are connected to switch using straight-through ethernet cables.

   IP address: PC3 = 10.0.0.4,   PC4 = 10.0.0.5, PC5 = 10.0.0.6

Procedure

1. Add 1 hub, 1 switch and 6 PCs to the cisco packet tracer workspace.

2. Use copper straight-through cables PC0, PC1, PC2 to Hub0. Nly connect PC3, PC4, PC5 to switch0 using same type of cables.

3. Assign IP address to each PC & obtain subnet fff
poo mask

4. Switch to simulation mode to observe data traffic
behaviour when packets are sent between the
devices

5. In hub, notice how hub broadcasts packets to all
devices, causing potential traffic overload.
In the switch network, observe how the switch,
forwards packets only to the intended recipient,
reducing unnecessary traffic.

6. The hub broadcasts data to all connected devices,
leading to more network connected devices,
while the switch efficiently sends data only to
the correct device, optimizing performance.

OBSERVATION

1. Hub broadcasts packets to all devices, which may
cause unnecessary traffic

2. Switch forwards packets only to appropriate device
by learning MAC addresses, making it more
efficient in reducing traffic.

Topology:
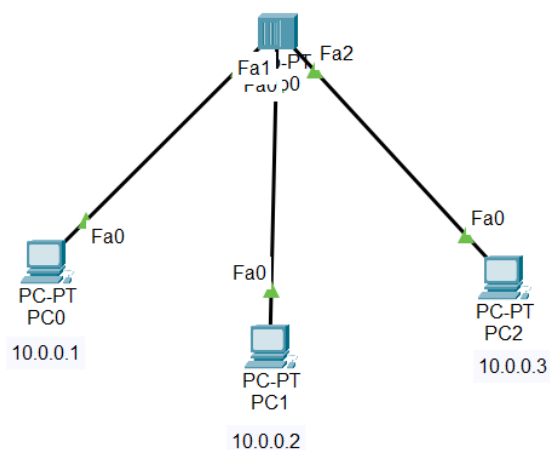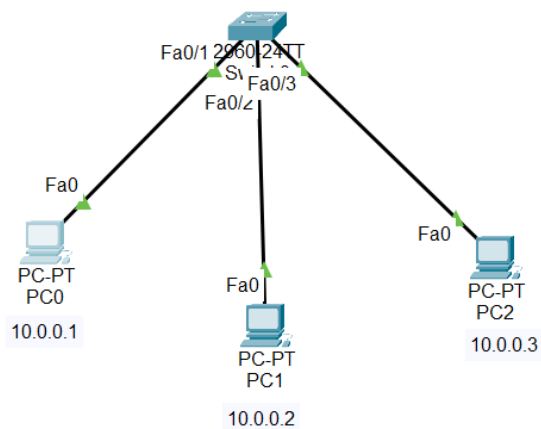
Output:


```
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:\>
```



```
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:\>
```