31/07/2024

Practical-3

AIM: To study the Packet tracer tool installation and user interface overview.

Analyse the behaviour of network devices using CISCO PACKET TRACER simulator.

1. From the network component box, click and drag-and-drop the below components:
   a. 4 Generic PCs and One HUB
   b. 4 Generic PCs and One Switch

2. Click on Connections:
   a. Click on copper straight-through cable
   b. Select one of the PC and connect it to HUB using the cable. The link LED should glow in green, indicating that the link is up. Similarly connect remaining 3 PCs to the HUB.
   c. Similarly connect 4 PCs to the switch using copper straight-through cable.

3. Click on the PCs connected to hub, go to the Desktop tab, click on IP configuration and enter IP address and subnet mask. Here, the default gateway and DNS server information is not needed as there are only two end devices in the network.

   Click on the PDU (message icon) from the common tool bar,
   a. Drag and drop it on one of PC and then drop on another PC connected to the HUB.

4. Observe the flow of PDU from source PC to destination PC by selecting the Realtime mode of simulation.

5. Repeat steps 3 to step 5 for the PC's connected to the switch.

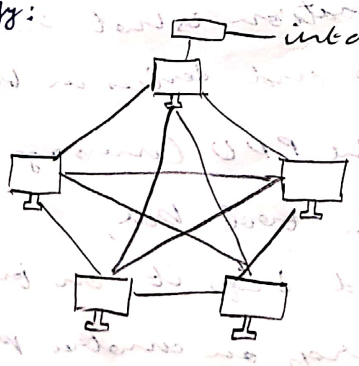
6. Observe how HUB and switch are forwarding the PDU and write your observation and conclusion about the behaviours of switch and HUB.

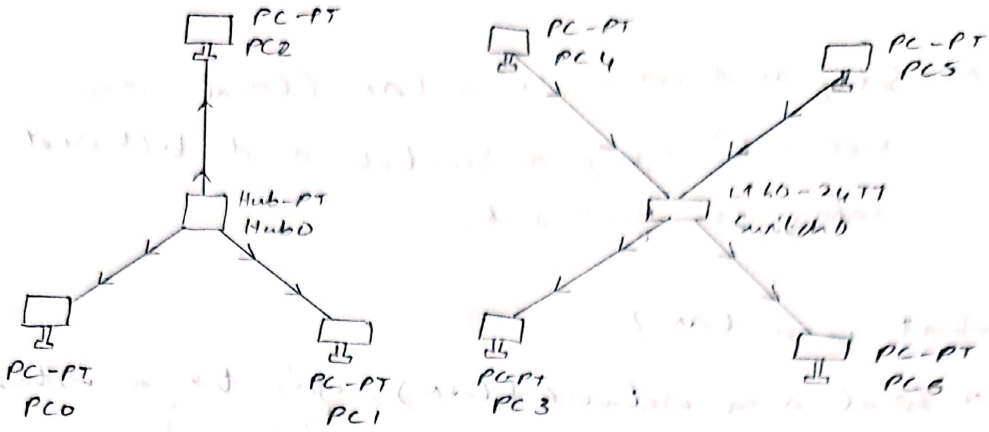
Student Observation

a. HUB:
- → Forwards packets to all connected devices regardless of the destination.
- → Causes network congestion due to unnecessary traffic.
- → less secure as all devices receive the broadcasted packets.

Switch:
- → Forwards packets only to the specific destination device based on MAC addresses.
- → Reduces network congestion by minimizing unnecessary traffic.
- → more secure and efficient compared to HUB.

b. Mesh Topology:





PC0	PC1
IP Configuration	IP Configuration
IP Configuration	IP Configuration
○ DHCP ⊙ Static	○ DHCP ⊙ Static
IP Address: 10.1.1.1	IP Address: 10.1.1.2
Subnet Mask: 255.0.0.0	Subnet Mask: 255.0.0.0
Default Gateway:	Default Gateway:
DNS Server:	DNS Server:

RESULT

Thus, the packet tracer tool installation and user interface overview has been studied.

31/8/24