Exp No: 7a

Spanning Tree Protocol Configuration

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Aim: To design and implement spanning tree configuration using Packet tracer.

Introduction: In a typical network topology, we have redundant connections play a very crucial role as it eliminates the single point of failure in the network. However, redundant connections create loop in the network. And to prevent those loops in networks the spanning Tree Protocol chooses the best link while blocking the redundant links.

Root bridge is the most important switch in a Spanning Tree Network. And all the other switches choose the best way to reach a Root Bridge and block the redundant links.

Therefore, it is very important to choose the best switch in the network as a Root Bridge.

Device Requirement: Server, Switches, PCs
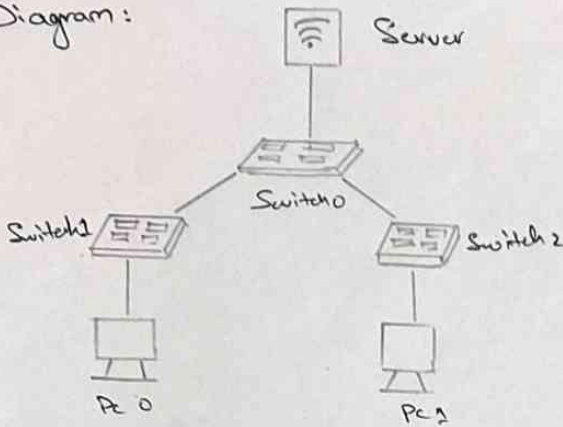
Procedure:
1. Open Cisco Packet Tracer
2. Navigate to network tool bar
3. Drag & drop the required tools into logical view section
4. Make the connections as per the Network Diagram.
5. Assign the IP Addresses for PCs and configure the switches

Network Diagram:

Server

Switch0

Switch1

Switch 2

Pc 0

Pc 1

Commands:

```
Switch>en
Switch#config t
Switch(config)#vlan 10
Switch(config-vlan)#int fa0/2
Switch(config-if)#exit
Switch(config)#int fa0/2
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 10
Switch(config-if)#exit
Switch(config)#int fa0/3
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 10
Switch(config-if)#exit
```

Configuration Table / Device Configuration

Device	VLAN	IP
PC0	VLAN 10	192.168.55.1
Pc1	VLAN 10	192.168.55.2

Result: Thus the Implementation of Spanning Tree Protocol In Cisco Packet Tracer has been done successfully.

Configuration of Address Resolution Protocol

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Aim: To design and implement Address Resolution Protocol using Packet tracer.

Introduction: ARP (Address Resolution Protocol) is a network protocol used to find out the hardware (MAC) address of a device from an IP address. It is used when a device wants to communicate with some other device on a local network.

The sending device uses ARP to translate IP address to MAC addresses. The device sends on ARP request message containing the IP address of the receiving device. All devices on a local network segment segment see the message, but only the device that has the IP address responds with the ARP reply message containing its MAC address.

Device Requirements: 1, Switch

2, PCs

Procedure: 1, Open Cisco Packet Tracer

2, Navigate to Network toolbar

3, Drag & drop a Switch and PCs into logical view section

4, Connect all the PCs with the Switch

5, Assign IP addresses for each Pc

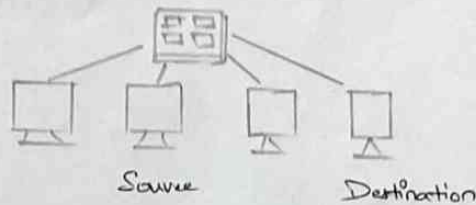6, Open the Traffic Generator of a PC

7, Set the Destination and Source IPs

8, Set Sequence number as 1

9. Pass a message from Source to Destination

10. Test the Ping and run the realtime simulation.

Network Diagram:

Commands: # No commands to execute

Configuration Table / Device Configuration

Device	IP Address	Source IP	Destination IP
PC 0	192.168.55.1	192.168.55.1	192.168.55.2
PC 1	192.168.55.2	192.168.55.2	192.168.55.4
PC 2	192.168.55.3	192.168.55.3	192.168.55.1
PC 3	192.168.55.4	192.168.55.4	192.168.55.3

To assign the Source & Destination IP Address:

click on PC → Desktop → Traffic Generator → Enter Destination IP
↓
click ← set sequence ← Enter Source IP
on number as 1
Send

Result: Thus the Implementation of Address Resolution Protocol has been done successfully.