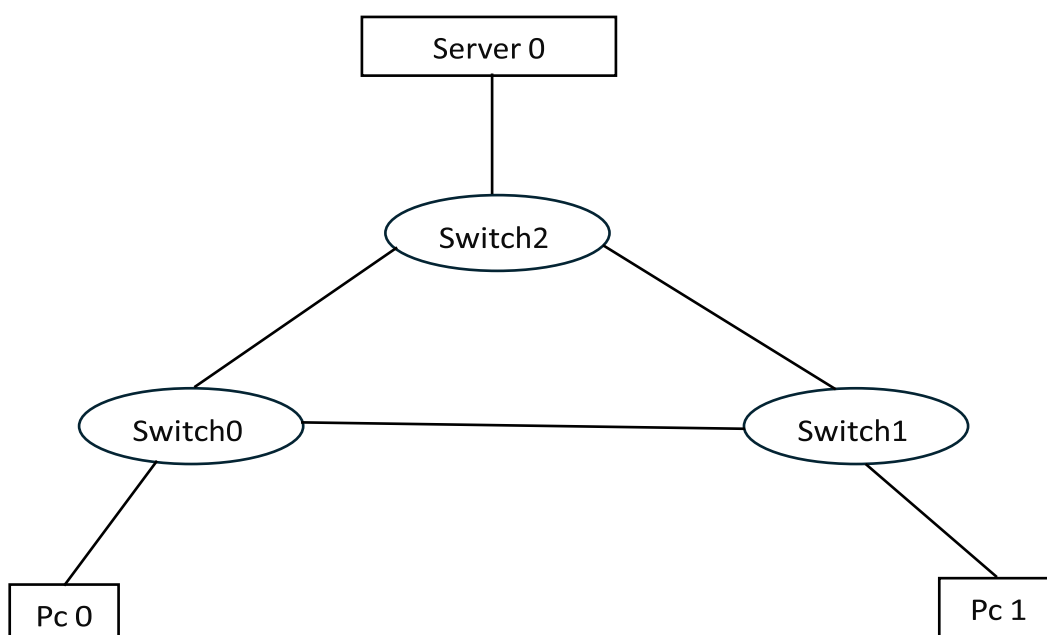


Register No:	99220040570
Name	KAPILAVAI HANUMAAN
Class/Section	8501A/S06
Ex.No:	6a
Date of Submission	06.02.2025
Name of the Experiment	Spanning Tree Protocol Configuration
Google Drive link of the packet tracer file (give view permission):	https://drive.google.com/drive/folders/1xeF6Ry-JXDk6vymw93v_nc14-oGuO2qA?usp=sharing

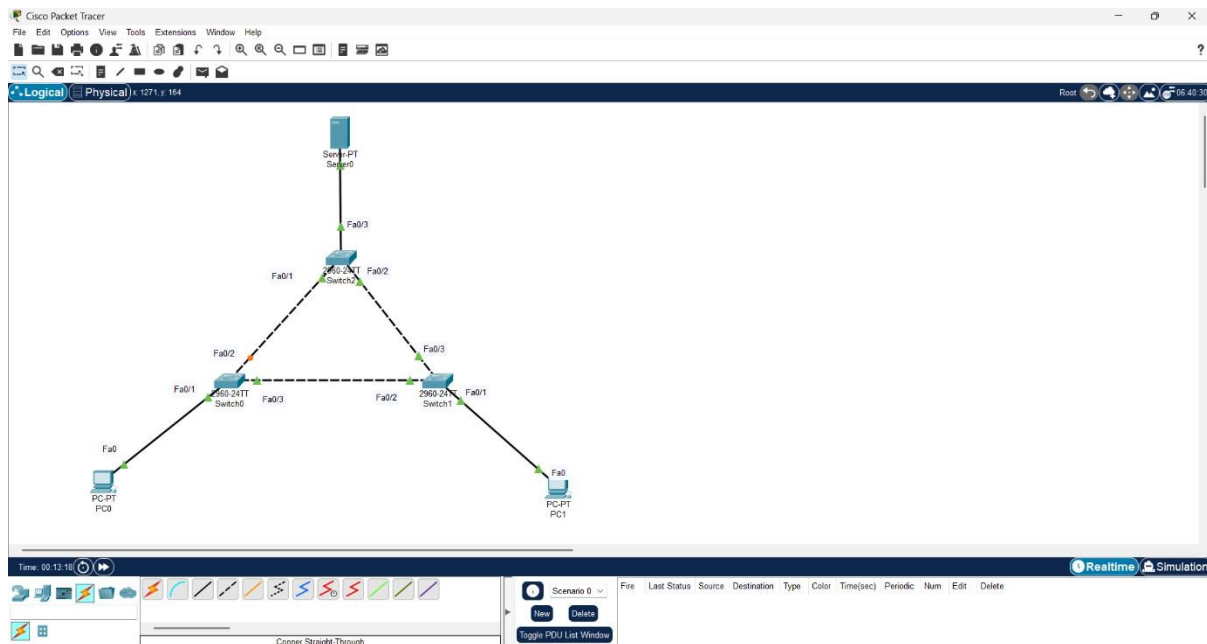
1. Device Requirements:

1. Server 0
2. PC0
3. PC1
4. Switch 0
5. Switch 1
6. Switch 2

2. Network Diagram for your experiment (draw the diagram either hand drawing/ms paint or any other drawing tools)



3. Network Diagram (Packet Tracer diagram before configuration):



4. Configuration details:

Device Name	Interface Name	IP Address	Subnet mask
PC0	Fa0/1	192.168.10.1	255.255.255.0
PC1	Fa0/2	192.168.10.2	255.255.255.0
Switch 0	Fa0/3		
Switch 1	Fa0/3		
Switch 2	Fa0/3		
Server 0	Fa0	192.168.10.3	255.255.255.0

5. Describe step by step configuration steps properly (you may copy the commands used in the configuration tab and paste it.)

Switch0:

Switch>en

Switch#show spanning-tree

VLAN0001

Spanning tree enabled protocol ieee

Root ID Priority 32769

 Address 000B.BECE.B890

 Cost 19

 Port 3(FastEthernet0/3)

 Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec

Bridge ID Priority 32769 (priority 32768 sys-id-ext 1)

 Address 00E0.8FB4.95A5

 Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec

 Aging Time 20

Interface	Role	Sts	Cost	Prio.Nbr	Type
-----	-----	-----	-----	-----	-----
Fa0/1	Desg	FWD	19	128.1	P2p
Fa0/2	Altn	BLK	19	128.2	P2p
Fa0/3	Root	FWD	19	128.3	P2p

Switch#config ter

Enter configuration commands, one per line. End with CNTL/Z.

Switch(config)#interface fa0/2

Switch(config-if)#shut

Switch(config-if)#

%LINK-5-CHANGED: Interface FastEthernet0/2, changed state to administratively down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2, changed state to down

Switch(config-if)#exit

Switch(config)#exit

Switch 1:

Switch>en

Switch#show spanning-tree

VLAN0001

Spanning tree enabled protocol ieee Root

ID Priority 32769

Address 000B.BECE.B890

This bridge is the root

Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec

Bridge ID Priority 32769 (priority 32768 sys-id-ext 1)

Address 000B.BECE.B890

Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec

Aging Time 20

Interface	Role	Sts	Cost	Prio.Nbr	Type
Fa0/1	Desg	FWD	19	128.1	P2p
Fa0/2	Desg	FWD	19	128.2	P2p Fa0/3
Desg	FWD	19	128.3	P2p	<u>Switch 2:</u>

Switch>en

Switch#show spanning-tree VLAN0001

Spanning tree enabled protocol ieee

Root ID Priority 32769

Address 000B.BECE.B890

Cost 19

Port 2(FastEthernet0/2)

Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec

Bridge ID Priority 32769 (priority 32768 sys-id-ext 1)

Address 0030.A3A4.A059

Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec

Aging Time 20

Interface	Role	Sts	Cost	Prio.Nbr	Type
Fa0/1	Desg	FWD	19	128.1	P2p
Fa0/2	Desg	FWD	19	128.3	P2p

Fa0/3 Root FWD 19 128.2 P2p

Switch#config ter

Switch(config)#spanning-tree vlan 1 ?

priority Set the bridge priority for the spanning tree root

Configure switch as root

<cr>

Switch(config)#spanning-tree vlan 1?

WORD

Switch(config)#spanning-tree vlan 1 ?

priority Set the bridge priority for the spanning tree root

Configure switch as root

<cr>

Switch(config)#spanning-tree vlan 1 root ? primary Configure this

switch as primary root for this spanning tree secondary Configure

switch as secondary root

Switch(config)#spanning-tree vlan 1 root primary

Switch(config)#

%LINK-3-UPDOWN: Interface FastEthernet0/1, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to down

Switch(config)#exit

Switch#

%SYS-5-CONFIG_I: Configured from console by console

exit

6.Output Diagram (Minimum 3 screenshot):

The following tables represent the output of the 'show spanning-tree' command for each switch, showing the spanning tree enabled protocol IEEE and the root bridge ID.

Switch0:

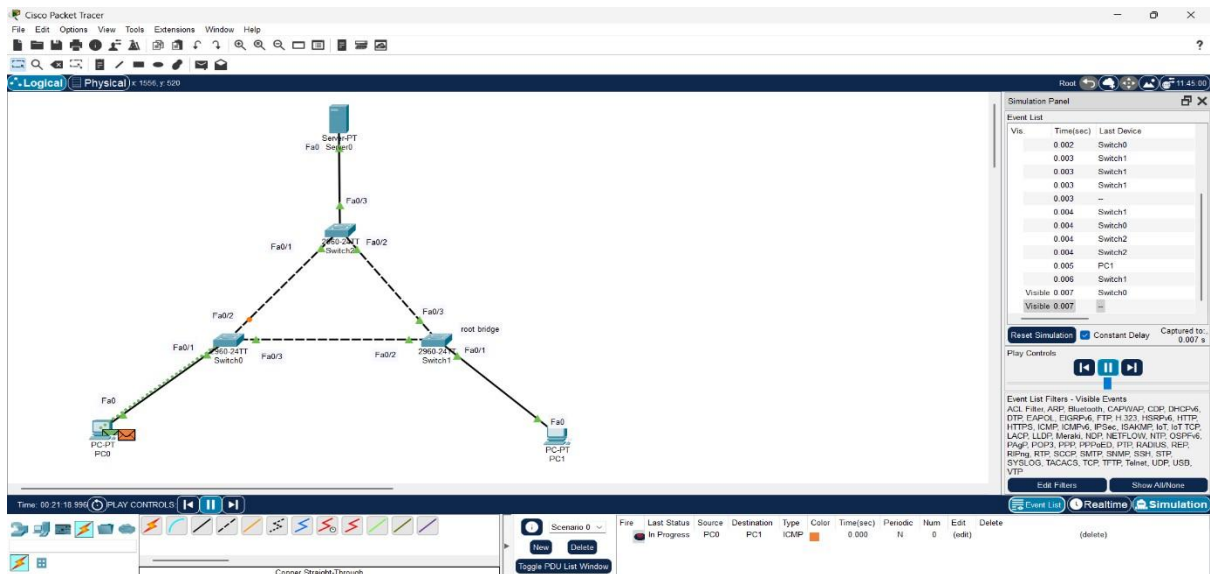
Root ID	Priority	Address	Cost	Port	Interface
Root ID	Priority 32769	Address 0008.B8CE.8B90	Cost 19	Port 2 (FastEthernet0/3)	Forward
Bridge ID	Priority 32769 (priority 32768 sys-id-ext 1)	Address 0008.B8CE.8B90	Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec	Aging Time 20	

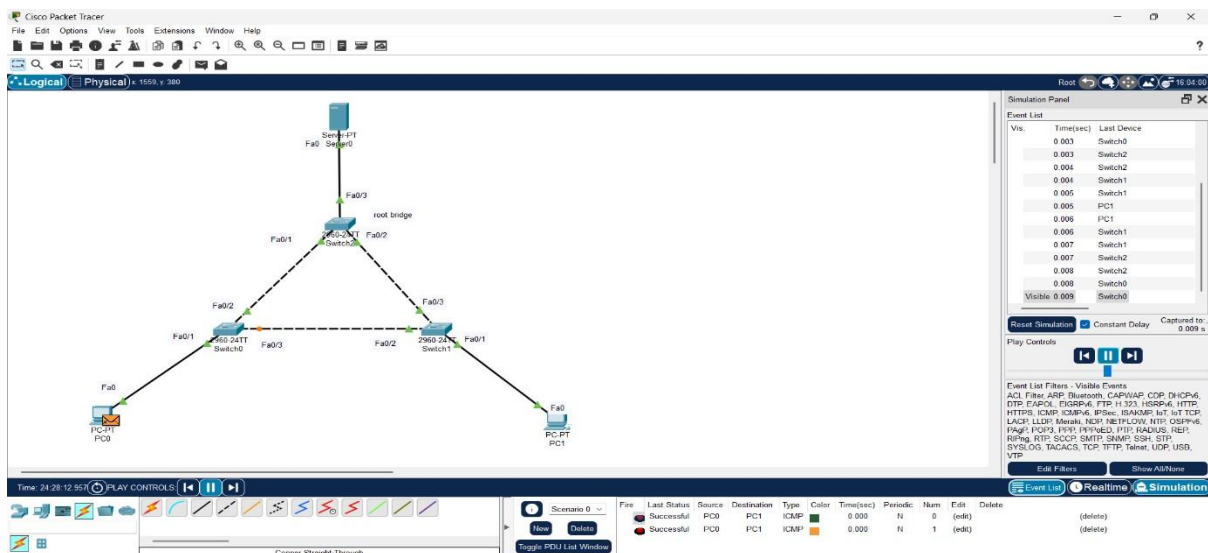
Switch1:

Root ID	Priority	Address	Cost	Port	Interface
Root ID	Priority 32769	Address 0008.B8CE.8B90	Cost 19	Port 2 (FastEthernet0/3)	Forward
Bridge ID	Priority 32769 (priority 32768 sys-id-ext 1)	Address 0008.B8CE.8B90	Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec	Aging Time 20	

Switch2:

Root ID	Priority	Address	Cost	Port	Interface
Root ID	Priority 32769	Address 0008.B8CE.8B90	Cost 19	Port 2 (FastEthernet0/3)	Forward
Bridge ID	Priority 32769 (priority 32768 sys-id-ext 1)	Address 0008.B8CE.8B90	Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec	Aging Time 20	



[illegible]

https://drive.google.com/drive/folders/1xE6Ry-JXdk6vymw93v_nc14-oGuO2qA?usp=sharing

Configuring the Spanning Tree Protocol (STP) is essential to prevent network loops while maintaining redundancy. By selecting an optimal Root Bridge, network efficiency and stability are ensured. Proper STP configuration enhances network performance, minimizes downtime, and supports seamless data transmission.

Rubrics for Experiment Assessment:

Rubrics	Good	Normal	Poor	Marks
Creation of Topology (4)	Created the topology, Identify the proper devices and making the connections (4)	Created the topology, Identify the proper devices, making the connections But missing some features (3)	Created wrong topology, Failed to Identify the proper devices and making connections (1)	
Verify the connectivity (4)	Verified the connectivity in all the levels (4)	Verified the connectivity at some levels (only some nodes) (2)	Verified the connectivity is not done. (1)	
Timely Completion (2)	Completed the lab before the allotted time (2)	Completed the lab after the deadline (1)	Did not submitted before grading (0)	
Total				

Result: Thus, the Design a Configuration of Spanning Tree Protocol has been done successfully