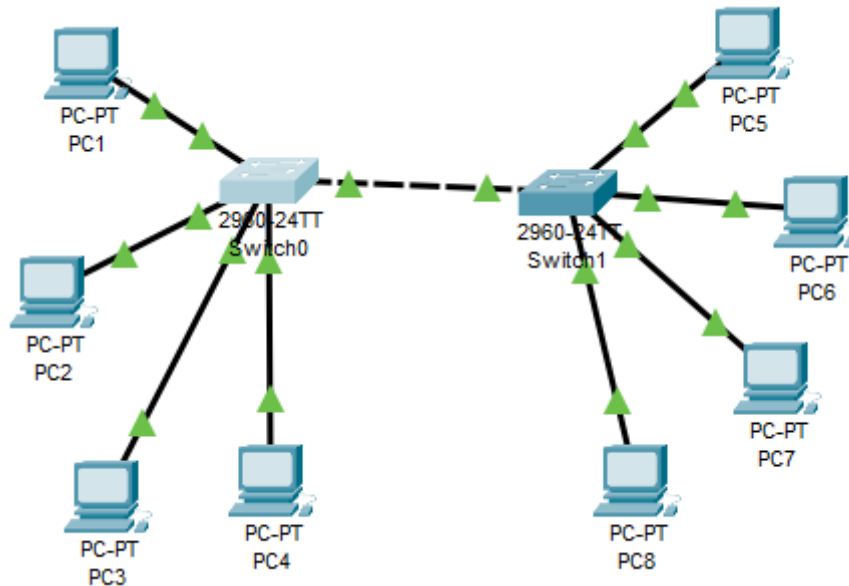


Session 4 Construction of Different VLANS and TRUNKING using cisco packet tracer.



Devices:

- Switch 1 (S1)
- Switch 2 (S2)
- PCs (End Devices)
 - PC1 and PC2 connected to S1 (assigned to VLAN 10)
 - PC3 and PC4 connected to S1 (assigned to VLAN 20)
 - PC5 and PC6 connected to S2 (assigned to VLAN 10)
 - PC7 and PC8 connected to S2 (assigned to VLAN 20)

VLANs:

- VLAN 10: IP range 192.168.10.0/24
- VLAN 20: IP range 192.168.20.0/24

Trunk Ports:

- Fa0/24 on both S1 and S2

Switch 0 Configuration

Switch>enable

Switch#configure terminal

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

Create VLAN 10

Switch(config)#vlan 10

Switch(config-vlan)#name VLAN10

Switch(config-vlan)#exit

Create VLAN 20

Switch(config)#vlan 20

Switch(config-vlan)#name VLAN20

Switch(config-vlan)#exit

Assign Ports to VLAN 10:

Switch(config)#interface range fa0/1 - 4

Switch(config-if-range)#switchport mode access

Switch(config-if-range)#switchport access vlan 10

Switch(config-if-range)#exit

Assign Ports to VLAN 20:

Switch(config)#interface range fa0/5 - 8

Switch(config-if-range)#switchport mode access

Switch(config-if-range)#switchport access vlan 20

Switch(config-if-range)#exit

Set a Port to Trunk Mode- S0

Switch(config)#interface fa0/24

Switch(config-if)#switchport mode trunk

Switch(config-if)#exit

```

Switch>enable
Switch#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#vlan 10
Switch(config-vlan)#name vlan10
Switch(config-vlan)#exit
Switch(config)#vlan 20
Switch(config-vlan)#name vlan20
Switch(config-vlan)#exit
Switch(config)#interface range fa0/1-4
Switch(config-if-range)#switchport mode access
Switch(config-if-range)#switchport access vlan 10
Switch(config-if-range)#exit
Switch(config)#interface range fa0/5-8
Switch(config-if-range)#switchport mode access
Switch(config-if-range)#switchport access vlan 20
Switch(config-if-range)#exit
Switch(config)#interface fa0/24
Switch(config-if)#switchport mode trunk
Switch(config-if)#exit
Switch(config)#
Switch(config)#exit
Switch#
%SYS-5-CONFIG_I: Configured from console by console

```

switch 0

```

Switch>enable
Switch#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#vlan 10
Switch(config-vlan)#name vlan10
Switch(config-vlan)#exit
Switch(config)#vlan 20
Switch(config-vlan)#name vlan20
Switch(config-vlan)#exit
Switch(config)#interface range fa0/1-4
Switch(config-if-range)#switchport mode access
Switch(config-if-range)#switchport access vlan 10
Switch(config-if-range)#exit
Switch(config)#interface range fa0/5-8
Switch(config-if-range)#switchport mode access
Switch(config-if-range)#exit
Switch(config)#interface fa0/24
Switch(config-if)#switchport mode trunk
Switch(config-if)#exit
Switch(config)#exit
Switch#
%SYS-5-CONFIG_I: Configured from console by console

```

switch 1

Verify Connectivity

Check Trunk Ports:

Check VLANs:

```
Switch#show vlan brief
```

VLAN	Name	Status	Ports
1	default	active	Fa0/9, Fa0/10, Fa0/11, Fa0/12 Fa0/13, Fa0/14, Fa0/15, Fa0/16 Fa0/17, Fa0/18, Fa0/19, Fa0/20 Fa0/21, Fa0/22, Fa0/23, Gig0/1 Gig0/2
10	vlan10	active	Fa0/1, Fa0/2, Fa0/3, Fa0/4
20	vlan20	active	Fa0/5, Fa0/6, Fa0/7, Fa0/8
1002	fddi-default	active	
1003	token-ring-default	active	
1004	fddinet-default	active	
1005	trnet-default	active	

```
Switch#
```

```
Port      Vlans allowed on trunk
Fa0/24    1-1005
```

```
Port      Vlans allowed and active in management domain
Fa0/24    1,10,20
```

```
Port      Vlans in spanning tree forwarding state and not pruned
Fa0/24    1,10,20
```

Configure End Devices

1. Assign IP Addresses to PCs:

- PC1: 192.168.10.1/24
- PC2: 192.168.10.2/24
- PC3: 192.168.20.1/24
- PC4: 192.168.20.2/24
- PC5: 192.168.10.3/24
- PC6: 192.168.10.4/24
- PC7: 192.168.20.3/24
- PC8: 192.168.20.4/24

2. Test Connectivity within VLANs:

3. Ping from PC1 to PC2 (both in VLAN 10)
4. Ping from PC3 to PC4 (both in VLAN 20)
5. Ping from PC5 to PC1 (both in VLAN 10, across switches)

```

Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.10.1

Pinging 192.168.10.1 with 32 bytes of data:

Reply from 192.168.10.1: bytes=32 time=4ms TTL=128
Reply from 192.168.10.1: bytes=32 time=22ms TTL=128
Reply from 192.168.10.1: bytes=32 time=22ms TTL=128
Reply from 192.168.10.1: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.10.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 22ms, Average = 12ms

C:\>|

```

- Ping from PC7 to PC3 (both in VLAN 20, across switches)

```

C:\>ping 192.168.20.1

Pinging 192.168.20.1 with 32 bytes of data:

Reply from 192.168.20.1: bytes=32 time<1ms TTL=128
Reply from 192.168.20.1: bytes=32 time<1ms TTL=128
Reply from 192.168.20.1: bytes=32 time<1ms TTL=128
Reply from 192.168.20.1: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.20.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>|

```

Verify that PCs in different VLANs cannot communicate without a router:

- Ping from PC1 to PC3 should fail (VLAN 10 to VLAN 20)
- Ping from PC7 to PC1

pc1 to pc3 failed

```

C:\>ping 192.168.20.1

Pinging 192.168.20.1 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 192.168.20.1:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

```

pc7 to pc1 failed

```
C:\>ping 192.168.10.1

Pinging 192.168.10.1 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 192.168.10.1:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>|
```