

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

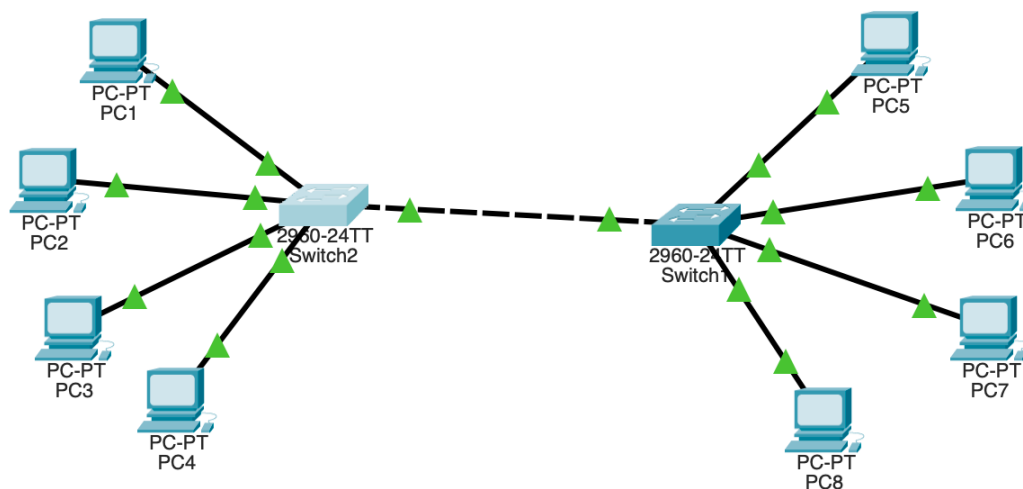
Creating the Network in Cisco Packet Tracer

Step 1: Place Network Devices

1. Open Cisco Packet Tracer.
2. Add the Devices:
 - Go to the End Devices section and add 8 PCs.
 - Go to the Switches section and add 2 switches (2960-24TT).
3. Position the Devices as per the diagram:
 - Switch1 (2960-24TT) connects to PC5, PC6, PC7, and PC8.
 - Switch2 (2960-24TT) connects to PC1, PC2, PC3, and PC4.

Step 2: Connect the Devices

1. Use copper straight-through cables to connect each PC to a switch port:
 - PC1, PC2, PC3, and PC4 are connected to Switch2.
 - PC5, PC6, PC7, and PC8 are connected to Switch1.
2. Trunk the Switches:
 - Use a crossover cable to connect the two switches on any available interface (e.g., Fa0/24 on both switches).



Step 3: VLAN Configuration

1. Open CLI for Switch1 and Switch2.

Configure Switch1 (VLANs and Trunk)

```
Switch> enable
```

```
Switch configure terminal
```

```
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

! Assigning ports to VLAN 10 (PC5 and PC6)

Switch(config) interface range fa0/1 - 2

Switch(config-if-range) switchport mode access

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

Switch(config-if-range) exit

! Assigning ports to VLAN 20 (PC7 and PC8)

Switch(config) interface range fa0/3 - 4

Switch(config-if-range) switchport mode access

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

Switch(config-if-range) exit


! Configure trunk port (Fa0/24) connecting to Switch2

Switch(config) interface fa0/24

Switch(config-if) switchport mode trunk

Switch(config-if) switchport trunk allowed vlan 10,20

Switch(config-if) exit



The screenshot shows a network switch CLI interface with the following configuration commands and error messages:

```
Switch1
Physical Config CLI Attributes
IOS Command Line Interface

Enter Configuration Commands, one per line. End with Ctrl/Z.
Switch(config)#vlan 10
Switch(config-vlan)#name VLAN10
Switch(config-vlan)#exit
Switch(config)#vn\
%CDP-4-NATIVE_VLAN_MISMATCH: Native VLAN mismatch discovered on FastEthernet0/1 (1), with Switch FastEthernet0/5 (20v
% Ambiguous command: "v"
Switch(config)#vlan 20
Switch(config-vlan)#name VLAN20
Switch(config-vlan)#exit
Switch(config)#interface range fa1/0 - 4
interface range not validated - command rejected
Switch(config)#interface range fa0/1 - 4
Switch(config-if-range)#switchport mode access
Switch(config-if-range)#switch access vlan 10
%CDP-4-NATIVE_VLAN_MISMATCH: Native VLAN mismatch discovered on FastEthernet0/1 (1), with Switch FastEthernet0/5 (20).

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
%CDP-4-NATIVE_VLAN_MISMATCH: Native VLAN mismatch discovered on FastEthernet0/1 (10), with Switch FastEthernet0/5 (20)
% Incomplete command.
Switch(config-if-range)#switchport mode access 20
^
% Invalid input detected at '^' marker.

Switch(config-if-range)#switchport mode access 20
^
% Invalid input detected at '^' marker.

Switch(config-if-range)#switchport mode access
Switch(config-if-range)#exit
Switch(config)#fa0/24
^
% Invalid input detected at '^' marker.

Switch(config)#
%CDP-4-NATIVE_VLAN_MISMATCH: Native VLAN mismatch discovered on FastEthernet0/1 (10), with Switch FastEthernet0/5 (20).

Switch(config)#interface fa0/24
Switch(config-if)#switchport mode truck
^
% Invalid input detected at '^' marker.

Switch(config-if)#switchport mode trunk
Switch(config-if)#exit
Switch(config)#
%CDP-4-NATIVE_VLAN_MISMATCH: Native VLAN mismatch discovered on FastEthernet0/1 (10), with Switch FastEthernet0/5 (20).
```

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Configure Switch2 (VLANs and Trunk)

Switch> enable

Switch configure terminal

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

! Assigning ports to VLAN 10 (PC1 and PC2)

Switch(config) interface range fa0/1 - 2

Switch(config-if-range) switchport mode access

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

Switch(config-if-range) exit

! Assigning ports to VLAN 20 (PC3 and PC4)

Switch(config) interface range fa0/3 - 4

Switch(config-if-range) switchport mode access

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

Switch(config-if-range) exit

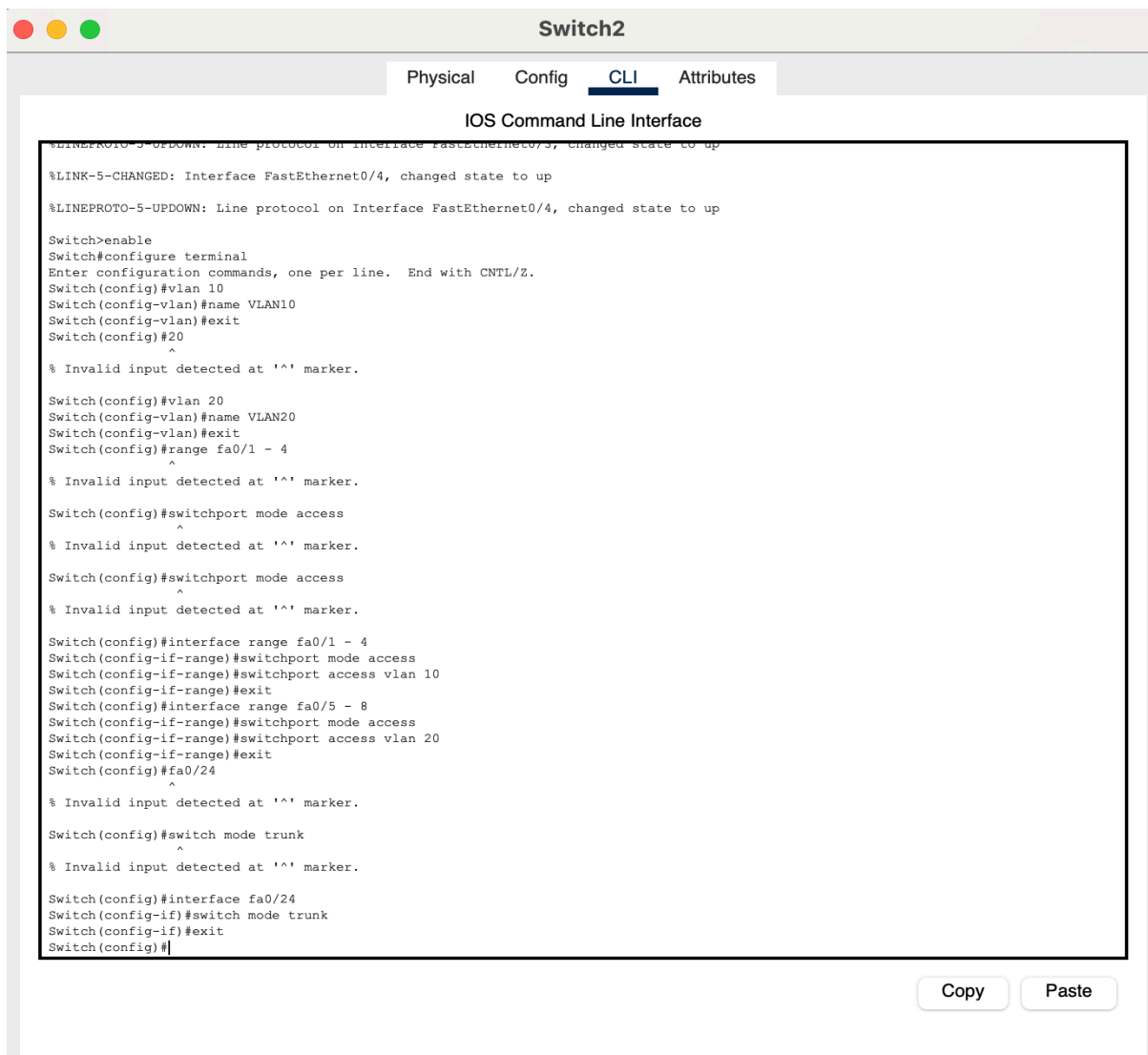
! Configure trunk port (Fa0/24) connecting to Switch1

Switch(config) interface fa0/24

Switch(config-if) switchport mode trunk

Switch(config-if) switchport trunk allowed vlan 10,20

Switch(config-if) exit



Step 4: Configure IP Addresses for PCs

1. Click on each PC (PC1 to PC8) and configure the IP addresses as follows:

For PCs in VLAN 10:

- PC1: IP: 192.168.10.1, Subnet: 255.255.255.0
- PC2: IP: 192.168.10.2, Subnet: 255.255.255.0
- PC5: IP: 192.168.10.3, Subnet: 255.255.255.0
- PC6: IP: 192.168.10.4, Subnet: 255.255.255.0

For PCs in VLAN 20:

- PC3: IP: 192.168.20.1, Subnet: 255.255.255.0
- PC4: IP: 192.168.20.2, Subnet: 255.255.255.0
- PC7: IP: 192.168.20.3, Subnet: 255.255.255.0
- PC8: IP: 192.168.20.4, Subnet: 255.255.255.0

Step 5: Verify the Configuration

1. Save the configurations on both switches:

Switch write memory

2. Test Connectivity:

- Go to PC1 and ping PC2 (which is in VLAN 10).
- Ping across VLANs (e.g., from PC1 to PC3) will fail unless a router is added for inter-VLAN routing.

Additional Considerations

- If you want to enable inter-VLAN routing, you will need to add a router or configure a Layer 3 Switch for routing between VLANs.

```
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=24ms TTL=128
Reply from 192.168.10.1: bytes=32 time=15ms TTL=128
Reply from 192.168.10.1: bytes=32 time=15ms TTL=128
Reply from 192.168.10.1: bytes=32 time=19ms 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 = 15ms, Maximum = 24ms, Average = 18ms
```