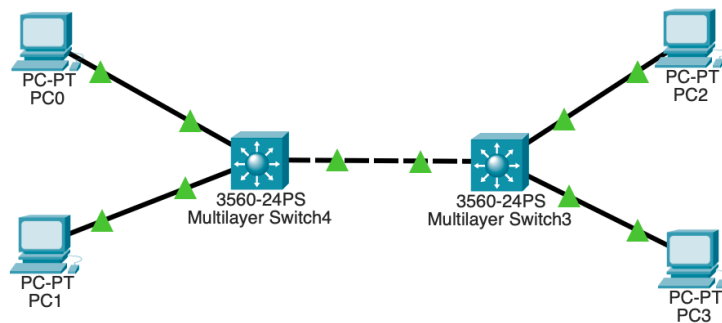


## Exp 5 Configuration of Encapsulation dot 1Q using cisco packet tracer:

Full VLAN and Trunk Setup with IP Configuration for Multiple PCs and Switches:

### 1. Network Layout:

- Switch1 (3560-24PS): Connects PC0 (VLAN 10) and PC1 (VLAN 20).
- Switch2 (3560-24PS): Connects PC2 (VLAN 10) and PC3 (VLAN 20).
- Trunk Line between Switch1 and Switch2 to allow VLANs 10 and 20 traffic to communicate across switches.



### 2. Configure VLANs on Both Switches:

On Switch1:

- Access CLI:

```
enable
configure terminal
```

- Create VLAN 10 and VLAN 20:

```
vlan 10
name Sales
exit
vlan 20
name Product
exit
```

- Assign Ports to VLANs:

```
interface FastEthernet0/1
switchport mode access
switchport access vlan 10
```

exit

```
interface FastEthernet0/2
switchport mode access
switchport access vlan 20
exit
```

- Configure Trunk Port (to Switch2):

```
interface FastEthernet0/3
switchport trunk encapsulation dot1q
switchport mode trunk
exit
```

On Switch2:

- Repeat the VLAN creation:

```
vlan 10
name Sales
exit
vlan 20
name Product
exit
```

- Assign Ports to VLANs:

```
interface FastEthernet0/1
switchport mode access
switchport access vlan 10
exit
```

```
interface FastEthernet0/2
switchport mode access
switchport access vlan 20
exit
```

- Configure Trunk Port (to Switch1):

```
interface FastEthernet0/3
switchport trunk encapsulation dot1q
switchport mode trunk
exit
```

Multilayer Switch4

PhysicalConfigCLIAttributes

IOS Command Line Interface

Switch	Ports	Model	SW Version	SW Image	
*	1	26	WS-C3560-24PS	12.2(37)SE1	C3560-ADVIPSERVICESK

Cisco IOS Software, C3560 Software (C3560-ADVIPSERVICESK9-M), Version 12.2(37)SE1, RELEASE SOFTWARE (fc1)  
Copyright (c) 1986-2007 by Cisco Systems, Inc.  
Compiled Thu 05-Jul-07 22:22 by pt\_team

Press RETURN to get started!

%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up  
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up  
%LINK-5-CHANGED: Interface FastEthernet0/24, changed state to up  
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/24, changed state to up  
%LINK-5-CHANGED: Interface FastEthernet0/3, changed state to up  
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/3, changed state to up

Switch>enable  
Switch#configure terminal  
Enter configuration commands, one per line. End with CNTL/Z.  
Switch(config)#vlan 10  
Switch(config-vlan)#name Sales  
Switch(config-vlan)#exit  
Switch(config)#vlan 20  
Switch(config-vlan)#name Product  
Switch(config-vlan)#exit  
Switch(config)#plaintext  
^  
% Invalid input detected at '^' marker.  
Switch(config)#copy code  
^  
% Invalid input detected at '^' marker.  
Switch(config)#interface FastEthernet0/1  
Switch(config-if)#switchport mode access  
Switch(config-if)#switch access vlan 10  
Switch(config-if)#exit  
Switch(config)#interface FastEthernet0/2  
Switch(config-if)#switchport access vlan 20  
Switch(config-if)#exit  
Switch(config)#

CopyPaste

☐ Top

### 3. Assign IP Addresses to the PCs:

- PC0 (VLAN 10):
  - IP Address: 192.168.10.2
  - Subnet Mask: 255.255.255.0
  - Gateway: 192.168.10.1 (Assumed Router)
- PC1 (VLAN 20):
  - IP Address: 192.168.20.2
  - Subnet Mask: 255.255.255.0
  - Gateway: 192.168.20.1
- PC2 (VLAN 10):
  - IP Address: 192.168.10.3
  - Subnet Mask: 255.255.255.0
  - Gateway: 192.168.10.1
- PC3 (VLAN 20):

- IP Address: 192.168.20.3
- Subnet Mask: 255.255.255.0
- Gateway: 192.168.20.1

The screenshot shows the CLI interface of a Multilayer Switch4. The 'CLI' tab is selected. The command 'show vlan brief' has been entered, resulting in the following output:

VLAN Name	Status	Ports
1 default	active	Fa0/5, Fa0/6, Fa0/7, Fa0/8 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 Sales	active	Fa0/1
20 Product	active	Fa0/2, Fa0/3, Fa0/4
1002 fddi-default	active	
1003 token-ring-default	active	
1004 fddinet-default	active	
1005 trnet-default	active	

Below the table, the prompt 'Switch>' is visible. At the bottom of the window, there is a 'Top' button and a 'Copy' button.

#### 4. Testing Network Connectivity:

- After configuring VLANs and IP addresses, ping between PCs in the same VLAN (e.g., PC0 to PC2 for VLAN 10, PC1 to PC3 for VLAN 20) to ensure communication.

- Test the trunk link between the switches by pinging across VLANs.

