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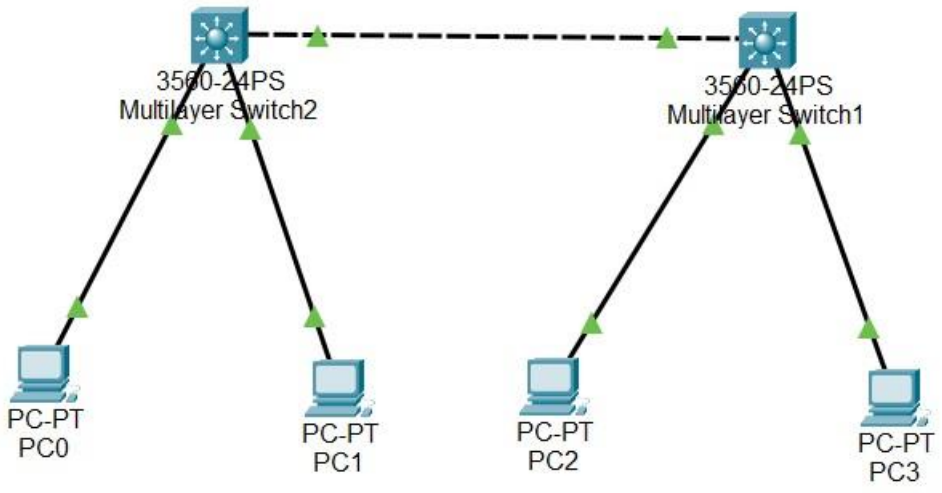
Experiment 5 Configuration of Encapsulation dot 1Q using cisco packet tracer



To configure VLANs and trunking with IEEE 802.1Q encapsulation on a Cisco Catalyst 356024TT switch, follow these steps:

Step-by-Step Configuration

Step 1: Set Up Your Network

1. **Open Cisco Packet Tracer** and create a new workspace.
2. **Add Devices**:
   - Drag and drop a 3560 switch and at least two PCs into the workspace.
   - Connect the PCs to the switch using copper straight-through cables.

Step 2: Configure VLANs on the Switch

1. **Access the Switch CLI**: ○ Click on the switch.
   ○ Go to the CLI tab.

1. **Enter Global Configuration Mode**:

```
enable configure
terminal
```

2. **Create VLANs**:

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

3. **Assign Ports to VLANs**:
   ○ Assign FastEthernet 0/1 to VLAN 10:

```
plaintext Copy code interface
FastEthernet0/1 switchport mode
access switchport access vlan 10
exit
```

○ Assign FastEthernet 0/2 to VLAN 20:

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

Step 3: Configure Trunk Port on the Switch

1. **Configure Trunk on the Switch**:

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

Step 4: Assign IP Addresses to PCs

1. **Configure IP Address on PC1**:
   ○ Click on PC1. ○ Go to the Desktop tab and click on IP Configuration. ○ Assign IP Address: 192.168.10.2
   ○ Subnet Mask: 255.255.255.0 ○ Gateway (if needed): 192.168.10.1

2. **Configure IP Address on PC2**:
   - Click on PC2. ○ Go to the Desktop tab and click on IP Configuration. ○ Assign IP Address: 192.168.20.2
   - Subnet Mask: 255.255.255.0 ○ Gateway (if needed): 192.168.20.1

Step 5: Verify Configuration

1. **Check VLANs on the Switch**:

```
show vlan brief
```

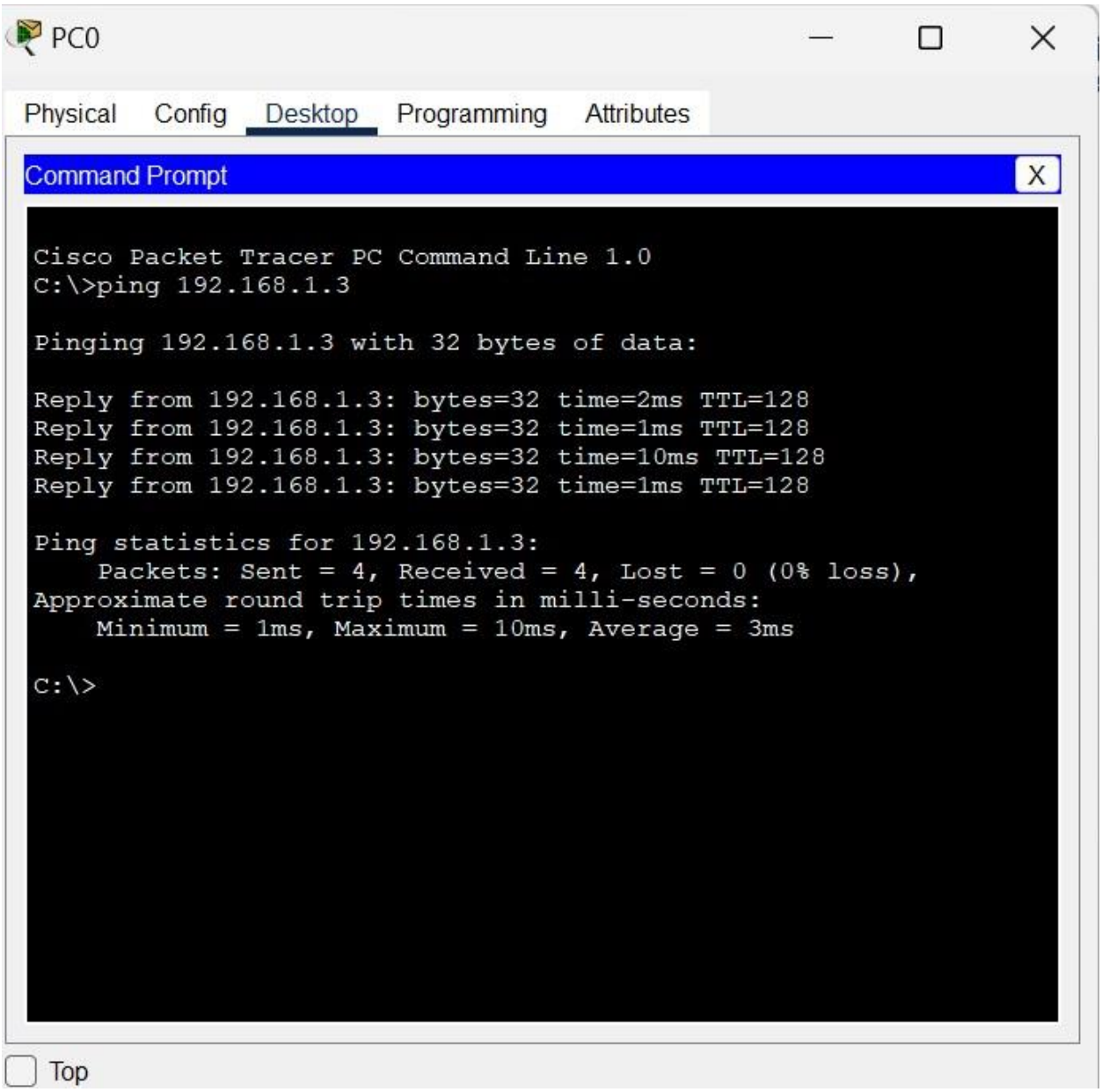
```
Switch>show vlan brief

VLAN Name                              Status    Ports
---- --------------------------------- --------- -------------------------------
1    default                           active    Fa0/1, Fa0/2, Fa0/3, Fa0/4
                                                 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, Fa0/24
                                                 Gig0/1, Gig0/2
10   sales                             active
20   product                           active
1002 fddi-default                      active
1003 token-ring-default                active
1004 fddinet-default                   active
1005 trnet-default                     active
Switch>
```

2. **Check Trunk Ports**:

```
show interfaces trunk
```

```
Switch>show interfaces trunk
Port        Mode         Encapsulation  Status        Native
vlan
Fa0/10      on           802.1q         trunking      1

Port        Vlans allowed on trunk
Fa0/10      1-1005

Port        Vlans allowed and active in management domain
Fa0/10      1,2

Port        Vlans in spanning tree forwarding state and not
pruned
Fa0/10      1,2

Switch>
```

3. **Test Connectivity**:
   - Go to the command prompt on PC1 and ping PC2 to ensure they can communicate if routing is correctly set up.



1. Ping 192.168.1.2 to 192.168.12.2
2. Ping 192.168.1.3 to 192.168.2.3
3. Ping 192.168.2.2 to 192.168.2.3