Packet Tracer - Troubleshoot Inter-VLAN Routing

Addressing Table

Device	Interface	IP Address	Subnet Mask	Default Gateway	VLAN
R1	G0/1.10	172.17.10.1	255.255.255.0	N/A	VLAN 10
	G0/1.30	172.17.30.1	255.255.255.0	N/A	VLAN 30
PC1	NIC	172.17.10.10	255.255.255.0	172.17.10.1	VLAN 10
PC3	NIC	172.17.30.10	255.255.255.0	172.17.30.1	VLAN 30

Objectives

Part 1: Locate Network Problems

Part 2: Implement the Solution

Part 3: Verify Network Connectivity

Scenario

In this activity, you will troubleshoot connectivity problems caused by improper configurations related to VLANs and inter-VLAN routing.

Instructions

Part 1: Locate the Network Problems

Examine the network and locate the source of any connectivity issues.

Commands you may find useful include:

```
R1# show ip interface brief
R1# show interface g0/1.10
R1# show interface g0/1.30
S1# show interface trunk
```

- Test connectivity and use the necessary **show** commands to verify configurations.
- Verify that all configured settings match the requirements shown in the Addressing Table.
- List all of the problems and possible solutions in the **Documentation Table**.

Documentation Table

Problems	Solutions
The G0/1 physical interface is up but G0/1.10 sub interface is administratively down.	Implement the no shutdown command to enable the G0/1.10 sub interface
PC3 is configured with the wrong default gateway address.	Change the default gateway on PC3 from 172.17.10.1 to 172.17.30.1
Interface G0/1 on S1 is configured as an access port instead of trunk port.	Use the command switchport mode trunk to change the interface from access mode to
Sub interface VLAN assignments are switched on R1. The configured assignments do not match the ones shown in the Addressing Table.	Issue the no encapsulation dot1q command to remove the incorrect configuration. Then configure the sub interfaces with the correct encapsulation dot1q vlan number command. Reenter the correct IP address information.

Part 2: Implement the Solutions

```
R1(config-subif)#exit
R1(config)#interface g0/1.10
R1(config-subif)#no encapsulation dot1Q
R1(config-subif)#int g0/1.30
R1(config-subif)#no encapsulation dot1Q
R1(config-subif)#exit
R1(config)#int g0/1.10
R1(config-subif)#encapsulation dot1Q 10
R1(config-subif)#ip address 172.17.10.1 255.255.255.0
R1(config-subif)#int g0/1.30
R1(config-subif)#encapsulation dot1Q 30
R1(config-subif)#ip address 172.17.30.1 255.255.255.0
R1(config-subif)#
```

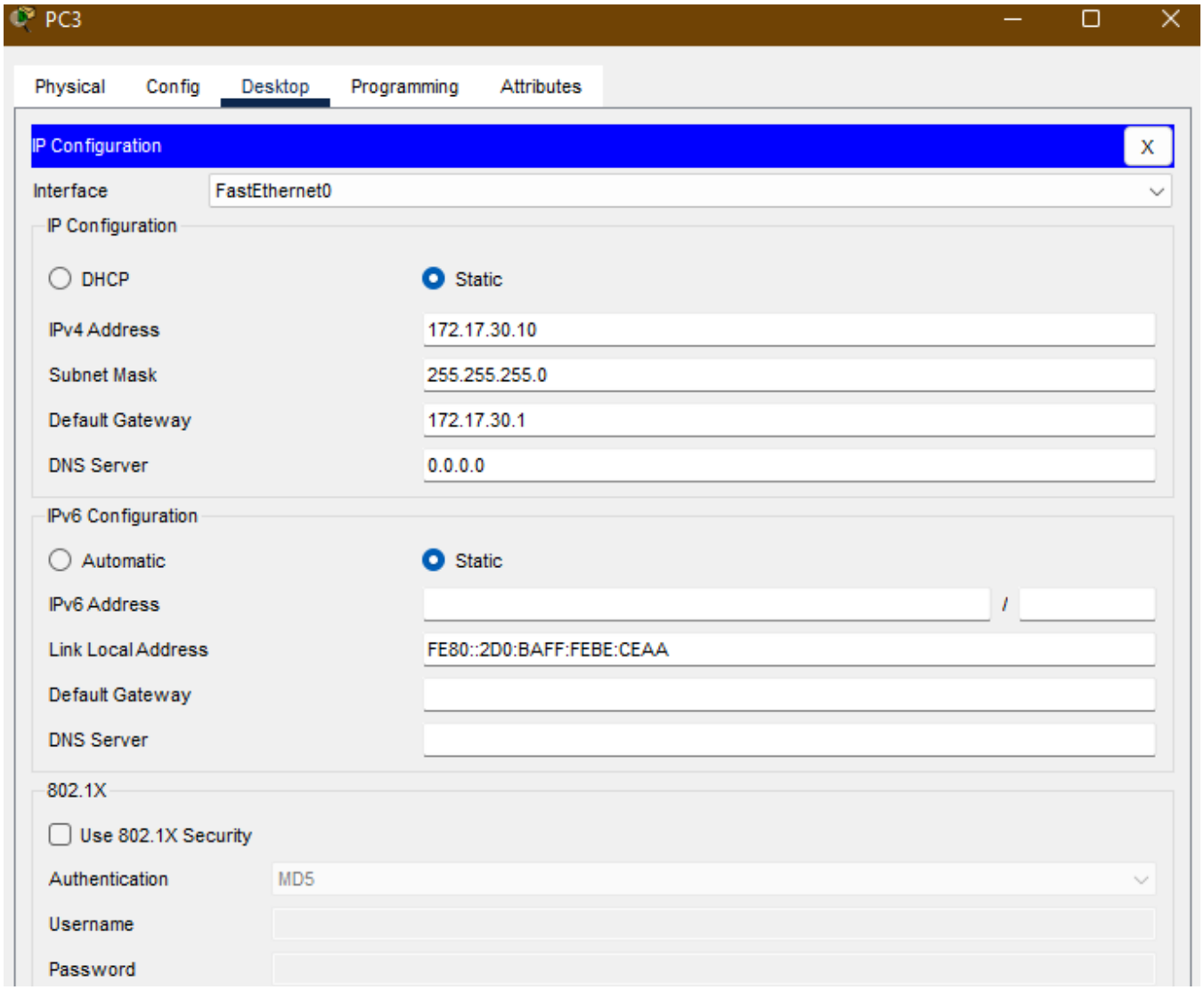
Ctrl+F6 to exit CLI focus Copy Paste

```
S1>en
S1#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
S1(config)#interface g0/1
S1(config-if)#switchport mode trunk

S1(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1, changed state to up
```

Ctrl+F6 to exit CLI focus Copy Paste



Part 3: Verify Network Connectivity

Verify the PCs can ping each other and R1. If not, continue to troubleshoot until the pings are successful.