Packet Tracer - Troubleshoot Inter-VLAN Routing

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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

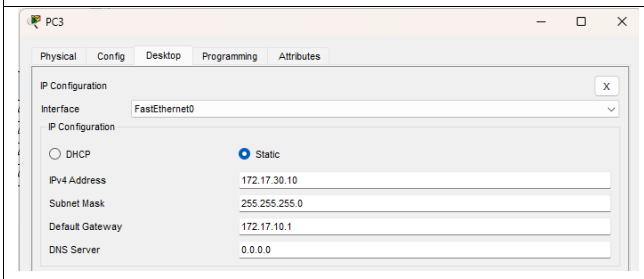
Examine the network and locate the source of any connectivity issues.

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
R1#show ip int brief Interface IP-Address OK? Method Status Protocol GigabitEthernet0/0 unassigned YES unset administratively down down GigabitEthernet0/1 unassigned YES unset up up GigabitEthernet0/1.10 172.17.10.1 YES manual administratively down down GigabitEthernet0/1.30 172.17.30.1 YES manual up up Vlan1 unassigned YES unset administratively down down ***GigabitEthernet0/1.10 administratively down***	R1(config-if)#int g0/1.10 R1(config-subif)#no shutdown
S1#show int trunk ***No trunk port set up***	S1#config t Enter configuration commands, one per line. End with CNTL/Z. S1(config)#int 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
 ***PC3 default gateway does not match VLAN 30 subinterface IP address***	
R1#show int g0/1.10 GigabitEthernet0/1.10 is up, line protocol is up (connected) Hardware is PQUICC_FEC, address is 000d.bde7.0c02 (bia 000d.bde7.0c02) Internet address is 172.17.10.1/24 MTU 1500 bytes, BW 100000 Kbit, DLY 100 usec, reliability 255/255, txload 1/255, rxload 1/255 Encapsulation 802.1Q Virtual LAN, Vlan ID 30 ARP type: ARPA, ARP Timeout 04:00:00, Last clearing of "show interface" counters never R1#show int g0/1.30 GigabitEthernet0/1.30 is up, line protocol is up (connected) Hardware is PQUICC_FEC, address is 000d.bde7.0c02 (bia 000d.bde7.0c02) Internet address is 172.17.30.1/24 MTU 1500 bytes, BW 100000 Kbit, DLY 100 usec, reliability 255/255, txload 1/255, rxload 1/255 Encapsulation 802.1Q Virtual LAN, Vlan ID 10 ARP type: ARPA, ARP Timeout 04:00:00, Last clearing of "show interface" counters never ***Encapsulation 802.1Q Virtual LAN, VLAN IDs are switched***	R1(config)#int 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)#encapsulation dot1q 30 R1(config-subif)#int g0/1.10 R1(config-subif)#encapsulation dot1q 10

Part 2: Implement the Solutions

Implement your recommended solutions.

Part 3: Verify Network Connectivity

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

Part 4: Post your screenshots

On the PT Activity window, make sure that the completion grade is **100%**. Click on the **Check Results** button and select the **Assessment Items** tab. Take a screen shot of the whole window, showing the table of assessment items, and the score/item count. Own your photo by placing a watermark on your photo with your name and USC ID Number. Paste your screenshot below: