

Packet Tracer - Troubleshoot Inter-VLAN Routing (Instructor Version)

[4.4.8 Packet Tracer – Troubleshoot Inter-VLAN Routing](#)

Instructor Note: Red font color or gray highlights indicate text that appears in the instructor copy only.

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 subinterface is administratively down.	Implement the no shutdown command to enable the G0/1.10 subinterface.
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 trunk mode.
Subinterface 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 subinterfaces with the correct encapsulation dot1q <vlan> command. Reenter the correct IP address information.

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.