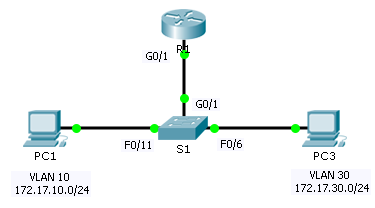
Packet Tracer – Troubleshooting Inter-VLAN Routing (Instructor Version)

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

1. Topology



1. 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 |

1. Objectives

Part 1: Locate Network Problems

Part 2: Implement the Solution

Part 3: Verify Network Connectivity

1. Scenario

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

1. Locate the Network Problems

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

* Test connectivity and use the necessary **show** commands on to verify configurations.
* List all of the problems and possible solutions in the **Documentation Table**.

1. 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. | Issue the **no encapsulation dot1q** command to remove the incorrect configuration. Then configure the subinterfaces with the correct **encap dot1q <vlan>** command. Reenter the correct IP address information. |
|  |  |
|  |  |

1. Implement the Solutions

Make changes according to your recommended solutions.

1. Verify Network Connectivity

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

1. Suggested Scoring Rubric

Packet Tracer scores 60 points. Completing the **Documentation Table** is worth 40 points.