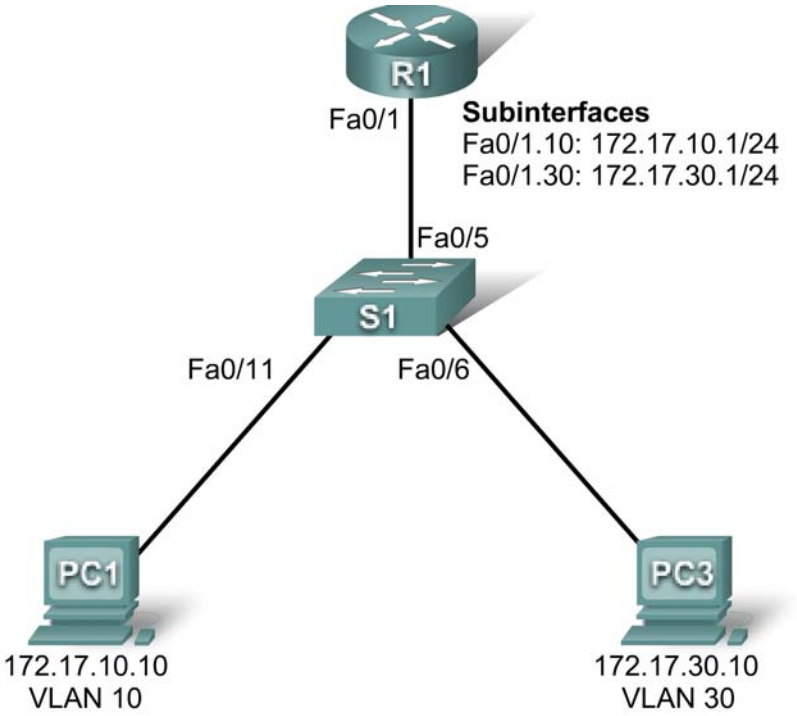
PT Activity 6.3.3: Troubleshooting Inter-VLAN Routing

Topology Diagram



Addressing Table

Device	Interface	IP Address	Subnet Mask	Default Gateway
R1	**Fa0/1.10**	172.17.10.1	255.255.255.0	N/A
	Fa0/1.30	172.17.30.1	255.255.255.0	N/A
PC1	**NIC**	172.17.10.10	255.255.255.0	172.17.10.1
PC3	**NIC**	172.17.30.10	255.255.255.0	172.17.30.1

Learning Objectives

- Test connectivity between PCs and a router.
- Gather data on the problem.
- Implement the solution and test connectivity.

Introduction

In this activity, you will troubleshoot connectivity problems between PC1 and PC3. The activity is complete when your completion result is 100% and the two PCs can ping each other. Any solution you implement must conform to the topology diagram.

Task 1: Test Connectivity between PCs and a Router

From **Simulation** mode, use the **Add Simple PDU** tool to ping between two PCs on the same VLAN. The following tests should be successful at the conclusion of this activity:

- PC1 can ping R1.
- PC3 can ping R1.
- PC1 can ping PC3.

Can PC1 ping R1? _____

Can PC3 ping R1? _____

Can PC1 ping PC3? _____

Task 2: Gather Data on the Problem

Step 1. Verify the configuration on the PCs.

Are the following configurations for each PC correct?

- IP address
- Subnet mask
- Default gateway

Step 2. Verify the configuration on S1.

Are the configurations on the switch correct? Be sure to verify the following:

- Ports assigned to the correct VLANs.
- Ports configured for the correct mode.
- Ports connected to the correct device.

Step 3. Verify the configuration on R1.

Are the configurations on the router correct? Be sure to verify the following:

- IP addresses
- Interface status
- Encapsulation and VLAN assignment

Step 4. Document the problem and suggest solutions.

What are the reasons why connectivity failed between the PCs? What are the solutions? There could be more than one problem and more than one solution. All solutions must conform to the topology diagram.

PC1 and/or PC3

Problem: _____

Solution: _____

S1

Problem: _____

Solution: _____

R1

Problem: _____

Solution: _____

Task 3: Implement the Solution and Test Connectivity

Step 1. Make changes according to the suggested solutions in Task 2.

Note: If you make changes to the switch configuration, you should make the changes in **Realtime** mode rather than **Simulation** mode. This is necessary so that the switch port will proceed to the forwarding state.

Step 2. Test connectivity between PCs and R1.

If you change any IP configurations, you should create new pings because the prior pings use the old IP address.

- PC1 should be able to ping R1.
- PC3 should be able to ping R1.
- PC1 should be able to ping PC3.

Can PC1 ping R1? _____

Can PC3 ping R1? _____

Can PC1 ping PC3? _____

If any pings fail, return to Task 2 to continue troubleshooting.

Step 3. Check completion percentage.

Your completion percentage should be 100%. If not, return to Step 1 and continue to implement your suggested solutions. You will be unable to click **Check Results** and see which required components are not yet completed.

