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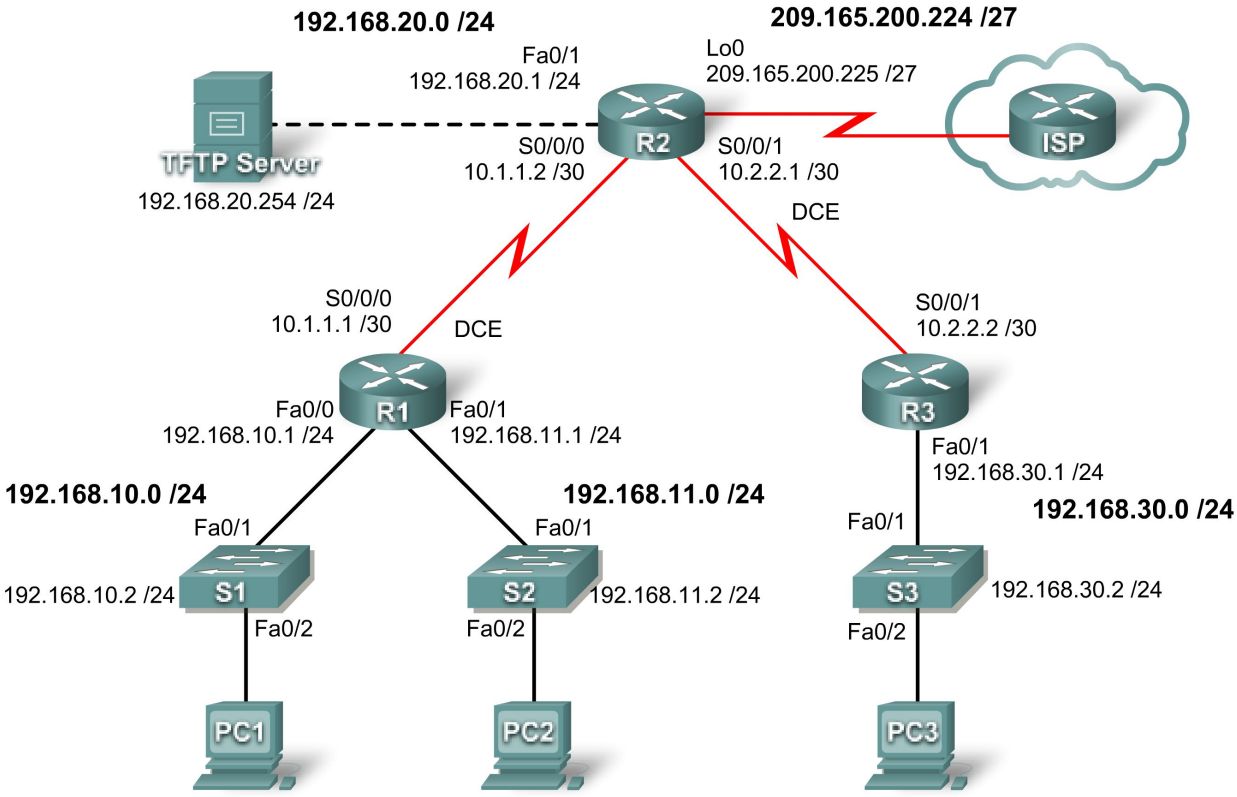
Lab 8.3.7: Troubleshooting Role Play

Topology Diagram



Learning Objectives

- Build a network
- Test a network
- Break a network
- Troubleshoot a problem
- Gather symptoms
- Correct the problem
- Document the problem and solution

Scenario

In this activity, you and another student will build the network displayed in the topology diagram. You will configure NAT, DHCP, and OSPF, and then verify connectivity. When the network is fully operational, one student will introduce several errors. Then the other student will use troubleshooting skills to isolate and solve the problem. Then the students will reverse roles and repeat the process. This activity can be done on real equipment or with Packet Tracer.

Task 1: Build the Network

Step 1: Cable and configure devices according to the topology diagram.

Step 2: Configure NAT, DHCP, and OSPF

Task 2: Test the Network

Step 1: Ensure that you have connectivity from end to end.

Step 2: Verify that DHCP and NAT are working correctly.

Step 3: Become familiar with every device using show and debug commands.

Task 3: Break the Network

One student leaves the room, if necessary, while the other student breaks the configuration. The break should only be one problem. The idea is to help each other develop troubleshooting skills. Creating multiple problems magnifies the scope of the work, which is not the goal of the lab. The goal is to help you become aware of the various changes that can occur in the network from just one problem.

Task 4: Troubleshoot the Problem

The student returns and questions the other student about the symptoms of the problem. Begin with general questions and attempt to narrow the scope of the problem. When the student being questioned feels that enough information has been provided, the questioning can stop.

Task 5: Gather Symptoms from Suspect Devices

Begins gathering symptoms using various **show** and **debug** commands. Use the **show running-config** command as the very last option.

Task 6: Correct the Problem

Correct the configuration and test the solution.

Task 7: Document the problem and solution.

Both students should enter the problem in their journal and document the solution.

Task 8: Reverse the roles and start over.

The students should now switch roles and start the process over.

Task 9: Clean Up

Erase the configurations and reload the routers. Disconnect and store the cabling. For PC hosts that are normally connected to other networks, such as the school LAN or to the Internet, reconnect the appropriate cabling and restore the TCP/IP settings.

