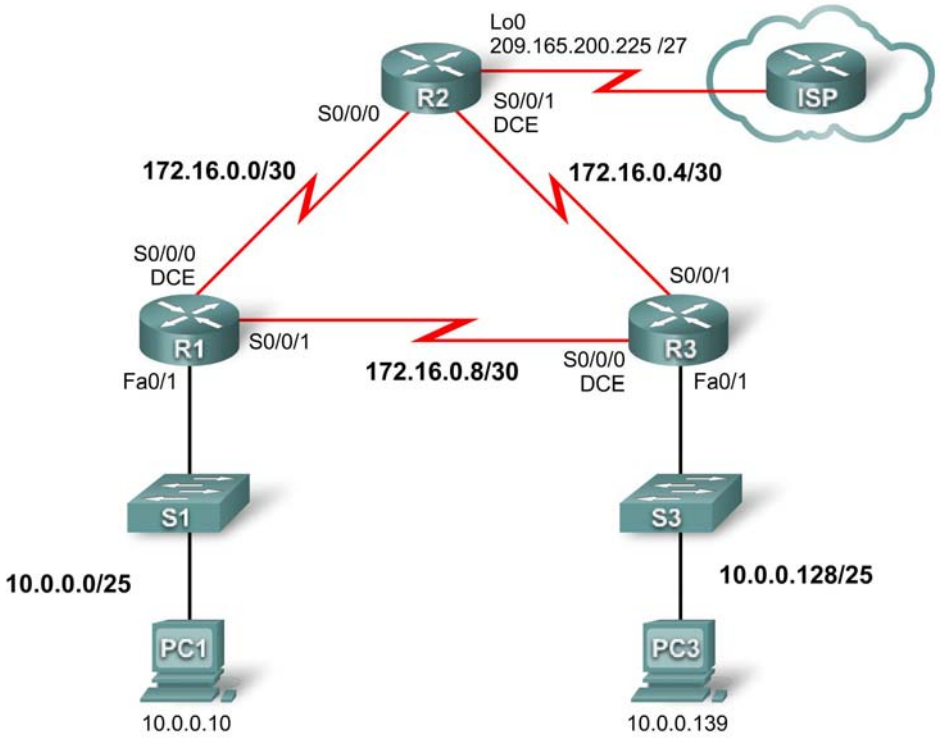
Activity 2.5.2: Challenge PPP Configuration

Topology



Addressing Table

Device	Interface	IP Address	Subnet Mask	Default Gateway
R1	Fa0/1	10.0.0.1	255.255.255.128	N/A
	S0/0/0	172.16.0.1	255.255.255.252	N/A
	S0/0/1	172.16.0.9	255.255.255.252	N/A
R2	Lo0	209.165.200.161	255.255.255.224	N/A
	S0/0/0	172.16.0.2	255.255.255.252	N/A
	S0/0/1	172.16.0.5	255.255.255.252	N/A
R3	Fa0/1	10.0.0.129	255.255.255.128	N/A
	S0/0/0	172.16.0.10	255.255.255.252	N/A
	S0/0/1	172.16.0.6	255.255.255.252	N/A
PC1	NIC	10.0.0.10	255.255.255.128	10.0.0.1
PC3	NIC	10.0.0.139	255.255.255.128	10.0.0.129

Learning Objectives

- Configure and activate interfaces
- Configure OSPF routing on all routers
- Configure PPP encapsulation on all serial interfaces
- Configure PPP CHAP authentication

Introduction

In this activity, you will configure PPP encapsulation on serial links using the network shown in the topology diagram. You will also configure PPP CHAP authentication. If you need assistance, refer back to the Basic PPP Configuration lab or activity, but try to do as much on your own as possible.

Task 1: Configure and Activate Serial and Ethernet Addresses

Step 1. Configure interfaces on R1, R2, and R3.

The addressing scheme is listed on the topology and in the Addressing Table. Some interface addresses are provided, but for some interfaces only the network is provided. In the cases where you are only given the network address, you may use any valid address on the specified network in order to be graded correctly in Packet Tracer.

Configure the interfaces for R1, R2, and R3 according to the topology. On the DCE sides of the serial links, the clock rate is 64000 bits.

Step 2. Verify IP addressing and interfaces.

Verify that all the interfaces are up at both the physical and data link layers. Directly connected routers should be able to ping each other.

Step 3. Configure the Ethernet interfaces of PC1 and PC3.

Step 4. Test connectivity between the PCs.

Should the PCs be able to ping each other at this point? Can they ping their default gateways?

Task 2: Configure OSPF on Routers

Step 1. Enable OSPF routing on the routers.

When configuring OSPF routing, use an area-id of 1.

Step 2. Verify that you have full network connectivity.

All routers should have routes to all networks and now be able to ping any device.

Task 3: Configure PPP Encapsulation on Serial Interfaces

Step 1. Configure PPP on the serial interfaces of all three routers.

Currently encapsulation is set to HDLC on all the serial links. In order to configure authentication later, encapsulation must be set to PPP.

Step 2. Verify that all serial interfaces are using PPP encapsulation.

If connected serial interfaces have mismatched encapsulation, the link will go down. Make sure all interfaces are set to PPP encapsulation.

Task 4: Configure PPP CHAP Authentication

The password for CHAP authentication is cisco.

Step 1. Configure PPP CHAP authentication on all serial links.

Step 2. Verify PPP CHAP authentication on all serial links.

Can all routers communicate with one another? Can the PC1 ping PC3?