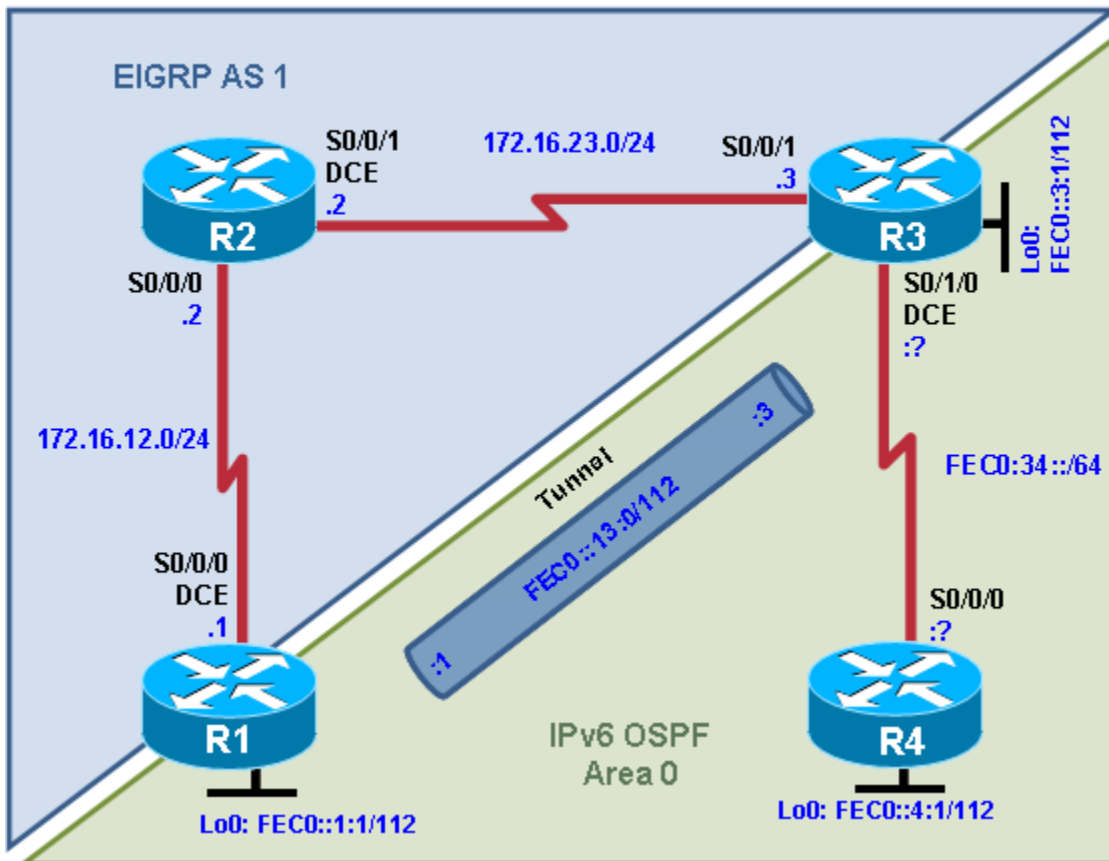


## Chapter 8 Lab 8-4, IPv6 Challenge Lab

### Topology



### Objectives

- Implement the topology diagram using the instructions in the Requirements section.
- Change the IPv6 IGP from OSPFv3 to RIPng.

### Background

In the first part of this lab (Steps 1 through 7), you configure IPv4 with EIGRP on routers R1, R2 and R3. You also configure IPv6 with OSPFv3 on routers R1, R3 and R4, create an IPv6 tunnel between R1 and R3 and then test network connectivity. In the second part of the lab (Step 8), you replace the OSPFv3 routing protocol with RIPng and re-test connectivity.

### Required Resources

**Note:** This lab uses Cisco 1841 routers with Cisco IOS Release 12.4(24)T1 and the Advanced IP Services image c1841-advipservicesk9-mz.124-24.T1.bin. You can use other routers (such as a 2801 or 2811) and Cisco IOS Software versions if they have comparable capabilities and features. Depending on the router model and Cisco IOS Software version, the commands available and output produced might vary from what is shown in this lab.

- 4 routers (Cisco 1841 with Cisco IOS Release 12.4(24)T1 Advanced IP Services or comparable)
- Serial and console cables

### Requirements

1. Configure all interfaces in the topology diagram with the IPv4 or IPv6 addresses shown.
2. Use EUI-64 addresses on the link between R3 and R4.
3. Configure EIGRP AS 1 on R1, R2, and R3 to route all IPv4 networks.
4. Disable EIGRP automatic summarization.
5. Configure a manual IPv6 tunnel between R1 and R3.
6. Include all IPv6 networks in OSPF area 0 on R1, R3, and R4.
7. Manually configure a router ID of 172.16.4.1 on R4 (this address does not need to be reachable).
8. Remove the OSPFv3 configuration commands from R1, R3, and R4 and configure RIPng to run on these routers using RIP1 as the process name.

### Notes:



## Router Interface Summary Table

Router Interface Summary				
Router Model	Ethernet Interface #1	Ethernet Interface #2	Serial Interface #1	Serial Interface #2
1700	Fast Ethernet 0 (FA0)	Fast Ethernet 1 (FA1)	Serial 0 (S0)	Serial 1 (S1)
1800	Fast Ethernet 0/0 (FA0/0)	Fast Ethernet 0/1 (FA0/1)	Serial 0/0/0 (S0/0/0)	Serial 0/0/1 (S0/0/1)
2600	Fast Ethernet 0/0 (FA0/0)	Fast Ethernet 0/1 (FA0/1)	Serial 0/0 (S0/0)	Serial 0/1 (S0/1)
2800	Fast Ethernet 0/0 (FA0/0)	Fast Ethernet 0/1 (FA0/1)	Serial 0/0/0 (S0/0/0)	Serial 0/0/1 (S0/0/1)

**Note:** To find out how the router is configured, look at the interfaces to identify the type of router and how many interfaces the router has. Rather than list all combinations of configurations for each router class, this table includes identifiers for the possible combinations of Ethernet and serial interfaces in the device. The table does not include any other type of interface, even though a specific router might contain one. For example, for an ISDN BRI interface, the string in parenthesis is the legal abbreviation that can be used in Cisco IOS commands to represent the interface.