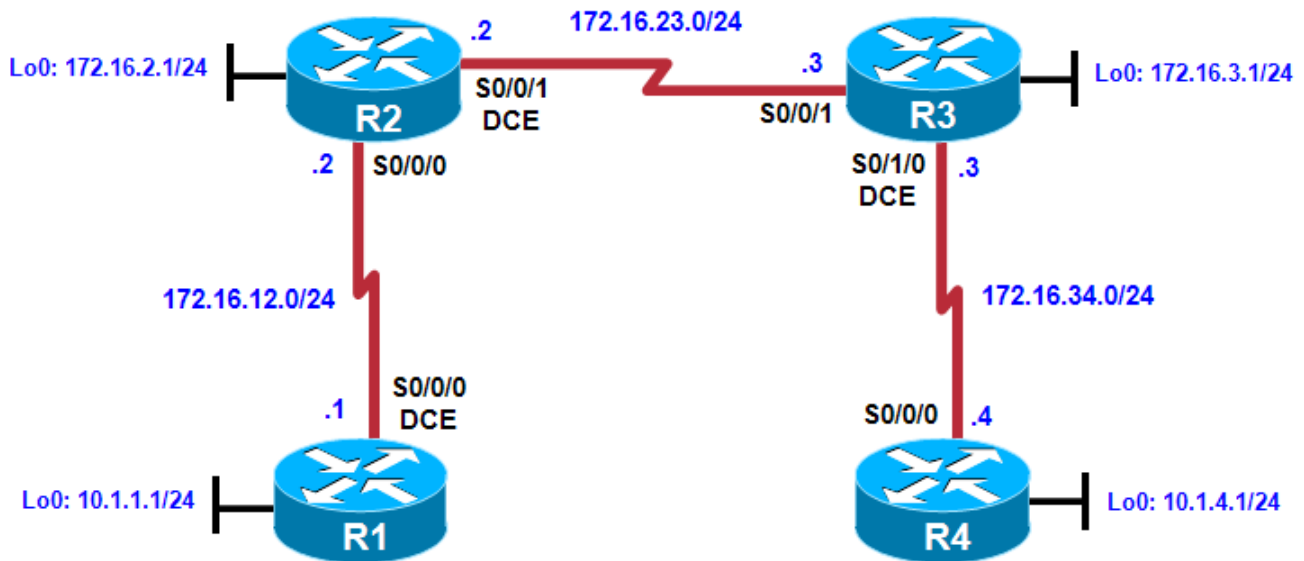


Chapter 2 Lab 2-7, Troubleshooting EIGRP

Topology



Objective

- Troubleshoot EIGRP configurations.

Background

In this lab, you troubleshoot existing configurations to achieve a working topology. You use troubleshooting techniques to correct anything in the scenario that prevents full IP connectivity. Full IP connectivity means that every IP address in the scenario should be reachable from every router. If you do not know where to start, try pinging remote addresses and see which ones are reachable (either manually performing pings or using a Tcl script).

Note: This lab uses Cisco 1841 routers with Cisco IOS Release 12.4(24)T1 and the advanced IP services image c1841-adviservicesk9-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.

Required Resources

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

Requirements

- Use the IP addressing scheme shown in the diagram.
- All routers must participate in EIGRP AS 1.
- All networks in the diagram must be in EIGRP AS 1.
- Do not use any static routes, default routes, or other routing protocols.
- All IP addresses in the topology must be reachable from all routers.

Initial Configurations

Copy and paste the initial configurations into your routers.

Router R1

```
hostname R1
!
interface Loopback0
 ip address 10.1.1.1 255.255.255.0
!
interface Serial0/0/0
 ip address 172.16.21.1 255.255.255.0
 clock rate 64000
 bandwidth 64
 no shutdown
!
router eigrp 1
 network 10.1.1.0 0.0.0.255
 network 172.16.12.0 0.0.0.255
 auto-summary
end
```

Router R2

```
hostname R2
!
interface Loopback0
 ip address 172.16.2.1 255.255.255.0
!
interface Serial0/0/0
 ip address 172.16.12.2 255.255.255.0
 bandwidth 64
 no shutdown
!
interface Serial0/0/1
 ip address 172.16.23.2 255.255.255.0
 clock rate 64000
 bandwidth 64
 no shutdown
!
router eigrp 1
 network 172.16.2.0 0.0.0.255
 network 172.16.12.0 0.0.0.255
 network 172.16.23.0 0.0.0.255
 no auto-summary
end
```

Router R3

```
hostname R3
!
interface Loopback0
 ip address 172.16.3.1 255.255.255.0
!
interface Serial0/0/1
 ip address 172.16.23.3 255.255.255.0
 bandwidth 64
 no shutdown
!
interface Serial0/1/0
 ip address 172.16.34.3 255.255.255.0
 clock rate 64000
 bandwidth 64
 no shutdown
!
router eigrp 1
 network 172.16.23.0 0.0.0.255
 network 172.16.30.0 0.0.0.255
 network 172.16.34.0 0.0.0.255
 no auto-summary
end
```

Router R4

```
hostname R4
!
interface Loopback0
 ip address 10.1.4.1 255.255.255.0
!
interface Serial0/0/0
 ip address 172.16.34.4 255.255.255.0
 bandwidth 64
 no shutdown
!
router eigrp 100
 network 10.1.4.0 0.0.0.255
 network 172.16.34.0 0.0.0.255
 auto-summary
end
```

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.