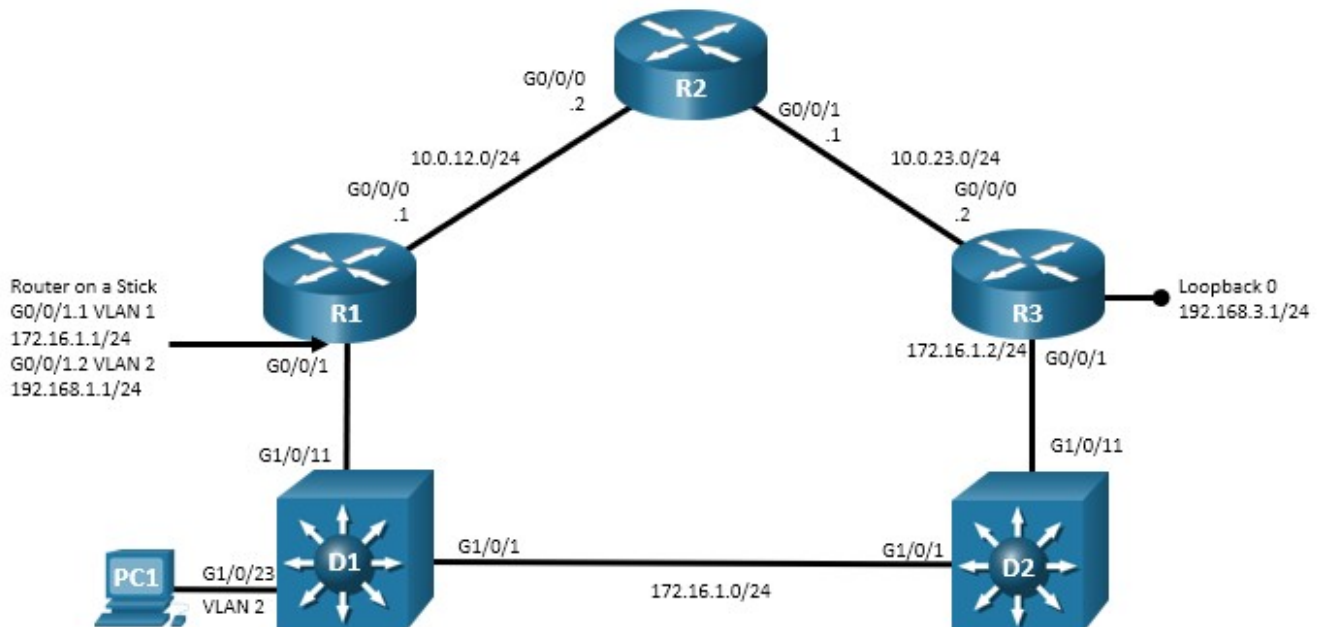


Lab - Troubleshoot EIGRP for IPv4 (Instructor Version)

Instructor Note: Red font color or gray highlights indicate text that appears in the instructor copy only.

Topology



Addressing Table

Device	Interface	IP Address	Subnet Mask
R1	G0/0/0	10.0.12.1	255.255.255.0
	G0/0/1.1	172.16.1.1	255.255.255.0
	G0/0/1.2	192.168.1.1	255.255.255.0
R2	G0/0/0	10.0.12.2	255.255.255.0
	G0/0/1	10.0.23.1	255.255.255.0
R3	G0/0/0	10.0.23.2	255.255.255.0
	G0/0/1	172.16.1.2	255.255.255.0
	Loopback 0	192.168.3.1	255.255.255.0
PC1	NIC	DHCP	

Objectives

Troubleshoot network issues related to the configuration and operation of EIGRP for IPv4.

Background / Scenario

In this topology, routers R1, R2, and R3 are EIGRP neighbors. Switches D1 and D2 provide connectivity between R1 and R3. Router R1 is configured for inter-VLAN routing and DHCP to provide support for PC 1. You will be loading configurations with intentional errors onto the network. Your tasks are to FIND the error(s), document your findings and the command(s) or method(s) used to fix them. FIX the issue(s) presented here and then test the network to ensure both of the following conditions are met:

- 1) the complaint received in the ticket is resolved
- 2) full reachability is restored

Note: The routers used with CCNP hands-on labs are Cisco 4221 with Cisco IOS XE Release 16.9.4 (universalk9 image). The switches used in the labs are Cisco Catalyst 3650s with Cisco IOS XE Release 16.9.4 (universalk9 image) and Cisco Catalyst 2960s with Cisco IOS Release 15.2(2) (lanbasek9 image). Other routers, switches, and Cisco IOS versions can be used. Depending on the model and Cisco IOS version, the commands available and the output produced might vary from what is shown in the labs. Refer to the Router Interface Summary Table at the end of the lab for the correct interface identifiers.

Note: Make sure that the switches have been erased and have no startup configurations. If you are unsure, contact your instructor.

Instructor Note: Refer to the Instructor Lab Manual for the procedures to initialize and reload devices.

Required Resources

- 3 Routers (Cisco 4221 with Cisco IOS XE Release 16.9.4 universal image or comparable)
- 2 Switches (Cisco 3560 with Cisco IOS XE Release 16.9.4 universal image or comparable)
- 1 PC (Choice of operating system with terminal emulation program installed)
- Console cables to configure the Cisco IOS devices via the console ports
- Ethernet cables as shown in the topology

Instructions

Part 1: Trouble Ticket 4.1.2.1

Scenario:

R2 was added to the network to increase bandwidth for traffic between the R1 and R3 LANs. However, R2, is not sending routes to R1 or forming adjacencies with R3.

Use the commands listed below to load the configuration files for this trouble ticket:

Instructor Note: Commands for uploading the configuration are provided at the end of this document.

Device	Command
R1	<code>copy flash:/enarsi/4.1.2.1-r1-config.txt run</code>
R2	<code>copy flash:/enarsi/4.1.2.1-r2-config.txt run</code>
R3	<code>copy flash:/enarsi/4.1.2.1-r3-config.txt run</code>
D1	<code>copy flash:/enarsi/4.1.2.1-d1-config.txt run</code>
D2	<code>copy flash:/enarsi/4.1.2.1-d2-config.txt run</code>

- PC 1 should be configured for and receive an address from an IPv4 DHCP server.
- Passwords on all devices are **cisco12345**. If a username is required, use **admin**.

- After you have fixed the ticket, change the MOTD on EACH DEVICE using the following command:
banner motd # This is \$(hostname) FIXED from ticket <ticket number> #
- Then save the configuration by issuing the **wri** command (on each device).
- Inform your instructor that you are ready for the next ticket.
- After the instructor approves your solution for this ticket, issue the **reset.now** privileged EXEC command on each device. This script will clear your configurations and reload the devices.

Instructor Notes:

This trouble ticket contains two intentional errors:

- 1) R2 is configured with the same Router-ID as R1
- 2) R3 has interface g0/0/0 marked passive

The commands used to fix these errors should be:

```
R2(config)# router eigrp 412  
R2(config-router)# eigrp router-id 2.2.2.2  
R2(config-router)# end
```

```
R3(config)# router eigrp 412  
R3(config-router)# no passive-interface g0/0/0  
R3(config-router)# end
```

Note: Student may choose to issue the command **no passive-interface default**. This solves the adjacency issue with R2 but would open the router up to possible undesired adjacencies if there were more L3 interfaces configured.

Part 2: Trouble Ticket 4.1.2.2

Scenario:

Your company hired an outside security consultant to work on the network. His task was to ensure that routing was being done securely. After he completed his work, R2 stopped sharing route information about networks at R1.

Use the commands listed below to load the configuration files for this trouble ticket:

Instructor Note: Commands for creating these files are at the end of this document.

Device	Command
R1	copy flash:/enarsi/4.1.2.2-r1-config.txt run
R2	copy flash:/enarsi/4.1.2.2-r2-config.txt run
R3	copy flash:/enarsi/4.1.2.2-r3-config.txt run
D1	copy flash:/enarsi/4.1.2.2-d1-config.txt run
D2	copy flash:/enarsi/4.1.2.2-d2-config.txt run

- PC1 should be configured for and receive an address from an IPv4 DHCP server.
- Passwords on all devices are **cisco12345**. If a username is required, use **admin**.
- After you have fixed the ticket, change the MOTD on EACH DEVICE using the following command:
banner motd # This is \$(hostname) FIXED from ticket <ticket number> #

- Then save the configuration by issuing the **wri** command (on each device).
- Inform your instructor that you are ready for the next ticket.
- After the instructor approves your solution for this ticket, issue the **reset.now** privileged EXEC command. This script will clear your configurations and reload the devices.

Instructor Notes:

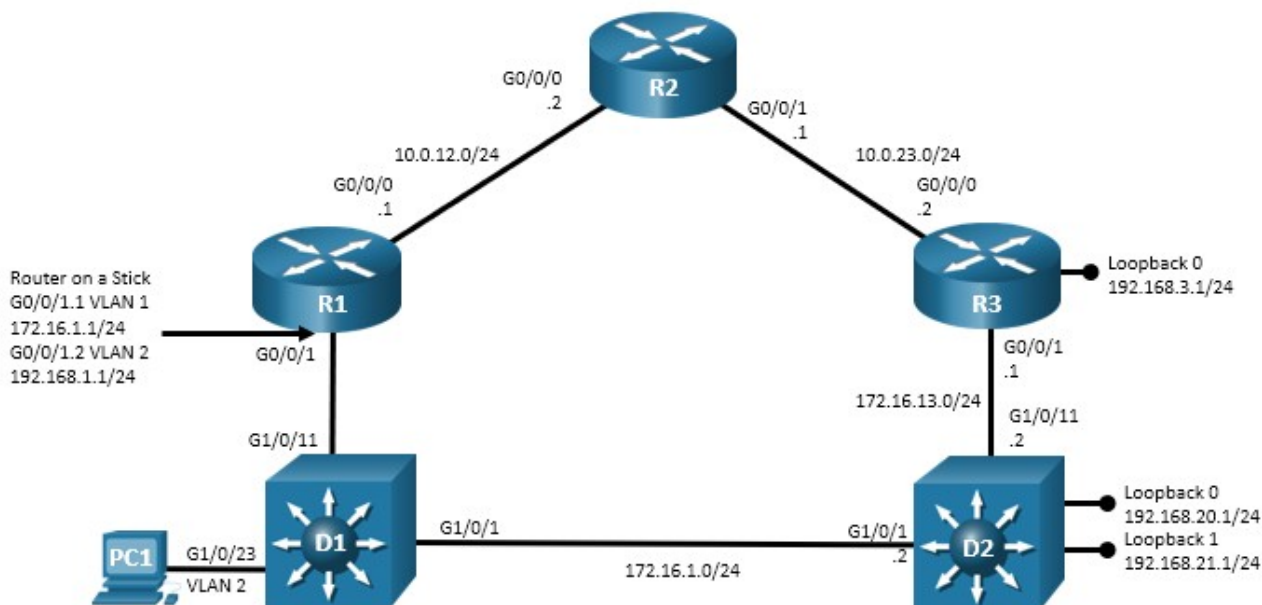
This trouble ticket contains 1 intentional error. R2 has a distribute list that is blocking the networks. The distribute list should be removed.

The commands used to fix these errors should be:

```
R2(config)# router eigrp 412
R2(config-router)# no distribute-list prefix 88QRX-T13 out g0/0/1
R2(config-router)# end
```

Part 3: Trouble Ticket 4.1.2.3

Topology Update:



Addressing Table Update:

Device	Interface	IP Address	Subnet Mask
R1	G0/0/0	10.0.12.1	255.255.255.0
	G0/0/1.1	172.16.1.1	255.255.255.0
	G0/0/1.2	192.168.1.1	255.255.255.0
R2	G0/0/0	10.0.12.2	255.255.255.0
	G0/0/1	10.0.23.1	255.255.255.0
R3	G0/0/0	10.0.23.2	255.255.255.0
	G0/0/1	172.16.1.2	255.255.255.0

Device	Interface	IP Address	Subnet Mask
	Loopback 0	192.168.3.1	255.255.255.0
D2	G1/0/1	172.16.1.2	255.255.255.0
	G1/0/11	172.16.13.2	255.255.255.0
	Loopback 0	192.168.20.1	255.255.255.0
	Loopback 1	192.168.21.1	255.255.255.0
PC1	NIC	DHCP	

Scenario:

Switch D2 was converted to support Inter-VLAN routing and is connected to the network via two routed ports. Switch D2 was also configured to join the EIGRP domain, but it is not forming adjacencies.

Use the commands listed below to load the configuration files for this trouble ticket:

Instructor Note: Commands for creating these files are at the end of this document.

Device	Command
R1	<code>copy flash:/enarsi/4.1.2.3-r1-config.txt run</code>
R2	<code>copy flash:/enarsi/4.1.2.3-r2-config.txt run</code>
R3	<code>copy flash:/enarsi/4.1.2.3-r3-config.txt run</code>
D1	<code>copy flash:/enarsi/4.1.2.3-d1-config.txt run</code>
D2	<code>copy flash:/enarsi/4.1.2.3-d2-config.txt run</code>

- PC1 should be configured for and receive an address from an IPv4 DHCP server.
- Passwords on all devices are **cisco12345**. If a username is required, use **admin**.
- After you have fixed the ticket, change the MOTD on EACH DEVICE using the following command:
banner motd # This is \$(hostname) FIXED from ticket <ticket number> #
- Then save the configuration by issuing the **wri** command (on each device).
- Inform your instructor that you are ready for the next ticket.
- After the instructor approves your solution for this ticket, issue the **reset.now** privileged EXEC command. This script will clear your configurations and reload the devices.

Instructor Notes:

This trouble ticket contains 1 intentional error, which is repeated in three places. The D2 EIGRP AS # is incorrect, which impacts the EIGRP configuration as well as the authentication commands on interface g1/0/1 and g1/0/11.

The commands used to fix these errors should be:

```
D2(config)# no router eigrp 421
D2(config)# router eigrp 412
D2(config-router)# eigrp router-id 132.132.132.132
D2(config-router)# network 172.16.1.0 0.0.0.255
D2(config-router)# network 172.16.13.0 0.0.0.255
D2(config-router)# network 192.168.20.0 0.0.0.255
```

```
D2(config-router)# network 192.168.21.0 0.0.0.255
D2(config-router)# exit
D2(config)# interface g1/0/1
D2(config-if)# ip authentication mode eigrp 412 md5
D2(config-if)# ip authentication key-chain eigrp 412 security
D2(config-if)# exit
D2(config)# interface g1/0/11
D2(config-if)# ip authentication mode eigrp 412 md5
D2(config-if)# ip authentication key-chain eigrp 412 security
D2(config-if)# end
```

Router Interface Summary Table

Router Model	Ethernet Interface #1	Ethernet Interface #2	Serial Interface #1	Serial Interface #2
1800	Fast Ethernet 0/0 (F0/0)	Fast Ethernet 0/1 (F0/1)	Serial 0/0/0 (S0/0/0)	Serial 0/0/1 (S0/0/1)
1900	Gigabit Ethernet 0/0 (G0/0)	Gigabit Ethernet 0/1 (G0/1)	Serial 0/0/0 (S0/0/0)	Serial 0/0/1 (S0/0/1)
2801	Fast Ethernet 0/0 (F0/0)	Fast Ethernet 0/1 (F0/1)	Serial 0/1/0 (S0/1/0)	Serial 0/1/1 (S0/1/1)
2811	Fast Ethernet 0/0 (F0/0)	Fast Ethernet 0/1 (F0/1)	Serial 0/0/0 (S0/0/0)	Serial 0/0/1 (S0/0/1)
2900	Gigabit Ethernet 0/0 (G0/0)	Gigabit Ethernet 0/1 (G0/1)	Serial 0/0/0 (S0/0/0)	Serial 0/0/1 (S0/0/1)
4221	Gigabit Ethernet 0/0/0 (G0/0/0)	Gigabit Ethernet 0/0/1 (G0/0/1)	Serial 0/1/0 (S0/1/0)	Serial 0/1/1 (S0/1/1)
4300	Gigabit Ethernet 0/0/0 (G0/0/0)	Gigabit Ethernet 0/0/1 (G0/0/1)	Serial 0/1/0 (S0/1/0)	Serial 0/1/1 (S0/1/1)

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. There is no way to effectively list all the 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 may contain one. An example of this might be an ISDN BRI interface. The string in parenthesis is the legal abbreviation that can be used in Cisco IOS commands to represent the interface.

Uploading Configuration Files

Use the commands below to create the configuration files on the lab devices for each trouble ticket in this lab. The TCL script commands help create and copy the configurations. However, the configuration commands could also be copied and pasted directly into global config mode on each device. Simply remove the TCL script commands, enter the **enable** and **configure t** commands on the device, and copy and paste the configuration commands.

Important: The device requires a folder in flash named **enarsi**. Use the **dir** command to verify. If the folder is missing, then create it using the **mkdir flash:/enarsi** privileged EXEC command. For all switches, make sure the **vlan.dat** file is set to the default. Use the **delete vlan.dat** privileged EXEC command, if necessary.

Reset scripts

These TCL scripts will completely clear and reload the device in preparation for the next ticket. Copy and paste the appropriate script to the appropriate device.

Router Reset Script

```
tclsh
puts [ open "flash:/enarsi/reset.tcl" w+ ] {
typeahead "\n"
copy running-config startup-config
typeahead "\n"
erase startup-config
puts "Reloading the router"
typeahead "\n"
reload
}
tclquit
```

D1/D2 (Cisco 3650) Reset Script - The default 3650 SDM template supports IPv6, so it is not set by this script.

```
tclsh
puts [ open "flash:/enarsi/reset.tcl" w+ ] {
typeahead "\n"
copy running-config startup-config
typeahead "\n"
erase startup-config
delete /force vlan.dat
puts "Reloading the switch"
typeahead "\n"
reload
}
tclquit
```

A1 (Cisco 2960 Script) - The default 2960 SDM template does not support IPv6, so this script includes that setting.

```
tclsh
puts [ open "flash:/enarsi/reset.tcl" w+ ] {
typeahead "\n"
copy running-config startup-config
typeahead "\n"
erase startup-config
delete /force vlan.dat
delete /force multiple-fs
ios_config "sdm prefer lanbase-routing"
typeahead "\n"
puts "Reloading the switch in 1 minute, type reload cancel to halt"
typeahead "\n"
reload
```

```
}  
tclquit
```

R1 Configuration File Scripts

!R1 - Trouble Ticket # 1

```
tclsh  
puts [ open "flash:/enarsi/4.1.2.1-r1-config.txt" w+ ] {  
hostname R1  
banner motd # This is R1, Trouble Ticket 4.1.2.1 #  
enable secret cisco12345  
username admin privilege 15 algorithm-type scrypt secret cisco12345  
interface g0/0/0  
ip address 10.0.12.1 255.255.255.0  
no shutdown  
exit  
interface g0/0/1  
no ip address  
no shutdown  
exit  
interface g0/0/1.1  
encapsulation dot1q 1 native  
ip address 172.16.1.1 255.255.255.0  
no shutdown  
exit  
interface g0/0/1.2  
encapsulation dot1q 2  
ip address 192.168.1.1 255.255.255.0  
no shutdown  
exit  
router eigrp 412  
  eigrp router-id 1.1.1.1  
  network 10.0.12.0 0.0.0.255  
  network 172.16.1.0 0.0.0.255  
  network 192.168.1.0 0.0.0.255  
  passive-interface g0/0/1.2  
  exit  
ip dhcp excluded-address 192.168.1.1 192.168.1.5  
ip dhcp pool HOSTS  
  network 192.168.1.0 255.255.255.0  
  default-router 192.168.1.1  
  exit  
line con 0  
  exec-timeout 0 0  
  logging synchronous  
  exit
```



```
line vty 0 4
  login local
  transport input telnet
exit
alias exec reset.now tclsh flash:/enarsi/reset.tcl
end
}
```

!R1 - Trouble Ticket # 2

```
tclsh
puts [ open "flash:/enarsi/4.1.2.2-r1-config.txt" w+ ] {
hostname R1
banner motd # This is R1, Trouble Ticket 4.1.2.2 #
enable secret cisco12345
username admin privilege 15 algorithm-type scrypt secret cisco12345
interface g0/0/0
ip address 10.0.12.1 255.255.255.0
no shutdown
exit
interface g0/0/1
no ip address
no shutdown
exit
interface g0/0/1.1
encapsulation dot1q 1 native
ip address 172.16.1.1 255.255.255.0
no shutdown
exit
interface g0/0/1.2
encapsulation dot1q 2
ip address 192.168.1.1 255.255.255.0
no shutdown
exit
router eigrp 412
  eigrp router-id 1.1.1.1
  network 10.0.12.0 0.0.0.255
  network 172.16.1.0 0.0.0.255
  network 192.168.1.0 0.0.0.255
  passive-interface g0/0/1.2
exit
key chain security
  key 1
    key-string cisco12345
  exit
exit
```

```
interface g0/0/0
  ip authentication mode eigrp 412 md5
  ip authentication key-chain eigrp 412 security
  exit
interface g0/0/1.1
  ip authentication mode eigrp 412 md5
  ip authentication key-chain eigrp 412 security
  exit
ip dhcp excluded-address 192.168.1.1 192.168.1.5
ip dhcp pool HOSTS
  network 192.168.1.0 255.255.255.0
  default-router 192.168.1.1
  exit
line con 0
  exec-timeout 0 0
  logging synchronous
  exit
line vty 0 4
  login local
  transport input telnet
  exit
alias exec reset.now tclsh flash:/enarsi/reset.tcl
end
}
tclquit
```

!R1 - Trouble Ticket # 3

```
tclsh
puts [ open "flash:/enarsi/4.1.2.3-r1-config.txt" w+ ] {
hostname R1
banner motd # This is R1, Trouble Ticket 4.1.2.3 #
enable secret cisco12345
username admin privilege 15 algorithm-type scrypt secret cisco12345
interface g0/0/0
  ip address 10.0.12.1 255.255.255.0
  no shutdown
  exit
interface g0/0/1
  no ip address
  no shutdown
  exit
interface g0/0/1.1
  encapsulation dot1q 1 native
  ip address 172.16.1.1 255.255.255.0
  no shutdown
  exit
```

```
interface g0/0/1.2
encapsulation dot1q 2
ip address 192.168.1.1 255.255.255.0
no shutdown
exit
router eigrp 412
  eigrp router-id 1.1.1.1
  network 10.0.12.0 0.0.0.255
  network 172.16.1.0 0.0.0.255
  network 192.168.1.0 0.0.0.255
  passive-interface g0/0/1.2
  exit
key chain security
  key 1
    key-string cisco12345
  exit
exit
interface g0/0/0
  ip authentication mode eigrp 412 md5
  ip authentication key-chain eigrp 412 security
  exit
interface g0/0/1.1
  ip authentication mode eigrp 412 md5
  ip authentication key-chain eigrp 412 security
  exit
ip dhcp excluded-address 192.168.1.1 192.168.1.5
ip dhcp pool HOSTS
  network 192.168.1.0 255.255.255.0
  default-router 192.168.1.1
  exit
line con 0
  exec-timeout 0 0
  logging synchronous
  exit
line vty 0 4
  login local
  transport input telnet
  exit
alias exec reset.now tclsh flash:/enarsi/reset.tcl
end
}
tclquit
```

R2 Configuration File Scripts

!R2 - Trouble Ticket # 1

```
tclsh
puts [ open "flash:/enarsi/4.1.2.1-r2-config.txt" w+ ] {
hostname R2
banner motd # This is R2, Trouble Ticket 4.1.2.1 #
enable secret cisco12345
username admin privilege 15 algorithm-type scrypt secret cisco12345
interface g0/0/0
ip address 10.0.12.2 255.255.255.0
no shutdown
exit
interface g0/0/1
ip address 10.0.23.1 255.255.255.0
no shutdown
exit
router eigrp 412
  eigrp router-id 1.1.1.1
  network 10.0.12.0 0.0.0.255
  network 10.0.23.0 0.0.0.255
  exit
line con 0
  exec-timeout 0 0
  logging synchronous
  exit
line vty 0 4
  login local
  transport input telnet
  exit
alias exec reset.now tclsh flash:/enarsi/reset.tcl
end
}
tclquit
```

!R2 - Trouble Ticket # 2

```
tclsh
puts [ open "flash:/enarsi/4.1.2.2-r2-config.txt" w+ ] {
hostname R2
banner motd # This is R2, Trouble Ticket 4.1.2.2 #
enable secret cisco12345
username admin privilege 15 algorithm-type scrypt secret cisco12345
interface g0/0/0
ip address 10.0.12.2 255.255.255.0
no shutdown
exit
interface g0/0/1
ip address 10.0.23.1 255.255.255.0
no shutdown
```

```
exit
ip prefix-list 88QRX-T13 seq 5 deny 172.16.0.0/16 le 24
ip prefix-list 88QRX-T13 seq 10 deny 192.168.0.0/16 le 24
ip prefix-list 88QRX-T13 seq 15 deny 10.0.0.0/8 le 24
ip prefix-list 88QRX-T13 seq 20 permit 0.0.0.0/0 le 32
router eigrp 412
  eigrp router-id 2.2.2.2
  network 10.0.12.0 0.0.0.255
  network 10.0.23.0 0.0.0.255
  distribute-list prefix 88QRX-T13 out g0/0/1
exit
key chain security
  key 1
    key-string cisco12345
  exit
exit
interface g0/0/0
  ip authentication mode eigrp 412 md5
  ip authentication key-chain eigrp 412 security
exit
interface g0/0/1
  ip authentication mode eigrp 412 md5
  ip authentication key-chain eigrp 412 security
exit
line con 0
  exec-timeout 0 0
  logging synchronous
exit
line vty 0 4
  login local
  transport input telnet
exit
alias exec reset.now tclsh flash:/enarsi/reset.tcl
end
}
tclquit
```

!R2 - Trouble Ticket # 3

```
tclsh
puts [ open "flash:/enarsi/4.1.2.3-r2-config.txt" w+ ] {
hostname R2
banner motd # This is R2, Trouble Ticket 4.1.2.3 #
enable secret cisco12345
username admin privilege 15 algorithm-type scrypt secret cisco12345
interface g0/0/0
ip address 10.0.12.2 255.255.255.0
```

```
no shutdown
exit
interface g0/0/1
ip address 10.0.23.1 255.255.255.0
no shutdown
exit
router eigrp 412
  eigrp router-id 2.2.2.2
  network 10.0.12.0 0.0.0.255
  network 10.0.23.0 0.0.0.255
exit
key chain security
  key 1
    key-string cisco12345
  exit
exit
interface g0/0/0
  ip authentication mode eigrp 412 md5
  ip authentication key-chain eigrp 412 security
exit
interface g0/0/1
  ip authentication mode eigrp 412 md5
  ip authentication key-chain eigrp 412 security
exit
line con 0
  exec-timeout 0 0
  logging synchronous
exit
line vty 0 4
  login local
  transport input telnet
exit
alias exec reset.now tclsh flash:/enarsi/reset.tcl
end
}
tclquit
```

R3 Configuration File Scripts

!R3 - Trouble Ticket # 1

```
tclsh
puts [ open "flash:/enarsi/4.1.2.1-r3-config.txt" w+ ] {
hostname R3
banner motd # This is R3, Trouble Ticket 4.1.2.1 #
enable secret cisco12345
username admin privilege 15 algorithm-type scrypt secret cisco12345
```

```
interface g0/0/0
ip address 10.0.23.2 255.255.255.0
no shutdown
exit
interface g0/0/1
ip address 172.16.1.2 255.255.255.0
no shutdown
exit
interface loopback 0
ip address 192.168.3.1 255.255.255.0
router eigrp 412
  eigrp router-id 3.3.3.3
  network 10.0.23.0 0.0.0.255
  network 172.16.1.0 0.0.0.255
  network 192.168.3.0 0.0.0.255
  passive-interface default
  no passive-interface g0/0/1
exit
line con 0
  exec-timeout 0 0
  logging synchronous
  exit
line vty 0 4
  login local
  transport input telnet
  exit
alias exec reset.now tclsh flash:/enarsi/reset.tcl
end
}
tclquit
```

!R3 - Trouble Ticket # 2

```
tclsh
puts [ open "flash:/enarsi/4.1.2.2-r3-config.txt" w+ ] {
hostname R3
banner motd # This is R3, Trouble Ticket 4.1.2.2 #
enable secret cisco12345
username admin privilege 15 algorithm-type scrypt secret cisco12345
interface g0/0/0
ip address 10.0.23.2 255.255.255.0
no shutdown
exit
interface g0/0/1
ip address 172.16.1.2 255.255.255.0
no shutdown
exit
```

```
interface loopback 0
ip address 192.168.3.1 255.255.255.0
router eigrp 412
  eigrp router-id 3.3.3.3
  network 10.0.23.0 0.0.0.255
  network 172.16.1.0 0.0.0.255
  network 192.168.3.0 0.0.0.255
exit
key chain security
  key 1
    key-string cisco12345
  exit
exit
interface g0/0/0
  ip authentication mode eigrp 412 md5
  ip authentication key-chain eigrp 412 security
exit
interface g0/0/1
  ip authentication mode eigrp 412 md5
  ip authentication key-chain eigrp 412 security
exit
line con 0
  exec-timeout 0 0
  logging synchronous
exit
line vty 0 4
  login local
  transport input telnet
exit
alias exec reset.now tclsh flash:/enarsi/reset.tcl
end
}
tclquit
```

!R3 - Trouble Ticket # 3

```
tclsh
puts [ open "flash:/enarsi/4.1.2.3-r3-config.txt" w+ ] {
hostname R3
banner motd # This is R3, Trouble Ticket 4.1.2.3 #
enable secret cisco12345
username admin privilege 15 algorithm-type scrypt secret cisco12345
interface g0/0/0
ip address 10.0.23.2 255.255.255.0
no shutdown
exit
interface g0/0/1
```



```
ip address 172.16.13.1 255.255.255.0
no shutdown
exit
interface loopback 0
ip address 192.168.3.1 255.255.255.0
router eigrp 412
  eigrp router-id 3.3.3.3
  network 10.0.23.0 0.0.0.255
  network 172.16.13.0 0.0.0.255
  network 192.168.3.0 0.0.0.255
exit
key chain security
  key 1
    key-string cisco12345
  exit
exit
interface g0/0/0
  ip authentication mode eigrp 412 md5
  ip authentication key-chain eigrp 412 security
exit
interface g0/0/1
  ip authentication mode eigrp 412 md5
  ip authentication key-chain eigrp 412 security
exit
line con 0
  exec-timeout 0 0
  logging synchronous
exit
line vty 0 4
  login local
  transport input telnet
exit
alias exec reset.now tclsh flash:/enarsi/reset.tcl
end
}
tclquit
```

D1 Configuration File Scripts

!D1 - Trouble Ticket # 1

```
tclsh
puts [ open "flash:/enarsi/4.1.2.1-d1-config.txt" w+ ] {
hostname D1
banner motd # This is D1, Trouble Ticket 4.1.2.1 #
enable secret cisco12345
username admin privilege 15 algorithm-type scrypt secret cisco12345
```

```
spanning-tree mode rapid-pvst
spanning-tree vlan 1-2 root primary
interface range g1/0/1 - 24
    switchport mode access
    shutdown
exit
interface g1/0/11
    switchport mode trunk
    no shutdown
exit
interface g1/0/1
    switchport mode access
    switchport access vlan 1
    no shutdown
exit
interface g1/0/23
    switchport mode access
    switchport access vlan 2
    no shutdown
exit
line con 0
    exec-timeout 0 0
    logging synchronous
exit
alias exec reset.now tclsh flash:/enarsi/reset.tcl
end
}
tclquit
```

!D1 - Trouble Ticket # 2

```
tclsh
puts [ open "flash:/enarsi/4.1.2.2-d1-config.txt" w+ ] {
hostname D1
banner motd # This is D1, Trouble Ticket 4.1.2.2 #
enable secret cisco12345
username admin privilege 15 algorithm-type scrypt secret cisco12345
spanning-tree mode rapid-pvst
spanning-tree vlan 1-2 root primary
interface range g1/0/1 - 24
    switchport mode access
    shutdown
exit
interface g1/0/11
    switchport mode trunk
    no shutdown
exit
```

```
interface g1/0/1
  switchport mode access
  switchport access vlan 1
  no shutdown
  exit
interface g1/0/23
  switchport mode access
  switchport access vlan 2
  no shutdown
  exit
line con 0
  exec-timeout 0 0
  logging synchronous
  exit
alias exec reset.now tclsh flash:/enarsi/reset.tcl
end
}
tclquit
```

ID1 - Trouble Ticket # 3

```
tclsh
puts [ open "flash:/enarsi/4.1.2.3-d1-config.txt" w+ ] {
hostname D1
banner motd # This is D1, Trouble Ticket 4.1.2.3 #
enable secret cisco12345
username admin privilege 15 algorithm-type scrypt secret cisco12345
spanning-tree mode rapid-pvst
spanning-tree vlan 1-2 root primary
interface range g1/0/1 - 24
  switchport mode access
  shutdown
  exit
interface g1/0/11
  switchport mode trunk
  no shutdown
  exit
interface g1/0/1
  switchport mode access
  switchport access vlan 1
  no shutdown
  exit
interface g1/0/23
  switchport mode access
  switchport access vlan 2
  no shutdown
  exit
```

```
line con 0
  exec-timeout 0 0
  logging synchronous
  exit
alias exec reset.now tclsh flash:/enarsi/reset.tcl
end
}
```

D2 Configuration File Scripts

!D2 - Trouble Ticket # 1

```
tclsh
puts [ open "flash:/enarsi/4.1.2.1-d2-config.txt" w+ ] {
hostname D2
banner motd # This is D2, Trouble Ticket 4.1.2.1 #
enable secret cisco12345
username admin privilege 15 algorithm-type scrypt secret cisco12345
spanning-tree mode rapid-pvst
interface range g1/0/1 - 24
  switchport mode access
  shutdown
  exit
interface g1/0/11
  switchport mode access
  switchport access vlan 1
  no shutdown
  exit
interface g1/0/1
  switchport mode access
  switchport access vlan 1
  no shutdown
  exit
line con 0
  exec-timeout 0 0
  logging synchronous
  exit
alias exec reset.now tclsh flash:/enarsi/reset.tcl
end
}
```

!D2 - Trouble Ticket # 2

```
tclsh
puts [ open "flash:/enarsi/4.1.2.2-d2-config.txt" w+ ] {
hostname D2
banner motd # This is D2, Trouble Ticket 4.1.2.2 #
```

```
enable secret cisco12345
username admin privilege 15 algorithm-type scrypt secret cisco12345
spanning-tree mode rapid-pvst
interface range g1/0/1 - 24
    switchport mode access
    shutdown
    exit
interface g1/0/11
    switchport mode access
    switchport access vlan 1
    no shutdown
    exit
interface g1/0/1
    switchport mode access
    switchport access vlan 1
    no shutdown
    exit
line con 0
    exec-timeout 0 0
    logging synchronous
    exit
alias exec reset.now tclsh flash:/enarsi/reset.tcl
end
}
tclquit
```

!D2 - Trouble Ticket # 3

```
tclsh
puts [ open "flash:/enarsi/4.1.2.3-d2-config.txt" w+ ] {
hostname D2
ip routing
banner motd # This is D2, Trouble Ticket 4.1.2.3 #
enable secret cisco12345
username admin privilege 15 algorithm-type scrypt secret cisco12345
spanning-tree mode rapid-pvst
interface range g1/0/1 - 24
    switchport mode access
    shutdown
    exit
interface g1/0/11
    no switchport
    ip address 172.16.13.2 255.255.255.0
    no shutdown
    exit
interface g1/0/1
    no switchport
```

```
ip address 172.16.1.2 255.255.255.0
no shutdown
exit
interface loopback 0
ip address 192.168.20.1 255.255.255.0
no shutdown
exit
interface loopback 1
ip address 192.168.21.1 255.255.255.0
no shutdown
exit
router eigrp 421
eigrp router-id 132.132.132.132
network 172.16.1.0 0.0.0.255
network 172.16.13.0 0.0.0.255
network 192.168.20.0 0.0.0.255
network 192.168.21.0 0.0.0.255
exit
key chain security
key 1
key-string cisco12345
exit
exit
interface g1/0/1
ip authentication mode eigrp 421 md5
ip authentication key-chain eigrp 421 security
exit
interface g1/0/11
ip authentication mode eigrp 421 md5
ip authentication key-chain eigrp 421 security
exit
line con 0
exec-timeout 0 0
logging synchronous
exit
line vty 0 4
login local
transport input telnet
exit
alias exec reset.now tclsh flash:/enarsi/reset.tcl
end
}
tclquit
```

A1 Configuration File Scripts - Not Used In This Lab