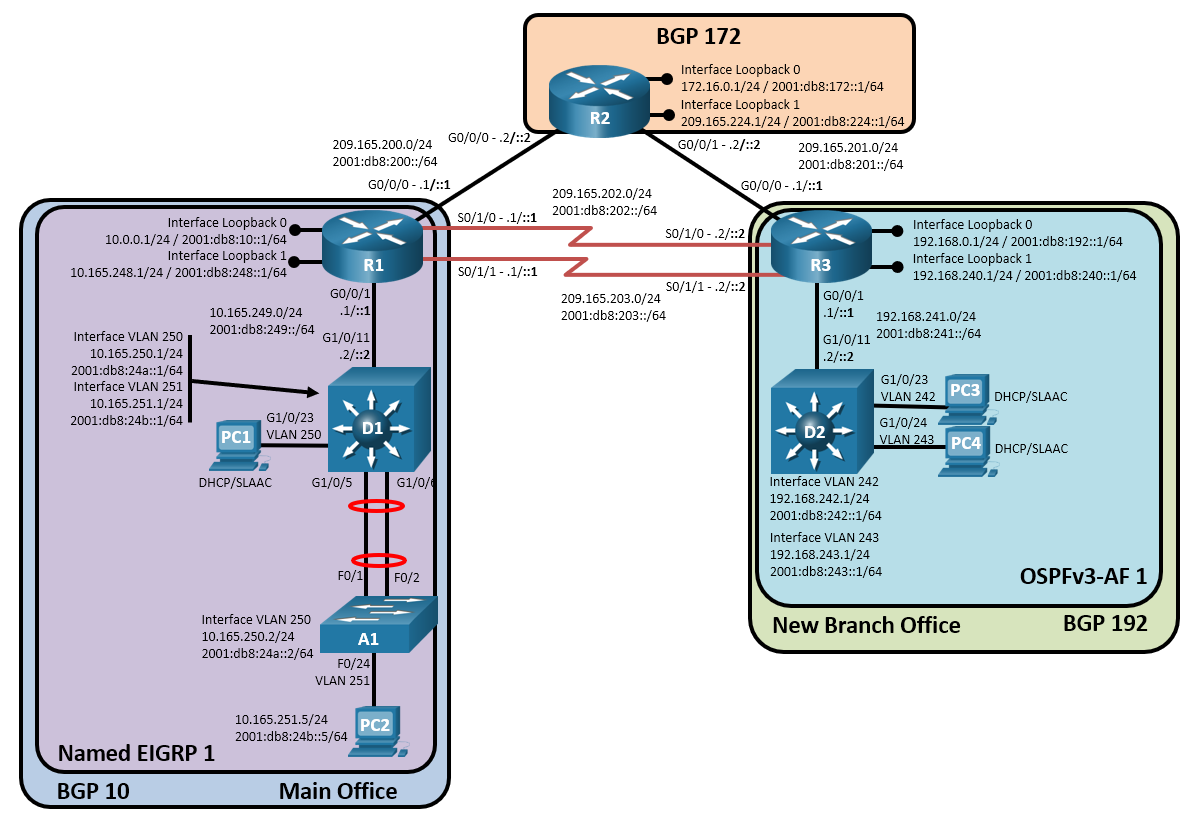
ENARSI Skills Assessment - Configuration (Instructor Version)

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

# Topology



# Addressing Table

| Device | Interface | IPv4 Address/Mask | IPv6 Address/Prefix Length | Link-Local Address |
| --- | --- | --- | --- | --- |
| R1 | G0/0/0 | 209.165.200.1/24 | 2001:db8:200::1/64 | fe80::1:1 |
| R1 | G0/0/1 | 10.165.249.1/24 | 2001:db8:249::1/64 | fe80::1:2 |
| R1 | Loopback 0 | 10.0.0.1/24 | 2001:db8:10::1/64 | fe80::1:3 |
| R1 | Loopback 1 | 10.165.248.1/24 | 2001:db8:248::1/64 | fe80::1:4 |
| R2 | G0/0/0 | 209.165.200.2/24 | 2001:db8:200::2/64 | fe80::2:1 |
| R2 | G0/0/1 | 209.165.201.2/24 | 2001:db8:201::2/64 | fe80::2:2 |
| R2 | Loopback 0 | 172.16.0.1/24 | 2001:db8:172::1/64 | fe80::2:3 |
| R2 | Loopback 1 | 209.165.224.1/24 | 2001:db8:224::1/64 | fe80::2:4 |
| R3 | G0/0/0 | 209.165.201.1/24 | 2001:db8:201::1/64 | fe80::3:1 |
| R3 | G0/0/1 | 192.168.241.1/24 | 2001:db8:241::1/64 | fe80::3:2 |
| R3 | Loopback 0 | 192.168.0.1/24 | 2001:db8:192::1/64 | fe80::3:3 |
| R3 | Loopback 1 | 192.168.240.1/24 | 2001:db8:240::1/64 | fe80::3:4 |
| D1 | G1/0/11 | 10.165.249.2/25 | 2001:db8:249::2/64 | fe80::d1:1 |
| D1 | VLAN 250 | 10.165.250.1/24 | 2001:db8:24a::1/64 | fe80::d1:2 |
| D1 | VLAN 251 | 10.165.251.1/24 | 2001:db8:24b::1/64 | fe80::d1:3 |
| D2 | G1/0/11 | 192.168.241.2/24 | 2001:db8:241::2/64 | fe80::d2:1 |
| D2 | VLAN 242 | 192.168.242.1/24 | 2001:db8:242::1/64 | fe80::d2:2 |
| D2 | VLAN 243 | 192.168.243.1/24 | 2001:db8:243::1/64 | fe80::d2:3 |
| A1 | VLAN 250 | 10.165.250.2/24 | 2001:db8:24a::2/64 | fe80::a1:1 |
| PC1 | NIC | DHCP | SLAAC | EUI-64/CGA |
| PC2 | NIC | 10.165.251.5/24 | 2001:db8:24b::5/64 | EUI-64/CGA |
| PC3 | NIC | DHCP | SLAAC | EUI-64/CGA |
| PC4 | NIC | DHCP | SLAAC | EUI-64/CGA |

# Objectives

Part 1: Build the Network and Configure Basic Device Settings and Interface Addressing

Part 2: Configure Routing to Specifications

# Background / Scenario

You have been tasked with configuring routing for the network according to a set of specifications. You must be precise and configure routing to adhere to the requirements provided.

**Note**: This lab is an exercise in configuring routing options and does not necessarily reflect networking best practices.

**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 3650 with Cisco IOS XE Release 16.9.4 (universalk9 image) and Cisco Catalyst 2960 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 routers and switches have been erased and have no startup configurations. If you are unsure, contact your instructor.

**Note:** The default Switch Database Manager (SDM) template on a Catalyst 2960 does not support IPv6. You must change the default SDM template to the dual-ipv4-and-ipv6 default template using the **sdm prefer dual-ipv4-and-ipv6 default** global configuration command. Changing the template will require a reboot.

**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 3650 with Cisco IOS XE Release 16.9.4 universal image or comparable)
* 1 Switch (Cisco 2960 with Cisco IOS Release 15.2(2) lanbasek9 image or comparable)
* 4 PCs (Choice of Operating System with terminal emulation program installed)
* Console cables to configure the Cisco IOS devices via the console ports
* Ethernet and serial cables as shown in the topology

# Instructions

## Build the Network and Configure Basic Device Settings and Interface Addressing

In Part 1, you will set up the network topology and configure basic settings and interface addressing on routers.

### Cable the network as shown in the topology.

Attach the devices as shown in the topology diagram, and cable as necessary.

### Configure basic settings for each device.

* + - 1. Console into each device, enter global configuration mode, and apply the basic settings. The startup configurations for each device are provided below.

**Instructor Note**: Each device should have the enarsi directory in flash with the appropriate reset.tcl script existing there. If not, use the following scripts to create them:

**Router Reset Script**

enable

delete /force /recursive flash:/enarsi

mkdir flash:/enarsi

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.

enable

delete /force /recursive flash:/enarsi

mkdir flash:/enarsi

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.

enable

delete /force /recursive flash:/enarsi

mkdir flash:/enarsi

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

Router R1

hostname R1

no ip domain lookup

ipv6 unicast-routing

banner motd # This is R1, ENARSI SA Part 1 #

enable secret cisco12345

username admin privilege 15 algorithm-type scrypt secret cisco12345

interface g0/0/0

ip address 209.165.200.1 255.255.255.0

ipv6 address fe80::1:1 link-local

ipv6 address 2001:db8:200::1/64

no shutdown

exit

interface g0/0/1

ip address 10.165.249.1 255.255.255.0

ipv6 address fe80::1:2 link-local

ipv6 address 2001:db8:249::1/64

no shutdown

exit

interface s0/1/0

ip address 209.165.202.1 255.255.255.0

ipv6 address fe80::1:3 link-local

ipv6 address 2001:db8:202::1/64

no shutdown

exit

interface s0/1/1

ip address 209.165.203.1 255.255.255.0

ipv6 address fe80::1:4 link-local

ipv6 address 2001:db8:203::1/64

no shutdown

exit

interface loopback 0

ip address 10.0.0.1 255.255.255.0

ipv6 address fe80::1:5 link-local

ipv6 address 2001:db8:10::1/64

no shutdown

exit

interface loopback 1

ip address 10.165.248.1 255.255.255.0

ipv6 address fe80::1:6 link-local

ipv6 address 2001:db8:248::1/64

no shutdown

exit

line con 0

logging synchronous

exec-timeout 0 0

exit

line vty 0 4

login local

transport input telnet

exec-timeout 5 0

exit

alias exec reset.now tclsh flash:/enarsi/reset.tcl

end

Router R2

hostname R2

no ip domain lookup

ipv6 unicast-routing

banner motd # This is R2, ENARSI SA Part 1 #

enable secret cisco12345

username admin privilege 15 algorithm-type scrypt secret cisco12345

interface g0/0/0

ip address 209.165.200.2 255.255.255.0

ipv6 address fe80::2:1 link-local

ipv6 address 2001:db8:200::2/64

no shutdown

exit

interface g0/0/1

ip address 209.165.201.2 255.255.255.0

ipv6 address fe80::2:2 link-local

ipv6 address 2001:db8:201::2/64

no shutdown

exit

interface loopback 0

ip address 172.16.0.1 255.255.255.0

ipv6 address fe80::2:3 link-local

ipv6 address 2001:db8:172::1/64

no shutdown

exit

interface loopback 1

ip address 209.165.224.1 255.255.255.0

ipv6 address fe80::2:4 link-local

ipv6 address 2001:db8:224::1/64

no shutdown

exit

line con 0

logging synchronous

exec-timeout 0 0

exit

line vty 0 4

login local

transport input telnet

exec-timeout 5 0

exit

alias exec reset.now tclsh flash:/enarsi/reset.tcl

end

Router R3

hostname R3

no ip domain lookup

ipv6 unicast-routing

banner motd # This is R3, ENARSI SA Part 1 #

enable secret cisco12345

username admin privilege 15 algorithm-type scrypt secret cisco12345

interface g0/0/0

ip address 209.165.201.1 255.255.255.0

ipv6 address fe80::3:1 link-local

ipv6 address 2001:db8:201::1/64

no shutdown

exit

interface g0/0/1

ip address 192.168.241.1 255.255.255.0

ipv6 address fe80::3:2 link-local

ipv6 address 2001:db8:241::1/64

no shutdown

exit

interface s0/1/0

ip address 209.165.202.2 255.255.255.0

ipv6 address fe80::3:3 link-local

ipv6 address 2001:db8:202::2/64

no shutdown

exit

interface s0/1/1

ip address 209.165.203.2 255.255.255.0

ipv6 address fe80::3:4 link-local

ipv6 address 2001:db8:203::2/64

no shutdown

exit

interface loopback 0

ip address 192.168.0.1 255.255.255.0

ipv6 address fe80::3:5 link-local

ipv6 address 2001:db8:192::1/64

no shutdown

exit

interface loopback 1

ip address 192.168.240.1 255.255.255.0

ipv6 address fe80::3:6 link-local

ipv6 address 2001:db8:240::1/64

no shutdown

exit

line con 0

logging synchronous

exec-timeout 0 0

exit

line vty 0 4

login local

transport input telnet

exec-timeout 5 0

exit

alias exec reset.now tclsh flash:/enarsi/reset.tcl

end

Switch D1

hostname D1

no ip domain lookup

ip routing

ipv6 unicast-routing

banner motd # This is D1, ENARSI SA Part 1 #

enable secret cisco12345

username admin privilege 15 algorithm-type scrypt secret cisco12345

vlan 250

name Users

exit

vlan 251

name Servers

exit

interface range g1/0/1-24

switchport mode access

shutdown

interface g1/0/11

no switchport

ip address 10.165.249.2 255.255.255.0

ipv6 address fe80::d1:1 link-local

ipv6 address 2001:db8:249::2/64

no shutdown

exit

interface g1/0/23

switchport mode access

spanning-tree portfast

switchport access vlan 250

no shutdown

exit

interface vlan 250

ip address 10.165.250.1 255.255.255.0

ipv6 address fe80::d1:2 link-local

ipv6 address 2001:db8:24A::1/64

no shutdown

exit

interface vlan 251

ip address 10.165.251.1 255.255.255.0

ipv6 address fe80::d1:3 link-local

ipv6 address 2001:db8:24B::1/64

no shutdown

exit

interface range g1/0/5-6

switchport mode trunk

channel-group 1 mode active

no shutdown

exit

ip dhcp excluded-address 10.165.250.1 10.165.250.5

ip dhcp pool VLAN250DHCP

network 10.165.250.0 255.255.255.0

default-router 10.165.250.1

exit

line con 0

logging synchronous

exec-timeout 0 0

exit

line vty 0 4

login local

transport input telnet

exec-timeout 5 0

exit

alias exec reset.now tclsh flash:/enarsi/reset.tcl

end

Switch D2

hostname D2

no ip domain lookup

ip routing

ipv6 unicast-routing

banner motd # This is D2, ENARSI SA Part 1 #

enable secret cisco12345

username admin privilege 15 algorithm-type scrypt secret cisco12345

vlan 242

name Users

exit

interface range g1/0/1-24

switchport mode access

shutdown

interface g1/0/11

no switchport

ip address 209.165.241.2 255.255.255.0

ipv6 address fe80::d2:1 link-local

ipv6 address 2001:db8:241::2/64

no shutdown

exit

interface g1/0/23

switchport mode access

spanning-tree portfast

switchport access vlan 242

no shutdown

exit

interface g1/0/24

switchport mode access

spanning-tree portfast

switchport access vlan 243

no shutdown

exit

interface vlan 242

ip address 192.168.242.1 255.255.255.0

ipv6 address fe80::d2:2 link-local

ipv6 address 2001:db8:242::1/64

no shutdown

exit

interface vlan 243

ip address 192.168.243.1 255.255.255.0

ipv6 address fe80::d1:3 link-local

ipv6 address 2001:db8:243::1/64

no shutdown

exit

ip dhcp excluded-address 192.168.242.1 192.168.242.5

ip dhcp pool VLAN242DHCP

network 192.168.242.0 255.255.255.0

default-router 192.168.242.1

exit

ip dhcp excluded-address 192.168.243.1 192.168.243.5

ip dhcp pool VLAN243DHCP

network 192.168.243.0 255.255.255.0

default-router 192.168.243.1

exit

line con 0

logging synchronous

exec-timeout 0 0

exit

line vty 0 4

login local

transport input telnet

exec-timeout 5 0

exit

alias exec reset.now tclsh flash:/enarsi/reset.tcl

end

Switch A1

hostname A1

no ip domain lookup

banner motd # This is A1, ENARSI SA Part 1 #

enable secret cisco12345

username admin privilege 15 algorithm-type scrypt secret cisco12345

vlan 251

name Servers

exit

interface range f0/1-24

switchport mode access

shutdown

exit

interface f0/23

switchport mode access

switchport access vlan 250

spanning-tree portfast

no shutdown

exit

interface f0/24

switchport mode access

switchport access vlan 251

spanning-tree portfast

no shutdown

exit

interface vlan 250

ip address 10.165.250.2 255.255.255.0

ipv6 address fe80::a1:1 link-local

ipv6 address 2001:db8:24A::2/64

no shutdown

exit

ip default-gateway 10.165.250.1

interface f0/23

shutdown

exit

interface range f0/1-3

switchport mode trunk

channel-group 1 mode active

no shutdown

exit

line con 0

logging synchronous

exec-timeout 0 0

exit

line vty 0 4

login local

transport input telnet

exec-timeout 5 0

exit

alias exec reset.now tclsh flash:/enarsi/reset.tcl

end

* + - 1. Set the clock on each device to UTC time.
      2. Save the running configuration to startup-config.
      3. Verify the IPv4 and IPv6 configuration on hosts as shown in the Addressing Table. PC2 should be manually configured.

## Configure Routing to Specifications

Implement routing in the network using the following specifications.

**Note**: The enable secret is **cisco12345**. If you must provide a username, the configured username is **admin**.

### Configure R1 and D1 to communicate using Named EIGRP.

* + - 1. Name the process ENARSI-SA and use autonomous system number 1 for both IPv4 and IPv6.
      2. Use the router id 0.4.10.1 for R1 and 0.4.10.2 for D1 with address family IPv4.
      3. Use the router id 0.6.10.1 for R1 and 0.6.10.2 for D1 with address family IPv6.
      4. Advertise individual IPv4 and IPv6 networks attached to R1 and D1. Do not summarize.
      5. Ensure R1 interface G0/0/0 does not send or receive EIGRP updates in either address family.
      6. Ensure D1 will not form an EIGRP adjacency on interface VLAN 250 or interface VLAN 251 in either address family.

**Instructor Note**: Commands used to complete this step on R1 include those shown below. Note that the option exists to use passive-interface default and no passive-interface for specific interfaces, or to use passive-interface on specific interfaces only.

router eigrp ENARSI-SA

address-family ipv4 unicast autonomous-system 1

eigrp router-id 0.4.10.1

network 10.0.0.0

network 10.165.248.0

network 10.165.249.0

exit-address-family

address-family ipv6 unicast autonomous-system 1

eigrp router-id 0.6.10.1

af-interface g0/0/0

shutdown

exit-af-interface

exit-address-family

exit

**Instructor Note**: Commands used to complete this step on D1 include those shown below. Note that the option exists to use passive-interface default and no passive-interface for specific interfaces, or to use passive-interface on specific interfaces only.

router eigrp ENARSI-SA

address-family ipv4 unicast autonomous-system 1

eigrp router-id 0.4.10.2

network 10.165.249.0

network 10.165.250.0

network 10.165.251.0

af-interface vlan 250

passive-interface

exit

af-interface vlan 251

passive-interface

exit

exit-address-family

address-family ipv6 unicast autonomous-system 1

eigrp router-id 0.6.10.2

af-interface vlan 250

passive-interface

exit

af-interface vlan 251

passive-interface

exit

exit-address-family

exit

### Configure R1 to speak BGP for AS 10 using Multi-Protocol BGP.

* + - 1. Configure MP-BGP for AS 10 and disable the default IPv4 behavior.
      2. Use the BGP router-id 4.6.10.1.
      3. Configure neighbor statements as follows:
         1. Establish adjacency with R2 in AS 172 via G0/0/0 using IPv4 and IPv6.
         2. Establish adjacency with R3 in AS 192 via S0/1/0 using IPv4 and IPv6.
         3. Establish adjacency with R3 in AS 192 via S0/1/1 using IPv4 and IPv6.
      4. Activate the neighbors under the appropriate unicast address family.
      5. Advertise all of the individual networks in AS 10. Do not summarize.

**Instructor Note**: Commands used to complete this step include the following:

router bgp 10

no bgp default ipv4-unicast

bgp router-id 4.6.10.1

neighbor 209.165.200.2 remote-as 172

neighbor 209.165.202.2 remote-as 192

neighbor 209.165.203.2 remote-as 192

neighbor 2001:db8:200::2 remote-as 172

neighbor 2001:db8:202::2 remote-as 192

neighbor 2001:db8:203::2 remote-as 192

address-family ipv4 unicast

neighbor 209.165.200.2 activate

neighbor 209.165.202.2 activate

neighbor 209.165.203.2 activate

network 10.165.248.0 mask 255.255.255.0

network 10.165.249.0 mask 255.255.255.0

network 10.165.250.0 mask 255.255.255.0

network 10.165.251.0 mask 255.255.255.0

network 10.0.0.0 mask 255.255.255.0

exit

address-family ipv6 unicast

neighbor 2001:db8:200::2 activate

neighbor 2001:db8:202::2 activate

neighbor 2001:db8:203::2 activate

network 2001:db8:248::/64

network 2001:db8:249::/64

network 2001:db8:24a::/64

network 2001:db8:24b::/64

network 2001:db8:10::/64

exit

exit

### Configure R1 to redistribute BGP into EIGRP.

Configure R1 to redistribute BGP 10 into both EIGRP address families with an appropriate metric.

**Instructor Note**: Commands used to complete this step include those shown below. Note that the option exists to use passive-interface default and no passive-interface for specific interfaces, or to use passive-interface on specific interfaces only.

router eigrp ENARSI-SA

address-family ipv4 unicast autonomous-system 1

topology base

redistribute bgp 10 metric 1000000 10 255 1 1500

exit

exit-address-family

address-family ipv6 unicast autonomous-system 1

topology base

redistribute bgp 10 metric 1000000 10 255 1 1500

exit

exit

### Configure R2 to speak BGP for AS 172 using Multi-Protocol BGP.

* + - 1. Configure static default routes for IPv4 and IPv6 pointed to null0.
      2. Configure MP-BGP for AS 172 and disable the default IPv4 behavior.
      3. Use the BGP router-id 4.6.172.2.
      4. Configure neighbor statements as follows:
         1. Establish adjacency with R1 in AS 10 via G0/0/0 using IPv4 and IPv6.
         2. Establish adjacency with R3 in AS 192 via G0/01 using IPv4 and IPv6.
      5. Activate the neighbors under the appropriate unicast address family.
      6. Advertise all of the individual networks in AS 10. Do not summarize.
         1. For the default routes, use the **network** 0.0.0.0 **mask** 0.0.0.0 and **network** ::/0 commands.

**Instructor Note**: Commands used to complete this step include the following:

ip route 0.0.0.0 0.0.0.0 null0

ipv6 route ::/0 null0

router bgp 172

no bgp default ipv4-unicast

bgp router-id 4.6.172.2

neighbor 209.165.200.1 remote-as 10

neighbor 209.165.201.1 remote-as 192

neighbor 2001:db8:200::1 remote-as 10

neighbor 2001:db8:201::1 remote-as 192

address-family ipv4 unicast

neighbor 209.165.200.1 activate

neighbor 209.165.201.1 activate

network 172.16.0.0 mask 255.255.255.0

network 209.165.224.0

network 0.0.0.0 mask 0.0.0.0

exit

address-family ipv6 unicast

neighbor 2001:db8:200::1 activate

neighbor 2001:db8:201::1 activate

network 2001:db8:172::/64

network 2001:db8:224::/64

network ::/0

exit

exit

### Configure R3 to speak BGP for AS 192 using Multi-Protocol BGP.

* + - 1. Configure MP-BGP for AS 10 and disable the default IPv4 behavior.
      2. Use the BGP router-id 4.6.192.3.
      3. Configure neighbor statements as follows:
         1. Establish adjacency with R2 in AS 172 via G0/0/0 using IPv4 and IPv6.
         2. Establish adjacency with R1 in AS 10 via S0/1/0 using IPv4 and IPv6.
         3. Establish adjacency with R1 in AS 10 via S0/1/1 using IPv4 and IPv6.
      4. Activate the neighbors under the appropriate unicast address family.
      5. Advertise all of the individual networks in AS 192. Do not summarize.

**Instructor Note**: Commands used to complete this step include the following:

router bgp 192

no bgp default ipv4-unicast

bgp router-id 4.6.192.3

neighbor 209.165.201.2 remote-as 172

neighbor 209.165.202.1 remote-as 10

neighbor 209.165.203.1 remote-as 10

neighbor 2001:db8:201::2 remote-as 172

neighbor 2001:db8:202::1 remote-as 10

neighbor 2001:db8:203::1 remote-as 10

address-family ipv4 unicast

neighbor 209.165.201.2 activate

neighbor 209.165.202.1 activate

neighbor 209.165.203.1 activate

network 192.168.240.0

network 192.168.241.0

network 192.168.242.0

network 192.168.243.0

network 192.168.0.0

exit

address-family ipv6 unicast

neighbor 2001:db8:201::2 activate

neighbor 2001:db8:202::1 activate

neighbor 2001:db8:203::1 activate

network 2001:db8:240::/64

network 2001:db8:241::/64

network 2001:db8:242::/64

network 2001:db8:243::/64

network 2001:db8:192::/64

exit

exit

### Configure R3 and D2 to communicate using OSPFv3-Address Families.

* + - 1. Use OSPFv3 process-id number 1 on both R3 and D2.
      2. Use the router id 0.0.192.3 for R3 and 0.0.192.2 for D2.
      3. Configure R3 interfaces Loopback 0 and Loopback 1 as OSPF point-to-point networks for both IPv4 and IPv6.
      4. Advertise individual IPv4 and IPv6 networks attached to R3 and D2. Do not summarize.
      5. Ensure R3 will not form an OSPFv3 adjacency on interface G0/0/0 in either address family.
      6. Ensure D2 will not form an OSPFv3 adjacency on interface VLAN 250 or interface VLAN 251 in either address family.
      7. Redistribute BGP 192 into OSPFv3 in both address families. Do not specify a custom metric or metric-type.

**Instructor Note**: Commands used to complete this step on R3 include those shown below. Note that the option exists to use passive-interface default and no passive-interface for specific interfaces, or to use passive-interface on specific interfaces only.

router ospfv3 1

router-id 0.0.192.3

address-family ipv4 unicast

passive-interface default

no passive-interface g0/0/1

redistribute bgp 192

exit

address-family ipv6 unicast

passive-interface default

no passive-interface g0/0/1

redistribute bgp 192

exit

exit

interface g0/0/1

ospfv3 1 ipv4 area 0

ospfv3 1 ipv6 area 0

exit

interface loopback 0

ip ospf network point-to-point

ipv6 ospf network point-to-point

ospfv3 1 ipv4 area 0

ospfv3 1 ipv6 area 0

exit

interface loopback 1

ip ospf network point-to-point

ipv6 ospf network point-to-point

ospfv3 1 ipv4 area 0

ospfv3 1 ipv6 area 0

exit

**Instructor Note**: Commands used to complete this step on D2 include those shown below. Note that the option exists to use passive-interface default and no passive-interface for specific interfaces, or to use passive-interface on specific interfaces only.

router ospfv3 1

router-id 0.0.192.2

address-family ipv4 unicast

passive-interface default

no passive-interface g1/0/11

exit

address-family ipv6 unicast

passive-interface default

no passive-interface g1/0/11

exit

exit

interface g1/0/11

ospfv3 1 ipv4 area 0

ospfv3 1 ipv6 area 0

exit

interface vlan 242

ospfv3 1 ipv4 area 0

ospfv3 1 ipv6 area 0

exit

interface vlan 243

ospfv3 1 ipv4 area 0

ospfv3 1 ipv6 area 0

exit

end

### Verify Operation.

* + - 1. BGP path selection should follow the shortest AS path in all cases.
         1. Traffic moving from R1 to R3 networks should cross a serial interface.
         2. Traffic moving from R1 to R2 or R3 to R2 should cross the GigabitEthernet interfaces.
      2. Because there is no security in place, each host should be able to ping every other host and device on the network.

# 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.

End of document

# Device Configs – Final

# Router R1

R1# **show run**

Building configuration...

Current configuration : 5800 bytes

!

version 16.9

service timestamps debug datetime msec

service timestamps log datetime msec

platform qfp utilization monitor load 80

no platform punt-keepalive disable-kernel-core

!

hostname R1

!

boot-start-marker

boot-end-marker

!

enable secret 5 $1$i3nW$PAsFaNnxVNL7g8dsGnSx./

!

no aaa new-model

!

no ip domain lookup

!

login on-success log

!

subscriber templating

!

ipv6 unicast-routing

multilink bundle-name authenticated

!

diagnostic bootup level minimal

!

spanning-tree extend system-id

!

username admin privilege 15 secret 9 $9$ZgwX5rg1yDMSH2$opyuVtGAnPj7f54TPAs78Qs3I7T2ivhLXp9NES4wQnk

!

redundancy

mode none

!

interface Loopback0

ip address 10.0.0.1 255.255.255.0

ipv6 address FE80::1:5 link-local

ipv6 address 2001:DB8:10::1/64

!

interface Loopback1

ip address 10.165.248.1 255.255.255.0

ipv6 address FE80::1:6 link-local

ipv6 address 2001:DB8:248::1/64

!

interface GigabitEthernet0/0/0

ip address 209.165.200.1 255.255.255.0

negotiation auto

ipv6 address FE80::1:1 link-local

ipv6 address 2001:DB8:200::1/64

!

interface GigabitEthernet0/0/1

ip address 10.165.249.1 255.255.255.0

negotiation auto

ipv6 address FE80::1:2 link-local

ipv6 address 2001:DB8:249::1/64

!

interface Serial0/1/0

ip address 209.165.202.1 255.255.255.0

ipv6 address FE80::1:3 link-local

ipv6 address 2001:DB8:202::1/64

!

interface Serial0/1/1

ip address 209.165.203.1 255.255.255.0

ipv6 address FE80::1:4 link-local

ipv6 address 2001:DB8:203::1/64

!

router eigrp ENARSI-SA

!

address-family ipv4 unicast autonomous-system 1

!

topology base

redistribute bgp 10 metric 1000000 10 255 1 1500

exit-af-topology

network 10.0.0.0

eigrp router-id 0.4.10.1

exit-address-family

!

address-family ipv6 unicast autonomous-system 1

!

af-interface GigabitEthernet0/0/0

shutdown

exit-af-interface

!

topology base

redistribute bgp 10 metric 1000000 10 255 1 1500

exit-af-topology

eigrp router-id 0.6.10.1

exit-address-family

!

router bgp 10

bgp router-id 4.6.10.1

bgp log-neighbor-changes

no bgp default ipv4-unicast

neighbor 2001:DB8:200::2 remote-as 172

neighbor 2001:DB8:202::2 remote-as 192

neighbor 2001:DB8:203::2 remote-as 192

neighbor 209.165.200.2 remote-as 172

neighbor 209.165.202.2 remote-as 192

neighbor 209.165.203.2 remote-as 192

!

address-family ipv4

network 10.0.0.0 mask 255.255.255.0

network 10.165.248.0 mask 255.255.255.0

network 10.165.249.0 mask 255.255.255.0

network 10.165.250.0 mask 255.255.255.0

network 10.165.251.0 mask 255.255.255.0

neighbor 209.165.200.2 activate

neighbor 209.165.202.2 activate

neighbor 209.165.203.2 activate

exit-address-family

!

address-family ipv6

network 2001:DB8:10::/64

network 2001:DB8:248::/64

network 2001:DB8:249::/64

network 2001:DB8:24A::/64

network 2001:DB8:24B::/64

neighbor 2001:DB8:200::2 activate

neighbor 2001:DB8:202::2 activate

neighbor 2001:DB8:203::2 activate

exit-address-family

!

ip forward-protocol nd

ip http server

ip http authentication local

ip http secure-server

!

control-plane

!

banner motd ^C This is R1, ENARSI SA Part 1 ^C

alias exec reset.now tclsh flash:/enarsi/reset.tcl

!

line con 0

exec-timeout 0 0

logging synchronous

transport input none

stopbits 1

line aux 0

stopbits 1

line vty 0 4

exec-timeout 5 0

login local

transport input telnet

!

end

# Router R2

R2# **show run**

Building configuration...

Current configuration : 4762 bytes

!

version 16.9

service timestamps debug datetime msec

service timestamps log datetime msec

platform qfp utilization monitor load 80

no platform punt-keepalive disable-kernel-core

!

hostname R2

!

boot-start-marker

boot-end-marker

!

enable secret 5 $1$0hz6$/cF4u1wUcY9ssD.S/Npo41

!

no aaa new-model

!

no ip domain lookup

!

login on-success log

!

subscriber templating

!

ipv6 unicast-routing

multilink bundle-name authenticated

!

diagnostic bootup level minimal

!

spanning-tree extend system-id

!

username admin privilege 15 secret 9 $9$.JcOt7LrpkBWq0$qT8H9p97PyDqEJ1VRZrmj8mp2L9wOvmnUei09Nl6M7U

!

redundancy

mode none

!

interface Loopback0

ip address 172.16.0.1 255.255.255.0

ipv6 address FE80::2:3 link-local

ipv6 address 2001:DB8:172::1/64

!

interface Loopback1

ip address 209.165.224.1 255.255.255.0

ipv6 address FE80::2:4 link-local

ipv6 address 2001:DB8:224::1/64

!

interface GigabitEthernet0/0/0

ip address 209.165.200.2 255.255.255.0

negotiation auto

ipv6 address FE80::2:1 link-local

ipv6 address 2001:DB8:200::2/64

!

interface GigabitEthernet0/0/1

ip address 209.165.201.2 255.255.255.0

negotiation auto

ipv6 address FE80::2:2 link-local

ipv6 address 2001:DB8:201::2/64

!

router bgp 172

bgp router-id 4.6.172.2

bgp log-neighbor-changes

no bgp default ipv4-unicast

neighbor 2001:DB8:200::1 remote-as 10

neighbor 2001:DB8:201::1 remote-as 192

neighbor 209.165.200.1 remote-as 10

neighbor 209.165.201.1 remote-as 192

!

address-family ipv4

network 0.0.0.0

network 172.16.0.0 mask 255.255.255.0

network 209.165.224.0

neighbor 209.165.200.1 activate

neighbor 209.165.201.1 activate

exit-address-family

!

address-family ipv6

network ::/0

network 2001:DB8:172::/64

network 2001:DB8:224::/64

neighbor 2001:DB8:200::1 activate

neighbor 2001:DB8:201::1 activate

exit-address-family

!

ip forward-protocol nd

ip http server

ip http authentication local

ip http secure-server

ip route 0.0.0.0 0.0.0.0 Null0

!

ipv6 route ::/0 Null0

!

control-plane

!

banner motd ^C This is R2, ENARSI SA Part 1 ^C

alias exec reset.now tclsh flash:/enarsi/reset.tcl

!

line con 0

exec-timeout 0 0

logging synchronous

transport input none

stopbits 1

line aux 0

stopbits 1

line vty 0 4

exec-timeout 5 0

login local

transport input telnet

!

end

# Router R3

R3# **show run**

Building configuration...

Current configuration : 5863 bytes

!

version 16.9

service timestamps debug datetime msec

service timestamps log datetime msec

platform qfp utilization monitor load 80

no platform punt-keepalive disable-kernel-core

!

hostname R3

!

boot-start-marker

boot-end-marker

!

enable secret 5 $1$XU2w$tRZEn5rFHZG3QuOJ5hNAm.

!

no aaa new-model

!

no ip domain lookup

!

login on-success log

!

subscriber templating

!

ipv6 unicast-routing

multilink bundle-name authenticated

!

diagnostic bootup level minimal

!

spanning-tree extend system-id

!

username admin privilege 15 secret 9 $9$rgAPMVhFfFn7Cu$9S64DkcIhU2PNDhSoSkg.HRSQRya3H2TWOgYKkWwGeU

!

redundancy

mode none

!

interface Loopback0

ip address 192.168.0.1 255.255.255.0

ip ospf network point-to-point

ipv6 address FE80::3:5 link-local

ipv6 address 2001:DB8:192::1/64

ospfv3 1 ipv4 area 0

ospfv3 1 ipv6 area 0

ospfv3 1 ipv6 network point-to-point

!

interface Loopback1

ip address 192.168.240.1 255.255.255.0

ip ospf network point-to-point

ipv6 address FE80::3:6 link-local

ipv6 address 2001:DB8:240::1/64

ospfv3 1 ipv4 area 0

ospfv3 1 ipv6 area 0

ospfv3 1 ipv6 network point-to-point

!

interface GigabitEthernet0/0/0

ip address 209.165.201.1 255.255.255.0

negotiation auto

ipv6 address FE80::3:1 link-local

ipv6 address 2001:DB8:201::1/64

!

interface GigabitEthernet0/0/1

ip address 192.168.241.1 255.255.255.0

negotiation auto

ipv6 address FE80::3:2 link-local

ipv6 address 2001:DB8:241::1/64

ospfv3 1 ipv6 area 0

ospfv3 1 ipv4 area 0

!

interface Serial0/1/0

ip address 209.165.202.2 255.255.255.0

ipv6 address FE80::3:3 link-local

ipv6 address 2001:DB8:202::2/64

!

interface Serial0/1/1

ip address 209.165.203.2 255.255.255.0

ipv6 address FE80::3:4 link-local

ipv6 address 2001:DB8:203::2/64

!

router ospfv3 1

router-id 0.0.192.3

!

address-family ipv4 unicast

redistribute bgp 192

passive-interface default

no passive-interface GigabitEthernet0/0/1

exit-address-family

!

address-family ipv6 unicast

passive-interface default

no passive-interface GigabitEthernet0/0/1

redistribute bgp 192

exit-address-family

!

router bgp 192

bgp router-id 4.6.192.3

bgp log-neighbor-changes

no bgp default ipv4-unicast

neighbor 2001:DB8:201::2 remote-as 172

neighbor 2001:DB8:202::1 remote-as 10

neighbor 2001:DB8:203::1 remote-as 10

neighbor 209.165.201.2 remote-as 172

neighbor 209.165.202.1 remote-as 10

neighbor 209.165.203.1 remote-as 10

!

address-family ipv4

network 192.168.0.0

network 192.168.240.0

network 192.168.241.0

network 192.168.242.0

network 192.168.243.0

neighbor 209.165.201.2 activate

neighbor 209.165.202.1 activate

neighbor 209.165.203.1 activate

exit-address-family

!

address-family ipv6

network 2001:DB8:192::/64

network 2001:DB8:240::/64

network 2001:DB8:241::/64

network 2001:DB8:242::/64

network 2001:DB8:243::/64

neighbor 2001:DB8:201::2 activate

neighbor 2001:DB8:202::1 activate

neighbor 2001:DB8:203::1 activate

exit-address-family

!

ip forward-protocol nd

ip http server

ip http authentication local

ip http secure-server

!

control-plane

!

banner motd ^C This is R3, ENARSI SA Part 1 ^C

alias exec reset.now tclsh flash:/enarsi/reset.tcl

!

line con 0

exec-timeout 0 0

logging synchronous

transport input none

stopbits 1

line aux 0

stopbits 1

line vty 0 4

exec-timeout 5 0

login local

transport input telnet

!

end

# Switch D1

D1# **show run**

Building configuration...

Current configuration : 6056 bytes

!

version 16.9

no service pad

service timestamps debug datetime msec

service timestamps log datetime msec

no platform punt-keepalive disable-kernel-core

!

hostname D1

!

vrf definition Mgmt-vrf

!

address-family ipv4

exit-address-family

!

address-family ipv6

exit-address-family

!

enable secret 5 $1$h1SX$EP/9YI.JI5Ezo9xqSeFPH0

!

no aaa new-model

switch 1 provision ws-c3650-24td

!

ip routing

!

no ip domain lookup

ip dhcp excluded-address 10.165.250.1 10.165.250.5

!

ip dhcp pool VLAN250DHCP

network 10.165.250.0 255.255.255.0

default-router 10.165.250.1

!

login on-success log

ipv6 unicast-routing

!

license boot level ipservicesk9

!

diagnostic bootup level minimal

!

spanning-tree mode rapid-pvst

spanning-tree extend system-id

!

username admin privilege 15 secret 9 $9$TST/qp2wBgPRPE$0zzcVAgyPgDETLaDsVKxNG2QjvXU/iplLQC8EFInbNc

!

redundancy

mode sso

!

transceiver type all

monitoring

!

class-map match-any system-cpp-police-topology-control

description Topology control

class-map match-any system-cpp-police-sw-forward

description Sw forwarding, L2 LVX data, LOGGING

class-map match-any system-cpp-default

description Inter FED, EWLC control, EWLC data

class-map match-any system-cpp-police-sys-data

description Learning cache ovfl, High Rate App, Exception, EGR Exception, NFLSAMPLED DATA, RPF Failed

class-map match-any system-cpp-police-punt-webauth

description Punt Webauth

class-map match-any system-cpp-police-l2lvx-control

description L2 LVX control packets

class-map match-any system-cpp-police-forus

description Forus Address resolution and Forus traffic

class-map match-any system-cpp-police-multicast-end-station

description MCAST END STATION

class-map match-any system-cpp-police-multicast

description Transit Traffic and MCAST Data

class-map match-any system-cpp-police-l2-control

description L2 control

class-map match-any system-cpp-police-dot1x-auth

description DOT1X Auth

class-map match-any system-cpp-police-data

description ICMP redirect, ICMP\_GEN and BROADCAST

class-map match-any system-cpp-police-stackwise-virt-control

description Stackwise Virtual

class-map match-any non-client-nrt-class

class-map match-any system-cpp-police-routing-control

description Routing control and Low Latency

class-map match-any system-cpp-police-protocol-snooping

description Protocol snooping

class-map match-any system-cpp-police-dhcp-snooping

description DHCP snooping

class-map match-any system-cpp-police-system-critical

description System Critical and Gold Pkt

!

policy-map system-cpp-policy

!

interface Port-channel1

switchport mode trunk

!

interface GigabitEthernet0/0

vrf forwarding Mgmt-vrf

no ip address

negotiation auto

!

interface GigabitEthernet1/0/1

switchport mode access

shutdown

!

interface GigabitEthernet1/0/2

switchport mode access

shutdown

!

interface GigabitEthernet1/0/3

switchport mode access

shutdown

!

interface GigabitEthernet1/0/4

switchport mode access

shutdown

!

interface GigabitEthernet1/0/5

switchport mode trunk

channel-group 1 mode active

!

interface GigabitEthernet1/0/6

switchport mode trunk

channel-group 1 mode active

!

interface GigabitEthernet1/0/7

switchport mode access

shutdown

!

interface GigabitEthernet1/0/8

switchport mode access

shutdown

!

interface GigabitEthernet1/0/9

switchport mode access

shutdown

!

interface GigabitEthernet1/0/10

switchport mode access

shutdown

!

interface GigabitEthernet1/0/11

no switchport

ip address 10.165.249.2 255.255.255.0

ipv6 address FE80::D1:1 link-local

ipv6 address 2001:DB8:249::2/64

!

interface GigabitEthernet1/0/12

switchport mode access

shutdown

!

interface GigabitEthernet1/0/13

switchport mode access

shutdown

!

interface GigabitEthernet1/0/14

switchport mode access

shutdown

!

interface GigabitEthernet1/0/15

switchport mode access

shutdown

!

interface GigabitEthernet1/0/16

switchport mode access

shutdown

!

interface GigabitEthernet1/0/17

switchport mode access

shutdown

!

interface GigabitEthernet1/0/18

switchport mode access

shutdown

!

interface GigabitEthernet1/0/19

switchport mode access

shutdown

!

interface GigabitEthernet1/0/20

switchport mode access

shutdown

!

interface GigabitEthernet1/0/21

switchport mode access

shutdown

!

interface GigabitEthernet1/0/22

switchport mode access

shutdown

!

interface GigabitEthernet1/0/23

switchport access vlan 250

switchport mode access

spanning-tree portfast

!

interface GigabitEthernet1/0/24

switchport mode access

shutdown

!

interface GigabitEthernet1/1/1

!

interface GigabitEthernet1/1/2

!

interface TenGigabitEthernet1/1/3

!

interface TenGigabitEthernet1/1/4

!

interface Vlan1

no ip address

!

interface Vlan250

ip address 10.165.250.1 255.255.255.0

ipv6 address FE80::D1:2 link-local

ipv6 address 2001:DB8:24A::1/64

!

interface Vlan251

ip address 10.165.251.1 255.255.255.0

ipv6 address FE80::D1:3 link-local

ipv6 address 2001:DB8:24B::1/64

!

router eigrp ENARSI-SA

!

address-family ipv4 unicast autonomous-system 1

!

af-interface Vlan250

passive-interface

exit-af-interface

!

af-interface Vlan251

passive-interface

exit-af-interface

!

topology base

exit-af-topology

network 10.0.0.0

eigrp router-id 0.4.10.2

exit-address-family

!

address-family ipv6 unicast autonomous-system 1

!

af-interface Vlan250

passive-interface

exit-af-interface

!

af-interface Vlan251

passive-interface

exit-af-interface

!

topology base

exit-af-topology

eigrp router-id 0.6.10.2

exit-address-family

!

ip forward-protocol nd

ip http server

ip http secure-server

!

control-plane

service-policy input system-cpp-policy

!

banner motd ^C This is D1, ENARSI SA Part 1 ^C

alias exec reset.now tclsh flash:/enarsi/reset.tcl

!

line con 0

exec-timeout 0 0

logging synchronous

stopbits 1

line aux 0

stopbits 1

line vty 0 4

exec-timeout 5 0

login local

transport input telnet

line vty 5 15

login

!

end

# Switch D2

D2# **show run**

Building configuration...

Current configuration : 8537 bytes

!

version 16.9

no service pad

service timestamps debug datetime msec

service timestamps log datetime msec

! Call-home is enabled by Smart-Licensing.

service call-home

no platform punt-keepalive disable-kernel-core

!

hostname D2

!

vrf definition Mgmt-vrf

!

address-family ipv4

exit-address-family

!

address-family ipv6

exit-address-family

!

enable secret 5 $1$3nks$rSkbJF9PTw7PcUVSoXbsh0

!

no aaa new-model

switch 1 provision ws-c3650-24td

!

ip routing

!

no ip domain lookup

ip dhcp excluded-address 192.168.242.1 192.168.242.5

ip dhcp excluded-address 192.168.243.1 192.168.243.5

!

ip dhcp pool VLAN242DHCP

network 192.168.242.0 255.255.255.0

default-router 192.168.242.1

!

ip dhcp pool VLAN243DHCP

network 192.168.243.0 255.255.255.0

default-router 192.168.243.1

!

login on-success log

ipv6 unicast-routing

!

license boot level ipservicesk9

!

diagnostic bootup level minimal

!

spanning-tree mode rapid-pvst

spanning-tree extend system-id

!

username admin privilege 15 secret 9 $9$BtIeOeiXAsJMHE$kIykk/3Wal3iCUvdXiJRay1Oh7MAw5nuwRMWuTpBYCg

!

redundancy

mode sso

!

transceiver type all

monitoring

!

class-map match-any system-cpp-police-topology-control

description Topology control

class-map match-any system-cpp-police-sw-forward

description Sw forwarding, L2 LVX data, LOGGING

class-map match-any system-cpp-default

description Inter FED, EWLC control, EWLC data

class-map match-any system-cpp-police-sys-data

description Learning cache ovfl, High Rate App, Exception, EGR Exception, NFLSAMPLED DATA, RPF Failed

class-map match-any system-cpp-police-punt-webauth

description Punt Webauth

class-map match-any system-cpp-police-l2lvx-control

description L2 LVX control packets

class-map match-any system-cpp-police-forus

description Forus Address resolution and Forus traffic

class-map match-any system-cpp-police-multicast-end-station

description MCAST END STATION

class-map match-any system-cpp-police-multicast

description Transit Traffic and MCAST Data

class-map match-any system-cpp-police-l2-control

description L2 control

class-map match-any system-cpp-police-dot1x-auth

description DOT1X Auth

class-map match-any system-cpp-police-data

description ICMP redirect, ICMP\_GEN and BROADCAST

class-map match-any system-cpp-police-stackwise-virt-control

description Stackwise Virtual

class-map match-any non-client-nrt-class

class-map match-any system-cpp-police-routing-control

description Routing control and Low Latency

class-map match-any system-cpp-police-protocol-snooping

description Protocol snooping

class-map match-any system-cpp-police-dhcp-snooping

description DHCP snooping

class-map match-any system-cpp-police-system-critical

description System Critical and Gold Pkt

!

policy-map system-cpp-policy

!

interface GigabitEthernet0/0

vrf forwarding Mgmt-vrf

no ip address

negotiation auto

!

interface GigabitEthernet1/0/1

switchport mode access

shutdown

!

interface GigabitEthernet1/0/2

switchport mode access

shutdown

!

interface GigabitEthernet1/0/3

switchport mode access

shutdown

!

interface GigabitEthernet1/0/4

switchport mode access

shutdown

!

interface GigabitEthernet1/0/5

switchport mode access

shutdown

!

interface GigabitEthernet1/0/6

switchport mode access

shutdown

!

interface GigabitEthernet1/0/7

switchport mode access

shutdown

!

interface GigabitEthernet1/0/8

switchport mode access

shutdown

!

interface GigabitEthernet1/0/9

switchport mode access

shutdown

!

interface GigabitEthernet1/0/10

switchport mode access

shutdown

!

interface GigabitEthernet1/0/11

no switchport

ip address 209.165.241.2 255.255.255.0

ipv6 address FE80::D2:1 link-local

ipv6 address 2001:DB8:241::2/64

ospfv3 1 ipv6 area 0

ospfv3 1 ipv4 area 0

!

interface GigabitEthernet1/0/12

switchport mode access

shutdown

!

interface GigabitEthernet1/0/13

switchport mode access

shutdown

!

interface GigabitEthernet1/0/14

switchport mode access

shutdown

!

interface GigabitEthernet1/0/15

switchport mode access

shutdown

!

interface GigabitEthernet1/0/16

switchport mode access

shutdown

!

interface GigabitEthernet1/0/17

switchport mode access

shutdown

!

interface GigabitEthernet1/0/18

switchport mode access

shutdown

!

interface GigabitEthernet1/0/19

switchport mode access

shutdown

!

interface GigabitEthernet1/0/20

switchport mode access

shutdown

!

interface GigabitEthernet1/0/21

switchport mode access

shutdown

!

interface GigabitEthernet1/0/22

switchport mode access

shutdown

!

interface GigabitEthernet1/0/23

switchport access vlan 242

switchport mode access

spanning-tree portfast

!

interface GigabitEthernet1/0/24

switchport access vlan 243

switchport mode access

spanning-tree portfast

!

interface GigabitEthernet1/1/1

!

interface GigabitEthernet1/1/2

!

interface TenGigabitEthernet1/1/3

!

interface TenGigabitEthernet1/1/4

!

interface Vlan1

no ip address

!

interface Vlan242

ip address 192.168.242.1 255.255.255.0

ipv6 address FE80::D2:2 link-local

ipv6 address 2001:DB8:242::1/64

ospfv3 1 ipv6 area 0

ospfv3 1 ipv4 area 0

!

interface Vlan243

ip address 192.168.243.1 255.255.255.0

ipv6 address FE80::D1:3 link-local

ipv6 address 2001:DB8:243::1/64

ospfv3 1 ipv6 area 0

ospfv3 1 ipv4 area 0

!

router ospfv3 1

router-id 0.0.192.2

!

address-family ipv4 unicast

passive-interface default

no passive-interface GigabitEthernet1/0/11

exit-address-family

!

address-family ipv6 unicast

passive-interface default

no passive-interface GigabitEthernet1/0/11

exit-address-family

!

ip forward-protocol nd

ip http server

ip http secure-server

!

control-plane

service-policy input system-cpp-policy

!

banner motd ^C This is D2, ENARSI SA Part 1 ^C

alias exec reset.now tclsh flash:/enarsi/reset.tcl

!

line con 0

exec-timeout 0 0

logging synchronous

stopbits 1

line aux 0

stopbits 1

line vty 0 4

exec-timeout 5 0

login local

transport input telnet

line vty 5 15

login

!

end

# Switch A1

A1# **show run**

Building configuration...

Current configuration : 2913 bytes

!

version 15.2

no service pad

service timestamps debug datetime msec

service timestamps log datetime msec

no service password-encryption

!

hostname A1

!

boot-start-marker

boot-end-marker

!

enable secret 5 $1$bzXo$MB8eSj50SJX0CYl0asS/X.

!

username admin privilege 15 secret 9 $9$0q7QXDhijplHc1$sUT0sCoRPpUoTTIxokrQb3j9VGMiOd/w3RdCLZirVJQ

no aaa new-model

system mtu routing 1500

!

no ip domain-lookup

!

spanning-tree mode rapid-pvst

spanning-tree extend system-id

!

vlan internal allocation policy ascending

!

!

interface Port-channel1

switchport mode trunk

!

interface FastEthernet0/1

switchport mode trunk

channel-group 1 mode active

!

interface FastEthernet0/2

switchport mode trunk

channel-group 1 mode active

!

interface FastEthernet0/3

switchport mode trunk

channel-group 1 mode active

!

interface FastEthernet0/4

switchport mode access

shutdown

!

interface FastEthernet0/5

switchport mode access

shutdown

!

interface FastEthernet0/6

switchport mode access

shutdown

!

interface FastEthernet0/7

switchport mode access

shutdown

!

interface FastEthernet0/8

switchport mode access

shutdown

!

interface FastEthernet0/9

switchport mode access

shutdown

!

interface FastEthernet0/10

switchport mode access

shutdown

!

interface FastEthernet0/11

switchport mode access

shutdown

!

interface FastEthernet0/12

switchport mode access

shutdown

!

interface FastEthernet0/13

switchport mode access

shutdown

!

interface FastEthernet0/14

switchport mode access

shutdown

!

interface FastEthernet0/15

switchport mode access

shutdown

!

interface FastEthernet0/16

switchport mode access

shutdown

!

interface FastEthernet0/17

switchport mode access

shutdown

!

interface FastEthernet0/18

switchport mode access

shutdown

!

interface FastEthernet0/19

switchport mode access

shutdown

!

interface FastEthernet0/20

switchport mode access

shutdown

!

interface FastEthernet0/21

switchport mode access

shutdown

!

interface FastEthernet0/22

switchport mode access

shutdown

!

interface FastEthernet0/23

switchport access vlan 250

switchport mode access

shutdown

spanning-tree portfast edge

!

interface FastEthernet0/24

switchport access vlan 251

switchport mode access

spanning-tree portfast edge

!

interface GigabitEthernet0/1

!

interface GigabitEthernet0/2

!

interface Vlan1

no ip address

!

interface Vlan250

ip address 10.165.250.2 255.255.255.0

ipv6 address FE80::A1:1 link-local

ipv6 address 2001:DB8:24A::2/64

!

ip default-gateway 10.165.250.1

ip http server

ip http secure-server

!

banner motd ^C This is A1, ENARSI SA Part 1 ^C

alias exec reset.now tclsh flash:/enarsi/reset.tcl

!

line con 0

exec-timeout 0 0

logging synchronous

line vty 0 4

exec-timeout 5 0

login local

transport input telnet

line vty 5 15

login

!

end