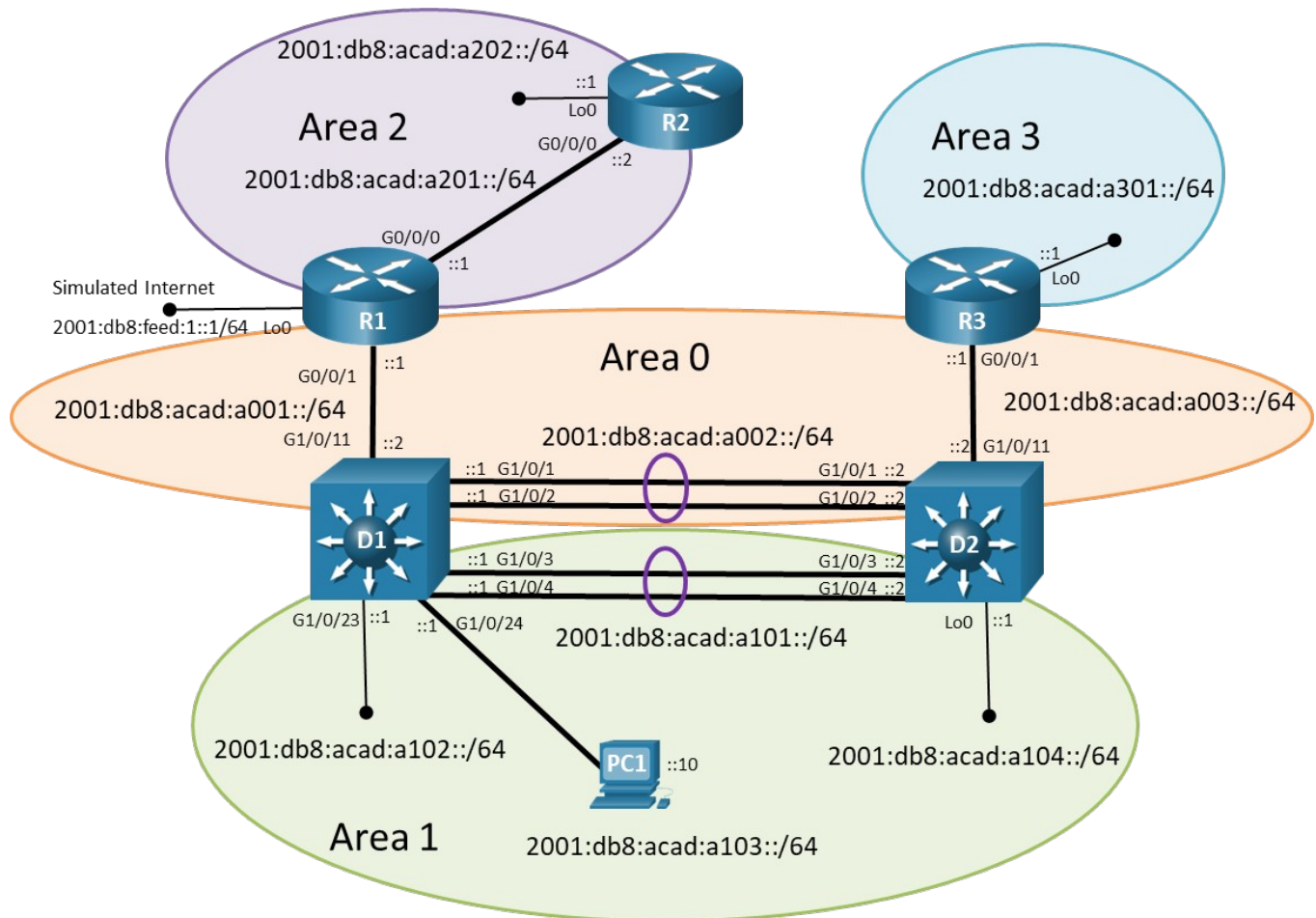![Cisco Networking Academy logo]

Lab - Troubleshoot OSPFv3 (Instructor Version)

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

Topology

Addressing Table

Device	Interface	IPv6 Address	Link-Local
R1	G0/0/0	2001:db8:acad:a201::1/64	fe80::a201:1
	G0/0/1	2001:db8:acad:a001::1/64	fe80::a001:1
	Lo1	2001:db8:feed:1::1/64	fe80::1:1
R2	G0/0/0	2001:db8:acad:a201::2/64	fe80::a201:2
	Lo1	2001:db8:acad:a202::1/64	fe80::a202:1
R3	G0/0/1	2001:db8:acad:a003::1/64	fe80::a003:1
	Lo1	2001:db8:acad:a301::1/64	fe80::a301:1

Device	Interface	IPv6 Address	Link-Local
D1	G1/0/1 (Po1)	2001:db8:acad:a002::1/64	fe80::a002:1
	G1/0/2 (Po1)	2001:db8:acad:a002::1/64	fe80::a002:1
	G1/0/3 (Po2)	2001:db8:acad:a101::1/64	fe80::a101:1
	G1/0/4 (Po2)	2001:db8:acad:a101::1/64	fe80::a101:1
	G1/0/5	2001:db8:acad:a103::1/64	fe80::a103:1
	G1/0/11	2001:db8:acad:a001::2/64	fe80::a001:2
	G1/0/23	2001:db8:acad:a102::1/64	fe80::a102:1
D2	G1/0/1 (Po1)	2001:db8:acad:a002::2/64	fe80::a002:2
	G1/0/2 (Po1)	2001:db8:acad:a002::2/64	fe80::a002:2
	G1/0/3 (Po2)	2001:db8:acad:a101::2/64	fe80::a101:2
	G1/0/4 (Po2)	2001:db8:acad:a101::2/64	fe80::a101:2
	G1/0/11	2001:db8:acad:a003::2/64	fe80::a003:2
	Lo0	2001:db8:acad:a104::1/64	fe80::a104:1
PC1	N/A	SLAAC	SLAAC

Note: To make it easier to recognize IPv6 prefixes, familiarize yourself with the IPv6 GUA and LLA address formats.

o **GUA**: The GUA has a 16-bit subnet-ID, a<area-id>xx ("a" for area). For example, subnet-ID a201 is area 2, network 01.

o **LLA**: Following best practice the LLA address is unique on each interface. The LLA interface-ID uses the GUA subnet-ID:interface-ID for the last 64 bits. For example, fe80::a201:1 has an LLA interface-ID a201 (the subnet-ID of the GUA) and :1 (the Interface ID of the GUA).

Objectives

Troubleshoot network issues related to the configuration and operation of OSPFv3.

Background / Scenario

Although the topology has a limited number of routers, you should use the appropriate troubleshooting commands to help find and solve the problems in the three trouble tickets as if this were a much more complex topology with many more routers and networks.

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 3650 with Cisco IOS XE Release 16.9.4 (universalk9 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 devices 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 10.1.2.1

Scenario:

Your University network has migrated to IPv6-only internally and is using multiarea OSPFv3 address families. Recently your team configured all the necessary devices for this migration, with different people responsible for configuring different parts of the network.

During testing and validation, the network team noticed that routers are not showing the 2001:db8:acad:a202::/64 prefix in their routing tables.

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	`copy flash:/enarsi/10.1.2.1-r1-config.txt run`
R2	`copy flash:/enarsi/10.1.2.1-r2-config.txt run`
R3	`copy flash:/enarsi/10.1.2.1-r3-config.txt run`
D1	`copy flash:/enarsi/10.1.2.1-d1-config.txt run`
D2	`copy flash:/enarsi/10.1.2.1-d2-config.txt run`

- All routers should have the 2001:db8:acad:a202::/64 network in their routing tables.
- All devices should be able to ping 2001:db8:acad:a202::2/64.
- When 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> #
- 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.

Part 2: Trouble Ticket 10.1.2.2

Scenario:

After a regularly scheduled downtime for maintenance and IOS upgrades, users started reporting to the helpdesk that there is no access to the IPv6 prefix in area 3. Although there are backups for all device configurations it is suspected that there some of the backups might not have been correct.

You have been tasked to find and resolve the issue with reaching the IPv6 prefix in area 3.

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

Device	Command
R1	`copy flash:/enarsi/10.1.2.2-r1-config.txt run`
R2	`copy flash:/enarsi/10.1.2.2-r2-config.txt run`
R3	`copy flash:/enarsi/10.1.2.2-r3-config.txt run`
D1	`copy flash:/enarsi/10.1.2.2-d1-config.txt run`
D2	`copy flash:/enarsi/10.1.2.2-d2-config.txt run`

- All routers should have the 2001:db8:acad:a301::/64 network in their routing tables.

- All devices should be able to ping 2001:db8:acad:a301::1/64.

- When 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. Router R3 was not configured with an OSPFv3 router ID. Because R3 does not have any interfaces with IPv4 addresses, the OSPF process was unable to create a 32-bit router ID.

The commands used to fix these errors should be:

```
R3(config-router)# router ospfv3 1
R3(config-router)# address-family ipv6 unicast
R3(config-router-af)# router-id 3.3.3.3
```

Part 3: Trouble Ticket 10.1.2.3

Scenario:

Network technicians recently installed a new router, R2 to area 2. However, during the verification phase the technicians are reporting that the other routers are not including the 2001:db8:acad:a202::/64 prefix in their routing tables. They call you for assistance.

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/10.1.2.3-r1-config.txt run`
R2	`copy flash:/enarsi/10.1.2.3-r2-config.txt run`
R3	`copy flash:/enarsi/10.1.2.3-r3-config.txt run`
D1	`copy flash:/enarsi/10.1.2.3-d1-config.txt run`
D2	`copy flash:/enarsi/10.1.2.3-d2-config.txt run`

Note: To simulate the link being cut, shutdown the G0/0/1 interface on R3:

- PC1 should be able to ping 2001:db8:acad:a301::1.

- Network 2001:db8:acad:a301::/64 must be in its own area.

- When 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> #

- 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. On R2 the hello-interval is 5 but the dead-interval was not configured. By default, OSPF uses 4 times the hello-interval, which results in 20 seconds for R2. R1 is the adjacent router and is configured with a hello-interval of 5 and a dead-interval of 15.

The commands used to fix these errors should be:

```
R2(config)# inter g 0/0/0
R2(config-if)# ospfv3 dead-interval 15
```

Uploading Configuration Files

Use the commands below to create the configuration files for each trouble ticket in this lab on the lab devices. 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 by default, 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: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/10.1.2.1-r1-config.txt" w+ ] {
hostname R1
banner motd # This is R1, Trouble Ticket 10.1.2.1 #
no ip domain lookup
ipv6 unicast-routing
line con 0
logg sync
exec-time 0 0
exit
inter g 0/0/0
ipv6 add 2001:db8:acad:a201::1/64
ipv6 add fe80::a201:1 link-local
ospfv3 1 ipv6 area 2
no shut
inter g 0/0/1
ipv6 add 2001:db8:acad:a001::1/64
ipv6 add fe80::a001:1 link-local
ospfv3 1 ipv6 area 0
no shut
int lo0
ipv6 add 2001:db8:feed:1::1/64
ipv6 add fe80::1:1 link-local
exit
router ospfv3 1
```

```
address-family ipv6 unicast
router-id 1.1.1.1
exit

alias exec reset.now tclsh flash:/enarsi/reset.tcl
}
tclquit
```

!R1 - Trouble Ticket # 2

```
tclsh
puts [ open "flash:/enarsi/10.1.2.2-r1-config.txt" w+ ] {
hostname R1
banner motd # This is R1, Trouble Ticket 10.1.2.2 #
no ip domain lookup
ipv6 unicast-routing
line con 0
logg sync
exec-time 0 0
exit
inter g 0/0/0
ipv6 add 2001:db8:acad:a201::1/64
ipv6 add fe80::a201:1 link-local
ospfv3 1 ipv6 area 2
no shut
inter g 0/0/1
ipv6 add 2001:db8:acad:a001::1/64
ipv6 add fe80::a001:1 link-local
ospfv3 1 ipv6 area 0
no shut
int lo0
ipv6 add 2001:db8:feed:1::1/64
ipv6 add fe80::1:1 link-local
exit
router ospfv3 1
address-family ipv6 unicast
router-id 1.1.1.1
exit
alias exec reset.now tclsh flash:/enarsi/reset.tcl
}
tclquit
```

!R1 - Trouble Ticket # 3

```
tclsh
puts [ open "flash:/enarsi/10.1.2.3-r1-config.txt" w+ ] {
hostname R1
banner motd # This is R1, Trouble Ticket 10.1.2.3 #
```

```
no ip domain lookup
ipv6 unicast-routing

line con 0
logg sync
exec-time 0 0
exit
inter g 0/0/0
ipv6 add 2001:db8:acad:a201::1/64
ipv6 add fe80::a201:1 link-local
ospfv3 1 ipv6 area 2
ospfv3 hello-interval 5
ospfv3 dead-interval 15
no shut
inter g 0/0/1
ipv6 add 2001:db8:acad:a001::1/64
ipv6 add fe80::a001:1 link-local
ospfv3 1 ipv6 area 0
no shut
int lo0
ipv6 add 2001:db8:feed:1::1/64
ipv6 add fe80::1:1 link-local
exit
router ospfv3 1
address-family ipv6 unicast
router-id 1.1.1.1
exit
alias exec reset.now tclsh flash:/enarsi/reset.tcl
}
tclquit
```

R2 Configuration File Scripts

!R2 - Trouble Ticket # 1

```
tclsh
puts [ open "flash:/enarsi/10.1.2.1-r2-config.txt" w+ ] {
hostname R2
banner motd # This is R2, Trouble Ticket 10.1.2.1 #
no ip domain lookup
ipv6 unicast-routing
line con 0
logg sync
exec-time 0 0
exit
inter g 0/0/0
ipv6 add 2001:db8:acad:a201::2/64
```

```
    ipv6 add fe80::a201:2 link-local
    ipv6 ospf 1 area 2
    no shut
    inter lo 0
    ipv6 add 2001:db8:acad:a202::1/64
    ipv6 add fe80::a202:1 link-local
    ipv6 ospf 1 area 2
    ipv6 ospf network point-to-point
    no shut
    exit
    ipv6 router ospf 1
    router-id 2.2.2.2
    area 2 stub
    exit
    alias exec reset.now tclsh flash:/enarsi/reset.tcl
    }
    tclquit
```

!R2 - Trouble Ticket # 2

```
    tclsh
    puts [ open "flash:/enarsi/10.1.2.2-r2-config.txt" w+ ] {
    hostname R2
    banner motd # This is R2, Trouble Ticket 10.1.2.2 #
    no ip domain lookup
    ipv6 unicast-routing
    line con 0
    logg sync
    exec-time 0 0
    exit
    inter g 0/0/0
    ipv6 add 2001:db8:acad:a201::2/64
    ipv6 add fe80::a201:2 link-local
    ospfv3 1 ipv6 area 2
    no shut
    inter lo 0
    ipv6 add 2001:db8:acad:a202::1/64
    ipv6 add fe80::a202:1 link-local
    ospfv3 1 ipv6 area 2
    ipv6 ospf network point-to-point
    no shut
    exit
    router ospfv3 1
    address-family ipv6 unicast
    router-id 2.2.2.2
    exit
    alias exec reset.now tclsh flash:/enarsi/reset.tcl
```

```
}
tclquit
```

!R2 - Trouble Ticket # 3

```
tclsh
puts [ open "flash:/enarsi/10.1.2.3-r2-config.txt" w+ ] {
hostname R2
banner motd # This is R2, Trouble Ticket 10.1.2.3 #
no ip domain lookup
ipv6 unicast-routing
line con 0
logg sync
exec-time 0 0
exit
inter g 0/0/0
ipv6 add 2001:db8:acad:a201::2/64
ipv6 add fe80::a201:2 link-local
ospfv3 1 ipv6 area 2
ospfv3 hello-interval 5
no shut
inter lo 0
ipv6 add 2001:db8:acad:a202::1/64
ipv6 add fe80::a202:1 link-local
ospfv3 1 ipv6 area 2
ipv6 ospf network point-to-point
no shut
exit
router ospfv3 1
address-family ipv6 unicast
router-id 2.2.2.2
exit
alias exec reset.now tclsh flash:/enarsi/reset.tcl
}
tclquit
```

R3 Configuration File Scripts

!R3 - Trouble Ticket # 1

```
tclsh
puts [ open "flash:/enarsi/10.1.2.1-r3-config.txt" w+ ] {
hostname R3
banner motd # This is R3, Trouble Ticket 10.1.2.1 #
no ip domain lookup
ipv6 unicast-routing
line con 0
```

```
logg sync
exec-time 0 0
exit
inter g 0/0/1
ipv6 add 2001:db8:acad:a003::1/64
ipv6 add fe80::a003:1 link-local
ospfv3 1 ipv6 area 0
no shut
inter lo 0
ipv6 add 2001:db8:acad:a301::1/64
ipv6 add fe80::a301:1 link-local
ospfv3 1 ipv6 area 3
ipv6 ospf network point-to-point
no shut
exit
router ospfv3 1
address-family ipv6 unicast
router-id 3.3.3.3
exit
alias exec reset.now tclsh flash:/enarsi/reset.tcl
}
tclquit
```

!R3 - Trouble Ticket # 2

```
tclsh
puts [ open "flash:/enarsi/10.1.2.2-r3-config.txt" w+ ] {
hostname R3
banner motd # This is R3, Trouble Ticket 10.1.2.2 #
no ip domain lookup
ipv6 unicast-routing
line con 0
logg sync
exec-time 0 0
exit
inter g 0/0/1
ipv6 add 2001:db8:acad:a003::1/64
ipv6 add fe80::a003:1 link-local
ospfv3 1 ipv6 area 0
no shut
inter lo 0
ipv6 add 2001:db8:acad:a301::1/64
ipv6 add fe80::a301:1 link-local
ospfv3 1 ipv6 area 3
ipv6 ospf network point-to-point
no shut
exit
```

```
router ospfv3 1
address-family ipv6 unicast
exit
alias exec reset.now tclsh flash:/enarsi/reset.tcl
}
tclquit
```

!R3 - Trouble Ticket # 3

```
tclsh
puts [ open "flash:/enarsi/10.1.2.3-r3-config.txt" w+ ] {
hostname R3
banner motd # This is R3, Trouble Ticket 10.1.2.3 #
no ip domain lookup
ipv6 unicast-routing
line con 0
logg sync
exec-time 0 0
exit
inter g 0/0/1
ipv6 add 2001:db8:acad:a003::1/64
ipv6 add fe80::a003:1 link-local
ospfv3 1 ipv6 area 0
no shut
inter lo 0
ipv6 add 2001:db8:acad:a301::1/64
ipv6 add fe80::a301:1 link-local
ospfv3 1 ipv6 area 3
ipv6 ospf network point-to-point
no shut
exit
router ospfv3 1
address-family ipv6 unicast
router-id 3.3.3.3
exit
alias exec reset.now tclsh flash:/enarsi/reset.tcl
}
tclquit
```

D1 Configuration File Scripts

!D1 - Trouble Ticket # 1

```
tclsh
puts [ open "flash:/enarsi/10.1.2.1-d1-config.txt" w+ ] {
hostname D1
banner motd # This is D1, Trouble Ticket 10.1.2.1 #
no ip domain lookup
```

```
ip routing
ipv6 unicast-routing
line con 0
logg sync
exec-time 0 0
exit
inter g 1/0/11
no switchport
ipv6 add 2001:db8:acad:a001::2/64
ipv6 add fe80::a001:2 link-local
ospfv3 1 ipv6 area 0
no shut
exit
inter g 1/0/23
no switchport
ipv6 add 2001:db8:acad:a102::1/64
ipv6 add fe80::a102:1 link-local
ospfv3 1 ipv6 area 1
no shut
exit
inter g 1/0/24
no switchport
ipv6 add 2001:db8:acad:a103::1/64
ipv6 add fe80::a103:1 link-local
ospfv3 1 ipv6 area 1
no shut
exit
interface g 1/0/1
 description Channel to D2
 no switchport
 channel-group 1 mode on
 no shutdown
exit
interface g 1/0/2
 description Channel to D2
 no switchport
 channel-group 1 mode on
 no shutdown
exit
interface g 1/0/3
 description Channel to D2
 no switchport
 channel-group 2 mode on
 no shutdown
exit
```

```
    interface g 1/0/4
     description Channel to D2
     no switchport
     channel-group 2 mode on
     no shutdown
    exit
    inter port-channel 1
    ipv6 add 2001:db8:acad:a002::1/64
    ipv6 add fe80::a002:1 link-local
    ospfv3 1 ipv6 area 0
    no shut
    exit
    inter port-channel 2
    ipv6 add 2001:db8:acad:a101::1/64
    ipv6 add fe80::a101:1 link-local
    ospfv3 1 ipv6 area 1
    no shut
    exit
    inter range g1/0/5-10, g1/0/12-22
    shut
    exit
    router ospfv3 1
    address-family ipv6 unicast
    router-id 4.4.4.4
    exit
    alias exec reset.now tclsh flash:/enarsi/reset.tcl
    }
    tclquit
```

!D1 - Trouble Ticket # 2

```
    tclsh
    puts [ open "flash:/enarsi/10.1.2.2-d1-config.txt" w+ ] {
    hostname D1
    banner motd # This is D1, Trouble Ticket 10.1.2.2 #
    no ip domain lookup
    ip routing
    ipv6 unicast-routing
    line con 0
    logg sync
    exec-time 0 0
    exit
    inter g 1/0/11
    no switchport
    ipv6 add 2001:db8:acad:a001::2/64
    ipv6 add fe80::a001:2 link-local
    ospfv3 1 ipv6 area 0
```

```
no shut
exit
inter g 1/0/23
no switchport
ipv6 add 2001:db8:acad:a102::1/64
ipv6 add fe80::a102:1 link-local
ospfv3 1 ipv6 area 1
no shut
exit
inter g 1/0/24
no switchport
ipv6 add 2001:db8:acad:a103::1/64
ipv6 add fe80::a103:1 link-local
ospfv3 1 ipv6 area 1
no shut
exit
interface g 1/0/1
 description Channel to D2
 no switchport
 channel-group 1 mode on
 no shutdown
exit
interface g 1/0/2
 description Channel to D2
 no switchport
 channel-group 1 mode on
 no shutdown
exit
interface g 1/0/3
 description Channel to D2
 no switchport
 channel-group 2 mode on
 no shutdown
exit
interface g 1/0/4
 description Channel to D2
 no switchport
 channel-group 2 mode on
 no shutdown
exit
inter port-channel 1
ipv6 add 2001:db8:acad:a002::1/64
ipv6 add fe80::a002:1 link-local
ospfv3 1 ipv6 area 0
no shut
```

```
exit
inter port-channel 2
ipv6 add 2001:db8:acad:a101::1/64
ipv6 add fe80::a101:1 link-local
ospfv3 1 ipv6 area 1
no shut
exit
inter range g1/0/5-10, g1/0/12-22
shut
exit
router ospfv3 1
address-family ipv6 unicast
router-id 4.4.4.4
exit
alias exec reset.now tclsh flash:/enarsi/reset.tcl
}
tclquit
```

!D1 - Trouble Ticket # 3

```
tclsh
puts [ open "flash:/enarsi/10.1.2.3-d1-config.txt" w+ ] {
hostname D1
banner motd # This is D1, Trouble Ticket 10.1.2.3 #
no ip domain lookup
ip routing
ipv6 unicast-routing
line con 0
logg sync
exec-time 0 0
exit
inter g 1/0/11
no switchport
ipv6 add 2001:db8:acad:a001::2/64
ipv6 add fe80::a001:2 link-local
ospfv3 1 ipv6 area 0
no shut
exit
inter g 1/0/23
no switchport
ipv6 add 2001:db8:acad:a102::1/64
ipv6 add fe80::a102:1 link-local
ospfv3 1 ipv6 area 1
no shut
exit
inter g 1/0/24
no switchport
```

```
ipv6 add 2001:db8:acad:a103::1/64
ipv6 add fe80::a103:1 link-local
ospfv3 1 ipv6 area 1
no shut
exit
interface g 1/0/1
 description Channel to D2
 no switchport
 channel-group 1 mode on
 no shutdown
exit
interface g 1/0/2
 description Channel to D2
 no switchport
 channel-group 1 mode on
 no shutdown
exit
interface g 1/0/3
 description Channel to D2
 no switchport
 channel-group 2 mode on
 no shutdown
exit
interface g 1/0/4
 description Channel to D2
 no switchport
 channel-group 2 mode on
 no shutdown
exit
inter port-channel 1
ipv6 add 2001:db8:acad:a002::1/64
ipv6 add fe80::a002:1 link-local
ospfv3 1 ipv6 area 0
no shut
exit
inter port-channel 2
ipv6 add 2001:db8:acad:a101::1/64
ipv6 add fe80::a101:1 link-local
ospfv3 1 ipv6 area 1
no shut
exit
inter range g1/0/5-10, g1/0/12-22
shut
exit
router ospfv3 1
```

```
address-family ipv6 unicast
router-id 4.4.4.4
exit
alias exec reset.now tclsh flash:/enarsi/reset.tcl
}
tclquit
```

D2 Configuration File Scripts

!D2 - Trouble Ticket # 1

```
tclsh
puts [ open "flash:/enarsi/10.1.2.1-d2-config.txt" w+ ] {
hostname D2
banner motd # This is D2, Trouble Ticket 10.1.2.1 #
no ip domain lookup
ip routing
ipv6 unicast-routing
line con 0
logg sync
exec-time 0 0
exit
inter g 1/0/11
no switchport
ipv6 add 2001:db8:acad:a003::2/64
ipv6 add fe80::a003:2 link-local
ospfv3 1 ipv6 area 0
no shut
interface g 1/0/1
 description Channel to D1
 no switchport
 channel-group 1 mode on
 no shutdown
interface g 1/0/2
 description Channel to D1
 no switchport
 channel-group 1 mode on
 no shutdown
interface g 1/0/3
 description Channel to D1
 no switchport
 channel-group 2 mode on
 no shutdown
interface g 1/0/4
 description Channel to D1
 no switchport
 channel-group 2 mode on
```

```
 no shutdown
inter lo 0
ipv6 add 2001:db8:acad:a104::1/64
ipv6 add fe80::a104:1 link-local
ospfv3 1 ipv6 area 1
ipv6 ospf network point-to-point
no shut
inter port-channel 1
ipv6 add 2001:db8:acad:a002::2/64
ipv6 add fe80::a002:2 link-local
ospfv3 1 ipv6 area 0
no shut
inter port-channel 2
ipv6 add 2001:db8:acad:a101::2/64
ipv6 add fe80::a101:2 link-local
ospfv3 1 ipv6 area 1
no shut
inter range g1/0/5-10, g1/0/12-24
shut
exit
router ospfv3 1
address-family ipv6 unicast
router-id 5.5.5.5
exit
alias exec reset.now tclsh flash:/enarsi/reset.tcl
}
tclquit
```

!D2 - Trouble Ticket # 2

```
tclsh
puts [ open "flash:/enarsi/10.1.2.2-d2-config.txt" w+ ] {
hostname D2
banner motd # This is D2, Trouble Ticket 10.1.2.2 #
no ip domain lookup
ip routing
ipv6 unicast-routing
line con 0
logg sync
exec-time 0 0
exit
inter g 1/0/11
no switchport
ipv6 add 2001:db8:acad:a003::2/64
ipv6 add fe80::a003:2 link-local
ospfv3 1 ipv6 area 0
no shut
```

```
interface g 1/0/1
 description Channel to D1
 no switchport
 channel-group 1 mode on
 no shutdown
interface g 1/0/2
 description Channel to D1
 no switchport
 channel-group 1 mode on
 no shutdown
interface g 1/0/3
 description Channel to D1
 no switchport
 channel-group 2 mode on
 no shutdown
interface g 1/0/4
 description Channel to D1
 no switchport
 channel-group 2 mode on
 no shutdown
inter lo 0
ipv6 add 2001:db8:acad:a104::1/64
ipv6 add fe80::a104:1 link-local
ospfv3 1 ipv6 area 1
ipv6 ospf network point-to-point
no shut
inter port-channel 1
ipv6 add 2001:db8:acad:a002::2/64
ipv6 add fe80::a002:2 link-local
ospfv3 1 ipv6 area 0
no shut
inter port-channel 2
ipv6 add 2001:db8:acad:a101::2/64
ipv6 add fe80::a101:2 link-local
ospfv3 1 ipv6 area 1
no shut
inter range g1/0/5-10, g1/0/12-24
shut
exit
router ospfv3 1
address-family ipv6 unicast
router-id 5.5.5.5
exit
alias exec reset.now tclsh flash:/enarsi/reset.tcl
}
```

```
        tclquit
```
!D2 - Trouble Ticket # 3
```
        tclsh
        puts [ open "flash:/enarsi/10.1.2.3-d2-config.txt" w+ ] {
        hostname D2
        banner motd # This is D2, Trouble Ticket 10.1.2.3 #
        no ip domain lookup
        ip routing
        ipv6 unicast-routing
        line con 0
        logg sync
        exec-time 0 0
        exit
        inter g 1/0/11
        no switchport
        ipv6 add 2001:db8:acad:a003::2/64
        ipv6 add fe80::a003:2 link-local
        ospfv3 1 ipv6 area 0
        no shut
        interface g 1/0/1
         description Channel to D1
         no switchport
         channel-group 1 mode on
         no shutdown
        interface g 1/0/2
         description Channel to D1
         no switchport
         channel-group 1 mode on
         no shutdown
        interface g 1/0/3
         description Channel to D1
         no switchport
         channel-group 2 mode on
         no shutdown
        interface g 1/0/4
         description Channel to D1
         no switchport
         channel-group 2 mode on
         no shutdown
        inter lo 0
        ipv6 add 2001:db8:acad:a104::1/64
        ipv6 add fe80::a104:1 link-local
        ospfv3 1 ipv6 area 1
        ipv6 ospf network point-to-point
        no shut
```

```
inter port-channel 1
ipv6 add 2001:db8:acad:a002::2/64
ipv6 add fe80::a002:2 link-local
ospfv3 1 ipv6 area 0
no shut
inter port-channel 2
ipv6 add 2001:db8:acad:a101::2/64
ipv6 add fe80::a101:2 link-local
ospfv3 1 ipv6 area 1
no shut
inter range g1/0/5-10, g1/0/12-24
shut
exit
router ospfv3 1
address-family ipv6 unicast
router-id 5.5.5.5
exit
alias exec reset.now tclsh flash:/enarsi/reset.tcl
}
tclquit
```

A1 Configuration File Scripts - Not Used In This Lab