NetSim®
NETWORK SIMULATOR®

Lab ID: 9.9K315A075.SAI1.2

Stand-Alone Lab: Configuring IPv6

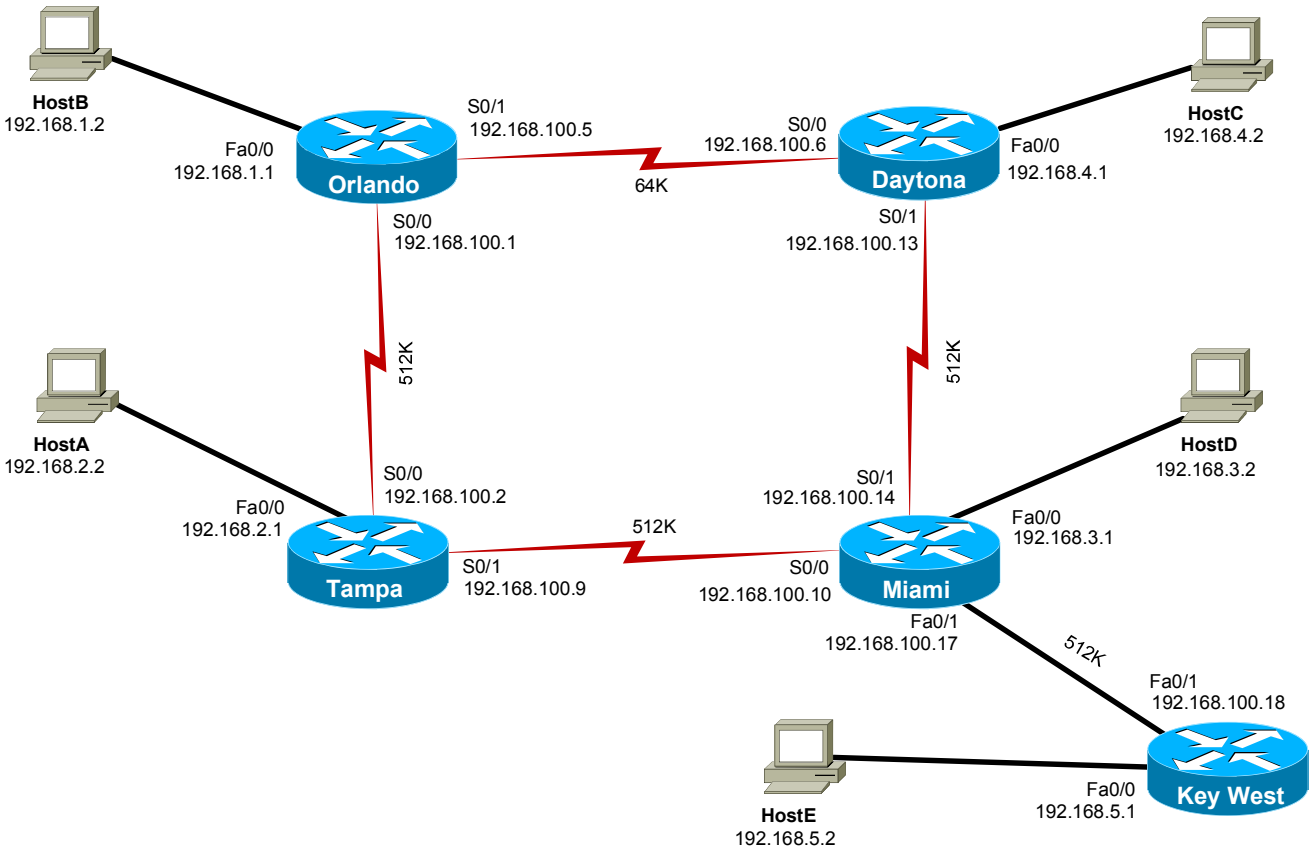
Objective

Understand and implement Internet Protocol version 6 (IPv6) addressing on the network, and implement Routing Information Protocol next generation (RIPng) to implement dynamic IPv6 routing.

The simulated network for this lab consists of five routers connected by point-to-point wide area network (WAN) links. Each router also has a local area network (LAN) connected to its FastEthernet interface. Each LAN has one host PC connected. This network is comparable to an actual network connecting five geographically separate offices; each office has a LAN to which desktop PCs and servers are connected.

Lab Topology

The topology diagram below represents the NetMap in the Simulator.



Command Summary

Command	Description
configure terminal	enters global configuration mode from privileged EXEC mode
enable	enters privileged EXEC mode
end	ends and exits configuration mode
interface *type number*	changes from global configuration mode to interface configuration mode
ip address *ip-address subnet-mask*	assigns an IP version 4 (IPv4) address to an interface
ipv6 address *address/prefix-length*	configures an IPv6 address for an interface
ipv6 router rip *process-name*	configures a router for RIPng
ipv6 rip *process-name* **enable**	configures an interface for RIPng
ipv6 unicast-routing	enables IPv6 routing
ping *ip-address*	sends an Internet Control Message Protocol (ICMP) echo request to the specified address
ping ipv6 *ipv6-address*	sends an ICMP echo request to the specified IPv6 address
show interfaces [*type number*]	displays the interface's Data Link layer status; when the *type* and *number* parameters are included, displays detailed information about the specified interface
show ip interface brief	displays a brief summary of interface status and configuration
show ipv6 interface brief	displays a brief summary of interface status and configuration
show ipv6 route	displays the IP routing table
show running-config	displays the active configuration file

The IP addresses and subnet masks used in this lab are shown in the following tables:

IP Addresses

Device	Interface	IP Address	Subnet Mask
Tampa	Serial 0/0 Serial 0/1 FastEthernet 0/0	192.168.100.2 192.168.100.9 192.168.2.1	255.255.255.252 255.255.255.252 255.255.255.0
Orlando	Serial 0/0 Serial 0/1 FastEthernet 0/0	192.168.100.1 192.168.100.5 192.168.1.1	255.255.255.252 255.255.255.252 255.255.255.0
KeyWest	FastEthernet 0/0 FastEthernet 0/1	192.168.5.1 192.168.100.18	255.255.255.0 255.255.255.252
Daytona	Serial 0/0 Serial 0/1 FastEthernet 0/0	192.168.100.6 192.168.100.13 192.168.4.1	255.255.255.252 255.255.255.252 255.255.255.0
Miami	Serial 0/0 Serial 0/1 FastEthernet 0/0 FastEthernet 0/1	192.168.100.10 192.168.100.14 192.168.3.1 192.168.100.17	255.255.255.252 255.255.255.252 255.255.255.0 255.255.255.252

Device	IP Address	Subnet Mask	Default Gateway
HostA	192.168.2.2	255.255.255.0	192.168.2.1
HostB	192.168.1.2	255.255.255.0	192.168.1.1
HostC	192.168.4.2	255.255.255.0	192.168.4.1
HostD	192.168.3.2	255.255.255.0	192.168.3.1
HostE	192.168.5.2	255.255.255.0	192.168.5.1

Lab Tasks

Task 1: Examine the Initial Network Configuration

The routers have been configured with **admin** as the password at console prompts, **cisco** as the password at enable prompts, and **sanfran** as the virtual terminal (vty) password.

A. Verify IP Addressing

1. Examine the running configuration of all five routers, and compare the IP addresses on the WAN interfaces to the IP address assignments shown in the network topology diagram. The IP address assigned to each router interface should match the IP address assignments shown in the network topology diagram. Are the IP addresses correctly assigned to each device? _____

2. What types of IP addresses are currently assigned to the Tampa, Orlando, KeyWest, Daytona, and Miami routers? _____

3. What is the theoretical maximum number of unique IP addresses of this type that can be assigned? _____

4. Why is there a need to change this method of IP addressing? _____
_____

Task 2: Explore IPv6

A. Understand IPv6 Addresses

1. IPv6 addresses will eventually replace the IP addresses currently in use today. What are the expected benefits of this new type of IP addressing? _____
_____

2. What are some of the major differences between IPv4 addressing and IPv6 addressing? _____
_____

3. What is the theoretical maximum number of IPv6 addresses that can be assigned? _____

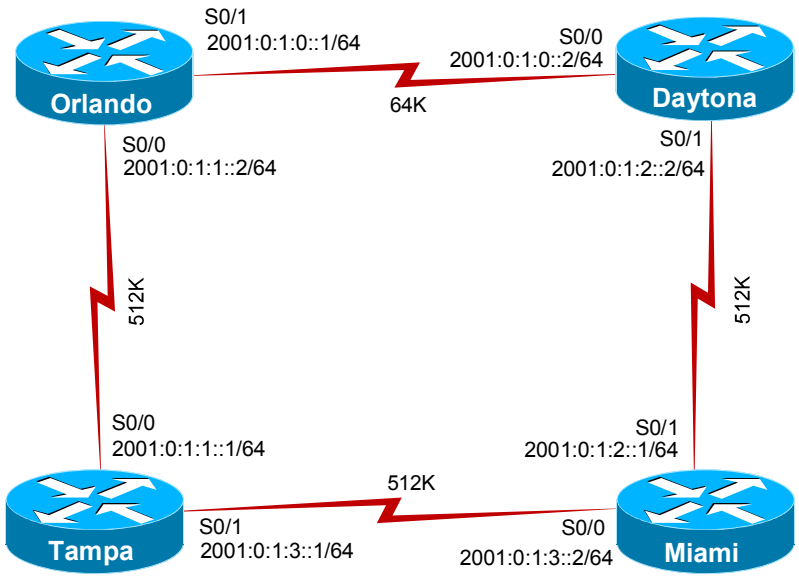
4. The transition to IPv6 will not happen immediately. The transition from IPv4 addressing to IPv6 addressing will occur over time. Briefly describe some of the techniques that will allow IPv4 addressing to coexist with IPv6 addressing. _____

Task 3: Implement IPv6

A. Implement IPv6 Addressing

1. You will implement IPv6 addressing on the WAN links that connect the Tampa, Orlando, Daytona, and Miami routers. You will not implement IPv6 addressing on the WAN link that connects the Miami and KeyWest routers or on the LANs.

2. The diagram and table below show the IPv6 addresses that should be assigned to each end of the WAN links:



IPv6 Addresses

Device	Interface	IPv6 Address
Tampa	Serial 0/0 Serial 0/1	2001:0:1:1::1/64 2001:0:1:3::1/64
Orlando	Serial 0/0 Serial 0/1	2001:0:1:1::2/64 2001:0:1:0::1/64
Daytona	Serial 0/0 Serial 0/1	2001:0:1:0::2/64 2001:0:1:2::2/64
Miami	Serial 0/0 Serial 0/1	2001:0:1:3::2/64 2001:0:1:2::1/64

3. Review the commands used to assign an IPv6 address to an interface. Compare these commands to the commands you currently use to assign IP addresses to an interface. What are the differences? _____
_____

4. On Tampa, Orlando, Daytona, and Miami, enable IPv6 routing.

5. On Tampa, Orlando, Daytona, and Miami, assign the appropriate IPv6 addresses; refer to the IPv6 Addresses table.

B. Implement IPv6 Routing

1. Updated routing protocols capable of working with IPv6 network addresses must be used in order for IPv6 routes to be exchanged with other routers. You will implement RIPng in this lab. RIPng can function with IPv6 addresses.

2. Identify the commands you should issue to enable IPv6 dynamic routing with RIPng. How do these commands differ from the commands you would issue to configure interfaces for RIP with IPv4?
_____
_____

3. On Tampa, Orlando, Daytona, and Miami, configure RIPng; use **boson** as the process identification string.

Task 4: Verify IPv6

A. Verify IPv6 Addresses

1. Examine each of the four routers that you have configured with IPv6 addresses. Verify that you have assigned the IPv6 addresses correctly.

2. Before you continue, correct any configuration errors that you find.

3. Now that you have configured IPv6 addressing, what has happened with the other IP addresses that were previously configured on the Tampa, Orlando, Daytona, and Miami routers? _____
_____

B. Verify IPv6 Routing

1. On Tampa, Orlando, Daytona, and Miami, display the contents of the IPv6 routing table.

2. Do you see the IPv6 networks that represent the WAN links that are connected to each of the four routers? _____
Are there any missing networks? _____

3. Before you continue, correct any configuration errors that you find.

4. Now that you have configured IPv6 routing, what has happened to the contents of the existing routing tables on the Tampa, Orlando, Daytona, and Miami routers? _____

_____

How did you determine this? _____

C. Verify IPv6 Connectivity

1. Identify the interface that connects the Tampa router to the Orlando router. How did you determine which interface this is? _____

2. What is the IPv6 address of the interface on the Orlando router that connects the Orlando router to Tampa? _____

3. From the Tampa router, attempt to ping the IPv6 address of the interface on the Orlando router that connects to the Tampa router. What can you do differently when you ping an IPv6 address? _____

_____

Was the ping successful? _____
If not, review and correct your configuration.

4. Refer to the network topology diagram shown at the beginning of this lab. Identify the IPv4 address assigned to the interface on the Orlando router that connects to the Tampa router. From the Tampa router, attempt to ping this IP address. Is this ping successful? _____

5. Based on the result of the previous ping, what conclusions can you draw regarding the coexistence of IPv6 addresses and IPv4 addresses on the same device? _____

_____

Lab Solutions

Task 1: Examine the Initial Network Configuration

The routers have been configured with **admin** as the password at console prompts, **cisco** as the password at enable prompts, and **sanfran** as the virtual terminal (vty) password.

A. Verify IP Addressing

1. Yes, the IP addresses assigned to each router interface match the IP addresses shown in the network topology diagram. You can verify the IP addresses on the routers by issuing the **show ip interface brief** command, the **show interfaces** command, and the **show running-config** command, among others; sample output from the **show ip interface brief** command and the **show running-config** command issued on Tampa is shown below:

```
Tampa#show ip interface brief
Interface              IP-Address      OK? Method Status
Protocol
Serial0/0              192.168.100.2   YES unset  up                    up
Serial0/1              192.168.100.9   YES unset  up                    up
FastEthernet0/0        192.168.2.1     YES unset  up                    up
FastEthernet0/1        unassigned      YES unset  down                  down


Tampa#show running-config
Building configuration...
!
<output omitted>
!
interface Serial0/0
 description ToOrlando
 ip address 192.168.100.2 255.255.255.252
 no ip directed-broadcast
 bandwidth 512
!
interface Serial0/1
 description ToMiami
 ip address 192.168.100.9 255.255.255.252
 no ip directed-broadcast
 bandwidth 512
!
interface FastEthernet0/0
 description TampaLAN
 ip address 192.168.2.1 255.255.255.0
 no ip directed-broadcast
!
interface FastEthernet0/1
 no ip address
 no ip directed-broadcast
!
<output omitted>
```

2. The Tampa, Orlando, KeyWest, Daytona, and Miami routers are currently configured with IPv4 addresses.

3. The theoretical maximum number of unique IP addresses that can be assigned in the IPv4 address space is 2^{32}, which equals 4,294,467,295 IP addresses. Due to inefficiencies in the allocation of addresses, it is estimated that there are approximately 1.3 billion usable IPv4 addresses available.

4. A new method of IP addressing is needed because the IPv4 address space is being rapidly exhausted. Address conservation technologies, such as Classless Inter-Domain Routing (CIDR), variable-length subnet masking (VLSM), and private IP addressing combined with Network Address Translation (NAT) and Port Address Translation (PAT), have extended the life of IPv4 addressing long beyond initial predictions. Even so, the growing number of Internet users is rapidly exhausting the remaining available IPv4 addresses. A new IP addressing technique that allows for a much larger number of IP addresses is needed to meet the increasing demand of Internet users and the growth of new Internet-enabled devices, such as wireless phones and other handheld devices.

Task 2: Explore IPv6

A. Understand IPv6 Addresses

1. The primary benefit of IPv6 is the dramatically higher number of IP addresses that can be assigned. Other benefits of IPv6 over IPv4 include built-in security, automatic address configuration, a simpler header structure, and better support for mobile devices.

2. A major difference between IPv4 and IPv6 addresses is the length of the address. An IPv4 address is 32 bits in length and is usually represented in dotted decimal notation as four decimal octets. An IPv6 address is 128 bits in length and is usually represented as eight 16-bit hexadecimal values. IPv4 addresses are usually assigned with a dotted decimal subnet mask, such as 255.255.255.248. IPv6 addresses are usually assigned with a prefix length in CIDR notation.

3. The theoretical maximum number of IPv6 addresses that can be assigned is 3.4×10^{38} IP addresses.

4. The transition to IPv6 is supported by several technologies, such as dual stacking, 6to4 tunneling, and 4to6 tunneling. Dual stacking is a technique that allows a device to be configured with both IPv4 and IPv6 addresses and to participate in IPv4 and IPv6 networks simultaneously. The 6to4 tunneling technology allows an IPv4 network to encapsulate and transport IPv6 traffic, and the 4to6 tunneling technology allows an IPv6 network to encapsulate and transport IPv4 traffic.

Task 3: Implement IPv6

A. Implement IPv6 Addressing

1. No solution is required.

2. No solution is required.

3. The **ip address** command is used in interface configuration mode to assign an IPv4 address in dotted decimal notation with a dotted decimal mask. The **ipv6 address** command is used in interface configuration mode to assign an IPv6 address in dotted hexadecimal notation with a CIDR prefix length.

4. You should issue the following commands to enable IPv6 routing:

```
Tampa#configure terminal
Tampa(config)#ipv6 unicast-routing

Orlando#configure terminal
Orlando(config)#ipv6 unicast-routing

Daytona#configure terminal
Daytona(config)#ipv6 unicast-routing

Miami#configure terminal
Miami(config)#ipv6 unicast-routing
```

5. You should issue the following commands on Tampa, Orlando, Daytona, and Miami to assign IPv6 addresses to the appropriate interfaces:

```
Tampa(config)#interface serial 0/0
Tampa(config-if)#ipv6 address 2001:0:1:1::1/64
Tampa(config-if)#interface serial 0/1
Tampa(config-if)#ipv6 address 2001:0:1:3::1/64

Orlando(config)#interface serial 0/0
Orlando(config-if)#ipv6 address 2001:0:1:1::2/64
Orlando(config-if)#interface serial 0/1
Orlando(config-if)#ipv6 address 2001:0:1:0::1/64

Daytona(config)#interface serial 0/0
Daytona(config-if)#ipv6 address 2001:0:1:0::2/64
Daytona(config-if)#interface serial 0/1
Daytona(config-if)#ipv6 address 2001:0:1:2::2/64

Miami(config)#interface serial 0/0
Miami(config-if)#ipv6 address 2001:0:1:3::2/64
Miami(config-if)#interface serial 0/1
Miami(config-if)#ipv6 address 2001:0:1:2::1/64
```

B. Implement IPv6 Routing

1. No solution is required.

2. You should issue the **ipv6 rip** *process-name* **enable** command in interface configuration mode to enable IPv6 dynamic routing with RIPng. To configure interfaces for RIP with IPv4, you would issue the **network** command in router configuration mode.

3. You should issue the following commands on Tampa, Orlando, Daytona, and Miami to configure RIPng on the appropriate interfaces:

```
Tampa(config-if)#ipv6 router rip boson
Tampa(config)#interface serial 0/0
Tampa(config-if)#ipv6 rip boson enable
Tampa(config-if)#interface serial 0/1
Tampa(config-if)#ipv6 rip boson enable

Orlando(config-if)#ipv6 router rip boson
Orlando(config)#interface serial 0/0
Orlando(config-if)#ipv6 rip boson enable
Orlando(config-if)#interface serial 0/1
Orlando(config-if)#ipv6 rip boson enable

Daytona(config-if)#ipv6 router rip boson
Daytona(config)#interface serial 0/0
Daytona(config-if)#ipv6 rip boson enable
Daytona(config-if)#interface serial 0/1
Daytona(config-if)#ipv6 rip boson enable

Miami(config-if)#ipv6 router rip boson
Miami(config)#interface serial 0/0
Miami(config-if)#ipv6 rip boson enable
Miami(config-if)#interface serial 0/1
Miami(config-if)#ipv6 rip boson enable
```

Task 4: Verify IPv6

A. Verify IPv6 Addresses

1. You can issue the **show ipv6 interface brief** and the **show running-config** commands on the Tampa, Orlando, Miami, and Daytona routers to verify that the IPv6 addresses have been assigned correctly. Below is sample output from the Tampa router:

```
Tampa(config-if)#end
Tampa#show ipv6 interface brief
Serial0/0                  [up/up]
    FE80::20C:39FF:FE62:6232
    2001:0:1:1::1
Serial0/1                  [up/up]
    FE80::20C:39FF:FE62:6232
    2001:0:1:3::1
FastEthernet0/0            [up/up]
    unassigned
FastEthernet0/1            [down/down]
    unassigned
```

(continued on next page)

(continued from previous page)

```
Tampa#show running-config
Building configuration...
!
<output omitted>
!
ipv6 unicast-routing
!
interface Serial0/0
 description ToOrlando
 ip address 192.168.100.2 255.255.255.252
 no ip directed-broadcast
 bandwidth 512
 ipv6 rip boson enable
 ipv6 address 2001:0:1:1::1/64
!
interface Serial0/1
 description ToMiami
 ip address 192.168.100.9 255.255.255.252
 no ip directed-broadcast
 bandwidth 512
 ipv6 rip boson enable
 ipv6 address 2001:0:1:3::1/64
!
interface FastEthernet0/0
 description TampaLAN
 ip address 192.168.2.1 255.255.255.0
 no ip directed-broadcast
!
interface FastEthernet0/1
 no ip address
 no ip directed-broadcast
!
 ipv6 router rip boson
!
router eigrp 100
 network 192.168.100.0
 network 192.168.2.0
 auto-summary
!
<output omitted>
```

2. No solution is required.

3. The IPv4 addresses that were previously assigned to the interfaces on the Tampa, Orlando, Miami, and Daytona routers are still assigned. An examination of the output of the **show running-config** command shows that the IPv4 and IPv6 addresses can coexist.

B. Verify IPv6 Routing

1. The **show ipv6 route** command displays the contents of the IPv6 routing table. Most newer routers have the ability to maintain IPv4 and IPv6 addresses on the same interfaces. Dual stacking is when IPv4 and IPv6 addresses are both configured on the same router. This allows a router to simultaneously communicate with IPv4 and IPv6 networks. Below is sample output from the Tampa router:

```
Tampa#show ipv6 route
IPv6 Routing Table - 8 entries
Codes: C - Connected, L - Local, S - Static, R - RIP, B - BGP
       U - Per-user Static route
       I1 - ISIS L1, I2 - ISIS L2, IA - ISIS interarea, IS - ISIS summary
       O - OSPF intra, OI - OSPF inter, OE1 - OSPF ext 1, OE2 - OSPF ext 2
       ON1 - OSPF NSSA ext 1, ON2 - OSPF NSSA ext 2
C   2001:0:1:3::/64 [0/0]
     via Serial0/1, directly connected
L   2001:0:1:3::1/128 [0/0]
     via Serial0/1, receive
C   2001:0:1:1::/64 [0/0]
     via Serial0/0, directly connected
L   2001:0:1:1::1/128 [0/0]
     via Serial0/0, receive
R   2001:0:1::/64 [120/2]
R   2001:0:1:2::/64 [120/2]
L   FF00::/8 [0/0]
     via Null0, receive
```

2. Yes, IPv6 networks that represent the WAN links between the Daytona, Orlando, Tampa, and Miami routers are present in the IPv6 routing tables of all four routers.

3. Before you continue, correct any configuration errors that you find.

4. The contents of the Tampa, Orlando, Daytona, and Miami routers' IPv4 routing tables are unaffected by the configuration of IPv6. When routers are configured with both IPv4 and IPv6 addresses, separate IPv4 and IPv6 routing tables are maintained.

   The **show ip route** command and the **show ipv6 route** command can be issued on all four routers to display the IPv4 and IPv6 routing tables, respectively. Below is sample output from the **show ip route** command issued on Tampa:

```
Tampa#show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, * - candidate default
       U - per-user static route

Gateway of last resort is not set

     192.168.100.0/30 is subnetted, 5 subnets
C       192.168.100.0 is directly connected, Serial0/0
D       192.168.100.4 [90/41024000] via 192.168.100.1, 00:21:52, Serial0/0
C       192.168.100.8 is directly connected, Serial0/1
D       192.168.100.12 [90/6023936] via 192.168.100.10, 00:21:52, Serial0/1
D       192.168.100.16 [90/5514496] via 192.168.100.10, 00:21:52, Serial0/1
C    192.168.2.0 is directly connected, FastEthernet0/0
D    192.168.5.0 [90/5517056] via 192.168.100.10, 00:21:52, Serial0/1
D    192.168.3.0 [90/5514496] via 192.168.100.10, 00:21:52, Serial0/1
D    192.168.4.0 [90/6026496] via 192.168.100.10, 00:21:52, Serial0/1
D    192.168.1.0 [90/5514496] via 192.168.100.1, 00:21:52, Serial0/0
```

C. Verify IPv6 Connectivity

1. The output of the **show running-config interface serial 0/0** command on the Tampa router shows that the interface description command has been used to identify that Serial 0/0 on the Tampa router connects to the Orlando router.

```
Tampa#show running-config interface serial 0/0
Building configuration...
Current configuration : 190 bytes
!
interface Serial0/0
 description ToOrlando
 ip address 192.168.100.2 255.255.255.252
 no ip directed-broadcast
 bandwidth 512
 ipv6 rip boson enable
 ipv6 address 2001:0:1:1::1/64
end
```

2. The IPv6 address of the interface on the Orlando router that connects to the Tampa router is 2001:0:1:1::2/64.

3. You can issue either the **ping** command or the **ping ipv6** command in order to ping an IPv6 address. A ping from the Tampa router to the Orlando router's Serial 0/0 interface is successful.

```
Tampa#ping ipv6 2001:0:1:1::2

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 2001:0:1:1::2, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/2/4 ms
```

4. Yes, the ping from the Tampa router to the IPv4 address of the Orlando router's Serial 0/0 interface is successful.

```
Tampa#ping 192.168.100.1

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.100.1, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/2/4 ms
```

5. IPv4 and IPv6 addressing can coexist on the same router. This will allow for an orderly transition from IPv4 addressing to IPv6 addressing.

Sample Configuration Scripts

Tampa

```
Tampa#show running-config
Building configuration...
Current configuration : 1115 bytes
!
Version 12.3
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname Tampa
enable secret 5 $sdf$6978yhg$jnb76sd
!
ip subnet-zero
!
ip cef
no ip domain-lookup
!
ipv6 unicast-routing
!
interface Serial0/0
 description ToOrlando
 ip address 192.168.100.2 255.255.255.252
 no ip directed-broadcast
 bandwidth 512
 ipv6 rip boson enable
 ipv6 address 2001:0:1:1::1/64
!
interface Serial0/1
 description ToMiami
 ip address 192.168.100.9 255.255.255.252
 no ip directed-broadcast
 bandwidth 512
 ipv6 rip boson enable
 ipv6 address 2001:0:1:3::1/64
!
```

Tampa (continued)

```
interface FastEthernet0/0
 description TampaLAN
 ip address 192.168.2.1 255.255.255.0
 no ip directed-broadcast
!
interface FastEthernet0/1
 no ip address
 no ip directed-broadcast
!
 ipv6 router rip boson
!
router eigrp 100
 network 192.168.100.0
 network 192.168.2.0
!
ip classless
no ip http server
!
line con 0
 login
 password admin
line aux 0
line vty 0 4
 password sanfran
!
no scheduler allocate
end
```

Orlando

```
Orlando#show running-config
Building configuration...
Current configuration : 1163 bytes
!
Version 12.3
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname Orlando
enable secret 5 $sdf$6978yhg$jnb76sd
!
ip subnet-zero
!
ip cef
no ip domain-lookup
!
ipv6 unicast-routing
!
interface Serial0/0
 description ToTampa
 ip address 192.168.100.1 255.255.255.252
 no ip directed-broadcast
 clock rate 64000
 bandwidth 512
 ipv6 rip boson enable
 ipv6 address 2001:0:1:1::2/64
!
interface Serial0/1
 description ToDaytona
 ip address 192.168.100.5 255.255.255.252
 no ip directed-broadcast
 clock rate 64000
 bandwidth 64
 ipv6 rip boson enable
 ipv6 address 2001:0:1::1/64
!
```

Orlando (continued)

```
interface FastEthernet0/0
 description OrlandoLAN
 ip address 192.168.1.1 255.255.255.0
 no ip directed-broadcast
!
interface FastEthernet0/1
 no ip address
 no ip directed-broadcast
!
 ipv6 router rip boson
!
router eigrp 100
 network 192.168.1.0
 network 192.168.100.0
!
ip classless
no ip http server
!
line con 0
 login
 password admin
line aux 0
line vty 0 4
 login
 password sanfran
!
no scheduler allocate
end
```

Daytona

```
Daytona#show running-config
Building configuration...
Current configuration : 1126 bytes
!
Version 12.3
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname Daytona
enable secret 5 $sdf$6978yhg$jnb76sd
!
ip subnet-zero
!
ip cef
no ip domain-lookup
!
ipv6 unicast-routing
!
interface Serial0/0
 description ToOrlando
 ip address 192.168.100.6 255.255.255.252
 no ip directed-broadcast
 bandwidth 64
 ipv6 rip boson enable
 ipv6 address 2001:0:1::2/64
!
interface Serial0/1
 description ToMiami
 ip address 192.168.100.13 255.255.255.252
 no ip directed-broadcast
 bandwidth 512
 ipv6 rip boson enable
 ipv6 address 2001:0:1:2::2/64
!
```

Daytona (continued)

```
interface FastEthernet0/0
 description DaytonaLAN
 ip address 192.168.4.1 255.255.255.0
 no ip directed-broadcast
!
interface FastEthernet0/1
 no ip address
 no ip directed-broadcast
!
 ipv6 router rip boson
!
router eigrp 100
 network 192.168.100.0
 network 192.168.4.0
!
ip classless
no ip http server
!
line con 0
 login
 password admin
line aux 0
line vty 0 4
 login
 password sanfran
!
no scheduler allocate
end
```

Miami	Miami (continued)
Miami#show running-config Building configuration... Current configuration : 1245 bytes ! Version 12.3 service timestamps debug uptime service timestamps log uptime no service password-encryption ! hostname Miami enable secret 5 sdf6978yhg$jnb76sd ! ip subnet-zero ! ip cef no ip domain-lookup ! ipv6 unicast-routing ! interface Serial0/0 description ToTampa ip address 192.168.100.10 255.255.255.252 no ip directed-broadcast clock rate 64000 bandwidth 512 ipv6 rip boson enable ipv6 address 2001:0:1:3::2/64 ! interface Serial0/1 description toDaytona ip address 192.168.100.14 255.255.255.252 no ip directed-broadcast clock rate 64000 bandwidth 512 ipv6 rip boson enable ipv6 address 2001:0:1:2::1/64 !	interface FastEthernet0/0 description MiamiLAN ip address 192.168.3.1 255.255.255.0 no ip directed-broadcast ! interface FastEthernet0/1 description toKeyWest ip address 192.168.100.17 255.255.255.252 no ip directed-broadcast bandwidth 512 fair-queue ! ipv6 router rip boson ! router eigrp 100 network 192.168.3.0 network 192.168.100.0 ! ip classless no ip http server ! line con 0 login password admin line aux 0 line vty 0 4 login password sanfran ! no scheduler allocate end