Sun Ethernet Fabric Operating System

RIPng Administration Guide

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Using This Documentation

The document describes configuring the OPUS switch product line to use RIPng, the IPv6 version of RIP, to propagate routing information.

- "Product Notes" on page 1
- "Related Documentation" on page 2
- "Acronyms and Abbreviations" on page 2
- "CLI Command Modes" on page 3
- "Feedback" on page 3
- "Support and Accessibility" on page 3

Product Notes

For late-breaking information and known issues about the following products, refer to the product notes at:

Oracle Switch ES1-24:

`http://www.oracle.com/goto/ES1-24/docs`

Sun Network 10GbE Switch 72p:

`http://www.oracle.com/goto/SN-10GbE-72p/docs`

Sun Blade 6000 Ethernet Switched NEM 24p 10GbE:

`http://www.oracle.com/goto/SB6K-24p-10GbE/docs`

Related Documentation

Documentation	Links
All Oracle products	http://oracle.com/documentation
Oracle Switch ES1-24	http://www.oracle.com/goto/ES1-24/docs
Sun Network 10GbE Switch 72p	http://www.oracle.com/goto/SN-10GbE-72p/docs
Sun Blade 6000 Ethernet Switched NEM 24p 10GbE	http://www.oracle.com/goto/SB6K-24p-10GbE/docs
Sun Blade 6000 modular system	http://www.oracle.com/pls/topic/lookup?ctx=sb6000
Oracle Integrated Lights Out Manager (Oracle ILOM) 3.0	http://www.oracle.com/pls/topic/lookup?ctx=ilom30

For detailed information about the commands and options described in this document, refer to the *Sun Ethernet Fabric Operating System CLI Base Reference Manual*.

Acronyms and Abbreviations

Acronym or Abbreviation	Explanation
CLI	Command-line interface
IETF	Internet Engineering Task Force
IGP	Internet Gateway Protocol
Oracle ILOM	Oracle Integrated Lights Out Management
LAN	Local area network
NEM	Network Express Module
RIP	Routing Information Protocol
SEFOS	Sun Ethernet Fabric Operating System

CLI Command Modes

The following table lists the configuration modes used in this document with their access and exit methods.

Command Mode	Access Method	Prompt	Exit Method
User EXEC	Access SEFOS from Oracle ILOM with read-only rights (privilege level 1).	`SEFOS>`	Use logout or exit to return to the Oracle ILOM prompt.
Privileged EXEC	Access SEFOS from Oracle ILOM with full administrative rights (privilege level 15).	`SEFOS#`	Use the `logout` or `exit` command to return to the Oracle ILOM prompt.
Global Configuration	From Privileged EXEC mode, use the `configure terminal` command.	`SEFOS(config)#`	Use the `end` command to return to Privileged EXEC mode.
Interface Configuration	From Global Configuration mode, use the `interface` *interface-type interface-id* command.	`SEFOS(config-if)#`	Use the `exit` command to return to Global Configuration mode, or use the `end` command to return to Privileged EXEC mode.

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RIPng Overview

This section describes the RIPng protocol and how to configure the example topology:

- "Protocol Description" on page 5
- "Configuring the RIPng Topology Example" on page 5

Protocol Description

IPv6 RIPng functions similarly to RIP in IPv4, with various enhancements for IPv6, For more information about RIP and its features, refer to the following web sites:

`http://searchnetworking.techtarget.com/definition/Routing-Information-Protocol`

`http://www.pulsewan.com/data101/rip_basics.htm`

Configuring the RIPng Topology Example

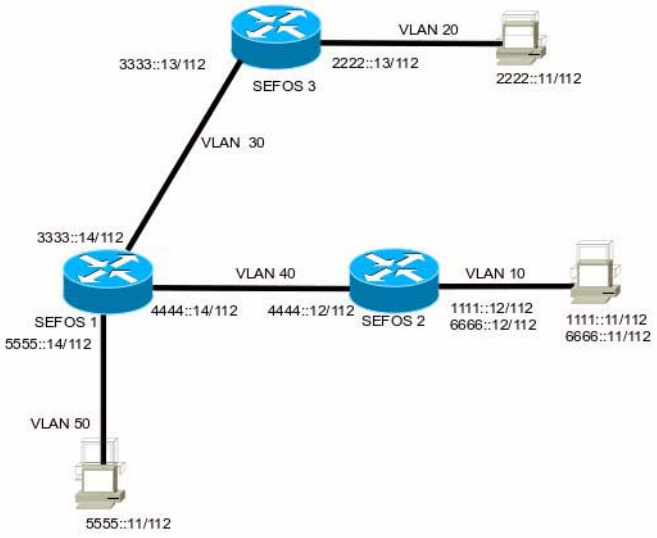
This section describes a simple RIPng topology example and configuration. These configurations are examples and used for illustration purposes only. Variables such as interfaces, IP addresses, and others would be different based on your site topology and configuration.

- "RIPng Topology Example" on page 6
- "Configure SEFOS1" on page 6
- "Configure SEFOS2" on page 9
- "Configure SEFOS3" on page 11

RIPng Topology Example

The following illustration shows a a RIP topology in which the three switches are connected over multiple VLANs interfaces. Switch SEFOS1 has `VLAN 30`, `40`, and `50` configured. Switch SEFOS 3 has VLAN 20 and 30 configured, and switch 2 has `VLAN 40` and `VLAN 10` configured.

Before configuring the switch to run IPv6 RIPng protocol, IPv6 unicast-routing must be enabled globally, and IPv6 must be enabled on any interface on which IPv6 RIPng is to be processed. This guide describes how to configure RIPng for IPv6 in SEFOS switches and provides configuration examples on the topology shown below.



▼ Configure SEFOS1

Use the following commands to configure `VLAN 50`, `VLAN 40`, and `VLAN 30` on switch SEFOS1 in the example topology.

1. Configure SEFOS1.

```
SEFOS 1 SEFOS# configure terminal
SEFOS 1 SEFOS(config)# set gvrp disable
SEFOS 1 SEFOS(config)# set gmrp disable

SEFOS 1 SEFOS(config)# interface extreme-ethernet 0/15
SEFOS 1 SEFOS(config-if)# switchport access vlan 50
```

```
% Access VLAN does not exist.,Creating vlan
SEFOS 1 SEFOS(config-if)# exit

SEFOS 1 SEFOS(config)# interface vlan 50
SEFOS 1 SEFOS(config-if)# no shutdown
SEFOS 1 SEFOS(config-if)# ipv6 enable
SEFOS 1 SEFOS(config-if)# ipv6 address  5555::14 112
SEFOS 1 SEFOS(config-if)# exit

SEFOS 1 SEFOS(config)# vlan 40
SEFOS 1 SEFOS(config-vlan)# port extreme-ethernet 0/3
SEFOS 1 SEFOS(config-vlan)# exit

SEFOS 1 SEFOS(config)# interface extreme-ethernet 0/3
SEFOS 1 SEFOS(config-if)# no shut
SEFOS 1 SEFOS(config-if)# exit

SEFOS 1 SEFOS(config)# interface vlan 40
SEFOS 1 SEFOS(config-if)# no shut
SEFOS 1 SEFOS(config-if)# ipv6 enable
SEFOS 1 SEFOS(config-if)# ipv6 address 4444::14 112
SEFOS 1 SEFOS(config-if)# end

SEFOS 1 SEFOS# configure terminal
SEFOS 1 SEFOS(config)# vlan 30
SEFOS 1 SEFOS(config-vlan)# port extreme-ethernet 0/7
SEFOS 1 SEFOS(config-vlan)# exit

SEFOS 1 SEFOS(config)# interface extreme-ethernet 0/7
SEFOS 1 SEFOS(config-if)# no shut
SEFOS 1 SEFOS(config-if)# exit

SEFOS 1 SEFOS(config)# interface vlan 30
SEFOS 1 SEFOS(config-if)# no shut
SEFOS 1 SEFOS(config-if)# ipv6 enable
SEFOS 1 SEFOS(config-if)# ipv6 address 3333::14 112
SEFOS 1 SEFOS(config-if)# end
SEFOS 1 SEFOS#
```

2. Show the status of IPv6 interfaces on SEFOS1.

```
SEFOS 1 SEFOS# show ipv6 interface
vlan1 is up, line protocol is up
    IPv6 is Enabled
    Link local address:
        fe80::221:28ff:fe56:d7a9
    Global unicast address(es):
        Not Configured.
```

```
    Joined group address(es):
        ff02::1
        ff02::2
        ff02::1:ff56:d7a9
    MTU is 9216
    ICMP redirects are enabled
    ND DAD is enabled, Number of DAD attempts: 1
    ND router advertisement is disabled
vlan50 is up, line protocol is up
    IPv6 is Enabled
    Link local address:
        fe80::221:28ff:fe56:d7a9
    Global unicast address(es):
        5555::14/112
    Joined group address(es):
        ff02::1
        ff02::2
        ff02::1:ff00:14
        ff02::1:ff56:d7a9
    MTU is 9216
    ICMP redirects are enabled
    ND DAD is enabled, Number of DAD attempts: 1
    ND router advertisement is disabled
vlan40 is up, line protocol is up
    IPv6 is Enabled
    Link local address:
        fe80::221:28ff:fe56:d7a9
    Global unicast address(es):
        4444::14/112
    Joined group address(es):
        ff02::1
        ff02::2
        ff02::1:ff00:14
        ff02::1:ff56:d7a9
    MTU is 9216
    ICMP redirects are enabled
    ND DAD is enabled, Number of DAD attempts: 1
    ND router advertisement is disabled
vlan30 is up, line protocol is up
    IPv6 is Enabled
    Link local address:
        fe80::221:28ff:fe56:d7a9
    Global unicast address(es):
        3333::14/112
    Joined group address(es):
        ff02::1
        ff02::2
        ff02::1:ff00:14
        ff02::1:ff56:d7a9
```

```
    MTU is 9216
    ICMP redirects are enabled
    ND DAD is enabled, Number of DAD attempts: 1
    ND router advertisement is disabled
```

▼ Configure SEFOS2

Configure `VLAN 10` and `VLAN 40` interfaces on SEFOS2 in the example topology.

1. Configure SEFOS2.

```
SEFOS 2 SEFOS# configure terminal
SEFOS 2 SEFOS(config)# set gvrp disable
SEFOS 2 SEFOS(config)# set gmrp disable

SEFOS 2 SEFOS(config)# interface extreme-ethernet 0/15
SEFOS 2 SEFOS(config-if)# switchport access vlan 10
% Access VLAN does not exist.,Creating vlan
SEFOS 2 SEFOS(config-if)# exit

SEFOS 2 SEFOS(config)# interface vlan 10
SEFOS 2 SEFOS(config-if)# no shut
SEFOS 2 SEFOS(config-if)# ipv6 enable
SEFOS 2 SEFOS(config-if)# ipv6 address 1111::12 112
SEFOS 2 SEFOS(config-if)# exit

SEFOS 2 SEFOS(config)# interface vlan 40
SEFOS 2 SEFOS(config-if)# no shut
SEFOS 2 SEFOS(config-if)# ipv6 enable
SEFOS 2 SEFOS(config-if)# ipv6 address 4444::12 112
SEFOS 2 SEFOS(config-if)# exit

SEFOS 2 SEFOS(config)# vlan 40
SEFOS 2 SEFOS(config-vlan)# ports extreme-ethernet 0/3
SEFOS 2 SEFOS(config-vlan)# exit

SEFOS 2 SEFOS(config)# interface extreme-ethernet 0/3
SEFOS 2 SEFOS(config-if)# no shut
SEFOS 2 SEFOS(config-if)# end
```

2. Show the status of IPv6 interfaces on SEFOS2.

```
SEFOS 2 SEFOS# show ipv6 interface
vlan1 is up, line protocol is up
    IPv6 is Enabled
    Link local address:
```

```
        fe80::214:4fff:fe6c:630f
    Global unicast address(es):
        Not Configured.
    Joined group address(es):
        ff02::1
        ff02::2
        ff02::1:ff6c:630f
    MTU is 9216
    ICMP redirects are enabled
    ND DAD is enabled, Number of DAD attempts: 1
    ND router advertisement is disabled
vlan40 is up, line protocol is up
    IPv6 is Enabled
    Link local address:
        fe80::214:4fff:fe6c:630f
    Global unicast address(es):
        4444::12/112
    Joined group address(es):
        ff02::1
        ff02::2
        ff02::9
        ff02::1:ff00:12
        ff02::1:ff6c:630f
    MTU is 9216
    ICMP redirects are enabled
    ND DAD is enabled, Number of DAD attempts: 1
    ND router advertisement is disabled
vlan10 is up, line protocol is up
    IPv6 is Enabled
    Link local address:
        fe80::214:4fff:fe6c:630f
    Global unicast address(es):
        1111::12/112
        6666::12/112
    Joined group address(es):
        ff02::1
        ff02::2
        ff02::9
        ff02::1:ff00:12
        ff02::1:ff6c:630f
    MTU is 9216
    ICMP redirects are enabled
    ND DAD is enabled, Number of DAD attempts: 1
    ND router advertisement is disabled
```

▼ Configure SEFOS3

Use the following commands to configure `VLAN 20` and `VLAN 30` on SEFOS3 in the example topology.

1. Configure SEFOS3.

```
SEFOS 3 SEFOS# configure terminal
SEFOS 3 SEFOS(config)# set gvrp disable
SEFOS 3 SEFOS(config)# set gmrp disable

SEFOS 3 SEFOS(config)# interface extreme-ethernet 0/65
SEFOS 3 SEFOS(config-if)# no shutdown
SEFOS 3 SEFOS(config-if)# switchport access vlan 20
% Access VLAN does not exist.,Creating vlan
SEFOS 3 SEFOS(config-if)# exit

SEFOS 3 SEFOS(config)# interface vlan 20
SEFOS 3 SEFOS(config-if)# no shutdown
SEFOS 3 SEFOS(config-if)# ipv6 enable
SEFOS 3 SEFOS(config-if)# ipv6 address 2222::13 112
SEFOS 3 SEFOS(config-if)# exit

SEFOS 3 SEFOS(config)# vlan 30
SEFOS 3 SEFOS(config-vlan)# port extreme-ethernet 0/1
SEFOS 3 SEFOS(config-vlan)# exit

SEFOS 3 SEFOS(config)# interface extreme-ethernet 0/1
SEFOS 3 SEFOS(config-if)# no shutdown
SEFOS 3 SEFOS(config-if)# exit

SEFOS 3 SEFOS(config)# interface vlan 30
SEFOS 3 SEFOS(config-if)# no shutdown
SEFOS 3 SEFOS(config-if)# ipv6 enable
SEFOS 3 SEFOS(config-if)# ipv6 address 3333::13 112
SEFOS 3 SEFOS(config-if)# end
```

2. Show the status of the IPv6 interface on SEFOS3.

```
SEFOS 3 SEFOS# show ipv6 interface
vlan1 is up, line protocol is up
    IPv6 is Enabled
    Link local address:
        fe80::214:4fff:fe6c:686d
    Global unicast address(es):
        Not Configured.
    Joined group address(es):
```

```
        ff02::1
        ff02::2
        ff02::1:ff6c:686d
    MTU is 9216
    ICMP redirects are enabled
    ND DAD is enabled, Number of DAD attempts: 1
    ND router advertisement is disabled
vlan20 is up, line protocol is up
    IPv6 is Enabled
    Link local address:
        fe80::214:4fff:fe6c:686d
    Global unicast address(es):
        2222::13/112
    Joined group address(es):
        ff02::1
        ff02::2
        ff02::9
        ff02::1:ff00:13
        ff02::1:ff6c:686d
    MTU is 9216
    ICMP redirects are enabled
    ND DAD is enabled, Number of DAD attempts: 1
    ND router advertisement is disabled
vlan30 is up, line protocol is up
    IPv6 is Enabled
    Link local address:
        fe80::214:4fff:fe6c:686d
    Global unicast address(es):
        3333::13/112
    Joined group address(es):
        ff02::1
        ff02::2
        ff02::9
        ff02::1:ff00:13
        ff02::1:ff6c:686d
    MTU is 9216
    ICMP redirects are enabled
    ND DAD is enabled, Number of DAD attempts: 1
    ND router advertisement is disabled

SEFOS 3 SEFOS#
```

General Configurations

This section contains procedures for configuring RIPng in SEFOS switches. See "RIPng Topology Example" on page 6 for descriptions of the topologies that are referenced in the procedures. Before you can configure RIPng, you must perform the basic IPv6 configuration in your environment in similar fashion as described in "Configuring the RIPng Topology Example" on page 5.

- "Configuring IPv6 RIPng" on page 13
- "Configuring Redistribution" on page 18
- "Configuring the Debug Level for RIPng" on page 22

Configuring IPv6 RIPng

Follow these steps to configure IPv6 RIPng on each switch:

1. Enable IPv6 unicast routing globally.
2. Enable IPv6 RIPng routing globally.
3. Enable RIPng routing on the desired interfaces.

- "Enable RIPng" on page 13
- "Enable and Configure RIPng on Desired IPv6 Interfaces" on page 14

▼ Enable RIPng

1. On the switch, enable IPv6 unicast routing.

```
SEFOS 2 SEFOS# configure terminal
SEFOS 2 SEFOS(config)# ipv6 unicast-routing
```

2. Enable RIPng and route redsitribution.

```
SEFOS 2 SEFOS(config)# ipv6 router rip
SEFOS 2 SEFOS(config-router)# redistribute connected
SEFOS 2 SEFOS(config-router)# end
SEFOS 2 SEFOS#
```

▼ Enable and Configure RIPng on Desired IPv6 Interfaces

1. Enable RIPng on the interfaces on SEFOS1.

```
SEFOS 1 SEFOS# configure terminal
SEFOS 1 SEFOS(config)# interface vlan 30
SEFOS 1 SEFOS(config-if)# ipv6 rip enable
SEFOS 1 SEFOS(config-if)# exit

SEFOS 1 SEFOS(config)# interface vlan 40
SEFOS 1 SEFOS(config-if)# ipv6 rip enable
SEFOS 1 SEFOS(config-if)# exit

SEFOS 1 SEFOS(config)# interface vlan 50
SEFOS 1 SEFOS(config-if)# ipv6 rip enable
SEFOS 1 SEFOS(config-if)#
```

2. Enable RIPng on the interfaces on SEFOS2.

```
SEFOS 2 SEFOS# configure terminal
SEFOS 2 SEFOS(config)# interface vlan 10
SEFOS 2 SEFOS(config-if)# ipv6 rip enable
SEFOS 2 SEFOS(config-if)# exit

SEFOS 2 SEFOS(config)# interface vlan 40
SEFOS 2 SEFOS(config-if)# ipv6 rip enable
SEFOS 2 SEFOS(config-if)# exit
```

3. Enable RIPng on the interfaces on SEFOS3.

```
SEFOS 3 SEFOS# configure terminal
SEFOS 3 SEFOS(config)# interface vlan 20
SEFOS 3 SEFOS(config-if)# ipv6 rip enable
SEFOS 3 SEFOS(config-if)# exit
```

```
SEFOS 3 SEFOS(config)# interface vlan 30
SEFOS 3 SEFOS(config-if)# ipv6 rip enable
  SEFOS 3 SEFOS(config-if)# exit
```

4. Review the RIPng status on SEFOS1.

```
SEFOS 1 SEFOS# show ipv6 rip
RIP  port 521, multicast-group ff02::9,Maximum paths is 16
Updates every 30 seconds; expire after 180
SEFOS 1 SEFOS# show ipv6 rip  database
Garbage Collect after  120 seconds
RIP local RIB
1111::/112,  metric 2, ripng
      vlan40/fe80::214:4fff:fe6c:630f, expires in 180 secs
2222::/112,  metric 2, ripng
      vlan30/fe80::214:4fff:fe6c:686d, expires in 180 secs
3333::/112,  metric 2, ripng
      vlan30/fe80::214:4fff:fe6c:686d, expires in 180 secs
3333::/112,  metric 1, local
      vlan30/::, expires in 180 secs
4444::/112,  metric 2, ripng
      vlan40/fe80::214:4fff:fe6c:630f, expires in 180 secs
4444::/112,  metric 1, local
      vlan40/::, expires in 180 secs
5555::/112,  metric 1, local
      vlan50/::, expires in 180 secs
6666::/112,  metric 2, ripng
      vlan40/fe80::214:4fff:fe6c:630f, expires in 180 secs
Poison Reverse is on
Interface:
vlan50
vlan40
vlan30
Redistribution:
Connected,Routes  Redistribution is enabled.
```

```
SEFOS 1 SEFOS# show ipv6 route
IPv6 Routing Table  -  8 entries
Codes : C - Connected, S - Static
SEFOS 1 SEFOS# show ipv6 route summary
O - OSPF, R - RIP, B - BGP
IPv6 Routing Table Summary - 8 entries
    3 Connected, 0 Static, 5 RIP, 0 BGP, 0 OSPF
    Number of prefixes:
    /112: 8
R   1111::/112   [2/120]
```

```
via fe80::214:4fff:fe6c:630f, vlan40
R   2222::/112   [2/120]
via fe80::214:4fff:fe6c:686d, vlan30
C   3333::/112   [1/1]
via ::, vlan30
R   3333::/112   [2/120]
via fe80::214:4fff:fe6c:686d, vlan30
C   4444::/112   [1/1]
via ::, vlan40
R   4444::/112   [2/120]
via fe80::214:4fff:fe6c:630f, vlan40
C   5555::/112   [1/1]
via ::, vlan50
R   6666::/112   [2/120]
via fe80::214:4fff:fe6c:630f, vlan40
```

5. Review the RIP route on SEFOS2.

```
SEFOS 2 SEFOS# show ipv6 rip
RIP  port 521, multicast-group ff02::9,Maximum paths is 16
Updates every 30 seconds; expire after 180
SEFOS 2 SEFOS# show ipv6 rip  database
Garbage Collect after  120 seconds
RIP local RIB
1111::/112,  metric 1, local
      vlan10/::, expires in 180 secs
2222::/112,  metric 3, ripng
      vlan40/fe80::221:28ff:fe56:d7a9, expires in 180 secs
3333::/112,  metric 2, ripng
      vlan40/fe80::221:28ff:fe56:d7a9, expires in 180 secs
4444::/112,  metric 1, local
      vlan40/::, expires in 180 secs
5555::/112,  metric 2, ripng
      vlan40/fe80::221:28ff:fe56:d7a9, expires in 180 secs
6666::/112,  metric 1, local
      vlan10/::, expires in 180 secs
Poison Reverse is on
Interface:
vlan40
vlan10
Redistribution:
Connected,Routes  Redistribution is enabled.
```

```
SEFOS 2 SEFOS# show ipv6 route
IPv6 Routing Table  -  6 entries
Codes : C - Connected, S - Static
SEFOS 2 SEFOS# show ipv6 route summary
O - OSPF, R - RIP, B - BGP
IPv6 Routing Table Summary - 6 entries
    3 Connected, 0 Static, 3 RIP, 0 BGP, 0 OSPF
    Number of prefixes:
    /112: 6
C   1111::/112   [1/1]
via ::, vlan10
R   2222::/112   [3/120]
via fe80::221:28ff:fe56:d7a9, vlan40
R   3333::/112   [2/120]
via fe80::221:28ff:fe56:d7a9, vlan40
C   4444::/112   [1/1]
via ::, vlan40
R   5555::/112   [2/120]
via fe80::221:28ff:fe56:d7a9, vlan40
C   6666::/112   [1/1]
via ::, vlan10
```

6. Review the RIP route on SEFOS3.

```
SEFOS 3 SEFOS# show ipv6 rip
RIP  port 521, multicast-group ff02::9,Maximum paths is 16
Updates every 30 seconds; expire after 180
SEFOS 3 SEFOS# show ipv6 rip  database
Garbage Collect after  120 seconds
RIP local RIB
1111::/112,  metric 3, ripng
      vlan30/fe80::221:28ff:fe56:d7a9, expires in 180 secs
2222::/112,  metric 1, local
      vlan20/::, expires in 180 secs
3333::/112,  metric 2, ripng
      vlan30/fe80::221:28ff:fe56:d7a9, expires in 180 secs
3333::/112,  metric 1, local
      vlan30/::, expires in 180 secs
4444::/112,  metric 2, ripng
      vlan30/fe80::221:28ff:fe56:d7a9, expires in 180 secs
5555::/112,  metric 2, ripng
      vlan30/fe80::221:28ff:fe56:d7a9, expires in 180 secs
6666::/112,  metric 3, ripng
      vlan30/fe80::221:28ff:fe56:d7a9, expires in 180 secs
Poison Reverse is on
Interface:
```

```
vlan20
vlan30
Redistribution:
Connected,Routes  Redistribution is enabled.
```

```
SEFOS 3 SEFOS# show ipv6 route
IPv6 Routing Table  -  7 entries
Codes : C - Connected, S - Static
SEFOS 3 SEFOS# show ipv6 route summary
O - OSPF, R - RIP, B - BGP
IPv6 Routing Table Summary - 7 entries
    2 Connected, 0 Static, 5 RIP, 0 BGP, 0 OSPF
    Number of prefixes:
    /112: 7
R   1111::/112   [3/120]
via fe80::221:28ff:fe56:d7a9, vlan30
C   2222::/112   [1/1]
via ::, vlan20
C   3333::/112   [1/1]
via ::, vlan30
R   3333::/112   [2/120]
via fe80::221:28ff:fe56:d7a9, vlan30
R   4444::/112   [2/120]
via fe80::221:28ff:fe56:d7a9, vlan30
R   5555::/112   [2/120]
via fe80::221:28ff:fe56:d7a9, vlan30
R   6666::/112   [3/120]
via fe80::221:28ff:fe56:d7a9, vlan30
```

Configuring Redistribution

- "Redistribution Overview" on page 19
- "Disable Redistribution" on page 19
- "Disable the split-horizon Option" on page 21

Redistribution Overview

Redistribution is enabled by default when RIPng is enabled. You can disable or change redistribution status, allowing more control of distributing IPv6 routes. Available options are static, connected and OSPF routes, and metrics. The following example shows a configuration with the default redistribution values.

```
SEFOS 1 SEFOS# show ipv6 rip
RIP  port 521, multicast-group ff02::9,Maximum paths is 16
Updates every 30 seconds; expire after 180
Garbage Collect after  120 seconds
Poison Reverse is on
Interface:
vlan40
vlan10
Redistribution:
 Connected, Routes Redistribution is enabled.
```

▼ Disable Redistribution

The following example disables the redistribution of directly connected routes (`5555::0`) on SEFOS1. With redistribution disabled, the route to `5555::0` is not visible on switches SEFOS2 and SEFOS3.

1. On SEFOS2, review the route information before disabling redistribution.

```
SEFOS 2 SEFOS# show ipv6 route

IPv6 Routing Table  -  6 entries
Codes : C - Connected, S - Static
        O - OSPF, R - RIP, B - BGP
C   1111::/112   [1/1]
        via ::, vlan10
R   2222::/112   [3/120]
        via fe80::221:28ff:fe56:d7a9, vlan40
R   3333::/112   [2/120]
        via fe80::221:28ff:fe56:d7a9, vlan40
C   4444::/112   [1/1]
        via ::, vlan40
R   5555::/112   [2/120]
        via fe80::221:28ff:fe56:d7a9, vlan40
C   6666::/112   [1/1]
        via ::, vlan10
```

2. On SEFOS3, review the route information before disabling redistribution.

```
SEFOS 3 SEFOS# show ipv6 route
IPv6 Routing Table  -  7 entries
Codes : C - Connected, S - Static
        O - OSPF, R - RIP, B - BGP
R   1111::/112   [3/120]
        via fe80::221:28ff:fe56:d7a9, vlan30
C   2222::/112   [1/1]
        via ::, vlan20
C   3333::/112   [1/1]
        via ::, vlan30
R   3333::/112   [2/120]
        via fe80::221:28ff:fe56:d7a9, vlan30
R   4444::/112   [2/120]
        via fe80::221:28ff:fe56:d7a9, vlan30
R   5555::/112   [2/120]
        via fe80::221:28ff:fe56:d7a9, vlan30
R   6666::/112   [3/120]
        via fe80::221:28ff:fe56:d7a9, vlan30
```

3. Disable the route redistribution on SEFOS1.

```
SEFOS 1 SEFOS# configure terminal
SEFOS 1 SEFOS(config)# ipv6 route rip
SEFOS 1 SEFOS(config-router)# no redistribute connected
SEFOS 1 SEFOS(config-router)# exit
```

4. On SEFOS2, review the route information after disabling redistribution.

Note that `5555::/112` [`2/120`] is missing from the output.

```
SEFOS 2 SEFOS# show ipv6 route
IPv6 Routing Table  -  5 entries
Codes : C - Connected, S - Static
        O - OSPF, R - RIP, B - BGP
C   1111::/112   [1/1]
        via ::, vlan10
R   2222::/112   [3/120]
        via fe80::221:28ff:fe56:d7a9, vlan40
R   3333::/112   [3/120]
        via fe80::221:28ff:fe56:d7a9, vlan40
C   4444::/112   [1/1]
        via ::, vlan40
C   6666::/112   [1/1]
        via ::, vlan10
```

5. **On SEFOS3, review the route information after disabling redistribution.**

   Note that `5555::/112` [`2/120`] is missing from the output.

```
SEFOS 3 SEFOS# show ipv6 route

IPv6 Routing Table  -  6 entries
Codes : C - Connected, S - Static
        O - OSPF, R - RIP, B - BGP
R   1111::/112   [3/120]
        via fe80::221:28ff:fe56:d7a9, vlan30
C   2222::/112   [1/1]
        via ::, vlan20
C   3333::/112   [1/1]
        via ::, vlan30
R   3333::/112   [3/120]
        via fe80::221:28ff:fe56:d7a9, vlan30
R   4444::/112   [3/120]
        via fe80::221:28ff:fe56:d7a9, vlan30
R   6666::/112   [3/120]
        via fe80::221:28ff:fe56:d7a9, vlan30
```

▼ Disable the `split-horizon` Option

By default, the `split-horizon` option with poison reverse is enabled on all RIPng interfaces.

1. **On SEFOS1, enter the configuration mode for the interface and disable split-horizon.**

```
SEFOS 1 SEFOS# configure terminal
SEFOS 1 SEFOS(config)# interface vlan 40
SEFOS 1 SEFOS(config-if)# no ipv6 split-horizon
SEFOS 1 SEFOS(config-if)# end
SEFOS 1 SEFOS#
```

2. **Review the configuration information.**

```
SEFOS 1 SEFOS# show ipv6 rip

RIP  port 521, multicast-group ff02::9,Maximum paths is 16
Updates every 30 seconds; expire after 180
Garbage Collect after  120 seconds
Split Horizon is off;
Interface:
vlan50
```

```
vlan40
vlan30
Redistribution:
 Connected,Routes  Redistribution is enabled.
```

Configuring the Debug Level for RIPng

The IPv6 RIPng debug option can be used to observe and debug RIPng issues.

- "Enable Debugging" on page 22
- "Disable RIPng Debugging" on page 23

▼ Enable Debugging

For details of the `debug ipv6 rip` command, refer to the *Sun Ethernet Fabric Operating System CLI Enterprise Reference Manual*.

- **Enable the debug level.**

```
SEFOS 1 SEFOS# debug ipv6 rip all

RIP6: RIP6 : Got a update timer expiry on If = 41
RIP6: RIP6: Send RIP6 resp Dest port = 521 If = 41 Resp flag = 1
Dest Addr = ff02::9
RIP6: RIP6BUF: In bufwrite Bufptr = 0x11277798 data = 0x3cb9340e
offset = 0 size = 4 Copy = 1
RIP6: RIP6:Combining routes over If=41 RespFlag=1 Horizon=1
DestPort=521 DestAddr=ff02::9
RIP6: Sending over If=41 Route counter=0 Max no of RTE= 456 Len=4
BufPtr=0x3cb932f0
RIP6: RIP6BUF: In bufwrite Bufptr = 0x11277798 data = 0x3cb93280
offset = 4 size = 20 Copy = 1
RIP6: RIP6:Combining routes over If=41 RespFlag=1 Horizon=1
DestPort=521 DestAddr=ff02::9
RIP6: Sending over If=41 Route counter=1 Max no of RTE= 456 Len=24
BufPtr=0x3cb932f0
RIP6: RIP6BUF: In bufwrite Bufptr = 0x11277798 data = 0x3cb93280
offset = 24 size = 20 Copy = 1
RIP6: RIP6:Combining routes over If=41 RespFlag=1 Horizon=1
DestPort=521 DestAddr=ff02::9
RIP6: Sending over If=41 Route counter=2 Max no of RTE= 456 Len=44
BufPtr=0x3cb932f0
```

```
RIP6: RIP6BUF: In bufwrite Bufptr = 0x11277798 data = 0x3cb93280
offset = 44 size = 20 Copy = 1
RIP6: RIP6:Combining routes over If=41 RespFlag=1 Horizon=1
DestPort=521 DestAddr=ff02::9
RIP6: Sending over If=41 Route counter=3 Max no of RTE= 456 Len=64
BufPtr=0x3cb932f0
RIP6: RIP6BUF: In bufwrite Bufptr = 0x11277798 data = 0x3cb93280
offset = 64 size = 20 Copy = 1
RIP6: RIP6:Combining routes over If=41 RespFlag=1 Horizon=1
DestPort=521 DestAddr=ff02::9
RIP6: Sending over If=41 Route counter=4 Max no of RTE= 456 Len=84
BufPtr=0x3cb932f0
RIP6: RIP6BUF: In bufwrite Bufptr = 0x11277798 data = 0x3cb93280
offset = 84 size = 20 Copy = 1
RIP6: RIP6:Combining routes over If=41 RespFlag=1 Horizon=1
DestPort=521 DestAddr=ff02::9
RIP6: Sending over If=41 Route counter=5 Max no of RTE= 456 Len=
104 BufPtr=0x3cb932f0
RIP6: RIP6BUF: In bufwrite Bufptr = 0x11277798 data = 0x3cb93280
offset = 104 size = 20 Copy = 1
RIP6: RIP6:RIP6 send Buf=0x11277798 Send flag=1 DstUDP6Port=521
If=41 DestAddr=ff02::9 Len=124
RIP6: RIP6LIB: Starting timer Id = 3 Duration = 30 Timer Node =
0x11702424
RIP6: RIP6BUF: Reading from buf = 0x112777f8 data = 0x3cb934f4
offset = 0 size = 4 copy = 0
RIP6: RIP6BUF: Returning pointer = 0x35840d80 local data =
0x3cb934f4
RIP6: RIP6 : The RIP6 header has Command = 2 Version = 1 Reserved
field = 0
RIP6: RIP6:rcvd resp Buf=0x112777f8 HopLim=255 Len=124 If=41
SrcAddr=ff02::9 DestAddr=fe80::221:28ff:fe56:d7a9
RIP6: RIP6 : Received RIP6 response buffer :
RIP6: RIP6:sndrOfRIPngRespDidnt putLlocalSrcAddr RespCameOnIf=41
SrcAddr=FF02:0000:0000:0000:0000:0000:0000:0009 DesAddr=
FE80:0000:0000:0000:0221:28FF
```

▼ Disable RIPng Debugging

For details of the `no debug ipv6 rip` command, refer to the *Sun Ethernet Fabric Operating System CLI Enterprise Reference Manual*.

- **Type.**

```
SEFOS 1 SEFOS# no debug ipv6 rip
```