

Troubleshoot VRRPv3 Related Issues with IPv6

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Introduction

This document describes the steps to troubleshoot Virtual Router Redundancy Protocol Version 3 (VRRPv3) with IPv6 in Nexus 9000.

Prerequisites

Requirements

Cisco NXOS® recommends that you have knowledge of these topics:

- VRRP
- Ethalyzer
- IPv6
- First Hop Redundancy Protocol (FHRP)

Components used

This document is restricted to specific hardware such as Nexus 9000.

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, ensure that you understand the potential impact of any command.

Background Information

VRRP version 2 has support only for the IPv4 address family, but VRRP version 3 (VRRP3) has support for both IPv4 and IPv6 address families. On NX-OS, both VRRP and VRRPv3 cannot be enabled on the same device. If the feature VRRP is already enabled on the Nexus switch, enabling the feature VRRPv3 displays an error stating that VRRPv2 is already enabled. Thus, a migration must be performed from VRRP to VRRPv3, which has minimal impact on the services.

Topology

X:X:X:X::70a

X:X:X:X::70c



Virtual Mac Address: 0000.5e00.0201

VRRP3 IPV6 address: X:X:X:X::70b

Note: No Virtual Port-Channel (VPC) environment.

Verify

1) Verify the configuration in both sides matches.

Switch 1:

```
Switch1# show run interface vlan 209
```

```
interface Vlan209
no shutdown
no ip redirects
ipv6 address X:X:X:X::70a/125
vrrpv3 1 address-family ipv6
priority 200
address X::X:X:X:297 primary
```



```
Switch2# show vrrpv3 vlan 209
```

```
Vlan209 - Group 1 - Address-Family IPv6  
State is BACKUP  
State duration 3 mins 57.928 secs  
Virtual IP address is X::X:X:X:297  
Virtual MAC address is 0000.5e00.0201  
Advertisement interval is 1000 msec  
Preemption enabled  
Priority is 100, (Configured 100)  
Primary Router is X::X:X:X:dea7, priority is 200  
Primary Advertisement interval is 1000 msec (learned)  
Primary Down interval is 3609 msec (expires in 3422 msec)
```

```
Switch2#
```

Troubleshoot

Broken scenario.

1) The **show vrrpv3 brief** command option displays the brief information related to the group, such as group number, address family, priority, preemption, state, primary address, and group address (which is the virtual group IP). In this example, and as described above, both switches are primary which is not correct.

Switch 1:

```
Switch1# show vrrpv3 brief
```

```
Interface Grp A-F Pri Time Own Pre State Primary addr/Group addr  
Vlan209 1 IPv6 200 0 N Y Primary X::X:X:X:dea7(local) X::X:X:X:297  
Switch1#
```

Switch 2:

```
Switch2# show vrrpv3 brief
```

```
Interface Grp A-F Pri Time Own Pre State Primary addr/Group addr  
Vlan209 1 IPv6 100 0 N Y Primary X::X:X:X:de07(local) X::X:X:X:297  
Switch2#
```

2) The **show vrrpv3 detail** command displays additional information, such as advertisements sent and received for VRRPv3, virtual MAC address, and other statistics related to errors and transition states. For instance, VRRPv3 advertisements received are not incrementing.

Switch 1:

Switch1# show vrrpv3 detail vlan 209

```
Vlan209 - Group 1 - Address-Family IPv6
State is Primary
State duration 12 hours 47 mins 40 secs
Virtual IP address is X::X:X:X:297
Virtual MAC address is 0000.5e00.0201
Advertisement interval is 1000 msec
Preemption enabled
Priority is 200, (Configured 200)
Primary Router is X::X:X:X:dea7 (local), priority is 200
Primary Advertisement interval is 1000 msec (expires in 284 msec)
Primary Down interval is unknown
VRRPv3 Advertisements: sent 57138 (errors 2) - rcvd 177      <-----
VRRPv2 Advertisements: sent 0 (errors 0) - rcvd 0
Group Discarded Packets: 0
VRRPv2 incompatibility: 0
IP Address Owner conflicts: 0
Invalid address count: 0
IP address configuration mismatch : 0
Invalid Advert Interval: 0
Adverts received in Init state: 0
Invalid group other reason: 0
Group State transition:
Init to Primary: 0
Init to backup: 4 (Last change Thu Apr 11 01:01:46.418 UTC)
Backup to Primary: 4 (Last change Thu Apr 11 01:01:49.637 UTC)
Primary to backup: 0
Primary to init: 3 (Last change Thu Apr 11 00:57:37.107 UTC)
Backup to init: 0
```

Switch1#

Switch1# show vrrpv3 detail vlan 209

```
Vlan209 - Group 1 - Address-Family IPv6
State is Primary
State duration 12 hours 51 mins 29 secs
Virtual IP address is fx::X:X:X:297
Virtual MAC address is 0000.5e00.0201
Advertisement interval is 1000 msec
Preemption enabled
Priority is 200, (Configured 200)
Primary Router is X::X:X:X:dea7 (local), priority is 200
Primary Advertisement interval is 1000 msec (expires in 667 msec)
Primary Down interval is unknown
VRRPv3 Advertisements: sent 57393 (errors 2) - rcvd 177      <-----
VRRPv2 Advertisements: sent 0 (errors 0) - rcvd 0
Group Discarded Packets: 0
VRRPv2 incompatibility: 0
IP Address Owner conflicts: 0
Invalid address count: 0
IP address configuration mismatch : 0
Invalid Advert Interval: 0
Adverts received in Init state: 0
Invalid group other reason: 0
Group State transition:
Init to Primary: 0
Init to backup: 4 (Last change Thu Apr 11 01:01:46.418 UTC)
Backup to Primary: 4 (Last change Thu Apr 11 01:01:49.637 UTC)
```

Primary to backup: 0
Primary to init: 3 (Last change Thu Apr 11 00:57:37.107 UTC)
Backup to init: 0

Switch1#

Switch 2:

Switch2# show vrrpv3 detail vlan 209

Vlan209 - Group 1 - Address-Family IPv6
State is Primary
State duration 12 hours 51 mins 49 secs
Virtual IP address is X::X:X:X:297
Virtual MAC address is 0000.5e00.0201
Advertisement interval is 1000 msec
Preemption enabled
Priority is 100, (Configured 100)
Primary Router is X::X:X:X:de07 (local), priority is 100
Primary Advertisement interval is 1000 msec (expires in 412 msec)
Primary Down interval is unknown
VRRPv3 Advertisements: sent 51764 (errors 0) - rcvd 6032 <-----
VRRPv2 Advertisements: sent 0 (errors 0) - rcvd 0
Group Discarded Packets: 0
VRRPv2 incompatibility: 0
IP Address Owner conflicts: 0
Invalid address count: 0
IP address configuration mismatch : 0
Invalid Advert Interval: 0
Adverts received in Init state: 0
Invalid group other reason: 0
Group State transition:
Init to Primary: 0
Init to backup: 1 (Last change Wed Apr 10 23:21:09.604 UTC)
Backup to Primary: 4 (Last change Thu Apr 11 00:57:40.229 UTC)
Primary to backup: 3 (Last change Thu Apr 11 00:54:11.758 UTC)
Primary to init: 0
Backup to init: 0

Switch2#

Switch2# show vrrpv3 detail vlan 209

Vlan209 - Group 1 - Address-Family IPv6
State is Primary
State duration 12 hours 55 mins 38 secs
Virtual IP address is fX::X:X:X:297
Virtual MAC address is 0000.5e00.0201
Advertisement interval is 1000 msec
Preemption enabled
Priority is 100, (Configured 100)
Primary Router is X::X:X:X:de07 (local), priority is 100
Primary Advertisement interval is 1000 msec (expires in 479 msec)
Primary Down interval is unknown
VRRPv3 Advertisements: sent 52019 (errors 0) - rcvd 6032 <-----
VRRPv2 Advertisements: sent 0 (errors 0) - rcvd 0


```
Group Discarded Packets: 0
VRRPv2 incompatibility: 0
IP Address Owner conflicts: 0
Invalid address count: 0
IP address configuration mismatch : 0
Invalid Advert Interval: 0
Adverts received in Init state: 0
Invalid group other reason: 0
Group State transition:
Init to Primary: 0
Init to backup: 1 (Last change Wed Apr 10 23:21:09.604 UTC)
Backup to Primary: 4 (Last change Thu Apr 11 00:57:40.229 UTC)
Primary to backup: 3 (Last change Thu Apr 11 00:54:11.758 UTC)
Primary to init: 0
Backup to init: 0
```

Switch2#

3) The **show vrrpv3 internal event-history debugs** command displays information about the different stages the VRRPv3 participant has gone through.

Switch 1:

```
Switch1# show vrrpv3 internal event-history debugs
```

```
2024 Apr 11 01:01:49.642985: E_DEBUG vrrpv3 [23795]: VRRS Vlan209 [vrrpVlan209v61 tag]: Current MAC Sta
2024 Apr 11 01:01:49.642974: E_DEBUG vrrpv3 [23795]: VRRS Vlan209 [vrrpVlan209v61 tag]: Current MAC Sta
2024 Apr 11 01:01:49.642963: E_DEBUG vrrpv3 [23795]: VRRS Vlan209 [vrrpVlan209v61 tag]: Pathway MAC Even
2024 Apr 11 01:01:49.642952: E_DEBUG vrrpv3 [23795]: VRRS Vlan209 [vrrpVlan209v61 tag]: Notifying Pathw
2024 Apr 11 01:01:49.642941: E_DEBUG vrrpv3 [23795]: VRRS Vlan209 [vrrpVlan209v61 tag]: L2fm Alloc Resp
2024 Apr 11 01:01:49.642898: E_DEBUG vrrpv3 [23795]: VRRP-MTS: L2fm Alloc Response: RRToken=0x2f9a22, N
2024 Apr 11 01:01:49.637478: E_DEBUG vrrpv3 [23795]: VRRS Vlan209: [vrrpVlan209v61 tag] Installing ICMP
2024 Apr 11 01:01:49.637453: E_DEBUG vrrpv3 [23795]: VRRS Vlan209: [vrrpVlan209v61 tag] Activating VIP6
2024 Apr 11 01:01:49.637367: E_DEBUG vrrpv3 [23795]: VRRS Vlan209 [vrrpVlan209v61 tag]: Current MAC Sta
2024 Apr 11 01:01:49.637306: E_DEBUG vrrpv3 [23795]: VRRS Vlan209 [vrrpVlan209v61 tag]: Current MAC Sta
2024 Apr 11 01:01:49.637295: E_DEBUG vrrpv3 [23795]: VRRS Vlan209 [vrrpVlan209v61 tag]: Pathway MAC Even
2024 Apr 11 01:01:47.421619: E_DEBUG vrrpv3 [23795]: VRRP-MTS: Handling IPv6 Change 7: Ifindex=0x90100d
2024 Apr 11 01:01:46.421957: E_DEBUG vrrpv3 [23795]: VRRS Vlan209 [vrrpVlan209v61 tag]: Current MAC Sta
2024 Apr 11 01:01:46.421950: E_DEBUG vrrpv3 [23795]: VRRS Vlan209 [vrrpVlan209v61 tag]: Current MAC Sta
2024 Apr 11 01:01:46.421944: E_DEBUG vrrpv3 [23795]: VRRS Vlan209 [vrrpVlan209v61 tag]: Pathway MAC Even
2024 Apr 11 01:01:46.421938: E_DEBUG vrrpv3 [23795]: VRRS Vlan209 [vrrpVlan209v61 tag]: Notifying Pathw
2024 Apr 11 01:01:46.421932: E_DEBUG vrrpv3 [23795]: VRRS Vlan209 [vrrpVlan209v61 tag]: L2fm Alloc Resp
```

```
2024 Apr 11 01:01:46.421911: E_DEBUG vrrpv3 [23795]: VRRP-MTS: L2fm Alloc Response: RRToken=0x2f99cd, N
2024 Apr 11 01:01:46.419597: E_DEBUG vrrpv3 [23795]: VRRS Vlan209: [vrrpVlan209v61 tag] Installing ICMP
2024 Apr 11 01:01:46.419574: E_DEBUG vrrpv3 [23795]: VRRS Vlan209: [vrrpVlan209v61 tag] Deactivating VI
2024 Apr 11 01:01:46.419515: E_DEBUG vrrpv3 [23795]: VRRS Vlan209 [vrrpVlan209v61 tag]: Current MAC Sta
2024 Apr 11 01:01:46.419463: E_DEBUG vrrpv3 [23795]: VRRS Vlan209 [vrrpVlan209v61 tag]: Current MAC Sta
2024 Apr 11 01:01:46.419454: E_DEBUG vrrpv3 [23795]: VRRS Vlan209 [vrrpVlan209v61 tag]: Pathway MAC Even
Switch1#
```

Switch 2:

```
Switch2# show vrrpv3 internal event-history debugs
```

```
2024 Apr 11 00:57:40.234767: E_DEBUG VRRS Vlan209 [vrrpVlan209v61 tag] Current MAC 0000.5e00.0201 state
2024 Apr 11 00:57:40.234752: E_DEBUG VRRS Vlan209 [vrrpVlan209v61 tag] Current MAC 0000.5e00.0201 State
2024 Apr 11 00:57:40.234744: E_DEBUG VRRS Vlan209 [vrrpVlan209v61 tag] pw id val is(983043)

2024 Apr 11 00:57:40.234736: E_DEBUG VRRS Vlan209 [vrrpVlan209v61 tag] Notifying pathway mac of async e
2024 Apr 11 00:57:40.234728: E_DEBUG VRRS Vlan209 [vrrpVlan209v61 tag] fx_macdb_handle_l2fm_alloc :: AL
2024 Apr 11 00:57:40.234694: E_DEBUG VRRP-MTS: L2FM alloc resp: rrtoken 0x3ba768, msgs 1, overall statu
2024 Apr 11 00:57:40.229355: E_DEBUG VRRS Vlan209 [vrrpVlan209v61 tag] installing icmpv6 entry for vip
2024 Apr 11 00:57:40.229329: E_DEBUG VRRS Vlan209 [vrrpVlan209v61 tag] activating vip6 X::X:X:X:297, th
2024 Apr 11 00:57:40.229251: E_DEBUG VRRS Vlan209 [vrrpVlan209v61 tag] Current MAC 0000.5e00.0201 state
2024 Apr 11 00:57:40.229195: E_DEBUG VRRS Vlan209 [vrrpVlan209v61 tag] Current MAC 0000.5e00.0201 State
2024 Apr 11 00:57:40.229184: E_DEBUG VRRS Vlan209 [vrrpVlan209v61 tag] pw id val is(983043)

2024 Apr 11 00:57:36.813093: E_DEBUG VRRP-MTS: Received IM_PHY_LINK_STATE_CHANGE(down) for 0x1a006400
2024 Apr 11 00:54:11.763596: E_DEBUG VRRS Vlan209 [vrrpVlan209v61 tag] Current MAC 0000.5e00.0201 state
2024 Apr 11 00:54:11.763587: E_DEBUG VRRS Vlan209 [vrrpVlan209v61 tag] Current MAC 0000.5e00.0201 State
2024 Apr 11 00:54:11.763580: E_DEBUG VRRS Vlan209 [vrrpVlan209v61 tag] pw id val is(983043)

2024 Apr 11 00:54:11.763572: E_DEBUG VRRS Vlan209 [vrrpVlan209v61 tag] Notifying pathway mac of async e
2024 Apr 11 00:54:11.763564: E_DEBUG VRRS Vlan209 [vrrpVlan209v61 tag] fx_macdb_handle_l2fm_alloc :: AL
2024 Apr 11 00:54:11.763533: E_DEBUG VRRP-MTS: L2FM alloc resp: rrtoken 0x3b791e, msgs 1, overall statu
2024 Apr 11 00:54:11.758782: E_DEBUG VRRS Vlan209 [vrrpVlan209v61 tag] installing icmpv6 entry for vip
```

```
2024 Apr 11 00:54:11.758757: E_DEBUG VRRS Vlan209 [vrrpVlan209v61 tag] de-activating vip6 X::X:X:X:297,
2024 Apr 11 00:54:11.758685: E_DEBUG VRRS Vlan209 [vrrpVlan209v61 tag] Current MAC 0000.5e00.0201 state
2024 Apr 11 00:54:11.758637: E_DEBUG VRRS Vlan209 [vrrpVlan209v61 tag] Current MAC 0000.5e00.0201 State
2024 Apr 11 00:54:11.758626: E_DEBUG VRRS Vlan209 [vrrpVlan209v61 tag] pw id val is(983043)

2024 Apr 11 00:54:06.643584: E_DEBUG VRRP-MTS: L2_PROTO_CHANGE: intf 0x1a006400 entering L2
2024 Apr 11 00:54:06.616851: E_DEBUG VRRP-MTS: Received IM_PHY_LINK_STATE_CHANGE(up) for 0x1a006400

2024 Apr 11 00:52:11.216190: E_DEBUG VRRS Vlan209 [vrrpVlan209v61 tag] Current MAC 0000.5e00.0201 state
2024 Apr 11 00:52:11.216182: E_DEBUG VRRS Vlan209 [vrrpVlan209v61 tag] Current MAC 0000.5e00.0201 State
2024 Apr 11 00:52:11.216174: E_DEBUG VRRS Vlan209 [vrrpVlan209v61 tag] pw id val is(983043)

2024 Apr 11 00:52:11.216167: E_DEBUG VRRS Vlan209 [vrrpVlan209v61 tag] Notifying pathway mac of async e
2024 Apr 11 00:52:11.216159: E_DEBUG VRRS Vlan209 [vrrpVlan209v61 tag] fx_macdb_handle_l2fm_alloc :: AL
2024 Apr 11 00:52:11.216125: E_DEBUG VRRP-MTS: L2FM alloc resp: rrtoken 0x3b3bc5, msgs 1, overall statu
2024 Apr 11 00:52:11.210932: E_DEBUG VRRS Vlan209 [vrrpVlan209v61 tag] installing icmpv6 entry for vip
2024 Apr 11 00:52:11.210906: E_DEBUG VRRS Vlan209 [vrrpVlan209v61 tag] activating vip6 X::X:X:X:297, th
2024 Apr 11 00:52:11.210828: E_DEBUG VRRS Vlan209 [vrrpVlan209v61 tag] Current MAC 0000.5e00.0201 state
2024 Apr 11 00:52:11.210773: E_DEBUG VRRS Vlan209 [vrrpVlan209v61 tag] Current MAC 0000.5e00.0201 State
2024 Apr 11 00:52:11.210762: E_DEBUG VRRS Vlan209 [vrrpVlan209v61 tag] pw id val is(983043)

2024 Apr 11 00:52:08.025681: E_DEBUG VRRP-MTS: Received IM_PHY_LINK_STATE_CHANGE(down) for 0x1a006400
```

Switch2#

4) Ethalyzer shows the VRRP announcements. VRRP announcements are only done by the primary switch. Multicast address for VRRPv3 is ff02::12.

Switch 1:

```
Switch1# ethalyzer local interface inband display-filter "vrrp.adver_int" limit-captured-frames 0
Capturing on inband
2024-04-11 14:07:50.050745 X::X:X:X:dea7 -> ff02::12 VRRP Announcement (v3)
2024-04-11 14:07:50.967333 X::X:X:X:dea7 -> ff02::12 VRRP Announcement (v3)
2024-04-11 14:07:51.861690 X::X:X:X:dea7 -> ff02::12 VRRP Announcement (v3)
2024-04-11 14:07:52.809845 X::X:X:X:dea7 -> ff02::12 VRRP Announcement (v3)
2024-04-11 14:07:53.700778 X::X:X:X:dea7 -> ff02::12 VRRP Announcement (v3)
2024-04-11 14:07:54.693008 X::X:X:X:dea7 -> ff02::12 VRRP Announcement (v3)
```

6 packets captured

Switch1#

Switch 2:

```
Switch2# ethanalyzer local interface inband display-filter "vrrp.adver_int" limit-captured-frames 0
Capturing on inband
2024-04-11 14:07:49.946663 X::X:X:X:de07 -> ff02::12 VRRP Announcement (v3)
2024-04-11 14:07:50.829985 X::X:X:X:de07 -> ff02::12 VRRP Announcement (v3)
2024-04-11 14:07:51.728800 X::X:X:X:de07 -> ff02::12 VRRP Announcement (v3)
2024-04-11 14:07:52.720034 X::X:X:X:de07 -> ff02::12 VRRP Announcement (v3)
2024-04-11 14:07:53.571038 X::X:X:X:de07 -> ff02::12 VRRP Announcement (v3)
2024-04-11 14:07:54.386109 X::X:X:X:de07 -> ff02::12 VRRP Announcement (v3)

6 packets captured
Switch2#
```

From the output above, both switches are sending their own advertisements (dea7 and de07). That is an indication that there is not connectivity between the two switches participating in the same VRRPv3 group.

Taking a deeper look into the packets generated by VRRPv3 details about MAC address, priority, version and IP are found.

Switch 1:

```
Ethernet II, Src: ICANNIAN_00:02:01 (00:00:5e:00:02:01), Dst: IPv6mcast_12 (33:33:00:00:00:12)

Frame 206: 82 bytes on wire (656 bits), 82 bytes captured (656 bits)
Ethernet II, Src: ICANNIAN_00:02:01 (00:00:5e:00:02:01), Dst: IPv6mcast_12 (33:33:00:00:00:12)
Internet Protocol Version 6, Src: X::X:X:X:dea7, Dst: ff02::12
Virtual Router Redundancy Protocol
Version 3, Packet type 1 (Advertisement)
Virtual Rtr ID: 1
Priority: 200 (Default priority for a backup VRRP router)
Addr Count: 1
0000 .... = Reserved: 0
.... 0000 0110 0100 = Adver Int: 100
Checksum: 0xb912 [correct]
[Checksum Status: Good]
IPv6 Address: X::X:X:X:297
```

Switch 2:

```
Frame 82: 78 bytes on wire (624 bits), 78 bytes captured (624 bits)
```

```
Ethernet II, Src: ICANNIAN_00:02:01 (00:00:5e:00:02:01), Dst: IPv6mcast_12 (33:33:00:00:00:12)
Frame 82: 78 bytes on wire (624 bits), 78 bytes captured (624 bits)
Ethernet II, Src: ICANNIAN_00:02:01 (00:00:5e:00:02:01), Dst: IPv6mcast_12 (33:33:00:00:00:12)
Internet Protocol Version 6, Src: X::X:X:X:de07, Dst: ff02::12
Virtual Router Redundancy Protocol
Version 3, Packet type 1 (Advertisement)
Virtual Rtr ID: 1
Priority: 100 (Default priority for a backup VRRP router)
Addr Count: 1
0000 .... = Reserved: 0
.... 0000 0110 0100 = Adver Int: 100
Checksum: 0xb912 [correct]
[Checksum Status: Good]
IPv6 Address: X::X:X:X:297
```

5) Once the connectivity issue has been solved which in this case was that the layer 2 interface was in a shutdown state even though the SVI was in an up state, the switches must now show the right state (primary and backup respectively) and the advertisements are only sent by the primary switch.

Switch 1:

```
Switch1# show vrrpv3
```

```
Vlan209 - Group 1 - Address-Family IPv6
State is Primary
State duration 13 hours 42 mins 46 secs
Virtual IP address is X::X:X:X:297
Virtual MAC address is 0000.5e00.0201
Advertisement interval is 1000 msec
Preemption enabled
Priority is 200, (Configured 200)
Primary Router is X::X:X:X:dea7 (local), priority is 200
Primary Advertisement interval is 1000 msec (expires in 118 msec)
Primary Down interval is unknown
```

```
Switch1#
Switch1#
```

```
Switch1# ethanalyzer local interface inband display-filter "vrrp" limit-captured-frames 0
Capturing on inband
```

```
2024-04-11 14:48:48.125754 X::X:X:X:dea7 -> ff02::12 VRRP Announcement (v3)
2024-04-11 14:48:48.125794 X::X:X:X:dea7 -> ff02::12 VRRP Announcement (v3)
2024-04-11 14:48:49.002998 X::X:X:X:dea7 -> ff02::12 VRRP Announcement (v3)
2024-04-11 14:48:49.003035 X::X:X:X:dea7 -> ff02::12 VRRP Announcement (v3)
2024-04-11 14:48:49.983749 X::X:X:X:dea7 -> ff02::12 VRRP Announcement (v3)
2024-04-11 14:48:49.983782 X::X:X:X:dea7 -> ff02::12 VRRP Announcement (v3)
```

```
6 packets captured
Switch1#
```

An ELAM is triggered in the Primary switch showing the right MAC addresses when pointing to the

multicast address for VRRPv3:

```
Switch1(TAH-elam-insel6)# set outer ipv6 src_ip fe80::6a9e:bff:feaa:dea7 dst_ip ff02::12
Switch1(TAH-elam-insel6)# start
Switch1(TAH-elam-insel6)# report
HOMEWOOD ELAM REPORT SUMMARY
slot - 1, asic - 0, slice - 0
=====
```

```
Incoming Interface: sup-eth
Src Idx : 0x0, Src BD : 209
Outgoing Interface Info: met_ptr 0
```

Packet Type: IPv6

```
Dst MAC address: 33:33:00:00:00:12
Src MAC address: 00:00:5E:00:02:01
```

```
Dst IPv6 address: FF02:0000:0000:0000:0000:0000:0000:0012
Src IPv6 address: FE80:0000:0000:0000:6A9E:0BFF:FEAA:DEA7
Ver = 6, Pkt len = 40, Payload_length = 4
```

L4 Protocol : 112

Drop Info:

```
LUA:
LUB:
LUC:
LUD:
Final Drops:
```

```
vntag:
vntag_valid : 0
vntag_vir : 0
vntag_svif : 0
```

Switch1(TAH-elam-insel6)#

Switch 2:

Switch2# show vrrpv3

```
Vlan209 - Group 1 - Address-Family IPv6
State is BACKUP
State duration 1.538 secs
Virtual IP address is X::X:X:X:297
Virtual MAC address is 0000.5e00.0201
Advertisement interval is 1000 msec
Preemption enabled
Priority is 100, (Configured 100)
Primary Router is X::X:X:X:dea7, priority is 200
```

Primary Advertisement interval is 1000 msec (learned)
Primary Down interval is 3609 msec (expires in 2886 msec)

Switch2#

```
Switch2# ethanalyzer local interface inband display-filter "vrrp" limit-captured-frames 0
Capturing on inband
2024-04-11 14:48:48.082516 X::X:X:X:dea7 -> ff02::12 VRRP Announcement (v3)
2024-04-11 14:48:48.959735 X::X:X:X:dea7 -> ff02::12 VRRP Announcement (v3)
2024-04-11 14:48:49.940504 X::X:X:X:dea7 -> ff02::12 VRRP Announcement (v3)

3 packets captured
Switch2#
```

The advertisement can be seen on the backup device when running an ELAM. The advertisement is coming from the primary switch (X::X:X:X:dea7) and it is being received in the correct incoming interface which is ethernet 1/51

Switch2# show hardware internal tah interface e1/51

```
#####
IfIndex: 0x1a006400
DstIndex: 5944
IfType: 26
Asic: 0
Asic: 0
AsicPort: 60
SrcId: 120
Slice: 0
PortOnSlice: 60
Table entries for interface Ethernet1/51
```

```
Switch2(TAH-elam)# trigger init asic 0 slice 0 in-select 6 out-select 0 use-src-id 120
Switch2(TAH-elam-insel6)# set outer ipv6 src_ip X::X:X:X:dea7
Switch2(TAH-elam-insel6)# start
Switch2(TAH-elam-insel6)# report
HOMEWOOD ELAM REPORT SUMMARY
slot - 1, asic - 0, slice - 0
=====
```

```
Incoming Interface: Eth1/51
Src Idx : 0xc9, Src BD : 209
Outgoing Interface Info: met_ptr 0
```

Packet Type: IPv6

```
Dst MAC address: 33:33:00:00:00:12
Src MAC address: 00:00:5E:00:02:01
.lq Tag0 VLAN: 209, cos = 0x6
```

Sup hit: 1, Sup Idx: 3344

```
Dst IPv6 address: FF02:0000:0000:0000:0000:0000:0000:0012
Src IPv6 address: X:X:X:X:X:X:DEA7
Ver = 6, Pkt len = 24, Payload_length = 4
```

L4 Protocol : 112

Drop Info:

LUA:

LUB:

LUC:

LUD:

Final Drops:

vntag:

vntag_valid : 0

vntag_vir : 0

vntag_svif : 0

Switch2(TAH-e1am-inse16)#

Related information

[Configuring VRRPv3](#)

[Ethanalyzer](#)