Résolution des problèmes liés au protocole VRRPv3 avec IPv6

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Introduction

Ce document décrit les étapes pour dépanner le protocole VRRPv3 (Virtual Router Redundancy Protocol Version 3) avec IPv6 dans Nexus 9000.

Conditions préalables

Exigences

Cisco NXOS® vous recommande de connaître les sujets suivants :

- VRRP
- Ethanalyseur
- IPv6
- Protocole FHRP (First Hop Redundancy Protocol)

Composants utilisés

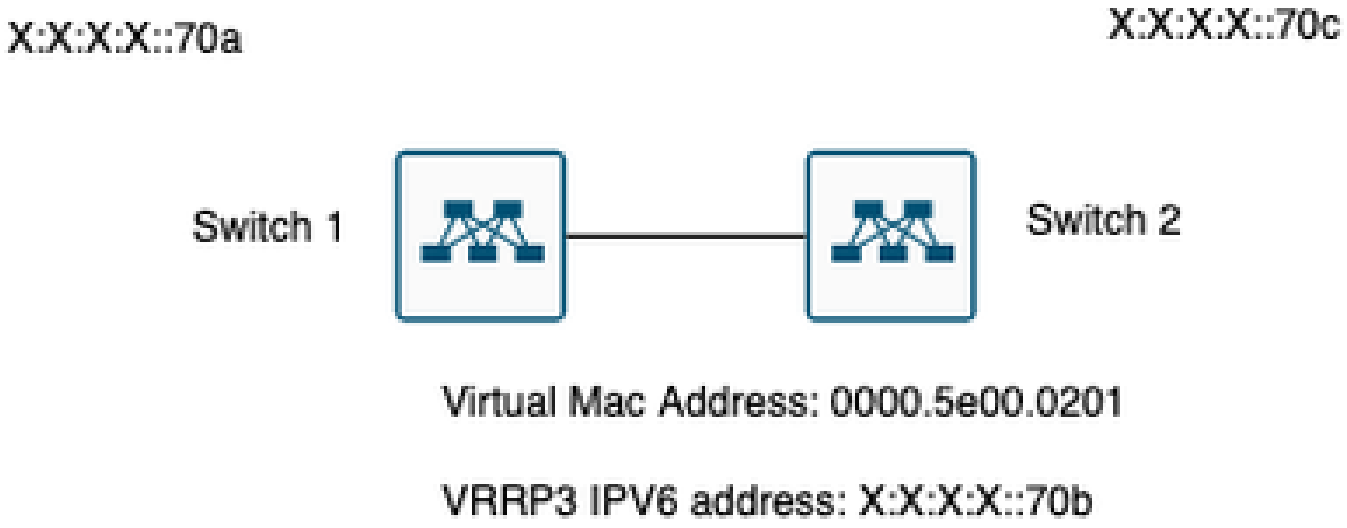
Ce document est limité à un matériel spécifique tel que Nexus 9000.

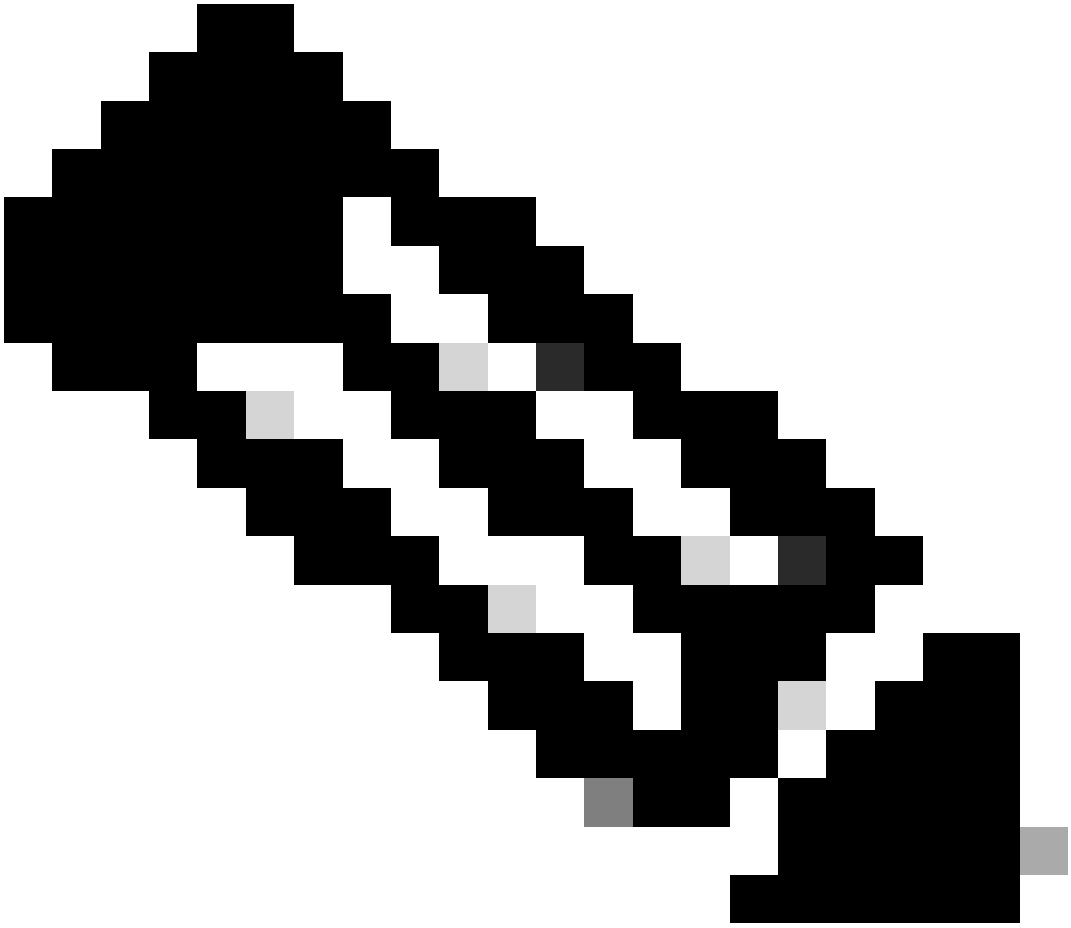
The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. Si votre réseau est en ligne, assurez-vous de bien comprendre l'incidence possible des commandes.

Informations générales

Le protocole VRRP version 2 prend uniquement en charge la famille d'adresses IPv4, mais le protocole VRRP version 3 (VRRP3) prend en charge les familles d'adresses IPv4 et IPv6. Sur NX-OS, les protocoles VRRP et VRRPv3 ne peuvent pas être activés sur le même périphérique. Si la fonctionnalité VRRP est déjà activée sur le commutateur Nexus, l'activation de la fonctionnalité VRRPv3 affiche une erreur indiquant que VRRPv2 est déjà activé. Par conséquent, une migration du protocole VRRP vers le protocole VRRPv3 doit être effectuée, ce qui a un impact minimal sur les services.

Topologie





Remarque : aucun environnement VPC (Virtual Port-Channel).

Vérifier

1) Vérifiez que la configuration des deux côtés correspond.

Commutateur 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

Switch1#
```

Commutateur 2:

```
Switch2# show run interface vlan 209

interface Vlan209
no shutdown
no ip redirects
ipv6 address X:X:X:X::70c/125
no ipv6 redirects
vrrpv3 1 address-family ipv6
address X::X:X:X:297 primary

Switch2#
```

2) Vérifiez que la table d'adresses MAC est correctement remplie.

Commutateur 1:

```
Switch1# show mac address-table vlan 209
Legend:
* - primary entry, G - Gateway MAC, (R) - Routed MAC, O - Overlay MAC
age - seconds since last seen,+ - primary entry using vPC Peer-Link,
(T) - True, (F) - False, C - ControlPlane MAC, ~ - vsan
VLAN MAC Address Type age Secure NTFY Ports
---------+-----------------+--------+---------+------+----+------------------
G 209 0000.5e00.0201 static - F F sup-eth1(R)
G 209 689e.0baa.dea7 static - F F sup-eth1(R)
Switch1#
```

```
module-1# show hardware internal tah rmac
Instance : 0
====================================
Mac-Address Vlan Flag
------------------------------------
68:9e:0b:aa:de:a7 0 SYSTEM
00:00:5e:00:02:01 209 VRMAC

module-1#
```

Commutateur 2:

```
Switch2# show mac address-table vlan 209
Legend:
* - primary entry, G - Gateway MAC, (R) - Routed MAC, O - Overlay MAC
age - seconds since last seen,+ - primary entry using vPC Peer-Link,
(T) - True, (F) - False, C - ControlPlane MAC, ~ - vsan
VLAN MAC Address Type age Secure NTFY Ports
---------+-----------------+--------+---------+------+----+------------------
* 209 0000.5e00.0201 dynamic 0 F F Eth1/51
G 209 689e.0baa.de07 static - F F sup-eth1(R)
Switch2#
```

```
Switch2# show hardware mac address-table 1 address 0000.5e00.0201
FE | VLAN | MAC | Dynamic | Port |Location Index|
| | | | | |
---+------+--------------+---------+---------+--------------+
0 209 0000.5e00.0201 dynamic Eth1/51

Switch2#
```

```
module-1# show hardware internal tah rmac
Instance : 0
====================================
Mac-Address Vlan Flag
------------------------------------
68:9e:0b:aa:de:07 0 SYSTEM

module-1#
```

3) Vérifiez l'état des périphériques faisant partie du groupe.

Commutateur 1:

```
Switch1# show vrrpv3 vlan 209


Vlan209 - Group 1 - Address-Family IPv6
State is Primary
State duration 15 hours 43 mins 44 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 813 msec)
Primary Down interval is unknown

Switch1#
```

Commutateur 2:

```
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#
```

Dépannage

Scénario rompu.

1) L'option de commande show vrrpv3 brief affiche les informations brèves relatives au groupe, telles que le numéro de groupe, la famille d'adresses, la priorité, la préemption, l'état, l'adresse principale et l'adresse du groupe (qui est l'adresse IP du groupe virtuel). Dans cet exemple, et comme décrit ci-dessus, les deux commutateurs sont primaires, ce qui n'est pas correct.

Commutateur 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#
```

Commutateur 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) La commande show vrrpv3 detail affiche des informations supplémentaires, telles que les annonces envoyées et reçues pour VRRPv3, l'adresse MAC virtuelle et d'autres statistiques liées aux erreurs et aux états de transition. Par exemple, les annonces VRRPv3 reçues n'augmentent pas.

Commutateur 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#
```

Commutateur 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) La commande show vrrpv3 internal event-history debugs affiche des informations sur les différentes étapes que le participant VRRPv3 a traversées.

Commutateur 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 Eve

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 Eve

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 Eve

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 Eve
Switch1#
```

Commutateur 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) Ethanalyzer affiche les annonces VRRP. Les annonces VRRP sont uniquement effectuées par le commutateur principal. L'adresse de multidiffusion pour VRRPv3 est ff02::12.

Commutateur 1:

```
Switch1# ethanalyzer 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#
```

Commutateur 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#
```

À partir du résultat ci-dessus, les deux commutateurs envoient leurs propres annonces (dea7 et de07). Cela indique qu'il n'y a pas de connectivité entre les deux commutateurs appartenant au même groupe VRRPv3.

En examinant de plus près les paquets générés par VRRPv3, vous trouverez des détails sur l’adresse MAC, la priorité, la version et l’adresse IP.

Commutateur 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
```

Commutateur 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) Une fois le problème de connectivité résolu, dans le cas présent l'interface de couche 2 était dans un état d'arrêt alors que l'interface SVI était dans un état up, les commutateurs doivent maintenant afficher le bon état (primaire et de secours respectivement) et les annonces sont envoyées uniquement par le commutateur primaire.

Commutateur 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#
```

Un ELAM est déclenché dans le commutateur principal et affiche les adresses MAC correctes lorsque vous pointez vers l'adresse de multidiffusion pour 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)#
```

Commutateur 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#
```

L'annonce peut être vue sur le périphérique de sauvegarde lors de l'exécution d'un ELAM. L'annonce provient du commutateur principal (X::X:X:X:dea7) et elle est reçue dans l'interface entrante correcte qui est 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
.1q 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: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-elam-insel6)#
```

Informations connexes

[Configuration de VRRPv3]

[Ethanalyseur]

À propos de cette traduction
Cisco a traduit ce document en traduction automatisée vérifiée par une personne dans le cadre d'un service mondial permettant à nos utilisateurs d'obtenir le contenu d'assistance dans leur propre langue.

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