Engineering
Simplicity

Network Configuration Example

Migrate a Virtual Chassis Fabric to an EVPN-VXLAN Bridging Overlay Fabric

Author: Rugved Bidkar

Published
2020-04-09

Juniper Networks, Inc.
1133 Innovation Way
Sunnyvale, California 94089
USA
408-745-2000
www.juniper.net

Juniper Networks assumes no responsibility for any inaccuracies in this document. Juniper Networks reserves the right to change, modify, transfer, or otherwise revise this publication without notice.

Network Configuration Example Migrate a Virtual Chassis Fabric to an EVPN-VXLAN Bridging Overlay Fabric

The information in this document is current as of the date on the title page.

YEAR 2000 NOTICE

Juniper Networks hardware and software products are Year 2000 compliant. Junos OS has no known time-related limitations through the year 2038. However, the NTP application is known to have some difficulty in the year 2036.

END USER LICENSE AGREEMENT

The Juniper Networks product that is the subject of this technical documentation consists of (or is intended for use with) Juniper Networks software. Use of such software is subject to the terms and conditions of the End User License Agreement ("EULA") posted at https://support.juniper.net/support/eula/. By downloading, installing or using such software, you agree to the terms and conditions of that EULA.

Table of Contents

About This Guide

This network configuration example shows how to migrate a four-member Virtual Chassis fabric (VCF) to an EVPN-VXLAN bridged overlay fabric.

1

CHAPTER

Example: How to Migrate a Virtual Chassis Fabric to an EVPN-VXLAN Bridging Overlay Fabric

Migrate a Virtual Chassis Fabric to an EVPN-VXLAN Bridging Overlay Fabric

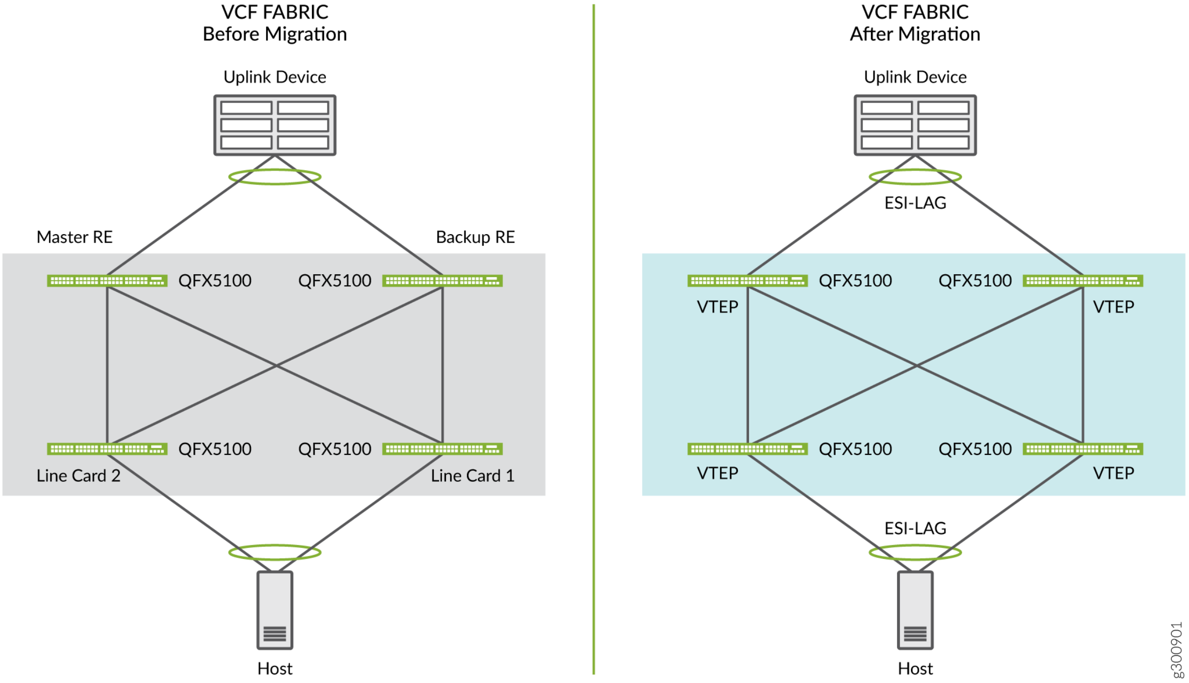
IN THIS SECTION

About This Network Configuration Example

This NCE shows how to migrate a four-member Virtual Chassis fabric (VCF) to an EVPN-VXLAN bridged overlay fabric. A VCF serves customers with a centrally managed Layer 2 fabric well. However, in a centrally managed fabric there can be downtime caused by maintenance and upgrades. You can avoid this downtime by moving to a distributed control plane. In this case, we recommend migrating your VCF to an EVPN-VXLAN bridged overlay fabric. Another reason to upgrade your VCF is that there will be limited support for VCF in future Junos releases.

Figure 1 on page 3 shows a before and after of a VCF to EVPN-VXLAN configuration.

Figure 1: VCF to EVPN-VXLAN Migration



SEE ALSO

Virtual Chassis Fabric Overview

Configuring an EVPN-VXLAN Fabric for a Campus Network With CRB

How to Migrate a Virtual Chassis Fabric to an EVPN Bridging Overlay Fabric

IN THIS SECTION

Requirements

We use the following in this example:

- A two-spine and two-leaf VCF composed of QFX5100 switches running Junos OS Release 14.1X53-D47.6 that we will upgrade to Release 18.4R2.7, which is an EVPN-recommended release.
- A server that is dual-homed to the VCF leaf devices. We recommend that the server be dual-homed to the leaf devices because a single homed server requires downtime to perform this migration.
- Incorporate MTU 9216 on fabric (leaf and spine) underlay links and 9100 bytes on PE to CE links (AE interfaces level MTU).
- Pre-provisioned mode VCF
- Layer 2-only VCF
- Console access to all devices
- A reachable FTP server
- Junos OS Release 18.4R2.7 or later EVPN recommended release

Overview

IN THIS SECTION

The key changes to move from a VCF to EVPN-VXLAN configuration are:

- Adding an EBGP underlay
- Adding an IBGP overlay
- VLAN to VNI mapping
- Addition of EVPN-VXLAN signaling, switch-options and related import and export policy statements
- Changing LAG towards uplink device and and downlink servers to ESI-LAGs

To migrate the VCF to an EVPN-VXLAN fabric:

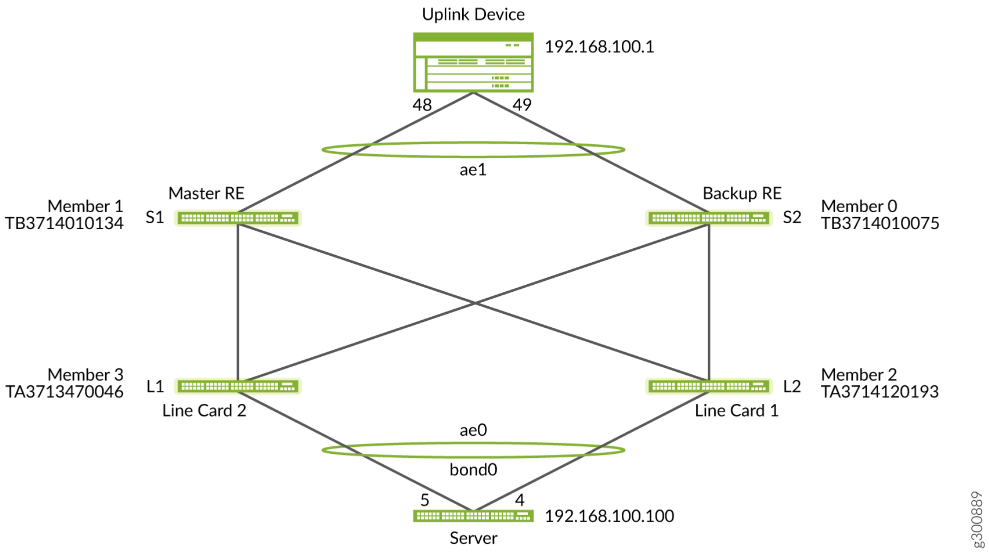
1. Split the existing VCF into halves and isolate the backup Routing Engine and one device in a line card role.

2. Migrate the isolated half to EVPN-VXLAN while traffic is still passing through the other half.
3. Isolate and migrate the remaining half while directing the traffic through the new EVPN-VXLAN fabric.
4. Join all the devices into a single EVPN-VXLAN fabric.

Topology

Figure 2 on page 5 illustrates the topology of the VCF. Members 1 and 0 are connected to the uplink device, while the line cards are connected to the server.

Figure 2: Topology of the VCF



Configuration

IN THIS SECTION

Prepare for the Migration

Before you begin, create a topology diagram of your VCF like in Figure 2, copy the new Junos OS image to your devices, and monitor the traffic flow.

Step-by-Step Procedure

1. Check the status of the VCF before you begin the migration. Note the serial numbers, member IDs, and associated roles of the devices.

```
user@switch> show virtual-chassis

Preprovisioned Virtual Chassis Fabric
Fabric ID: 123a.123b.123c
Fabric Mode: Enabled
                                      Mstr        Mixed Route Neighbor List
Member ID  Status Serial No    Model  prio  Role   Mode  Mode ID  Interface
0 (FPC 0)  Prsnt  XXXXXXXXX000 ...    129   Backup    N  F    2  vcp-255/0/10
                                                              3  vcp-255/0/2
1 (FPC 1)  Prsnt  XXXXXXXXX001 ...    129   Master*   N  F    2  vcp-255/0/10
                                                              3  vcp-255/0/2
2 (FPC 2)  Prsnt  XXXXXXXXX002 ...      0   Linecard  N  F    0  vcp-255/0/52
                                                              1  vcp-255/0/53
3 (FPC 3)  Prsnt  XXXXXXXXX003 ...      0   Linecard  N  F    1  vcp-255/0/48
                                                              0  vcp-255/0/49
```

2. Check the Virtual Chassis ports (VCPs) and create a topology diagram for reference.

```
user@switch> show virtual-chassis vc-port

fpc0:
--------------------------------------------------------------------------
Interface   Type              Trunk  Status       Speed        Neighbor
or                             ID                 (mbps)       ID  Interface
PIC / Port
0/10        Configured         -1    Up           40000        2   vcp-255/0/52
0/2         Configured         -1    Up           40000        3   vcp-255/0/49

fpc1:
--------------------------------------------------------------------------
Interface   Type              Trunk  Status       Speed        Neighbor
or                             ID                 (mbps)       ID  Interface
PIC / Port
0/10        Configured         -1    Up           40000        2   vcp-255/0/53
0/2         Configured         -1    Up           40000        3   vcp-255/0/48

fpc2:
--------------------------------------------------------------------------
Interface   Type              Trunk  Status       Speed        Neighbor
or                             ID                 (mbps)       ID  Interface
PIC / Port
0/52        Configured         -1    Up           40000        0   vcp-255/0/10
0/53        Configured         -1    Up           40000        1   vcp-255/0/10

fpc3:
--------------------------------------------------------------------------
Interface   Type              Trunk  Status       Speed        Neighbor
or                             ID                 (mbps)       ID  Interface
PIC / Port
0/48        Configured         -1    Up           40000        1   vcp-255/0/2
0/49        Configured         -1    Up           40000        0   vcp-255/0/2
```

3. Check that all four members are present. Check the Junos OS release running on each device. Each device must be running the same Junos OS release. If there is a release mismatch, the device shows as inactive.

```
user@switch> show version
fpc0:
--------------------------------------------------------------------------
Hostname: switch
Model: qfx5100-24q-2p
Junos: 14.1X53-D47.6
JUNOS Base OS Software Suite [14.1X53-D47.6]
JUNOS Base OS boot [14.1X53-D47.6]

fpc1:
--------------------------------------------------------------------------
Hostname: switch
Model: qfx5100-24q-2p
Junos: 14.1X53-D47.6
JUNOS Base OS Software Suite [14.1X53-D47.6]
JUNOS Base OS boot [14.1X53-D47.6]

fpc2:
--------------------------------------------------------------------------
Hostname: switch
Model: qfx5100-48s-6q
Junos: 14.1X53-D47.6
JUNOS Base OS Software Suite [14.1X53-D47.6]
JUNOS Base OS boot [14.1X53-D47.6]

fpc3:
--------------------------------------------------------------------------
Hostname: switch
Model: qfx5100-48s-6q
Junos: 14.1X53-D47.6
JUNOS Base OS Software Suite [14.1X53-D47.6]
JUNOS Base OS boot [14.1X53-D47.6]
JUNOS Crypto Software Suite [14.1X53-D47.6]
JUNOS Online Documentation [14.1X53-D47.6]
```

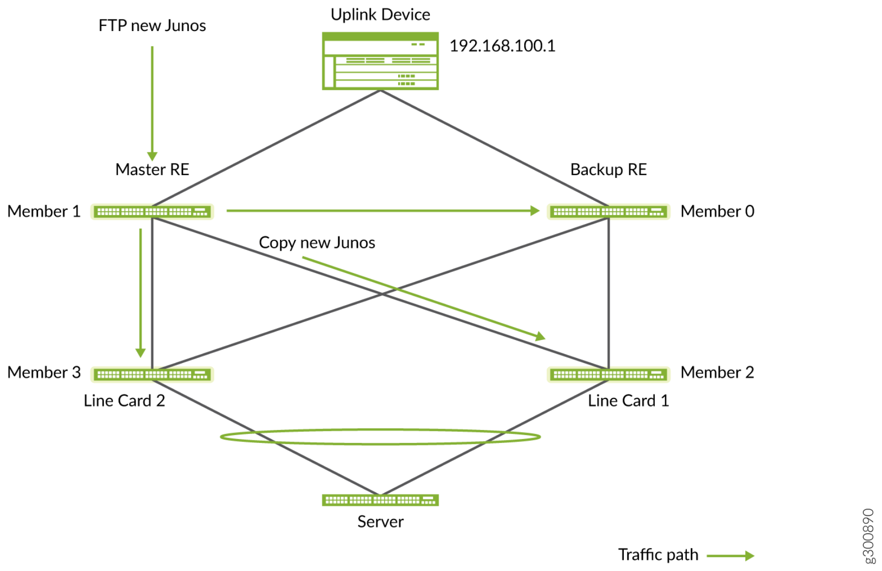
4. Copy the recommended Junos release for running EVPN to all the devices. Use FTP to copy the new Junos OS image to the primary Routing Engine. Then copy the new image from the primary Routing Engine to the other VCF members.

To copy the image from the **/var/tmp** directory on the primary Routing Engine to Member 3, also called **fpc 3**:

```
file copy /var/tmp/jinstall-host-qfx-5-flex-18.4R2.7-signed.tgz  fpc3:/var/tmp
```

Figure 3 on page 9 Illustrates how the new Junos OS image is distributed among the members.

Figure 3: Copy Junos OS Image to VCF members



5. Do the same for the other members. The FPC number is the same as the member number. For example:

```
file copy /var/tmp/jinstall-host-qfx-5-flex-18.4R2.7-signed.tgz fpc0:/var/tmp
file copy /var/tmp/jinstall-host-qfx-5-flex-18.4R2.7-signed.tgz fpc2:/var/tmp
```

6. Access each member from the VCF primary Routing Engine and confirm that the file was copied to each member. For example, to access Member 3:

```
{master:1}
user@switch> request session Member 3

--- JUNOS 14.1X53-D47.6 built 2018-09-08 01:46:47 UTC
```

Next, check the **/var/tmp** directory on this VCF member for the new Junos OS image.

```
user@switch:LC:3% cd /var/tmp/
user@switch:LC:3% ls -ltr
total 1222684
-r--r--r--  1 user  field       505 Apr 18 19:05 preinstall_boot_loader.conf
-rw-r--r--  1 user  field        42 Apr 18 19:07 vjunos-install.log
drwxr-xr-x  2 user  field       512 Apr 18 19:14 gres-tp
drwxrwxrwt  2 user  wheel       512 Apr 18 19:14 vi.recover
drwxrwxrwx  2 user  wheel       512 Apr 18 19:14 pics
drwxrwxrwx  2 user  wheel       512 Apr 18 19:14 install
-rw-r--r--  1 user  field         0 Apr 18 19:27 stable
-rw-r-----  1 user  field      1043 Apr 18 19:30 juniper.conf+.gz
-rw-r--r--  1 user  field  625814976 Apr 19 21:28 jinstall-host-qfx-5-flex-18.4R2.7-signed.tgz
```

When you are done, use `exit` to return to the primary device.

```
user@switch:LC:3% exit
```

Repeat the image check on each device in the VCF.

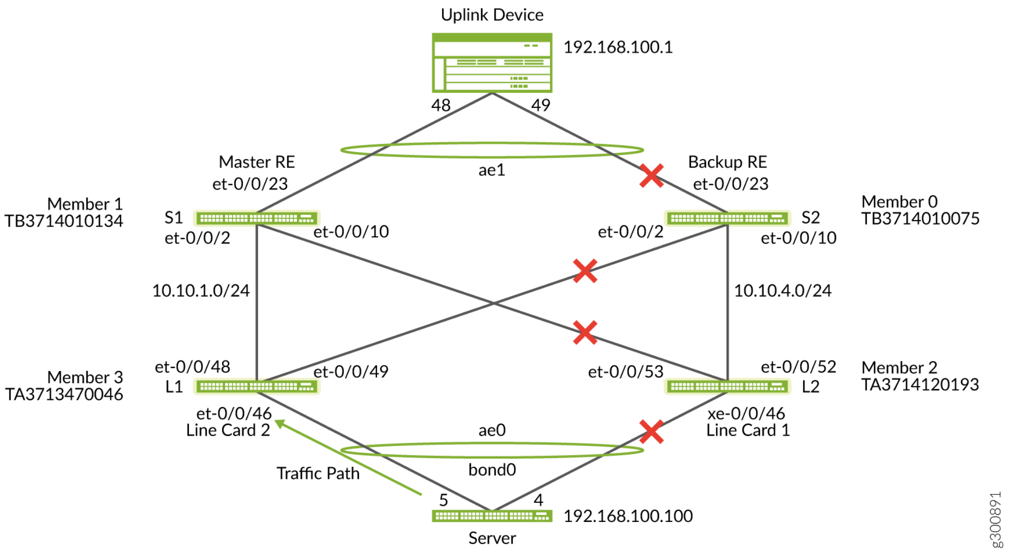
7. To check for any traffic loss during the procedure, start a continuous ping from the server to IRB 192.168.100.1 on the uplink device.

```
user@router> ping 192.168.100.1

PING 192.168.100.1 (192.168.100.1) 56(84) bytes of data.
64 bytes from 192.168.100.1: icmp_seq=1 ttl=64 time=3.33 ms
64 bytes from 192.168.100.1: icmp_seq=2 ttl=64 time=6.84 ms
64 bytes from 192.168.100.1: icmp_seq=3 ttl=64 time=7.87 ms
64 bytes from 192.168.100.1: icmp_seq=4 ttl=64 time=5.91 ms
. . .
```

Reroute Traffic Through Member 1 and Member 3

To start the migration procedure, first isolate the half of the VCF that contains the backup Routing Engine and one device in the linecard role: Members 0 and 2. To do so, on Member 0, disable the interfaces to the uplink device and Member 3. On Member 2, disable the interface to Member 1 and the server. At this point, we have split the VCF in half. Traffic is still forwarded through the other line card, through the primary Routing Engine, and finally to the uplink MX Series router.

Figure 4: Isolate Member 0 and Member 2



Step-by-Step Procedure

1. Using the figure above, identify the member interfaces and VCPs you need to disable on Members 0 and 2 to isolate them from the rest of the VCF. The VCPs you disable are port 2 on Member 0 and port 53 on Member 2. Before you delete any VCPs enable 'no split-detection' on the entire VCF.

```
set virtual-chassis no-split-detection
```

2. Use the command below on the primary Routing Engine (Member 1) to determine the names of the relevant interfaces. You will disable the LACP member interfaces towards the uplink device and servers. In this case, et-0/0/23.0 is the Member 0 upstream interface and xe-2/0/46.0 is the Member 2 downstream interface.

```
{master:1}
user@switch> show interfaces terse | match ae

et-0/0/23.0             up    up   aenet    --> ae1.0
et-1/0/23.0             up    up   aenet    --> ae1.0
xe-2/0/46.0             up    up   aenet    --> ae0.0
xe-3/0/46.0             up    up   aenet    --> ae0.0
ae0                     up    up
ae0.0                   up    up   eth-switch
```

```
ae1                     up    up
ae1.0                   up    up   eth-switch
```

3. Access the primary (Member 1) console and do the following:

   - Disable the interface on Member 0 to the uplink device.

     ```
     set interfaces et-0/0/23 disable
     ```

     Disable the interface from Member 2 to the server.

     ```
     set interfaces xe-2/0/46 disable
     ```

     Commit the configuration for it to take effect.

4. Delete the VCP from Member 0 towards Member 3.

   ```
   user@switch> request virtual-chassis vc-port delete pic-slot 0 port 2 Member 0
   ```

   - Delete the VCP from Member 2 towards Member 1.

     ```
     user@switch>request virtual-chassis vc-port delete pic-slot 0 port 53 Member 2
     ```

5. Check that the members were removed from the VCF and marked as `NotPrsnt`.

   ```
   user@switch> show virtual-chassis

   Preprovisioned Virtual Chassis Fabric
   Fabric ID: 123a.123b.123c
   Fabric Mode: Enabled
                                           Mstr       Mixed Route Neighbor List
   Member ID  Status   Serial No    Model  prio  Role  Mode  Mode ID  Interface
   0 (FPC 0)  NotPrsnt XXXXXXXXX000 ...
   1 (FPC 1)  Prsnt    XXXXXXXXX001 ...    129   Master*  N  F    3  vcp-255/0/2
   2 (FPC 2)  NotPrsnt XXXXXXXXX002 ...
   3 (FPC 3)  Prsnt    XXXXXXXXX003 ...      0   Linecard N  F    1  vcp-255/0/48
   ```

Upgrade Member 0 and Member 2

Separate member 0 and member 2 by deleting the VCP between both devices. On member 0 apply the following commands:

```
user@member0> request virtual-chassis vc-port
delete pic-slot 0 port 52 Member 3
user@member0> request virtual-chassis vc-port
delete pic-slot local 0 port 10
```

Now that you have isolated Member 0 and Member 2, you can upgrade these devices. Notice that the only traffic path is through Members 1 and 3.

Step-by-Step Procedure

1. Access the consoles for Members 0 and 2. Enter the following command to upgrade both members to the Junos OS image that was copied onto the devices.

   ```
   user@switch> request system software add /var/tmp/jinstall-host-qfx-5-flex-18.4R2.7-
   signed.tgz no-copy no-validate reboot
   ```

2. Confirm the update was successful.

   ```
   {linecard:2}
   user@Member0> show version

   fpc0:
   ---------------------------------------------------------------------------
   Hostname: switch
   Model: qfx5100-24q-2p
   Junos 18.4R2.7
   JUNOS Base OS Software Suite [18.4R2.7]
   JUNOS Base OS boot [18.4R2.7]
   . . .
   ```

   ```
   {linecard:2}
   user@member2> show version
   ```

```
fpc2:
---------------------------------------------------------------------------
Hostname: switch
Model: qfx5100-48s-6q
Junos: 18.4R2.7
JUNOS Base OS Software Suite [18.4R2.7]
. . .
```

Zeroize Member 0 and Member 2

Once Member 0 and 2 are migrated to a recommended EVPN-VXLAN release, zeroize both switches. Zeroizing the switches ensures that the residual VCF configuration and logs are removed from each switch.

```
{master:0}
user@member0>request system zeroize
user@member2> request system zeroize
```

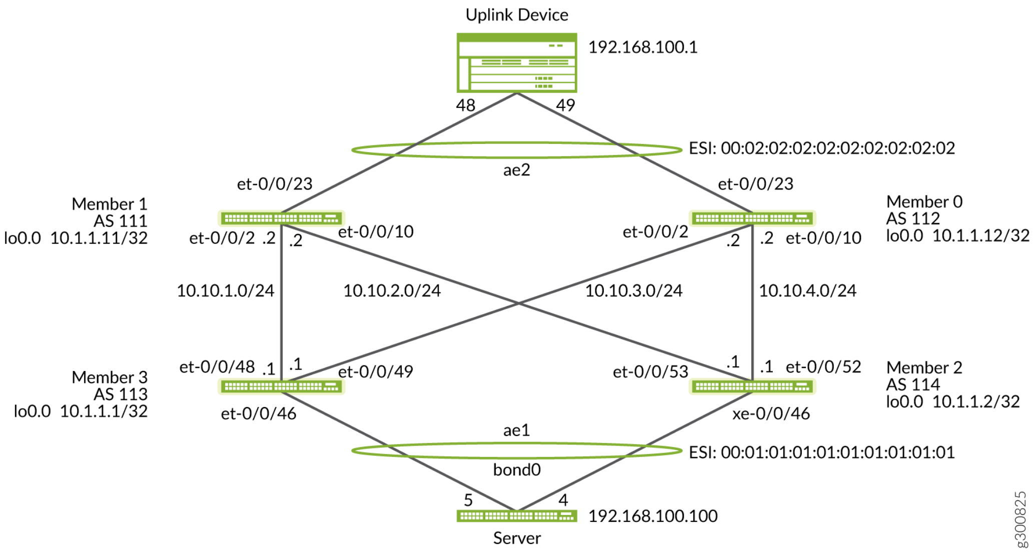
Once the switches reboot, restore the out-of-band management network connectivity.

Step-by-Step Procedure

Configure Member 0 and Member 2

Use the next steps to configure the underlay on Member 0 and Member 2. We identify the switches using member numbers for the sake of clarity even though the VCF does not exist yet. Configure the switches with the interface and loopback addresses, autonomous system (AS) numbers, and other components of the final EVPN-VXLAN fabric.

Figure 5: Final EVPN-VXLAN fabric



Step-by-Step Procedure

Configure the Underlay and EVPN-VXLAN Overlay for Member 0

Step-by-Step Procedure

1. Configure the interfaces (Keep the uplink interface for Member 0 disabled).

```
set interfaces et-0/0/23 disable
set interfaces et-0/0/2 unit 0 family inet address 10.10.3.2/24
set interfaces et-0/0/10 unit 0 family inet address 10.10.4.2/24
```

2. Configure the loopback interfaces for Member 0.

```
set interfaces lo0 unit 0 family inet address 10.1.1.12/32 primary
set interfaces lo0 unit 0 family inet address 10.1.1.12/32 preferred
```

3. Configure the underlay external BGP (EBGP) for Member 0.

```
set protocols bgp group underlay type external
set protocols bgp group underlay export VTEPS
set protocols bgp group underlay export direct
set protocols bgp group underlay local-as 112
set protocols bgp group underlay multipath multiple-as
set protocols bgp group underlay neighbor 10.10.4.1 peer-as 114
set protocols bgp group underlay neighbor 10.10.3.1 peer-as 113
```

4. Configure the overlay internal BGP (IBGP) for Member 0.

```
user@switc#>
set protocols bgp group overlay type internal
set protocols bgp group overlay local-address 10.1.1.12
set protocols bgp group overlay family evpn signaling
set protocols bgp group overlay vpn-apply-export
set protocols bgp group overlay cluster 10.1.1.12
set protocols bgp group overlay local-as 64513
set protocols bgp group overlay multipath
set protocols bgp group overlay neighbor 10.1.1.1
set protocols bgp group overlay neighbor 10.1.1.2
```

5. Configure the VLAN to VXLAN network identifier (VNI) mapping for Member 0.

```
 set vlans default vlan-id 1
set vlans default l3-interface irb.0
set vlans v100 vlan-id 100
set vlans v100 vxlan vni 10100
```

6. Configure the protocol EVPN-VXLAN configuration and route targets for each VNI for Member 0.

```
set protocols evpn vni-options vni 10100 vrf-target target:64513:100
set protocols evpn encapsulation vxlan
set protocols evpn multicast-mode ingress-replication
set protocols evpn extended-vni-list 10100
set protocols evpn extended-vni-list all
```

7. Configure the default switch options for Member 0.

```
set switch-options vtep-source-interface lo0.0
set switch-options route-distinguisher 10.1.1.12:1
set switch-options vrf-import my-fabric
set switch-options vrf-target target:1:9999
```

8. Configure the routing options for Member 0.

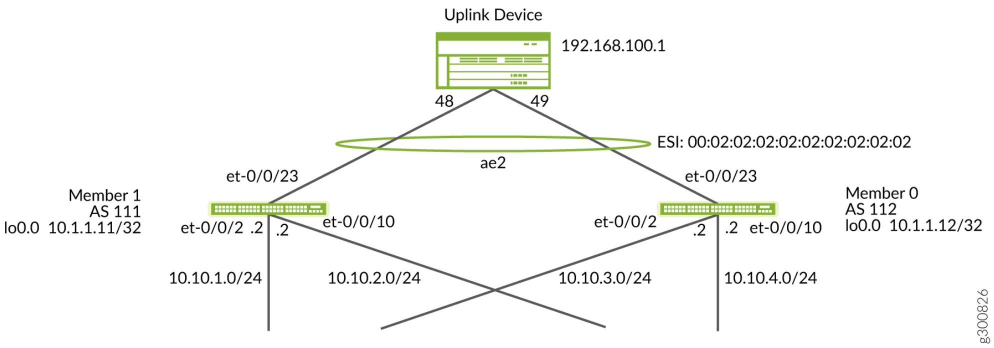
```
set routing-options static route 0.0.0.0/0 next-hop 10.92.71.254
set routing-options router-id 10.1.1.12
set routing-options autonomous-system 112
set routing-options forwarding-table export LB
```

9. Configure the policy options for Member 0.

```
set policy-options policy-statement LB then load-balance per-packet
set policy-options policy-statement VTEPS term term1 from route-filter 10.1.1.0/24 prefix-length-range /32-/32
set policy-options policy-statement VTEPS term term1 then accept
set policy-options policy-statement VTEPS term term2 then reject
set policy-options policy-statement direct term term10 from protocol direct
set policy-options policy-statement direct term term10 then accept
set policy-options policy-statement my-fabric term term1 from community my-fab-com
set policy-options policy-statement my-fabric term term1 then accept
set policy-options policy-statement my-fabric term term2 from community my-vni10100
set policy-options policy-statement my-fabric term term2 then accept
set policy-options community my-fab-com members target:1:9999
set policy-options community my-vni10100 members target:64513:100
```

10. On Member 0 configure ESI LAG to the uplink device. The ESI LAG pair for Member 0 is Member 1 after Member 1 is migrated to EVPN-VXLAN as seen in Figure 6 on page 18.

Figure 6: ESI LAG Configuration



```
set chassis aggregated-devices ethernet device-count 2
```

```
set interfaces et-0/0/23 ether-options 802.3ad ae2
set interfaces ae2 esi 00:02:02:02:02:02:02:02:02:02
set interfaces ae2 esi all-active
set interfaces ae2 aggregated-ether-options lacp active
set interfaces ae2 aggregated-ether-options lacp system-id 00:00:02:02:02:02
set interfaces ae2 unit 0 family ethernet-switching interface-mode trunk
set interfaces ae2 unit 0 family ethernet-switching vlan members v100
```

Configure the Underlay and EVPN-VXLAN Overlay on Member 2

Step-by-Step Procedure

1. Configure the interfaces (keep the downlink interface for Member 2 disabled).

```
set interfaces xe-0/0/46 disable
set interfaces et-0/0/52 unit 0 family inet address 10.10.4.1/24
set interfaces et-0/0/53 unit 0 family inet address 10.10.2.1/24
```

2. Configure the loopback interfaces for Member 2.

```
set interfaces lo0 unit 0 family inet address 10.1.1.2/32 primary
set interfaces lo0 unit 0 family inet address 10.1.1.2/32 preferred
```

3. Configure the underlay EBGP for Member 2.

```
set protocols bgp group underlay type external
set protocols bgp group underlay export direct
set protocols bgp group underlay local-as 114
set protocols bgp group underlay multipath multiple-as
set protocols bgp group underlay neighbor 10.10.4.2 peer-as 112
set protocols bgp group underlay neighbor 10.10.2.2 peer-as 111
```

4. Configure the overlay IBGP for Member 2.

```
set protocols bgp group overlay type internal
set protocols bgp group overlay local-address 10.1.1.2
set protocols bgp group overlay family evpn signaling
set protocols bgp group overlay vpn-apply-export
set protocols bgp group overlay local-as 64513
set protocols bgp group overlay multipath
set protocols bgp group overlay neighbor 10.1.1.11
set protocols bgp group overlay neighbor 10.1.1.12
```

5. Configure the VLAN to VNI mapping for Member 2.

```
set vlans default vlan-id 1
set vlans default l3-interface irb.0
set vlans v100 vlan-id 100
set vlans v100 vxlan vni 10100
```

6. Configure the protocol EVPN-VXLAN config and route targets for each VNI for Member 2.

```
set protocols evpn vni-options vni 10100 vrf-target target:64513:100
set protocols evpn encapsulation vxlan
set protocols evpn multicast-mode ingress-replication
set protocols evpn extended-vni-list 10100
set protocols evpn extended-vni-list all
```

7. Configure the default switch options for Member 2.

```
set switch-options vtep-source-interface lo0.0
set switch-options route-distinguisher 10.1.1.2:1
set switch-options vrf-import my-fabric
set switch-options vrf-target target:1:9999
```

8. Configure the routing options for Member 2.

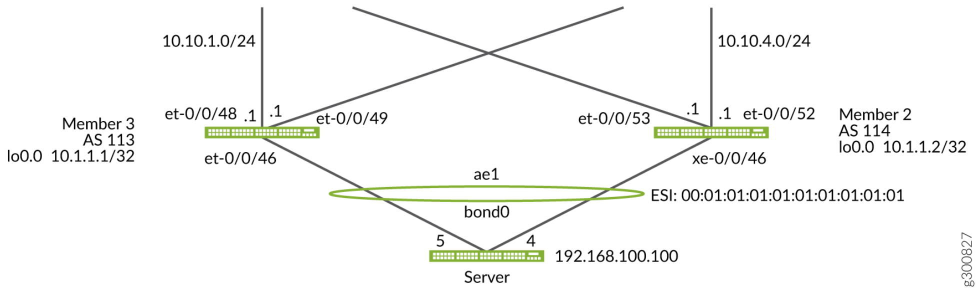
```
set routing-options router-id 10.1.1.2
set routing-options autonomous-system 114
set routing-options forwarding-table export LB
```

9. Configure the policy options for Member 2.

```
set policy-options policy-statement LB then load-balance per-packet
set policy-options policy-statement VTEPS term term1 from route-filter 10.1.1.0/24 prefix-
length-range /32-/32
set policy-options policy-statement VTEPS term term1 then accept
set policy-options policy-statement VTEPS term term2 then reject
set policy-options policy-statement direct term term10 from protocol direct
set policy-options policy-statement direct term term10 then accept
set policy-options policy-statement my-fabric term term1 from community my-fab-com
set policy-options policy-statement my-fabric term term1 then accept
set policy-options policy-statement my-fabric term term2 from community my-vni10100
set policy-options policy-statement my-fabric term term2 then accept
set policy-options community my-fab-com members target:1:9999
set policy-options community my-vni10100 members target:64513:100
```

10. On Member 2, configure ESI LAG on the downlink to the server. The ESI LAG pair for Member 2 will be Member 3 after Member 3 is migrated to EVPN-VXLAN as seen in Figure 7 on page 21.

Figure 7: Configure the downlink ESI LAG



```
set chassis aggregated-devices ethernet device-count 2
```

```
set interfaces xe-0/0/46 ether-options 802.3ad ae1
set interfaces ae1 esi 00:01:01:01:01:01:01:01:01:01
set interfaces ae1 esi all-active
set interfaces ae1 aggregated-ether-options lacp active
set interfaces ae1 aggregated-ether-options lacp system-id 00:00:01:01:01:01
set interfaces ae1 unit 0 family ethernet-switching interface-mode access
set interfaces ae1 unit 0 family ethernet-switching vlan members v100
```

Configure the Bond Interface on Host Server

In the output below from the server, eth4 and eth5 are both slave interfaces for bond0.

```
[user@host1 network-scripts]#cat ifcfg-bond0
DEVICE=bond0
TYPE=Bond
BONDING_MASTER =yes
IPADDR=192.168.100.100
NETMASK=255.255.255.0
ONBOOT=yes
```

```
BOOTPROTO=none
BONDING_OPTS="mode=4 miimon=100"
```

```
[user@host1 network-scripts]#cat ifcfg-eth4
DEVICE=eth4
HWADDR=00:1B:21:79:5A:EC
TYPE=Ethernet
UUID=5baae400-bbe3-435e-8044-9aaa696adedb
ONBOOT=no
NM_CONTROLLED=yes
BOOTPROTO=none
IPV4_FAILURE_FATAL=no
MASTER=bond0
SLAVE=yes
```

```
[user@host1 network-scripts]#cat ifcfg-eth5
DEVICE=eth5
HWADDR=00:1B:21:79:5A:ED
TYPE=Ethernet
UUID=ad36aabf-82c4-45af-9ae5-f9ac334d7e17
ONBOOT=no
NM_CONTROLLED=yes
BOOTPROTO=none
IPV4_FAILURE_FATAL=no
MASTER=bond0
SLAVE=yes
```

Move the Traffic Flow from VCF to the New EVPN-VXLAN Fabric

In this section, isolate Members 1 and 3 before configuring them for EVPN-VXLAN. Open the newly created EVPN-VXLAN fabric, Member 0 and Member 2, and reroute the traffic through it. Now that the EVPN-VXLAN configuration is in place on Member 0 and Member 2, check the BGP states between them. Member 1 and 3 still show as down since you haven't configured EVPN-VXLAN on them yet.

NOTE: NOTE: Shutting links on the Member 1 and 3 pair and opening the link on the Member 0 and 2 pair needs to be done simultaneously as seen in Figure 8 on page 31. You can do this using scripting.

Step-by-Step Procedure

Apply the following statements on the switches and `commit` them at the same time. It is important to follow these instructions.

> **NOTE**: Run `commit` at the same time on all devices. There might be a slight disruption in traffic until the states converge. Check that the traffic from the host passes successfully.

1. On Member 1

```
user@switch#set interfaces et-1/0/23 disable
user@switch#set interfaces xe-3/0/46 disable
```

2. On Member 0

```
user@switch>delete interfaces et-0/0/23 disable
```

3. On Member 2

```
user@switch>delete interfaces xe-0/0/46 disable
```

Migrate and Zeroize Member 1 and Member 3

Separate member 1 and member 3 by deleting the VCP between both devices. On member1 CLI apply the following commands:

```
user@member1> request virtual-chassis vc-port delete pic-slot 0 port 48 Member 3
user@member1> request virtual-chassis vc-port delete pic-slot local 0 port 2
```

Step-by-Step Procedure

Now that Member 1 and 3 are isolated migrate both devices to recommended release for EVPN-VXLAN fabrics that we downloaded on all the switches at the beginning of this procedure.

1. Migrate the switches.

```
user@switch>request system software add /var/tmp/jinstall-host-qfx-5-flex-18.4R2.7-signed.tgz
no-copy no-validate reboot
```

2. Zeroize the switches.

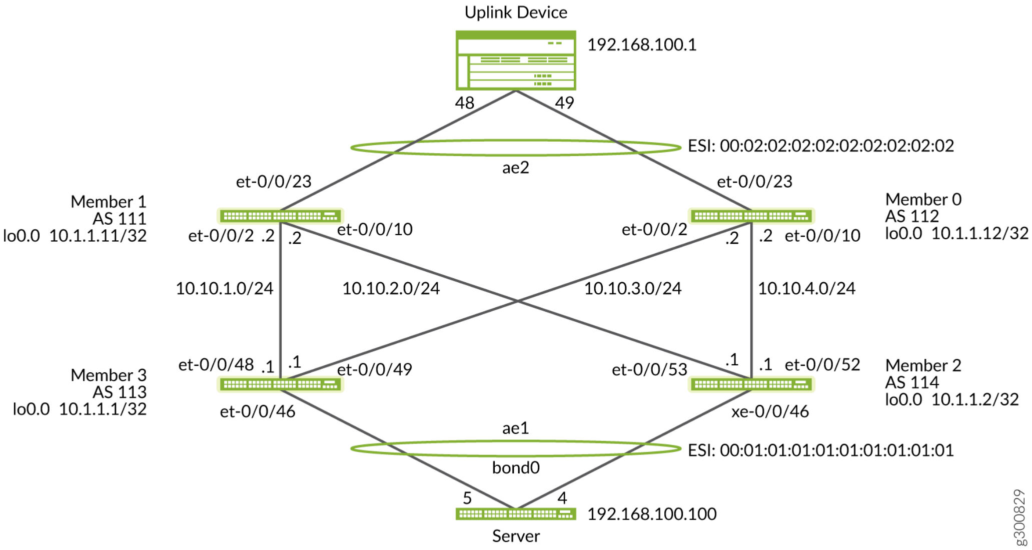
```
{master:0}
user@member1> request system zeroize

{master:0}
user@member3> request system zeroize
```

3. Once the switches reboot, restore the out-of-band management network connectivity.

Configure the Underlay and EVPN-VXLAN Overlay for Member 1

Follow the same procedure as for Member 0 and Member 2.

Figure 8: Full Configuration of Member 1 and 3



Step-by-Step Procedure

Member 1 configuration:

1. Configure the interfaces (keep the uplink interface for Member 1 disabled).

   ```
   set interfaces et-0/0/23 disable
   set interfaces et-0/0/2 unit 0 family inet address 10.10.1.2/24
   set interfaces et-0/0/10 unit 0 family inet address 10.10.2.2/24
   ```

2. Configure the loopbacks for Member 1.

   ```
   set interfaces lo0 unit 0 family inet address 10.1.1.11/32 primary
   set interfaces lo0 unit 0 family inet address 10.1.1.11/32 preferred
   ```

3. Configure the underlay EBGP for Member 1.

   ```
   set protocols bgp group underlay export VTEPS
   set protocols bgp group underlay export direct
   set protocols bgp group underlay local-as 111
   set protocols bgp group underlay multipath multiple-as
   set protocols bgp group underlay neighbor 10.10.1.1 peer-as 113
   set protocols bgp group underlay neighbor 10.10.2.1 peer-as 114
   ```

4. Configure the overlay IBGP for Member 1.

   ```
   set protocols bgp group overlay type internal
   set protocols bgp group overlay local-address 10.1.1.11
   set protocols bgp group overlay family evpn signaling
   set protocols bgp group overlay vpn-apply-export
   set protocols bgp group overlay cluster 10.1.1.11
   set protocols bgp group overlay local-as 64513
   set protocols bgp group overlay multipath
   set protocols bgp group overlay neighbor 10.1.1.1
   set protocols bgp group overlay neighbor 10.1.1.2
   ```

5. Configure the VLAN to VNI mapping for Member 1.

```
set vlans default vlan-id 1
set vlans default l3-interface irb.0
set vlans v100 vlan-id 100
set vlans v100 vxlan vni 10100
```

6. Configure the protocol EVPN-VXLAN configurations and route targets for each VNI for Member 1.

```
set protocols evpn vni-options vni 10100 vrf-target target:64513:100
set protocols evpn encapsulation vxlan
set protocols evpn multicast-mode ingress-replication
set protocols evpn extended-vni-list 10100
set protocols evpn extended-vni-list all
```

7. Configure the default switch options for Member 1.

```
set switch-options vtep-source-interface lo0.0
set switch-options route-distinguisher 10.1.1.11:1
set switch-options vrf-import my-fabric
set switch-options vrf-target target:1:9999
```

8. Configure the routing options for Member 1.

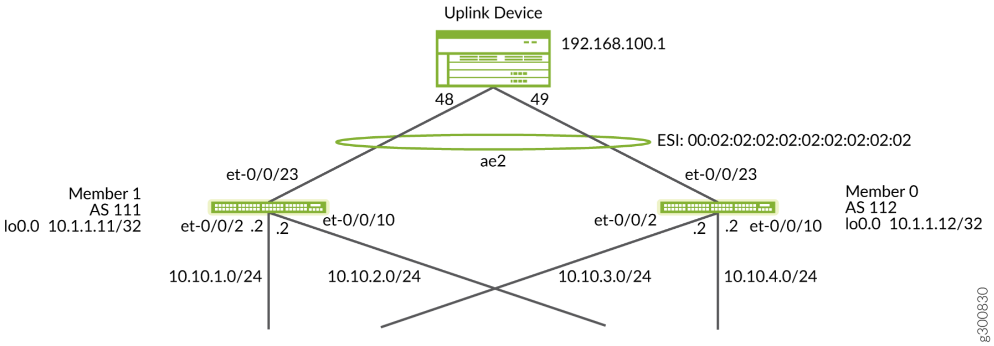
```
set routing-options router-id 10.1.1.11
set routing-options autonomous-system 111
set routing-options forwarding-table export LB
```

9. Configure the policies for Member 1.

```
set policy-options policy-statement LB then load-balance per-packet
set policy-options policy-statement VTEPS term term1 from route-filter 10.1.1.0/24 prefix-length-range /32-/32
set policy-options policy-statement VTEPS term term1 then accept
set policy-options policy-statement VTEPS term term2 then reject
set policy-options policy-statement direct term term10 from protocol direct
set policy-options policy-statement direct term term10 then accept
set policy-options policy-statement my-fabric term term1 from community my-fab-com
set policy-options policy-statement my-fabric term term1 then accept
set policy-options policy-statement my-fabric term term2 from community my-vni10100
set policy-options policy-statement my-fabric term term2 then accept
set policy-options community my-fab-com members target:1:9999
set policy-options community my-vni10100 members target:64513:100
```

10. On Member 1, configure ESI LAG to the uplink device. The ESI LAG pair for Member 1 will be Member 0 which we already configured in prior steps.

Figure 9: Configure the ESI LAG going to Member 1



```
set chassis aggregated-devices ethernet device-count 2
```

```
set interfaces et-0/0/23 ether-options 802.3ad ae2
set interfaces ae2 esi 00:02:02:02:02:02:02:02:02:02
set interfaces ae2 esi all-active
set interfaces ae2 aggregated-ether-options lacp active
set interfaces ae2 aggregated-ether-options lacp system-id 00:00:02:02:02:02
set interfaces ae2 unit 0 family ethernet-switching interface-mode trunk
set interfaces ae2 unit 0 family ethernet-switching vlan members v100
set interfaces em0 unit 0 family inet address 10.92.70.107/23
```

Configure the Underlay and EVPN-VXLAN Overlay for Member 3

Step-by-Step Procedure

Member 3 configuration:

1. Configure the interfaces (keep the downlink interface for Member 3 disabled).

```
set interfaces xe-0/0/46 disable
set interfaces et-0/0/48 unit 0 family inet address 10.10.1.1/24
set interfaces et-0/0/49 unit 0 family inet address 10.10.3.1/24
```

2. Configure the loopbacks for Member 3.

```
set interfaces lo0 unit 0 family inet address 10.1.1.1/32 primary
set interfaces lo0 unit 0 family inet address 10.1.1.1/32 preferred
```

3. Configure the underlay EBGP for Member 3.

```
set protocols bgp group underlay type external
set protocols bgp group underlay export VTEPS
set protocols bgp group underlay export direct
set protocols bgp group underlay local-as 113
set protocols bgp group underlay multipath multiple-as
set protocols bgp group underlay neighbor 10.10.1.2 peer-as 111
set protocols bgp group underlay neighbor 10.10.3.2 peer-as 112
```

4. Configure the overlay IBGP for Member 3.

```
set protocols bgp group overlay type internal
set protocols bgp group overlay local-address 10.1.1.1
set protocols bgp group overlay family evpn signaling
set protocols bgp group overlay vpn-apply-export
set protocols bgp group overlay local-as 64513
set protocols bgp group overlay multipath
set protocols bgp group overlay neighbor 10.1.1.11
set protocols bgp group overlay neighbor 10.1.1.12
```

5. Configure the VLAN to VNI mapping for Member 3.

```
set vlans default vlan-id 1
set vlans default l3-interface irb.0
set vlans v100 vlan-id 100
set vlans v100 vxlan vni 10100
```

6. Configure the protocol EVPN-VXLAN config and route targets for each VNI for Member 3.

```
set protocols evpn vni-options vni 10100 vrf-target target:64513:100
set protocols evpn encapsulation vxlan
set protocols evpn multicast-mode ingress-replication
set protocols evpn extended-vni-list all
```

7. Configure the default switch options for Member 3.

```
set switch-options vtep-source-interface lo0.0
set switch-options route-distinguisher 10.1.1.1:1
set switch-options vrf-import my-fabric
set switch-options vrf-target target:1:9999
```

8. Configure the routing options for Member 3.

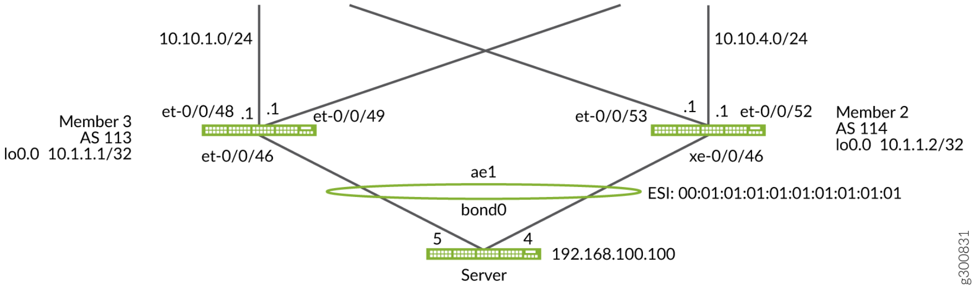
```
set routing-options static route 0.0.0.0/0 next-hop 10.92.71.254
set routing-options router-id 10.1.1.1
set routing-options autonomous-system 113
set routing-options forwarding-table export LB
```

9. Configure the routing options for Member 3.

```
set policy-options policy-statement LB then load-balance per-packet
set policy-options policy-statement VTEPS term term1 from route-filter 10.1.1.0/24 prefix-
length-range /32-/32
set policy-options policy-statement VTEPS term term1 then accept
set policy-options policy-statement VTEPS term term2 then reject
set policy-options policy-statement direct term term10 from protocol direct
set policy-options policy-statement direct term term10 then accept
set policy-options policy-statement my-fabric term term1 from community my-fab-com
set policy-options policy-statement my-fabric term term1 then accept
set policy-options policy-statement my-fabric term term2 from community my-vni10100
set policy-options policy-statement my-fabric term term2 then accept
set policy-options community my-fab-com members target:1:9999
set policy-options community my-vni10100 members target:64513:100
```

10. One Member 3, configure ESI LAG on the downlink to the host device. The ESI LAG pair for Member 3 will be Member 2 after Member 2 is migrated to to EVPN-VXLAN.

Figure 10: Configure the Downlink ESI LAG



```
set chassis aggregated-devices ethernet device-count 2
```

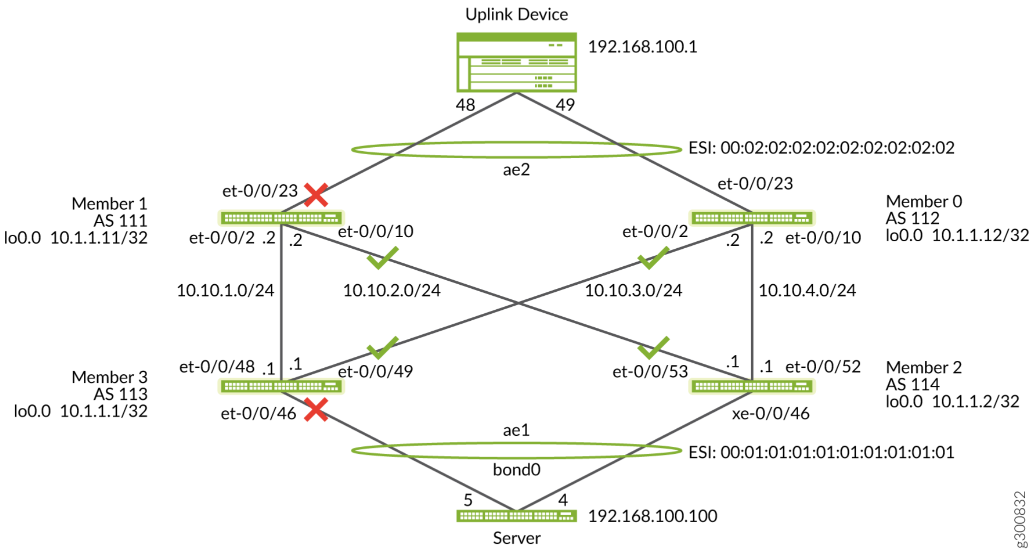
```
set interfaces xe-0/0/46 ether-options 802.3ad ae1
set interfaces ae1 esi 00:01:01:01:01:01:01:01:01:01
set interfaces ae1 esi all-active
set interfaces ae1 aggregated-ether-options lacp active
set interfaces ae1 aggregated-ether-options lacp system-id 00:00:01:01:01:01
set interfaces ae1 unit 0 family ethernet-switching interface-mode access
set interfaces ae1 unit 0 family ethernet-switching vlan members v100
```

Control Plane Convergence

At this step, we will open the links between all four member switches while keeping the uplink on Member 1 and the downlink on Member 3 disabled.

This is primarily for the convergence of BGP and EVPN-VXLAN states.

Figure 11: Open Links Between Switches



Step-by-Step Procedure

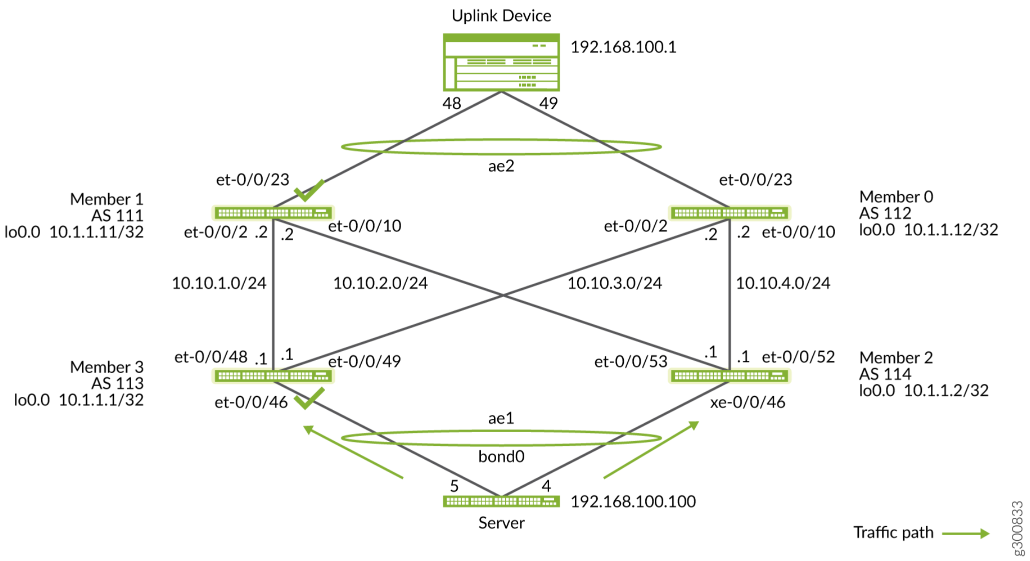
1. Check the BGP states.

```
user@member3> show bgp summary
Threading mode: BGP I/O
Groups: 2 Peers: 4 Down peers: 0
Table          Tot Paths  Act Paths Suppressed    History Damp State    Pending
bgp.evpn.0
```

```
                      22         16          0          0          0          0
inet.0
                       6          4          0          0          0          0
Peer                     AS      InPkt     OutPkt    OutQ   Flaps Last Up/Dwn State|#Active/
Received/Accepted/Damped...
10.1.1.11             64513       3164       3080       0       1    23:07:40 Establ
  __default_evpn__.evpn.0: 1/1/1/0
  bgp.evpn.0: 11/11/11/0
  default-switch.evpn.0: 10/10/10/0
10.1.1.12             64513       3053       2980       0       3    22:24:45 Establ
  __default_evpn__.evpn.0: 0/1/1/0
  bgp.evpn.0: 5/11/11/0
  default-switch.evpn.0: 5/10/10/0
10.10.1.2               111       3063       3063       0       1    23:07:44 Establ
  inet.0: 2/3/3/0
10.10.3.2               112       2964       2963       0       3    22:24:46 Establ
  inet.0: 2/3/3/0
```

2. EVPN-VXLAN is **MAC learning** through the control plane. Once the control plane information has converged on Member 1 and Member 3, enable the disabled links, which are the uplink on Member 1 and downlink on Member 3. Perform the following steps and `commit` at the same time. Check for the traffic flow from the server to the uplink device.

Figure 12: Open the Final Disabled Links



On Member 3

```
{master:0}[edit]
user@member3# delete interfaces xe-0/0/46 disable
```

On Member 1

```
{master:0}[edit]
user@member1# delete interfaces et-0/0/23 disable
```

Verification

At this point, the VCF fabric is migrated to an EVPN-VXLAN bridged overlay fabric. Perform the following check on every switch to confirm that the EVPN-VXLAN bridged overlay model is working as intended.

Step-by-Step Procedure

1. Check that the ESI LAGs are up and running.

```
user@member2> show interfaces terse | match ae
xe-0/0/46.0             up    up   aenet    --> ae1.0
ae1                     up    up
ae1.0                   up    up   eth-switch
  inet.0: 2/3/3/0
```

```
user@member2> show lacp interfaces
Aggregated interface: ae1
    LACP state:       Role   Exp   Def  Dist  Col  Syn  Aggr  Timeout  Activity
      xe-0/0/46      Actor    No    No   Yes  Yes  Yes   Yes     Fast    Active
      xe-0/0/46    Partner    No    No   Yes  Yes  Yes   Yes     Fast    Active
    LACP protocol:        Receive State  Transmit State          Mux State
      xe-0/0/46                 Current   Fast periodic Collecting distributing
```

```
user@switch> show interfaces terse | match ae
et-0/0/23.0             up    up   aenet    --> ae2.0
```

```
ae2                     up    up
ae2.0                   up    up   eth-switch
```

```
user@member2> show lacp interfaces
Aggregated interface: ae2
    LACP state:       Role   Exp   Def  Dist  Col  Syn  Aggr  Timeout  Activity
      et-0/0/23      Actor    No    No   Yes  Yes  Yes   Yes     Fast    Active
      et-0/0/23    Partner    No    No   Yes  Yes  Yes   Yes     Fast    Active
    LACP protocol:        Receive State  Transmit State          Mux State
      et-0/0/23                 Current   Fast periodic Collecting distributing
```

2. Check that the Ethernet switching table has a MAC entry for the host.

```
user@member3> show ethernet-switching table
MAC flags (S - static MAC, D - dynamic MAC, L - locally learned, P - Persistent static
           SE - statistics enabled, NM - non configured MAC, R - remote PE MAC, O - ovsdb MAC)





Ethernet switching table : 2 entries, 2 learned
Routing instance : default-switch
   Vlan                MAC                 MAC      Logical                Active
   name                address             flags    interface              source
   v100                00:1b:21:79:5a:ec   DR       ae1.0
   v100                10:0e:7e:ba:67:c0   DR       esi.1758
00:02:02:02:02:02:02:02:02:02
```

3. Check that the VLANs have VTEPS associated with them.

```
user@member3> show vlans
Routing instance        VLAN name              Tag          Interfaces
default-switch          default                1

default-switch          v100                   100
                                                            ae1.0*
                                                            esi.1758*
                                                            esi.1764*
                                                            vtep.32769*
```

```
                                                           vtep.32770*
                                                           vtep.32771*
```

4. Check the EVPN-VXLAN database is updated.

```
user@member3> show evpn database
Instance: default-switch
VLAN  DomainId  MAC address        Active source                  Timestamp        IP address
     10100      00:1b:21:79:5a:ec  00:01:01:01:01:01:01:01:01:01  Aug 07 23:36:02
192.168.100.100
     10100      10:0e:7e:ba:67:c0  00:02:02:02:02:02:02:02:02:02  Aug 08 21:31:49
192.168.100.1
```

```
user@member3>  show interfaces vtep terse
 Interface               Admin Link Proto    Local                 Remote
vtep                    up    up
vtep.32768              up    up
vtep.32769              up    up   eth-switch
vtep.32770              up    up   eth-switch
vtep.32771              up    up   eth-switch
```

5. Check that the routing table is receiving type 2 and other EVPN routes.

NOTE: See Juniper Networks EVPN Implementation for Next-Generation Data Center Architectures for all EVPN route types.

```
user@switch>  show route
                       MultiRecv


bgp.evpn.0: 20 destinations, 26 routes (20 active, 0 holddown, 0 hidden)
+ = Active Route, - = Last Active, * = Both


1:10.1.1.1:0::0101010101010101::FFFF:FFFF/192 AD/ESI
                   *[EVPN/170] 22:21:54
                       Indirect
1:10.1.1.1:1::0101010101010101::0/192 AD/EVI
```

```
                   *[EVPN/170] 22:21:55
                       Indirect
1:10.1.1.2:0::010101010101010101::FFFF:FFFF/192 AD/ESI
                   *[BGP/170] 22:21:52, localpref 100, from 10.1.1.11
                      AS path: I, validation-state: unverified
                    >  to 10.10.1.2 via et-0/0/48.0
                       to 10.10.3.2 via et-0/0/49.0
                    [BGP/170] 22:21:52, localpref 100, from 10.1.1.12
                      AS path: I, validation-state: unverified
                    >  to 10.10.1.2 via et-0/0/48.0
                       to 10.10.3.2 via et-0/0/49.0
1:10.1.1.2:1::010101010101010101::0/192 AD/EVI
                   *[BGP/170] 22:21:53, localpref 100, from 10.1.1.11
                      AS path: I, validation-state: unverified
                    >  to 10.10.1.2 via et-0/0/48.0
                       to 10.10.3.2 via et-0/0/49.0
                    [BGP/170] 22:21:53, localpref 100, from 10.1.1.12
                      AS path: I, validation-state: unverified
                    >  to 10.10.1.2 via et-0/0/48.0
                       to 10.10.3.2 via et-0/0/49.0
1:10.1.1.11:0::020202020202020202::FFFF:FFFF/192 AD/ESI
                   *[BGP/170] 23:06:44, localpref 100, from 10.1.1.11
                      AS path: I, validation-state: unverified
                    >  to 10.10.1.2 via et-0/0/48.0
1:10.1.1.11:1::020202020202020202::0/192 AD/EVI
                   *[BGP/170] 23:06:45, localpref 100, from 10.1.1.11
                      AS path: I, validation-state: unverified
                    >  to 10.10.1.2 via et-0/0/48.0
1:10.1.1.12:0::020202020202020202::FFFF:FFFF/192 AD/ESI
                   *[BGP/170] 22:23:49, localpref 100, from 10.1.1.12
                      AS path: I, validation-state: unverified
                    >  to 10.10.3.2 via et-0/0/49.0
1:10.1.1.12:1::020202020202020202::0/192 AD/EVI
                   *[BGP/170] 22:23:50, localpref 100, from 10.1.1.12
                      AS path: I, validation-state: unverified
                    >  to 10.10.3.2 via et-0/0/49.0
2:10.1.1.2:1::10100::00:1b:21:79:5a:ec/304 MAC/IP
                   *[BGP/170] 21:57:58, localpref 100, from 10.1.1.11
                      AS path: I, validation-state: unverified
                       to 10.10.1.2 via et-0/0/48.0
                    >  to 10.10.3.2 via et-0/0/49.0
                    [BGP/170] 21:57:58, localpref 100, from 10.1.1.12
                      AS path: I, validation-state: unverified
```

```
                       to 10.10.1.2 via et-0/0/48.0
                    >  to 10.10.3.2 via et-0/0/49.0
2:10.1.1.11:1::10100::10:0e:7e:ba:67:c0/304 MAC/IP
                   *[BGP/170] 00:25:28, localpref 100, from 10.1.1.11
                      AS path: I, validation-state: unverified
                    >  to 10.10.1.2 via et-0/0/48.0
2:10.1.1.12:1::10100::10:0e:7e:ba:67:c0/304 MAC/IP
                   *[BGP/170] 00:02:11, localpref 100, from 10.1.1.12
                      AS path: I, validation-state: unverified
                    >  to 10.10.3.2 via et-0/0/49.0
2:10.1.1.2:1::10100::00:1b:21:79:5a:ec::192.168.100.100/304 MAC/IP
                   *[BGP/170] 21:57:58, localpref 100, from 10.1.1.11
                      AS path: I, validation-state: unverified
                       to 10.10.1.2 via et-0/0/48.0
                    >  to 10.10.3.2 via et-0/0/49.0
                    [BGP/170] 21:57:58, localpref 100, from 10.1.1.12
                      AS path: I, validation-state: unverified
                       to 10.10.1.2 via et-0/0/48.0
                    >  to 10.10.3.2 via et-0/0/49.0
2:10.1.1.11:1::10100::10:0e:7e:ba:67:c0::192.168.100.1/304 MAC/IP
                   *[BGP/170] 00:25:28, localpref 100, from 10.1.1.11
                      AS path: I, validation-state: unverified
                    >  to 10.10.1.2 via et-0/0/48.0
2:10.1.1.12:1::10100::10:0e:7e:ba:67:c0::192.168.100.1/304 MAC/IP
                   *[BGP/170] 00:02:11, localpref 100, from 10.1.1.12
                      AS path: I, validation-state: unverified
                    >  to 10.10.3.2 via et-0/0/49.0
3:10.1.1.1:1::10100::10.1.1.1/248 IM
                   *[EVPN/170] 21:57:59
                       Indirect
3:10.1.1.2:1::10100::10.1.1.2/248 IM
                   *[BGP/170] 21:57:58, localpref 100, from 10.1.1.11
                      AS path: I, validation-state: unverified
                    >  to 10.10.1.2 via et-0/0/48.0
                       to 10.10.3.2 via et-0/0/49.0
                    [BGP/170] 21:57:58, localpref 100, from 10.1.1.12
                      AS path: I, validation-state: unverified
                    >  to 10.10.1.2 via et-0/0/48.0
                       to 10.10.3.2 via et-0/0/49.0
3:10.1.1.11:1::10100::10.1.1.11/248 IM
                   *[BGP/170] 21:57:58, localpref 100, from 10.1.1.11
                      AS path: I, validation-state: unverified
                    >  to 10.10.1.2 via et-0/0/48.0
```

```
3:10.1.1.12:1::10100::10.1.1.12/248 IM
                   *[BGP/170] 02:49:58, localpref 100, from 10.1.1.12
                      AS path: I, validation-state: unverified
                    >  to 10.10.3.2 via et-0/0/49.0
4:10.1.1.1:0::010101010101010101:10.1.1.1/296 ES
                   *[EVPN/170] 22:21:55
                       Indirect
4:10.1.1.2:0::010101010101010101:10.1.1.2/296 ES
                   *[BGP/170] 22:21:53, localpref 100, from 10.1.1.11
                      AS path: I, validation-state: unverified
                    >  to 10.10.1.2 via et-0/0/48.0
                       to 10.10.3.2 via et-0/0/49.0
                    [BGP/170] 22:21:53, localpref 100, from 10.1.1.12
                      AS path: I, validation-state: unverified
                    >  to 10.10.1.2 via et-0/0/48.0
                       to 10.10.3.2 via et-0/0/49.0



default-switch.evpn.0: 17 destinations, 22 routes (17 active, 0 holddown, 0 hidden)
+ = Active Route, - = Last Active, * = Both

1:10.1.1.1:1::010101010101010101::0/192 AD/EVI
                   *[EVPN/170] 22:21:55
                       Indirect
1:10.1.1.2:0::010101010101010101::FFFF:FFFF/192 AD/ESI
                   *[BGP/170] 22:21:52, localpref 100, from 10.1.1.11
                      AS path: I, validation-state: unverified
                    >  to 10.10.1.2 via et-0/0/48.0
                       to 10.10.3.2 via et-0/0/49.0
                    [BGP/170] 22:21:52, localpref 100, from 10.1.1.12
                      AS path: I, validation-state: unverified
                    >  to 10.10.1.2 via et-0/0/48.0
                       to 10.10.3.2 via et-0/0/49.0
1:10.1.1.2:1::010101010101010101::0/192 AD/EVI
                   *[BGP/170] 22:21:53, localpref 100, from 10.1.1.11
                      AS path: I, validation-state: unverified
                    >  to 10.10.1.2 via et-0/0/48.0
                       to 10.10.3.2 via et-0/0/49.0
                    [BGP/170] 22:21:53, localpref 100, from 10.1.1.12
                      AS path: I, validation-state: unverified
                    >  to 10.10.1.2 via et-0/0/48.0
                       to 10.10.3.2 via et-0/0/49.0
1:10.1.1.11:0::020202020202020202::FFFF:FFFF/192 AD/ESI
```

```
                   *[BGP/170] 23:06:44, localpref 100, from 10.1.1.11
                      AS path: I, validation-state: unverified
                    >  to 10.10.1.2 via et-0/0/48.0
1:10.1.1.11:1::0202020202020202::0/192 AD/EVI
                   *[BGP/170] 23:06:45, localpref 100, from 10.1.1.11
                      AS path: I, validation-state: unverified
                    >  to 10.10.1.2 via et-0/0/48.0
1:10.1.1.12:0::0202020202020202::FFFF:FFFF/192 AD/ESI
                   *[BGP/170] 22:23:49, localpref 100, from 10.1.1.12
                      AS path: I, validation-state: unverified
                    >  to 10.10.3.2 via et-0/0/49.0
1:10.1.1.12:1::0202020202020202::0/192 AD/EVI
                   *[BGP/170] 22:23:50, localpref 100, from 10.1.1.12
                      AS path: I, validation-state: unverified
                    >  to 10.10.3.2 via et-0/0/49.0
2:10.1.1.2:1::10100::00:1b:21:79:5a:ec/304 MAC/IP
                   *[BGP/170] 21:57:58, localpref 100, from 10.1.1.11
                      AS path: I, validation-state: unverified
                       to 10.10.1.2 via et-0/0/48.0
                    >  to 10.10.3.2 via et-0/0/49.0
                    [BGP/170] 21:57:58, localpref 100, from 10.1.1.12
                      AS path: I, validation-state: unverified
                       to 10.10.1.2 via et-0/0/48.0
                    >  to 10.10.3.2 via et-0/0/49.0
2:10.1.1.11:1::10100::10:0e:7e:ba:67:c0/304 MAC/IP
                   *[BGP/170] 00:25:28, localpref 100, from 10.1.1.11
                      AS path: I, validation-state: unverified
                    >  to 10.10.1.2 via et-0/0/48.0
2:10.1.1.12:1::10100::10:0e:7e:ba:67:c0/304 MAC/IP
                   *[BGP/170] 00:02:11, localpref 100, from 10.1.1.12
                      AS path: I, validation-state: unverified
                    >  to 10.10.3.2 via et-0/0/49.0
2:10.1.1.2:1::10100::00:1b:21:79:5a:ec::192.168.100.100/304 MAC/IP
                   *[BGP/170] 21:57:58, localpref 100, from 10.1.1.11
                      AS path: I, validation-state: unverified
                       to 10.10.1.2 via et-0/0/48.0
                    >  to 10.10.3.2 via et-0/0/49.0
                    [BGP/170] 21:57:58, localpref 100, from 10.1.1.12
                      AS path: I, validation-state: unverified
                       to 10.10.1.2 via et-0/0/48.0
                    >  to 10.10.3.2 via et-0/0/49.0
2:10.1.1.11:1::10100::10:0e:7e:ba:67:c0::192.168.100.1/304 MAC/IP
                   *[BGP/170] 00:25:28, localpref 100, from 10.1.1.11
```

```
                      AS path: I, validation-state: unverified
                    >  to 10.10.1.2 via et-0/0/48.0
2:10.1.1.12:1::10100::10:0e:7e:ba:67:c0::192.168.100.1/304 MAC/IP
                   *[BGP/170] 00:02:11, localpref 100, from 10.1.1.12
                      AS path: I, validation-state: unverified
                    >  to 10.10.3.2 via et-0/0/49.0
3:10.1.1.1:1::10100::10.1.1.1/248 IM
                   *[EVPN/170] 22:21:53
                       Indirect
3:10.1.1.2:1::10100::10.1.1.2/248 IM
                   *[BGP/170] 21:57:58, localpref 100, from 10.1.1.11
                      AS path: I, validation-state: unverified
                    >  to 10.10.1.2 via et-0/0/48.0
                       to 10.10.3.2 via et-0/0/49.0
                    [BGP/170] 21:57:58, localpref 100, from 10.1.1.12
                      AS path: I, validation-state: unverified
                    >  to 10.10.1.2 via et-0/0/48.0
                       to 10.10.3.2 via et-0/0/49.0
3:10.1.1.11:1::10100::10.1.1.11/248 IM
                   *[BGP/170] 21:57:58, localpref 100, from 10.1.1.11
                      AS path: I, validation-state: unverified
                    >  to 10.10.1.2 via et-0/0/48.0
3:10.1.1.12:1::10100::10.1.1.12/248 IM
                   *[BGP/170] 02:49:58, localpref 100, from 10.1.1.12
                      AS path: I, validation-state: unverified
                    >  to 10.10.3.2 via et-0/0/49.0

__default_evpn__.evpn.0: 3 destinations, 4 routes (3 active, 0 holddown, 0 hidden)
+ = Active Route, - = Last Active, * = Both


1:10.1.1.1:0::010101010101010101::FFFF:FFFF/192 AD/ESI
                   *[EVPN/170] 22:21:54
                       Indirect
4:10.1.1.1:0::010101010101010101:10.1.1.1/296 ES
                   *[EVPN/170] 22:21:55
                       Indirect
4:10.1.1.2:0::010101010101010101:10.1.1.2/296 ES
                   *[BGP/170] 22:21:53, localpref 100, from 10.1.1.11
                      AS path: I, validation-state: unverified
                    >  to 10.10.1.2 via et-0/0/48.0
                       to 10.10.3.2 via et-0/0/49.0
                    [BGP/170] 22:21:53, localpref 100, from 10.1.1.12
```

```
                      AS path: I, validation-state: unverified
                    >  to 10.10.1.2 via et-0/0/48.0
                       to 10.10.3.2 via et-0/0/49.0
```

Conclusion

This procedure outlines a step-by-step recommended method to migrate a centralized control plane VCF fabric to a distributed control plane Bridged overlay EVPN-VXLAN fabric.