

## VXLAN MP-BGP EVPN eBGP Multi-AS Configuration for Nexus 9000 (NX-OS) Switches

```

Spine-1# sh run
<some output omitted below>

nv overlay evpn
feature bgp
feature pim
feature lldp
feature nv overlay

ip pim rp-address 111.1.1.1 group-list 224.0.0.0/4
ip pim ssm range 222.0.0.0/8
ip pim anycast-rp 111.1.1.1 123.1.1.1
ip pim anycast-rp 111.1.1.1 222.2.2.2

route-map UNCHANGED permit 10
set ip next-hop unchanged

interface Ethernet1/3
description connected-to-Leaf2-Ethernet1/3
no switchport
mtu 9216
no ip redirects
ip address 192.168.3.1/30
no ipv6 redirects
ip pim sparse-mode
no shutdown

interface Ethernet1/4
description connected-to-Leaf2-Ethernet1/4
no switchport
mtu 9216
no ip redirects
ip address 192.168.4.1/30
no ipv6 redirects
ip pim sparse-mode
no shutdown

interface Ethernet1/5
description connected-to-Leaf1-Ethernet1/5
no switchport
mtu 9216
no ip redirects
ip address 192.168.5.1/30
no ipv6 redirects
ip pim sparse-mode
no shutdown

interface Ethernet1/6
description connected-to-Leaf1-Ethernet1/6
no switchport
mtu 9216
no ip redirects
ip address 192.168.6.1/30
no ipv6 redirects
ip pim sparse-mode
no shutdown

interface loopback0
description Routing loopback interface
ip address 10.2.0.1/32
ip pim sparse-mode

interface loopback100
description RP interface
ip address 222.2.2.2/32
ip pim sparse-mode

interface loopback101
description Anycast-RP interface
ip address 111.1.1.1/32
ip pim sparse-mode

router bgp 65536
router-id 10.2.0.1
address-family ipv4 unicast
network 10.2.0.0/32
network 111.1.1.1/32
network 222.2.2.2/32
address-family l2vpn evpn
retain route-target all
template peer LEAF-2-PEER
remote-as 65552
address-family ipv4 unicast
template peer LEAF-1-PEER
remote-as 65551
address-family ipv4 unicast
neighbor 10.2.0.2
remote-as 65552
update-source loopback0
ebgp-multihop 3
address-family l2vpn evpn
send-community
send-community extended
route-map UNCHANGED out
neighbor 10.2.0.4
remote-as 65551
update-source loopback0
ebgp-multihop 3
address-family l2vpn evpn
send-community
send-community extended
route-map UNCHANGED out
neighbor 192.168.3.2
inherit peer LEAF-2-PEER
neighbor 192.168.4.2
inherit peer LEAF-2-PEER
neighbor 192.168.5.2
inherit peer LEAF-1-PEER
neighbor 192.168.6.2
inherit peer LEAF-1-PEER

```

```

Spine-2# sh run

<some output omitted below>

nv overlay evpn
feature bgp
feature pim
feature lldp
feature nv overlay

ip pim rp-address 111.1.1.1 group-list 224.0.0.0/4
ip pim sm range 232.0.0.0/8
ip pim anycast-rp 111.1.1.1 123.1.1.1
ip pim anycast-rp 111.1.1.1 222.2.2.2

route-map UNCHANGED permit 10
set ip next-hop unchanged

interface Ethernet1/3
description connected-to-Leaf1-Ethernet1/3
no switchport
mtu 9216
no ip redirects
ip address 172.16.3.1/30
no ipv6 redirects
ip pim sparse-mode
no shutdown

interface Ethernet1/4
description connected-to-Leaf1-Ethernet1/4
no switchport
mtu 9216
no ip redirects
ip address 172.16.4.1/30
no ipv6 redirects
ip pim sparse-mode
no shutdown

interface Ethernet1/5
description connected-to-Leaf2-Ethernet1/5
no switchport
mtu 9216
no ip redirects
ip address 172.16.5.1/30
no ipv6 redirects
ip pim sparse-mode
no shutdown

interface Ethernet1/6
description connected-to-Leaf2-Ethernet1/6
no switchport
mtu 9216
no ip redirects
ip address 172.16.6.1/30
no ipv6 redirects
ip pim sparse-mode
no shutdown

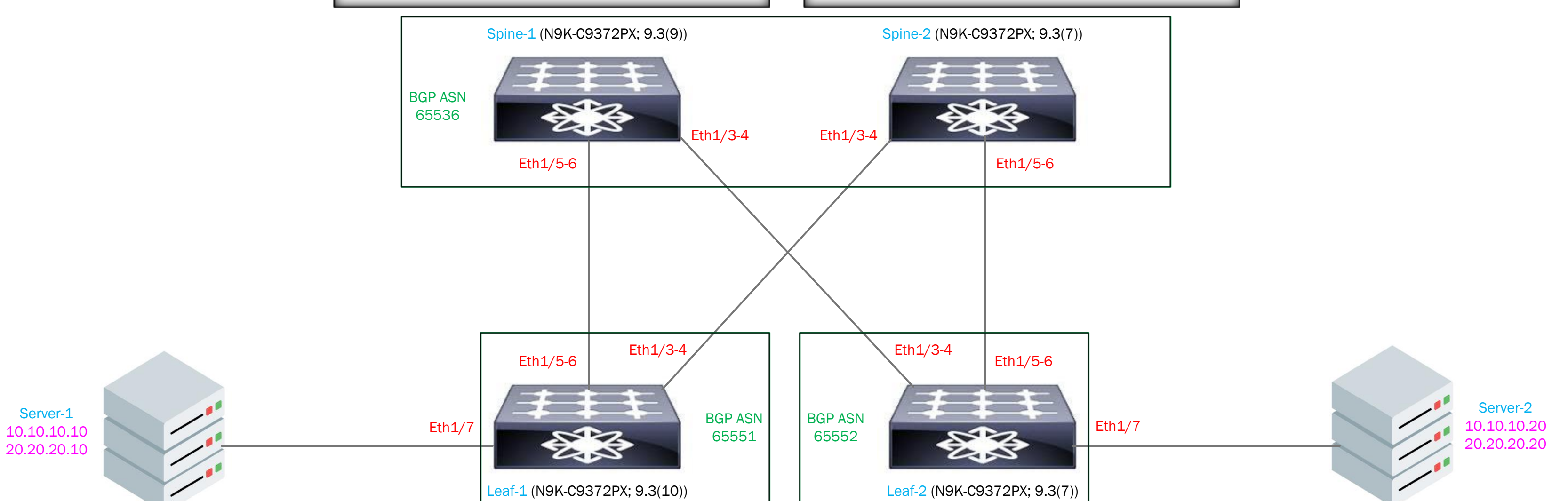
interface loopback0
description Routing loopback interface
ip address 10.2.0.3/32
ip pim sparse-mode

interface loopback100
description RP interface
ip address 123.1.1.1/32
ip pim sparse-mode

interface loopback101
description Anycast-RP interface
ip address 111.1.1.1/32
ip pim sparse-mode

router bgp 65536
router-id 10.2.0.3
address-family ipv4 unicast
network 10.2.0.3/32
network 111.1.1.1/32
network 123.1.1.1/32
address-family l2vpn evpn
retain route-target all
template peer LEAF-2-PEER
remote-as 65552
address-family ipv4 unicast
template peer LEAF-1-PEER
remote-as 65551
address-family ipv4 unicast
neighbor 10.2.0.2
remote-as 65552
update-source loopback0
ebgp-multihop 3
address-family l2vpn evpn
send-community
send-community extended
route-map UNCHANGED out
neighbor 10.2.0.4
remote-as 65551
update-source loopback0
ebgp-multihop 3
address-family l2vpn evpn
send-community
send-community extended
route-map UNCHANGED out
neighbor 172.16.3.2
inherit peer LEAF-1-PEER
neighbor 172.16.4.2
inherit peer LEAF-1-PEER
neighbor 172.16.5.2
inherit peer LEAF-2-PEER
neighbor 172.16.6.2
inherit peer LEAF-2-PEER

```



```

Server> ping 10.10.10.20/30 source 10.10.10.10
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.10.10.20, timeout is 2 seconds:
Packet sent with a source address of 10.10.10.10
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 3/3/4 ms

Server> ping 10.10.10.20/30 source 20.20.20.10
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.10.10.20, timeout is 2 seconds:
Packet sent with a source address of 20.20.20.10
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 3/4/6 ms

Server> ping 20.20.20.30/30 source 10.10.10.10
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 20.20.20.30, timeout is 2 seconds:
Packet sent with a source address of 10.10.10.10
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 3/3/4 ms

Server> ping 20.20.20.30/30 source 20.20.20.10
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 20.20.20.30, timeout is 2 seconds:
Packet sent with a source address of 20.20.20.10
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 3/3/4 ms

```

```

cof-18 sh run
<some output omitted below>

vn overlay evpn
feature bgp
feature ip
feature fabric forwarding
feature interface-vlan
feature vn-segment-vlan-based
feature lldp
feature vn overlay

fabric forwarding anycast-gateway-mac 20:
ip pim rp-address 111.1.1.1 group-list 20
ip igmp ssm range 232.0.0.0/8
vlan 10,20,30
vlan 10
  vn-segment 10010
vlan 20
  vn-segment 20020
vlan 30
  vn-segment 30030

vrf context TENANT-1
vni 30030
rd auto
address-family ipv4 unicast
  route-target import 65552:30030
  route-target export 65552:30030 evpn
  route-target import 65551:30030 evpn

```

```
leaf-28.sh run
<some output omitted below>

vn overlay evpn
feature bgp
feature pim
feature fabric forwarding
feature interface-vlan
feature vn-segment-vlan-based
feature lldp
feature vn overlay

fabric forwarding anycast-gateway-mac 2020.0000.000a
ip pim rp-address 1111.1.1.1 group-list 224.0.0.0/4
ip nhrp sr range 232.0.0.0/8
vlan 10,20,30
vlan 18
vn-segment 10010
vlan 28
vn-segment 20020
vlan 30
vn-segment 30030

vrf context TENANT-1
vni 30030
rd auto
address-family ipv4 unicast
route-target import 65551:30030
route-target export 65552:30030
route-target import 65551:30030 evpn
route-target export 65552:30030 evpn
route-target import 65552:30030 evpn
```

```
Server-28 ping 10.10.10.10 source 10.10.10.20
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.10.10.10, timeout is 2 seconds:
Packet sent with a source address of 10.10.10.20
11111
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/4/10 ms

Server-28 ping 20.20.20.20 source 10.10.10.20
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 20.20.20.20, timeout is 2 seconds:
Packet sent with a source address of 10.10.10.20
11111
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/2/10 ms

Server-28 ping 10.10.10.10 source 20.20.20.20
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.10.10.10, timeout is 2 seconds:
Packet sent with a source address of 20.20.20.20
11111
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/4/10 ms

Server-28 ping 20.20.20.20 source 20.20.20.20
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 20.20.20.20, timeout is 2 seconds:
Packet sent with a source address of 20.20.20.20
11111
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/6/10 ms
```

```

interface Vlan10
no shutdown
vrf member TENANT-1
no ip redirects
ip address 10.20.20.254/24
no ipv6 redirects
fabric forwarding mode anycast-gateway

interface Vlan20
no shutdown
vrf member TENANT-1
no ip redirects
ip address 20.20.20.254/24
no ipv6 redirects
fabric forwarding mode anycast-gateway

interface Vlan30
no shutdown
vrf member TENANT-1
no ip redirects
ip forward
no ipv6 redirects

interface vnet1
no shutdown
host-reachability protocol bgp
source-interface loopback1
member vni 10010
mcast-group 225.5.5.5
member vni 20020
mcast-group 227.7.7.7
member vni 30030 associate-vrf

```

```

interface Vlan10
 no shutdown
 vrf member TENANT-1
 no ip redirects
 ip address 10.10.10.254/24
 no ipv6 redirects
 fabric forwarding mode anycast-gateway

interface Vlan20
 no shutdown
 vrf member TENANT-1
 no ip redirects
 ip address 20.20.20.254/24
 no ipv6 redirects
 fabric forwarding mode anycast-gateway

interface Vlan30
 no shutdown
 vrf member TENANT-1
 no ip redirects
 ip forward
 no ipv6 redirects

interface vne1
 no shutdown
 host-reachability protocol bgp
 source-interface loopback1
 member vni 10010
 mcast-group vrf 225.5.5.5
 member vni 20020
 mcast-group 227.7.7.7
 member vni 30030 associate-vrf

```

```

interface Ethernet1/3
 description connected-to-Spine2-Ethernet
 no switchport
 mtu 9216
 no ip redirects
 ip address 172.16.16.3/2/30
 no ipv6 redirects
 ip pim sparse-mode
 no shutdown

interface Ethernet1/4
 description connected-to-Spine2-Ethernet
 no switchport
 mtu 9216
 no ip redirects
 ip address 172.16.4.2/30
 no ipv6 redirects
 ip pim sparse-mode
 no shutdown

interface Ethernet1/5
 description connected-to-Spine1-Ethernet
 no switchport
 mtu 9216
 no ip redirects
 ip address 192.168.5.2/30
 no ipv6 redirects
 ip pim sparse-mode
 no shutdown

interface Ethernet1/6
 description connected-to-Spine1-Ethernet
 no switchport
 mtu 9216
 no ip redirects
 ip address 192.168.6.2/30
 no ipv6 redirects
 ip pim sparse-mode
 no shutdown

```

```

interface Ethernet1/3
 description Connected to Spine1-Ethernet
 no switchport
 mtu 9216
 no ip redirects
 ip address 192.168.3.2/30
 no ipv6 redirects
 ip pim sparse-mode
 no shutdown

interface Ethernet1/4
 description Connected to Spine1-Ethernet
 no switchport
 mtu 9216
 no ip redirects
 ip address 192.168.4.2/30
 no ipv6 redirects
 ip pim sparse-mode
 no shutdown

interface Ethernet1/5
 description Connected to Spine2-Ethernet
 no switchport
 mtu 9216
 no ip redirects
 ip address 172.16.5.2/30
 no ipv6 redirects
 ip pim sparse-mode
 no shutdown

interface Ethernet1/6
 description Connected to Spine2-Ethernet
 no switchport
 mtu 9216
 no ip redirects
 ip address 172.16.6.2/30
 no ipv6 redirects
 ip pim sparse-mode
 no shutdown

```

```
interface Ethernet1/7
 switchport mode trunk

interface loopback0
 description Routing loopback interface
 ip address 10.2.0.4/32
 ip pim sparse-mode

interface loopback1
 description VTEP loopback interface
 ip address 10.3.0.2/32
 ip pim sparse-mode
```

```
interface Ethernet1/7
  switchport mode trunk

interface loopback0
  description Routing loopback interface
  ip address 10.2.0.2/32
  ip pim sparse-mode

interface loopback1
  description VTEP loopback interface
  ip address 10.3.0.1/32
  ip pim sparse-mode
```

```
router bgp 65551
router-id 10.2.0.4
address-family ipv4 unicast
network 10.2.0.4/32
network 10.3.0.2/32
template peer SPINE-PEER
remote-as 65536
address-family ipv4 unicast
neighbor 10.2.0.1
remote-as 65536
update-source loopback0
```

```
router bgp 65552
router-id 10.2.0.2
address-family ipv4 unicast
network 10.2.0.2/32
network 10.3.0.1/32
template peer SPINE-PEER
remote-as 65536
address-family ipv4 unicast
neighbor 10.2.0.1
remote-as 65536
update-source loopback0
```

```

address-family 12vpn evpn
  send-community
  send-community extended
neighbor 10.20.3.1
  remote-as 65536
  update-source loopback0
  ebgp-multihop 3
address-family 12vpn evpn
  send-community
  send-community extended
neighbor 172.16.3.1
  inherit peer SPINE-PEER
neighbor 172.16.4.1
  inherit peer SPINE-PEER
neighbor 192.168.5.1
  inherit peer SPINE-PEER
neighbor 192.168.6.1
  inherit peer SPINE-PEER
vrf 200A01-1
  address-family ipv4 unicast
evpn
  rd auto
  route-target import 65552:10010
  route-target export 65552:10010
  vrf 200A01-1
  rd auto
  route-target import 65552:200B02

```

```

address-family 12vpn evpn
  send-community
  send-community extended
neighbor 10.2.0.3
  remote-as 65536
  update-source loopback0
  ebgp-multihop 3
address-family 12vpn evpn
  send-community
  send-community extended
neighbor 172.16.5.1
  inherit peer SPINE-PEER
neighbor 172.16.6.1
  inherit peer SPINE-PEER
neighbor 192.168.1.1
  inherit peer SPINE-PEER
neighbor 192.168.4.1
  inherit peer SPINE-PEER
vrf vni 20050.1
  address-family ipv4 unicast
evpn
vni 10010.1
  rd auto
  route-target import 65551:10010
  route-target export 65552:10010
vni 20050.1
  rd auto
  route-target import 65551:20020
  route-target export 65552:20020

```

