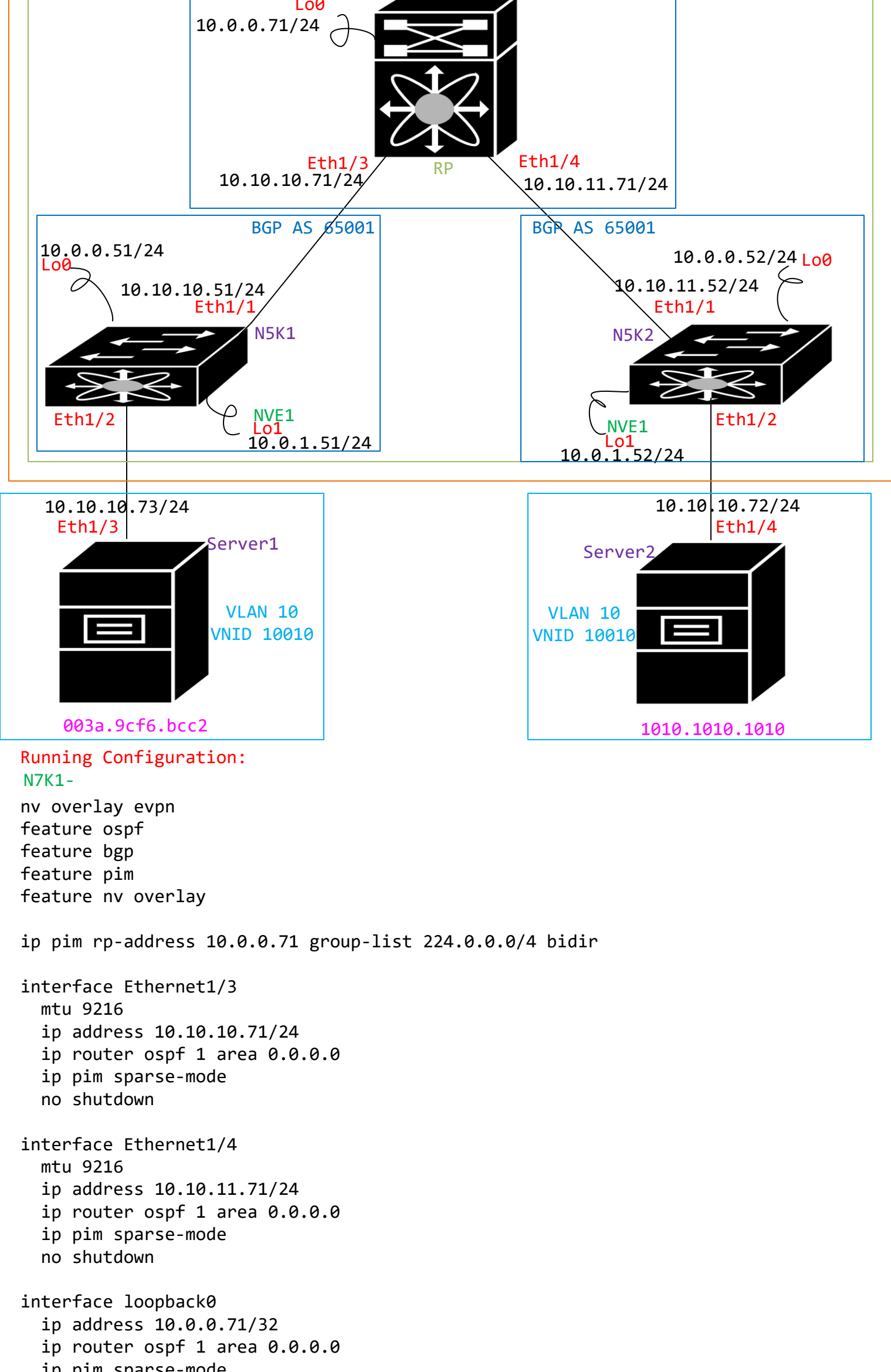


OSPF AREA 0



```
Running Configuration:
N7K1-
feature evpn
feature ospf
feature bgp
feature pim
feature nv overlay

ip pim rp-address 10.0.0.71 group-list 224.0.0.0/4 bidir

interface Ethernet1/3
mtu 9216
ip address 10.10.10.71/24
ip router ospf 1 area 0.0.0.0
ip pim sparse-mode
no shutdown

interface Ethernet1/4
mtu 9216
ip address 10.10.11.71/24
ip router ospf 1 area 0.0.0.0
ip pim sparse-mode
no shutdown

interface loopback0
ip address 10.0.0.71/32
ip router ospf 1 area 0.0.0.0
ip pim sparse-mode

router ospf 1

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

router bgp 65002
address-family l2vpn evpn
retain route-target all
neighbor 10.0.0.51 remote-as 65001
update-source loopback0
ebgp-multi-hop 3
address-family l2vpn evpn
disable-peer-as-check
send-community
send-community extended
route-map unchanged out
neighbor 10.0.0.52 remote-as 65001
update-source loopback0
ebgp-multi-hop 3
address-family l2vpn evpn
disable-peer-as-check
send-community
send-community extended
route-map unchanged out

N5K1-
hardware ethernet store-and-fwd-switching

install feature-set virtualization
install feature-set fabric
feature-set virtualization
feature-set fabric
feature fabric forwarding
nv overlay evpn
feature ospf
feature bgp
feature pim
feature nv overlay
feature vn-segment-vlan-based

ip pim rp-address 10.0.0.71 group-list 224.0.0.0/4 bidir

vlan 10
vn-segment 10010

interface nve1
no shutdown
source-interface loopback1
host-reachability protocol bgp
member vni 10010
mcast-group 224.1.1.1

interface Ethernet1/1
no switchport
mtu 9216
ip address 10.10.10.51/24
ip router ospf 1 area 0.0.0.0
ip pim sparse-mode

interface Ethernet1/2
switchport access vlan 10

interface loopback0
ip address 10.0.0.51/32
ip router ospf 1 area 0.0.0.0
ip pim sparse-mode

interface loopback1
ip address 10.0.1.51/32
ip router ospf 1 area 0.0.0.0
ip pim sparse-mode

router ospf 1

router bgp 65001
address-family l2vpn evpn
neighbor 10.0.0.71
remote-as 65002
update-source loopback0
ebgp-multi-hop 3
address-family l2vpn evpn
allowas-in
send-community extended

evpn
vni 10010 12
rd auto
route-target import auto
route-target export auto

N5K2-
hardware ethernet store-and-fwd-switching

install feature-set virtualization
install feature-set fabric
feature-set fabric
feature-set fabric
feature fabric forwarding
nv overlay evpn
feature ospf
feature bgp
feature pim
feature nv overlay
feature vn-segment-vlan-based

ip pim rp-address 10.0.0.71 group-list 224.0.0.0/4 bidir

vlan 10
vn-segment 10010

interface nve1
no shutdown
source-interface loopback1
host-reachability protocol bgp
member vni 10010
mcast-group 224.1.1.1

interface Ethernet1/1
no switchport
mtu 9216
ip address 10.10.11.52/24
ip router ospf 1 area 0.0.0.0
ip pim sparse-mode

interface Ethernet1/2
switchport access vlan 10

interface loopback0
ip address 10.0.0.52/32
ip router ospf 1 area 0.0.0.0
ip pim sparse-mode

interface loopback1
ip address 10.0.1.52/32
ip router ospf 1 area 0.0.0.0
ip pim sparse-mode

router ospf 1

router bgp 65001
address-family l2vpn evpn
neighbor 10.0.0.71
remote-as 65002
update-source loopback0
ebgp-multi-hop 3
address-family l2vpn evpn
allowas-in
send-community extended

evpn
vni 10010 12
rd auto
route-target import auto
route-target export auto
```

```
Basic Verification Commands (specifically for VXLAN):
N5K1-
N5K1# show interface nve 1
nve1 is up
Hardware: NVE
BW 0 Kbit,

N5K1# show platform fwm info nve peer all
Peer IP      |VRF id|   NVE IF   | Encap  |SwitchId|HWPgmdState|Path Info
| Age(m:s)
10.0.1.52|    1 | 0x49000001 |  VXLAN  |    2   |      Pgmd | L3
|  --:--

N5K1# show mac address-table vlan 10
Legend:
* - primary entry, G - Gateway MAC, (R) - Routed MAC, O - Overlay MAC
age - seconds since last seen, + - primary entry using vPC Peer-Link
VLAN      MAC Address      Type      age      Secure NTFY  Ports/
SWID.SSID.LID
-----
* 10      003a.9cf6.bcc2      dynamic   40       F      F      Eth1/2
* 10      1010.1010.1010     dynamic   0        F      F      nve1/10.0.1.52

N5K1# show nve peers
Interface Peer-IP      State LearnType Uptime      Router-Mac
-----
nve1      10.0.1.52      Up      CP          08:43:11 n/a

N5K1# show nve vni
Codes: CP - Control Plane      DP - Data Plane
UC - Unconfigured      SA - Suppress ARP
SU - Suppress Unknown Unicast

Interface VNI      Multicast-group  State Mode Type [BD/VRF]      Flags
-----
nve1      10010      224.1.1.1      Up      CP      L2 [10]

N5K1# show platform fwm info nve vni
Nve lif 0x49000001, encap 'VXLAN', VRF 'default'(1)
VNI Tree members:
vni 10010, vlan 10, dg 224.1.1.1 (0xe0010101) type: CP

N5K1# show bgp l2vpn evpn summary
BGP summary information for VRF default, address family L2VPN EVPN
BGP router identifier 10.0.0.51, local AS number 65001
BGP table version is 16, L2VPN EVPN config peers 2, capable peers 1
3 network entries and 3 paths using 364 bytes of memory
BGP attribute entries [2/288], BGP AS path entries [1/10]
BGP community entries [0/0], BGP clusterlist entries [0/0]

Neighbor      V      AS  MsgRcvd  MsgSent      TblVer  InQ  OutQ  Up/Down  State/PfxRcd
10.0.0.71      4  65002      617        613          16    0    0  09:59:40 1

N5K1# show bgp l2vpn evpn
BGP routing table information for VRF default, address family L2VPN EVPN
BGP table version is 16, local router ID is 10.0.0.51
Status: s-suppressed, x-deleted, S-stale, d-dampened, h-history, *-valid, >-best
Path type: i-internal, e-external, c-confed, l-local, a-aggregate, r-redist, I-injected
Origin codes: i - IGP, e - EGP, ? - incomplete, | - multipath, & - backup

Network      Next Hop      Metric      LocPrf      Weight Path
Route Distinguisher: 10.0.0.51:32777 (L2VNI 10010)
*>1[2]:[0]:[0]:[48]:[003a.9cf6.bcc2]:[0]:[0.0.0.0]/216
10.0.1.51      100      32768 i
*>e[2]:[0]:[0]:[48]:[1010.1010.1010]:[0]:[0.0.0.0]/216
10.0.1.52      0      65002

Route Distinguisher: 10.0.0.52:32777
*>e[2]:[0]:[0]:[48]:[1010.1010.1010]:[0]:[0.0.0.0]/216
10.0.1.52      0      65002

N5K1# show bgp l2vpn evpn neighbors 10.0.0.71 advertised-routes
Peer 10.0.0.71 routes for address family L2VPN EVPN:
BGP table version is 16, local router ID is 10.0.0.51
Status: s-suppressed, x-deleted, S-stale, d-dampened, h-history, *-valid, >-best
Path type: i-internal, e-external, c-confed, l-local, a-aggregate, r-redist, I-injected
Origin codes: i - IGP, e - EGP, ? - incomplete, | - multipath, & - backup

Network      Next Hop      Metric      LocPrf      Weight Path
Route Distinguisher: 10.0.0.51:32777 (L2VNI 10010)
*>1[2]:[0]:[0]:[48]:[003a.9cf6.bcc2]:[0]:[0.0.0.0]/216
10.0.1.51      100      32768 i

Route Distinguisher: 10.0.0.52:32777
*>e[2]:[0]:[0]:[48]:[1010.1010.1010]:[0]:[0.0.0.0]/216
10.0.1.52      0      65002

N5K1# show bgp l2vpn evpn 003a.9cf6.bcc2
Route Distinguisher: 10.0.0.51:32777 (L2VNI 10010)
BGP routing table entry for [2]:[0]:[0]:[48]:[003a.9cf6.bcc2]:[0]:[0.0.0.0]/216, version 14
Paths: (1 available, best #1)
Flags: (0x00030a) on xmit-list, is not in l2rib/evpn

Advertised path-id 1
Path type: local, path is valid, is best path
AS-Path: NONE, path locally originated
10.0.1.51 (metric 0) from 10.0.0.71 (10.0.0.51)
Origin IGP, MED not set, localpref 100, weight 32768
Received label 10010
Extcommunity:
RT:65001:10010
MAC Mobility Sequence:00:1

Path-id 1 advertised to peers:
10.0.0.71

N5K1# show bgp l2vpn evpn 1010.1010.1010
Route Distinguisher: 10.0.0.51:32777 (L2VNI 10010)
BGP routing table entry for [2]:[0]:[0]:[48]:[1010.1010.1010]:[0]:[0.0.0.0]/216, version 16
Paths: (1 available, best #1)
Flags: (0x00021a) on xmit-list, is in l2rib/evpn, is not in HW,

Advertised path-id 1
Path type: external, path is valid, is best path
Imported from
10.0.0.52:32777:[2]:[0]:[0]:[48]:[1010.1010.1010]:[0]:[0.0.0.0]/216
AS-Path: 65002 65001 , path sourced external to AS
10.0.1.52 (metric 9) from 10.0.0.71 (10.0.0.71)
Origin IGP, MED not set, localpref 100, weight 0
Received label 10010
Extcommunity:
RT:65001:10010
ENCAP:8

Path-id 1 not advertised to any peer

Route Distinguisher: 10.0.0.52:32777
BGP routing table entry for [2]:[0]:[0]:[48]:[1010.1010.1010]:[0]:[0.0.0.0]/216, version 15
Paths: (1 available, best #1)
Flags: (0x000202) on xmit-list, is not in l2rib/evpn, is not in HW, , is locked

Advertised path-id 1
Path type: external, path is valid, is best path
AS-Path: 65002 65001 , path sourced external to AS
10.0.1.52 (metric 9) from 10.0.0.71 (10.0.0.71)
Origin IGP, MED not set, localpref 100, weight 0
Received label 10010
Extcommunity:
RT:65001:10010
ENCAP:8

Path-id 1 not advertised to any peer

N5K2-
N5K2# show interface nve 1
nve1 is up
Hardware: NVE
BW 0 Kbit,

N5K2# show platform fwm info nve peer all
Peer IP      |VRF id|   NVE IF   | Encap  |SwitchId|HWPgmdState|Path Info
| Age(m:s)
10.0.1.51|    1 | 0x49000001 |  VXLAN  |    1   |      Pgmd | L3
|  --:--

N5K2# show mac address-table vlan 10
Legend:
* - primary entry, G - Gateway MAC, (R) - Routed MAC, O - Overlay MAC
age - seconds since last seen, + - primary entry using vPC Peer-Link
VLAN      MAC Address      Type      age      Secure NTFY  Ports/SWID.SSID.LID
-----
* 10      003a.9cf6.bcc2      dynamic   0        F      F      nve1/10.0.1.51
* 10      1010.1010.1010     dynamic   550      F      F      Eth1/2

N5K2# show nve peers
Interface Peer-IP      State LearnType Uptime      Router-Mac
-----
nve1      10.0.1.51      Up      CP          08:54:32 n/a

N5K2# show nve vni
Codes: CP - Control Plane      DP - Data Plane
UC - Unconfigured      SA - Suppress ARP
SU - Suppress Unknown Unicast

Interface VNI      Multicast-group  State Mode Type [BD/VRF]      Flags
-----
nve1      10010      224.1.1.1      Up      CP      L2 [10]

N5K2# show platform fwm info nve vni
Nve lif 0x49000001, encap 'VXLAN', VRF 'default'(1)
VNI Tree members:
vni 10010, vlan 10, dg 224.1.1.1 (0xe0010101) type: CP

N5K2# show bgp l2vpn evpn summary
BGP summary information for VRF default, address family L2VPN EVPN
BGP router identifier 10.0.0.52, local AS number 65001
BGP table version is 14, L2VPN EVPN config peers 2, capable peers 1
3 network entries and 3 paths using 364 bytes of memory
BGP attribute entries [2/288], BGP AS path entries [1/10]
BGP community entries [0/0], BGP clusterlist entries [0/0]

Neighbor      V      AS  MsgRcvd  MsgSent      TblVer  InQ  OutQ  Up/Down  State/PfxRcd
10.0.0.71      4  65002      625        626          14    0    0  10:10:42 1

N5K2# show bgp l2vpn evpn
BGP routing table information for VRF default, address family L2VPN EVPN
BGP table version is 14, local router ID is 10.0.0.52
Status: s-suppressed, x-deleted, S-stale, d-dampened, h-history, *-valid, >-best
Path type: i-internal, e-external, c-confed, l-local, a-aggregate, r-redist, I-injected
Origin codes: i - IGP, e - EGP, ? - incomplete, | - multipath, & - backup

Network      Next Hop      Metric      LocPrf      Weight Path
Route Distinguisher: 10.0.0.51:32777 (L2VNI 10010)
*>e[2]:[0]:[0]:[48]:[003a.9cf6.bcc2]:[0]:[0.0.0.0]/216
10.0.1.51      100      32768 i

Route Distinguisher: 10.0.0.52:32777 (L2VNI 10010)
*>e[2]:[0]:[0]:[48]:[003a.9cf6.bcc2]:[0]:[0.0.0.0]/216
10.0.1.51      0      65002

*>1[2]:[0]:[0]:[48]:[1010.1010.1010]:[0]:[0.0.0.0]/216
10.0.1.52      100      32768 i

N5K2# show bgp l2vpn evpn neighbors 10.0.0.71 advertised-routes
Peer 10.0.0.71 routes for address family L2VPN EVPN:
BGP table version is 14, local router ID is 10.0.0.52
Status: s-suppressed, x-deleted, S-stale, d-dampened, h-history, *-valid, >-best
Path type: i-internal, e-external, c-confed, l-local, a-aggregate, r-redist, I-injected
Origin codes: i - IGP, e - EGP, ? - incomplete, | - multipath, & - backup

Network      Next Hop      Metric      LocPrf      Weight Path
Route Distinguisher: 10.0.0.51:32777
Route Distinguisher: 10.0.0.52:32777 (L2VNI 10010)
*>1[2]:[0]:[0]:[48]:[003a.9cf6.bcc2]:[0]:[0.0.0.0]/216
10.0.1.52      100      32768 i

N5K2# show bgp l2vpn evpn 003a.9cf6.bcc2
Route Distinguisher: 10.0.0.51:32777 (L2VNI 10010)
BGP routing table entry for [2]:[0]:[0]:[48]:[003a.9cf6.bcc2]:[0]:[0.0.0.0]/216, version 11
Paths: (1 available, best #1)
Flags: (0x000202) on xmit-list, is not in l2rib/evpn, is not in HW, , is locked

Advertised path-id 1
Path type: external, path is valid, is best path
Imported from
10.0.0.51:32777:[2]:[0]:[0]:[48]:[003a.9cf6.bcc2]:[0]:[0.0.0.0]/216
AS-Path: 65002 65001 , path sourced external to AS
10.0.1.51 (metric 9) from 10.0.0.71 (10.0.0.71)
Origin IGP, MED not set, localpref 100, weight 0
Received label 10010
Extcommunity:
RT:65001:10010
ENCAP:8
MAC Mobility Sequence:00:1

Path-id 1 not advertised to any peer

Route Distinguisher: 10.0.0.52:32777 (L2VNI 10010)
BGP routing table entry for [2]:[0]:[0]:[48]:[003a.9cf6.bcc2]:[0]:[0.0.0.0]/216, version 13
Paths: (1 available, best #1)
Flags: (0x00031a) on xmit-list, is in l2rib/evpn, is not in HW,

Advertised path-id 1
Path type: external, path is valid, is best path
Imported from
10.0.0.51:32777:[2]:[0]:[0]:[48]:[003a.9cf6.bcc2]:[0]:[0.0.0.0]/216
AS-Path: 65002 65001 , path sourced external to AS
10.0.1.51 (metric 9) from 10.0.0.71 (10.0.0.71)
Origin IGP, MED not set, localpref 100, weight 0
Received label 10010
Extcommunity:
RT:65001:10010
ENCAP:8
MAC Mobility Sequence:00:1

Path-id 1 not advertised to any peer

N5K2# show bgp l2vpn evpn 1010.1010.1010
Route Distinguisher: 10.0.0.51:32777 (L2VNI 10010)
BGP routing table entry for [2]:[0]:[0]:[48]:[1010.1010.1010]:[0]:[0.0.0.0]/216, version 14
Paths: (1 available, best #1)
Flags: (0x00010a) on xmit-list, is not in l2rib/evpn

Advertised path-id 1
Path type: local, path is valid, is best path
AS-Path: NONE, path locally originated
10.0.1.52 (metric 0) from 10.0.0.0 (10.0.0.52)
Origin IGP, MED not set, localpref 100, weight 32768
Received label 10010
Extcommunity:
RT:65001:10010

Path-id 1 advertised to peers:
10.0.0.71
```