



```
Running Configuration:
N7K1-
nv overlay 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

router bgp 1
neighbor 10.0.0.51 remote-as 1
update-source loopback0
address-family l2vpn evpn
send-community extended
route-reflector-client
neighbor 10.0.0.52 remote-as 1
update-source loopback0
address-family l2vpn evpn
send-community extended
route-reflector-client

NSK1-
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 11
vn-segment 100010

interface nve1
no shutdown
source-interface loopback0
host-reachability protocol bgp
member vni 100010
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 11

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

router ospf 1

router bgp 1
address-family l2vpn evpn
neighbor 10.0.0.71 remote-as 1
address-family l2vpn evpn
send-community extended

evpn
vni 100010 l2
rd auto
route-target import auto
route-target export auto

NSK2-
hardware ethernet store-and-fwd-switching

install feature-set virtualization
install 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 11
vn-segment 100010

interface nve1
no shutdown
source-interface loopback0
host-reachability protocol bgp
member vni 100010
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 11

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

router ospf 1

router bgp 1
address-family l2vpn evpn
neighbor 10.0.0.71 remote-as 1
address-family l2vpn evpn
send-community extended

evpn
vni 100010 l2
rd auto
route-target import auto
route-target export auto

Basic Verification Commands (specifically for VXLAN):
NSK1-
NSK1# show interface nve 1
nve1 is up
Hardware: NVE
BW 0 Kbit,

NSK1# show platform fwm info nve peer all
Peer IP      |VRF id|  NVE IF   | Encap |SwitchId|HWPgmdState|Path Info
| Age(m:s) |
10.0.0.52|    1 | 0x49000001 |  VXLAN |    1 |      Pgmd | L3
| ---|---

NSK1# show mac address-table vlan 11
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
-----
* 11      003a.9cf6.bcc2      dynamic   30      F      F  Eth1/2
* 11      1010.1010.1010      dynamic    0      F      F  nve1/10.0.0.52

NSK1# show nve peers
Interface Peer-IP      State LearnType Uptime      Router-Mac
-----
nve1      10.0.0.52           Up        CP          22:16:03 n/a

NSK1# 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      100010      224.1.1.1      Up    CP    L2 [11]

NSK1# show platform fwm info nve vni
Nve lif 0x49000001, encap 'VXLAN', VRF 'default'(1)
VNI Tree members:
vni 100010, vlan 11, dg 224.1.1.1 (0xe0010101) type: CP

NSK1# show bgp l2vpn evpn summary
BGP summary information for VRF default, address family L2VPN EVPN
BGP router identifier 10.0.0.51:32778 (L2VNI 100010)
BGP table version is 7, local router ID is 10.0.0.51
3 network entries and 3 paths using 364 bytes of memory
BGP attribute entries [2/288], BGP AS path entries [0/0]
BGP community entries [0/0], BGP clusterlist entries [1/4]

Neighbor      V      AS MsgRcvd MsgSent      TblVer  InQ OutQ Up/Down State/
PfxRcd
10.0.0.71      4      1    1359    1357          7      0      0 22:25:14 1

NSK1# show bgp l2vpn evpn
BGP routing table information for VRF default, address family L2VPN EVPN
BGP table version is 7, 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: 10.0.0.51:32778 (L2VNI 100010)
*>i[2]:[0]:[0]:[48]:[003a.9cf6.bcc2]:[0]:[0.0.0.0]/216
10.0.0.51      100      32768 i
*>i[2]:[0]:[0]:[48]:[1010.1010.1010]:[0]:[0.0.0.0]/216
10.0.0.51      100      0 i

Route Distinguisher: 10.0.0.52:32778
*>i[2]:[0]:[0]:[48]:[1010.1010.1010]:[0]:[0.0.0.0]/216
10.0.0.52      100      0 i

NSK1# 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 7, 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: 10.0.0.51:32778 (L2VNI 100010)
*>i[2]:[0]:[0]:[48]:[003a.9cf6.bcc2]:[0]:[0.0.0.0]/216
10.0.0.51      100      32768 i

Route Distinguisher: 10.0.0.52:32778

NSK1# show bgp l2vpn evpn 003a.9cf6.bcc2
Route Distinguisher: 10.0.0.52:32778 (L2VNI 100010)
BGP routing table entry for [2]:[0]:[0]:[48]:[003a.9cf6.bcc2]:[0]:[0.0.0.0]/
216, version 7
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
10.0.0.51 (metric 0) from 0.0.0.0 (10.0.0.51)
Origin IGP, MED not set, localpref 100, weight 32768
Received label 100010
Extcommunity:
RT:1:100010

Path-id 1 advertised to peers:
10.0.0.71

NSK1# show bgp l2vpn evpn 1010.1010.1010
Route Distinguisher: 10.0.0.52:32778 (L2VNI 100010)
BGP routing table entry for [2]:[0]:[0]:[48]:[1010.1010.1010]:[0]:[0.0.0.0]/
216, version 6
Paths: (1 available, best #1)
Flags: (0x000202a) on xmit-list, is not in l2rib/evpn, is not in HW,

Advertised path-id 1
Path type: internal, path is valid, is best path
Imported from
10.0.0.52:32778:[2]:[0]:[0]:[48]:[1010.1010.1010]:[0]:[0.0.0.0]/216
AS-Path: NONE, path sourced internal to AS
10.0.0.52 (metric 9) from 10.0.0.71 (10.0.0.71)
Origin IGP, MED not set, localpref 100, weight 0
Received label 100010
Extcommunity:
RT:1:100010
ENCAP:8
Originator: 10.0.0.52 Cluster list: 10.0.0.71

Path-id 1 not advertised to any peer

Route Distinguisher: 10.0.0.52:32778 (L2VNI 100010)
BGP routing table entry for [2]:[0]:[0]:[48]:[1010.1010.1010]:[0]:[0.0.0.0]/
216, version 5
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: internal, path is valid, is best path
Imported from
10.0.0.51:32778:[2]:[0]:[0]:[48]:[003a.9cf6.bcc2]:[0]:[0.0.0.0]/216
AS-Path: NONE, path sourced internal to AS
10.0.0.51 (metric 9) from 10.0.0.71 (10.0.0.71)
Origin IGP, MED not set, localpref 100, weight 0
Received label 100010
Extcommunity:
RT:1:100010
ENCAP:8
Originator: 10.0.0.51 Cluster list: 10.0.0.71

Path-id 1 not advertised to any peer

NSK2-
NSK2# show interface nve 1
nve1 is up
Hardware: NVE
BW 0 Kbit,

NSK2# show platform fwm info nve peer all
Peer IP      |VRF id|  NVE IF   | Encap |SwitchId|HWPgmdState|Path Info
| Age(m:s) |
10.0.0.51|    1 | 0x49000001 |  VXLAN |    1 |      Pgmd | L3
| ---|---

NSK2# show mac address-table vlan 11
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
-----
* 11      003a.9cf6.bcc2      dynamic    0      F      F  nve1/10.0.0.51
* 11      1010.1010.1010      dynamic  470      F      F  Eth1/2

NSK2# show nve peers
Interface Peer-IP      State LearnType Uptime      Router-Mac
-----
nve1      10.0.0.51           Up        CP          22:19:25 n/a

NSK2# 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      100010      224.1.1.1      Up    CP    L2 [11]

NSK2# show platform fwm info nve vni
Nve lif 0x49000001, encap 'VXLAN', VRF 'default'(1)
VNI Tree members:
vni 100010, vlan 11, dg 224.1.1.1 (0xe0010101) type: CP

NSK2# 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 1
BGP table version is 7, L2VPN EVPN config peers 1, capable peers 1
3 network entries and 3 paths using 364 bytes of memory
BGP attribute entries [2/288], BGP AS path entries [0/0]
BGP community entries [0/0], BGP clusterlist entries [1/4]

Neighbor      V      AS MsgRcvd MsgSent      TblVer  InQ OutQ Up/Down State/PfxRcd
10.0.0.71      4      1    1364    1363          7      0      0 22:29:52 1

NSK2# show bgp l2vpn evpn
BGP routing table information for VRF default, address family L2VPN EVPN
BGP table version is 7, 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: 10.0.0.51:32778 (L2VNI 100010)
*>i[2]:[0]:[0]:[48]:[003a.9cf6.bcc2]:[0]:[0.0.0.0]/216
10.0.0.51      100      0 i

Route Distinguisher: 10.0.0.52:32778 (L2VNI 100010)
*>i[2]:[0]:[0]:[48]:[003a.9cf6.bcc2]:[0]:[0.0.0.0]/216
10.0.0.51      100      0 i
*>i[2]:[0]:[0]:[48]:[1010.1010.1010]:[0]:[0.0.0.0]/216
10.0.0.52      100      32768 i

NSK2# 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 7, 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: 10.0.0.51:32778 (L2VNI 100010)
*>i[2]:[0]:[0]:[48]:[003a.9cf6.bcc2]:[0]:[0.0.0.0]/216
10.0.0.51      100      32768 i

Route Distinguisher: 10.0.0.52:32778 (L2VNI 100010)
*>i[2]:[0]:[0]:[48]:[1010.1010.1010]:[0]:[0.0.0.0]/216
10.0.0.52      100      32768 i

NSK2# show bgp l2vpn evpn 003a.9cf6.bcc2
Route Distinguisher: 10.0.0.52:32778 (L2VNI 100010)
BGP routing table entry for [2]:[0]:[0]:[48]:[003a.9cf6.bcc2]:[0]:[0.0.0.0]/
216, version 6
Paths: (1 available, best #1)
Flags: (0x000202a) on xmit-list, is not in l2rib/evpn, is not in HW, , is locked

Advertised path-id 1
Path type: internal, path is valid, is best path
Imported from
10.0.0.51:32778:[2]:[0]:[0]:[48]:[003a.9cf6.bcc2]:[0]:[0.0.0.0]/216
AS-Path: NONE, path sourced internal to AS
10.0.0.51 (metric 9) from 10.0.0.71 (10.0.0.71)
Origin IGP, MED not set, localpref 100, weight 0
Received label 100010
Extcommunity:
RT:1:100010
ENCAP:8
Originator: 10.0.0.51 Cluster list: 10.0.0.71

Path-id 1 not advertised to any peer

Route Distinguisher: 10.0.0.52:32778 (L2VNI 100010)
BGP routing table entry for [2]:[0]:[0]:[48]:[003a.9cf6.bcc2]:[0]:[0.0.0.0]/
216, version 7
Paths: (1 available, best #1)
Flags: (0x00021a) on xmit-list, is not in l2rib/evpn, is not in HW,

Advertised path-id 1
Path type: internal, path is valid, is best path
Imported from
10.0.0.51:32778:[2]:[0]:[0]:[48]:[003a.9cf6.bcc2]:[0]:[0.0.0.0]/216
AS-Path: NONE, path sourced internal to AS
10.0.0.51 (metric 9) from 10.0.0.71 (10.0.0.71)
Origin IGP, MED not set, localpref 100, weight 0
Received label 100010
Extcommunity:
RT:1:100010
ENCAP:8
Originator: 10.0.0.51 Cluster list: 10.0.0.71

Path-id 1 not advertised to any peer

NSK2# show bgp l2vpn evpn 1010.1010.1010
Route Distinguisher: 10.0.0.52:32778 (L2VNI 100010)
BGP routing table entry for [2]:[0]:[0]:[48]:[1010.1010.1010]:[0]:[0.0.0.0]/
216, version 5
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
10.0.0.52 (metric 0) from 0.0.0.0 (10.0.0.52)
Origin IGP, MED not set, localpref 100, weight 32768
Received label 100010
Extcommunity:
RT:1:100010

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

