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UNDERLAY: BGP

OVERLAY: MP-BGP EVPN + VXLAN

NX-OS Features:

```
nv overlay evpn
feature bgp
feature fabric forwarding
feature interface-vlan
feature vn-segment-vlan-based
feature nv overlay

install feature-set fabric

feature-set fabric

cli alias name status show system resources

cli alias name wr copy run start
```

Underlay mode: eBGP two AS (SPINE AS X and LEAFs AS Y) or Ebgp Multi AS (SPINE AS X and LEAFs AS n)

-> **Spines Underlay BGP Configuration:**

```
Point-to-Point (/30) or unnumbered interfaces via loopback (/32)
ebgp-multihop 2 or more
update-source Loopback
address-family ipv4:
send-community both
next-hop-self (DISABLED)
allowas-in (NOT NEED)
disable-peer-as-check

route-map NH-UNCHANGED permit 100
set ip next-hop unchanged

address-family l2vpn evpn:
retain Route-Target all (global l2vpn evpn)
send-community both
rewrite-evpn-rt-asn (NEED IF RT AUTO)
route-map NH-UNCHANGED out
```

-> **Leaf Underlay BGP Configuration:**

```
update-source loopback
ebgp-multihop 2 or more
disable-peer-as-check
address-family ipv4 unicast:
allowas-in 3
```

```
    send-community
    send-community extended
    next-hop-self
address-family l2vpn evpn:
    allowas-in 3
    send-community
    send-community extended
vrf X
    address-family ipv4 unicast
    advertise l2vpn evpn
    redistribute direct route-map LAB (ROUTE-MAP IS NEED)
```

-> Overlay VXLAN L2VNI Configuration:

VLAN VNI MAP (L2):

```
vlan X
    vn-segment Y
```

VLAN INTERFACE (L2):

```
interface VLAN X
    no shutdown
    vrf member X
    ip forward (NO IP ADDRESS IS NEED)
```

-> Overlay VXLAN L3VNI Configuration:

VLAN VNI MAP (L3):

```
vlan H
    vn-segment Y (SPECIFIC VLAN DEDICATED FOR VRF)
```

```
vlan Z (L3 VLAN/NETWORK)
    vn-segment P
```

VRF (L2 and L3):

```
vrf context X
    vni Y
    rd auto
    address-family ipv4 unicast
    route-target both auto
    route-target both auto evpn
```

```
interface H (SPECIFIC VLAN DEDICATED FOR VRF)
    no shutdown
    vrf member X
    ip forward (NO IP ADDRESS IS NEED)
```

INTERFACE VLAN (L3):

```
interface Z
  no shutdown
  vrf member X
  ip address x.y.z.h/y (SAME NETWORK OR DIFFERENT NETWORK ON LEAFS)
  fabric forwarding mode anycast-gateway (USED ONLY ON SAME NETWORKS)
```

GLOBAL: fabric forwarding anycast-gateway-mac aabb.ccdd.eeff (SAME ADDRESS ON BOTH LEAFS)

-> VXLAN (VTEP) interface:

```
interface nve1
  no shutdown
  host-reachability protocol bgp
  source-interface loopback
  member vni 2001 (L2VNI)
    ingress-replication protocol bgp (UNICAST FOR BUM VIA BGP) or
    mcast-group 239.x.y.z (Multicast for BUM)
  member vni 2002 (L2VNI)
    ingress-replication protocol bgp (UNICAST FOR BUM VIA BGP) or
    mcast-group 239.x.y.h (Multicast for BUM)
  member vni 383901 associate-vrf (L3VNI)
  member vni 383902 associate-vrf (L3VNI)
```

-> EVPN L2:

```
evpn
  vni X l2 (L2)
    route-target import auto
    route-target export auto
```

-> Interface VLAN configuration:

VXLAN VNI mapping:

```
interface Ethernet X/Y
  switchport mode access
  switchport access vlan X
```