



Configuring Seamless Integration of EVPN with L3VPN (MPLS LDP)

This chapter contains the following sections:

- [Information About Configuring Seamless Integration of EVPN with L3VPN \(MPLS LDP\)](#), on page 1
- [Guidelines and Limitations for Configuring Seamless Integration of EVPN with L3VPN \(MPLS LDP\)](#), on page 1
- [Configuring Seamless Integration of EVPN with L3VPN \(MPLS LDP\)](#), on page 2

Information About Configuring Seamless Integration of EVPN with L3VPN (MPLS LDP)

Data center deployments have adopted VXLAN EVPN for its benefits like EVPN control-plane learning, multitenancy, seamless mobility, redundancy, and easier POD additions. Similarly, the Core is either an LDP-based MPLS L3VPN network or transitioning from traditional an MPLS L3VPN LDP-based underlay to a more sophisticated solution like segment routing (SR). Segment routing is adopted for its benefits like unified IGP and MPLS control planes, simpler traffic engineering methods, easier configuration, and SDN adoption.

With two different technologies, one within the data center and one in the Core, it is natural to handoff from VXLAN to an MPLS-based core at the DCI nodes. These nodes which sit on the edge of the DC domain, interfacing with the Core edge router.

Guidelines and Limitations for Configuring Seamless Integration of EVPN with L3VPN (MPLS LDP)

The following are the guidelines and limitations for Configuring Seamless Integration of EVPN with L3VPN (MPLS LDP):

The following features are supported:

- Layer 3 orphans
- MPLS extended ECMP (enabled by default)

- Beginning with Cisco NX-OS Release 10.3(3)F, Type-6 encryption for MPLS LDP user password is supported on Cisco NX-OS switches.

The following features are not supported:

- Subnet stretches across the DC domain
- vPC
- SVI/Subinterfaces

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These configuration steps are required on a DCI switch to import and re-originate the routes from a VXLAN domain to an MPLS domain and back to a VXLAN domain.

SUMMARY STEPS

1. **configure terminal**
2. **feature mpls l3vpn**
3. **feature mpls ldp**
4. **nv overlay evpn**
5. **router bgp *number***
6. **address-family ipv4 unicast**
7. **redistribute direct route-map *route-map-name***
8. **exit**
9. **address-family l2vpn evpn**
10. **exit**
11. **neighbor *address* remote-as *number***
12. **update-source *type/id***
13. **ebgp-multihop *ttl-value***
14. **address-family ipv4 unicast**
15. **send-community extended**
16. **exit**
17. **address-family vpv4 unicast**
18. **send-community extended**
19. **import l2vpn evpn reoriginate**
20. **neighbor *address* remote-as *number***
21. **address-family ipv4 unicast**
22. **send-community extended**
23. **address-family ipv6 unicast**
24. **send-community extended**
25. **address-family l2vpn evpn**
26. **send-community extended**
27. **import vpn unicast reoriginate**

DETAILED STEPS

	Command or Action	Purpose
Step 1	configure terminal Example: switch# configure terminal	Enters global configuration mode.
Step 2	feature mpls l3vpn Example: switch# feature mpls l3vpn	Enables the MPLS Layer 3 VPN feature.
Step 3	feature mpls ldp Example: switch# feature mpls ldp	Enables the MPLS Label Distribution Protocol (LDP).
Step 4	nv overlay evpn Example: switch(config)# nv overlay evpn	Enables the EVPN control plane for VXLAN.
Step 5	router bgp number Example: switch(config)# router bgp 100	Configures BGP. The value of the <i>number</i> argument is from 1 to 4294967295.
Step 6	address-family ipv4 unicast Example: switch(config-router)# address-family ipv4 unicast	Configures the address family for IPv4.
Step 7	redistribute direct route-map route-map-name Example: switch(config-router-af)# redistribute direct route-map passall	Configures the directly connected route map.
Step 8	exit Example: switch(config-router-af)# exit	Exits command mode.
Step 9	address-family l2vpn evpn Example: switch(config-router)# address-family l2vpn evpn	Configures the L2VPN address family.
Step 10	exit Example: switch(config-router-af)# exit	Exits command mode.
Step 11	neighbor address remote-as number Example:	Configures a BGP neighbor. The range of the <i>number</i> argument is from 1 to 65535.

	Command or Action	Purpose
	<code>switch(config-router)# neighbor 108.108.108.108 remote-as 22</code>	
Step 12	update-source <i>type/id</i> Example: <code>switch(config-router-neighbor)# update-source loopback100</code>	Specifies the source of the BGP session and updates.
Step 13	ebgp-multihop <i>tvl-value</i> Example: <code>switch(config-router-neighbor)# ebgp-multihop 10</code>	Specifies the multihop TTL for the remote peer. The range of <i>tvl-value</i> is from 2 to 255.
Step 14	address-family ipv4 unicast Example: <code>switch(config-router-neighbor)# address-family ipv4 unicast</code>	Configures the unicast sub-address family.
Step 15	send-community extended Example: <code>switch(config-router-neighbor-af)# send-community extended</code>	Configures the community attribute for this neighbor.
Step 16	exit Example: <code>switch(config-router-neighbor-af)# exit</code>	Exits command mode.
Step 17	address-family vpnv4 unicast Example: <code>switch(config-router-neighbor)# address-family vpnv4 unicast</code>	Configures the address family for IPv4.
Step 18	send-community extended Example: <code>switch(config-router)# send-community extended</code>	Sends the extended community attribute.
Step 19	import l2vpn evpn reoriginate Example: <code>switch(config-router)# import l2vpn evpn reoriginate</code>	Reoriginates the route with a new RT.
Step 20	neighbor <i>address remote-as number</i> Example: <code>switch(config-router)# neighbor 175.175.175.2 remote-as 1</code>	Defines the neighbor.
Step 21	address-family ipv4 unicast Example:	Configures the address family for IPv4.

	Command or Action	Purpose
	<code>switch(config-router)# address-family ipv4 unicast</code>	
Step 22	send-community extended Example: <code>switch(config-router)# send-community extended</code>	Configures the community for BGP neighbors.
Step 23	address-family ipv6 unicast Example: <code>switch(config-router)# address-family ipv6 unicast</code>	Configures the IPv6 unicast address family, which is required for IPv6 over VXLAN with an IPv4 underlay.
Step 24	send-community extended Example: <code>switch(config-router)# send-community extended</code>	Configures the community for BGP neighbors.
Step 25	address-family l2vpn evpn Example: <code>switch(config-router)# address-family l2vpn evpn</code>	Configures the L2VPN address family.
Step 26	send-community extended Example: <code>switch(config-router)# send-community extended</code>	Configures the community for BGP neighbors.
Step 27	import vpn unicast reoriginate Example: <code>switch(config-router)# import vpn unicast reoriginate</code>	Reoriginates the route with a new RT.

