

# **Configuring Seamless Integration of EVPN with L3VPN (MPLS LDP)**

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## 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)

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The following features are not supported:

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

## Configuring Seamless Integration of EVPN with L3VPN (MPLS LDP)

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.

### Procedure

	Command or Action	Purpose
Step 1	configure terminal	Enters global configuration mode.
	Example:	
	switch# configure terminal	
Step 2	feature mpls l3vpn	Enables the MPLS Layer 3 VPN feature.
	Example:	
	switch# feature mpls 13vpn	
Step 3	feature mpls ldp	Enables the MPLS Label Distribution Protocol (LDP).
	Example:	
	switch# feature mpls ldp	
Step 4	nv overlay evpn	Enables the EVPN control plane for VXLAN.
	Example:	
	<pre>switch(config)# nv overlay evpn</pre>	
Step 5	router bgp number	Configures BGP. The value of the <i>number</i> argument is from 1 to 4294967295.
	Example:	
	<pre>switch(config) # router bgp 100</pre>	
Step 6	address-family ipv4 unicast	Configures the address family for IPv4.
	Example:	
	<pre>switch(config-router)# address-family ipv4 unicast</pre>	
Step 7	redistribute direct route-map	Configures the directly connected route map.
	route-map-name	
	Example:	

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Switch (config-router-af) # redistribute         direct route-map passall         Step 8       exit         Example:       switch (config-router-af) # exit         Step 9       address-family l2vpn evpn         Example:       switch (config-router) # exit         Step 10       exit         Example:       switch (config-router) # exit         Step 10       exit         Example:       switch (config-router-af) # exit         Step 11       neighbor address remote-as number         Example:       switch (config-router) # neighbor         switch (config-router) # neighbor       Configures a BGP neighbor. The range of the number argument is from 1 to 65535.         Step 11       neighbor address remote-as 22         Step 12       update-source type/id         switch (config-router-neighbor) #       updates.         switch (config-router-neighbor) #       Specifies the source of the BGP session and updates.         switch (config-router-neighbor) #       Specifies the multihop TTL for the remote peer. The range of ttl-value is from 2 to 255.         switch (config-router-neighbor) #       Specifies the unicast sub-address family.         Example:       switch (config-router-neighbor) #         switch (config-router-neighbor) #       Configures the unicast sub-address family.         E
Step 8exit Example: switch(config-router-af) # exitExits command mode.Step 9address-family l2vpn evpn Example: switch(config-router) # address-family l2vpn evpnConfigures the L2VPN address family.Step 10exit Example: switch(config-router) # address-family l2vpn evpnExits command mode.Step 11neighbor address remote-as number Example: switch(config-router) # neighbor 108 108 108 108 108 remote-as 22Configures a BGP neighbor. The range of the number argument is from 1 to 65535.Step 12update-source type/id Example: switch(config-router-neighbor) # update-source loopback100Specifies the source of the BGP session and updates.Step 13ebgp-multihop tll-value Example: switch(config-router-neighbor) # update-source loopback100Specifies the multihop TTL for the remote peer. The range of tll-value is from 2 to 255.Step 14address-family ipv4 unicast Example: switch(config-router-neighbor) # address-family ipv4 unicastConfigures the unicast sub-address family.Step 15send-community extended Example: switch(config-router-neighbor) # address-family ipv4 unicastConfigures the community attribute for this neighbor.Step 15send-community extended Example: switch(config-router-neighbor-af) # address-family ipv4 unicastConfigures the community attribute for this neighbor.
Example: switch(config-router-af)# exitConfigures the L2VPN address family.Step 9address-family l2vpn evpn Example: switch(config-router)# address-family l2vpn evpnConfigures the L2VPN address family.Step 10exit Example: switch(config-router-af)# exitExits command mode.Step 11neighbor address remote-as number Example: switch(config-router)# neighbor 108.108.108 non-as 22Configures a BGP neighbor. The range of the number argument is from 1 to 65535.Step 12update-source type/id Example: switch(config-router-neighbor)# update-source loopback100Specifies the source of the BGP session and updates.Step 13ebgp-multihop ttl-value Example: switch(config-router-neighbor)# ebgp-multihop 10Specifies the multihop TTL for the remote peer. The range of ttl-value is from 2 to 255.Step 14address-family ipv4 unicast Example: switch(config-router-neighbor)# eddress-family ipv4 unicastConfigures the unicast sub-address family.Step 15send-community extended Example: switch(config-router-neighbor.af)# eddress-family ipv4 unicastConfigures the community attribute for this neighbor.
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Example:       switch (config-router-neighbor) #       peer. The range of <i>til-value</i> is from 2 to 255.         Step 14       address-family ipv4 unicast       Configures the unicast sub-address family.         Example:       switch (config-router-neighbor) #       Configures the unicast sub-address family.         Step 15       send-community extended       Configures the community attribute for this neighbor.         Step 15       send-community extended       Configures the community attribute for this neighbor.         Step 16       avit       Exits command mode
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Step 14       address-family ipv4 unicast       Configures the unicast sub-address family.         Example:       switch (config-router-neighbor) #       address-family ipv4 unicast         Step 15       send-community extended       Configures the community attribute for this neighbor.         Step 16       switch (config-router-neighbor-af) #       Step 16
Example:       switch (config-router-neighbor) #         address-family ipv4 unicast       configures the community attribute for this         Step 15       send-community extended       Configures the community attribute for this         switch (config-router-neighbor-af) #       send-community extended       Example:         Step 16       evit       Evits command mode
switch (config-router-neighbor) #         address-family ipv4 unicast         Step 15       send-community extended         Example:         switch (config-router-neighbor-af) #         switch (config-router-neighbor-af) #         Step 16
Step 15       send-community extended       Configures the community attribute for this neighbor.         Example:       switch (config-router-neighbor-af) #       Configures the community attribute for this neighbor.         Step 16       evit       Evits command mode
Example:     neighbor.       switch(config-router-neighbor-af)#     send-community extended
switch (config-router-neighbor-af) #       send-community extended       Sten 16     evit   Evits command mode
Ston 16 evit Evits command made
Step to Exits command mode.
Example:
<pre>switch(config-router-neighbor-af)# exit</pre>
Step 17address-family vpnv4 unicastConfigures the address family for IPv4.
Example:

	Command or Action	Purpose
	<pre>switch(config-router-neighbor)# address-family vpnv4 unicast</pre>	
Step 18	send-community extended	Sends the extended community attribute.
	Example:	
	<pre>switch(config-router)# send-community extended</pre>	
Step 19	import l2vpn evpn reoriginate	Reoriginates the route with a new RT.
	Example:	
	<pre>switch(config-router)# import l2vpn evpn reoriginate</pre>	
Step 20	neighbor address remote-as number	Defines the neighbor.
	Example:	
	<pre>switch(config-router)# neighbor 175.175.175.2 remote-as 1</pre>	
Step 21	address-family ipv4 unicast	Configures the address family for IPv4.
	Example:	
	<pre>switch(config-router)# address-family ipv4 unicast</pre>	
Step 22	send-community extended	Configures the community for BGP neighbors.
	Example:	
	<pre>switch(config-router)# send-community extended</pre>	
Step 23	address-family ipv6 unicast	Configures the IPv6 unicast address family,
	Example:	which is required for IPv6 over VXLAN with an IPv4 underlay
	<pre>switch(config-router)# address-family ipv6 unicast</pre>	
Step 24	send-community extended	Configures the community for BGP neighbors.
	Example:	
	<pre>switch(config-router)# send-community extended</pre>	
Step 25	address-family l2vpn evpn	Configures the L2VPN address family.
	Example:	
	<pre>switch(config-router)# address-family l2vpn evpn</pre>	
Step 26	send-community extended	Configures the community for BGP neighbors.
	Example:	
	<pre>switch(config-router)# send-community extended</pre>	

	Command or Action	Purpose
Step 27	import vpn unicast reoriginate	Reoriginates the route with a new RT.
	Example:	
	<pre>switch(config-router)# import vpn unicast reoriginate</pre>	

Configuring Seamless Integration of EVPN with L3VPN (MPLS LDP)