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# Introduction

This document provides examples for configuring EVPN-DCI over an MPLS L3VPN network.

## Prerequisites

This document is not restricted to specific software or hardware versions.

The configuration examples in this document were created and verified in a lab environment, and all the devices were started with the factory default configuration. When you are working on a live network, make sure you understand the potential impact of every command on your network.

This document assumes that you have basic knowledge of MPLS L3VPN and EVPN.

## General restrictions and guidelines

Before you configure EVPN on a device, you must perform the following tasks:

1. Set the system operating mode to VXLAN mode by using the `switch-mode` command in system view.
2. Save the running configuration.
3. Reboot the device.

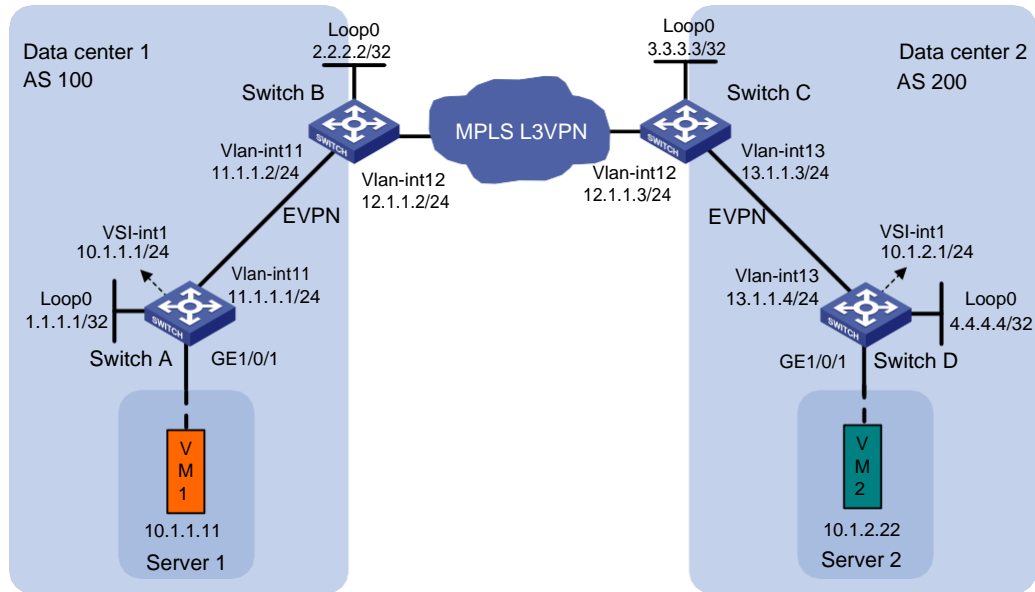
## Example: Configuring IPv4 EVPN-DCI over an MPLS L3VPN network

### Network configuration

As shown in [Figure 1](#):

- Data center 1 and data center 2 are interconnected through an MPLS L3VPN network. The two data centers can communicate with each other through the MPLS L3VPN network.
- Switch A and Switch D are distributed EVPN gateways in the data centers.
- Switch B and Switch C act as both EVPN EDs and MPLS L3VPN PEs.

**Figure 1 Network diagram**



## Analysis

For the switches within a data center to reach each other, configure a routing protocol on the switches to advertise routes for interfaces (including the loopback interfaces). In this example, OSPF is used.

To enable communication between the data centers, you must perform the following tasks on Switch B and Switch C:

- Configure both MPLS L3VPN and EVPN.
- Configure the BGP EVPN address family and the BGP VPNv4 address family to exchange routes.

## Applicable hardware and software versions

The following matrix shows the hardware and software versions to which this configuration example is applicable:

Hardware	Software version
SC 3570 switch series	Not supported
SC 5525 switch series	Release 65xx, Release 6615Pxx, Release 6628Pxx
SC 5520 switch series	Release 65xx, Release 6615Pxx, Release 6628Pxx
SC 3170 switch series	Not supported
SC 3130 switch series	Not supported

## Restrictions and guidelines

As a best practice to ensure correct traffic forwarding, configure the same MAC address for all VSI interfaces on an EVPN gateway.

When you configure L3 VXLAN IDs for VSI interfaces, make sure the same route targets are configured for the VPN instances associated with these VSI interfaces.

# Procedures

## Configuring the system operating mode

# Set the system operating mode to VXLAN on Switch A, and reboot the switch for the mode change to take effect.

```
<SwitchA> system-view
[SwitchA] switch-mode 1
[SwitchA] quit
<SwitchA> reboot
```

# Set the system operating mode of Switch B, Switch C, and Switch D to VXLAN. The method is the same as Switch A. (Details not shown.)

## Configuring IP addresses for interfaces

# Configure IP addresses for interfaces on Switch A.

```
<SwitchA> system-view
[SwitchA] vlan 11
[SwitchA-vlan11] quit
```

```
[SwitchA] interface gigabitethernet 1/0/2
[SwitchA-GigabitEthernet1/0/2] port link-type trunk
[SwitchA-GigabitEthernet1/0/2] port trunk permit vlan 11
[SwitchA-GigabitEthernet1/0/2] undo shutdown
[SwitchA-GigabitEthernet1/0/2] quit
[SwitchA] interface vlan-interface 11
[SwitchA-Vlan-interface11] ip address 11.1.1.1 24
[SwitchA-Vlan-interface11] undo shutdown
[SwitchA-Vlan-interface11] quit
[SwitchA] interface loopback 0
[SwitchA-LoopBack0] ip address 1.1.1.1 32
[SwitchA-LoopBack0] undo shutdown
[SwitchA-LoopBack0] quit
```

**# Configure IP addresses for interfaces on Switch B, Switch C, and Switch D. The method is the same as Switch A. (Details not shown.)**

## Configuring OSPF on the switches

**# On Switch A, specify interfaces attached to the specified network to run OSPF.**

```
[SwitchA] ospf 1
[SwitchA-ospf-1] area 0
[SwitchA-ospf-1-area-0.0.0.0] network 1.1.1.1 0.0.0.0
[SwitchA-ospf-1-area-0.0.0.0] network 11.1.1.0 0.0.0.255
[SwitchA-ospf-1-area-0.0.0.0] quit
[SwitchA-ospf-1] quit
```

**# On Switch B, specify interfaces attached to the specified network to run OSPF.**

```
<SwitchB> system-view
[SwitchB] ospf 1
[SwitchB-ospf-1] import-route bgp
[SwitchB-ospf-1] area 0
[SwitchB-ospf-1-area-0.0.0.0] network 2.2.2.2 0.0.0.0
[SwitchB-ospf-1-area-0.0.0.0] network 11.1.1.0 0.0.0.255
[SwitchB-ospf-1-area-0.0.0.0] quit
[SwitchB-ospf-1] quit
```

**# On Switch C, specify interfaces attached to the specified network to run OSPF.**

```
<SwitchC> system-view
[SwitchC] ospf 1
[SwitchC-ospf-1] import-route bgp
[SwitchC-ospf-1] area 0
[SwitchC-ospf-1-area-0.0.0.0] network 3.3.3.3 0.0.0.0
[SwitchC-ospf-1-area-0.0.0.0] network 13.1.1.0 0.0.0.255
[SwitchC-ospf-1-area-0.0.0.0] quit
[SwitchC-ospf-1] quit
```

**# On Switch D, specify interfaces attached to the specified network to run OSPF.**

```
<SwitchD> system-view
[SwitchD] ospf 1
[SwitchD-ospf-1] area 0
[SwitchD-ospf-1-area-0.0.0.0] network 4.4.4.4 0.0.0.0
```

```
[SwitchD-ospf-1-area-0.0.0.0] network 13.1.1.0 0.0.0.255
[SwitchD-ospf-1-area-0.0.0.0] quit
[SwitchD-ospf-1] quit
```

## Creating the VXLANs and EVPN instances

### Configuring Switch A

```
# Enable L2VPN.
[SwitchA] l2vpn enable

# Create VSI vpn1 and VXLAN 10.
[SwitchA] vsi vpn1
[SwitchA-vsi-vpn1] vxlan 10
[SwitchA-vsi-vpn1-vxlan-10] quit

# Create an EVPN instance on VSI vpn1. Configure the switch to automatically generate an RD and
a route target for the EVPN instance.
[SwitchA-vsi-vpn1] evpn encapsulation vxlan
[SwitchA-vsi-vpn1-evpn-vxlan] route-distinguisher auto
[SwitchA-vsi-vpn1-evpn-vxlan] vpn-target auto
[SwitchA-vsi-vpn1-evpn-vxlan] quit
[SwitchA-vsi-vpn1] quit
```

### Configuring Switch D

```
# Enable L2VPN.
[SwitchD] l2vpn enable

# Create VSI vpn1 and VXLAN 20.
[SwitchD] vsi vpn1
[SwitchD-vsi-vpn1] vxlan 20
[SwitchD-vsi-vpn1-vxlan-20] quit

# Create an EVPN instance on VSI vpn1. Configure the switch to automatically generate an RD and
a route target for the EVPN instance.
[SwitchD-vsi-vpn1] evpn encapsulation vxlan
[SwitchD-vsi-vpn1-evpn-vxlan] route-distinguisher auto
[SwitchD-vsi-vpn1-evpn-vxlan] vpn-target auto
[SwitchD-vsi-vpn1-evpn-vxlan] quit
[SwitchD-vsi-vpn1] quit
```

## Configuring L3 VXLAN IDs and VSI interfaces

### Configuring Switch A

```
# Configure RD and route target settings for VPN instance vpna.
[SwitchA] ip vpn-instance vpna
[SwitchA-vpn-instance-vpna] route-distinguisher 1:1
[SwitchA-vpn-instance-vpna] address-family ipv4
[SwitchA-vpn-ipv4-vpna] vpn-target 2:2
[SwitchA-vpn-ipv4-vpna] quit
[SwitchA-vpn-instance-vpna] address-family evpn
[SwitchA-vpn-evpn-vpna] vpn-target 1:1
[SwitchA-vpn-evpn-vpna] quit
```

```
[SwitchA-vpn-instance-vpna] quit
```

**# Enable Layer 3 forwarding for VXLANs.**

```
[SwitchA] vxlan ip-forwarding
```

**# Configure VSI-interface 1 as a distributed gateway.**

```
[SwitchA] interface vsi-interface 1
```

```
[SwitchA-Vsi-interface1] ip binding vpn-instance vpna
```

```
[SwitchA-Vsi-interface1] ip address 10.1.1.1 24
```

```
[SwitchA-Vsi-interface1] mac-address 1-1-1
```

```
[SwitchA-Vsi-interface1] distributed-gateway local
```

```
[SwitchA-Vsi-interface1] local-proxy-arp enable
```

```
[SwitchA-Vsi-interface1] quit
```

**# Create VSI-interface 2. Associate VSI-interface 2 with VPN instance **vpna**, and configure the L3 VXLAN ID as 1000 for the VPN instance.**

```
[SwitchA] interface vsi-interface 2
```

```
[SwitchA-Vsi-interface2] ip binding vpn-instance vpna
```

```
[SwitchA-Vsi-interface2] l3-vni 1000
```

```
[SwitchA-Vsi-interface2] quit
```

**# Specify VSI-interface 1 as the gateway interface for VSI **vpn1**.**

```
[SwitchA] vsi vpn1
```

```
[SwitchA-vsi-vpn1] gateway vsi-interface 1
```

```
[SwitchA-vsi-vpn1] quit
```

## Configuring Switch B

**# Enable L2VPN.**

```
[SwitchB] l2vpn enable
```

**# Configure RD and route target settings for VPN instance **vpna**.**

```
[SwitchB] ip vpn-instance vpna
```

```
[SwitchB-vpn-instance-vpna] route-distinguisher 1:2
```

```
[SwitchB-vpn-instance-vpna] address-family ipv4
```

```
[SwitchB-vpn-ipv4-vpna] vpn-target 2:2
```

```
[SwitchB-vpn-ipv4-vpna] quit
```

```
[SwitchB-vpn-instance-vpna] address-family evpn
```

```
[SwitchB-vpn-evpn-vpna] vpn-target 1:1
```

```
[SwitchB-vpn-evpn-vpna] quit
```

```
[SwitchB-vpn-instance-vpna] quit
```

**# Enable Layer 3 forwarding for VXLANs.**

```
[SwitchB] vxlan ip-forwarding
```

**# Create VSI-interface 1. Associate VSI-interface 1 with VPN instance **vpna**, and configure the L3 VXLAN ID as 1000 for the VPN instance.**

```
[SwitchB] interface vsi-interface 1
```

```
[SwitchB-Vsi-interface1] ip binding vpn-instance vpna
```

```
[SwitchB-Vsi-interface1] l3-vni 1000
```

```
[SwitchB-Vsi-interface1] quit
```

## Configuring Switch C

**# Enable L2VPN.**

```
[SwitchC] l2vpn enable
```

**# Configure RD and route target settings for VPN instance **vpna**.**

```
[SwitchC] ip vpn-instance vpna
[SwitchC-vpn-instance-vpna] route-distinguisher 1:3
[SwitchC-vpn-instance-vpna] address-family ipv4
[SwitchC-vpn-ipv4-vpna] vpn-target 2:2
[SwitchC-vpn-ipv4-vpna] quit
[SwitchC-vpn-instance-vpna] address-family evpn
[SwitchC-vpn-evpn-vpna] vpn-target 1:1
[SwitchC-vpn-evpn-vpna] quit
[SwitchC-vpn-instance-vpna] quit
```

**# Enable Layer 3 forwarding for VXLANs.**

```
[SwitchC] vxlan ip-forwarding
```

**# Create VSI-interface 1. Associate VSI-interface 1 with VPN instance **vpna**, and configure the L3 VXLAN ID as 1000 for the VPN instance.**

```
[SwitchC] interface vsi-interface 1
[SwitchC-Vsi-interface1] ip binding vpn-instance vpna
[SwitchC-Vsi-interface1] l3-vni 1000
[SwitchC-Vsi-interface1] quit
```

## Configuring Switch D

**# Configure RD and route target settings for VPN instance **vpna**.**

```
[SwitchD] ip vpn-instance vpna
[SwitchD-vpn-instance-vpna] route-distinguisher 1:4
[SwitchD-vpn-instance-vpna] address-family ipv4
[SwitchD-vpn-ipv4-vpna] vpn-target 2:2
[SwitchD-vpn-ipv4-vpna] quit
[SwitchD-vpn-instance-vpna] address-family evpn
[SwitchD-vpn-evpn-vpna] vpn-target 1:1
[SwitchD-vpn-evpn-vpna] quit
[SwitchD-vpn-instance-vpna] quit
```

**# Enable Layer 3 forwarding for VXLANs.**

```
[SwitchD] vxlan ip-forwarding
```

**# Configure VSI-interface 1 as a distributed gateway.**

```
[SwitchD] interface vsi-interface 1
[SwitchD-Vsi-interface1] ip binding vpn-instance vpna
[SwitchD-Vsi-interface1] ip address 10.1.2.1 24
[SwitchD-Vsi-interface1] mac-address 1-2-1
[SwitchD-Vsi-interface1] distributed-gateway local
[SwitchD-Vsi-interface1] local-proxy-arp enable
[SwitchD-Vsi-interface1] quit
```

**# Create VSI-interface 2. Associate VSI-interface 2 with VPN instance **vpna**, and configure the L3 VXLAN ID as 1000 for the VPN instance.**

```
[SwitchD] interface vsi-interface 2
[SwitchD-Vsi-interface2] ip binding vpn-instance vpna
[SwitchD-Vsi-interface2] l3-vni 1000
[SwitchD-Vsi-interface2] quit
```

**# Specify VSI-interface 1 as the gateway interface for VSI **vpn1**.**

```
[SwitchD] vsi vpn1
[SwitchD-vsi-vpn1] gateway vsi-interface 1
```



```
[SwitchD-vsi-vpn1] quit
```

## Disabling remote MAC address learning and remote ARP learning

# On Switch A, disable remote MAC address learning and remote ARP learning.

```
[SwitchA] vxlan tunnel mac-learning disable
```

```
[SwitchA] vxlan tunnel arp-learning disable
```

# Disable remote MAC address learning and remote ARP learning on Switch B, Switch C, and Switch D. The method is the same as Switch A. (Details not shown.)

## Mapping Ethernet service instances to VSIs

# On Switch A, create Ethernet service instance 1000 on GigabitEthernet 1/0/1 to match VLAN 100 and map the Ethernet service instance to VSI **vpn1**.

```
[SwitchA] interface gigabitethernet 1/0/1
```

```
[SwitchA-GigabitEthernet1/0/1] service-instance 1000
```

```
[SwitchA-GigabitEthernet1/0/1-srv1000] encapsulation s-vid 100
```

```
[SwitchA-GigabitEthernet1/0/1-srv1000] xconnect vsi vpn1
```

```
[SwitchA-GigabitEthernet1/0/1-srv1000] quit
```

```
[SwitchA-GigabitEthernet1/0/1] quit
```

# On Switch D, create Ethernet service instance 1000 on GigabitEthernet 1/0/1 to match VLAN 100 and map the Ethernet service instance to VSI **vpn1**.

```
[SwitchD] interface gigabitethernet 1/0/1
```

```
[SwitchD-GigabitEthernet1/0/1] service-instance 1000
```

```
[SwitchD-GigabitEthernet1/0/1-srv1000] encapsulation s-vid 100
```

```
[SwitchD-GigabitEthernet1/0/1-srv1000] xconnect vsi vpn1
```

```
[SwitchD-GigabitEthernet1/0/1-srv1000] quit
```

```
[SwitchD-GigabitEthernet1/0/1] quit
```

## Establishing BGP EVPN peer relationship within a data center

### Data center 1

# Configure Switch A to advertise BGP EVPN routes.

```
[SwitchA] bgp 100
```

```
[SwitchA-bgp-default] peer 2.2.2.2 as-number 100
```

```
[SwitchA-bgp-default] peer 2.2.2.2 connect-interface loopback 0
```

```
[SwitchA-bgp-default] address-family l2vpn evpn
```

```
[SwitchA-bgp-default-evpn] peer 2.2.2.2 enable
```

```
[SwitchA-bgp-default-evpn] quit
```

```
[SwitchA-bgp-default] quit
```

# Configure Switch B to advertise BGP EVPN routes.

```
[SwitchB] bgp 100
```

```
[SwitchB-bgp-default] peer 1.1.1.1 as-number 100
```

```
[SwitchB-bgp-default] peer 1.1.1.1 connect-interface loopback 0
```

```
[SwitchB-bgp-default] address-family l2vpn evpn
```

```
[SwitchB-bgp-default-evpn] peer 1.1.1.1 enable
[SwitchB-bgp-default-evpn] quit
[SwitchB-bgp-default] quit
```

## Data center 2

# Configure Switch C to advertise BGP EVPN routes.

```
[SwitchC] bgp 200
[SwitchC-bgp-default] peer 4.4.4.4 as-number 200
[SwitchC-bgp-default] peer 4.4.4.4 connect-interface loopback 0
[SwitchC-bgp-default] address-family l2vpn evpn
[SwitchC-bgp-default-evpn] peer 4.4.4.4 enable
[SwitchC-bgp-default-evpn] quit
[SwitchC-bgp-default] quit
```

# Configure Switch D to advertise BGP EVPN routes.

```
[SwitchD] bgp 200
[SwitchD-bgp-default] peer 3.3.3.3 as-number 200
[SwitchD-bgp-default] peer 3.3.3.3 connect-interface loopback 0
[SwitchD-bgp-default] address-family l2vpn evpn
[SwitchD-bgp-default-evpn] peer 3.3.3.3 enable
[SwitchD-bgp-default-evpn] quit
[SwitchD-bgp-default] quit
```

# Establishing MPLS L3VPN connections between ASs

## Configuring Switch B

# Configure the LSR ID as 2.2.2.2 for the local node, enable LDP globally, and enable MPLS and IPv4 LDP on VLAN-interface 12.

```
[SwitchB] mpls lsr-id 2.2.2.2
[SwitchB] mpls ldp
[SwitchB-ldp] quit
[SwitchB] interface vlan-interface 12
[SwitchB-Vlan-interface12] mpls enable
[SwitchB-Vlan-interface12] mpls ldp enable
[SwitchB-Vlan-interface12] quit
```

# Configure BGP to advertise VPNv4 routes.

```
[SwitchB] bgp 100
[SwitchB-bgp-default] peer 12.1.1.3 as-number 200
[SwitchB-bgp-default] address-family vpnv4
[SwitchB-bgp-default-vpnv4] peer 12.1.1.3 enable
[SwitchB-bgp-default-vpnv4] quit
[SwitchB-bgp-default] quit
```

## Configuring Switch C

# Configure the LSR ID as 3.3.3.3 for the local node, enable LDP globally, and enable MPLS and IPv4 LDP on VLAN-interface 12.

```
[SwitchC] mpls lsr-id 3.3.3.3
[SwitchC] mpls ldp
[SwitchC -ldp] quit
[SwitchC] interface vlan-interface 12
```

```
[SwitchC-Vlan-interface12] mpls enable
[SwitchC-Vlan-interface12] mpls ldp enable
[SwitchC-Vlan-interface12] quit

# Configure BGP to advertise VPNv4 routes.
[SwitchC] bgp 200
[SwitchC-bgp-default] peer 12.1.1.2 as-number 100
[SwitchC-bgp-default] address-family vpnv4
[SwitchC-bgp-default-vpnv4] peer 12.1.1.2 enable
[SwitchC-bgp-default-vpnv4] quit
[SwitchC-bgp-default] quit
```

## Configuring the BGP EVPN address family and the BGP VPNv4 address family to exchange routes

**# On Switch B, configure the BGP EVPN address family and the BGP VPNv4 address family to exchange routes.**

```
[SwitchB] bgp 100
[SwitchB-bgp-default] address-family l2vpn evpn
[SwitchB-bgp-default-evpn] advertise l3vpn route
[SwitchB-bgp-default-evpn] quit
[SwitchB-bgp-default] address-family vpnv4
[SwitchB-bgp-default-vpnv4] advertise evpn route
[SwitchB-bgp-default-vpnv4] quit
[SwitchB-bgp-default] quit
```

**# On Switch C, configure the BGP EVPN address family and the BGP VPNv4 address family to exchange routes.**

```
[SwitchC] bgp 200
[SwitchC-bgp-default] address-family l2vpn evpn
[SwitchC-bgp-default-evpn] advertise l3vpn route
[SwitchC-bgp-default-evpn] quit
[SwitchC-bgp-default] address-family vpnv4
[SwitchC-bgp-default-vpnv4] advertise evpn route
[SwitchC-bgp-default-vpnv4] quit
[SwitchC-bgp-default] quit
```

## Verifying the configuration

**# On Switch B, display the BGP VPNv4 routing table. Verify that BGP EVPN routes are redistributed to the routing table.**

```
[SwitchB] display bgp routing-table vpnv4

BGP local router ID is 2.2.2.2
Status codes: * - valid, > - best, d - dampened, h - history
              s - suppressed, S - stale, i - internal, e - external
              a - additional-path
Origin: i - IGP, e - EGP, ? - incomplete

Total number of routes from all PEs: 1
```

Route distinguisher: 1:2(vpna)  
 Total number of routes: 3

Network	NextHop	MED	LocPrf	PrefVal	Path/Ogn
* >i 10.1.1.0/24	1.1.1.1	0	100	0	i
* >i 10.1.1.11/32	1.1.1.1	0	100	0	i
* >e 10.1.2.0/24	12.1.1.3			0	200i

Route distinguisher: 1:3  
 Total number of routes: 1

Network	NextHop	MED	LocPrf	PrefVal	Path/Ogn
* >e 10.1.2.0/24	12.1.1.3			0	200i

**# Display BGP VPNv4 route advertisement information. Verify that the BGP EVPN routes are advertised to the BGP VPNv4 neighbor.**

[SwitchB] display bgp routing-table vpnv4 10.1.1.0 advertise-info

BGP local router ID: 2.2.2.2  
 Local AS number: 100

Route distinguisher: 1:2  
 Total number of routes: 1  
 Paths: 1 best

BGP routing table information of 10.1.1.0/24(TxPathID:0):

Advertised to VPN peers (1 in total):

12.1.1.3

Inlabel : 1150

**# Display BGP EVPN routes. Verify that an IP prefix advertisement route is generated based on the route that is redistributed in to the BGP EVPN address family from the BGP VPNv4 address family.**

[SwitchB] display bgp l2vpn evpn

BGP local router ID is 2.2.2.2

Status codes: \* - valid, > - best, d - dampened, h - history  
 s - suppressed, S - stale, i - internal, e - external  
 a - additional-path

Origin: i - IGP, e - EGP, ? - incomplete

Total number of routes from all PEs: 2

Route distinguisher: 1:1  
 Total number of routes: 1

\*> Network : [5][0][24][10.1.1.0]/80

```

      NextHop : 1.1.1.1                      LocPrf      100
      PrefVal  : 0                          OutLabel   : NULL
      MED      : 0
      Path/Ogn: i

```

```

Route distinguisher: 1:2(vpna)
Total number of routes: 2

```

```

*>i Network : [2][0][48][0005-0005-0005][32][10.1.1.11]/136
      NextHop : 1.1.1.1                      LocPrf      : 100
      PrefVal  : 0                          OutLabel   : NULL
      MED      : 0
      Path/Ogn: i

```

```

*>e Network : [5][0][24][10.1.2.0]/80
      NextHop : 127.0.0.1                    LocPrf      : 0
      PrefVal  : 0                          OutLabel   : NULL
      MED      : 0
      Path/Ogn: 200i

```

```

Route distinguisher: 1:10
Total number of routes: 1

```

```

*>i Network : [2][0][48][0005-0005-0005][32][10.1.1.11]/136
      NextHop : 1.1.1.1                      LocPrf      100
      PrefVal  : 0                          OutLabel   : NULL
      MED      : 0
      Path/Ogn: i

```

**# Display detailed advertisement information about the IP prefix advertisement route. Verify that the switch has advertised the route to the EVPN neighbor.**

```
[SwitchB] display bgp l2vpn evpn [5][0][24][10.1.2.0]/80 advertise-info
```

```

BGP local router ID: 2.2.2.2
Local AS number: 100

```

```

Route distinguisher: 1:2
Total number of routes: 1
Paths:    1 best

```

```

BGP routing table information of [5][0][24][10.1.2.0]/80(TxPathID:0):
Advertised to peers (1 in total):
  1.1.1.1

```

## Configuration files

- Switch A:  
#

```

sysname SwitchA
#
ip vpn-instance vpna
    route-distinguisher 1:1
#
address-family ipv4
    vpn-target 2:2 import-extcommunity
    vpn-target 2:2 export-extcommunity
#
address-family evpn
    vpn-target 1:1 import-extcommunity
    vpn-target 1:1 export-extcommunity
#
vxlan tunnel mac-learning disable
#
ospf 1
    area 0.0.0.0
        network 1.1.1.1 0.0.0.0
        network 11.1.1.0 0.0.0.255
#
vlan 11
#
vlan 100
#
    l2vpn enable
    vxlan tunnel arp-learning disable
#
vsi vpn1
    gateway vsi-interface 1
    vxlan 10
    evpn encapsulation vxlan
        route-distinguisher auto
        vpn-target auto export-extcommunity
        vpn-target auto import-extcommunity
#
interface LoopBack0
    ip address 1.1.1.1 255.255.255.255
#
interface Vlan-interface11
    ip address 11.1.1.1 255.255.255.0
#
interface GigabitEthernet1/0/1
    port link-mode bridge
#
service-instance 1000
    encapsulation s-vid 100
    xconnect vsi vpn1
#

```

```

interface GigabitEthernet1/0/2
    port link-mode bridge
    port link-type trunk
    port trunk permit vlan 1 11
#
interface Vsi-interface1
    ip binding vpn-instance vpna
    ip address 10.1.1.1 255.255.255.0
    mac-address 0001-0001-0001
    local-proxy-arp enable
    distributed-gateway local
#
interface Vsi-interface2
    ip binding vpn-instance vpna
    l3-vni 1000
#
bgp 100
    peer 2.2.2.2 as-number 100
    peer 2.2.2.2 connect-interface LoopBack0
#
    address-family l2vpn evpn
        peer 2.2.2.2 enable
#
return

```

- **Switch B:**

```

#
sysname SwitchB
#
ip vpn-instance vpna
    route-distinguisher 1:2
#
    address-family ipv4
        vpn-target 2:2 import-extcommunity
        vpn-target 2:2 export-extcommunity
#
    address-family evpn
        vpn-target 1:1 import-extcommunity
        vpn-target 1:1 export-extcommunity
#
    vxlan tunnel mac-learning disable
#
ospf 1
    import-route bgp
    area 0.0.0.0
        network 2.2.2.2 0.0.0.0
        network 11.1.1.0 0.0.0.255
#
mpls lsr-id 2.2.2.2

```

```

#
vlan 11 to 12
#
mpls ldp
#
    l2vpn enable
    vxlan tunnel arp-learning disable
#
interface LoopBack0
    ip address 2.2.2.2 255.255.255.255
#
interface Vlan-interface11
    ip address 11.1.1.2 255.255.255.0
#
interface Vlan-interface12
    ip address 12.1.1.2 255.255.255.0
    mpls enable
    mpls ldp enable
#
interface GigabitEthernet1/0/1
    port link-mode bridge
    port link-type trunk
    port trunk permit vlan 1 11
#
interface GigabitEthernet1/0/2
    port link-mode bridge
    port link-type trunk
    port trunk permit vlan 1 12
#
interface Vsi-interface1
    ip binding vpn-instance vpna
    l3-vni 1000
#
bgp 100
    peer 1.1.1.1 as-number 100
    peer 1.1.1.1 connect-interface LoopBack0
    peer 12.1.1.3 as-number 200
#
    address-family vpnv4
        advertise evpn route
        peer 12.1.1.3 enable
#
    address-family l2vpn evpn
        advertise l3vpn route
        peer 1.1.1.1 enable
#

```

- **Switch C:**

```

#

```



```

sysname SwitchC
#
ip vpn-instance vpna
  route-distinguisher 1:3
#
address-family ipv4
  vpn-target 2:2 import-extcommunity
  vpn-target 2:2 export-extcommunity
#
address-family evpn
  vpn-target 1:1 import-extcommunity
  vpn-target 1:1 export-extcommunity
#
vxlan tunnel mac-learning disable
#
ospf 1
  import-route bgp
  area 0.0.0.0
    network 3.3.3.3 0.0.0.0
    network 13.1.1.0 0.0.0.255
#
mpls lsr-id 3.3.3.3
#
vlan 12 to 13
#
mpls ldp
#
l2vpn enable
vxlan tunnel arp-learning disable
#
interface LoopBack0
  ip address 3.3.3.3 255.255.255.255
#
interface Vlan-interface12
  ip address 12.1.1.3 255.255.255.0
  mpls enable
  mpls ldp enable
#
interface Vlan-interface13
  ip address 13.1.1.3 255.255.255.0
#
interface GigabitEthernet1/0/1
  port link-mode bridge
  port link-type trunk
  port trunk permit vlan 1 12
#
interface GigabitEthernet1/0/2
  port link-mode bridge

```

```

port link-type trunk
port trunk permit vlan 1 13
#
interface Vsi-interface1
ip binding vpn-instance vpna
13-vni 1000
#
bgp 200
peer 4.4.4.4 as-number 200
peer 4.4.4.4 connect-interface LoopBack0
peer 12.1.1.2 as-number 100
#
address-family vpnv4
advertise evpn route
peer 12.1.1.2 enable
#
address-family l2vpn evpn
advertise l3vpn route
peer 4.4.4.4 enable
#

```

- **Switch D:**

```

#
sysname SwitchD
#
ip vpn-instance vpna
route-distinguisher 1:4
#
address-family ipv4
vpn-target 2:2 import-extcommunity
vpn-target 2:2 export-extcommunity
#
address-family evpn
vpn-target 1:1 import-extcommunity
vpn-target 1:1 export-extcommunity
#
vxlan tunnel mac-learning disable
#
ospf 1
area 0.0.0.0
network 4.4.4.4 0.0.0.0
network 13.1.1.0 0.0.0.255
#
vlan 13
#
l2vpn enable
vxlan tunnel arp-learning disable
#
vsi vpn1

```

```

gateway vsi-interface 1
vxlan 20
evpn encapsulation vxlan
route-distinguisher auto
vpn-target auto export-extcommunity
vpn-target auto import-extcommunity
#
interface LoopBack0
ip address 4.4.4.4 255.255.255.255
#
interface Vlan-interface13
ip address 13.1.1.4 255.255.255.0
#
interface GigabitEthernet1/0/1
port link-mode bridge
#
service-instance 1000
encapsulation s-vid 100
xconnect vsi vpn1
#
interface GigabitEthernet1/0/2
port link-mode bridge
port link-type trunk
port trunk permit vlan 1 13
#
interface Vsi-interface1
ip binding vpn-instance vpna
ip address 10.1.2.1 255.255.255.0
mac-address 0001-0002-0001
local-proxy-arp enable
distributed-gateway local
#
interface Vsi-interface2
ip binding vpn-instance vpna
l3-vni 1000
#
bgp 200
peer 3.3.3.3 as-number 200
peer 3.3.3.3 connect-interface LoopBack0
#
address-family l2vpn evpn
peer 3.3.3.3 enable
#

```