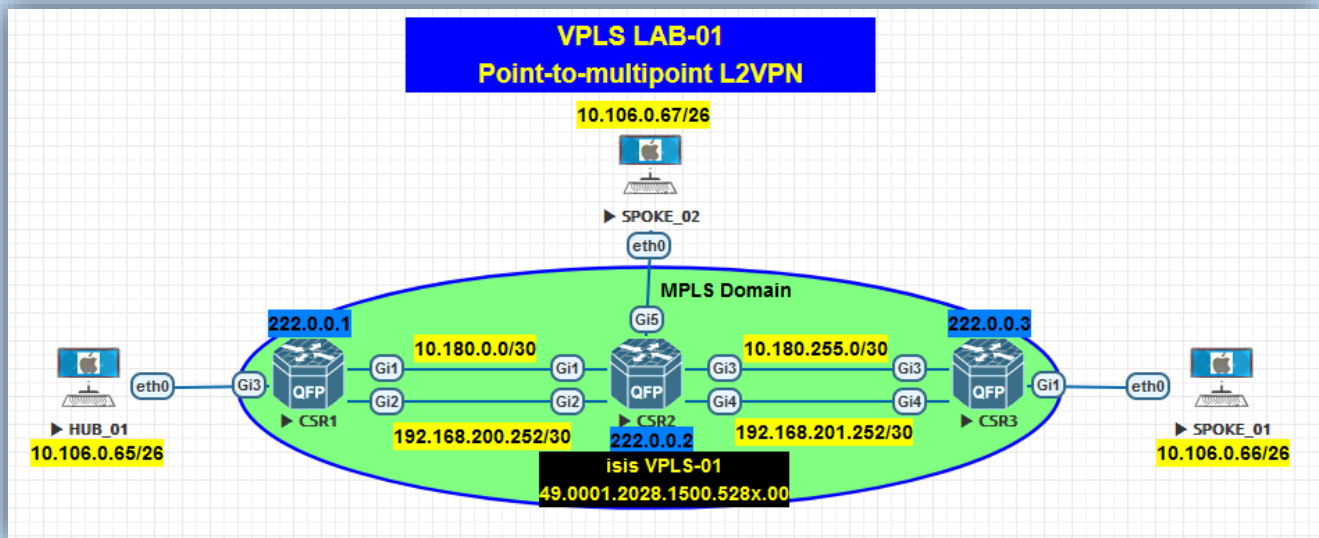# VPLS LAB–01

Point–to–multipoint/Multipoint–to–multipoint L2VPN

1.Run an IGP such as IS–IS or OSPF.

2.Enable MPLS at respective interfaces.

CSR–01

Ethernet Flow Point (EFP) (or) Service Instance

interface **GigabitEthernet3**

 no ip address

 service instance **1** ethernet

  encapsulation untagged

 !

Virtual Forwarding Instance (VFI)

l2vpn vfi context **VPLS–01**

 vpn id **1**

 member **222.0.0.2 10** encapsulation mpls

 member **222.0.0.3 11** encapsulation mpls

!

Bridge-Domain (BD)

bridge-domain **1**

  member **GigabitEthernet3** service-instance **1**

  member vfi **VPLS-01**

!

Ethernet Flow Point (EFP) (or) Service Instance

interface **GigabitEthernet5**

  no ip address

  service instance **2** ethernet

    encapsulation untagged

  !

Virtual Forwarding Instance (VFI)

l2vpn vfi context **VPLS-01**

  vpn id **1**

  member **222.0.0.1 10** encapsulation mpls

!

Bridge-Domain (BD)

bridge-domain **2**

  member **GigabitEthernet5** service-instance **2**

  member vfi **VPLS-01**

!

Ethernet Flow Point (EFP) (or) Service Instance

interface **GigabitEthernet1**

 no ip address

 service instance **11** ethernet

  encapsulation untagged

 !

Virtual Forwarding Instance (VFI)

l2vpn vfi context **VPLS–01**

 vpn id **1**

 member **222.0.0.1 11** encapsulation mpls

!

Bridge–Domain (BD)

bridge–domain **11**

 member **GigabitEthernet1** service–instance **11**

 member vfi **VPLS–01**

!

Ping Results

Spoke–01

```
SPOKE1> ping 10.106.0.65

84 bytes from 10.106.0.65 icmp_seq=1 ttl=64 time=28.536 ms
84 bytes from 10.106.0.65 icmp_seq=2 ttl=64 time=36.899 ms
84 bytes from 10.106.0.65 icmp_seq=3 ttl=64 time=22.605 ms
84 bytes from 10.106.0.65 icmp_seq=4 ttl=64 time=12.493 ms
84 bytes from 10.106.0.65 icmp_seq=5 ttl=64 time=15.022 ms

SPOKE1>
```

Spoke–02

```
SPOKE2> ping 10.106.0.65

84 bytes from 10.106.0.65 icmp_seq=1 ttl=64 time=13.469 ms
84 bytes from 10.106.0.65 icmp_seq=2 ttl=64 time=21.802 ms
84 bytes from 10.106.0.65 icmp_seq=3 ttl=64 time=11.777 ms
84 bytes from 10.106.0.65 icmp_seq=4 ttl=64 time=22.482 ms
84 bytes from 10.106.0.65 icmp_seq=5 ttl=64 time=8.862 ms

SPOKE2>
```

Hub

```
HUB>
HUB>
HUB> ping 10.106.0.66

84 bytes from 10.106.0.66 icmp_seq=1 ttl=64 time=24.136 ms
84 bytes from 10.106.0.66 icmp_seq=2 ttl=64 time=46.604 ms
84 bytes from 10.106.0.66 icmp_seq=3 ttl=64 time=12.863 ms
84 bytes from 10.106.0.66 icmp_seq=4 ttl=64 time=14.564 ms
84 bytes from 10.106.0.66 icmp_seq=5 ttl=64 time=14.985 ms

HUB> ping 10.106.0.67

84 bytes from 10.106.0.67 icmp_seq=1 ttl=64 time=12.622 ms
84 bytes from 10.106.0.67 icmp_seq=2 ttl=64 time=25.780 ms
84 bytes from 10.106.0.67 icmp_seq=3 ttl=64 time=12.363 ms
84 bytes from 10.106.0.67 icmp_seq=4 ttl=64 time=12.076 ms
84 bytes from 10.106.0.67 icmp_seq=5 ttl=64 time=8.193 ms

HUB>
```

Verifications

CSR–01

```
CSR-01#sh mpls l2tran vc

Local intf       Local circuit               Dest address     VC ID       Status
-------------    --------------------------  ---------------  ----------  ----------
VFI VPLS-01      vfi                         222.0.0.2        10          UP
VFI VPLS-01      vfi                         222.0.0.3        11          UP

CSR-01#sh l2vpn vfi
Legend: RT=Route-target, S=Split-horizon, Y=Yes, N=No

VFI name: VPLS-01, state: up, type: multipoint, signaling: LDP
  VPN ID: 10
  Bridge-Domain 1 attachment circuits:
  Pseudo-port interface: pseudowire100001
  Interface          Peer Address      VC ID        S
  pseudowire100003   222.0.0.2         10           Y
  pseudowire100002   222.0.0.3         11           Y

CSR-01#
```

CSR–02

```
CSR-02#sh mpls l2tran vc

Local intf       Local circuit               Dest address     VC ID       Status
-------------    --------------------------  ---------------  ----------  ----------
VFI VPLS-01      vfi                         222.0.0.1        10          UP

CSR-02#sh l2vpn vfi
Legend: RT=Route-target, S=Split-horizon, Y=Yes, N=No

VFI name: VPLS-01, state: up, type: multipoint, signaling: LDP
  VPN ID: 1
  Bridge-Domain 2 attachment circuits:
  Pseudo-port interface: pseudowire100001
  Interface          Peer Address      VC ID        S
  pseudowire100002   222.0.0.1         10           Y

CSR-02#
```

CSR-03

```
CSR-03#sh l2vp vfi
Legend: RT=Route-target, S=Split-horizon, Y=Yes, N=No

VFI name: VPLS-01, state: up, type: multipoint, signaling: LDP
  VPN ID: 1
  Bridge-Domain 11 attachment circuits:
  Pseudo-port interface: pseudowire100001
  Interface           Peer Address      VC ID        S
  pseudowire100002    222.0.0.1         11           Y

CSR-03#sh mpls l2tran vc

Local intf    Local circuit              Dest address    VC ID      Status
------------  -------------------------  --------------  ---------  ---------
VFI VPLS-01   vfi                        222.0.0.1       11         UP

CSR-03#
```