



## EVC Local Connect

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Local connect (Layer 2 point to point service) is a point to point connection. It transparently transmits packet between two service instances which are configured on the same box. Local connect only connects two end points (service instances) without learning any Mac addresses. This is different from the traditional L2 bridging.



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**Note** Packet is not forwarded based on MAC addresses.

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- [Information About EVC Local Connect, on page 1](#)
- [Prerequisites for EVC Local Connect, on page 1](#)
- [Restrictions for EVC Local Connect, on page 1](#)
- [How to Configure EVC Local Connect, on page 2](#)
- [Configuration Examples, on page 5](#)
- [Use Cases or Deployment Scenarios, on page 6](#)

## Information About EVC Local Connect

### Prerequisites for EVC Local Connect

- EVC Local connect and global bridge domain configurations requires Advanced Metro IPAccess license.
- Ensure EFPs are configured without any Bridge-Domain or Xconnect mapped to it.

### Restrictions for EVC Local Connect

- EVC local connect is not supported on port-channel interfaces.
- CFM is *not* supported on EVC which contains local connect.
- L2 Protocol Tunnel are *not* supported.
- Ethernet Loopback is *not* supported.
- EVC local connect over Trunk is *not* supported.

- Port based local connect is *not* supported.
- Egress filtering based on encapsulation, vlan translation, terminal and facility loopback are *not* supported
- Local Connect members without service instances will *not* work.
- On point-point connection storm control should not be applied. However, with local connect, broadcast storm control gets applied.
- For IP multicast, IGMP and PIM control packets get punted to CPU and then re-injected into the hardware path. The same thing applies to DHCP control packets too.

### Scaling

- With the 8k SDM template enabled, there can be 4000 local connects configured. This total EFP scale can be divided among cross-connect and local- connect and there is no fixed limit on the division numbers.
- Local Connect does not share Internal Bridge-Domain space with L2VPN.
- Local Connect is scaled by half of total EFP scale. EFP scale is 8000 on RSP3-400 and 4000 on RSP3-200 modules.

# How to Configure EVC Local Connect

## Configuring EVC Local Connect

### Before You Begin

Ensure that service instances are configured with proper encapsulations and rewrites as needed.

### Procedure

Follow this procedure to establish an EVC local connection:

#### Configuring Service Instance 1

```
enable
configure terminal
interface GigabitEthernet0/1/6
service instance 1 ethernet
encapsulation dot1q 2
end
```

#### Configuring Service Instance 2

```
enable
configure terminal
interface GigabitEthernet0/1/7
service instance 2 ethernet
encapsulation dot1q 2
end
```

**EVC Local Connect for Service Instances 1 and 2**

```
enable
configure terminal
l2vpn xconnect context efp2
member GigabitEthernet0/1/6 service-instance 1
member GigabitEthernet0/1/7 service-instance 2
no shut
end
```

**Configuring EVC Local Connect as Interworking VLAN**

Interworking VLAN is configured in the **l2vpn xconnect** command for local connect, if the local connect both member EFPs has different encapsulation types as default or untagged or vlan range. Follow this procedure to configure EVC local connect using interworking VLAN.

**Before You Begin**

Ensure that service instances are configured with proper encapsulations and rewrites as needed.

**Procedure**

```
enable
configure terminal
l2vpn xconnect context connect1
member GigabitEthernet0/3/4 service-instance 1
member GigabitEthernet0/3/7 service-instance 1
interworking vlan
end
```

**Verifying EVC Local Connect Configuration****Verifying EVC Local Connect Configuration**

```
show l2vpn service xconnect name efp2
```

```
Legend: St=State      XC St=State in the L2VPN Service      Prio=Priority
        UP=Up          DN=Down          AD=Admin Down      IA=Inactive
        SB=Standby    HS=Hot Standby    RV=Recovering      NH=No Hardware
        m=manually selected
```

Interface	Group	Encapsulation	Prio	St	XC	St
VPWS name: efp2, State: UP						
Gi0/1/6		Gi0/1/6:2 (Eth VLAN)	0	UP	UP	
Gi0/1/7		Gi0/1/7:2 (Eth VLAN)	0	UP	UP	

**Verifying not Configured EVC Local Connect**

```
show l2vpn service xconnect name efp2
```

```
Legend: St=State      XC St=State in the L2VPN Service      Prio=Priority
        UP=Up          DN=Down          AD=Admin Down      IA=Inactive
        SB=Standby    HS=Hot Standby    RV=Recovering      NH=No Hardware
        m=manually selected
```

Interface	Group	Encapsulation	Prio	St	XC	St
-----------	-------	---------------	------	----	----	----

```

-----
Xconnect entry does not exist
-----

```

### Verifying EVC Local Connect with Interworking VLAN

```
show l2vpn service name test1
```

```

Legend: St=State      XC St=State in the L2VPN Service      Prio=Priority
        UP=Up         DN=Down                          AD=Admin Down      IA=Inactive
        SB=Standby    HS=Hot Standby      RV=Recovering      NH=No Hardware
        m=manually selected

```

Interface	Group	Encapsulation	Prio	St	XC St
VPWS name: test1, State: UP					
Gi0/1/6		Gi0/1/6:1(Ethernet)	0	UP	UP
Gi0/1/7		Gi0/1/7:10(Eth VLAN)	0	UP	UP

## Verifying Traffic Statistics

```
show interface gig0/1/6 | in pack
```

```

30 second input rate 43604000 bits/sec, 43955 packets/sec
30 second output rate 0 bits/sec, 0 packets/sec
1521946 packets input, 188721304 bytes, 0 no buffer
0 packets output, 0 bytes, 0 underruns

```

```
show interface gig0/1/7 | in pack
```

```

30 second input rate 0 bits/sec, 0 packets/sec
30 second output rate 43131000 bits/sec, 43482 packets/sec
0 packets input, 0 bytes, 0 no buffer
1523724 packets output, 188941776 bytes, 0 underruns

```

```
show ethernet service instance id 1 interface gig0/1/6 stats
```

```

Port maximum number of service instances: 4000
Service Instance 1, Interface GigabitEthernet0/1/6
  Pkts In   Bytes In   Pkts Out   Bytes Out
  1300224  161227776      0           0

```

```
show ethernet service instance id 2 interface gig0/1/7 stats
```

```

Port maximum number of service instances: 4000
Service Instance 2, Interface GigabitEthernet0/1/7
  Pkts In   Bytes In   Pkts Out   Bytes Out
      0           0    1300226  161228024

```

# Configuration Examples

## Example: Configuration Example for EVC Local Connect

### Example: Configuration Example for EVC Local Connect

```
show run interface GigabitEthernet0/1/6

Building configuration...

Current configuration : 142 bytes
!
interface GigabitEthernet0/1/6
 no ip address
 negotiation auto
 no keepalive
 service instance 1 ethernet
 encapsulation dot1q 10
!
end

show run interface GigabitEthernet0/1/7

Building configuration...

Current configuration : 142 bytes
!
interface GigabitEthernet0/1/7
 no ip address
 negotiation auto
 no keepalive
 service instance 1 ethernet
 encapsulation dot1q 10
!
end

show run | sec localconnect1

l2vpn xconnect context localconnect1
member GigabitEthernet0/1/6 service-instance 1
member GigabitEthernet0/1/7 service-instance 1
```

## Example: Configuration Example for EVC Local Connect as Interworking VLAN

### Example: Configuration Example for EVC Local Connect as Interworking VLAN

```
show run interface GigabitEthernet0/3/4

Building configuration...

Current configuration : 165 bytes
!
interface GigabitEthernet0/3/4
 no ip address
 negotiation auto
```

```

service instance 1 ethernet
  encapsulation dot1q 1
!
end

show run interface GigabitEthernet0/3/7

Building configuration...

Current configuration : 127 bytes
!
interface GigabitEthernet0/3/7
no ip address
negotiation auto
service instance 1 ethernet
  encapsulation default
!
end

show run | sec localconnect2

l2vpn xconnect context localconnect2
interworking vlan
member GigabitEthernet0/3/4 service-instance 1
member GigabitEthernet0/3/7 service-instance 1

```

## Use Cases or Deployment Scenarios

### Ingress is VLAN list and Egress is fixed VLAN

If you have the configuration where, Ingress has encapsulations as a list of VLAN and Egress is a fixed VLAN. You need to configure interworking VLAN in **l2vpn xconnect** command to enable local connect and the state of the connection to be UP.

A notification is displayed when you have not configured interworking VLAN.

The following configuration describes the scenario:

```

enable
configure terminal
interface GigabitEthernet0/1/6
service instance 1 ethernet
encapsulation dot1q 2,4,5-8,10
end

enable
configure terminal
interface GigabitEthernet0/1/7
service instance 2 ethernet
encapsulation dot1q 5
end

enable
configure terminal
l2vpn xconnect context efp2
member gigabitEthernet 0/1/6 service-instance 1
member gigabitEthernet 0/1/7 service-instance 2
no shut
end

% Incomplete xconnect configuration. Please configure interworking.

```

You can verify the configuration using the **show l2vpn service xconnect name name**

```
show l2vpn service xconnect name efp2
```

```
Legend: St=State      XC St=State in the L2VPN Service      Prio=Priority
        UP=Up         DN=Down          AD=Admin Down      IA=Inactive
        SB=Standby   HS=Hot Standby   RV=Recovering     NH=No Hardware
        m=manually selected
```

Interface	Group	Encapsulation	Prio	St	XC	St
VPWS name: efp2, State: UP						
Gi0/1/6		Gi0/1/6:1(Ethernet)	0	UP	UP	
Gi0/1/7		Gi0/1/7:5(Eth VLAN)	0	UP	UP	

