



EVPN Commands

This section describes the commands used to configure Ethernet VPN (EVPN) services for Layer 2 VPNs.

- [advertise-mac](#), on page 2
- [core-isolation-group](#), on page 3
- [ethernet-segment](#), on page 4
- [etree rt-leaf](#), on page 5
- [evi](#), on page 6
- [evpn](#), on page 7
- [host mac-address duplicate-detection](#), on page 8
- [show bgp l2vpn evpn](#), on page 10
- [show evpn ethernet-segment](#), on page 12
- [show evpn evi](#), on page 13
- [show evpn summary](#), on page 16

advertise-mac

To advertise local MAC to the peers, use **advertise-mac** command in the EVPN configuration mode. The local MAC is advertised to the peer in control plane using BGP.

advertise-mac

Syntax Description This command has no keywords or arguments.

Command Default None

Command Modes EVPN

Command History	Release	Modification
	Release 7.11.1	This command was introduced.

Usage Guidelines No specific guidelines impact the use of this command.

The following example shows how to advertise local MAC.

```
Router(config)# evpn
Router(config-evpn)# interface Bundle-Ether 1
Router(config-evpn-ac)# exit
Router(config-evpn)# evi 2001
Router(config-evpn-instance)# advertise-mac
Router(config-evpn-instance-mac)# commit
```

core-isolation-group

To configure EVPN core isolation group after the core interfaces fail, use the **core-isolation-group** command in the EVPN Timers configuration mode.

core-isolation-group *group-id*

Syntax Description	<i>group-id</i> Specifies the core isolation group ID. The range is from 1 to 4294967295.				
Command Default	None.				
Command Modes	EVPN configuration mode				
Command History	<table border="1"> <thead> <tr> <th>Release</th> <th>Modification</th> </tr> </thead> <tbody> <tr> <td>Release 7.11.1</td> <td>This command was introduced.</td> </tr> </tbody> </table>	Release	Modification	Release 7.11.1	This command was introduced.
Release	Modification				
Release 7.11.1	This command was introduced.				
Usage Guidelines	No specific guidelines impact the use of this command.				

Example

This example shows how to configure the EVPN core isolation group.

```
Router# configure
Router(config-evpn)# interface bundle-Ether 43001
Router(config-evpn-ac)# core-isolation-group 43001
Router(config-evpn-ac)# commit
```

ethernet-segment

To enter the EVPN interface ethernet segment configuration mode, use the **ethernet-segment** command in the EVPN interface configuration mode. To disable the Ethernet segment configuration, use the **no** form of this command.

```
ethernet-segment [{ backbone-source-mac | identifier | load-balancing-mode | service-carving }]
no ethernet-segment [{ backbone-source-mac | identifier | load-balancing-mode | service-carving
}]
```

Syntax Description	Parameter	Description
	backbone-source-mac	Specifies Backbone Source MAC.
	identifier	Specifies Ethernet Segment Identifier.
	load-balancing-mode	Specifies load balancing mode.
	service-carving	Specifies service carving.

Command Default None.

Command Modes EVPN interface configuration

Command History	Release	Modification
	Release 7.11.1	This command was introduced.

Usage Guidelines No specific guidelines impact the use of this command.

Task ID	Task ID	Operation
	l2vpn	read, write

This example shows how to enter the EVPN interface ethernet segment configuration mode:

```
Router# configure
Router(config)# evpn
Router(config-evpn)# interface bundle-ether 1
Router(config-evpn-ac)# ethernet-segment
Router(config-evpn-ac-es)#
```

etree rt-leaf

To enable EVPN instance as EVPN E-Tree leaf site using BGP Route Target (RT) import and export policies, use the **etree rt-leaf** command in the EVPN EVI configuration submode.

etree rt-leaf

Syntax Description	This command has no keywords or arguments.
---------------------------	--

Command Default	None.
------------------------	-------

Command Modes	EVI configuration submode
----------------------	---------------------------

Command History	Release	Modification
	Release 7.11.1	This command was introduced.

Usage Guidelines	No specific guidelines impact the use of this command.
-------------------------	--

Task ID	Task ID	Operation
	l2vpn	read, write

Example

This example shows how to designate EVPN instance as EVPN E-Tree Route-Target leaf site.

```
Router(config)# evpn
Router(config-evpn)# evi 15
Router(config-evpn-instance)# etree
Router(config-evpn-instance-etree)# rt-leaf
```

evi

To enter the EVPN EVI configuration mode and configure BGP settings for a bridge domain or EVI, use the **evi** command in the EVPN configuration mode.

evi *evi-id*

Syntax Description	<i>evi-id</i> Specifies the Ethernet VPN ID to set. The range is from 1 to 65534.
---------------------------	---

Command Default	None.
------------------------	-------

Command Modes	EVPN configuration mode
----------------------	-------------------------

Command History	Release	Modification
	Release 7.11.1	This command was introduced.

Usage Guidelines	Use this command to configure static BGP route distinguisher or BGP route target for an EVI.
-------------------------	--

Task ID	Task ID	Operation
	l2vpn	read, write

Example

This example shows how to enter the EVPN EVI configuration mode:

```
Router# configure
Router(config)# evpn
Router(config-evpn)# evi 2
```

evpn

To enter EVPN configuration mode, use the **evpn** command in the global configuration mode. To return to the global configuration mode, use the **no** form of this command.

```
evpn  [{ bgp | evi | interface | timers }]
no evpn  [{ bgp | evi | interface | timers }]
```

Syntax Description	Command	Description
	bgp	Configures BGP.
	evi	Configures Ethernet VPN ID (EVI).
	interface	Assigns an interface to EVPN.
	timers	Configures global EVPN timers.

Command Default None.

Command Modes Global configuration

Command History	Release	Modification
	Release 7.11.1	This command was introduced.

Usage Guidelines No specific guidelines impact the use of this command.

Task ID	Task ID	Operation
	l2vpn	read, write

Example

This example shows how to enter the EVPN configuration mode:

```
Router# configure
Router(config)# evpn
Router(config-evpn)#
```

host mac-address duplicate-detection

To enable duplicate detection of host MAC address, use the **host mac-address duplicate-detection** command in the EVPN configuration mode.

host mac-address duplicate-detection [**freeze-time** *freeze-time* | **move-count** *move-count* | **move-interval** *move-interval* | **retry-count** *retry-count* | **infinity** | **reset-freeze-count-interval** *interval*] **disable**

Syntax Description		
freeze-time <i>freeze-time</i>		Length of time to lock the MAC address after it has been detected as duplicate. Default is 30 seconds.
move-count <i>move-count</i>		Number of moves to occur within the specified move-interval before freezing the MAC address. Default is 5.
move-interval <i>move-interval</i>		Interval to watch for subsequent MAC moves before freezing the MAC address. Default is 180 seconds.
retry-count <i>retry-count</i>		Number of times to unfreeze an MAC address before freezing it permanently. Default is three times.
infinite		Infinite retry count. Prevents freezing of the duplicate MAC address permanently.
reset-freeze-count-interval <i>interval</i>		Interval after which the count of duplicate detection events is reset. Default is 24 hours. The range is from 1 hour to 48 hours.
disable		Disable duplicate detection of MAC addresses.

Command Default None

Command Modes EVPN configuration mode

Command History	Release	Modification
	Release 7.11.1	This command was introduced.

Usage Guidelines None

Task ID	Task ID	Operation
	l2vpn	read, write

Example

This example shows how to enable duplicate detection of host MAC address:


```
Router# configure
Router(config)# evpn
Router(config-evpn)# host MAC-address duplicate-detection
Router(config-evpn-host-mac-addr-dup-detection)# move-count 2
Router(config-evpn-host-mac-addr-dup-detection)# freeze-time 10
Router(config-evpn-host-mac-addr-dup-detection)# retry-count 2
Router(config-evpn-host-mac-addr-dup-detection)# commit
```

This example shows how to prevent permanent freezing of duplicate host MAC address:

```
Router# configure
Router(config)# evpn
Router(config-evpn)# host MAC-address duplicate-detection
Router(config-evpn-host-mac-addr-dup-detection)# retry-count infinity
Router(config-evpn-host-mac-addr-dup-detection)# commit
```

This example shows how to reset the interval after which the count of duplicate detection events are permanently frozen.

```
Router# configure
Router(config)# evpn
Router(config-evpn)# host MAC-address duplicate-detection
Router(config-evpn-host-mac-addr-dup-detection)# reset-freeze-count-interval 20
Router(config-evpn-host-mac-addr-dup-detection)# commit
```

show bgp l2vpn evpn

To display BGP routes associated with EVPN under L2VPN address family, use the **show bgp l2vpn evpn** command in EXEC mode.

```
show bgp l2vpn evpn {bridge-domain bridge-domain-name | rd {all IPv4 address:nn 4-byte
as-number:nn 2-byte as-number:nn}}
```

Syntax Description		
bridge-domain <i>bridge-domain-name</i>		Displays the bridges by the bridge ID. The bridge-domain-name argument is used to name a bridge domain.
rd		Displays routes with specific route distinguisher.
all		Displays specified routes in all RDs.
<i>IPv4 address:nn</i>		Specifies the IPv4 address of the route distinguisher. nn: 16-bit number
<i>4-byte as-number:nn</i>		Specifies 4-byte AS number in asdot (X.Y) format or in asplain format. <ul style="list-style-type: none"> For 4-byte AS number in asdot (X.Y) format, the range is from 1 to 65535. The format is: <1-65535>.<0-65535>:<0-65535> For 4-byte AS number in asplain format, the range is from 65536 to 4294967295. The format is: <65536-4294967295>: nn: 32-bit number
<i>2-byte as-number:nn</i>		Specifies 2-byte as-number. The range is from 1 to 65535. nn: 32-bit number

Command Default None

Command Modes EXEC

Command History	Release	Modification
	Release 7.11.1	This command was introduced.

Usage Guidelines No specific guidelines impact the use of this command.

Task ID	Task ID	Operation
	bgp	read

Example

This sample output shows the BGP routes associated with EVPN with bridge-domain filter:

```

show bgp l2vpn evpn bridge-domain bd1
Network          Next Hop          Metric LocPrf Weight Path
Route Distinguisher: 192.0.2.1:1 (default for vrf bd1)
*>i[1][0077.0000.0000.0000.0001][0]/120
                198.51.100.1          100      0 i
*>i[1][0077.0000.0000.0000.0001][4294967295]/120
                198.51.100.1          100      0 i
*>i[1][0088.0000.0000.0000.0001][0]/120
                203.0.113.1          100      0 i
* i              209.165.200.225      100      0 i
*>i[1][0088.0000.0000.0000.0001][4294967295]/120
                203.0.113.1          100      0 i
* i              209.165.200.225      100      0 I
* [2][0][48][0001.0000.0001][0]/104
*>              209.165.201.1          0 101 i
*>i[2][0][48][0002.0000.0001][0]/104
                203.0.113.1          100      0 102 i
* i              209.165.200.225      100      0 102 i
*>i[3][0][32][203.0.113.1]/80
                203.0.113.1          100      0 i
*>i[3][0][32][209.165.200.225]/80
                209.165.200.225      100      0 i

```

show evpn ethernet-segment

To display the EVPN Ethernet segment information, use the **show evpn ethernet-segment** command in the EXEC mode.

```
show evpn ethernet-segment [{ detail | esi | interface | location | private | standby | carving
}]
```

Syntax Description	Option	Description
	detail	Displays detailed information.
	esi	Filters by Ethernet Segment identifier.
	interface	Filters by interface name.
	location	Displays location specific information.
	private	Displays private information.
	standby	Displays standby node specific information.

Command Default None.

Command Modes EXEC

Command History	Release	Modification
	Release 7.11.1	This command was introduced.

Usage Guidelines No specific guidelines impact the use of this command.

Task ID	Task ID	Operation
	l2vpn	read

Example

This sample output shows the EVPN Ethernet segment detailed information:

```
Router# show evpn ethernet-segment interface HundredGigE 0/0/0/24 detail
```

```

Ethernet Segment Id      Interface                Nexthops
-----
N/A                      HundredGigE 0/0/0/24  10.0.0.1
.....
Topology :
Operational : SH

```

show evpn evi

To display the EVPN E-VPN ID information, use the **show evpn evi** command in the EXEC mode.

```
show evpn evi [{ bridge-domain | detail | inclusive-multicast | location | mac | standby |
vpn-id }]
```

Syntax Description	Option	Description
	bridge-domain	Displays information for a specified bridge-domain..
	detail	Displays detailed information.
	inclusive-multicast	Displays EVPN Inclusive Multicast information.
	location	Displays location specific information.
	mac	Displays EVI MAC route associated configuration information.
	standby	Displays standby node specific information.
	vpn-id	Displays information for a specified E-VPN Identifier.

Command Default None.

Command Modes EXEC

Command History	Release	Modification
	Release 7.11.1	This command was introduced.

Usage Guidelines No specific guidelines impact the use of this command.

Task ID	Task ID	Operation
	l2vpn	read

Example

This sample output shows the EVPN EVI information with the VPN-ID and MAC address filter:

```
Router#show evpn evi vpn-id 185 mac 0024.be03.ce01
MAC address      Nexthop          Label    vpn-id
-----
0024.be03.ce01  3.100.100.100   16004    185
                  4.100.100.100   16004    185
ESI port key    : 0x0000
Source         : Remote
Flush Count    : 0
```

This sample output shows the EVPN EVI information with the VPN-ID and inclusive-multicast filter:

```
Router#show evpn evi vpn-id 185 inclusive-multicast service-id 1850312 orig-ip 1.100.100.100
ISID          Originating IP          vpn-id
-----
1850312      1.100.100.100          185
1850312      2.100.100.100          185
1850312      3.100.100.100          185
1850312      4.100.100.100          185
```

This sample output shows the EVPN EVI inclusive-multicast information:

```
Router#show evpn evi inclusive-multicast detail
ISID: 1850312, Originating IP: 1.100.100.100          185
  Nexthop: ::
  Label   : 16005
  Source  : Local
ISID: 1850312, Originating IP: 2.100.100.100          185
  Nexthop: 2.100.100.100
  Label   : 16005
  Source  : Remote
ISID: 1850312, Originating IP: 3.100.100.100          185
  Nexthop: 3.100.100.100
  Label   : 16005
  Source  : Remote
ISID: 1850312, Originating IP: 4.100.100.100          185
  Nexthop: 4.100.100.100
  Label   : 16005
  Source  : Remote
```

This sample output shows the EVPN EVI information with the bridge-domain filter:

```
Router#show evpn evi bridge-domain tb1-core1 detail
EVI          Bridge Domain          Type
-----
145          tb1-core1                 PBB
165          tb1-core2                 PBB
185          tb1-core3                 PBB
65535       ES:GLOBAL                 BD
```

This sample output shows the EVPN EVI detailed information:

```
Router#show evpn evi detail
EVI          Bridge Domain          Type
-----
145          tb1-core1                 PBB
  Unicast Label   : 16000
  Multicast Label : 16001
  RD Config: none
  RD Auto   : (auto) 1.100.100.100:145
  RT Auto   : 100:145
  Route Targets in Use          Type
  -----
  100:145                       Import
  100:145                       Export

165          tb1-core2                 PBB
```

```
Unicast Label : 16002
Multicast Label: 16003
RD Config: none
RD Auto : (auto) 1.100.100.100:165
RT Auto : 100:165
Route Targets in Use          Type
-----
100:165                        Import
100:165                        Export

185          tbl-core3                PBB
Unicast Label : 16004
Multicast Label: 16005
RD Config: none
RD Auto : (auto) 1.100.100.100:185
RT Auto : 100:185
Route Targets in Use          Type
-----
100:185                        Import
100:185                        Export

65535        ES:GLOBAL                BD
Unicast Label : 0
Multicast Label: 0
RD Config: none
RD Auto : (auto) 1.100.100.100:0
RT Auto : none
Route Targets in Use          Type
-----
0100.9e00.0210                Import
0100.be01.ce00                Import
0100.be02.0101                Import
```

show evpn summary

To display the EVPN summary, use the **show evpn summary** command in the EXEC mode.

show evpn summary[{**location** | **private** | **standby**}]

Syntax Description	location	private	standby
	Displays location specific information.	Displays private information.	Displays standby node specific information.

Command Default None.

Command Modes EXEC

Command History	Release	Modification
	Release 7.11.1	This command was introduced.

Usage Guidelines No specific guidelines impact the use of this command.

Task ID	Task ID	Operation
	l2vpn	read

Example

This sample output shows the EVPN summary:

```
Router#show evpn summary
-----
Global Information
-----
Number of EVIs                : 1
Number of Local MAC Routes    : 1
Number of Remote MAC Routes   : 0
Number of Local IMCAST Routes : 0
Number of Remote IMCAST Routes: 0
Number of Internal Labels     : 0
Number of ES Entries          : 0
BGP Router ID                 : ::
BGP ASN                       : Invalid
PBB BSA MAC address           : f866.f214.abd7
Global peering timer          : 45 seconds
Global recovery timer         : 20 seconds
Global programming timer      : 1500 microseconds
Global flushagain timer       : 60 seconds
-----
High Availability Information
```



```
-----  
BGP EOD : N  
Number of Marked MAC Routes : 0  
Number of Swept MAC Routes : 0  
Number of Marked IMCAST Routes: 0  
Number of Swept IMCAST Routes : 0
```

show evpn summary