EVPN Commands

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

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
```

convergence reroute

To enable the switchover of a failed primary link from one PE device to another by redirecting the unicast traffic to backup peer , use the **convergence reroute** command in the EVPN interface Ethernet segment configuration mode.

convergence reroute

Syntax Description

This command has no keywords or arguments.

Command Default

None

Command Modes

EVPN interface Ethernet segment configuration mode

Command History

Release	Modification
Release 24.3.1	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 redirect the unicast traffic to backup peer.

```
Router(config)# evpn
Router(config-evpn)# interface Bundle-Ether1
Router(config-evpn-ac)# ethernet-segment
Router(config-evpn-ac-es)# identifier type 0 00.00.00.00.00.00.05.01.02
Router(config-evpn-ac-es)# convergence reroute
```

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

group-id	Specifies the core isolation group ID. The range is from 1 to 4294967295.

Command Default

None.

Command Modes

EVPN configuration mode

Command History

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

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

evi-id	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

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 *freeze-time*	Length of time to lock the MAC address after it has been detected as duplicate. Default is 30 seconds.
move-count *move-count*	Number of moves to occur witin the specified **move-interval** before freezing the MAC address. Default is 5.
move-interval *move-interval*	Interval to watch for subsequent MAC moves before freezing the MAC address. Default is 180 seconds.
retry-count *retry-count*	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 *interval*	Interval after which the count of duplicate detection events is reset. Default is 24 hours. The range is from is 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 *bridge-domain-name*	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.
IPv4 address:nn	Specifies the IPv4 address of the route distinguisher. nn: 16-bit number
4-byte as-number:nn	Specifies 4-byte AS number in asdot (X.Y) format or in asplain format. • 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
2-byte as-number:nn	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
```

load-balancing-mode

To enable the load-balancing mode, use the **load-balancing-mode** command in the EVPN interface configuration mode. To disable the load-balancing mode, use the **no** form of this command.

load-balancing-mode { **port-active** | **single-active** | **single-flow-active** }

Syntax Description

port-active	Enables the port-active load-balancing mode
single-active	Enables the single-active load-balancing mode.
single-flow-active	Enables the single-flow-active load-balancing mode.

Command Default

None

Command Modes

EVPN configuration mode

Command History

Release	Modification
Release 24.2.11	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 enable the single-active load-balancing mode:

```
Router# configure
Router(config)# evpn
Router(config-evpn)# ethernet-segment
Router(config-evpn-es)# load-balancing-mode single-active
```

This example shows how to enable the single-flow-active load-balancing mode:

```
Router# configure
Router(config)# evpn
Router(config-evpn)# ethernet-segment
Router(config-evpn-es)# load-balancing-mode single-flow-active
```

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

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

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        tb1-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	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 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
```